897.13 DPWH
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REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
OFFICE OF THE SECRETARY
MANILA

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DEPARTMENT ORDER)
)
NO. 148)
Series of 2017 12.18.17)

SUBJECT: DPWH Standard Specification for Item 1110 – Nurse Call System

It has been the thrust of the Department to provide effective standard specifications in the implementation of various infrastructure projects. As such, there is a need to set a standard specification for the proper installation and connection of network cabling system. The attached **DPWH Standard Specification for Nurse Call System, Item 1110** is hereby prescribed for the guidance and compliance of all concerned.

This specification shall form part of the on-going revision of the DPWH Standard Specifications for Public Work Structures – Buildings, Ports and Harbors, Flood Control and Drainage Structure and Water Supply Systems, Volume III, 1995 Edition.

This Order shall take effect immediately.

MARK A. VILLAR
Secretary

14.1.2 FET/RGT

Department of Public Works and Highways
Office of the Secretary
WIN7U01551

DPWH STANDARD SPECIFICATION
FOR ITEM 1110 – NURSE CALL SYSTEM

1110.1 Description

This Item shall consist of furnishing and installation of Nurse Call System, equipment and associated components to form a complete coordinated system ready for operation in health care facilities in accordance with the Plans and Specifications.

1110.2. Definition

1110.2.1 Nurse Call System

Nurse call system primarily provides means for a patient to signal the nursing staff that assistance is needed. Additionally, nurse call system shall provide means for communications between staff members to serve administrative as well as emergency signaling requirements.

1110.2.2 Types of Systems

1110.2.2.1 Tone Visual Nurse Call System (TVS)

A tone visual nurse call provides audible signaling and visual annunciation of patient calls. Two (2) call priority levels are possible (normal calls and emergency calls from toilet emergency stations). Tone visual systems are used primarily in hospital ancillary areas such as physical therapy, radiology, hydrotherapy and emergency departments or other treatment areas where patients may be left unattended and where voice communication to a central location is not required by the staff.

1110.2.2.2 Audiovisual Nurse Call System (AVS)

An audiovisual nurse call system provides audible signaling, visual annunciation, patient-to-staff communication, staff-to-staff communication, and intercommunication between master station annunciators.

Audiovisual systems can be divided into two (2) basic groups: basic hardwired systems and microprocessor-controlled systems. Microprocessor-controlled systems can provide more levels of calls on the system, can be programmed for swing room and call transfer, and have reduced cabling requirements over hardwired systems.

1110.3 Material Requirements

1110.3.1 General

The nurse call system shall be audiovisual type or tone visual type. All nurse call equipment, conduits, switching devices, wires and cables shall conform to the Philippine Electrical Code (PEC), ANSI /UL 1069, Safety Standard for Hospital Signaling and Nurse Call Equipment and the Manufacturer's recommendations.
All nurse call equipment shall be from an authorized Manufacturer to maintain compatibility of equipment in a system.

1110.3.2 Area Control Unit (ACU)

The area control unit (ACU) shall enclose all equipment for automatic switching, storage, logic, signaling, circuit protection system and interconnection circuitry required to provide specified nurse call functions and shall be mounted in a suitable cabinet complete with hinged locking cover.

All equipment shall be completely solid state, using integrated circuits, and other semi-conductor devices for all service functions and shall provide bi-directional data and audio between associated stations and to the nurse call network.

The switching, storing, amplifying and signaling circuitry shall be mounted on modular printed circuit boards and contain the following:

1. Solid state flasher circuitry and tone generators to provide a source of intermittent visual and audible annunciation.
2. Solid state audio amplifier with independent talk/listen controls. Voice switching to be performed by a transistorized switching circuit. Sensitivity control to be provided to set level of operation.
3. Automatic Voltage Regulator

Power supplies shall be provided for each control unit equipment. Power supplies shall be designed for continuous duty operation, overload protected, filtered and regulated so that emergency AC supply transients do not affect system operation and shall be in accordance with the Philippine Electrical Code (PEC).

1110.3.3 Nurse Call Console

The nurse call system shall be designed to have one (1) or more UL 1069 listed LED nurse call consoles. It shall have three (3) panel sizes available; 28, 56, and 112 zones. Each zone shall have a dedicated RBG LED. The nurse call console shall be wall mounted or desk mounted. The construction must be powder coated steel in white or ivory.

The nurse console shall have a customizable template for names and/or room numbers to identify the calling locations. There shall be a built-in adjustable sounder with a three (3)-position switch for high, low and mute tone. The tone silence shall be momentary and re-activate automatically with another call.

The nurse call console shall have a LED power indicator and a system power loss LED and sounder for power supervision.

1110.3.4 Patient Bed Station

The patient bed station shall be pendant type wall/panel recessed or surface mounted station for patient/staff communications. Stations shall be for single patient use only, with privacy mode in addition to the standard system features. A receptacle on the station shall accept a cordset with a single prong plug or multi-purpose controls as indicated.

A cordset, pendant control, shall be provided at each patient bed station, with the required operational capabilities as indicated.

1110.3.5 Corridor Dome Lights and Zone Lights

Corridor dome lights and zone lights shall either be wall or ceiling mounted, with colored lens or bulbs as indicated.

The lenses shall be multi-section with translucent plastic lenses with opaque partitions separating the sections.

LED indicators shall be capable of producing a minimum of six (6) configurable colors per the following schedule and shall be customizable:

1. Flashing (Slow) White – Routine Call
2. Flashing (Fast) White – Priority Call
3. Red – Emergency Pull Cord Station, Cord Out, Staff Emergency

1110.3.6 System Wiring

All wiring shall comply with the same standards as the nurse call equipment and with the recommendations of the system Manufacturer. All wiring shall be free from shorts and faults.

Wires and cables shall be insulated to prevent contact with signal or current carrying conductors and shall be 99.9% shielded.

1110.4 Construction Requirements

1110.4.1 General

Installation of all Nurse Call System equipment shall comply with the governing laws, codes and standards such as the Philippine Electrical Code (PEC) and the ANSI /UL 1069, Safety Standard for Hospital Signaling and Nurse Call Equipment and shall also be in accordance with the instructions/recommendations of the system Manufacturer.

1110.4.2 Installation

Install all system components and hardware according to Manufacturers' instruction as well as all applicable local codes and standards.

1. The system shall be designed and installed so that the installation, interfacing, integration, combining, and/or consolidation of equipment actually employed does not produce any undesirable visual or aural effects such as signal distortions, noise pulses, glitches, audio or video hum bars, transients, ghosting, and the like.
2. All system components shall be mounted in the locations indicated on the Plans.
3. Enclosures shall be installed plumb and square. Each shall be permanently attached to the building structure and held firmly in place.
4. Nurse call cabinets shall be mounted to house all required components.
5. Proper bend radius is maintained for each wire or cable as specified by the Manufacturer.
6. Wires or cables used in assembling consoles, panels, equipment cabinets and racks shall be formed into harnesses that are bundled and tied. Harnessed wires or cables shall be

combed straight, formed and dressed in either a vertical or horizontal relationship to equipment, controls, components or terminations.

7. Wires and cables shall enter each equipment enclosure, console, cabinet, or rack in such a manner that all doors or access panels can be opened and closed without removal or disruption of the cables.
8. All nurse call wiring shall be continuous with no allowance for splicing.
9. All nurse call wiring shall be run in its own dedicated conduit and raceways.
10. Backup power supplies shall be installed in the area control unit (ACU) or in a separate metal cabinet equipped with a hinged door and lock. If a separate cabinet is installed, it shall be provided adjacent to the ACU. Where the backup power supply is already self-contained in a housing, the unit shall be mounted adjacent to the respective equipment cabinet. In all cases, backup power supplies shall be permanently mounted. Each backup power supply shall be provided with full electrical supervision as described herein.

1110.4.3 Personnel Qualification

The installation of nurse call system, including wiring, cable termination and, testing shall be done by a certified installer under the supervision of a duly registered Professional Electrical Engineer (PEE) and / or certified designer for Nurse Call System.
The installer shall be certified and experienced in the proper installation and testing of nurse call system and trained by the system manufacturer.

1110.5 Testing

All wires, cables and equipment shall be 100% tested for defects in installation and for verification of performance under installed conditions. All installed equipment and wiring shall be verified useable by the Contractor prior to system acceptance.

1110.6 Method of Measurement

The work under this Item shall be measured by lump sum actually placed and installed nurse call system as indicated on the Plans. System components shall be measured by set.

1110.7 Basis of Payment

The quantity as determined in Section 1110.6 shall be paid for at unit price stipulated in the Contract's Bill of Quantities. The payment shall constitute the full compensation for furnishing all the necessary materials, providing necessary equipment and tools in installing the Nurse Call System, labor cost and all the incidental expenses necessary to complete the work.

Payment will be made under:

Pay Item Number	Description	Unit of Measurement
1110 (1)	Nurse Call System	Lump Sum
1110 (2)	Area Control Unit (ACU)	Set
1110 (3)	Nurse Call Console	Set
1110 (4)	Patient Bed Station	Set
1110 (5)	Corridor Dome Lights and Zone Lights	Set

References:

1. Philippine Electrical Code (PEC)
2. Underwriters Laboratory
   ANSI /UL 1069 - Safety Standard for Hospital Signaling and Nurse Call Equipment
3. IEEE Recommended Practice for Electric Systems in Health Care Facilities
4. National Fire Protection Association (NFPA)
   NFPA 99 – Standard for Health Care Facilities
5. Internet
   https://www.nema.org/