

U.S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D.C. 20250

DEPARTMENTAL REGULATION	NUMBER: DR 3300-001-K
SUBJECT: Installation of Telecommunications Cables in Federal Buildings	DATE: November 13, 2019
OPI: Office of the Chief Information Officer, Digital Infrastructure Services Center, Enterprise Network Services	EXPIRATION DATE: November 13, 2024

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1. PURPOSE

This Departmental Regulation (DR) establishes the United States Department of Agriculture (USDA) policy for installing telecommunications cables in Federal buildings.

2. SPECIAL INSTRUCTIONS/CANCELLATIONS

- a. This DR supersedes DR 3300-001-K, *Building Telecommunications Cabling and Infrastructure*, dated March 23, 1999.
- b. This DR will be in effect until superseded or the expiration date.
- c. All Mission Areas, agencies, and staff offices will align their policies and procedures with this DR within 6 months of the publication date.

- d. All Mission Areas, agencies, and staff offices may supplement this DR when developing their internal guidance. Modifications to the intent or purpose of this DR are not allowed. If Mission Areas, agencies, and staff offices publish internal guidance that supplements this DR, one copy of each supplement will be forwarded to the Office of the Chief Information Officer (OCIO), Digital Infrastructure Services Center (DISC), Enterprise Network Services (ENS), Telecommunications Infrastructure Management and Governance (TIMG) at ens.policy@ocio.usda.gov.

3. BACKGROUND

Before the 1950s, planning for telecommunications facilities was not perceived as a significant factor in the design and construction of a building. However, the economic penalties of this perception became clear in the 1950s, and the building and telecommunications industries determined that they had to work more closely as a team. Progressive technological advances have continued to reinforce this requirement, and it has become imperative that telecommunications managers be aware of building codes and standards governing the installation practices and materials used in the construction of telecommunications facilities. The purpose of building codes and standards is to ensure the quality of construction and to protect life, health, and property.

4. SCOPE

This DR applies to all USDA Mission Areas, agencies, staff offices, employees, contractors, data centers, cooperative partners, and others working for, or on behalf of, the USDA.

5. POLICY

- a. Federal Agencies and departments are directed by the *National Technology Transfer and Advancement Act of 1995*, [Public Law \(P.L.\) 104-113](#), to use industry standards that are developed in voluntary consensus standards bodies. For cable installation, the standards are the following:
 - (1) [American National Standards Institute \(ANSI\)/Building Industry Consulting Service International \(BICSI\) 002-2019](#), *Data Center Design and Implementation Best Practices*;
 - (2) [ANSI/BICSI 003-2014](#), *Building Information Modeling (BIM) Practices for Information Technology System*;
 - (3) [ANSI/BICSI 005-2016](#), *Electronic Safety and Security (ESS) System Design and Implementation Best Practice*;

- (4) [ANSI/BICSI 006-2015](#), *Distributed Antenna System (DAS) Design and Implementation Best Practices*;
 - (5) [ANSI/BICSI 007-2017](#), *Information Communication Technology Design and Implementation Practices for Intelligent Buildings and Premises*;
 - (6) [ANSI/BICSI 008-2018](#), *Wireless Local Area Network (WLAN) Systems Design and Implementation Best Practices*;
 - (7) [ANSI/BICSI 009-2019](#), *Data Center Operations and Maintenance Best Practices*;
 - (8) [ANSI/BICSI N1-2019](#), *Installation Practices for Telecommunications and ICT [Information Communication Technology] Cabling and Related Cabling Infrastructure*;
 - (9) [ANSI/BICSI N2-17](#), *Practices for the Installation of Telecommunications and ICT Cabling Intended to Support Remote Power Applications*;
 - (10) [ANSI/BICSI G1-17](#), *ICT Outside Plant Construction and Installation: General Practices*;
 - (11) [ANSI/National Electrical Contractors Association \(NECA\)/BICSI 607-2011](#), *Standard for Telecommunications Bonding and Grounding Planning and Installation Methods for Commercial Buildings*;
 - (12) [ANSI/Telecommunications Industry Association \(TIA\)-568.0-D](#): *Generic Telecommunications Cabling for Customer Premises*;
 - (13) [ANSI/TIA-568.1-D](#): *Commercial Building Telecommunications Infrastructure Standard*;
 - (14) [ANSI/TIA-568.3-D](#): *Optical Fiber Cabling and Components Standard*;
 - (15) [ANSI/TIA-568.4-D](#): *Broadband Coaxial Cabling and Components Standard*; and
 - (16) [ANSI/TIA-568.2-C](#): *Balanced Twisted-Pair Telecommunications Cabling and Components Standards*.
- b. Installation of telecommunications cables must comply with all [National Fire Protection Association \(NFPA\) Codes and Standards](#). These requirements include, but are not limited to, the following:
- (1) For buildings that contain hazardous materials requiring proper abatement of asbestos and lead paint, conduct environmental testing at Mission Area, agency or staff office expense prior to the routing of cable. Any existing Asbestos Containing

Building Materials (ACBM) within the areas that are marked as such cannot be disturbed;

- (2) For buildings that are included in the National Register of Historic Places, install cables sensitively to preserve the structure's architectural significance;
 - (3) Install proper fire stopping between floors and differing multiple occupancy classification areas for each building;
 - (4) Protect adjacent surfaces from damage during cable installations;
 - (5) Repair or replace damaged ceiling tiles resulting from cable installations;
 - (6) Repair damaged wall surfaces resulting from cable installations;
 - (7) Avoid a surface mounted conduit by channeling plaster walls and fishing lines through drywall construction; and
 - (8) Install labels or tags to all cables, every 25 feet, to indicate the origin and destination point of each cable.
- c. Mission Areas, agencies, and staff offices will specify in solicitations or contracts that all wiring comply with the cabling standards and codes specified in Sections 5a and 5b. These standards and codes will be used by all Mission Areas, agencies, and staff offices in the planning and design of all office buildings, including both the wiring of new buildings and the upgrading of existing plants in both Federal and leased non-Federal buildings.
 - d. Mission Areas, agencies, and staff offices responsible for the architectural design of new Federal buildings will comply with the provisions of the cabling standards and codes specified in Sections 5a and 5b.
 - e. Mission Areas, agencies, and staff offices responsible for wiring small Federal buildings will comply with the cabling standards and codes specified in Sections 5a and 5b.
 - f. Mission Areas, agencies, and staff offices responsible for the administration of the telecommunications infrastructure (telecommunications equipment spaces, cable pathways, bonding and grounding, wiring, and termination hardware) will comply with the provisions of the cabling standards and codes specified in Sections 5a and 5b.
 - g. Mission Areas, agencies, and staff offices responsible for the design, maintenance, renovation, or retrofit of telecommunications grounding systems within new or existing Federal buildings will comply with the provisions of the cabling standards and codes specified in Sections 5a and 5b.

- h. Mission Areas, agencies, and staff offices must coordinate the installation of telecommunications cables through the Facility Manager who must be aware of general conditions and life safety code requirements.

6. ROLES AND RESPONSIBILITIES

- a. The USDA Chief Information Officer (CIO) will:
 - (1) Represent USDA in the Federal, national, and industry standards development process;
 - (2) Manage and oversee the implementation of the standards and codes specified in Sections 5a and 5b at USDA locations; and
 - (3) Perform management and/or oversight responsibilities in accordance with the *Federal Information Technology Acquisition Reform Act* (FITARA), [P.L. 113-291](#), as applicable to this directive.
- b. The ENS Director will:
 - (1) Establish procedures for monitoring, measuring, and enforcing compliance with this DR;
 - (2) Oversee Mission Area, agency, and staff office compliance with USDA telecommunications policies and procedures;
 - (3) Review and render a decision for Mission Area, agency, and staff office policy waiver requests;
 - (4) Maintain an electronic file of approved waivers;
 - (5) Work with Mission Areas, agencies, and staff offices to eliminate redundant or unused services and equipment;
 - (6) Include telecommunications requirements and initiatives as part of the telecommunications planning process;
 - (7) Use General Services Administration (GSA) and USDA mandated programs when Mission Area, agency, and staff office requirements can be met cost-effectively through those programs; and
 - (8) Maintain inventories of USDA telecommunications resources to the extent necessary to:
 - (a) Ensure adequate and appropriate telecommunications resources to support the

Mission Area, agency, and staff office mission;

(b) Ensure accountability for USDA telecommunications property; and

(c) Meet Departmental and governmental requests for periodic or special inventory reports.

c. Mission Area Assistant CIOs, and Agency and Staff Office Information Technology (IT) Directors will:

(1) Ensure their respective Mission Area, agency, and staff office personnel comply with this directive;

(2) Ensure their respective Mission Area, agency, and staff office internal directives conform to this DR's stated requirements;

(3) Develop telecommunications cost estimates for lease renewals or building moves to determine the cost of applying the standards. Where cost savings can be achieved and improvements in service and safety are realized, they will be included;

(4) Survey the existing building telecommunications infrastructure to ensure that it supports advanced technology and is compatible with modern telecommunications equipment;

(5) Include environmental ACBM and lead paint assessment, review, testing, and abatement costs in their Mission Area, agency, or staff office cabling installation project budgets;

(6) Review the available GSA Governmentwide Acquisition Contract (GWAC) for wiring and cabling to determine if it is a cost-effective solution; and

(7) Obtain approval for new wiring from the USDA CIO prior to making changes to the building wiring infrastructure.

d. Facility Managers will:

(1) Be aware of building conditions and life safety code requirements;

(2) Comply with the cabling standards and codes specified in Sections 5a and 5b; and

(3) Coordinate building assessments and reviews, environmental testing and abatement, and telecommunications cabling installations for Mission Areas, agencies, and staff offices.

7. COMPLIANCE

Federal Agencies are directed by the *National Technology Transfer and Advancement Act of 1995* to use industry technical standards that are developed in voluntary consensus standards bodies.

- a. A violation of any of the aforementioned standards may be cause for disciplinary or adverse action.
- b. Disciplinary or adverse action will be put into effect in accordance with applicable law and regulations.

8. POLICY EXCEPTIONS

- a. All USDA Mission Areas, agencies, and staff offices are required to conform to this policy. In the event that a specific policy requirement cannot be met as explicitly stated, Mission Areas, agencies, and staff offices may submit a waiver request. The waiver request will explain the reason for the request, identify compensating controls and actions that meet the intent of the policy, and identify how the compensating controls and actions provide a similar or greater level of defense or compliance than the policy requirement.
- b. Mission Area Assistant CIOs, and Agency and Staff Office IT Directors will address all policy waiver request memoranda to the ENS Director and submit the waiver request to ens.policy@ocio.usda.gov for review and determination.
- c. Waivers to stipulations of this directive that have been granted approval by the ENS Director and that are associated with a National Institute of Standards and Technology (NIST) [Special Publication \(SP\) 800-53 Revision 4](#), *Security and Privacy Controls for Federal Information Systems and Organizations*, control will be recorded and tracked as a Plan of Action and Milestones (POA&M) item in the USDA *Federal Information Security Modernization Act of 2014* (FISMA), [44 United States Code \(U.S.C.\) Section 3551](#), data management and reporting tool.
- d. Waivers will expire at the end of the fiscal year or 6 months from the date of approval, whichever is longer. Unless otherwise specified, Mission Areas, agencies, and staff offices will review and renew previously approved policy waivers every fiscal year.

9. INQUIRIES

Questions and comments concerning the requirements of this regulation should be directed to OCIO, DISC, ENS, TIMG at ens.policy@ocio.usda.gov.

- END -

APPENDIX A

ACRONYMS AND ABBREVIATIONS

ACBM	Asbestos Containing Building Materials
ANSI	American National Standards Institute
BICSI	Building Industry Consulting Service International
BIM	Building Information Modeling
CIO	Chief Information Officer
DAS	Distributed Antenna System
DISC	Digital Infrastructure Services Center
DR	Departmental Regulation
ENS	Enterprise Network Services
ESS	Electronic Safety and Security
FISMA	Federal Information Security Modernization Act
FITARA	Federal Information Technology Acquisition Reform Act
GSA	General Services Administration
GWAC	Governmentwide Acquisition Contract
ICT	Information Communication Technology
IT	Information Technology
NECA	National Electrical Contractors Association
NFPA	National Fire Protection Association
NIST	National Institute of Standards and Technology
OCIO	Office of the Chief Information Officer
OMB	Office of Management and Budget
P.L.	Public Law
POA&M	Plan of Action and Milestones
SP	Special Publication
TIA	Telecommunications Industry Association
TIMG	Telecommunications Infrastructure Management and Governance
U.S.C.	United States Code
USDA	United States Department of Agriculture
WLAN	Wireless Local Area Network

APPENDIX B

DEFINITIONS

- a. Bonding. The permanent joining of metallic parts to form an electrically conductive path that will assure electrical continuity and the capacity to conduct safely any electrical current likely to be imposed.
- b. Building Telecommunications Infrastructure. A collection of those telecommunications components, excluding equipment that together provides the basic support for the distribution of all information within a building or campus.
- c. Grounding. A conducting connection, whether intentional or accidental, between an electrical circuit or equipment and the earth, or to some conducting body that serves in place of the earth.
- d. Information Technology (IT). (1) Any services or equipment, or interconnected system(s) or subsystem(s) of equipment, that are used in the automatic acquisition, storage, analysis, evaluation, manipulation, management, movement, control, display, switching, interchange, transmission, or reception of data or information by the agency; where (2) such services or equipment are ‘used by an agency’ if used by the agency directly or if used by a contractor under a contract with the agency that requires either use of the services or equipment or requires use of the services or equipment to a significant extent in the performance of a service or the furnishing of a product. (3) The term “information technology” includes computers, ancillary equipment (including imaging peripherals, input, output, and storage devices necessary for security and surveillance), peripheral equipment designed to be controlled by the central processing unit of a computer, software, firmware and similar procedures, services (including provisioned services such as cloud computing and support services that support any point of the lifecycle of the equipment or service), and related resources. (4) The term “information technology” does not include any equipment that is acquired by a contractor incidental to a contract that does not require use of the equipment. (Source: Office of Management and Budget (OMB), [Memorandum M-15-14](#), *Management and Oversight of Federal Information Technology*, June 10, 2015)
- e. Pathway. A facility for the placement of telecommunications cable.

APPENDIX C

AUTHORITIES AND REFERENCES

BICSI, [ANSI/BICSI 002-2019](#), *Data Center Design and Implementation*

BICSI, [ANSI/BICSI 003-2014](#), *Building Information Modeling (BIM) Practices for Information Technology System*

BICSI, [ANSI/BICSI 005-2016](#), *Electronic Safety and Security (ESS) System Design and Implementation Best Practice*

BICSI, [ANSI/BICSI 006-2015](#), *Distributed Antenna System (DAS) Design and Implementation Best Practices*

BISCI, [ANSI/BICSI 007-2017](#), *Information Communication Technology Design and Implementation Practices for Intelligent Buildings and Premises*

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BISCI, [ANSI/BICSI 009-2019](#), *Data Center Operations and Maintenance Best Practices*

BISCI, [ANSI/BICSI N1-2019](#), *Installation Practices for Telecommunications and ICT Cabling and Related Cabling Infrastructure*

BISCI, [ANSI/BICSI N2-17](#), *Practices for the Installation of Telecommunications and ICT Cabling Intended to Support Remote Power Applications*

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Federal Information Security Modernization Act of 2014 (FISMA), [44 U.S.C. Section 3551](#), December 18, 2014

Federal Information Technology Acquisition Reform Act (FITARA), [P.L. 113-291, 128 Stat. 3292, Title VIII, Subtitle D, §831-837](#), December 19, 2014

National Technology Transfer and Advancement Act of 1995, [P.L. 104-113](#), March 7, 1996

NFPA, [NFPA Codes and Standards](#)

NIST, [SP 800-53 Revision 4](#), *Security and Privacy Controls for Federal Information Systems and Organizations*, April 2013, includes updates as of January 22, 2015

OMB, [M-15-14](#), *Management and Oversight of Federal Information Technology*, June 10, 2015

TIA, [ANSI/TIA-568.0-D](#): *Generic Telecommunications Cabling for Customer Premises*, December 15, 2015, as amended July 26, 2017

TIA, [ANSI/TIA-568.1-D](#): *Commercial Building Telecommunications Infrastructure Standard*, September 9, 2015

TIA, [ANSI/TIA-568.3-D](#): *Optical Fiber Cabling and Components Standard*, October 25, 2016

TIA, [ANSI/TIA-568.4-D](#): *Broadband Coaxial Cabling and Components Standard*, June 27, 2017

TIA, [ANSI/TIA-568.2-C](#): *Balanced Twisted-Pair Telecommunications Cabling and Components Standards*, August 2009, as amended June 30, 2016