

\*\*\*\*\*  
USACE / NAVFAC / AFCEA / NASA UFGS-33 81 27 (April 2006)  
-----  
Preparing Activity: NAVFAC Replacing without change  
UFGS-16722 (August 2004)

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMLR dated 18 July 2006

Latest change indicated by CHG tags.

\*\*\*\*\*

SECTION TABLE OF CONTENTS

DIVISION 33 - UTILITIES

SECTION 33 81 27

PIER TELEPHONE DISTRIBUTION SYSTEMS

04/06

PART 1 GENERAL

- 1.1 REFERENCES
- 1.2 RELATED REQUIREMENTS
- 1.3 TELEPHONE SERVICE
- 1.4 SUBMITTALS

PART 2 PRODUCTS

- 2.1 MATERIALS AND EQUIPMENT
- 2.2 CONDUIT
- 2.3 TELEPHONE CABLE
- 2.4 CLOSURES AND PAD-MOUNTED CROSS CONNECT TERMINAL CABINETS
- 2.5 FIBERGLASS ENCLOSURE
- 2.6 PIER TELECOMMUNICATION OUTLET ASSEMBLIES
  - 2.6.1 Doors
  - 2.6.2 Pier Telephone Receptacles
  - 2.6.3 Nameplates
  - 2.6.4 Cable Tags
  - 2.6.5 Ventilators
- 2.7 PAD-MOUNTED CROSS CONNECT TERMINAL CABINETS

PART 3 EXECUTION

- 3.1 INSTALLATION
  - 3.1.1 Contractor Damage
- 3.2 FIELD QUALITY CONTROL
  - 3.2.1 Acceptance Tests

-- End of Section Table of Contents --

\*\*\*\*\*  
USACE / NAVFAC / AFCEA / NASA UFGS-33 81 27 (April 2006)  
-----  
Preparing Activity: NAVFAC Replacing without change  
UFGS-16722 (August 2004)

## UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated 18 July 2006

Latest change indicated by CHG tags.

\*\*\*\*\*

### SECTION 33 81 27

#### PIER TELEPHONE DISTRIBUTION SYSTEMS 04/06

\*\*\*\*\*

NOTE: This guide specification covers the requirements for pier telephone distribution work.

Comments and suggestions on this guide specification are welcome and should be directed to the technical proponent of the specification. A listing of technical proponents, including their organization designation and telephone number, is on the Internet.

Recommended changes to a UFGS should be submitted as a Criteria Change Request (CCR).

Use of electronic communication is encouraged.

Brackets are used in the text to indicate designer choices or locations where text must be supplied by the designer.

\*\*\*\*\*

\*\*\*\*\*

NOTE: This guide specification does not cover all possible methods or requirements for providing facilities nor does it cover telephone handsets or switching equipment. This guide specification should be used in conjunction with Section 33 82 00 TELECOMMUNICATIONS OUTSIDE PLANT, Section 26 05 33 DOCKSIDE POWER CONNECTIONS STATIONS, Section 16303N UNDERGROUND ELECTRICAL WORK, (use for LANTNAVFACENGCOM Projects in lieu of 33 71 02.00 20) and Section 33 71 02.00 20 UNDERGROUND TRANSMISSION AND DISTRIBUTION. Before preparing plans and specifications for a specific project, consult Unified Facilities Criteria (UFC) 4-150-02 Design: Dockside Utilities for ships' demand and telecommunication systems requirements.

\*\*\*\*\*

\*\*\*\*\*

NOTE: This section contains the following sketches

and are available in metric (SI) and U.S. Customary (IP) system dimensions. Sketch titles and style numbers are unchanged for both types. The metric values indicated are a conversion of the IP system dimensions.

Do not include list of sketches, or sketches themselves, in project specifications. If special features are required for a project, do not modify sketches, but indicate these changes on notes in schedule. The "TL" style numbers and dates should remain on the drawing details.

NOTE: Index Date: November 1990

#### List of Sketches

Sketch Number	Title
TL-1	Typical Pier - Plan
TL-2	Pier Telecommunication Outlet Assembly - Elevation and Section
TL-3	Pier Telecommunication Outlet Assembly - Plan and Section
TL-4	Telephone Connector Detail and Notes

NOTE: Do not include index in project specification.

\*\*\*\*\*

\*\*\*\*\*

NOTE: TO DOWNLOAD UFGS GRAPHICS

Go to <http://www.wbdg.org/ccb/NAVGRAPH/graphdoc.pdf>.

\*\*\*\*\*

\*\*\*\*\*

NOTE: The following information shall be shown on the project drawings:

1. Where specification identifies type, size, color, finish, or other definitive information to be "as indicated" the engineer shall show the information on the drawings.

2. Location of pier telecommunication outlet assemblies, manholes, handholes, ducts, and cables.

3. Types of wire and cable; number and sizes of conductors and conduits.

4. Special conditions.

\*\*\*\*\*

## PART 1 GENERAL

### 1.1 REFERENCES

\*\*\*\*\*

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 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.

\*\*\*\*\*

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 A 167 (2004) Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip

INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)

IEEE C2 (2005) National Electrical Safety Code

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (2005) National Electrical Code

U.S. DEPARTMENT OF DEFENSE (DOD)

MIL-C-28840 (Rev A; Notice 6; Supp 1) Connectors, Electrical, Circular Threaded, High Density, High Shock, Shipboard, Class D

MIL-C-28840/12 (Rev C; Am 1; Notice 1) Connectors, Electrical, Screw Threads, High Density High Shock, Shipboard, Crimp Contacts Receptacle, Mounting Box, Classes D and DS

1.2 RELATED REQUIREMENTS

\*\*\*\*\*

NOTE: Coordinate with Sections 33 71 02.00 20 UNDERGROUND TRANSMISSION AND DISTRIBUTION, Section 33 71 01 OVERHEAD TRANSMISSION AND DISTRIBUTION, 26 05 33 DOCKSIDE POWER CONNECTIONS STATIONS, and 33 82 00 TELECOMMUNICATIONS OUTSIDE PLANT. If manholes, handholes, and vaults are required for the project, show them on plans and specify them in the appropriate specifications section.

\*\*\*\*\*

Section 26 00 00.00 20 BASIC ELECTRICAL MATERIALS AND METHODS applies to this section with additions and modifications specified herein.

### 1.3 TELEPHONE SERVICE

\*\*\*\*\*

NOTE: Indicate where the cable system is to be cross connected to the Naval Station system. If a waterfront cross connection facility is provided, pier cables will be terminated at that facility. This specification envisions that the ship to shore receptacles cable will be isolated from the pier cable at the pier telecommunication outlet assembly and that the pier cable can be isolated from the Naval Station system at a cross connect module ashore between the pier and the mainframe. The mainframe and other telephone equipment are not specified in this section.

\*\*\*\*\*

Telephone service to the pier shall be terminated at the [mainframe] [or] [waterfront telephone cabinet] of the facility. [Terminate telephone cable at the mainframe.] [Telephone cable shall be terminated within the facility by others. Provide sufficient slack in cable so that each pair can be neatly routed and terminated in the telephone cabinet.]

### 1.4 SUBMITTALS

\*\*\*\*\*

NOTE: Review submittal description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list to reflect only the submittals required for the project. Submittals should be kept to the minimum required for adequate quality control.

A "G" following a submittal item indicates that the submittal requires Government approval. Some submittals are already marked with a "G". Only delete an existing "G" if the submittal item is not complex and can be reviewed through the Contractor's Quality Control system. Only add a "G" if the submittal is sufficiently important or complex in context of the project.

For submittals requiring Government approval on Army projects, a code of up to three characters within the submittal tags may be used following the "G" designation 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, Air Force, and NASA projects.

Choose the first bracketed item for Navy, Air Force

and NASA projects, or choose the second bracketed item for Army projects.

\*\*\*\*\*

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are [for Contractor Quality Control approval.] [for information only. When used, a designation following the "G" designation identifies the office that will review the submittal for the Government.] The following shall be submitted in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Pier telecommunication outlet assemblies[; G][; G, [\_\_\_\_]]

SD-03 Product Data

Pier telephone receptacles[; G][; G, [\_\_\_\_]]

SD-06 Test Reports

Acceptance tests[; G][; G, [\_\_\_\_]]

Submit within 3 working days after the tests for each segment of construction are completed.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

Provide materials and equipment listed by Underwriters Laboratories (UL) or approved by Factory Mutual Engineering and Research (FM), when such equipment is listed by UL or approved by FM.

2.2 CONDUIT

Provide as specified in Section [33 82 00 TELECOMMUNICATIONS OUTSIDE PLANT] [33 71 02.00 20 UNDERGROUND TRANSMISSION AND DISTRIBUTION].

2.3 TELEPHONE CABLE

\*\*\*\*\*

NOTE: If other cable types are required for the project, such as coaxial or fiber optic, refer to the appropriate section or insert the cable descriptions here under the title: "Communications Cable."

\*\*\*\*\*

Provide as specified in Section 33 82 00 TELECOMMUNICATIONS OUTSIDE PLANT.

2.4 CLOSURES AND PAD-MOUNTED CROSS CONNECT TERMINAL CABINETS

Provide as specified in Section 33 82 00 TELECOMMUNICATIONS OUTSIDE PLANT.

2.5 FIBERGLASS ENCLOSURE

Provide as specified in Section 33 82 00 TELECOMMUNICATIONS OUTSIDE PLANT.

## 2.6 PIER TELECOMMUNICATION OUTLET ASSEMBLIES

Assemblies shall include telephone cross connect modules, receptacles, and nameplates. The pier telecommunication outlet assembly shall be a freestanding 9.525 mm 3/8 inch welded stainless steel plate enclosure. Stainless steel shall conform to ASTM A 167. Assemblies shall be provided with lifting eyes. The location and number of pier telecommunication outlet assemblies and telecommunication outlet receptacles shall be as indicated. Equip the telephone section of the outlet assembly with "push on" cross connect modules to connect the telephone cables and ship to shore receptacles as indicated. Metal work shall conform to requirements of Section 05 50 00 METAL: MISCELLANEOUS AND FABRICATIONS.

### 2.6.1 Doors

Provide doors with a door latch mechanism having padlocking provisions. Doors shall be of identical material and construction as pier telecommunication outlet assemblies. Door locking provisions shall result in snug fit of door to frame, with means provided on each door for [padlock] [or] [pental bolt lock] [or] [a combination pental bolt padlock].

### 2.6.2 Pier Telephone Receptacles

\*\*\*\*\*  
NOTE: Receptacles and plugs may be supplied as  
Government-furnished equipment to the Contractor and  
are available from the Federal Supply System.  
\*\*\*\*\*

The telephone outlet receptacles and matching plugs shall conform to MIL-C-28840 and MIL-C-28840/12. Telephone outlet receptacles shall be part number [MIL-C-28840/12 BF1S1] [and] [MIL-C-28840/12 BD1S1] as indicated. The ship to shore telephone cable receptacles shall be box mounted in the pier telecommunication outlet assemblies as indicated. Provide sufficient support of the box-mounted receptacles to prevent cable strain on terminated contacts within the receptacles. Provide one matching plug assembly (compatible with receptacle) suitable for future connection to flexible cable with each receptacle. Plug assemblies shall be turned over to the Contracting Officer. Provide receptacles with a matching weatherproof cap secured to the receptacle by a stainless steel wire or chain.

### 2.6.3 Nameplates

\*\*\*\*\*  
NOTE: Obtain legends and cable designations from  
Naval Station Telephone Officer.  
\*\*\*\*\*

Provide laminated plastic nameplates for the enclosures at the locations indicated with the following legends:

[\_\_\_\_]  
[\_\_\_\_]  
[\_\_\_\_]  
[\_\_\_\_]

Provide nameplates for individual receptacles referenced to the cable feeding the receptacle. Nameplate material shall conform to Section

26 00 00.00 20 BASIC ELECTRICAL MATERIALS AND METHODS.

#### 2.6.4 Cable Tags

Cable tags shall be stainless steel 41.27 mm 5/8 inches in diameter, 1.588 mm 1/16 inch thick, and circular in shape.

#### 2.6.5 Ventilators

\*\*\*\*\*  
NOTE: Design air transfer ventilators to suit the project location. Show size, number, and location of ventilators on project plans.  
\*\*\*\*\*

Ventilators shall be of size, number, and location to allow proper transfer of air through the enclosure while excluding water. Provide perforated screens of stainless steel backed with suitable internal baffles to prevent entrance of foreign objects.

#### 2.7 PAD-MOUNTED CROSS CONNECT TERMINAL CABINETS

\*\*\*\*\*  
NOTE: Pad-mounted cabinets should be provided ashore near the head of the pier when the next cross connect point is excessively distant. Loading coils, when required, shall be selected to match the local telephone system requirements.  
\*\*\*\*\*

Provide as specified in Section 33 82 00 TELECOMMUNICATIONS OUTSIDE PLANT.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

Conform to IEEE C2, NFPA 70, and Section 33 82 00 TELECOMMUNICATIONS OUTSIDE PLANT except as indicated.

##### 3.1.1 Contractor Damage

Promptly repair indicated utility lines or systems damaged during site preparation and construction. Damages to lines or systems not indicated, which are caused by Contractor operations, shall be treated as "Changes" under the terms of the Contract Clauses. When the Contractor is advised in writing of the location of a nonindicated line or system, such notice shall provide that portion of the line or system with "indicated" status in determining liability for damages. In every event, immediately notify the Contracting Officer of damage.

#### 3.2 FIELD QUALITY CONTROL

Notify the Contracting Officer [10] [\_\_\_\_\_] working days prior to [each] [\_\_\_\_\_] test. Provide labor, equipment, and incidentals required for testing. Correct defective material and workmanship disclosed as the results of the tests. Perform testing as construction progresses and do not wait until construction is complete before starting field tests.



### 3.2.1 Acceptance Tests

Where telephone cable is installed under this contract, test for continuity through plug and receptacle assembly and for correct pair location on ship to shore cable compared to pigtail on receptacle.

-- End of Section --