DATA SPECIFICATIONS

PART 1 - GENERAL

1.01 EXTENT OF SECTION

A. This section covers data, and telephone systems including its component parts and installation.

1.02 QUALITY ASSURANCE

A. The most recent issue of the following standards and references apply in whole or in part to the installation of the Telephone and Computer communications systems. Where this standards document exceeds the listed reference standards, this standards document shall dominate.

1. EIA/TIA-569: Electronic Industries associate/Telecommunications Industry Association Commercial Building Standard for Telecommunication Pathways and Spaces.
2. EIA/TIA-568: Electronic Industries Association/Telecommunications Industry.
3. Association Commercial Building Standard for Telecommunications Wiring Standard.
4. FL DMS/DOC: General Facility Requirements for Telecommunications Systems.
5. IEEE 802.3 & 802.5: Institute of Electrical and Electronics Engineers LAN Standard for Ethernet.
6. UL: Underwriter's Laboratories.
7. ANSI: American National Standards Institute.
8. National Electrical Code - 2020
9. EIA / TIA - TSB36, 40 and 95
10. EIA / TIA - 606 and 607
11. EIA / TIA - 67 and 72

1.03 DESCRIPTION OF WORK

A. Design shall mandate that at the time of the walk through, it will be the responsibility of the contractor to verify all aspects of the installation. The guidelines used will include the ANSI/TIA/EIA-568-C.1, ANSI/TIA/EIA-568-C.2, ANSI/TIA/EIA-568C.3, ANSI TIA/EIA-569-B and ANSI/TIA/EIA-606-a, TSB-67 and TSB95. As well as, IEEE 802.3ab (Gigabit Ethernet over UTP 1000Base-T) and IEEE 802.3z (10 Gigabit Ethernet over Single mode fiber 1000Base-SX & 1000Base-LX).

B. The contractor will be required to modify their proposal in writing showing all exceptions taken to these standards, in order to meet the requirements of the above referenced TIA/EIA and IEEE specifications. It is the intent that all TIA/EIA and IEEE standards adopted at the time of bid opening shall be met.

C. Contractor must be certified for the Cable/Connecting hardware system they are installing. System shall have a minimum of a 15-year warranty, a certificate from the manufacture shall be provided with close out document and test results.

D. All data communication wiring and equipment installation shall be under the direct supervision of an installer certified by BISCI. All connections will be made by a BISCI certified installer and the installation shall adhere to the most current TIA/EIA 568 commercial building wiring standards.

E. Design shall be for a Category 6 cabling system for data and voice connectivity.

F. In addition to material and equipment, contractor shall provide labor and any incidental material required for installation. All fiber strands shall be terminated with connectors and landed on the fiber interconnect equipment. All copper station cables shall be terminated on patch panels (IDF end) and data communications outlets (work station end). Upon completion of installation, contractor shall record and perform all associated fiber optic and UTP cable testing to assure Gigabit Ethernet data transmission capability as outlined herein.

G. All testing shall be done after terminations have been made and prior to installation of any system electronics. Provide an electronic copy of all test results for each port and each fiber. Report shall be in PDF type document on CD-ROM. Contractors RCDD shall provide written certification of the network's Level V compliance.

H. Grounding: All equipment racks, cable trays, surge suppressors and cabinets shall be bonded to the building grounding system and building structural steel. Provide and install a minimum 4/0 ground cable from the building grounding system and building structural steel to the MGB. Provide and install a 6 AWG Green ground cable from all equipment racks, cable trays, surge suppressors and cabinets to the MGB mounted behind the Data rack on the Backboard in each MDF/IDF @ 30" AFF.

I. The cabling system shall meet / exceed the performance current requirements of the ANSI/TIA/EIA-568 standard (Annex E) and TIA/EIA Telecommunications Systems Bulletin 67.

J. The warranty on all materials, services, workmanship and operation of the cabling system shall be guaranteed for a period of one year from the time the owner receives all test results and all punch list items have been completed to the owners satisfaction.

PART 2 - PRODUCTS AND PARTS

A. Cabling shall not be supported from the ceiling, ductwork, conduits, piping or any other non-structural building member. Lashing cables to existing conduits/appurtenances is strictly prohibited.

B. All data cables shall be supported above ceiling via cable tray/J-Hooks.

1. Design Selection: Cable Management Solutions: Legrand or a pre-approved equivalent from the main cable tray, install J-Hook's at a maximum of 60" apart, with Velcro wraps every 30" to bundle cable.
2. All Cat 6 cable shall be bundled with Velcro wraps throughout project. No cabling to be bound with plastic tie wraps. Velcro only and loosely wrapped.
3. J-hooks shall be category 6 compliant and of adequate size to accommodate all cable plus 50% capacity for future adds, moves and changes.

PART 3 – FIBER INSTALLATION

A. FIBER OPTIC CABLE

1. A 12 strand tight buffer Six -Single Mode 9/125 and 62.5/125 Six-multi-mode fiber optic cable OFNR rated for indoor/outdoor, should be installed home run, with no splices, from the MDF to each identified IDF

   Design Selection: Optical Fiber Corporation # OC-0002466

2. Each strand must be usable and capable of supporting IEEE 802.3z 1000Base-SX and LX 1000 Mps data transmission.
3. Fiber should be terminated into a 36 port fiber optic patch panel on each end with SC (SM) and ST (MM) style connectors.
4. Cables should be permanently identified at each end.

B. FIBER OPTIC PATCH PANELS

1. Fiber patch panels will be equipped with SC and ST style connectors in an easily entered 19" rack mountable enclosure 36 position RIC. Each fiber cabinet shall have blank inserts for plate spaces not in use.

   a. Design Selection: Optical Fiber Corporation # RTC-2U-6APB
   b. Design Selection: Optical Fiber Corporation # 616SMSC
   c. Design Selection: Optical Fiber Corporation # 616MMST
   d. Design Selection: Optical Fiber Corporation # 600

FIBER OPTIC TESTING

1. Contractor shall test each fiber strand of each cable
2. Each fiber in every backbone cable shall be tested with an optical light source and power meter manufactured by Fluke Networks. Multimode and Single mode fiber shall be tested at all wavelengths and in both directions.
3. Maximum attenuation per component:
   a. Connector attenuation = 0.75db per mated pair
   b. Cable attenuation = 3.0db/km @850nm and 1db/km @1300nm
   c. No splices are permitted.
4. Contractor shall calculate the acceptance values for each and every fiber strand using the above criteria.
5. All fiber backbone lengths shall be verified using an OTDR manufactured by Fluke Networks.
6. Optical power meter and OTDR results shall be in the form of tester report print outs. Photocopies will not be accepted; only original signed reports shall be accepted. Test results shall be furnished to the DESIGN PROFESSIONAL and PCPS Telecommunications DIVISION EERS.
7. All Fiber optic test results shall include the following for each strand.

A. Wavelength

B. Fiber type
C. Measured dB loss
D. Calculated dB to Measured dB margin
E. Cable length
F. Test equipment model # and serial #
G. Date
H. Operator

PART 4 – COPPER INSTALLATION

4.01 UNSHIELDED TWISTED PAIR CABLE

A. All UTP twisted pair cable shall be 4-pair, 23 AWG, Category 6 and Riser Rated (CMR).
B. Provide plenum rated cable.
C. All cables must be installed with a minimum 8ft. service loop at each end.
D. UTP cabling lengths shall not exceed two hundred ninety-five feet (295') from the patch panel to the communications outlet.
E. Under no circumstances is UTP cabling to be run outside unless in grounded conduit.
F. All Category 6 cable shall be U.L Listed, 3rd party verified and exceed TIA-568-C.2 Electrical Specifications.
   1. Color of cable jacket: Orange (Data)
   2. Color of cable jacket: Yellow (Camera)
   3. Color of cable jacket: Blue (TV)
G. Unshielded twisted pair should be home run, free of splices from the MDF/IDF to all room locations.
H. Manufacturer: Belden CAT 6 plenum rated. Owner must pre-approve any cable if the part # above is not used.
I. Each location will receive 4-4 pair 23 AWG, Cat. 6 wires terminated on a RJ-45, 110 style patch panels (see UTP patch panel spec) at the IDF/MDF, and 4-4 pair wires terminated on RJ- 45,110 style wall plate jack.
J. Wires should be terminated on both ends to EIA/TIA 568A standards and all 8 wires should be properly punched down.
K. Each cable to be permanently identified 2 inches back from termination with each end noting where the opposite end is terminated.
L. Patch Panels: Panduit Netkey 24 port Snap-In part number NKFP24Y. Quantity required plus 20% spare.
M. Velcro
   a. Keep cable runs in a tight bundle.
   b. Leave enough to allow to add additional cable later
   c. At least every foot (not required in ceiling)
   d. If crossing ladder rack must be Velcro to the ladder rack
   e. At any point when the trunk is broken out into separate groups
N. Labeling
   a. Label cable at the end point with location of termination
   b. Wall plate or biscuit labeled as Data/Fax/??, Patch Panel letter, patch panel number
      Example: Data A-23, Fax D-12
   c. Label left top of patch panel with large letter of patch panel
O. U-Rings
   a. Every 2 feet in MDF/IDF from room penetration point to patch panel
   b. If no U-Rings are present in MDF/IDF for existing cable runs they should be added
P. Drop Sleeve
   a. Any time cable runs vertically penetrate ceiling
   b. Should be attached to the wall

4.02 STATION WALL PLATES

A. Room work station outlets shall be a 2-port single gang wall plate, office white in color and provide clear labeling windows for station ID and IDF/MDF placement. All workstation outlets must be labeled indicating room # as well as station plate # with IDF/MDF Labeled using the bottom label window.
B. Station wall plates:
   1. Hubbell Premise Wiring: # IFP Wall plate or a pre-approved equivalent.
C. Category 6 jacks shall be ETL verified to Cat.6 component and channel requirements. Jacks shall have T568A pin/pair assignment. Panduit Netkey 6 Punchdown Jack Module part number NK688MOR(orange) - data, NK688MY(yellow) - camera, NK688MBL(blue) - TV.
D. Jacks termination shall be industry standard 110 insulation displacement contact and utilize tin lead plated phosphor bronze.
E. Jacks shall be compatible with single conductor 110 impact termination tools.
F. Provide two Category 6 jacks per two port wall plate.
G. Contractor shall color code the jacks per drawings

4.03 CATEGORY 6 UTP TESTING

A. Contractor shall test each UTP cable. All runs must be certified 1gb.
B. Each horizontal cable shall be tested in a basic link configuration which includes the, patch panel, UTP cable and workstation jack. The cable tester shall be set for basic link parameters before testing. Each Category 6 cable shall be tested using a Level IIE or Level III tester compliant with TSB-95/Addendum 5 to ANSI/TIA/EIA 568A specifications for testing of Cat.6 cabling. Tester shall be manufactured by Fluke Network. Prior to testing basic link, the tester shall be calibrated per manufacturer guidelines. The correct cable (Nominal velocity of propagation) NVP shall be entered into tester to assure proper length and attenuation readings. All UTP wiring will be tested for 1000 Mbps capability I.A.W. IEEE802.3ab (1000 Base-TX).
C. Category 6 test results shall display plots for attenuation, PSNEXT, return loss, PSELFEXT and ACR, as well as worst pair measurements. The test results shall be in the form of tester software print outs. Photocopies will not be accepted; only original signed reports shall be accepted. Test results shall be furnished to Pasco County BOCC IT. UTP cables shall be tested for the following - all test results shall be in Fluke Network Pro Software format.
D. TIA/EIA 568A Addendum 5 test parameters:
   1. Near End Cross Talk- NEXT
   2. Power Sum Near End Cross Talk-PSNEXT
   3. Equal Level Far End Cross Talk- ELFEXT
   4. Power Sum Equal Level Far End Cross Talk- PSELFEXT
   5. Return Loss
   6. Length
   7. Wiremap
   8. Delay
   9. Delay Skew
   10. Attenuation

E. SUBCONTRACTORS QUALIFICATIONS

1. CONTRACTOR must have successfully performed at least three projects of similar scope within two years of the date of this bid. Proof of performance history shall be in the form of reference sheets which will include a brief description of the project, the beginning and ending contract price, the project foreman or superintendent's name and the name, address and telephone number of a project contact.
2. CONTRACTOR must be able to prove to the satisfaction of the ENGINEER that the CONTRACTOR has significant experience in the installation of fiber optic cabling systems. Installation must include installation of fiber optic cable, fiber termination, a knowledge of interconnect equipment and a thorough understanding of testing procedures. CONTRACTOR must provide a minimum of three references supporting its claim of experience for similar projects within the 2 years before this bid.
3. All data communication wiring and equipment installation shall be under the direct supervision of an installer certified by BISCI. All connections will be made by a BISCI certified installer and the installation shall adhere to TIA/EIA 568A commercial building wiring standards.
4. The subcontractor shall own and maintain tools and equipment necessary for successful installation and testing of the distributive information local area network systems.
5. Subcontractor shall have personnel who are adequately trained in the use of such tools and equipment.
6. A resume of qualifications shall be submitted with the subcontractor's bid indicating the following:

   a. A list of recently completed projects similar type and size with contact names and telephone numbers for each.
   b. A list of materials including quantities, manufacturers name, data sheets, and part number.
   c. A list of test equipment which will be used to check and verify all field wiring regardless of type.

PART 5 – TELEPHONE INSTALLATION

5.01 SCOPE OF WORK

A. The telephone distribution shall include all conduit, cabling, outlets, interconnection boxes, lightning protection, etc. as indicated on the drawings.

5.02 MATERIALS

A. Plywood Telephone backboard shall be ¾" X 4'-0" X 8'-0". Provide backboards at the entry point at the MDF and ¾" X 4'-0" X 4'-0" at IDF locations. All sides to be coated with UL® Classified Intumescent fire retardant latex paint (Color Grey). Backboards shall be ¾" A-C grade plywood. Drawings shall indicate locations and size. Backboards shall be mounted at all IDF locations and MDF/TEB locations.

   1. Provide and install backboard in all MDF/IDF rooms to facilitate incoming multi-pair telephone cables to be mounted on the racks supplied above in the data section and terminated with 1 pair per port on Category 6 24 port patch panels. Install 1-96 port patch panel on MDF voice rack.

B. Size and type of Telephone cables shall be indicated in plans. All telephone wiring between buildings shall be PE-89 exterior rated part # Essex db-25p24-al-89-5k-ess, and interior building wire (between Circa Protector and 24 port patch panels) shall be rated Category 3 part # General 3np25p24-gy-r-gcc-pv. All cables running from building to building shall be properly lightning protected. Protection to be Circa Systems # 1890ecl1/nsc-25. Lightning protection to be mounted at TEB and all building IDF locations and each Circa protector must be properly grounded using #6 AWG to the MGB , all cable shield's shall be properly grounded using a # 6 AWG to the MGB. Circa systems are to be filled with the following modules - 20 circa #C-3B3S-30 and 5 circa #C4B1FS-BAL or a pre-approved equivalent.

PART 6 – FIRE STOPPING

6.01 DESIGN REQUIREMENTS

A. Contractor must properly fire stop all penetrations per local codes as well as NEC Article 300-21, Article 800-52b and NFPA 101.
B. All ceiling penetrations located in IDF's and MDF's must have a EMT sleeve a minimum of 10" above the ceiling and 10" below the ceiling to provide a pathway for cable to the Data racks.
C. All sleeves as well as all wall, floor and ceiling penetrations must be fire stopped using the proper cable fill ratio.
   1. Unique Fire Stop Products, using Spec Seal # SSP28 Putty or a pre-approved equivalent.
   2. Sleeves used for IDF's and MDF's ceiling penetrations use EMT (general) with Arlington non - metallic bushings # EMT 200, EMT 300, EMT 400.

PART 7 – SPECIFICATIONS

7.01 EQUIPMENT RACK SPECIFICATIONS

A. IDF racks will be free standing 19" x 7'-0" relay style racks with vertical cable management on each side of rack.
   1. Panduit Vertical Wire Management.
   2. Support rack to wall above backboard with steel ladder racking.
B. Each rack will receive wire management panels above and below each patch panel installed.
   1. Panduit wire management.
      a. Patch Panel placement should be Patch panel at top with space below for switch then cable management then another Patch Panel followed by space for a switch and then cable management, etc.
C. Each rack /cabinet will receive a grounding bar to facilitate rack/cabinet grounding. Each rack and cabinet must be bonded to an approved ground, using # 6 AWG copper. A grounding bus bar is to be installed behind each rack mounted on the telecommunications plywood.
   1. Chatsworth Product's # 10610-019 or a pre-approved equivalent.
   2. Chatsworth Product's # 10622-010 or a pre-approved equivalent
D. Each data rack and/or cabinet shall receive 1 - Hubbell Premise Wiring #MCCPSS19 or a pre-approved equivalent for power management.

PART 8 - ACCESS CONTROL

8.01 DESCRIPTION OF WORK

A. Design shall mandate that at the time of the walk through, it will be the responsibility of the contractor to verify all aspects of the installation. New Access and Video devices shall connect and integrate properly with existing systems in place. Additional infrastructure may be required - see equipment section. Contractor is responsible for supplying and installing a complete and turn-key system.

8.02 EQUIPMENT

Access

1. Access control panel and boards manufacturer: Lenel.
2. Card reader manufacturer: Blue Diamonnd.
3. Access power controllers and power supplies manufacturer: Altronix .
4. Request to Exit Detectors manufacturer: Interlogix or Bosch.
5. All ethernet access control cabling shall be white including patch cables.
6. All information technology rooms (e.g., Server, Main Distribution Frame (MDF), or Independent Distribution Frame (IDF) rooms) shall have a pin-pad reader.
7. All exterior doors if they are to have access control shall have a pin-pad reader.

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ELECTRICAL SPECIFICATIONS
PASCO SHERIFF'S OFFICE
MENTAL PHYSICAL EMOTIONAL HEALTH CENTER
CENTRAL BLVD., BUILDING E
LAND O' LAKES, FL 34637

DATE: 09/17/2025
PHASE: 100% CONSTRUCTION DOCUMENTS

PROJ MGR: DTN
CKD BY: DJN

JOB NUMBER: 25-14

SHEET NUMBER: E102