

USDA/OCIO/ITS REQUIREMENTS

I. SPECIFICATIONS FOR THE ADP ROOM

- A. **Square Footage.** The ADP room shall be a minimum of 75 square feet and a maximum of 100 square feet. The configuration of the room shall allow a three-foot clearance around equipment.
- B. **Doors.** The number of entrances to the ADP room will be kept to a minimum as required by local fire code. Every entrance into an ADP room must be a metal clad or solid core, lockable door. A managed process will be utilized to control all access to the room. The process can be electronic or manual (key access, door bell with escort and sign-in, etc.) and the process must be documented. One key or code will be assigned to an individual from each SCA. All computer room doors shall be removed from the master key system of the facility. Exterior doors must have either interior hinges or exterior hinges with non-removable pins.
- C. **Windows.** There will be NO WINDOWS in the ADP room, even if a portion of the room has exterior walls.
- D. **Flooring.** The flooring will be anti-static hard surface; no carpet.
- E. **Walls.** Walls of the ADP room shall extend from the structural floor slab to the structural ceiling slab with sound transmission class 40 or better. While this is preferred in all ADP rooms, it is mandatory in new construction.
- F. **Temperature and Humidity.** The ADP room shall be cooled at all times. The ambient room temperature shall be maintained between 68° to 75°F (20° to 24°C). The ambient relative humidity levels shall be maintained between 45% and 55%. The temperature and humidity controls shall be managed within the room, including points of contacts for emergency situations. The ADP room shall have access to temperature readings within the space. Air conditioning must be controlled on the weekends and holidays as needed to maintain the minimum temperature in the room. Depending on the equipment to be placed in the room, a separate air conditioning unit may be required.
- G. **Shared Space.** The ADP room shall NOT be designed as a multi-use room. Only ADP and telephone equipment shall be in this room. Mail machines, printers (unless specifically for the ADP equipment), faxes, file cabinets, shared storage, copiers, plotters, etc. shall be located outside the ADP room. ITS storage will NOT be in the ADP room.
- H. **Plumbing.** Because of the danger of water damage, the ADP room shall not be located in areas where water bearing pipes would be overhead.
- I. **Fire Suppressant Systems.** A sprinkler system will be installed when local building codes require it. A dry-pipe system is preferred. Sprinkler heads shall be placed so that they are not directly above any equipment. Each ADP room shall be equipped with any type "***Clean Agent***" (at least 5 to 6 lbs) fire extinguishers that are approved/designed to be used for Computer,

Telecommunications, Data Storage and Laboratory type rooms, which houses delicate electronic equipment. An annual inspection must be performed on the fire extinguisher.

I. SPECIFICATIONS FOR THE ADP ROOM (continued)

- J. Design Approval.** In SCA offices, the Group Manager shall review the electrical section of the construction drawings to ensure that the location of the phone jacks, data ports, and electrical outlets will be accessible once systems furniture is installed. In all other offices, the appropriate Division Directors shall review and approve the floor plans. All final floor plans for the ADP room and general space shall be approved by the OCIO-ITS Realty Specialist before construction begins.
- K. Public Areas.** Where possible, the ADP room shall be within the interior of the building and away from public areas. Where possible, ensure that all computer rooms are not located either above or below public areas in multi-story buildings.
- L. Mailrooms and Loading Docks.** Where possible, the ADP room shall not be located in close proximity to mailrooms or loading docks.
- M. Signage.** Ensure that all signs identifying the ADP room are removed from public view. Directories or building maps that identify the location of critical or sensitive asset locations shall not be displayed.
- N. Electrical Power.** Where possible, the capability of shutting off power to an information system component that may be malfunctioning or threatened without endangering personnel by requiring them to approach the equipment shall be included in new and refurbished ADP rooms.

II. ADP ROOM EQUIPMENT OUTPUTS

Refer to the manufacturer's requirements for all equipment that will be located in the room.

III. DEDICATED ELECTRICAL CIRCUITS AND OUTLETS FOR ADP EQUIPMENT

- A. Computer Room Circuits.** Provide and install dedicated electrical circuits with isolated grounds in the Computer Room. Dedicated circuits must be 110 volt, 20-ampere standard three-prong circuits with true earth ground terminated into orange or other uniquely marked ("computer use only") duplex outlets. Provide and install duplex outlets for each dedicated electrical circuit in the Computer room. Dedicated electrical circuits will be used for the telephone systems. The main electrical panel for the computer/voice (if computer/voice is available) equipment will be properly grounded to meet TIA/EIA and Federal Information Processing Standards (FIPS).
- B. General Office Space Circuits.** Provide dedicated electrical circuits with multiple outlets at designated locations throughout the service center with multiple outlets to accommodate the peripheral equipment (i.e. computer workstations, printers).

III. DEDICATED ELECTRICAL CIRCUITS AND OUTLETS FOR ADP EQUIPMENT (continued)

C. **Electrical Requirements for Uninterruptible Power Supply (UPS) Circuit.** Critical servers are required to be connected to the UPS.

(1) **Uninterruptible Power Supply (UPS).** Dedicated Circuits will be required for use by UPS.

(2) **Number and Type of Circuits.** There will be a minimum of 2 (two) 120 volt, 30 amp minimum with true ground, terminated into a twisting-lock receptacle. Each dedicated circuit must have insulated, isolated earth ground; conduit ground is not acceptable.

(3) **Receptacle.** The receptacle will be a NEMA L5-30R twist-locking receptacle.

(4) **Location of the UPS receptacle.** The UPS receptacle will be located in the ADP/Computer room where the Local Area Network (LAN)/Wide Area Network (WAN)/Voice (LWV) cabinet is installed. The receptacle will be located within a maximum of 4.5 feet from the back of the United States Department of Agriculture (USDA) wiring cabinet.

IV. PLYWOOD

One sheet of $\frac{3}{4}$ inch 4 x 8 foot plywood shall be vertically mounted on the wall in the Computer Room within 3 feet of an electrical outlet and the wiring cabinet. The backboard should be attached to the wall using correct mounting hardware and procedures. If the wall is sheet-rocked, attach the backboard to the studs. If the wall is concrete, attach the backboard using anchors. The backboard should be painted with fire retardant paint the same color as the interior walls of the building. This will be the extended demarcation point and for the installation of phone equipment.

V. TELEPHONE SYSTEM

A telephone demarcation point (D-mark) must be provided on a type 66S block on the backboard for all telephone lines prior to the move date. The telephone system will be moved by USDA to a new office and will be installed by USDA technicians during move-in.

VI. DISTRIBUTION CLOSETS AND CABLE PATHWAYS

Facilities requiring multiple distribution points within the building or on multiple floors will comply with ANSI/TIA/EIA-569-B standards.

VII. DATA CABLING/TELECOMMUNICATIONS

A. **General Specifications.** All premise data/telecommunications cabling will comply with TIA/EIA-568-B. All new installations will use Category 6 cabling, as specified in TIA/EIA-568-B.2-1, or higher. All cabling will meet local building codes.

B. **Exceptions.** Renovations to buildings which currently comply with TIA/EIA-568-A and contain Category 5 cable and terminations may continue to use Category 5 wiring and terminations as specified in TIA/EIA-568-A.

VII. DATA CABLING/TELECOMMUNICATIONS (continued)

All substantial additions to, or replacements of, existing wiring should comply with the specifications in VII(A) where possible.

NOTE. Category 5 wiring is unsuitable for Ethernet speeds above 100 Mb/sec.

C. Copper Cable Installation.

- (1) Provide, place, terminate and test Cat-6 certified 100-ohm Balanced Twisted Pair cables according to applicable standards.
- (2) Data cable and voice cables shall be terminated with Cat-6 compliant terminations (patch panels, wall outlets, etc.).
- (3) All Balanced Twisted Pair cables shall be terminated using the T568A pin/pair assignments as specified in TIA/EIA-568-B and per FTR 1090-1997.

D. Copper Cable Specification. All cable equipment and materials must be manufactured by facilities that are International Organization for Standardization (ISO) 9001 registered and **certified** as follows:

- (1) Shall be Cat-6 or Cat-6a rated in accordance with ANSI/TIA/EIA-568-B.
- (2) Shall be four-pair, balanced, 100-Ohm, 24 American Wire Gage (AWG).
- (3) The selected cable must have contiguous, two-foot segment-length markers printed on the cable jacket. The markings must also show cable manufacturer, cable model number or name, cable part number, Cat-6 or Cat-6a designation, a UL or ETL verification designation, a CMP type, and a "tested to 350 MHz" or above designation.
- (4) Shall be tested and certified by the installer to comply with the previous requirements.

E. Data Fiber Cable Installation.

- (1) Fiber optic cable shall be used for all links in excess of 90 meters and where appropriate. There shall be no 90° bends in any fiber cables with a radius of less than three (3) inches.
- (2) All fiber cable links less than 500 meters shall be 6-strands, multimode optical fiber cable.
- (3) All Optical Fiber, Conductive, Plenum (OFCP) or Optical Fiber Conductive Riser (OFCR) rated fiber cable shall be properly grounded at both ends and may not be installed in the same cable tray or conduit as power cables.
- (4) All ANSI/TIA/EIA-568-B requirements for fiber cable installation, testing, and termination will be observed.

VII. DATA CABLING/TELECOMMUNICATIONS (continued)

E. Data Fiber Cable Installation.

(5) All strands of each fiber cable shall be terminated at each end of the cable, with either Straight Tip (ST) or Standard Connector (SC) connectors, as appropriate to the related equipment interface connector, and will be conveyed to the selected cable contractor upon request.

FIGURE 1



SC Connector

FIGURE 2



ST Connector

(6) Supply several sets of fiber patch cords that should not only serve immediate switch connection concerns, but allow for possible switch update connections in the future. The unused fiber patch cables will be kept in reserve at this site, in the event that such switch updates do occur.

F. Data Fiber Cable Specifications.

(1) All fiber cable shall be 6-strand, multimode, tight buffered, 50 x 125 μm optical fiber, rated OFCP or OFCR as appropriate, and must be clearly marked as such on the cable sheathing.

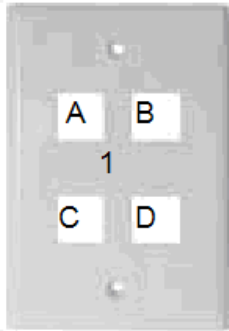
(2) All fiber link cable runs, shall be run within orange, plenum rated inter-duct, and appropriately sized according to the number of fiber runs to be contained.

(3) Both the fiber cable sheathing and the protective inter-duct shall be colored orange to denote multimode fiber.

G. **Wall Input/Output (I/O) Face Plates for Work Area I/O Connections.** Work areas will have a quad or hex outlet plate connector with four or six RJ-45 connectors (see diagram). Extra outlet plate connectors will also be required in some common areas. All drops will be identified and numbered on the office floor plan prior to installation. Each of the four or six connectors will be cabled with 4-pair balanced twisted-pair cable. The data cables will be category 6 as listed in the cable specification block. These cables will be terminated with RJ-45 connectors at the device end. The other end will be punched down on an RJ-45/110-type patch panel in the LWV wiring cabinet. Each quad plate MUST be labeled with the work station number (1, 2, etc.) and the A, B, C, etc. format. Each connection MUST be identified as (1A, 1B, 2A, 2B, etc.) on the corresponding patch panel location.

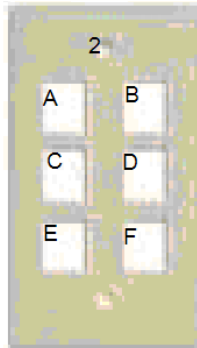
VII. DATA CABLING/TELECOMMUNICATIONS (continued)

FIGURE 3



Quad Plate
Quad Plate – Ports A, B, C – Data
Port D- Phone

FIGURE 4



Hex Plate
Hex Plate – Ports A, B, C, D, E - Data
Port F – Phone

VIII. LAN/WAN/VOICE CABINET

The Government will provide the LAN/WAN/VOICE cabinet, and a cable installation contractor will provide and install the wiring, cabling, and patch panels in the cabinet as specified by the TSD Group Manager. Patch panels will be RJ-45/110 type and appropriately-sized, based upon the number of quad and/or hex outlet plates. A wire service loop that will allow the cabinet to freely move a minimum of six feet in any direction will be installed by the cable installation contractor as part of the cable installation. The RJ-45/110 type patch panel must be mounted in the cabinet in the place designated by the TSD Group Manager.

IX. COPIES OF RELATED DOCUMENTS

- A. Copies of Federal Telecommunications Recommendations (FTRs). Copies of FTRs are available from:

National Communications System (NCS), Technology and Standards Division (N6)
701 South Court House Road
Arlington, Virginia 22204-2198
Telephone: (703) 607-6204

- B. Copies of the specifications and related documents. Copies of the specifications and related documents can be obtained from:

- (1) Global Engineering Documents
15 Inverness Way East
Englewood, Colorado 80112
Telephone: (800) 854-7179 or
(303) 397-7956
www.global.ihs.com
- (2) National Resource for Global Standards
www.nssn.org