1.1 GENERAL

1.2 Communications Equipment Rooms General

.1 Equipment in Telecommunications Rooms shall be installed as per industry standards (CEC, ANSI/TIA and any other applicable codes and/or standards), best practices of BISCI TDM and shall adhere to manufacturers recommendations to constitute a complete system.

2.1 PRODUCTS AND EXECUTION

2.2 Communications Cabinets, Racks, Frames and Enclosures

.1 Provide floor mounted communication Racks and/or Cabinets for installation of patch panels and owner supplied network equipment.

.2 Quantities of racks and cabinets shall be as indicated on drawings. (SFU standard is to use Racks for all installations, and Cabinets shall be used only when specifically noted on drawings or herein).

.3 Racks shall be BLACK, 19” wide and provide minimum 45RU capacity.

Pre-approved product: Chatsworth 55053-703

.4 All racks and cabinets are to be secured to prevailing local seismic standards. This contractor is fully responsible for all seismic installation requirements (this may include the services of a Professional Structural Engineer if required by local Codes, Standards and/or Bylaws).

.5 All racks, cabinets and frames shall be grounded to common telecommunications ground using a standard ground lug and green jacketed #6 ground wire according to ANSI/TIA- 4966 standard.

.6 Ensure proper fasteners are used for mounting equipment to the rack.

2.3 Communications Termination Blocks and Patch Panels - General

.1 Unless otherwise specified herein and/or drawings patch panels shall be arranged as per standard practice.

.2 Cables shall be terminated sequentially (by cable number) from left to right (viewed from front of panel) and top to bottom.

.3 Category 6A cables shall be routed to the back of patch panels from both (left and right) sides. Cables terminated on the left side of a patch panel shall come from the left. And cables terminated on the right side of a patch panel shall come from the right. Category 6A cables shall not cross centerline of the patch panels.

.4 Contractors shall submit proposed layout of equipment racks and equipment positioning to SFU NS, prior to installation.
2.4 Communications Copper Termination Blocks

.1 Belden A0266828 QCBIX1A distribution connectors shall be used to terminate Category 3 voice backbone.

.2 Distribution connectors shall be installed on 250-pair wall-mounted QMBIX mounts Belden A0270164.

.3 Provide Belden A0270168 Distribution Rings between two adjacent mounts.

.4 Contractor shall obtain approval for termination block layout from SFU NS prior to installation (refer to Section 27 10 00 Clause 1.11).

2.5 Communications Copper Patch Panels

.1 Rack-mounted Patch Panels shall be used:
   ● to terminate all horizontal Category 6A cables, unless noted otherwise
   ● as Voice backbone patch-fields (wired from the back of patch panel to wall-mounted BIX connectors).

.2 Patch Panels shall be rack-mounted (1RU high), black color, flat, 24-port, preloaded with black 8-pin modular data jacks.

.3 Patch Panels for Category 6A horizontal cabling shall meet or exceed Category 6A performance and utilize REVConnect termination technology.
   Pre-approved product: Belden 10GX REVConnect (RVAPPF1U24BK)

.4 Voice Patch Panels for 25-pair Category 3 cable shall meet or exceed Category 5e performance.
   Pre-approved product: Belden CAT5E HD-BIX (AX103260).

.5 Provide minimum 10% spare patch panel ports for future additions.

.6 Provide cable tie bar in the rear of patch panels to manage cable routing.

.7 Contractor shall obtain approval for patch panel layout from Consultant & SFU prior to installation (refer to Section 27 10 00 Clause 1.11).

2.6 Communications Optical Fiber Patch Panels

.1 Fiber enclosure shall be rack-mounted, black color and have capacity to terminate all fiber-optic cables plus spare space for minimum 2 future cassettes. Enclosure shall be FiberExpress ECX 4U patch panel housing Belden ECX-04U.

.2 Enclosures shall be loaded with sufficient quantity of cassettes to facilitate splicing and termination of all fiber-optic cables.

.3 Cassettes shall be Belden FiberExpress ECX splice cassette type with blue adapter plates. Module capacity shall be 24-fiber for backbone cabling.
Pre-approved product: Belden FCSX12LDFS.

.4 All cassettes shall be fully loaded with BLUE color UPC single mode LC type connectors with tight buffer 900µm pigtailed. Reference product Belden FTSLC900PR12 or approved equivalent.

.5 Fusion splice pigtailed to fiber backbone cables and cover with 250µm - 900µm heat shrink protectors. Reference product Belden FXFUHS9T2CB25 or approved equivalent.

2.7 Communications Coaxial Cable Splitters

Not Applicable.

2.8 Communications Cable Wraps

.1 In all areas, Velcro type wraps shall be used. Plastic tie wraps are NOT permitted on this project.

.2 Install Velcro wraps at maximum 300mm intervals inside Telecommunications Room. The number of cables managed by Velcro type wraps shall not exceed the number specified by the manufacturer.

Reference Product: Chatsworth Saf-T-Grip

2.9 Communications Cable Wall Management

.1 Provide Belden A0270168 Distribution Rings between two adjacent BIX mounts to manage cross connection wires.

2.10 Communications Cable Rack Management

.1 Provide 6” wide Vertical cable management channel on both sides of each equipment rack. Cable manager shall have hinged removable front cover.

Pre-approved product: Chatsworth 30092-703

.2 Where two (or more) racks are installed side-by-side provide 10” wide Vertical cable management channel(s) between racks.

Pre-approved product: Chatsworth 30093-703

.3 Provide Horizontal cable management above top patch panel AND then below every other patch panel. Cable manager shall be 2RU high and come with hinged removable front cover.

Pre-approved product: Chatsworth 30130-719

.4 All patch cables shall be hidden from view except for 75mm (3-inch) of exposed cord at the jack.

.5 Provide wire management bars at the back of patch panels to relieve strain on cable terminations.
2.11 Telecommunications Room Cable Tray

.1 Cable Trays shall be of rigid wire mesh type.

.2 Wire mesh cable management system shall be continuous, rigid and welded.

.3 The metal shall be carbon steel wire, ASTM A 510, Grade 1008. The wire shall be welded, formed and then surface treated by manufacturer.

.4 Cable trays within Telecommunications rooms shall have minimum dimensions of 450 x 100mm (18” x 4”), unless otherwise specified.

.5 Installation of Cable Trays shall be as per manufacturers requirements. Only manufacturer approved connecting hardware shall be used. This includes all turns, extensions etc.

.6 Manufacturer approved cable drop outs shall be used where cables exit cable trays to maintain minimum bend radii.

.7 Wire mesh tray shall be installed without sharp elbows or corners. All bends are to be radius turns and shall be performed in accordance with manufacturers instruction sheets and shall conform to BICSI standards. Sharp corners will not be acceptable.

Reference product: Legrand Cablofil CF 105 or approved equivalent.

2.12 Plywood Backboard

.1 Plywood backboards shall have the following features:
  ● 19mm thick Fir void-free plywood which is fire rated
  ● 2440mm (8’) height
  ● Smooth surface on exposed side
  ● Mounted directly onto walls without a stand-off.
  ● Painted with 2 coats of paint on the exposed side and edges. Fire resistant label to be left unpainted and visible throughout.

.2 Plywood Backboard shall be installed approximately 5” above the floor. Power receptacles shall be installed flush to the plywood backboard.
2.13 Rack Mounted Power Distribution Strip

.1 Each communications rack shall be equipped with one 20A Power Strip.

.2 Power strip shall be rack-mounted and occupy one rack space.

.3 Each power strip shall have a minimum of six NEMA 5-20R rear-facing receptacles plus one receptacle facing the front of the rack. Rear receptacles shall be adequately spaced so that equipment power supply transformers can be plugged in adjacent to each other without overlapping.

.4 20A circuit breaker shall be located on the power strip's front panel.

.5 Power strip shall provide EMI filtering and surge protection.

Reference product: Middle Atlantic PD-920R or approved equivalent.

***END OF SECTION***