COMMUNITY BASED OUTPATIENT CLINIC (CBOC) INSIDE PLANT INFORMATION TRANSPORT SYSTEMS SPECIFICATIONS

DEVELOPED BY:
DATA CENTER ENGINEERING
DATA CENTER & CLOUD ENGINEERING
PURPOSE:
THIS DRAWING SET REPRESENTS THE COMPUTING AND PASSIVE INFRASTRUCTURE DESIGN AND RACK ELEVATIONS FOR A GENERIC HEALTHCARE FACILITY EQUIPMENT ROOM (ER) AND A GENERIC TELECOMMUNICATION ROOM (TR). UNLESS NOTED OTHERWISE, ACTIVE EQUIPMENT WILL BE FURNISHED AND INSTALLED BY VA OR VA CONTRACTORS. THE STRUCTURED CABLE PLANT INSTALLERS WILL FURNISH AND INSTALL PASSIVE CABLE PLANT INFRASTRUCTURE INCLUDING HORIZONTAL CABLE MANAGERS, UTP AND FO HORIZONTAL CABLE, PATCH PANELS, PATHWAY RACKS, FIBER DISTRIBUTION CABINETS AND FIBER CASSETTES.

DESIGN OBJECTIVES
1. MODULARITY: THIS DESIGN IS HIGHLY MODULAR.
2. FLEXIBLE: THIS DESIGN IS FLEXIBLE TO ACCOMMODATE CHANGES TO FLOOR PLANS.
3. CABLE PLANT: UTP CATEGORY 6A CABLE PLANT WILL SUPPORT 10 GIGABIT ETHERNET. FIBER PLANT WILL UTILIZE LASER ENHANCED OM4 40 GbE RATED 50/125 MULTIMODE.

THIS DRAWING IS SCALED TO 11X17 FORMAT.

DRAWING TYPE DEFINITIONS
T0 - Campus or Site Plans - Exterior Pathways and Inter-Building Backbones
T1 - Layout of complete building per floor - Serving Zone Boundaries, Backbone Systems, and Horizontal Pathways
T2 - Serving Zones Drawings - Drop Locations and Cable IDs
T3 - Communication Equipment Rooms - Plan Views - Tech and AMEP / Elevations - Racks and Walls Elevations
T4 - typical Detail Drawings - Faceplate Labeling, Firestopping, ADA, Safety, DOT, etc.
T5 - Schedules (Cabling and Equipment Spreadsheets) for cutovers

ANSI/TIA-606-C, Administration Standard for Telecommunications Infrastructure
ANSI/TIA-606-B-1, Administration Standard for Telecommunications Infrastructure Addendum I: Automated Infrastructure Management Systems - Addendum to ANSI/TIA-606-B
ANSI/TIA-607-C, Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises
ANSI/TIA-607-C-1, Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises - Addendum to TIA-607-C
ANSI/TIA-942-A, Telecommunications Infrastructure Standard for Data Centers
ANSI/TIA-942-A-1, Telecommunications Infrastructure Standard for Data Centers Addendum I: Cabling Guidelines for Data Center Fabrics - Addendum to TIA-942-A
ANSI/TIA-1179, Healthcare Facility Telecommunications Infrastructure
BICSI 002, Data Center Design and Implementation Best Practices
BICSI ITSIMM, Information Technology Systems Installation Methods Manual (ITSIMM) - 7th Edition
BICSI/NECA 568, Standard for Installing Commercial Building Telecommunications Cabling
CSI MASTERFORMAT ™ 2004 EDITION NUMBERS & TITLES
Construction Specifications Institute (CSI)
NFPA 70, National Electrical Code
NFPA 75, Standard for the Fire Protection of Information Technology Equipment

BICSI ITSIMM, Information Technology Systems Installation Methods Manual (ITSIMM) - 7th Edition
BICSI/NECA 568, Standard for Installing Commercial Building Telecommunications Cabling
CSI MASTERFORMAT ™ 2004 EDITION NUMBERS & TITLES
Construction Specifications Institute (CSI)
NFPA 70, National Electrical Code
NFPA 75, Standard for the Fire Protection of Information Technology Equipment

Purpose:
This drawing set represents the computing and passive infrastructure design and rack elevations for a generic healthcare facility equipment room (ER) and a generic telecommunication room (TR). Unless noted otherwise, active equipment will be furnished and installed by VA or VA contractors. The structured cable plant installers will furnish and install passive cable plant infrastructure including horizontal cable managers, UTP and FO horizontal cable, patch panels, pathway racks, fiber distribution cabinets and fiber cassettes.

Design Objectives:
1. Modularity: This design is highly modular.
2. Flexible: This design is flexible to accommodate changes to floor plans.
3. Cable Plant: UTP category 6A cable plant will support 10 gigabit ethernet. Fiber plant will utilize laser enhanced OM4 40 GbE rated 50/125 multimode.

This drawing is scaled to 11x17 format.

Drawing Type Definitions:
T0 - Campus or site plans - exterior pathways and inter-building backbones
T1 - Layout of complete building per floor - serving zone boundaries, backbone systems, and horizontal pathways
T2 - Serving zones drawings - drop locations and cable IDs
T3 - Communication equipment rooms - plan views - tech and AMEP / elevations - racks and walls elevations
T4 - Typical detail drawings - faceplate labeling, firestopping, ADA, safety, DOT, etc.
T5 - Schedules (cabling and equipment spreadsheets) for cutovers

Standard or Document Description:
- ANSI/TIA-606-C, Administration Standard for Telecommunications Infrastructure
- ANSI/TIA-606-B-1, Administration Standard for Telecommunications Infrastructure Addendum I: Automated Infrastructure Management Systems - Addendum to ANSI/TIA-606-B
- ANSI/TIA-607-C, Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises
- ANSI/TIA-607-C-1, Generic Telecommunications Bonding and Grounding (Earthing) for Customer Premises - Addendum to TIA-607-C
- ANSI/TIA-942-A, Telecommunications Infrastructure Standard for Data Centers
- ANSI/TIA-942-A-1, Telecommunications Infrastructure Standard for Data Centers Addendum I: Cabling Guidelines for Data Center Fabrics - Addendum to TIA-942-A
- ANSI/TIA-1179, Healthcare Facility Telecommunications Infrastructure
- BICSI 002, Data Center Design and Implementation Best Practices
- BICSI/NECA 568, Standard for Installing Commercial Building Telecommunications Cabling
- CSI MASTERFORMAT ™ 2004 EDITION NUMBERS & TITLES
- Construction Specifications Institute (CSI)
- NFPA 70, National Electrical Code
- NFPA 75, Standard for the Fire Protection of Information Technology Equipment
**T2 SYMBOLS**

- **DATA**
- **WALL PHONE**
- **FLOOR MOUNT**
- **FIRE ALARM PANEL**
- **EMERGENCY PHONE**
- **SECURITY OR FIRE ALARM DEACTIVATORS**
- **DATA / TELEPHONE**
- **PHONE**
- **SECURITY SYSTEM CARD READER**
- **CLOSED CIRCUIT SURVEILLANCE CAMERA OUTLET**
- **MOTION DETECTOR**

**T3 SYMBOLS**

- **TWIST LOCK RECEPTACLE**
- **THERMOSTAT**
- **QUADREPLEX OUTLET**
- **110 RECEPTACLE**
- **TELECOMMUNICATIONS OUTLET**
- **TELECOMMUNICATIONS GROUNDING BUSBAR**
- **GROUNDING BUSBAR**
- **CABLE RACEWAY**
- **TERMINAL BLOCK**
- **GROWTH BAR**

**T4 SYMBOLS**

- **CHATSWORTH SERVER RACK. 24" WIDE X 47.5" DEEP**
- **PERFORATED FLOOR TILE**
- **OR-60401015**
- **OR-MM6HM61RU FC01U-P**
- **L21-20**
- **L21-30**
- **IEC 320-C19**
- **IEC 320-C20**
- **IEC 320-C10**
- **IEC 320-C14**
- **OR-MM20730-W. 30" DEEP CHANNEL 24"-48RU. ORTRONICS MM20 CHANNEL RACK**
Solution Delivery

**T3 - GENERIC HEALTH CARE FACILITY EQUIPMENT ROOM**

**NOTE:**

There shall be a minimum of one telecommunications room (TR) per floor.

The equipment room can serve as a TR. Additional rooms should be provided when:

A) The floor area to be served exceeds 1000 m² (10,000 ft²);

B) The horizontal distribution distance to the work area exceeds 90 m (295 ft).

No raised floor.

**AC**

**SERVICE PANEL FOR DEDICATED ROOM AIR CONDITIONING.** Non-IT load only. Shall be equipped with Schneider EM3500 series DIN rail meter or equivalent.

**SERVICE PANEL FOR RACK POWER IN TELECOMMUNICATION ROOM.** IT load only. Shall be equipped with Schneider EM3500 series DIN rail meter or equivalent.

**AC GRADE ¾" PLYWOOD BACKBOARD PAINTED HIGH-GLOSS WHITE. MOUNTED 6" AFF, 3 WALLS**

**TELECOMMUNICATIONS GROUNDING BUS BAR TO ELECTRICAL GROUND AT MAIN PANEL.**

**CABLEFIL 2"X16" CF 54/400 CABLE TRAY**

**TWO (2) CONDUITS INTERCONNECTING NETWORK SUPPORT CENTER WITH ENTRANCE FACILITY. TRADE SIZE 2**

**SERVER CABINET, 45U, 24"X48" (NOMINAL), SQUARE PUNCHED RAIL, SINGLE PERFORATED FRONT DOOR, SOLID REAR DOOR, TWO-POINT KEYED LOCKS, WHITE, SOLID SIDE PANELS**

**3'-0" RK-1 RK-2 RK-3 RK-4**

**PIV/KEYPAD**

**GENERIC FLOOR PLAN FOR HEALTH CARE FACILITY EQUIPMENT ROOM**

**MINIMUM 170 FT² WITH STATIC DISSIPATING FLOOR, NO DROP CEILING, WALLS FULL HEIGHT TO FLOOR ABOVE**

**HORIZONTAL SLOT OR SLEEVE FOR CABLEING FROM WORK AREA OUTLETS AND TELECOMMUNICATIONS ROOMS**

**OR-MM20730-W, 30" DEEP CHANNEL 7'H. 45RU ORTRONICS WHITE CHANNEL RACK**

**VERTICAL CABLE MANAGER WITH DOOR. ORTRONICS MM10VMD706-W 6" VERTICAL CABLE MANAGEMENT CAGE**

**SPLIT PACKAGE AIR CONDITIONER (32,600 BTU/H)**

**TYPICAL UNSWITCHED QUADREPLEX CONVENIENCE OUTLETS**

**ADDITIONAL SPLIT PACKAGE AIR CONDITIONER (32,600 BTU) WHEN NECESSARY**

**AIR CONDITIONER THERMOSTAT**

**ADDITIONAL SPLIT PACKAGE AIR CONDITIONER (32,600 BTU) WHEN NECESSARY**

**DRAFT**

**NOTE:**

There shall be a minimum of one telecommunications room (TR) per floor.

The equipment room can serve as a TR. Additional rooms should be provided when:

A) The floor area to be served exceeds 1000 m² (10,000 ft²);

B) The horizontal distribution distance to the work area exceeds 90 m (295 ft).

No raised floor.
SERVICE PANEL FOR DEDICATED ROOM AIR CONDITIONING. NON-IT LOAD ONLY. SHALL BE EQUIPPED WITH SCHNEIDER EM2500 SERIES DIN RAIL METER OR EQUIVALENT.

SERVICE PANEL FOR RACK POWER IN TELECOMMUNICATION ROOM. IT LOAD ONLY. SHALL BE EQUIPPED WITH SCHNEIDER EM2500 SERIES DIN RAIL METER OR EQUIVALENT.

AC GRADE ¾" PLYWOOD BACKBOARD PAINTED HIGH-GLOSS WHITE. MOUNTED 6" AFF, 3 WALLS.

TWO (2) CONDUITS INTERCONNECTING NETWORK SUPPORT CENTER WITH ENTRANCE FACILITY. TRADE SIZE 2.

CABLofil 2"x16" CF 54/400 CABLE TRAY.

GRADE ¾' PLYWOOD BACKBOARD PAINTED HIGH-GLOSS WHITE. MOUNTED 6" AFF, 3 WALLS.

MINIMUM 170 FT² WITH STATIC DISSIPATING FLOOR, NO DROP CEILING, WALLS FULL HEIGHT TO FLOOR ABOVE.

HORIZONTAL SLOT OR SLEEVE FOR CABLES FROM WORK AREA OUTLETS AND TELECOMMUNICATIONS ROOMS.

OR-MA20730-W. 30" DEEP CHANNEL, 7'H. 45RU. ORTRONICS MM20 CHANNEL RACK.

VERTICAL CABLE MANAGER WITH DOOR. ORTRONICS MM10VM0706-W 6" VERTICAL CABLE MANAGEMENT CAGE.

SPLIT PACKAGE AIR CONDITIONER (32,600 BTU/H)

TYPICAL UNSWITCHED QUADRUPLEX CONVENIENCE OUTLETS.

ADDITIONAL SPLIT-PACKAGE AIR CONDITIONER (32,600 BTU) WHEN NECESSARY.

AIR CONDITIONER THERMOSTAT.

PIV KEYPAD.

TELECOMMUNICATIONS GROUNDING BUS BAR.

L21-30R.

NOTE:

THERE SHALL BE A MINIMUM OF ONE TELECOMMUNICATIONS ROOM (TR) PER FLOOR.

THE EQUIPMENT ROOM CAN SERVE AS A TR. ADDITIONAL ROOMS SHOULD BE PROVIDED WHEN:

A) THE FLOOR AREA TO BE SERVED EXCEEDS 1000 M² (10,000 FT²); OR

B) THE HORIZONTAL DISTRIBUTION DISTANCE TO THE WORK AREA EXCEEDS 90 M (295 FT).

NO RAISED FLOOR.
DRAFT
MAXIMUM OF 12 ANGLED CATEGORY 6A, 24 PORT PATCH PANELS PER RACK. IF MORE THAN TWELVE (12) PATCH PANELS ARE REQUIRED, INSTALL NEXT SET IN RX 3.

1 RU BLANKING PANELS BETWEEN LOWEST PATCH PANEL AND RX12

1 RU CABLE MANAGER. SIX POSITION SPACING WITH DOOR AT RX11

3850 POE LAN SWITCH WITH 1100 WATT POWER SUPPLIES. MAX OF SIX (6) PER RACK.

2 RU CABLE MANAGER. SIX POSITION SPACING WITH DOOR.

1 RU CABLE MANAGER. SIX POSITION SPACING WITH DOOR.

ZONE PDU

UPS

SPACE RESERVED FOR WAN ROUTERS, IP PER, SECURITY EQUIPMENT, ETC.

SPACE RESERVED FOR SERVERS.

SERVICE PROVIDER MAIN CROSS CONNECT

FIRST LEVEL BACKBONE (Fiber)

TYPICAL RACK ELEVATION FOR HEALTH CARE FACILITY TELECOMMUNICATIONS ROOMS
CP3142445 P-Series TeraFrame Gen 3 Cabinet System with accessories installed
Configuration includes the following components:

**Item Number** | **Description/Qty**
--- | ---
FF1N-113C-E42-B | F-Series TeraFrame Gen 3 Cabinet System, 45 RMU, 84.6 in. (2149mm) H x 43.3 in. (1100mm) D Square-Punched Rails, 2-Pair, Single, Perforated Metal Front Door, 2 Point, Keyed Swing Handle Lock, Double Perforated Metal Rear Door, Two Point, Keyed Swing Handle Latch, Server Top Panel, 2 Solid Side Panels, Glacier White, 4 Frame Panels
024-76003-063 | Frame, 6 Side, 22.6 (600mm) W x 43.3 (1100mm) D x 45 (1150mm), Glacier White (1)
024-76060-003 | Door, TeraFrame, Front, Assembly, 23.6 (600mm) W x 45 (1150mm), Glacier White (1)
024-76064-003 | Lock Kit, 2-Point, Keyed, Front Door, 45 RMU (1)
024-76060-003 | Double Door Assembly, 23.6 (600mm) W x 45 (1150mm), Glacier White (1)
024-76064-003 | Lock Kit, 2-Point, Keyed, Perforated Door, 45 RMU (1)
024-76046-012 | Top Panel, 4-Piece, Front, 23.6 (600mm) W x 43.3 (1100mm) D, Glacier White (1)
024-76046-063 | Side Panel, 6 SLIDE, 23.6'' (600 mm) W x 45 RMU, Glacier White (2)
024-76030-062 | Kit, Common Parts, TeraFrame, Assembled White (1)
024-76010-001 | PDU Bracket, Assembly, Standard, 0.7 (17 mm) W x 2.4 (60 mm) D, Black (1)
024-76020-001 | PDU Bracket, Assembly, Standard, 0.7 (17 mm) W x 2.4 (60 mm) D, Black (1)
024-76000-003 | Kit, Packaging, 620 W x 4075-12000 D x 45 (1), Black (1)
024-76029-001 | Caster Kit, Two Swivel, Two Fixed, 0.7 (17 mm) W x 3.9 (100 mm) D x 2.4 (60 mm), Black (1)
024-76015-001 | Air Dam, 6 SLIDE, 23.6'' (600 mm) W x 45 (1150mm), Glacier White (1)
024-76017-001 | Baying Seal Kit, 45U (1)
024-76022-001 | Bottom Panel, With Brush, 23.6 (600mm) W x 45 (1150mm) D, Glacier White (1)
024-76020-003 | Finger Cable Manager, No Cover (2)
024-76140-001 | This Cabinet and any included accessories are UL Listed under the UL2416 category per the UL2416 Standard. For orders outside the US, the UL Listing only applies to cabinets manufactured in the United States.

**NOTE:** To provide 45 RU of Flexfill Blank Panel (per enclosure)

**UL2416**

**PROJECT:**

**DRAWING:**

**FILE:**

**DRAWN BY:**

**CHECKED BY:**

**DOC VERSION NO:**

**PRINT DATE:** Oct 5, 2017

**ISSUE DATE:** Oct 5, 2017

**SHEET TITLE:** TYPICAL ENCLOSURE SPECIFICATION

**SHEET:** 9 OF 15

**MARK DATE DESCRIPTION**

**ISSUE:**

**DRAWING NO:**

**FILE:**

**DRAWN BY:**

**CHECKED BY:**

**DOC VERSION NO:**

**PRINT DATE:** Oct 5, 2017

**ISSUE DATE:** Oct 5, 2017

**SHEET TITLE:** TYPICAL ENCLOSURE SPECIFICATION

**SHEET:** 9 OF 15
TYPICAL WORK AREA OUTLET FACEPLATE WILL BE INSTALLED WITH CATEGORY 6A COMPONENT-COMPATIBLE B/P 8P8C MEDIA INTERFACE CONNECTORS (RJ45). EACH CONNECTOR WILL BE TERMINATED TO HIGH QUALITY CATEGORY 6A HORIZONTAL CABLING WHICH WILL TERMINATE IN THE TELECOMMUNICATIONS ROOM AS SPECIFIED ELSEWHERE IN THIS DESIGN PACKAGE. ALL HORIZONTAL UTP SHALL BE CATEGORY 6A AND TERMINATED TO TS688.

TYPICAL FACEPLATE WILL BE INSTALLED WITH TWO (2) RJ45s. HIGH DENSITY FACEPLATES WILL BE INSTALLED WITH FOUR (4) RJ45s.

NOTES:

ALL LABELING SHALL BE ANSI/TIA-568C COMPLIANT. BLACK LETTERING ON WHITE FIELD. MACHINE PRINTED. FURTHER GUIDANCE ON ADMINISTRATION MAY BE SPECIFIED IN OTHER SECTIONS OF THIS DESIGN PACKAGE.
NOTE: The correct specification for the PDU is to feed it with a two power sources. Power inputs should originate from two independent power sources. Each input will use identical specs: WYE (5-wire) configured, 208V, 30A, three-phase, terminating in a NEMA L21-30R locking receptacle. The neutral conductor should be upsized one gauge to match the upsized neutral conductors in the PDU units. The neutral "upsizing" should ideally be continued in the power distribution system back to the UPS or transformer winding pole. This increases the efficiency of the power distribution system and suppresses harmonics in the system.
RECEPTACLE. THE NEUTRAL CONDUCTOR SHOULD BE UPGRADED ONE GAUGE TO MATCH THE OVERALL UPGRADE.

REQUIRES TWO 30 AMP, THREE-PHASE (3PH) CIRCUITS WITH L21-30R RECEPTACLES (OR EQUIVALENT):

- L21-30P "A" SIDE
- L21-30P "B" SIDE

REQUIRES A 208V, 30A, THREE-PHASE WHIP, TERMINATING IN A NEMA L21-30R LOCKING RECEPTACLE. THE NEUTRAL CONDUCTOR SHOULD BE UPGRADED ONE GAUGE TO MATCH THE OVERALL UPGRADE.

WARNING: THE NEW RECEPTACLE CONFIGURATION OF AP8961 RACK PDUs REQUIRES A 208V, 30A, THREE-PHASE WHIP, TERMINATING IN A NEMA L21-30R LOCKING RECEPTACLE. THE NEUTRAL CONDUCTOR SHOULD BE UPGRADED ONE GAUGE TO MATCH THE OVERALL UPGRADE.

STRING 20A 5W IN/5W OUT, ONE INTERNAL BATTERY

POWER SUPPLY (UPS) WITH NEMA 20A L21-30R RACK-MOUNTED 5KW 208V UNINTERRUPTIBLE POWER DISTRIBUTION SYSTEM, EXAMPLE: ZC05177OD110005/5 KW 208V/20A 3W IN/3W OUT, ONE INTERNAL BATTERY STRING

APC AP8961 RACK PDU 2G,SWITCHED, ZERO ULS, 2KW, 200/208V,(21)C13 & (3)C19, 6' CORD

ZONEIT 30 Amp 3-Phase PDU BASE UNIT - FRONT

(RIGHT ZON-C-ZPDU1) REQUIRES TWO 30 AMP, 3-PHASE (3PH) CIRCUITS WITH L21-30R RECEPTACLES (OR EQUIVALENT):

- L21-30P "A" SIDE
- L21-30P "B" SIDE

REQUIRES A 208V, 30A, THREE-PHASE WHIP, TERMINATING IN A NEMA L21-30R LOCKING RECEPTACLE. THE NEUTRAL CONDUCTOR SHOULD BE UPGRADED ONE GAUGE TO MATCH THE OVERALL UPGRADE.
Cable Specifications:

- **Telecommunications Room**: Horizontal Cross Connect (HC)
- **Intrabuilding 1st Level Backbone**
- **Equipment Room**: Main Cross Connect (MC)

**Color Coding**:
- **White**
- **Blue**
- **Green**
- **Orange**
- **Brown**

**Cables to Central Office**

**Patch Panel Label Field Color Coding**:

- **Project**: CBOC ITS
- **Specs**: CBOC INSIDE PLANT ITS Spec V1.vsd
- **Drawn by**: Kevin Grzelka
- **Checked by**: Michael Julian, RCDD
- **Doc Version**: 1.0
- **Print Date**: Oct 5, 2017
- **Issue Date**: Oct 5, 2017

**Sheet Title**: T5 - Color Coding

**Sheet**: 13 of 15
- **RACK** = RK1 THROUGH RK4, LABELED LEFT TO RIGHT WHEN LOOKING AT THE FRONT OF THE RACK. APPLIES TO RACKS AND CABINETS.

- **UTP PATCH PANEL** = CPL-RACK NAME-01 THROUGH 45. EXAMPLE: CPL-RK1-01 FOR THE PANEL LOCATED IN RACK UNIT #1 IN RACK #1.

- **UTP PATCH PANEL POSITION** = PANEL ID.01 THROUGH 24. EXAMPLE CPL-RK1-01-01

- **FIBER DISTRIBUTION PANEL** = FPL-RACK NAME-01 THROUGH 45. EXAMPLE: FPL-RK1-01 FOR THE PANEL IN RACK UNIT #1 RACK #1.

- **FIBER DISTRIBUTION CASSETTE** = FCS-RACK NAME-01 THROUGH 45.1 THROUGH 3. EXAMPLE: FCS-RK1-01.1 FOR THE CASSETTE IN POSITION #1 IN PANEL LOCATED IN RACK UNIT #1 IN RACK #1.

- **UTP PATCH CORDS** = CCA[SOURCE.PORT]/[DESTINATION.PORT]. EXAMPLE CCA[CPL-RK1-01.01]/[CPL-RK2-02.02] AS A PATCH CORD CONNECTING PORT #1 IN THE COPPER PATCH PANEL LOCATED IN RACK #1, RACK UNIT #1 WITH PORT 2 LOCATED IN RACK 2, RACK UNIT #2.

- **FIBER PATCH CORDS** = FCA[SOURCE.PORT]/[DESTINATION.PORT]. EXAMPLE FCA[FDP-RK1-01.01.01]/[FDP-RK2-02.02.02] AS A PATCH CORD CONNECTING PORT #1 IN THE FIBER PATCH PANEL LOCATED IN RACK #1, RACK UNIT #1 WITH PORT 2 LOCATED IN RACK 2, RACK UNIT #2.

- **FACEPLATE** = TR ROOM NUMBER-PATCH PANEL ID.PORT. EXAMPLE 1A-CPL-RK1-01.1 FOR TELECOMMUNICATIONS ROOM 1, UTP PANEL IN RACK #1, RACK UNIT #1, PORT POSITION #1.
<table>
<thead>
<tr>
<th>ID</th>
<th>PRIMARY ATTRIBUTE</th>
<th>SECONDARY ATTRIBUTE</th>
<th>SPECIFICATION</th>
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<tbody>
<tr>
<td>1</td>
<td>COPPER PATCH PANELS</td>
<td></td>
<td>PERFORMANCE CATEGORY: CATEGORY 6A (10 GBE)</td>
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<tr>
<td></td>
<td></td>
<td>POSITION COUNT: 24</td>
<td>(4 SIX-PORT MODULES)</td>
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<td></td>
<td>FORM FACTOR: ANGLED</td>
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<tr>
<td></td>
<td></td>
<td>SIZE: ONE RACK UNIT</td>
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<td></td>
<td></td>
<td>COLOR CODING: BLACK</td>
<td></td>
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<tr>
<td>2</td>
<td>FIBER DISTRIBUTION CASSETTES</td>
<td></td>
<td>CASSETTE CAPACITY: 24 STRAND (TWO 12-STRAND MULTI-FIBER PUSH ON (MPO))</td>
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<td></td>
<td></td>
<td>CASSETTE BACKBONE INTERFACES</td>
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<td></td>
<td>CASSETTE USER INTERFACES</td>
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<td></td>
<td>PERFORMANCE CHARACTERISTICS</td>
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<td>FORM FACTOR: ONE (1) RU</td>
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<tr>
<td>3</td>
<td>UTP (HORIZONTAL AND FIRST LEVEL BACKBONE)</td>
<td></td>
<td>PERFORMANCE SPECIFICATIONS: MEETS OR EXCEEDS TIA-EIA-568-C-2-10, TSB-155.</td>
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<td></td>
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<td>JACKET COLOR: BLUE (HORIZONTAL), WHITE (1ST LEVEL BACKBONE)</td>
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<tr>
<td></td>
<td></td>
<td>SIZE: ONE RACK UNIT</td>
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<td>COLOR CODING: BLACK</td>
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<td>PERFORMANCE CATEGORY: CATEGORY 6A (10 GBE)</td>
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<td></td>
<td>PERFORMANCE SPECIFICATIONS</td>
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<td>MEDIA CONNECTOR: AQUA</td>
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<td>STRAND COUNT: 12</td>
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<td>BUNDLING: LOOSE TUBE</td>
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<td>4</td>
<td>FIBER (HORIZONTAL AND FIRST LEVEL BACKBONE)</td>
<td></td>
<td>PERFORMANCE CATEGORY: OMA4 LASER ENHANCED TO 40 GIGABIT ETHERNET (GBE)</td>
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<td></td>
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<td>PERFORMANCE SPECIFICATIONS</td>
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<tr>
<td></td>
<td></td>
<td>MEDIA CONNECTOR: PRE-TERMINATED WITH MPO, TYPE A</td>
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<td>JL: 12</td>
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<tr>
<td>5</td>
<td>UTP PATCH CORDS</td>
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<td>PERFORMANCE CATEGORY: CATEGORY 6A, 26-GAUGE, STRANDED</td>
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<td></td>
<td>PERFORMANCE SPECIFICATIONS</td>
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<tr>
<td></td>
<td></td>
<td>JACKET COLOR: BLUE</td>
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<tr>
<td></td>
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<td>TERMINATION METHOD: FACTORY PRE-TERMINATED</td>
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<td></td>
<td>PERFORMANCE CATEGORY: OMA4 LASER ENHANCED TO 40 GIGABIT ETHERNET (GBE)</td>
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<tr>
<td></td>
<td></td>
<td>PERFORMANCE SPECIFICATIONS</td>
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<td>MODE: MULTIMODE</td>
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<td>6</td>
<td>FIBER PATCH CORDS</td>
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<td>PERFORMANCE CATEGORY: OMA4 LASER ENHANCED TO 40 GIGABIT ETHERNET (GBE)</td>
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<td>PERFORMANCE SPECIFICATIONS</td>
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<td>MEDIA CONNECTOR: PRE-TERMINATED WITH DUPLEX LC</td>
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<td>JACKET COLOR: AQUA</td>
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