

TELECOMMUNICATION STANDARDS

Cable Plant and Wireless Networking Standards

Updated January 21, 2015

The intent of these regulations is to establish criteria for installation of all telecommunications within the Southwest Corporate Center (SCC). Omninet Property Management LLC, as managing representative for the Building Owner, asks for your cooperation in maintaining these standards. Please inform your employees and subcontractors about these requirements. These standards will benefit both tenant and landlord when everyone can readily identify use and ownership of the telecommunications plant. These standards are distributed to all contractors bidding on or working on telecommunication issues. The Landlord employs a Chief Technology Consultant (CTC) for telecommunication issues at SCC. All submittals by tenant to SCC CTC will be directed through Property Manager and all approvals by CTC to tenant will be communicated through Property Manager.

Landlord shall be defined as Building Owner and/or its representatives.

TSP shall be defined as Telecommunications Service(s) Provider.

Tenants shall be defined as Tenants, Licensees, Lessees and/or TSP's.

These standards are hereby incorporated into the Building Rules.

Approval

1. Tenant and/or TSP telecommunications and data-com requirements and/or any of its revisions and/or amendments must be submitted to and approved by Property Manager prior to the start of the work is necessary to designate sufficient equipment areas and site specific requirements. A planning meeting with Property Management is required to obtain approval of installation plan and coordinate access to the facility prior to the commencement of the work start. Electronic drawing(s) (paper is also acceptable) of tenant's network routing diagram and patch panel schedule must be submitted to and approved in writing by Property Manager prior to start of work. Property Manager will communicate with SCC CTC for agreement of approvals. See examples of an acceptable routing diagram and patch panel schedule attached. See, also, the Questionnaire on page 3 of this document, which shall be answered and submitted along with the routing diagram and patch panel schedule.
2. During installation, SCC CTC and/or Property Management may inspect and advise tenant of any non-compliance issues.
3. All network drops will be certified and each drop will be marked at the wall plate and hub or patch panel as indicated in the network routing diagram approved by SCC CTC and Property Manager in accordance with these procedures.
4. All building connectivity to telecom service provider(s) will begin at the SCC designated demarcation point and continues to the customer tenant space only.
5. Upon cable plant installation:
 - SCC CTC will evaluate cable plant for compliance to SCC standards.
 - Tenant and/or TSP will submit network certification reports for each drop to Property Manager no less than 10 days following completion of cable plant installation.

TELECOMMUNICATION STANDARDS

Cable Plant and Wireless Networking Standards

Updated September 10, 2007

Cable Requirements

6. Only IEEE certified Cat 5e, Cat 6 pending IEEE certification, or fiber optic data cabling for voice and telephone. Cat 5 is approved for telecom tie cables only, not for desktop connections. Cat 3 cable may be used for voice only. Tenant is advised that Cat 3 will likely be obsolete in the near future and is strongly encouraged to install Cat 5e to avoid expense and inconvenience of re-running cable. Cat 3 cable may not be used outside the tenant's space. No lesser grade cabling will be approved.
7. Fiber optic cable will be used for data runs in excess of 150 feet (IEEE standard for Cat 5e at 100Mbps).
8. Color standards for plenum-rated cable is as follows:
 - Cat 3 – gray
 - Cat 5 – light blue
 - Cat 5e – med blue
 - Cat 6 – yellow
 - Fiber flex tube (Inner-duct) – orange

Mounting Requirements

9. Plenum mounted "J" hook or hanger with rubber insulation for data cable plenum suspension, to be located:
 - 18 inches above the ceiling grid, and no less than 12 inches away from a/c duct, fire suppression systems and a/c control boxes.
 - Hanger to be secured into the corrugated sheet metal above.
 - Each "J" hook/hanger must have its own independent suspension wire/strut support and will not be attached or touching the drop ceiling grid or grid suspension wire, electrical conduit hanger, cable tray or its suspension system, conduit or its suspension system, fire suppression system, air conditioning duct work, etc.
 - Support will be provided at no more than 5 foot increments.
10. Data Cable bundles will be 40 count or less in "J" hooks or 40 count or less on other support structures such as ladder racks or cable trays.
11. Data Cable bundles and/or trays will be identified with tagging every 10 feet with fiber/copper owner's name, vendor, and tenant's name and clearly labeled in all junction boxes. Such permanent identification will be easily read at a distance of 5 feet. Tagging must be written in English. Tagging is not required from the data closet to the wall receptacles, however it is required for all other runs.
12. Data Cable Tray will be utilized for multiple bundles (more than 2) for distances greater than thirty (30) feet.
13. Data cable tray will be separate from all power cable trays.
14. Data cables will not share the same conduit as power cables.
15. All tenant cabling will be in or above the tenant space. Second floor tenants will not utilize the first floor plenum for cabling runs. No core drilling will be performed. Exceptions will be made for access to the fiber ring and/or splice rooms as approved.

TELECOMMUNICATION STANDARDS

Cable Plant and Wireless Networking Standards

Updated September 10, 2007

16. Fiber optic cable will be protected with Electric Metalic Tubing (EMT) conduit from the building fiber conduit ring and/or telecommunication closets to the tenant space demarcation area wire closet to penetrate through the drop ceiling; this includes tenants who receive service from services providers within the SCC facility (tenant to tenant services). EMT conduit is to be used for all horizontal and vertical riser space in SCC unless otherwise approved by Building Owner in writing. Insulated connectors will be used for interior EMT conduit and should be setscrew, but external EMT conduit should be compression connectors. All buried conduit or sub-surface conduit should be RGC (rigid galvanized steel conduit) and connectors should be insulated or otherwise treated to prevent water from leaking into the system. If Building Owner approves the use of plastic conduit tubing, then it should be in a concrete encapsulated PVC system to prevent backhoe or damage by digging. All conduit systems must meet or exceed both NECA and local municipal standards.
17. Without specific written authorization by the Building Owner, Property Manager or it's representative CTC, the building fiber conduit ring will not be touched for any purpose.

Other

18. Tenant and/or TSP will not, at any time, under any circumstance, sever any copper or fiber cable plant or any portion thereof, even in it's own lease space without the prior written approval of the Landlord.
19. Upon lease termination or any tenant vacation of tenant space or sublease, Landlord will have first right of refusal to acquire in tact the approved, installed, tested cable plant. Should Landlord choose not to purchase said cable plant in tact, Landlord will perform the function of severing data cable and/or fiber plant connectivity.
20. Only approved data communication plant service companies will perform service in SCC. Therefore, tenant is responsible to obtain approval from Landlord prior to plenum entry by any tenant, contractor, building guest, telecom service provider, data communication services company, tenants authorized agent or otherwise. Landlord will grant tenant, in writing, a general 30-day plenum access upon substantial completion of original tenant improvements for punch work and adjustments typically necessary upon move-in.
21. No wireless networking will be allowed in this facility other than the IEEE 802.11 and IEEE 802.11b systems approved by SCC CTC and in accordance with separate rooftop site license agreement.
22. Size, depth and type of trenching and/or underground installation method from public right of way to SCC MPOE must be approved in writing by SCC prior to beginning of such work. Tenant and/or TSP is responsible for sole cost of repair of damages to property or otherwise.
23. All conduits and/or inner-ducts and pathways are controlled and assigned by Landlord Licensor. If you do not have prior written approval for specific access to this system, do not touch it for any reason.
24. Landlord reserves the right to remove at site user's expense all unauthorized installation(s).

TELECOMMUNICATION STANDARDS

Cable Plant and Wireless Networking Standards

Updated September 10, 2007

25. Telecommunications standards are subject to change by building management from time to time. Copies of the current standards are available in the building managers office during normal business hours.

TELECOMMUNICATION STANDARDS

Cable Plant and Wireless Networking Standards

Updated September 10, 2007

Questionnaire

Please submit the answer to the following questions with the submittal of the routing plan. No routing plan will be approved without this information.

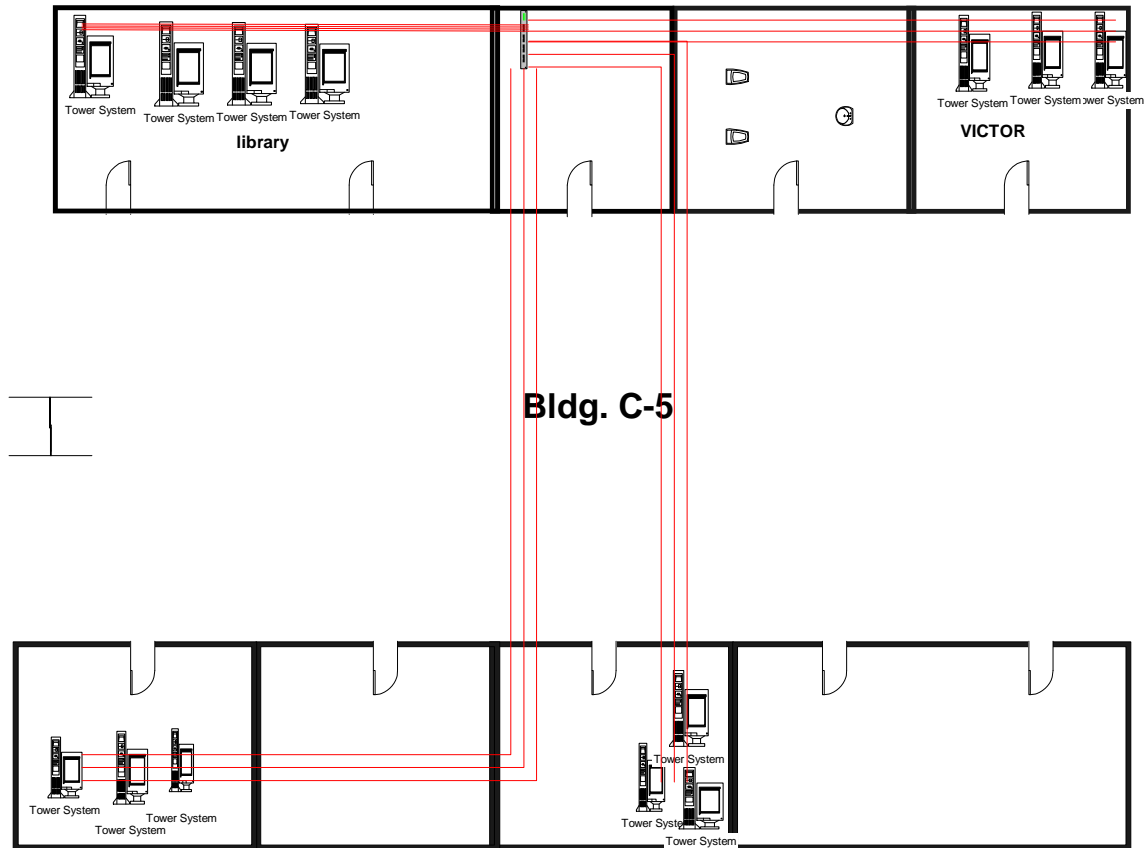
1. Where will your service provider connect to tenant's equipment? Is this tenant's demarcation point? If not, where is the point of demarcation?
2. Who are tenant's service providers, and what kind of service are they providing?
3. Where is tenant's telco room?
4. Will tenant have Smart Jacks? If so, where will they be located?

TELECOMMUNICATION STANDARDS

Cable Plant and Wireless Networking Standards

Updated September 10, 2007

Example of an acceptable cable routing plan



Routing plan shall be color coded if necessary. Label each run with the size, color & type of cable being run. Rooms shall be labeled.

Example of an acceptable patch panel schedule

Tenant will provide Property Management a patch panel to wall plate port schedule along with the routing plan for approval. Tenant's "hub port schedule" is not a part of this request, as that schedule would change frequently and leave with the tenant at their lease termination. The wall plate receptacles and patch panel would likely remain and then become the property of SCC.

PATCH PANEL #	SWITCH	Port on Switch	IP Addresses	Computer Name
1	2	8	209.113.119.136	ANA
2	EMPTY	EMPTY	EMPTY	EMPTY
3	3	3	209.16.40.26	CORY
4	3	5	209.16.40.57,58,42	ALMA
5B	3	24	209.16.40.27	BACKUP
6	1	7	64.9.144.128	TOM
7C	FireWall	FireWall	FireWall	FireWall
8	2	11	209.113.119.134	Computer #17

TELECOMMUNICATION STANDARDS

Cable Plant and Wireless Networking Standards

Updated September 10, 2007

9

4

15

209.16.40.19

RIGHTFAX