PART 1 - GENERAL

1.1 Related Sections

.1 Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.

1.2 References

.1 American National Standards Institute
.1 ANSI J-STD-607-A-2002, Joint Standard - Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications.

.2 Telecommunications Industries Association (TIA)/Electronic Industries Alliance (EIA)
.1 TIA/EIA-606-2002, Administration Standard for the Commercial Telecommunications Infrastructure.

.3 U.S. Department of Labor/Occupational Safety and Health Administration (OSHA)
.1 Nationally Recognized Testing Laboratory (NRTL).

1.3 System Description

.1 Telecommunications grounding and bonding system consist of grounding busbars, bonding backbones, and other bonding conductors.

.2 Provides ground reference for telecommunications systems within building and bonding to it of telecommunications rooms.

.3 Metallic pathways, cable shields, conductors, and hardware within telecommunications spaces are bonded to telecommunications grounding and bonding system.

1.4 Quality Assurance

.1 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.5 Delivery, Storage and Handling

.1 Waste Management and Disposal.

.2 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 - PRODUCTS

2.1 Warning Labels

.1 Non-metallic warning labels in English and French to: ANSI J-STD-607-A.

.2 Identify labels with wording "If this connector is loose or must be removed, please call the building Telecommunications Manager".

PART 3 - EXECUTION

3.1 Bonding Conductors General

.1 When placed in ferrous metallic conduit or EMT longer than 1 m, bond to each end of conduit or EMT using 6 AWG copper conductor.

3.2 Labelling

.1 Apply warning labels to telecommunications bonding and grounding conductors.

.2 Apply additional administrative labels to: TIA/EIA-606.

END

PART 1 - GENERAL

1.1 Related Sections

.1 Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

.2 Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.

1.2 System Description

.1 Empty telecommunications raceways system consists of outlet boxes, cover plates, conduits, "j" hooks, pull boxes, sleeves and caps, and fish wires.

1.3 Waste Management and Disposal

.1 Separate and recycle waste materials in accordance with Section 01 74 21 - Construction/Demolition Waste Management And Disposal.

.2 Remove from site and dispose of all packaging materials at appropriate recycling facilities.

.3 Collect and separate for disposal paper, plastic, polystyrene, and corrugated cardboard packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.

.4 Divert unused metal, conduit and wiring materials from landfill to metal recycling facility as approved by Engineer

.5 Fold up metal banding, flatten and place in designated area for recycling.

PART 2 - PRODUCTS

2.1 Material

.1 Conduits: EMT type, in accordance with Section 26 05 34 - Conduits, Conduit Fastenings and Conduit Fittings.

.2 Outlet boxes and fittings: in accordance with Section 26 05 32 - Outlet Boxes, Conduit Boxes and Fittings.

.3 Fish wire: polypropylene type.

PART 3 - EXECUTION

3.1 Installation

.1 Install empty raceway system, including overhead distribution system, fish wire, outlet boxes, pull boxes, cover plates, conduit, sleeves and caps, "J" Hooks, miscellaneous and positioning material to constitute complete system.

END

PART 1 - GENERAL

1.1 Related Sections

.1.

1.2 References

.1 Canadian Standards Association (CSA International)
.1 CSA-C22.2 No. 214-08(R2013), Communications Cables (Bi-National standard with UL 444)..

.2 Telecommunications Industry Association (TIA)/Electronic Industries Alliance (EIA)
.1 TIA/EIA-568-B.1-(2001), Commercial Building Telecommunications Cabling Standard, Part 1: General Requirements.
.2 TIA/EIA-568-B.2-(2001), Commercial Building Telecommunications Cabling Standard, Part 2: Balanced Twisted-Pair Cabling Components.
.3 TIA/EIA-568-B.3-(2000), Optical Fiber Cabling Components Standard.
.4 TIA/EIA-606-A-(2002), Administration Standard for the Commercial Telecommunications Infrastructure.

1.3 Definitions

.1 Refer to TIA/EIA-598-C, Annex A for definitions of terms: optical-fiber interconnect, distribution, and breakout cables.

1.4 System Description

.1 Structured telecommunications wiring system consist of unshielded-twisted-pair, terminations, connectors, cross-connection hardware and related equipment installed inside building for occupant's telecommunications systems, including voice (telephone), data, and image.

.2 Installed in physical star configuration with separate horizontal and backbone sub-systems.
.1 Horizontal cables link work areas to telecommunications rooms located on same floor.

1.5 Submittals

.1 Provide submittals in accordance with Section 01 33 00 - Submittal Procedures.

.2 As-built Records and Drawings:
.1 Provide Microsoft Access database reflecting cable installation and cross-connections.
.2 Provide electronic drawings in AutoCAD 2016 format depicting all construction.
.3 Provide two (2) bound complete hard-copy sets of as-built records to the Departmental Representative Engineer Consultant.
.1 Provide and place one hard copy of as-built records for each telecommunications room in plan holder in each telecommunications room.

1.6 Quality Assurance

.1 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.

1.7 Delivery, Storage and Handling

.1 Waste Management and Disposal: separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.

PART 2 - PRODUCTS

2.1 Four-Pair 100 OHM Ballanced Twisted Pair Cable

.1 Four-pair, 100 ohm balanced unshielded-twisted-pair (UTP) cable, flame test classification FT6 or MPP to: CSA-C22.2 No. 214, Category 6 (Cat 6)Enhanced to: TIA/EIA-568-B.2.

2.2 Work Area UTP Two-Pair Modular Jack

.1 Eight position modular jack ("RJ-45"), type T568A T568B Cataegory 6 to: TIA/EIA-568- B.2:
.2 .1 In self-contained surface-mount box, jacks per box.
.1 Mounted in compatible single double gang faceplate, flush angle entry, jack positions per faceplate.

.3 Multi-user telecommunications outlet assembly (MUTOA), ports, each port equipped with factory

2.2 Work Area UTP Two-Pair Modular Jack (Cont'd)	.3	(Cont'd) field installed "RJ-45" jacks, type T568A T568B Category 5e Category 6 to: TIA/EIA-568-B.2.
2.3 Termination and Cross Connection Hardware for UTP	.1	Patch panel, rack units high, ports: .1 Each port equipped with factory field installed "RJ-45" jacks, type T568A T568B Category 5e Category 6 to: TIA/EIA-568-B.2. .2 Horizontal cable-management unit for every 48 ports.
2.4 UTP Cross Connect Wire	.1	Category 6, 4 pairs to: TIA/EIA-568-B.2.
2.5 UTP Patch Cords	.1	3 meters long, with factory-installed male plug at one end to mate with "RJ-45" jack terminal strip and with factory-installed male plug at other end to mate with "RJ-45" jack terminal strip Category 6, to: TIA/EIA-568-B.2.
2.6 UTP Equipment Cable	.1	4 pair "pigtail", meters long, with factory-installed male plug on one end to mate with "RJ-45" jack and other end equipped with factory-installed male plug to mate with "RJ-45" jack terminal strip no connector: Category 6 to: TIA/EIA-568-B.2.
2.7 UTP Work Area Cords	.1	3 meters long, each end equipped with "RJ-45" plug Category 6 to: TIA/EIA-568-B.2.

PART 3 - EXECUTION

3.1 Installation of Termination and Cross-Connect Hardware

.1 Install termination and cross-connect hardware on wall in rack in cabinet as indicated and according to manufacturers' instructions.

Identify and label as indicated to:

TIA/EIA-606-A.

3.2 Installation of Horizontal Distribution Cables

.1 Install horizontal cables as indicated in conduits cable trays perimeter raceways "J" hooks from telecommunication rooms to

.2 Support horizontal cables at intervals not exceeding 2 meters.
.1 Where raceways are used to distribute cables to each zone, provide supplementary "J" hooks to support cables at intervals not exceeding 2 meters.

.3 Install horizontal cables from consolidation point to individual work-area jacks.
.1 Provide supplementary "J" hooks to support cables at intervals not exceeding 2 meters.
.2 Identify and label as indicated to: TIA/EIA-606-A.

.4 Terminate horizontal cables in telecommunications room and at user outlet.

.5 Coil spare cables and store in ceiling space in zone.

.6 Harness slack cable in cabinets, racks, and wall-mounted termination and cross-connection hardware.

3.3 Installation of Equipment Cables

.1 Install equipment cables from equipment terminal strips patch panel as indicated.
.1 Identify and label as indicated to: TIA/EIA-606-A.

3.4 Implement Cross-Connections

.1 Implement cross-connections using jumper wires patch cords as specified.

3.5 Field Quality Control

.1 Test horizontal UTP cables as specified below and correct deficiencies provide record of results as hard copy electronic record on floppy disk CD.

.1 Perform tests for Permanent Link on installed cables, including spares:

.1 Category 6 using certified level III tester to: TIA/EIA-568-B.2.

.2 Perform tests for Channel on 20 % of cross-connected data horizontal cabling installed from each telecommunications room, including shortest and longest drops from each telecommunications room: should more than 5 % of tested cables fail, test remaining cross-connected data cables.

.1 Category 6 using certified level III tester to: TIA/EIA-568-B.2.

.2 Provide record of results as hard copy electronic record to owner to: TIA/TSB-140.

END