

CAT 6 CABLING: EOC

PROJECT SPECIFICATIONS

October 7, 2021

General

- 1.1 The successful bidder (contractor) will provide all labor, materials, tools, equipment and incidentals required to make ready for use a complete and properly operating Premise Distribution System (PDS) to serve as a vehicle for transport of data signals.
- 1.2 The work provided under this contract document shall include all labor, materials, permits, inspections and re-inspection fees, tools, equipment, transportation, insurance, temporary protection, temporary lighting, supervision and incidental items essential for a properly installed and operating PDS, even though not specifically mentioned or indicated but which are usually provided or are essential for a properly operating PDS.
- 1.3 All work must be performed when the conference rooms are not in use. Generally both conference rooms are available during business hours. Awarded vendor shall coordinate times with Outagamie County IT staff.
- 1.4 The contractor shall check all site drawings and existing site conditions before bidding and advise the Outagamie County representative of any discrepancies prior to the bid.
- 1.5 This contract document describes the very minimum requirements that must be met for an acceptable installation.
- 1.6 The contractor will give all notices, file all plans, pay all fees, and obtain all permits and approvals from the authorities having jurisdiction. Include all fees in the bid package.
- 1.7 All work must be performed by a Panduit certified contractor.
- 1.8 Outagamie County's Senior Network Engineer shall act as the Outagamie County Project Manager.
- 1.9 Notify the Outagamie County Project Manager of any discrepancies found during construction of the project and do not proceed with that portion of the project, until written statement is received from the Outagamie County Project Manager providing clear directions. If a conflict exists between the contract documents and any applicable code or standard, the most stringent requirement shall be included for this project. The Outagamie County Project Manager shall make the decision regarding questionable areas of conflict.

Scope of Work

- 1.10 **Symbols**
 - 1.10.1 Symbols shown in the drawings shall be used.
- 1.11 **Project Description**
 - 1.11.1 The Premise Distribution System shall include the horizontal cables, the telecommunications outlets/connectors in the work area, and the patch panels in the Telecommunication Closet (hereafter referred to as the TC).
 - 1.11.2 The horizontal cabling system shall accommodate future equipment and service changes.
 - 1.11.3 The horizontal cabling system is a star topology. Each work area telecommunications outlet/connector as shown in the drawings shall be connected to a patch panel in the TC.
 - 1.11.4 The Justice Center Ground Level has one Telecommunications Closet as indicated by the drawings. The Telecommunications Closet (TC) is labeled Telecom Closet on the drawings.
 - 1.11.5 Separation of horizontal cabling pathways from typical sources of EMI shall be adhered to as per EIA/TIA standards.
 - 1.11.6 Bridged taps and splices shall not be permitted as part of the horizontal cabling system.

1.11.7 The maximum horizontal distance shall be 90 m (295ft), for Category 6 cable. This cable length shall be from the mechanical termination of the media at the patch panel in the telecommunications closet to the telecommunications outlet/connector in the work area.

1.11.8 All data horizontal cabling shall be plenum four pair UTP cable with a white jacket, spec for Panduit's Category 6 system. There shall be no exceptions or alternatives accepted. Approved unshielded cable manufacturer for horizontal data cable: Panduit PUP6004WH-W (White Jacket) for Plenum.

1.11.9 All horizontal cabling shall be physically supported in accordance with the latest revision of the EIA/TIA category 6, and 568 standards.

1.11.10 No drilling or any activity that causes sound to be heard in courtrooms shall occur during Outagamie County Courtroom Proceedings. Proceedings occur Monday through Friday usually from 8:00 am to 5:00 pm.

1.11.11 Any furniture that must be moved, for the installation of the Premise Distribution System, is the responsibility of the contractor. The contractor shall see that any moved furniture shall be moved back into place after the installation is complete.

1.11.12 The PDS shall include the Panduit 25 Year System Warranties.

1.12 Station Area Communication Outlets

1.12.1 Duplex Decora style Faceplate- Panduit's 4 port Pan-Net Adapter box Part # CFG4BL (Black)

1.12.2 Faceplate Black Module-Panduit's Mini-Com Blank Module Part # CMBBL-X (Black)

1.12.3 Data Jack – Panduit's giga-channel mini-jack TX-6 modular jack (color black), part #CJ688TGBL

1.13 Telecommunication Closet Components

1.13.1 Use existing Telecom Racks.

1.13.2 Add one new Panduit 48 port all metal patch panels, Part #CP48BLY (does not come with jacks).

1.13.3 Use existing Panduit (front/rear) horizontal wire management.

1.13.4 Use existing Panduit Vertical wire management.

1.13.5 All new cables must be installed in a sequential order

1.13.6 Category 6 Data Jacks – Panduit's giga-channel mini-jack TX-6 modular jack (color black), part #CJ688TGBL

1.13.7 Faceplate Black Module-Panduit's Mini-Com Blank Module Part # CMBBL-X (Black)

1.14 Justice Center Level Ground

1.14.1 Install (add color) Panduit above floor raceway and fittings per drawings. There shall be no exceptions. Example part numbers are: Floor Channel (AFR4BCOS6), Wall Transition Fitting (AFR4WTROS), Floor Channel Coupler (AFR4CCOS)

1.14.2 All Panduit above floor raceway and fittings must be in the color Black (BL)

1.14.3 The Justice Level Ground has its own TC. *See drawings below for location-Justice Center Ground*

1.14.4 On Rack 2 install new Panduit 48 port all metal patch panel, Part # CP48BLY (does not come with jacks). *Reference below for placement: Justice Center Telecom Closet-Patch Panel Placement*

1.14.5 Install one drop of three Category 6 cables to each data box identified in the below diagram-*Floor Plan Layout*.

1.14.6 For the data jack station locations - Use Panduit giga-channel mini jack TX-6 modular jacks (black) Part #CJ688TGBL. Use Panduit's 4 port duplex adapter Part # CFG4BL (Black)

1.14.7 Computer generated wire labels shall be used to label the patch panels, station location surface mount boxes.

1.14.8 Computer generated Panduit Turn-Tell wire labels shall be installed on all newly installed cabling 2 to 4 inches from its termination point at both the TC and station outlet ends.

1.14.9 EIA/TIA 568A wiring code shall standardize all Category 6 data communications twisted pair wiring.

1.14.10 All cable in this level shall be plenum rated.

1.14.11 All horizontal cabling shall be supported via existing cable tray/J-hooks. If no cable tray or J-hooks exist then install J-hooks per the **Cable Support and Routing Section** in these specs.

1.15 Labeling

1.15.1 All cables shall be labeled with Panduit Turn-Tell computer generated wire label ID numbers (2-4 inches above the termination) which follows the labeling standards of Outagamie County.

1.15.2 All jack locations shall have computer generated labeling easily identifying all communication outlets for that location.

1.15.3 All patch panels shall be labeled with a computer generated ID number, which follows the labeling standards of Outagamie County.

1.16 Warranty

1.16.1 Materials and workmanship hereinafter specified and furnished shall be fully provided with Panduit 25 year System Warranties.

1.16.2 If the Vendor procures equipment or materials under the Contract, The Vendor shall obtain for the benefit of The Customer, equipment and material warranties against defects in materials and workmanship to the extent such warranties are reasonably obtainable.

1.16.3 The Vendor shall pass along to The Customer any additional warranties offered by the manufacturers, at no additional costs to The Customer, should said warranties extend beyond the period specified herein.

1.16.4 This warranty shall in no manner cover equipment that has been damaged or rendered unserviceable due to negligence, misuse, acts of vandalism, or tampering by The Customer or anyone other than employees or agents of The Vendor. The Vendor's obligation under its warranty is limited to the cost of repair of the warranted item or replacement thereof, at The Vendor's option. Insurance covering said equipment from damage or loss is to be borne by The Vendor until full acceptance of equipment and services.

1.17 Reference Standards

1.17.1 UL Underwriter's Laboratories, Inc.

1.17.2 NEC National Electric Code

1.17.3 NFPA National Fire Protection Association

1.17.4 NEMA National Electric Manufacturers Association

1.17.5 ASTM American Society for Testing and Materials

1.17.6 IEEE Institute of Electrical and Electronic Engineers

1.17.7 ANSI American National Standards Institute, Inc.

1.17.8 BICSI Building Industry Consultants Service International

1.17.9 EIA/TIA Electronic / Telecommunications Industry Association

1.17.10 All Federal, State, County and City laws, codes and standards apply

1.17.11 All work shall be performed under the latest edition of the above standards, available at the time of bidding. All references to a PDS within the above standards shall be in effect as having been written within this contract document.

1.18 Workmanship

1.18.1 Acceptable workmanship is characterized by first quality appearance and function, conforming to all applicable standards of PDS construction, and exhibiting a high degree of quality and proficiency, which is judged by the Owner and Project Manager as equivalent or better than ordinary produced by a qualified industry tradesman.

1.18.2 The awarded bidder must be a Panduit PSC entity capable of providing The Customer with the twenty five year warranty on Panduit's Category 6 Systems. The project shall be staffed at all times by Installers and Technicians who, in the role of lead craftspersons, will be able to provide leadership and technical resources for the remaining craftspersons on the project. A copy

of the Panduit registered installers must be submitted in the Vendor's response to this RFP. The Vendor shall assign Panduit registered installers to this project.

1.18.3 Non Panduit registered installers shall not be used in the performance of the installation of material and equipment. Material and equipment installations not in compliance with the contract documents, or installed with substandard workmanship and not acceptable to the Owner and/or Project Manager, shall be removed and reinstalled by the qualified craftsman at no charge to the Owner and with no changes to the contract price.

1.18.4 Identification labeling and system marking shall be uniform throughout the PDS.

1.19 **General Cabling Practices**

1.19.1 Wiring color codes shall be observed at all times and terminations shall be uniform throughout the PDS.

1.19.2 EIA/TIA 568A wiring code shall standardize all data communications twisted pair wiring.

1.19.3 Fire stopping shall be the responsibility of the awarded contractor. All penetrations of walls and/or floor spaces shall be fire stopped with the exact time rating as the wall and/or floor itself.

1.19.4 Refer and adhere to EIA/TIA 607 and the National Electric Code for all grounding.

1.20 **Cable Support and Routing**

1.20.1 Station cable and tie cables used in this PDS are to be installed per standard cabling practices. When ceiling space is used, cables shall be routed at right angles to electrical power circuits and a minimum of 12 feet from those circuits.

1.20.2 Use of ceiling tile grids or hanger wires for cable supports shall be prohibited. The contractor shall use existing cable tray or j-hooks for cable paths. The contractor shall provide ceiling support hangers (j-hook style) for all cables where existing tray or j-hooks are not available. The ceiling support hangers (j-hook style) shall be 4 feet or less apart.

1.20.3 Vertical riser cables and bundles of horizontal cabling shall be properly secured to prevent slippage due to gravity. As a minimum requirement, cables shall be supported at their uppermost point and at each floor of vertical placement.

1.21 **Testing**

1.21.1 Each Category 6 data outlet shall be verified to Category 6 compliance per most recent revision of EIA/TIA standard. All testing will be between the workstation outlet and patch panel port in the TC.

1.21.2 Documentation of the testing shall be required. The contractor shall provide an electronic copy of the test results, from the test unit used, to the Owner and Project Manager for approval. The report shall show all defective pairs not cleared and the defect and test results of all pairs listed. All Category 6 defects must be repaired or replaced at no additional cost to the Owner.

1.22 **Inspection, Acceptance, and Title**

1.22.1 Acceptance will be at destination upon successful installation, and after the Customer receives the certificate of warranty (25 years) from Panduit. Title to/or risk of loss or damage to all items shall be the responsibility of the successful Vendor until acceptance by The Customer, unless loss or damage results from negligence by The Customer. If the materials or services supplied to the Customer are found to be defective or do not conform to the specifications, the Customer reserves the right to cancel the contract upon written notice to the Vendor and return products at the Vendor's expense, based upon the terms of the Contract.

1.22.2 The Customer shall at all times have access to the work wherever it is in preparation or progress, and The Vendor shall provide proper facilities for such access and for inspection.

1.22.3 The Vendor shall not close up any work until The Customer has inspected the work. Should The Vendor close up the work prior to inspection by The Customer, The Vendor shall

uncover the work for inspection by The Customer at no cost to The Customer, and then recover the work according to the specification contained herein.

1.22.4 The Vendor shall notify The Customer in writing when the work is ready for inspection. The Customer will inspect the work as expeditiously as possible after receipt of notification from The Vendor.

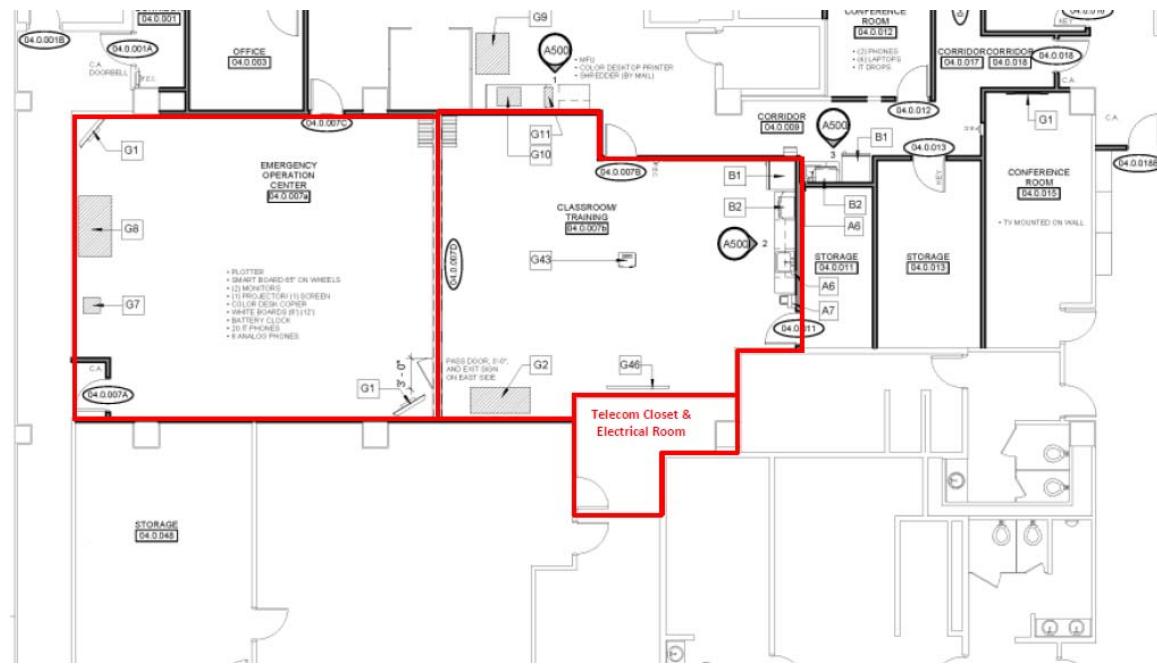
1.23 **Change Orders**

1.23.1 State hourly rate for change orders.

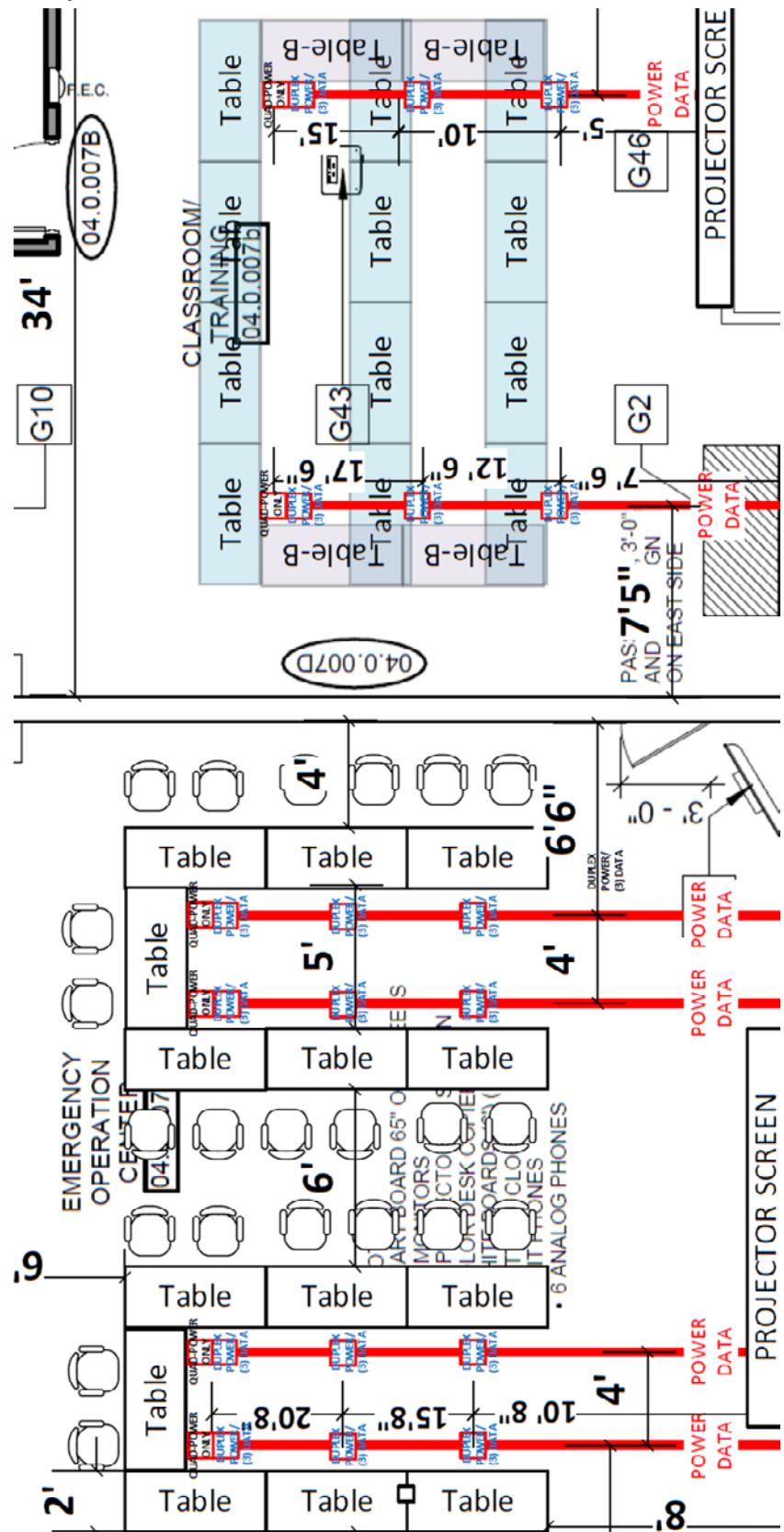
1.24 **As Built Drawings**

1.24.1 As built documentation complying with the contract document shall be provided as part of the PDS contract. As built drawings shall be a complete set of floor plans or lot plans showing all outlets as numbered and their locations. All cable routing and cross connect locations indicating terminations shall be required. All test reports for cables shall be included. As built documents shall be delivered to the Owner and Project Manager in both hardcopy and electronic format. The electronic format shall be created for ArcGIS version 10.4.1. All required as built documentation is mandatory and shall be required prior to the PDS acceptance.

Justice Level Ground



Floor Plan Layout



Justice Center Ground Telecom Closet-Patch Panel Placement

