Nurse Call

Series 4000 Telephone & Intercommunication Equipment
Architectural Specs

This document specifies nurse call equipment using lamp and electronic tone annunciation at a central annunciator station to register calls from patient and other call-in stations as manufactured by Cornell Communications, Inc., Milwaukee, WI.

PART 1 GENERAL

1.01 SUMMARY

A. **Section Includes:** Nurse call equipment using lamp and electronic tone annunciation at a central annunciator station to register calls from patient and other call-in stations.

Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles per CSI Master Format and specifier's practice.

B. **Related Sections:** Section(s) related to this section include:

1. Electrical: Division 16 Electrical Sections.

Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation, and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section.

1.02 REFERENCES

A. **General:** Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.

B. Underwriters Laboratories, Inc.:

1. UL 1069 Hospital Signaling and Nurse Call Equipment.

C. National Fire Protection Association (NFPA):

1. NFPA 70 National Electrical Code.

1.03 SYSTEM DESCRIPTION

A. Performance Requirements: Provide nurse call equipment, which has been manufactured and installed to maintain performance criteria stated by manufacturer without defects, damage or failure.

Specifier Note: Article below includes submittal of relevant data to be furnished by contractor before, during, or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Section.

1.04 SUBMITTALS

A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.

B. Product Data: Submit product data, including manufacturer’s product sheet, for specified products.

C. Shop Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage and accessories. Include cabling diagrams, wiring diagrams, station installation details, and equipment cabinet details.

D. Quality Assurance Submittals: Submit the following:

1. Test Reports: Certified test reports showing compliance with specified performance characteristics.
2. Manufacturer's Instructions: Manufacturer's installation instructions.

Specifier Note: Coordinate paragraph below with Part 3 Field Quality Requirements Article herein. Retain or delete as applicable.

4. Manufacturer's Field Reports: Manufacturer's field reports specified herein.

E. Closeout Submittals: Submit the following:

1. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Main-

tenance Data and Operation Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance. Include troubleshooting guide, wiring terminal identification and equipment parts list.

2. Warranty: Warranty documents specified herein.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.

Specifier Note: Paragraph below should list obligations for compliance with specific code requirements particular to this section. General statements to comply with a particular code are typically addressed in Conditions of the Contract and Division 1 Regulatory Requirements Section. Repetitive statements should be avoided.

B. Regulatory Requirements: [Specify applicable requirements of regulatory agencies.]

C. Pre-installation Meetings: Conduct pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions, and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.

1.06 DELIVERY, STORAGE & HANDLING

A. General: Comply with Division 1 Product Requirements Sections.

B. Ordering: Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.

C. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

D. Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.

Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty) Section.

1.07 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. **Manufacturer's Warranty:** Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

Specifier Note: Coordinate paragraph below with manufacturer's warranty requirements.

1. Warranty Period: [Specify term.] years commencing on the Date of Substantial Completion.

Specifier Note: Article below is a combination of two CSI Section Format article titles.

1.08 OWNER'S INSTRUCTION

A. **Owner's Instruction:** Instruct Owner's personnel in operation and maintenance of installed units. Provide manufacturer's installation, operation, and maintenance instructions for installed units.

Specifier Note: Coordinate article below with Division 1 Closeout Submittals (Maintenance Materials) Section.

1.09 MAINTENANCE

A. **Extra Materials:** Deliver to Owner extra materials from same production run as products installed. Package products with protective covering and identify with descriptive labels. Comply with Division 1 Closeout Submittals (Maintenance Materials) Section.

Specifier Note: Revise paragraph below specifying items and percentage as required for projects.

1. Quantity: Furnish quantity of lamps for corridor dome lights and zone light units equal to 20% of amount installed.
2. Delivery, Storage, and Protection: Comply with Owner's requirements for delivery, storage, and protection of extra materials.

PART 2 PRODUCTS

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards, and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal", or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

2.01 NURSE CALL EQUIPMENT

Specifier Note: Cornell believes that consistent reliability is essential to any nurse call product. Our 4000 series visual nurse call system is not only tested at our factory, but time proven in the field. Cornell manufactures and designs all of their equipment, including the circuit board and mounting plates. With any nurse call system, adaptability will ensure it meets the individual needs of the facility. Cornell has designed a wide variety of standard products in configurations that will meet the unique requirements of any organization. All Cornell equipment is made with service in mind. Corridor lamps can be changed without tools and electronic controls adjust easily. Cornell's system installs with a minimum of wires, but not at the expense of reliability.

A. Manufacturer: Cornell Communications, Inc.

Specifier Note: Paragraph below is an addition to CSI Section Format and a supplement to MANU-SPEC. Retain or delete paragraph below per project requirements and specifier's practice.

1. Contact: 7915 N 81st St., Milwaukee, WI 53223-3830;
   Telephone: 800- 558-8957; (414) 351-4660; Fax: (414) 351-4657.

B. Proprietary Product(s)/System(s): Cornell 4000 Series Nurse Call System.

1. Product(s)/System(s) Testing: System electrical components, devices and accessories shall be listed and labeled according to UL 1069 as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction, and marked for intended use.

Specifier Note: Edit article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

2.02 PRODUCT SUBSTITUTIONS

A. Substitutions: No substitutions permitted.

2.03 CORNELL 4000 NURSE CALL SYSTEM AND COMPONENTS

A. Annunciators: Manufacturer's standard lamp type.

1. Station Model: [Specify A-4003 or A-4006 station.]
   a. Mounting: [Specify Flush or Surface mounting.]
2. Panel Model: [Specify A-4060 or A-4045 panel model.]
3. Lamp Legends: Designation strips provided.
4. Power-on Indicator: Light-emitting diode or lamp test toggle switch.
5. Audible Signal: Electronic tone.

Specifier Note: The 4000 series annunciators indicate incoming calls from any initiation point in the system. Calls are identified by a solid (normal), flashing (emergency), or pulsing (priority) LED indicator, and staff are alerted to a call by a pleasant tone. Emergency calls are easily distinguished from routine calls by the change in the repeating tone: from a slow, intermittent rate to a more rapid rate. The annunciator is constructed of rugged, anodized aluminum with standard features such as: HI-LO tone volume control; lamp test; easily changed designation strips; and from 10 to 300 indicator lamps. The 4000 series annunciators are available surface, rack, or flush mount.

B. Bedside Stations: Manufacturer's standard [B-111/B-113/B-122] bedside station design.

Specifier Note: Bedside stations are available in 3 standard designs. They will activate the normal call tone and associated lights. The B-111 has a single call cord jack; the B-122 has 2 call cord jacks, while the B-113 has a pushbutton on the plate. A call is placed by pulling the call cord, accidental removal of the cord, or (on the B-113) by pushing the "push for help" button. All stations have LED indicator lights, call cancel buttons, silk screened lettering, screw terminal wiring connectors, and stainless steel, single gang faceplates.

C. Emergency Stations: Manufacturer's standard [E-103/E-104/E-105] emergency station.

Specifier Note: Typically emergency stations are used in locations requiring immediate action. They will activate the emergency signal and cause all the associated indicator lights to flash. There are 12 standard emergency stations. The E-103, E-104, and E-105 represent the typical design. The most popular design, E-104, features a nylon pull cord connected to a slide switch. A call is placed by simply pulling the cord. The E-103 features a pushbutton with a mechanical drop flag indicator. A call is placed by pushing the button once and a second push to reset. The E-105 has a toggle switch and is popular for use as a nurse follower or room status switch. All stations have: silk-screened lettering, stainless steel, and single gang faceplates. In addition, on most models there are screw terminal wiring connectors and LED indicator lights.

D. Duty Stations: Manufacturer's standard [D-111/D-112 Dual Status] [DS-110 Single Status] duty station.

Specifier Note: The D-112 duty station is used to indicate the call system status. The D-112 is typically utilized any place the staff needs to be alerted to a call. The duty station indicates a call by a green (normal call) or a red (emergency call) LED indicator lamp and sounding a slow or fast intermittent tone. A tone volume control is located behind the faceplate to prevent unauthorized adjustment. The D-112 is mounted on a stainless steel, single gang faceplate with silk screened lettering and screw terminal wiring connectors.

E. Staff Stations: Manufacturer's standard [S-111/S-112] staff station.

Specifier Note: The S-112 staff station is used to indicate the status of the call system, like the

D-112, and has an emergency pull cord, like the E-104. The staff station is employed in locations where staff congregate and may need emergency assistance.

F. Call Cords: Manufacturer's standard [SW-106/SW-110/SW-206/SW-210] call cords.

Specifier Note: There are 2 standard call cord types, used with bedside stations, to activate the call system. The SW-106 and SW-110 have momentary contact pushbuttons in molded plastic housings connected to white cables and a right angle phone plug. They are used for common applications whereby a call is placed by depressing the end of the cord. The SW-206 and SW-210 have a vinyl bulb connected to gray, air pressure tubing, and a right angle phone plug. These are used in oxygen-enriched environments or for geriatric use. A call is placed by as little as 1/4 oz. of pressure on the air bulb. All call cords resist contamination and will stand up to thorough cleaning. Both types come in 6 foot or 10 foot lengths and have bedding clips attached.

G. Corridor Lights: Manufacturer's standard [L-101/L-102/L-103] [Z-103] corridor lights.

Specifier Note: Corridor and zone lights are used to indicate the location of a call in a room, zone, or area. The L-101 and Z-103 are available in many standard configurations. The choices are 1 to 3 lamps per dome cover; on 1 to 4 gang back plates, with as many as 2 dome covers on a single stainless steel back plate. The L-101 dome covers come in red or white translucent plastic and are attached to the back plate by slide-in steel pegs making light bulb changes simple. Dome covers may be silk screened with any custom text. Red or green light bulb covers may be used inside the dome to enhance differentiation of the call.

H. Power Supply: Manufacturer's standard [P-512243A] power supply.

Specifier Note: The UL Listed power supply for the Series 4000 Nurse Call System shall be CORNELL Model P-512243A, furnishing 12 volts DC at 4 amps continuous. The power supply shall operate at 115 volts AC 60 HZ. Field wiring on the 13 ½”H x 12 ¾”W x 3 ¼”D gray painted unit shall be by screw terminals. Slotted keyholes shall be provided for vertical wall mounting. Short circuit and thermal overload protection.

I. Control Module: Manufacturer's standard [NC-102D] control module.

Specifier Note: The UL Listed NC-102D control module is used to provide all of the electronic features of the 4000 system. The NC-102D will produce the slow intermittent tone for normal calls, the fast intermittent tone for emergency calls, and the pulsing tone for priority calls. Call precedence is priority, emergency, and then normal calls. The control module can handle up to 3 amps, and is very compact at 7 ¼” W x 12” H x 3 ½” D.

J. Station Face Plates: Type 302 stainless steel, 0.0375" (0.95 mm) minimum, on brushed finish. Silk-screened labeling identifies indicator lamps and controls; optional plastic plates are available in 6 standard colors.

2.04 SOURCE QUALITY

A. Source Quality: Obtain nurse call equipment and system from a single manufacturer.

PART 3 EXECUTION

Specifier Note: Article below is an addition to the CSI Section Format and a supplement to MANU-SPEC. Revise article below to suit project requirements and specifier's practice.

3.01 MANUFACTURER'S INSTRUCTIONS

A. Compliance: Comply with manufacturer's product data, including product technical bulletins, product catalog installation instructions, and product carton instructions for installation.

3.02 EXAMINAITON

A. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

Specifier Note: Coordinate article below with manufacturer's recommended installation details and wiring requirements.

3.03 INSTALLATION

A. Nurse Call Equipment Installation:

1. Wiring Method: Install wiring in raceway as recommended by manufacturer.
2. Separation of Wires: Provide separation as recommended by equipment manufacturer.
3. Splices, Taps and Terminations: Make splices, taps and terminations on numbered terminal strips in junction, pull and outlet boxes, terminal cabinets and equipment enclosures.
4. Identification of Conductors and Cables: Retain color-coding of conductors, and apply wire and cable marking tape to designate wires and cables so all media are identified in coordination with system wiring diagrams. Label stations, controls, and indications using approved consistent nomenclature.

B. Grounding: Ground cable shields and equipment to eliminate shock hazard.

1. Signal Ground Terminal: Locate at main equipment cabinet. Isolate from power system and equipment grounding except at connection to main building ground bus.
2. Grounding Provisions: Comply with requirements in Division 16 Electrical, Grounding Section.

3.04 FIELD QUALITY REQUIREMENTS

A. Site Tests [Post Installation Testing]: comply with the following:

1. Schedule Tests: Schedule test a minimum of 7 days in advance of performance of tests.
2. Report: Submit a written record of test results.
3. Operational Test: Perform an operational system test to verify compliance of system with these specifications. Perform tests that include originating station-to-station and all-call messages and pages at each nurse call station. Verify proper routing, volume levels, and freedom from noise and distortion. Test each available message path from each station on the system.
4. Retesting: Rectify deficiencies indicated by tests and completely retest work affected by such deficiencies. Verify by the system test that the total system meets these specifications and complies with applicable standards. Report results in writing.

B. Inspection: Verify that units and controls are labeled and interconnecting wires and terminals are identified in accordance with NFPA and UL 1069 requirements.

Specifier Note: Edit paragraph below. Establish number and duration of periodic site visits with Owner and manufacturer, and specify below. Consult with manufacturer for services required. Coordinate paragraph below with Division 1 Quality Assurance Section and Part 1 Quality Assurance Submittals herein. Delete if manufacturer's field service not required.

C. Manufacturer's Field Services: Upon Owner's request, provide manufacturer's field service consisting of product use recommendations and periodic site visits for inspection of product installation in accordance with manufacturer's instructions.

3.05 CLEANING

A. Cleaning: Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove construction debris from project site and legally dispose of debris.

3.06 PROTECTION

A. **Protection:** Protect installed product and finish surfaces from damage during construction.