

August 2012

INTRODUCTION

This document establishes the standards of Office of Information and Technology (OI&T) for the installation of communications facilities in Bay Pines Veteran's Administration Healthcare System (BPVAHCS) while the standards are meant to apply particularly to new construction and major renovation projects, they should also be followed when wiring or rewiring existing buildings whenever it is practical. OI&T will act as communications consultant and review the plans for all BPVAHCS construction and renovation projects.

Reference material used in preparing this document includes standards that are published in several pre-existing documents, all containing related information from which a complete building wiring system is defined. This BPVAHCS OI&T Communication Closet and Cabling Minimum Specifications document take precedence over all others and shall be the defining document used going forward.

COMMUNICATIONS CLOSET SPECIFICATIONS

1. General

OI&T Communications closets house the wiring and electronic equipment that are used to connect user workstations to the BPVAHCS communications network. These closets are designed for and intended for the intra-building distribution of centrally managed telephone and data communications and ***in no instance shall they be used to support other building utilities or other non-OI&T system(s) or functions.*** OI&T Communications closets *must* be located so they can be accessed by their own OI&T keyed door from the hallway. OI&T Communication Closets may be placed adjacent to but not combined with electrical closets.

2. Dimensions

Sufficient space shall be provided at a minimum of 10' X 10' (no less than 100 sq. ft.), shall be provided on the floors where the Government occupies space for the purposes of terminating telecommunication services into the building. In areas where greater than 100 outlet locations are anticipated the closet shall be sized on a case-by-case basis. Ceilings shall be 9 ft. minimum in height; no false ceilings will be allowed. The OI&T communications closet must provide prevention of "Up & Over Access" for security purposes. Therefore, drywall must

Dimensions (Continued)

go from the floor to the top of the structural ceiling. The door shall be a minimum of 36" wide and 80" high, open outward, and be fitted with fitted with an automatic door-closer and deadlocking latch bolt with a minimum throw of ½ inch. Entrance must have a minimum unobstructed area of 48 inches directly in front of the closet door. Lock keying should meet OI&T specifications as appropriate. A magnetic card system may be requested in some cases in order to meet a particular requirement.

3. Interior Furnishings

All Communication closets shall be lined with (¾") "fire retardant" plywood (8') high on all walls with the bottom beginning two inches above the electrical outlets, (which should be 18" off floor). If Fire Retardant plywood is not available then regular ¾" plywood must be painted on all six sides with fire-retardant paint. It should be limited combustible as defined in NFPA 101, Chapter 3, Life Safety Code (NTE 25 Flame Spread). Floors, walls, and ceilings shall be treated to minimize dust. Paint or other surface finishes shall be of a texture and color such that room lighting is enhanced.

4. Lighting

Lighting shall be a minimum of 50-foot candles measured 3 feet above the finished floor, mounted 8.5 ft. above the finished floor. No wall-mounted lighting will be allowed.

5. AC Power

Three (3) dedicated 20-amp, double-duplex, 120 volt circuits electrical outlets shall be provided. (1) of the (3) electrical outlets to be installed in a data rack of the VA's choosing. Quad service outlets shall be placed at four (4) ft. intervals along the length of the four walls and 18 inches above the finished floor. Service panel location and breaker positions shall be clearly marked. Access shall be available to the main building-grounding electrode. Power for communications wiring closets should always be supplied from building emergency power systems whenever emergency power is available in a building. Some wiring closets in some buildings will need additional electrical power depending on special needs. These extra needs will be specified by OI&T during the review process.

6. Environment

The OI&T Communication rooms shall be provided with heating and cooling equipment capable of maintaining the internal space between 60 degrees F and 72 degrees F, with humidity control. The relative humidity shall not exceed 50 percent relative humidity non-condensing. Heating and cooling requirements shall include back up AC power capabilities the HVAC equipment shall be stand alone in design and accommodate a twenty four hour, seven-day week, 365 days per year operation, and remote alarming (loss of power, cooling and heating) functions. Wiring closet cooling cannot be controlled by energy management systems that cut off cooling when the building is not occupied. Minimum cooling requirement is 20,000 BT/H. A positive pressure shall be maintained with an air exchange sufficient to dissipate the heat generated by electronic/electrical equipment. Dissipated power will typically be less than 6,000 watts. When additional power is specified per Section 5 above, a corresponding increase in cooling capacity is required.

7. Closet Penetrations

The OI&T Communication closets require additional vertical risers from the Computer Room to each closet to support a separate backbone cable distribution system for data requirements. Conduit and path sizing shall be a minimum according to Telephone Backbone Guidelines herein. For further guidance on conduit requirements, consult with TCD-194D. Floor penetrations for vertically stacked closets shall be a minimum of two 4" penetrations per closet. Each penetration will include a bushed sleeve extending 1" above the finished floor. It is recommended that all penetrations be in clusters at a location in the closet stack specified by OI&T. Penetrations for horizontal conduit or cable tray runs which use ceiling pathways should be near the 8 ft. level. Additional penetrations may be needed depending on the density of network devices needed in a particular area. Fire Retardant procedures must be followed. See item 11 this section. Installation of the cable in conduit, raceway and cable tray(s) will not exceed the standard of 60% fill ratio.

8. Closet Linkage

When multiple closets exist on a single floor, these closets must be interconnected via horizontal cable pathways. If drop ceilings are used, the closets should be interconnected using cable ladder/tray that is 12 inches wide and 4 inches deep. In locations without drop ceilings a minimum of two four (4) inch conduits should be provided to implement the closet interconnection. A conduit system must include pull boxes at 100 foot intervals and after every pair of 90-degree bends. Conduits entering the closet through a 90-degree bend,

Closet Linkage (Continued)

whether from floor or ceiling, shall do so with a bend radius of 18 inches for 2' Inner Diameter (ID) or less. Conduits with greater than a 2" ID shall have a radius ten times conduit ID. Pull cords shall be provided in all conduits.

9. Closet-to-Wall Outlet Distance

The closet-to-wall outlet distance shall be a maximum of 290 cable-feet and for CAT6A maximum 328 cable-feet (100 meters). Multiple closets shall be provided where necessary to meet this requirement. Remember to include the vertical components of a cable path when calculating distances. The 290 foot limit is cable length and not simply floor path length.

10. Number of Closets Per Building

General rule of thumb is that one OI&T Communications closet shall be provided per 10,000 square ft. of administrative office floor space. For every *additional* 10,000 sq. ft. of administrative floor space served, there shall be an additional 10 linear ft. of wall space provided or an additional OI&T Communication closet. The choice will be determined by OI&T Communications manager and the Building Committee to best serve the needs of people destined to occupy the space.

11. Fire Code

Any wall penetrations must be sleeved and the appropriate fire rated protection used. Fire Retardant putty or caulk is required on both sides of the sleeve. Local fire code must be met as well as the main hospital..(Refer to latest BPVAHCS Facilities Management Firewall Penetration Policy-HPM 138-31 for restrictions).

12. Room Layout

All new voice and data cable shall be terminated in the OI&T Communication closet on appropriate Contractor provided Category 6 compliant 48 port patch panels (EIA/TIA 568A) with wire management to be provided for both vertical and horizontal management of cables and patch cords. Vertical wire management shall be provided on both sides of the equipment rack. Horizontal wire management shall be provided between each patch panel. All work to be done in accordance with the existing facility cable plant design. Each patch panel will have its own unique NT number, starting with the next highest unused number. One (1) 7' Category 6 patch cable shall be provided by the Contractor for each cable installed. Also to be installed in the OI&T Communications closet shall be three (3) standard 19" relay rack(s) floor mounted type. All associated cable

trays, ladder racks; vertical and horizontal wire and cable management are to be supplied. Relay racks with vertical and horizontal wire and cable management

Room Layout (Continued)

are to be supplied and installed. The racks are to be mounted using the appropriate Red Head® type expanding bolts and connected with ladder rack above the equipment racks around the entire OI&T Communications closet to the wall for transversal of the wiring from the ceiling to the center-mounted rack(s).

HORIZONTAL WIRING PATHWAYS

1. General

The term "horizontal wiring" refers to a number of cable types that run from a communications closet on a particular floor of a building to workstations on that floor. Where there are multiple closets on a floor, it can also include wiring-hub interconnection cables. These interconnection cables are typically some combination of copper and fiber optic cables. Careful design work on the horizontal cable pathways to minimize total cable length will help to lower wiring costs and in some cases might decrease the total number of wiring closets needed to serve a building.

2. Recognized Cables

The following cable types are recognized as intra-building horizontal wiring, see appendix for details.

- Category 6 twisted-pair cables
- FDDI-grade 62.5 micron multi-mode.

3. Color Codes

All voice and data cabling must conform to the existing BPVAHCS's color code:

- Blue used for Data cables, Cat 6

4. Ceiling Cable Pathways

Ceilings used as distribution pathways for horizontal cabling shall meet the following conditions:

- a. If a fixed ceiling has to be used as a cable route, properly sized conduit must be installed as a pass through.
- b. **Conduit Capacity:**
 - 4 inch conduit = 60 Category 6 cables
 - 3 inch conduit = 40 Category 6 cables
 - 2 inch conduit = 20 Category 6 cables
 - 1 inch conduit = 6 Category 6 cables
- c. Ceilings of lay-in tiles which allow easy access to a suitable space above are recommended. Suitable space is defined as that which supports the installation and ready use of a 12" open-frame cable ladder/tray. These cable ladders/trays should be installed in all hallways. Solid bottom cable trays are not to be used.
- d. Height of the cable ladder/raceway above the finished floor shall be no more than 11', where ever possible.
- e. Metal cable ladders/raceways shall be bonded to the building ground per applicable code.
- f. Plenum ceilings add to the cost of wiring a building since special type of cable must be used to meet fire codes.

5. Raceway-to-Workstation Outlet Cable Path

All locations for telephone and data jacks in the office space will need a $\frac{3}{4}$ " stub-up conduit with a 2 $\frac{1}{4}$ " (deep) box, or power pole depending on modular furniture arrangement. All existing abandoned phone/data cable must be removed. A 1" conduit shall be provided from the cable raceway area above the ceiling to a quad wall box, or quad boxes if specifically requested, for each workstation location. The quad box should be fitted with a mud ring to size it down to use a standard mudring faceplate. The conduit should be installed from the outlet box to the cable ladder/tray in main corridor. When no cable ladder/tray exists, a simple stub termination of the in-wall outlet conduit extending several inches into the ceiling space is preferred. A cable ladder/tray should be installed for all

addition and renovation projects. Enclosed raceways should not be installed as this restricts access. Pull ropes shall be installed in all conduits as part of the

Raceway-to-Workstation Outlet Cable Path (Continued)

conduit installation work. Daisy-chained systems that originate in the wiring closet and serve multiple outlets via a single conduit are not allowed.

6. Faceplate Jack Specifications

All faceplates are will to have (2) CAT 6 Data and (1) RJ-11 Voice. Arrangement on the faceplate shall be a single RJ-11 in the upper left corner, a blank in the upper right corner, and 2 RJ-45 CAT 6 jacks on the bottom. The white/blue cable pairs shall be terminated on the RJ-11 with the remaining pairs coiled in the jack for future use. Labeling of the workstation outlet jack shall include patch panel (NT) number and port number of the patch panel and shall be done with 3/8" P-touch labels.

BUILDING ENTRANCE TERMINATION SPACE

1. General

The building entrance room houses the facilities necessary to terminate the inter-building cable plant and to transition to the intra-building communications backbone cabling. Along with cable splice facilities, this room will also hold the lightening surge suppressors needed for the telephone system cable plant. The intra-building backbone cables run from this room via the vertical riser and horizontal pathways to the communications wiring closets throughout the building. In some cases this room may also serve as a wiring closet for the lower level of the building.

2. Dimensions

Sufficient space shall be provided at a minimum of 10' X 10' (no less than 100 sq. ft.), shall be provided for accommodating telecommunication services into the building. The ceiling shall be 9 ft. minimum in height; no false ceilings will be allowed. The OI&T communications switch room must provide prevention of "Up & Over Access" for security purposes. Therefore, drywall must go from the floor to the top of the structural ceiling. The door shall be a minimum of 36" wide and

80" high, open outward, and be fitted with fitted with an automatic door-closer and deadlocking latch bolt with a minimum throw of ½ inch. Entrance must have
Dimensions (Continued)

a minimum unobstructed area of 48 inches directly in front of the closet door. Lock keying should meet OI&T specifications as appropriate. A magnetic card system may be requested in some cases in order to meet a particular requirement.

3. Interior Furnishings

All Communication closets shall be lined with (¾)"fire retardant" plywood (8') high on all walls with the bottom beginning two inches above the electrical outlets, (which should be 18" off floor). If Fire Retardant plywood is not available then regular ¾" plywood must be painted on all six sides with fire-retardant paint. It should be limited combustible as defined in NFPA 101, Chapter 3, Life Safety Code (NTE 25 Flame Spread). Floors, walls, and ceilings shall be treated to minimize dust. Paint or other surface finishes shall be of a texture and color such that room lighting is enhanced.

4. Lighting

Lighting shall be a minimum of 50-foot candles measured 3 feet above the finished floor, mounted 8.5 ft. above the finished floor. No wall-mounted lighting will be allowed.

5. AC Power

A minimum of three (3) dedicated 20-amp, double-duplex, 120 volt circuits electrical outlets shall be provided. (1) of the (3) electrical outlets to be installed in a data rack of the VA's choosing. Quad service outlets shall be placed at four (4) ft. intervals along the length of the four walls and 18 inches above the finished floor. Service panel location and breaker positions shall be clearly marked. Access shall be available to the main building-grounding electrode. Power for communications wiring closets should always be supplied from building emergency power systems whenever emergency power is available in a building. In cases where this room also serves as a wiring closet, the additional electrical power requirements for a wiring closet must also be met. These extra needs will be specified by OI&T during the review process.

6. Environment

In cases where the Building Entrance room is also acts as a wiring closet, the cooling specifications for a normal wiring closet must also be met.

7. Entrance Pathway Sizing

The size of the pathways, if any, between the building entrance point and the Building Entrance room shall be the same as the actual facilities that enter the building. This is generally two 4" conduits. Installation of the cable in conduit, raceway and cable tray(s) will not exceed the standard of 60% fill ratio.

8. Closet Linkage

A backbone/riser cable pathway having the capacity of two (2) 4" conduits minimum shall be established between the Building Entrance Facility and *one of the N* vertically stacked closets configured as described in Sections 7 and 8 of the Communications Closet Specification portion of this document. If wiring closets are not stacked and positioned at random throughout a building, a 12" wide by 4" deep ladder rack/tray shall be provided from the entrance facility to each closet.

9. Local Exchange Carrier Requirements:

The Contractor shall provide a four (4) inch entrance conduit, dedicated for local exchange carrier ability to provide BPVAHCS with fiber based services, to be in place from the local exchange carrier right-of-way to the building and, a pathway or conduit from the building entrance point to the OI&T Communication closet. This is in addition to any other requirements the local exchange carrier has to provide copper based services.

HORIZONTAL WIRING COMPONENTS

1. General

Horizontal wiring is that portion of the building communications infrastructure which supports signal transmission from the communications closet to the user workstation. Included in this section are the closet-to-workstation cable, communications closet termination hardware, and workstation wall outlet hardware. Layout of the Communications Closet switch rooms, wire closets, and related spaces shall be agreed on by the VAMC (OI&T) and the Contractor before any termination of any Data/Voice cables located in the closets shall take place. The Contractor shall provide and ensure that all outlets and associated wiring, copper, optical fiber, CAT 6, or other transmission medium used to

transmit telecommunications (voice, data, video, internet, or other emerging technologies) service to the workstation shall be safely concealed under raised floors, in floor ducts, walls, columns, or molding. All outlets and/or junction

General (Continued)

boxes shall be provided with rings and pull strings to facilitate the installation of cable. Some transmission medium may require special conduit, inner duct, or shielding as specified by BPVAHCS OI&T Telecommunications Manager.

2. Closet-to-Workstation Cable Types

Recognized horizontal cable types are Category 6 twisted-pair cable, 62.5 micron optical fiber, or other special cable types as specified by OI&T and/or HS/CS. See appendix.

3. Installed Cable

Telecommunications floor or wall outlets shall be provided as required. A minimum of (3) Category 6 cables will be provided for each station location. (2) Of the Category 6 cables used for data and (1) Category cable used for voice and shall meet the following BPVAHCS standards listed below. Fiber shall be installed as specified on a case-by-case basis. Horizontal pathways from closet to the workstation outlets shall be sized to accommodate all three media types; exposed wiring is not allowed. Some locations may require more than four twisted-pair cables per outlet.

4. Twisted-pair Closet Terminations

Four pair unshielded twisted pair 24 AWG station wiring shall be installed from each voice and data jack to the OI&T Communication closet and shall be of a type designated to support Category 6 data communications (not less than 100 MHz/100 Mbps) The wiring shall be terminated in the OI&T Communications closet using a rack-mounted 48 port patch panel (EIA/TIA 568A). Data pair cross-connects shall use Category 6 components, including cordage, and be arranged such that any user workstation can access any communications hub port. See the appendix for details.

5. Twisted-pair Wall Outlet Terminations

All station side voice cables shall be terminated on RJ-11 and station side data outlets shall be Category 6-compliant eight position RJ-45 non-keyed (EIA/TIA 568A) flush mount jacks in a wall plate. The voice and data jack wall plate type and positions shall conform to the existing VAMC cable plant scheme. (See

Appendix: Wall Plate and Outlet Diagrams) The outlet wall plate shall be part of a modular system that supports twisted-pair and fiber.

Twisted-pair Wall Outlet Terminations (Continued)

See appendix for details. Some locations may require specialized terminations as specified by OI&T and/or HS/CS.

6. Communications Outlet Density

The Contractor shall install four (4) communications outlets per 100 sq. ft. of assignable office space. In all other areas, communications outlets to be provided as required. Interaction with the department that will occupy the space is essential when determining the number and location of communications outlets. In addition the Contractor will provide an additional five telephone outlets to be included as part of the total contract (locations to be designated by BPVAHCS).

7. Communications Outlet Restrictions

The splitting of pairs within a data cable between different data jacks shall not be permitted. The splitting of pairs within a voice cable shall be permitted only in the same station outlet. The installation of the cable shall conform to appropriate OEM, ANSI/EIA/TIA/BICSI recommendations, standards and existing VAMC facility scheme. This requirement will insure adequate protection for Electro-Magnetic Interference (EMI) sources

8. Communications Outlet Labeling/Testing/Proofing

All new voice and data cable shall be labeled on each end. The station side label will consist of patch panel number and port number of the patch panel. An end-to-end certification test will be performed on all voice/data cable in accordance with EIA/TIA TSB 67, using a Level II tester (accurate to 2db) will be conducted on all installations. Test results for all data wiring shall be provided to BPVAHCS in printed and electronic format that can be read without the need for special software.

9. Preferred Equipment Listing

Bay Pines VAHCS Preferred station outlet equipment can be found in the Appendix: Station Outlet Specifications

Building Backbone Cabling

1. General

Building backbone cabling refers to the intra-building communication trunk system. The system consists of multi-pair telephone riser cable, optical fiber cable, and in some cases Category 6 twisted pair cabling. These cables bring the various communications services from the building entrance facility to the communications closets on each floor from whence they are distributed via the horizontal wiring systems to the individual user outlets.

2. Intra-building Data Backbone

The data network backbone cable installed shall be 62.5 micron multi-mode fiber optic cable. No in-building distance limitations apply.

3. Intra-building Telephone Riser

Telephone risers shall be unshielded twisted pair CMR rated cable. Four pairs per 100 sq. ft. of assignable space shall be provided to each floor if the exact number of telephones required is unknown. If the number of telephones required is known, allow for 200 percent growth.

4. Voice Cable Termination

All new voice cables shall be terminated in the OI&T Communication closet on appropriate contractor provided 66-M Split 25-pair punch down block along with the associated 89-D stand-off brackets with cross-connect wire management. All voice cables shall be terminated on rows of three 66 blocks vertically. Numbering sequence starts on left side of the first block 1-6, second block 7-12, third block 13-18. Right side of first block 14-24, second block 25-30, third block 31- 36. Example: more than 6 cables being installed you must use a second 66 block. More than 13 cables being installed you must use a third 66 block.

5. Grounding

Telecommunications switch rooms, wire closets, and related spaces shall meet applicable NFPA standards. Bonding and grounding shall be in accordance with NFPA Standard 70, National Electrical Code, and other applicable NFPA standards and/or local code requirements. A single-ground bus bar (mounted according to the agreed upon closet layout) shall be installed.

Standards

1. General

This section contains comments on a variety of industry standards that need to be complied with.

2. Industry Standards

There are a number of agencies and professional standards issuance committees whose standards must be met in order to complete work here at BPVAHCS. Telecommunications switch rooms, wire closets, and related spaces shall meet applicable Telecommunications Industry Association (TIA), Electronic Industries Alliance (EIA) standards and National Communications System (NCS) standards, as well as the Building Industry Consulting Service International (BICSI) Standards design manuals. These standards include but not limited to the following:

- TIA/EIA-568, Commercial Building Telecommunications Cabling Standard.
- TIA/EIA-569, Commercial Building Standard for Telecommunications pathways and Spaces.
- TIA/EIA-570, Residential and Light Commercial Telecommunications Wiring Standard
- TIA/EIA-607, Commercial Building Grounding and Bonding requirements for Telecommunications Standard

See a complete listing of all standards to be met in the Appendix: Standards Publications. Sections A, B & C.

Miscellaneous Topics

1. General

This section contains comments on a variety of topics pertaining to building wiring that do not fit exclusively (at this time) under one of the five main headings.

2. Documentation

There shall be a signed and dated layout plan between the VA OI&T and the Contractor. The Contractor will provide as-built drawings after the cabling is complete. (Locations of all voice/data outlets and numbers) Documentation shall be computer based and include both schematic and table forms. Elements of the building infrastructure to be documented shall be chosen based on local requirements and with reference to the TIA/EIA-606 infrastructure administration standard. A documentation maintenance program shall be developed and put into effect.

3. Proximity to EMI Sources

Communications closets and wiring pathways shall not be located in close proximity to sources of electromagnetic interference. Special attention shall be given to potential EMI sources such as large electric motors, welding equipment, etc. Wiring pathways shall be at least 12" from unshielded power lines of <480 volts and at least 5" from fluorescent lighting fixtures.

Appendix: Fiber Specifications

Intra-building Fiber Cable

All fiber shall be Corning multimode graded index fiber with a 62.5/125 micron core/cladding diameter, buffered to 900 microns, and housed in a UL, OFNR rated jacket.

Minimum Performance Specifications for Multi-mode cable

Wavelength (nm)	Attenuation (dB/Km)	Capacity (MHz-Km)
850	3.75	160
1300	1.5	500

Approved cable: SEICOR Inc., MIC series fiber optic cable.

Appendix: Station Cable Specifications

Wiring closet-to-workstation cable shall have four (4) twisted-pair and meet all EIA Category 6 specifications.

	Attenuation @ 100 MHz	Next Loss @ 100 MHz
Minimum Performance Specifications	67 dB/1000 ft.	32 dB @ 1000 ft.

Minimum Approved Cable Types

Cable Application	Approved Cable Model
Normal cable use	Mohawk/ M58292

BAY PINES VETERAN'S ADMINISTRATION OFFICE of INFORMATION and TECHNOLOGY (OI&T)
Communication Closet and Cabling Minimum Specifications

Preferred Station Outlet Equipment

Unit	Manufacturer/Model#
Face Plates	Panduit/ CFPE4EIY (Ivory)
Single RJ-45 Cat 6 Jack	Panduit/ CJ688TPBU (Blue)
Single RJ-11 Cat 3 Jack	Panduit/ CJ66BLY (Black)
Blank	Panduit/ CMBEI-X (Ivory)
24/48 Port Patch Panel	Panduit/ DPxx688TG

The faceplate color of choice is Ivory

Preferred Closet/Rack Equipment

Unit	Manufacturer/Model#
36/72 Port LIU w/locking cover	Ortronics
Horizontal Wire Management	Panduit/WMPFSE
Vertical Wire Management	Panduit/ WMPVF45E
19" Telecomm Rack	Chatsworth

BAY PINES VETERAN'S ADMINISTRATION OFFICE of INFORMATION and TECHNOLOGY (OI&T)
Communication Closet and Cabling Minimum Specifications

Appendix: Standards Publications

Electronics Industry Associations/Telecommunications Industry Association (EIA/TIA) publications

EIA/TIA-568	Commercial Building Telecommunications Wiring Standard
TSB-36	Technical Systems Bulletin: Additional Cable Specifications for Unshielded Twisted-Pair Cables.
TSB-40	Technical Systems Bulletin: Additional Transmission Specifications for Unshielded Twisted-Pair Connecting Hardware.
EIA/TIA-569	Commercial Building Standard for Telecommunications Pathways and Spaces.
EIA-570	Residential and Light Commercial Telecommunications Wiring Standard.
EIA-606	The Administration Standard for the Telecommunications Infrastructure of Commercial Buildings.

A)

EIA/TIA 568A	Commercial Building Telecommunications Wiring Standards.
EIA/TIA 569	Commercial Building Standard for Telecommunications Pathways and Spaces.
EIA/TIA TSB 72	Centralized Optical Fiber Cabling Guidelines.
EIA/TIA 606	Administration Standard for the Telecommunications Infrastructure of Commercial Buildings.
EIA/TIA 607	Commercial Building Grounding and Bonding Requirements for Telecom.
EIA 310-D	Cabinets, Racks, Panels, and Associated Equipment.
EIA/TIA 455-57A	Optical Fiber End Preparation and Examination.
EIA/TIA 455-59	Measurement of Fiber Point Defects Using an OTDR.
EIA/TIA 455-60	Measurement of Fiber Cable Length Using an OTDR.
EIA/TIA 455-6	Measurement of Fiber Cable Attenuation Using an OTDR.
EIA/TIA 455-95	Absolute Optical Power Test for Optical

BAY PINES VETERAN'S ADMINISTRATION OFFICE of INFORMATION and TECHNOLOGY (OI&T)
Communication Closet and Cabling Minimum Specifications

	Fibers and Cables.
EIA/TIA 526-14	Optical Power Loss Measurements of Installed Multimode Fiber Cable.

B)

ANSI/ICEA S-83-596-1994 - Fiber Optic Premise Distribution Cable Technical Requirements.

C)

Installation shall be performed in accordance with the following applicable standards:

1. Applicable codes and regulations of the Government of the State of Florida and of the City of Tampa.
2. Building Officials and Code Administration National Code (BOCA).
3. Electronic Industries Association (EIA).
4. Institute of Electrical and Electronic Engineers (IEEE).
5. National Electrical Code (NEC).
6. National Fire Protection Association (NFPA).
7. National Electrical Manufacturers Associations (NEMA).
8. Occupational Safety and Health Administration (OSHA).
9. Telecommunications Industries Association (TIA).
10. Underwriters Laboratories (UL).
11. Building Industry Construction Standards Institute (BICSI).