UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated April 2026
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DIVISION 27 - COMMUNICATIONS

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PROTECTED DISTRIBUTION SYSTEM (PDS) FOR SIPRNET COMMUNICATION SYSTEMS

11/25

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USACE / NAVFAC / AFCEC **UFGS-27 05 29.00 10 (November 2025)**

Preparing Activity: USACE **Superseding**
UFGS-27 05 29.00 10 (August 2011)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

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SECTION 27 05 29.00 10

PROTECTED DISTRIBUTION SYSTEM (PDS) FOR SIPRNET COMMUNICATION SYSTEMS
11/25

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NOTE: This guide specification covers the requirements for a protected distribution system used in conjunction with SIPRNET communication systems.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).
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PART 1 GENERAL

1.1 REFERENCES

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NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a Reference Identifier (RID) outside of the Section's Reference Article to automatically

place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

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The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

ASTM D1785	(2021) Standard Specification for Poly(Vinyl Chloride) (PVC), Plastic Pipe, Schedules 40, 80, and 120

NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)

ANSI C80.3	(2020) American National Standard for Electrical Metallic Tubing (EMT)

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70	(2026; TIA 26-1; ERTA 26-1; TIA 26-2; TIA 26-3; TIA 26-4; TIA 26-5; TIA 26-6; TIA 26-7; ERTA 26-2; ERTA 26-3) National Electrical Code

NATIONAL SECURITY TELECOMMUNICATIONS AND INFORMATION SYSTEMS SECURITY (NSTISS)

CNSSAM TEMPEST/1-13	(2013) RED/BLACK Installation Guidance
CNSSI-7003	(2015) Protected Distribution Systems (PDS)

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA)

ANSI/TIA-569	(2019e; Add 1 2022) Telecommunications Pathways and Spaces

UL SOLUTIONS (UL)

UL 4	(2026) UL Standard for Safety Armored Cable

1.2 ADMINISTRATIVE REQUIREMENTS

1.2.1 Conditions

Notify the Contracting Officer if it is impossible to install SIPRNET PDS that complies with this section and references.

1.2.2 Construction Methods

Methods of construction that are not specifically described or indicated in the Contract will be subject to the control and approval of the

Contracting Officer.

1.2.3 PDS Design

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NOTE: For Army, select Network Entrerprise Center (NEC), Base Communications Officer (BCO) for Navy, Installation Communications-G6 for Marine Corps, and Base/Installation Communicatons Squadron, Commander's Representative for Air Force.

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Include separate plans, elevations, sections, details, and attachments to other work. Indicate PDS carrier route, PDS carrier mounting height above finished floor, user drop box mounting height, and user drop box locations. Submit the PDS design to the cognizant Certified TEMPEST Technical Authority (CTTA), for a technical review of [2][_] weeks prior to the acquisition of material, through the installation Telecommunications Manager: [Network Enterprise Center (NEC)][Base Communications Officer (BCO)][Installation Communications-G6][Base/Installation Communications Squadron, Commander's Representative.].

1.2.4 PDS Design Technical Review

Coordinate with the installation Telecommunications Manager and submit PDS design for technical review to the CTTA. Provide PDS carrier shop drawings, List of Material (LOM), and any other documentation required 90-days prior to PDS carrier installation (see CNSSI-7003, Appendix C).

1.2.5 PDS Design Approval Request

PDS design approving authority is the installation Telecommunications Manager Designated Approving Authority. Submit PDS design and CTTA technical review to the installation Telecommunications Manager to obtain PDS design approval from the RMF NIST prior to installation.

1.3 SUBMITTALS

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NOTE: Review Submittal Description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a “G” to an item, if the submittal is sufficiently important or complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office

(Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy and Air Force projects.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

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Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are for Contractor Quality Control approval. Submittals not having a "G" or "S" classification are for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

PDS Design; G, [_____]

PDS Design Technical Review; G, [_____]

PDS Design Approval; G, [_____]

SD-03 Product Data

Category 1 PDS

Category 2 PDS

SD-04 Samples

PDS Carrier Surface Mounted

Pull Boxes

Fittings

SD-11 Closeout Submittals

User Drop Box

Other Enclosures

1.4 QUALITY ASSURANCE

1.4.1 Manufacturer's Qualifications

Use firms regularly engaged in manufacture of secure raceway systems, boxes, and fittings of the types and sizes required, whose products have been in satisfactory use in similar service for not less than 3 years.

1.4.2 Installer's Qualifications

Installer is required to obtain certification from the manufacturer of secure raceway system and install secure raceway system in accordance with manufacturer's instructions.

1.4.3 Equipment

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NOTE: A Category 1 PDS provides a reduced level of physical security protection due to the higher level of control for the surrounding area. A Category 1 PDS can therefore generally be installed using a simple carrier at a reduced cost.

A Category 2 PDS provides significant physical security protection and can be implemented by using one of the following carriers: hardened, buried, suspended, alarmed, or continuously viewed.

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Provide a [Category 1 PDS][Category 2 PDS] meeting or exceeding guidelines as defined by CNSSI-7003 and approved for use by Deparment of Homeland Security (DHS), U.S. Army, U.S. Marine Corps, U.S. Navy, and U.S. Air Force. Submit manufacturer's descriptive data.

1.5 DELIVERY, STORAGE, AND HANDLING

Deliver secure raceways, conduit, fittings and components in factory labeled packages. Store and handle in strict compliance with manufacturer's written instructions and recommendations. Protect from damage due to weather, excessive temperature, and construction operations.

PART 2 PRODUCTS

2.1 PDS CARRIER CONFIGURATION

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NOTE: Use Secure Raceway carrier system in office environments, for SIPRNET PDS, unless the installation Telecommunications Manager specifically specifies a Conduit Carrier system. Conduit carrier may be used in non-office environments, such as hangars, maintenance facilities, warehouse, BCTC, etc.

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2.1.1 Conduit Carrier

[2.1.1.1 Category 1 PDS

a. Use [1][2][3][4]-inch [EMT][,][PVC of at least schedule-40 grade][, or][armored cable] that meets [ANSI C80.3][,][ASTM D1785][, or][UL 4] for horizontal backbone or vertical riser runs; [3/4][1]-inch [EMT][,][PVC of at least schedule-40 grade][, or][armored cable] that meets [ANSI C80.3][,][ASTM D1785][, or][UL 4] for vertical runs from horizontal runs to secure user drop box. Use components (e.g. couplers, connectors, condulette, fittings, pull boxes, enclosures) constructed of the same material as conduit.

[b. If armored cable is used, the armor jacket for the cable must be constructed of a flexible metallic material. If the armored cable is not constructed of a solid, continuous material, then the metallic material must have an overall, continuous plastic sheath.

] c. Do not exceed 30 percent cable fill capacity of secure raceway.

d. The carrier must not open to expose data cables, except at approved pull boxes and termination boxes.

][2.1.1.2 Category 2 PDS

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NOTE: Flexible conduit and armored cables must not be used as a hardened carrier.
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[2.1.1.2.1 Hardened Carrier

a. Use [1][2][3][4]-inch EMT conduit that meets ANSI C80.3 for horizontal backbone or vertical riser runs; [3/4][1]-inch EMT conduit that meets ANSI C80.3 for vertical runs from horizontal runs to secure user drop box. Use components (e.g. couplers, connectors, condulette, fittings, pull boxes, enclosures) constructed from ferrous metallic material. Use of components constructed from non-ferrous metallic material is not acceptable.

b. Do not exceed 30 percent cable fill capacity of secure raceway.

c. The carrier must not open to expose data cables, except at approved pull boxes and termination boxes.

][2.1.1.2.2 Burried Carrier

a. [EMT][RMC][IMC][PVC-40][PVC-80]

b. All connections must be permanently sealed around mating surfaces by means of [welding][two-layer epoxy][fusion][PVC glue]

c. Utilize elbows, couplings, fittings and connectors constructed from the same type of ferrous material as the carrier.

d. Do not exceed 30 percent fill capacity of secure conduit.

e. The carrier must not open to expose data cables, except at approved pull boxes and termination boxes.

][2.1.1.2.3 Suspended Carrier

a. Carrier must terminate in a Controlled Access Area (CAA) on each end or immediately enter a hardened PDS at the building boundary.

b. Carrier must be hung directly between buildings.

c. Provide clear unobstructed view of carrier at all time. The entirety of the carrier must be illuminated at night.

][2.1.1.2.4 Alarmed Carrier

a. Use [1][2][3][4]-inch EMT conduit that meets ANSI C80.3 for horizontal backbone or vertical riser runs; [3/4][1]-inch EMT conduit that meets ANSI C80.3 for vertical runs from horizontal runs to secure user drop box. Use components (e.g. couplers, connectors, condulette, fittings, pull boxes, enclosures) constructed from ferrous metallic material. Use of components constructed from non-ferrous metallic material is not acceptable.

b. Do not exceed 30 percent cable fill capacity of secure raceway.

c. The carrier must not open to expose data cables, except at approved pull boxes and termination boxes.

][2.1.1.2.5 Continuously Viewed Carrier

a. Use [1][2][3][4]-inch EMT conduit that meets ANSI C80.3 for horizontal backbone or vertical riser runs; [3/4][1]-inch EMT conduit that meets ANSI C80.3 for vertical runs from horizontal runs to secure user drop box. Use components (e.g. couplers, connectors, condulette, fittings, pull boxes, enclosures) constructed from ferrous metallic material. Use of components constructed from non-ferrous metallic material is not acceptable.

b. Do not exceed 30 percent cable fill capacity of secure raceway.

c. The carrier must not open to expose data cables, except at approved pull boxes and termination boxes.

]]2.1.1.3 Mounting Brackets

Surface mount PDS conduit carrier on interior walls using [12] [25] mm [1]-inch stand-off mounting brackets. Use of non-metallic pipe hangers is acceptable to mount PDS conduit carrier to wall partitions.

2.1.1.4 Pull Boxes

Provide a pull box with a pull string between every pair of adjacent access/pull locations; for every 180 degree bends in EMT conduit carrier; and every 100 feet of continuous conduit run.

a. Size pull boxes according to the size of the conduit, not the number of cables or conduits that enter/exit the pull box. NFPA 70 conduit fill standards do not apply.

b. Leave pull string in place throughout the conduit carrier, even after cable is pulled, in each horizontal and vertical run.

c. Seal all joints of pull boxes [by welding][with epoxy].

2.1.2 Secure Raceway Carrier

Provide secure raceway, fittings and components manufactured from ferrous material. Submit three 150 mm 6-inch lengths of exposed type PDS carrier surface mounted conduit material, including component and fitting samples from the manufacturer, along with a LOM to the Telecommunications Manager. Show finishes available (if applicable). PDS carrier that is comprised of Secure Raceway systems must be:

[2.1.2.1 Category 2 PDS (Hardened Carrier)

a. [Square][, or][rectangular] design with solid construction

b. [50 by 50 mm 2 by 2 inch raceway][50 by 100 mm 2 by 4 inch raceway] for horizontal backbone and vertical riser runs

c. [25 by 25 mm 1 by 1 inch][12 by 25 mm 1/2 by 1 inch] raceway for vertical user drops from horizontal backbone

d. Utilize elbows, couplings, fittings and connectors constructed from the same type of ferrous material as the secure raceway

e. Do not exceed 30 percent fill capacity of secure raceway of solid construction.

f. The carrier must not open to expose data cables, except at approved pull boxes and termination boxes.

]2.1.2.2 Fittings and Components

Fittings and components include internal and external elbows, tees, couplings for joining raceway sections, nipples, wire clips, blank end fittings, and device mounting brackets and plates as applicable. Provide full capacity corner elbows and fittings to maintain a controlled 50 mm 2-inch cable bend radius that meet the ANSI/TIA-569 specification for Fiber Optic and UTP cabling and exceeding the requirements for communications pathways.

2.1.2.3 Pull Boxes

a. Provide a pull box for secure raceway of solid construction every 180 degree change in direction. Provide additional pull boxes in accordance with the manufacturer's instructions. Pull boxes must have all joints [welded][epoxied]

****
NOTE: For low threat areas, retain 16 gauge. For medium threat areas, retain 14 gauge.
****

b. Pull boxes must be constructed of a ferrous metal with a minimum thickness of [16 gauge][14 gauge]. Pull boxes with pre-punched knockouts must not be used.

2.2 USER DROP BOX

Provide User Drop Box (UDB) (aka Secure User Workstation Enclosure, Drop Box, or Lockbox) that is at least 175 mm 7-inch high by 150 mm 6-inch wide by 100 mm 4-inch deep, tamper-resistant design constructed from [14][16] gauge steel with welded internal hinges, without pre-punched knockouts; and has a single door that has a built-in steel hasp that accepts a GSA approved changeable combination padlock. UDB must accommodate a complete line of open connectivity outlets; modular inserts for Category 6 UTP or STP cable; fiber optic cabling with matching faceplates. Provide STP cabling consisting of shielded connectors, jacks, and patch panels. UDB with exterior hinges, pre-punched knockouts, and built-in locks are not acceptable.

2.3 ENCLOSURES

Provide equipment and pull-box enclosures constructed from [14][16] gauge steel; have a single door with a built-in steel hasp or multi-point security hasp that accepts a GSA approved changeable combination padlock; without pre-punched knockouts; and a tamper-resistant design with welded internal hinges.

PART 3 EXECUTION

3.1 EXAMINATION

Examine the route and mounting locations of the raceways, boxes, distribution systems, supporting structure and accessories, to determine if conditions exist that will inhibit or prevent proper PDS installation and continued inspections after installation. Notify the Contracting Officer in writing of conditions detrimental to proper completion of the work (i.e. that would render the distribution system non-compliant with governing security regulations). Do not proceed with work until unsatisfactory conditions are corrected.

3.2 PDS CARRIER ROUTING

3.2.1 General

Route the PDS carrier in a tree type fashion.

a. Start the PDS horizontal backbone at the TR (SIPRNET TR or at IPS container location) with a single raceway or conduit sized accordingly (30 percent cable fill for EMT conduit and solid construction secure raceway) to contain telecommunciations cabling in accordance with Section 27 10 00 BUILDING TELECOMMUNICATIONS CABLING SYSTEM.

b. Extend the PDS carrier from the PDS horizontal backbone throughout the facility to areas where SIPRNET access is required. Branch off the PDS horizontal backbone with a horizontal run to an area where the UDB is located.

c. Use vertical carrier runs from the horizontal run to the UDB.

d. Use standard under-floor cable distribution methods in accordance with Section 27 10 00 BUILDING TELECOMMUNICATIONS CABLING SYSTEM to distribute SIPRNET cabling within Secure Room with raised flooring.

e. Maintain RED/BLACK cable separation in accordance with CNSSAM TEMPEST/1-13.

f. Remove all burrs from carrier segments prior to installation.

3.2.2 Distribution Topology

Use a distributed topology when designing the PDS carrier. Locating a small secondary network switch in an equipment enclosure mounted in a relay or equipment rack within a Controlled Access Area (CAA) space (i.e. SCIF, NOC/BOC, etc.) that has a high concentration of users is acceptable. Interconnect network switches using single-mode fiber optic cable. Increase the capacity of the network switch to provide service to adjacent spaces as required.

3.2.3 Adjacent Infrastructure Considerations

Keep conduit a minimum of 150 mm 6 inches from parallel runs of flues and steam or hot water pipes. A minimum separation of 150 mm 6-inches is required between the PDS carrier and water pipes, electrical wires, electrical pipes, plumbing, air conditioning, etc.

3.3 INSTALLATION

Strictly comply with manufacturer's installation instructions and recommendations and approved shop drawings. Coordinate installation with adjacent work to ensure proper clearances and compliance with project site manager and Telecommunications Manager.

3.3.1 Mounting PDS Carrier

[Surface mount PDS Conduit on the wall using conduit clamps, brackets, or mounts with a minimum of 12 to 25 mm 1-inch offset spacer from the wall surface. Mount PDS carrier to a wall partition every 1500 mm 5 feet and/or within 450 mm 18 inches of a section or component connection. Do not mount the PDS Carrier directly to the wall surface.

a. Bend (saddle or offset) conduit to follow wall contours and avoid wall obstacles (columns, pipes, etc.).

b. Use offset raceway to route secure raceway systems around columns and other wall partition obstacles.

c. Route PDS carrier so that it is surface mounted on interior walls wherever possible. Obtain exceptions from Telecommunications Manager prior to installation to mount PDS carrier on exterior wall partitions.

d. Do not mount PDS carrier to acoustical tile ceiling (ATC) framework.

e. Fasten PDS carrier and component items to building wall partitions per manufacturer's instructions for wall partition type, or as indicated.

f. Mount PDS carrier so that is is level and plumb along its route. The top edge of the carrier is horizontally level. Whenever possible maintain a minimum of 50 mm 2-inches below the suspended ceiling line or the true ceiling line, whichever is lower.

g. Use all-thread rod to mount the PDS carrier to true ceiling structure when routing across open areas (e.g. large hallways, open office areas, large rooms) that exceed 2400 mm 8 feet.

h. Struts are not allowed to be used to mount secure raceway or conduit to wall partitions.

i. Install the PDS carrier to permit visual inspections of its entire run.

j. Route PDS carrier to maximized cable fills in horizontal runs and reduce the number of horizontal runs within the same space.

k. Route the PDS carrier so that it does not cross windows or doorway openings; does not cross ceiling or wall mounted lighting fixtures; does not obscure EXIT signs or fire alarms; and maintains a minimum

1000 mm 3-foot separation from fire sprinkler heads.

l. Do not paint or cover the PDS carrier with wallpaper or other covering unless the paint is applied by the carrier manufacturer.

****
NOTE: Retain option for tape marking unless directed otherwise.
****

m. Mark at intervals not to exceed 9 feet 10 inches. Markings must consist of [tape][factory painted][cable tags]. Do not label the carrier as a PDS. Markings must not be red. PDS markings must be approved by the Telecommunications Manager prior to installation. Document approved markings on record drawings.

n. Bond PDS carrier to Telecommunications Secondary Bonding Busbar (SBB) or Primary Bonding Busbar (PBB) at point of origin.

[Alarmed Carriers may be concealed as long as compliance with CNSSI-7003 is maintained.]

][Burry the carrier a minimum of 1 meter 39 inches below the surface and on property owned or leased by the United States Government or by the U.S. contractor or vendor that controls the PDS. The buried carrier must enter the building through the building's concrete slab or basement wall. All portions of the PDS above the 1 meter 39 inch depth and not within a Controlled Access Area (CAA) must meet the requirements of a Category 2 Hardened Carrier. Manholes or any other access to the buried PDS must be secured with a PDS lock or an alarm.]

[Suspended carrier must be elevated a minimum of 5 meters 16 feet 4 inches above all obstructions. A suspended carrier must only be used if the property traversed is owned or leased by the United States Government or by a United States Government contractor or vendor that controls the PDS.]

3.3.2 Mounting Accessories

Mount secure raceways to the wall partition using 25 mm 1-inch stand-off mounting brackets or spacers. Do not mount the secure raceways flush with the wall partition.

[3.3.3 Fittings

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NOTE: Condulettes do not provide a 50 mm 2 inch bend radius except in larger sizes and listed as Mogul Pulling Elbows.
****

PDS conduit carrier fittings include; flat internal and external elbows; tees; condulette; pulling elbows; couplings for joining conduit sections; wire clips; blank end fittings; device mounting brackets; trim plates as applicable.

a. Provide full capacity corner elbows and fittings to maintain a controlled 50 mm 2-inch cable bend radius that meets the ANSI/TIA-569 specification for Fiber Optic and UTP/STP cabling for communications pathways.

[b. Use EMT conduit compression fittings and couplers to connect EMT conduit carrier sections, fittings and components together. Use of set screw connectors or set screw couplers to connect EMT conduit sections together is prohibited.

] c. All connections must be permanently sealed with a two part epoxy around all surfaces in accordance with CNSSI-7003. When the connection consists of more than one seam, then all seams must be sealed. The seal must provide a mechanical bond between components and must be visible.

]3.3.4 Through Wall Penetrating

a. Use trim plates threaded rigid pipe and locking rings on both the inside and outside of the raceway to secure the thru-wall penetration.

b. Provide non-conductive unions when penetrating secure room wall partitions.

c. Seal space between wall partition and through wall penetration using fire-stop material.

d. Fire-stop vertical risers and through wall penetrations of fire rated wall partitions after pulling cabling. Annotate firewall penetrations on PDS design.

3.3.5 Enclosures

Use of enclosures with pre-punched knockouts or external hinges is not acceptable. Fasten UDB, pull boxes, and enclosures to the wall partition using fasteners appropriate for the wall partition type.

3.3.5.1 User Drop Box (UDB)

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NOTE: Up to 6 cable connections may be terminated within the drop box as long as it is within 3.6 m 12 feet of the classified workstations and/or printers located in the same room.

****

a. Indicate UDB locations in the PDS Plan and on as-built drawings.

b. Size the UDB to terminate up to 6 cables. UDB must allow for all cable media bend radius and connector types when fully installed.

c. Coordinate drop box location with furniture, fixtures and equipment that will be used in the vicinity[(provided by others)]. Surface mount drop boxes on the wall partition approximately 1.2 to 1.5 m 4 to 5 feet above final floor line depending on room furniture height and layout.

3.3.5.2 Other Enclosures

Indicate enclosure type (user drop box, equipment, or pull-box) on shop and as-built drawings.

3.3.6 Mechanical Security

Comply with site specific epoxy standards obtained from the installation Telecommunications Manager. Apply a continuous bead of epoxy at all component, coupling, and fitting connection joints of PDS carrier system. Seal pull box covers to the pull boxes around the mating surfaces after installation if they cannot be secured with GSA approved changeable combination padlock.

3.3.7 Carrier Support

[Support carrier with mounting brackets at intervals [not to exceed 1.5 m 5 feet] [in accordance with manufacturer's installation sheets] and within 90 cm 3 feet of termination][Support armored cable in accordance with NFPA 70 article 320].

3.4 FIELD QUALITY ASSURANCE

3.4.1 Physical Inspection

Physically inspect all interfaces to ensure that they are tight and cannot turn. Also, physically inspect lock covers to ensure that the lock cap is properly sealed inside the locking mechanism.

[3.4.2 Magnetic Test

[For Category 1 PDS utilizing EMT][For Category 2 PDS] perform magnet test on all components (e.g. carrier conduit, carrier raceway, pull boxes, enclosures, conduit bodies, cover plates, etc) and fittings used to construct the carrier. Place a magnet on the carrier component or fitting to verify that construction is from ferrous material. Some alloys will fail the magnet test (e.g. 309 stainless steel) but meet the ferrous material requirements. Provide alloy material property list for components that fail magnet test to the Contracting Officer for approval. Use of components and fittings that fail the magnet test and are not made from ferrous material is not acceptable.

]3.5 CLEANING AND PROTECTION

Clean exposed surfaces using non-abrasive materials and methods recommended by manufacturer. Protect raceways and boxes until acceptance.

-- End of Section --