

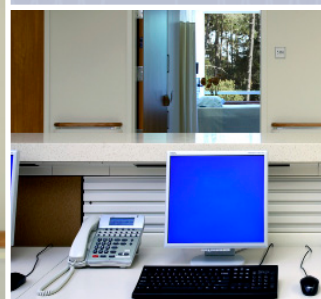
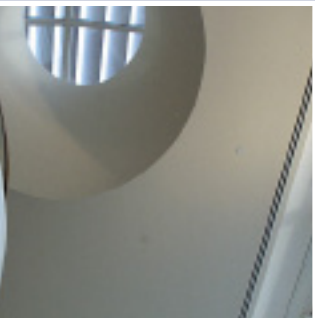


Department of  
Veterans Affairs  
*Office of Construction & Facilities Management*

# design guide

NOVEMBER 29, 2011

## MEDICAL/SURGICAL INPATIENT UNITS & INTENSIVE CARE NURSING UNITS





# MEDICAL / SURGICAL INPATIENT UNITS & INTENSIVE CARE NURSING UNITS

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## SECTION 1 - FOREWORD

### FOREWORD

The material contained in the Medical / Surgical Inpatient Units & Intensive Care Units Design Guide is the culmination of a coordinated effort between the Department of Veterans Affairs (VA), the Veterans Health Administration, the Office of Construction & Facilities Management, the Strategic Management Office, and the Capital Asset Management, Planning Service Group and Hellmuth, Obata & Kassabaum, P.C. The goal of this Design Guide is to maximize the efficiency of the design process for VA facilities and ensure a high level of design, while controlling construction and operating costs.

This document is intended to be used as a guide and is supplementary to current technical manuals, building codes and other VA criteria in planning Healthcare Facilities. The Design Guide is not to be used as a standard design; it does not preclude the need for a functional and physical design program for each specific project.

The Medical / Surgical Inpatient Units & Intensive Care Units Design Guide was developed as a design tool to assist the medical center staff, VACO Planners, and the project team in better understanding the choices that designers ask them to make, and to help designers understand the functional requirements necessary for proper operation of this Patient Care Unit.

This Design Guide is not intended to be project-specific. It addresses the general functional and technical requirements for typical VA Healthcare Facilities. While this Guide contains information for the key space types required in a Medical / Surgical Inpatient Unit and Intensive Care Unit, it is not possible to foresee all future requirements of the Patient Care Units in Healthcare Facilities. It is important to note that the guide plates are generic graphic representations intended as illustrations of VA's furniture, equipment, and personnel space needs. They are not meant to limit design opportunities.

Equipment manufacturers should be consulted for actual dimensions and utility requirements. Use of this Design Guide does not supersede the project architect's and engineers' responsibilities to develop a complete and accurate design that meets the user's needs and the appropriate code requirements within the budget constraints.

Lloyd H. Siegel, FAIA  
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## SECTION 2 - NARRATIVE

### GENERAL CONSIDERATIONS

VA operates the nation's largest healthcare system with over 5.5 million patients a year. While veterans' health care needs are often similar to the general population, they are also different in significant ways. For example, veterans can suffer from a higher prevalence of disabilities from traumatic injuries, post-traumatic stress disorder (PTSD) and neurological disorders. To respond to these needs, VA is in the process of developing and integrating a care delivery model focused on patient centered care specifically as it applies to veterans. This mirrors general trends in healthcare where patient centered care is part of a major understanding of how best to enhance healing and support better outcomes. To integrate knowledge derived from other industry efforts, VA is working with Planetree as a partner. Planetree's efforts are helping to lead the way to personalizing, humanizing, and demystifying the healthcare experience for patients and their families. They bring a history of integrating changes required to protocols and facilities to support patient centered care.

Veteran Centered Care has been defined by VA as follows:

*A fully engaged partnership of veteran, family, and healthcare team established through continuous healing relationships and provided in optimal healing environments, in order to improve health outcomes and the veteran's experience of care.*

In addition, Veteran Centered Care is based on twelve core principles which are noted below. Although all are important parts of the VA approach to care, nine principles stand out because they can be supported directly or indirectly by facility design solutions. These nine principles are noted in bold.

#### Veteran Centered Care Core Principles

- 1. Honor the veteran's expectations of safe, high quality, accessible care.**
- 2. Enhance the quality of human interactions and therapeutic alliances.**
3. Solicit and respect the veteran's values, preferences, and needs.
4. Systematize the coordination, continuity, and integration of care.
- 5. Empower veterans through information and education.**
6. Incorporate the nutritional, cultural and nurturing aspects of food.
- 7. Provide for physical comfort and pain management.**
- 8. Ensure emotional and spiritual support.**
- 9. Encourage involvement of family and friends.**
- 10. Ensure that architectural layout and design are conducive to health and healing.**
- 11. Introduce creative arts into the healing environment.**
- 12. Support and sustain an engaged work force as key to providing veteran centered care.**

The following discussion begins with an Overview of Inpatient Room Types and Issues and is followed by General Industry Trends and Veteran Centered Care Design Trends.

General Industry Trends is organized around four main areas of concern: Safety and Risk Reduction, Efficiency and Flexibility, Human Needs, and Integration of Research, as they apply to objectives for planning and design of Medical/Surgical (M/S) Inpatient Units and Intensive Care Nursing Units (ICU).

Veteran Centered Care Design Trends is guided by an understanding of how the nine facility linked core principles of Veteran Centered Care can strengthen VA goals for care delivery in support of better patient experiences and, ultimately, outcomes.

### **Overview of Inpatient Room Types, Functions, and Issues**

Inpatient care units provide overnight stay for patients who are recovering from surgical procedures or have medical conditions. The units may house male and female patients of various ages with different levels of acuity and special requirements for isolation. A patient's length of stay (LOS) until discharge or transfer to another facility is determined by a patient's acuity level and needs. Care delivery services may be offered by physicians, nurses, physician assistants, nurse's assistants, dietitians, physical and occupational therapists, respiratory therapists, and social workers, among others. In addition, there may be an education program and/or a research program, both of which bring other staff to the unit such as residents and clinical researchers respectively.

In general VA inpatient unit environments support:

- Veteran-centered care for veterans
- Educational requirements of nurses, medics, and physician assistants
- Graduate Medical Education (GME) for physicians

Inpatient care units at a VAMC can be categorized into two general types; from lowest to highest patient acuity: Medical / Surgical (M/S) and Intensive Care Unit (ICU). Medical / Surgical units may also include patients transitioning from an ICU, generally called step-down, for patients who have special needs which may require physiologic monitoring and a higher nurse to patient ratio than a standard M/S unit provides.

A standard M/S unit is a setting for patients recovering from surgery or with acute medical conditions. Typically, there is one nurse assigned to four or five patients.

The ICU is the setting for critical care provided to patients with a life-threatening condition. Invasive cardiovascular and respiratory monitoring and mechanical ventilation are available to assist with artificial life support. There is usually one nurse assigned to two patients. A hospital may co-locate critical care and step-down inpatients within an ICU setting because of similar monitoring, equipment, and staffing requirements.

All VA patient rooms are designed to accommodate patients with disabilities or bariatric patients. Specific door widths, clearances in the room and bathroom, and provision of patient lifts are standard. This maximizes flexibility of patient room assignment. Additionally, many inpatient units include rooms that meet isolation requirements necessary to house either immune-compromised patients or patients with communicable diseases. These include an anteroom between the corridor and the room. They require either positive or negative air pressure in the room respectively, relative to the anteroom and corridor.

Historically, inpatients have been accommodated in units which have been identified by type of illness and acuity requirements. Examples for M/S include Orthopedics, Cardiology, and Neurology. Depending on the number of intensive care beds in a facility, ICUs may include Surgical, Medical, Cardiac and Neurology, each addressing the specific needs of patients through specific clinical protocols, staff training, and equipment on the unit.

Throughout the healthcare industry, planning and design innovations are continuing to drive changes in the way inpatients are accommodated. These changes are driven by the need to improve outcomes and shorten LOS, increase safety, and reduce staff fatigue and errors, thereby raising efficiency and lowering costs.

Innovations advancing through the industry are often driven by evidence collected in on-unit research. A recent important change was the shift to all private rooms. Further innovations are based on recognizing the ways inpatient unit design can affect patients' psychological and medical well-being. Innovations include the exploration of same-handed rooms, patient empowerment with regard to their environment, and care protocols.

The following discussion focuses on general industry trends more specifically and their impact on healthcare planning and design for VA facilities and the veterans they serve.



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## GENERAL INDUSTRY TRENDS

### 1. Safety and Risk Reduction

Four key strategies to increase patient safety and reduce risk are as follows:

#### *Promote staff observation of patients*

Since increased observation from staff will provide a safer environment for patients, plans should seek to provide clear visualization by providers to patients. Four planning strategies working together will support this goal. These are: configuring patient room locations so all room corridor walls face the unit core, incorporating glazed elements in patient room corridor walls, providing nurse positions close to designated room groupings, and ensuring patient's head and upper body is visible from the corridor.

#### *Reduce risk of falls*

Patient falls are a significant component of hospital-originated injuries. Many falls occur when patients attempt to travel from bed to bathroom when they are physically weak or unstable, affected by drugs, disoriented from sleep deprivation, or suffering from age related impairments. This risk can be reduced by planning patient rooms where the path from bed to bathroom is visible to providers from outside the patient room, and is both as short as possible and equipped with grab bar access for the full traverse. Recent technology includes grab bars which incorporate touch sensitive automatic lights which light the pathway.

#### *Plan to control cross infection*

To enhance infection control, ensure that hand-washing stations or hands-free automated hand-rub devices are strategically located for easy access by providers. This includes opportunities along staff travel between nurse stations and patient rooms, at all staff support areas, and at patient room entries prior to reaching the bedside.

Specify material and finishes that enhance infection control.

Use materials, finishes, and casework that resist microbe growth and are easily cleaned. Specify anti-microbial materials and finishes. For example, certain metals, including silver and copper, have strong and permanent antimicrobial properties. These metals and their alloys can be incorporated in fabrics, paint, and hardware. Elements which people touch, such as push plates, door levers, and cabinet handles, can be made from alloys such as brass, bronze and nickel silver. Minimize seams in floor and wall finishes, and at floors to walls. To limit dirt accumulation, avoid horizontal surfaces which are not work surfaces. Provide all storage in enclosed units.

#### *Fully integrate Electronic Medical Records*

VA uses a system of electronic health records (EHR) and bar-coding of medications. As all records shift to a full EHR-based system, extensive use of these electronic tools will reduce risk and raise efficiency. In addition to quick access to comprehensive records, including imaging and test results, and consistency of patient documentation across all services, benefits of EHR use include the ability to locate nurses closer to patients and enhance opportunities for more time with patients. Space reductions include a decreased need for records storage.

## 2. Efficiency and Flexibility

### *Build in operational efficiency*

Increasing efficient operations will support VA objectives to provide quality service.

Standardization of key room plans so that items like equipment and sharps containers are always in the same location in a room can reduce errors and speed services as staff travels within a unit, or from unit to unit, providing care in or servicing different rooms.

### *Leverage benefits of decentralized nursing strategies*

For larger acute care units (above 24 beds), distributing nurse positions in more than one central location will shorten travel distances for nurses from the nurse station to bedside. In addition, locating Medication and Nourishment Rooms and Clean and Soiled Utility Rooms (support spaces frequently accessed by nurses) in close adjacency to the decentralized nurse stations, will reduce time spent hunting and picking, thereby adding to overall unit efficiency and permitting more time for patient care.

By having a nurse in closer proximity to his or her room, a patient experiences greater psychological security and the location enhances time for patient contact permitting the provision of more education and psychological support. In turn, because nurses will be more available to patients and may be less rushed, patients may experience fewer adverse events such as medication errors and falls.

Design strategies that support decentralization include sub-nursing stations, observation booths either directly inside or outside an inpatient room, and nurse servers (with linens, supplies, and/or medications) in proximity to each inpatient room. Successful information technology solutions may include computers-on-wheels, handheld computers, and wall- or ceiling-mounted computers.

Nurses benefit from face-to-face collaborations. Appropriately positioned decentralized nursing strategies can improve staff-to-staff visibility across a nursing floor. Paired with careful coordination of information technology solutions, decentralized nursing strategies can improve staff-to-staff communication and patient safety on an inpatient unit.

A hybrid strategy for decentralizing nursing positions, especially for units larger than beds, is to include a centralized nursing station which serves as a communications core for all staff and monitors access to the unit, as it also acts as a nurse observation position for nearby patient rooms. A strategy has been to hybridize centralized and decentralized nursing design options so that decentralized booths and sub-nursing stations are utilized primarily during night shifts. In addition, the booths and sub-nursing stations can be flexed during shifts with lower or higher nurse-to-patient ratios and patient acuity levels.

### *Plan for space and resource sharing*

Where size permits, planning for more than one inpatient unit on a floor will provide the opportunity to share space and resources among them. The vertical transportation core, where patients, material, and visitors arrive on a floor, is a logical focus for a link between two, or among more than two patient units. Support functions

which can be located as part of the linked core and shared among multiple units include staff lockers and lounge, staff offices and administrative spaces, education and research, and public waiting.

#### *Plan within standard grid dimensions*

Patient rooms planned within a standard modular grid will accommodate growth and change during the active life of a facility. A standard grid will permit standardized patient room dimensions. This permits the ability to accommodate changes in patient acuity, from acute care medical/surgical rooms to intensive care rooms within the existing partitions they may use many of the same utility risers locations, thereby reducing cost and time for physical responses to this kind of change.

#### *Integrate plans for future growth*

Planning for larger scale long-term growth for patient units should be identified early in the design process. Growth strategies can be integrated into the initial facility, enabling their future implementation at reduced expense and little impact on ongoing operations. Locations for projected growth should be addressed by first identifying the ideal direction for planned growth to occur. For inpatient facilities, aside from constructing a new bed tower, the choices will be either horizontally, by linking new units to the vertical transportation core of the existing bed units, or vertically, by building above the same footprint of the inpatient units below, thus extending risers, structure and fenestration in a coherent way.

#### *Incorporate Acuity Adaptable Inpatient Rooms*

Most care delivery services can be brought to the patient if the inpatient room is designed to house the necessary technology and operations. A fully outfitted acuity adaptable inpatient room may function as an intensive care, intermediate care, and medical/surgical inpatient room depending on the care delivery needs of the patient. Typically, an acuity adaptable inpatient room may accommodate ICU and intermediate care needs, based on equipment selection and nurse ratio, or intermediate care and acute care needs, based on provision of telemetry and nurse ratios.

Acuity adaptable inpatient rooms can be a logical solution for a growing volume of patients who are older, require telemetry, require critical care, and have multiple chronic illnesses. Patients and staff will benefit from fewer patient transfers and the familiarity that comes with care delivery provided by the same staff. Consequently, acuity-adaptable inpatient rooms can contribute to decreased operational costs, improved patient outcomes, decreased patient LOS, and fewer medication errors. Anecdotal evidence has been noted in support of acuity adaptable rooms for patients with medical conditions that require high utilization of critical care, such as patients with cardiovascular and neurological conditions.

Acuity adaptable rooms pose a staffing and skill-mix challenge to healthcare organizations. Nurses and ancillary staff who work with patients in acuity adaptable inpatient rooms may need to be trained in operational and care delivery aspects of both critical and acute care. When transitioning toward acuity adaptable rooms, nurse management may find it useful to gradually introduce nurses to new equipment and skill sets over time.



### *Consider Innovations in Material Supply Management*

Solutions for delivery and materials management like pneumatic tubes can contribute to improved efficiency and cost savings. Besides pneumatic tubes, materials management innovations include automated inventory dispensers (e.g., point-of-care stations), and robotic delivery systems. Planners and designers should be mindful of their cost and impact on design and operations. For example, robotic delivery systems require parking spaces, automatic doors, clean and soiled holding room locations near elevators, wide corridors and corners, unique floor surfaces, and dedicated lifts.

### **3. Response to Human Needs**

Patient dignity and self-determination must be accommodated while considering operational efficiencies. Patients' vulnerability to stress from noise, lack of privacy, poor lighting, and other causes, and the subsequent harmful effects it can have on the healing process, can be addressed by facility planning and design that incorporates solutions that support dignity, privacy, acoustic control, and patient empowerment over his or her environment.

Opportunities exist in the design of Medical / Surgical Inpatient Units and Intensive Care Nursing Units areas to address the above issues and to put forth creative solutions that enhance patient comfort and contribute to positive outcomes. A primary architectural objective should be to minimize an institutional image of health care facilities and to surround the patient and family members with finishes and furnishings that are familiar and comforting. Good planning and design appeal to the spirit and sensibilities of patients and care providers alike.

#### *Visitor or Family Areas*

All inpatient unit types may benefit from planning that includes visitor or family zones in each room and amenable waiting areas.

The presence of visitors or family members on an inpatient unit can contribute to improved patient outcomes (e.g., shorter LOS; shorter mechanical ventilation time) and satisfaction. Visitors or family members provide psychological support for the patient and can feel helpful by assisting with patient care delivery (e.g. bathroom transfers, bed changes). It is important that planners and designers promote design and operational solutions that encourage visitors' or families' participation in care delivery and support their well-being.

An ICU with a generous public waiting area and family zone in each room (e.g., sleeper sofa, reclining chair, non-reclining chair and privacy curtain in family zone) will increase visitor or family presence. In turn, the design may contribute to increased social support and improved patient outcomes. A balance must be achieved between the clinical needs of critical care patients and the benefits of support from family or friends.

### **4. Integration of Research**

The industry is trending towards increased translational research, resulting in clinical researchers, biostatisticians, bioethicists, and other research related personnel to be accommodated within or adjacent to clinical areas, including nursing units. For those facilities with research programs, this link can be a powerful facilitator of developing and applying research findings.



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## VETERAN-CENTERED CARE DESIGN TRENDS

### **Safe high quality accessible care**

Veterans on inpatient units will benefit from the range of strategies that increase safety as discussed above. These include maximizing patient visibility from the corridor with decentralized nurse positions, glazing of patient room corridor walls, and position of the bed relative to observation locations in the corridor; reducing the risk of falls by planning for the shortest travel distance from bed to toilet and providing grab bars to support that travel path; adding strategies that support the reduction of medical errors, including full integration of electronic health records and bar-coded medication dispensing; supporting infection control protocols by locating hand-washing opportunities strategically and often and incorporating inherently antimicrobial materials. In addition, provision of patient lifts throughout nursing units for bariatric or disabled patients requiring these aids is a key way to enhance patient safety and protect staff from injury.

### *Women Veterans' Privacy & Security*

The healthcare environment directly and indirectly affects the quality of care provided to women Veterans. It affects their comfort and sense of security, as well as their perceptions of care received. Measures must be taken to maintain and adjust care environments to support their dignity, privacy, and security. VHA facilities must ensure that sufficient inpatient medical and surgical rooms are available to accommodate female patients with plans for increases as the population of women Veterans expands. Capacity for women Veterans must be, at a minimum, equivalent to the current proportion of the women Veteran utilization rates or the specific VISN utilization rate for that site, whichever is greater. Plans for new inpatient medical/surgical space must project a 15% minimum utilization rate for women Veterans.

Patient room doors and patient toilet room doors must have locks that can be disengaged by staff from the corridor side. If possible patient rooms for women Veterans shall be located with direct visualization from a nurse station. If there is a sufficient occupancy level of women Veterans, planning consideration should be given to co-locating these rooms in a specified area of the patient care unit. Privacy curtains must be placed in all inpatient rooms, with the exception of Psychiatry and Mental Health units.

Examination rooms on units must be located in a space where they do not open into a public waiting room or a high-traffic public corridor. Access to hallways by patients/staff who do not work in that area should be restricted. Appropriate locks (either electronic or manual) for examination room doors are required (allowing staff to have key or code access in the case of emergency). Privacy curtains must be present and functional in examination rooms. Privacy curtains must encompass adequate space for the healthcare provider to perform the examination unencumbered by the curtain. A changing area must be provided behind a privacy curtain. Examination tables should be shielded from view when the door is opened. Examination tables must be placed with the foot facing away from the door. Patients who are undressed or wearing examination gowns must have proximity to women's restrooms that can be accessed without going through public hallways or waiting rooms. Tampons and sanitary pads should be available in examination rooms where pelvic examinations are performed and in bathrooms within close proximity.

Sanitary napkin and tampon dispensers and disposal bins must be available in women's public restrooms. A family or unisex restroom should be available where a patient or visitor can be assisted. Baby changing tables should be available in women's and men's public restrooms.

Refer to VHA HANDBOOK 1330.01, Health Care Services For Women Veterans, May 21, 2010.

### **Empower Veteran**

#### *Patient control over their environment*

Patients in treatment often benefit psychologically from a sense of control over their environment and over the protocols established for their care. Patient room design can permit veterans to control temperature, lighting levels, levels of privacy, and access to media. These can all be controlled from a bedside handheld signaling device to raise or lower shades, adjust temperature, and dim or raise light levels. Cubicle curtains can be mechanically driven by bedside controllers as well.

Menu choices selected electronically are increasingly being offered in the healthcare industry from a range of healthful foods. Within clinically approved parameters, this has been recorded to be a major driver of patient satisfaction.

#### *Access to education*

Education about a veteran's health issues is an important component of clinical care leading to better outcomes. Knowledge is empowering and can enhance a veteran's ability to understand reasons for and benefits of specific tests and treatment. Opportunities for education should be planned for easy access in settings where the veteran can control privacy. These can include information kiosks in waiting areas and individual media outlets in patient rooms.

### **Enhance Human Interaction / Encourage Involvement of Family and Friends**

Facility solutions that support increased interaction with caregivers and family or friends include the following:

Nurse positions that are close to patient rooms will shorten nurse travel and ensure more availability for patient interaction about clinical or emotional needs.

Providing space for families and friends in patient rooms will enhance the emotional support often sought from those close to the patient. In addition, specific space for family respite as part of the overall unit will support those family members who must spend more than normal visiting time with the patient. Family amenities can include nourishment, media access, and secure family interactions outside patient areas. Where site, climate, and building configuration permit, access to outdoor space can serve as a welcome area for respite.

### **Social Relationships and Activity in Veterans' Care**

The increasing prevalence of veterans over the age of 65 with chronic and comorbid conditions necessitates unique inpatient unit designs. These inpatient units support care delivery models proven to maintain or improve a patient's navigation through his or her daily routines when independent (e.g., ambulation, eating,

hygiene). Inpatient units staffed and designed to reinforce social activity and ambulation among older inpatients may contribute to shorter patient LOS and cost savings.

Inpatient room and unit planning and design implications for veterans may include the following: day rooms for socializing, seating areas outside of inpatient rooms for passive viewing of activities on the inpatient unit and chance conversations, additional handrails and grab bars, floor lighting for safer patient transfers to the bathroom, wider hallways to encourage ambulation, patient rooms with family zones, and generous visitor and family areas.

### **Healing Environment**

Planning solutions should promote patient dignity and increase privacy. This will lower stress and increase comfort in support of healing and wellness. Access to nature and views can lower stress and improve outcomes.

Other issues, specific to planning and design for veterans' care, include the following:

### **Imagery and Artwork**

Veterans' military experiences require a specific approach to the selection of imagery and artwork that is healing and restorative. Commemorative settings and iconography of national and symbolic importance help veterans recover from post-traumatic stress disorder. Units with artwork and color palettes that incorporate nature imagery that are not evocative of combat settings, and that honor veterans (e.g., photography of Mount Rushmore and national parks), can calm and restore patients. Note that nature images that may be considered restorative and healing for patients in the general public can communicate exposure and vulnerability to a veteran whose military service occurred in a similar setting (e.g. savannah or desert images).

### **Veterans of Recent Conflicts**

As a result of their injuries, many veterans of recent conflicts, Operation Enduring Freedom and Operation New Dawn, suffer from multiple traumas including traumatic brain injury, post-traumatic stress disorder, spinal cord injury, and amputation. Extremity wounds are the most common injury of veterans of recent conflicts.

VA facilities require full accessibility planning in all areas including clearances, floor finishes, floor levels with ramp transfers between different levels, hardware and plumbing fixture design.

Additionally, veterans entering the system are generally younger than veterans currently utilizing VA services from previous conflicts. Planners should consider access to contemporary information technology and entertainment, and strategies which address the lifetime prognosis for veterans suffering from multiple traumas.



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## SECTION 3 - FUNCTIONAL CONSIDERATIONS

### FUNCTIONAL ORGANIZATION

A Functional Area (FA) is the grouping of rooms and spaces based on their function within a clinical service. The organization of services in this Guide follows the chapters established in VA Space Planning Criteria, Chapter: 100 – Medical / Surgical Inpatient Units (M/S Units) and Chapter: 102 - Intensive Care Nursing Units (ICU).

Chapter: 100 – Medical / Surgical Inpatient Units is organized in five Functional Areas:

- FA 1: Reception Area
- FA 2: Patient Area
- FA 3: Support Area
- FA 4: Staff and Administrative Area
- FA 5: Education Area

Chapter: 102 - Intensive Care Nursing Units is organized in five Functional Areas:

- FA 1: Reception Area
- FA 2: Patient Area
- FA 3: Support Area
- FA 4: Staff and Administrative Area
- FA 5: Education Area

The intent of the Medical/Surgical Inpatient Unit and Intensive Care Nursing Unit Design Guide is to provide the information and data that will guide planners and facility staff in creating patient environments that achieve the highest quality of patient care on a consistent basis across all VA facilities.

The functionality of each individual room within the department, as well as the department as a whole, can greatly impact the delivery of patient care, departmental efficiency, staff satisfaction and patient satisfaction. The determinations described in this section should be employed in the design and planning of new and renovation projects to the fullest extent possible.

The Functional Diagrams in this section and Guide Plates in Section Four reflect function, organization, flow, and operational issues. They should not be interpreted as preconceived floor plans, as the diagrams do not correlate exactly to all the rooms and functions available in the Space Planning Criteria chapters, nor to those required for every project.



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**FUNCTIONAL AREAS AND RELATIONSHIPS: MEDICAL / SURGICAL INPATIENT UNITS****FA 1: Reception Area**

Spaces within this functional area include:

- Waiting
- Family Lounge / Family Pantry
- Public Toilets
- Consult Room
- Patient Education/Resource Kiosk
- Discharge Lounge

Public and family spaces shall be located near the main public entry to the unit but outside the main patient care areas. Because VA standards for nursing units require all private rooms and these can easily accommodate family zones in each room, other family and visitor spaces in the program become family/visitor respite and amenity spaces, which need not impact space available within the Patient Area on the unit nor add their activity and additional noise.

Except for the Discharge Lounge, as noted below, nursing staff shall have clear visualization of these spaces, located in a way that affords control of access to the unit. (See Functional Area 3 Support Area and the Functional Diagram in this section). Public toilets are to be located in close proximity.

In addition to Waiting, family amenities within this area may include, but are not limited to the Family Lounge and Family Pantry. These may be authorized on a specific facility basis. They should be planned as a set of functionally linked spaces. Access to daylight and views to the outside should be considered an important planning goal. These spaces should also be considered as good candidates for sharing with other adjacent M/S nursing units. Amenities provided here should include food storage, preparation and dishwashing, as well as access to media and internet sites, VA computers, TV, and telephones, and areas for family and visitor education related to medical or surgical issues relevant to each nursing unit served.

Two additional functions related to Waiting shall be provided:

A Consult Room shall be provided near Waiting to accommodate provider/family consultations.

A Patient Education /Resource Kiosk shall provide access to information about specific patient illnesses relevant to the patient population accommodated on the unit. This space should accommodate the patient and a family member in a setting with visual and acoustic privacy.

A Discharge Lounge, to accommodate administrative and clinical protocols for inpatient discharge, may be authorized as noted in SPC Chapter 100. It shall be located for convenience close to exit pathways from all inpatient units. Ideally it would have close proximity to the main patient pick-up area for ease of patients exiting the facility.

**FA 2: Patient Area**

Spaces within this functional area include:

- Patient Room with Patient Bathroom
- Patient Room, Airborne Infection Isolation with Anteroom and Patient Bathroom
- Patient Room, Protective Environment with Anteroom and Patient Bathroom
- Patient Room, Bariatric and Bathroom, Bariatric/Physical Disabilities
- Exam Room
- Dayroom, Recreation

**Patient Room with Patient Bathroom**

Design, layouts, clearances and staff access to equipment for Patient Rooms are all intrinsic to fulfilling VA objectives for high quality care. In many instances, design parameters align with industry guidelines. However, based on veterans' needs, all VA Patient Rooms require additional space and equipment considerations such as wider doors and provision of patient lifts to accommodate both bariatric and disabled patients. For rooms designated Bariatric Patient Rooms which must accommodate maximum weight patients, special maximum weight bariatric equipment such as beds, patient lifts, and patient toilets, are provided in the Equipment Lists for those rooms.

Patient rooms are organized functionally to support clinical objectives. Areas within each room include hand-washing close to entry, a provider work space near the patient, a patient care zone, and a family zone on the far side of the patient from the clinician work area.

All patient bedrooms shall be located on the perimeter of a floor and shall have access to natural light from a window to the outside or to a day lit atrium space. Consideration for views and environmental factors such as solar gain should be considered when planning patient units and patient bedrooms.

To ensure maximum visibility of patients from the circulating corridor and from nurse positions on the unit, doors to all rooms should be glazed. When needed to ensure patient privacy, all rooms shall have a curtain on a cubicle track crossing the room entry area.

Data access for all patient rooms shall be provided at three locations to accommodate:

1. Capability for monitoring of patient physiologic data via telemetry
2. In-room provider charting
3. Access to electronic media for patients, families and visitors

**Airborne Infection Isolation Rooms (All) and Protective Environment (PE) Rooms with Anteroom**

Layouts, mechanical systems and finishes for All and PE Rooms should conform to an Infection Control Risk Assessment (ICRA) to be provided for each unit by a facility's Infection Control Risk office.

An anteroom shall be provided. The anteroom shall include a hand-washing facility, clean storage for personal protective equipment (PPE) and soiled PPE holding. If approved by the facility and with VA approval and

authorization, HEPA filtration shall be provided within the anteroom. Operational procedures for monitoring, testing, and maintaining the air pressure are required and shall be selected by each facility.

To provide the ability to view the patient from the corridor, glazed panels shall be provided in the corridor wall next to the glazed door into the anteroom and in the wall between the anteroom and the patient room.

### **FA 3: Support Areas**

Key spaces within this functional area include:

- Nurse Station
- Telemetry Alcove
- Medication Rooms and Nourishment Stations
- Nurse and Team Workrooms
- Clean and Soiled Utility Rooms / Clean Linen Room
- Equipment and Medical Gas Storage Rooms
- Multipurpose Specialty Storage Rooms and Environmental Management Storage

A central nurse station shall be located adjacent to the public entrance to the unit and, optimally, near the center of the unit. This location should support three key functions: provide control of access to the unit, offer patient room observation for nearby rooms, and function as a central data and communication location for all staff. Centralized data may include telemetry monitoring in an alcove that is adjacent to a nurse station on those units authorized for telemetry. The number of monitors on a given unit shall be determined by patient acuity and departmental operational needs.

When a pneumatic tube system is authorized, a station shall be provided at or adjacent to the central nurse station in new construction. If a tube system is not authorized or possible, consideration should be given to locate service elevators which serve the unit to provide vertical alignment close to the locations of the Pharmacy and Clinical Laboratory when these functions are on other floors.

As an adjunct to the centrally located nurse station, and most effectively on larger units above twenty four beds, nurse sub-stations shall be provided at locations which offer close visualization of patients, based on unit size and configuration. Frequently accessed support areas like Medication and Nourishment Rooms should be located near Nurse Sub-stations. This will reduce both travel distance and time devoted to hunting for materials, and allow nurses more time for patient interaction. Medication and Nourishment Rooms shall be located with clear visibility and control from Nurse Sub-stations.

A Nurse Workroom and a Team Work Room should be located centrally in the unit. The Nurse Workroom accommodates nurse review of patients' clinical needs and charting. The Team Workroom functions as a multi-disciplinary work area that may include physicians, pharmacists, residents, dieticians, and researchers in a collaborative setting.

Other support spaces include a Clean Utility Room used for storage of sterile and non-sterile medical supplies,

a Soiled Utility Room which provides areas for pre-cleaning medical equipment and instruments, and a Clean Linen Room in which clean linen is stored. All these spaces can be decentralized to provide shorter travel distances for staff on larger nursing units.

Storage spaces should be planned so that the main circulating corridor on the unit remains clear of items like carts, wheelchairs, stretchers, and mobile electronic or clinical equipment. Alcoves off the circulating corridor can accommodate those items which must be accessed quickly like crash carts or stretchers. To maintain readiness for items requiring it, such as crash carts or mobile computers, alcoves should provide power sources on an emergency power circuit, as well as data ports as appropriate for equipment needs.

Larger items are stored in various storage rooms in the central core. These rooms include Equipment and Medical Gas Storage Rooms, Multipurpose Specialty Storage Rooms, and Environmental Management Storage.

#### **F4: Staff and Administrative Areas**

Spaces within this functional may include:

- Offices as authorized for Physicians and Physician Assistants, Nurse leaders, Social Worker, Dietician, Clinical Pharmacist, Clinical Researcher, and Consultant
- Cubicles as authorized for unit administrators
- Recycling Room as authorized
- Staff Lounge
- Staff Locker Rooms
- Staff Toilet

Offices for the Nurse Manager and Nurse Supervisor should be located near the center of the unit they serve. Other office spaces under FA 4 should be located in an area off, but close to, the unit. This reduces the level of traffic within the unit and permits office and administrative space to be shared with adjacent inpatient units.

Staff respite is an important concern to reduce fatigue and lower stress. Staff toilets should be located close to nurse work areas. Staff Locker and Staff Lounge should be separate rooms. Ideally, to reduce noise on the unit and ensure staff respite from activity on the unit, the Staff Lounge should be near the unit but not in the unit.

#### **F5: Education Area**

When authorized, spaces within this functional area include:

- Office for Residency Program Director
- Office for Patient Instructor
- Cubicles for interns, residents, and fellows

- Conference/Classroom
- Library

These functions should be near but not on the unit. This reduces the level of traffic within the unit and permits these functions to be shared with adjacent inpatient units with similar clinical programs.





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**FUNCTIONAL AREAS AND RELATIONSHIPS: INTENSIVE CARE NURSING UNITS****FA 1: Reception Areas**

Spaces within this functional area include:

- Waiting
- Family Lounge / Family Pantry
- Public Toilets
- Consult Room
- Patient Education / Resource Kiosk

Public and family spaces shall be located near the main public entry to the unit but outside the main patient care areas. Because VA standards for ICUs require all private rooms and these accommodate family zones in each room, other family and visitor spaces in the program become family/visitor respite and amenity spaces, which need not impact the limited space available within the Patient Area on the unit nor add their activity and additional noise.

Nursing staff shall have clear visualization of these spaces, located in a way that affords control of access to the unit. (See FA 3 Support Area and the Functional Diagram in this section). Public toilets are to be located in close proximity.

Two functions related to Waiting shall be provided:

A Consult Room shall be provided near Waiting to accommodate provider/family consultations.

A Patient Education /Resource Kiosk shall provide access to information about specific patient illnesses relevant to the patient population accommodated on the unit. This space should accommodate the patient and a family member in a setting with visual and acoustic privacy.

Other family support spaces related to Waiting may be authorized on a specific facility basis. These may include Family Lounge and Family Pantry. They should be planned as a set of functionally linked spaces. Access to daylight and views should be considered an important planning goal. These spaces should also be considered as good candidates for sharing with other adjacent ICUs. Amenities provided here should include food storage, preparation and dishwashing, as well as access to media and internet sites, VA computers, TV, and telephones, and areas for family and visitor education related to medical or surgical issues relevant to each nursing unit served.

Two additional functions related to Waiting shall be provided:

A Consult Room shall be provided near Waiting to accommodate provider/family consultations.

A Patient Education /Resource Kiosk shall provide access to information about specific patient illnesses relevant to the patient population accommodated on the unit. This space should accommodate family members and visitors in a setting with visual and acoustic privacy.

**FA 2: Patient Areas**

Spaces within this functional area include:

- Intensive Care Patient Rooms with Patient Bathroom
- Airborne Infection Isolation Patient Room with Anteroom and Patient Bathroom
- Protective Environment Patient Room with Anteroom and Patient Bathroom

Design, layouts, clearances and staff access to equipment for Patient Rooms are all intrinsic to fulfilling VA objectives for high quality care. In many instances, design parameters align with industry guidelines. However, based on veterans' needs, all VA Patient Rooms require additional space and equipment considerations such as wider doors and provision of patient lifts to accommodate both bariatric and disabled patients.

**Intensive Care Patient Rooms with Patient Bathrooms**

ICU Patient Rooms are organized functionally to support clinical objectives. Areas within each room include hand-washing close to entry, a provider work space near the patient, a patient care zone, and a family zone on the far side of the patient from the clinician work area.

ICU rooms require compliance with minimum clearances around the patient bed. These are noted on the Guide Plates in this guide. Proper clearances allow for the necessary number of providers who can approach the patient bedside and ease access to utilities. Equipment includes a ceiling mounted boom with two articulated arms to provide ready access to medical gases, power, and data. By locating the center of the boom over the center of the bed, maximum flexibility of bed placement can be achieved since it can be rotated in any direction for clinical reasons or to increase the patient's view toward daylight or family members.

All patient bedrooms should have a window with access to natural light from a window to the outside or to a naturally lit atrium space. Consideration for views and environmental factors such as solar gain shall be considered when locating bedrooms.

In addition to the Nurse Observation Alcoves discussed below, to ensure additional visibility of patients from the circulating corridor and from nurse positions on the unit, doors to all rooms should be glazed. When needed to ensure patient privacy, all rooms shall have a curtain on a cubicle track crossing the room entry area.

Data access for all patient rooms shall be provided at three locations to accommodate:

1. Capability for monitoring of patient physiological data via telemetry
2. In-room provider charting
3. Access to electronic media for families and visitors

**Airborne Infection Isolation Rooms (All) and Protective Environment (PE) Rooms with Anteroom**

Layouts, mechanical systems and finishes for All and PE Rooms should conform to an Infection Control Risk Assessment (ICRA) to be provided for each unit by a facility's Infection Control Risk office.

An anteroom shall be provided. The anteroom shall include a hand-washing facility, clean storage for personal protective equipment (PPE) and soiled PPE holding. If approved by the facility and with VA approval and authorization, HEPA filtration shall be provided within the ante room. Operational procedures for monitoring, testing, and maintaining the air pressure are required and shall be selected by each facility.

### **FA 3: Support Areas**

Spaces within this functional area include:

- Nurse Station, Nurse Observation Alcoves
- Medication Rooms and Nourishment Stations
- Nurse and Team Workrooms
- Clean and Soiled Utility Rooms / Clean Linen Room
- Equipment and Medical Gas Storage Rooms
- Multipurpose Specialty Storage Rooms and Environmental Management Storage

A central Nurse Station shall be located adjacent to the public entrance to the unit. This location should support two key functions: provide control of access to the unit and function as a central communication location for all staff. Centralized data includes multiple telemetry monitors for staff to track status of all patients on the unit. Since monitoring is also done at each patient bedside, this second location provides backup when a nurse may be attending to another patient or has moved away from the patient area for other reasons.

When a pneumatic tube system is authorized, a station shall be provided at or adjacent to the central nurse station in new construction. If a tube system is not authorized or possible, consideration should be given to locate service elevators which serve the unit to provide vertical alignment close to the locations of the Pharmacy and Clinical Laboratory when these functions are on other floors.

Nurse Observation Alcoves are located outside the clear width dimension of the unit circulating corridor for direct nurse observation and charting of each ICU patient through a glazed panel between the alcove and the room. While nurse ratios at these alcoves may be one nurse to one patient or one nurse to two patients, when rooms are paired in plan the alcove should be planned to accommodate two nurse positions.

Frequently accessed support areas like Medication and Nourishment Station, should be located on the unit to maximize ease of access and minimize travel distance. Medication and Nourishment Station shall be located with clear visibility from the Nurse Station.

A Nurse Workroom and a Team Work Room should be located centrally in the unit. The Nurse Workroom accommodates nurse review of patients' clinical needs and charting. The Team Workroom functions as a multi-disciplinary work area that may include physicians, pharmacists, residents, dieticians, and researchers in a collaborative setting.

Other support spaces include a Clean Utility Room used for storage of sterile and non-sterile medical supplies, a Soiled Utility Room which provides areas for pre-cleaning medical equipment and instruments, and a Clean Linen Room in which clean linen is stored. All these spaces can be decentralized to provide shorter travel distances for staff.

Storage spaces should be planned so that the main circulating corridor on the unit remains clear of items like carts, wheelchairs, stretchers, and mobile electronic or clinical equipment. Alcoves outside the clear width dimension of the circulating corridor can accommodate those items which must be accessed quickly like crash carts, stretchers or mobile computers. These alcoves should provide power sources on an emergency power circuit to maintain readiness for items requiring it such as crash carts.

Larger items are stored in various storage rooms in the central core. These rooms include Equipment and Medical Gas Storage Rooms, Multipurpose Specialty Storage Rooms, and Environmental Management Storage.

Space for ventilator storage, maintenance and cleaning is required related to their use in an ICU. These functions are programmed within the Pulmonary Medicine Service. They may be located near the ICU if possible, or elsewhere, to be determined by each facility's needs.

#### **FA 4: Staff and Administrative Areas**

Spaces within this functional area may include:

- On-call Rooms, Toilet/Shower
- Offices as authorized for Physicians and Physician Assistants, Nurse leaders, Social Worker, Dietician, Clinical Pharmacist, Clinical Researcher, and Consultant
- Cubicles as authorized for unit administrators
- Recycling Room as authorized
- Staff Lounge
- Staff Locker Rooms
- Staff Toilet

On-call Rooms should be considered for location close to the ICU which they serve. When appropriate they may be aggregated with other On-call Rooms serving the needs of other ICUs on the same floor.

Offices for the Nurse Manager and Nurse Supervisor should be located near the center of the unit they serve, Other office spaces under FA 4 should be located in an area off, but close to, the unit. This reduces the level of traffic within the unit and permits office and administrative space to be shared with adjacent inpatient units.

Staff respite is an important concern to reduce fatigue and lower stress. Staff toilets should be located close to nurse work areas. Staff Locker and Staff Lounge should be separate rooms. Ideally, to reduce noise on the unit and ensure staff respite from activity on the unit, the Staff Lounge should be near the unit but not in the unit.

**FA 5: Education Area**

When authorized, spaces within this functional area include:

- Office for Residency Program Director
- Office for Patient Instructor
- Cubicles for interns, residents, and fellows
- Conference/Classroom
- Library

When authorized, these functions should be near but not on the unit. This reduces the level of traffic within the unit and permits these functions to be shared with adjacent inpatient units with similar clinical programs.



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## FUNCTIONAL AREAS AND RELATIONSHIPS: GENERAL

### General Inpatient Facility Planning Issues

#### *Unit Size / Decentralizing Support*

The target number of beds per nursing unit will vary depending on volume projections and patient type. VA program standards for Chapter 100 - Medical / Surgical Inpatient Units range from seventeen to thirty-three beds and from eight to fifteen beds for Chapter 102 - Intensive Care Nursing Units. In order to minimize travel distances, thereby increasing the opportunity for more nurse/patient interaction and reducing staff fatigue, consideration should be given to decentralizing support space in M/S units. Decentralization of Nurse Stations, Medicine and Nourishment rooms, and Clean and Soiled Utility rooms would all achieve the objectives noted. Decentralization requires subdivision of some clinical support areas but should not increase the total area needed for those rooms based on the room sizes identified in the Space Planning Criteria chapters.

#### *Modular Dimensions / Special Room Sizes*

Patient rooms are the key module, or building block, which drives planning for nursing units and bed towers. VA has identified modular dimensions for all patient rooms as thirty feet wall centerline to wall centerline as a cross dimension for each pair of M/S Patient Rooms (fifteen feet wide centerline to centerline for each patient room). For M/S Patient Rooms the modular length dimension is twenty four feet from inside face of exterior wall to inside face of nursing unit circulating corridor wall. This permits room designs to be standardized to accommodate a range of patient needs including acute care medical surgical patients and patients with disabilities requiring specific space and equipment provisions. Airborne Infection Isolation (All) or Protective Environment (PE) rooms requiring anterooms and special bariatric patient rooms all require larger net square feet than the module provides and should be planned within the unit where the module can most easily be adjusted, such as at ends of ICU floors where it is possible to orient rooms at ninety degrees to the prevalent grid module or simply change the grid dimension.

The same modular dimensions noted above can accommodate ICU room planning but not ICU Airborne Infection Isolation (All) or Protective Environment (PE) room planning which require more square feet. A choice could be to locate larger All and PE ICU rooms at ends of ICU areas where it is possible to orient rooms at ninety degrees to the prevalent grid module or simply change the grid dimension.

For new construction, and to the greatest extent possible in renovated facilities, the dimensions noted above are intended to provide a guide to the use of a consistent grid in which to plan facilities for patient rooms as well as for framing of nursing units which can accommodate all VA patient room types listed in SPC Chapters 100 and 102 and in this guide.

When establishing the basic planning module for a specific project, consideration shall be given to how the variations of the different unit types may be accommodated within a consistent footprint, or when required, must be planned outside the standard footprint. The standards indicated in this Guide should not hinder innovation. Specific design objectives for each project should be considered in all areas of the process.

### *Bed Towers*

If the total number of patient rooms or unit types dictates multiple nursing units, a bed tower arrangement may be considered. This concept stacks bed floors on top of each other and is often a distinct building component. A bed tower may include like units of varying types such as Intensive Care, standard Medical/Surgical, and sub-specialty units. Use of a standard building grid dimension, as noted above, permits aligning structural, fenestration, and mechanical elements in a consistent, rational way.

The shape of the bed tower units will be influenced by many factors including site constraints and opportunities, travel distances, connectivity to other parts of the facility, and overall efficiency. Because the aggregation of medical /surgical patient rooms often comprises the largest total square feet area in a hospital facility, the basic building block of two paired medical/surgical rooms becomes a key component when planning the overall bed tower.

### *Expansion Planning*

Expansion to accommodate future nursing units should be considered during planning. The configuration of the units, where they are positioned on the site, and how they connect to the other areas of the facility are critical issues to plan for early in the process. If a bed tower concept is used, vertical transportation should be positioned in such a way that it can be shared with future units. See the Functional Diagram in this section and Unit Configurations Diagram which follows.

On compressed, typically urban sites, where the least costly building site may be above an existing building, expanding a bed tower vertically engages a range of constructability issues. Building directly over a functioning nursing unit is not a permissible risk unless the space below is unoccupied for the duration of structural framing construction activities.

When the future need is understood during the original design process, placing a function such as a major mechanical room on the floor immediately below the future expansion can help resolve the constructability issue by providing an unoccupied buffer to remove the risk and reduce construction noise and other environmental issues. If this option is considered, the design for building infrastructure systems will need to factor in the future system needs and floor loads. This will include structural foundations and framing, as well as major utility supply and waste sizes.

For smaller expansion possibilities, soft space within the facility may be located next to a unit. Examples of these spaces include offices, open storage rooms and minor clinical spaces. These spaces may be relocated to other areas of the facility at minimal cost and disruption.

### *Vertical Circulation / Unit Access Points*

The access points for the various populations and service materials entering and leaving the unit need to be carefully considered. For infection control and general visitor and patient comfort, it is good practice to provide separate service elevators. The primary groups can be divided into public (family and visitors), patients, staff, and service (clean and soiled materials). The separation of public and patient traffic and areas is the most



critical. Separate entry points, elevators and elevator lobbies should be provided for these two groups. In new construction, consideration should be given to providing separate vertical circulation for: patients, public, and service including separate lobbies for each function on each floor.

Staff may use any of the elevators or access points, though a facility may set an operational policy directing staff to access at one point. In order to minimize travel distances for staff, patients and family members, access points for M/S units, whether vertical or horizontal should be located near the middle of the unit, reducing travel distances to the farthest points of the unit. The central position also works as an efficient location when aggregating more than one ICU on a floor.

### *Renovations*

In renovation projects, the constraints of the existing building such as floor footprint, available area, mechanical systems, and existing vertical and horizontal circulation patterns may impact full implementation of the recommendations in this guide.

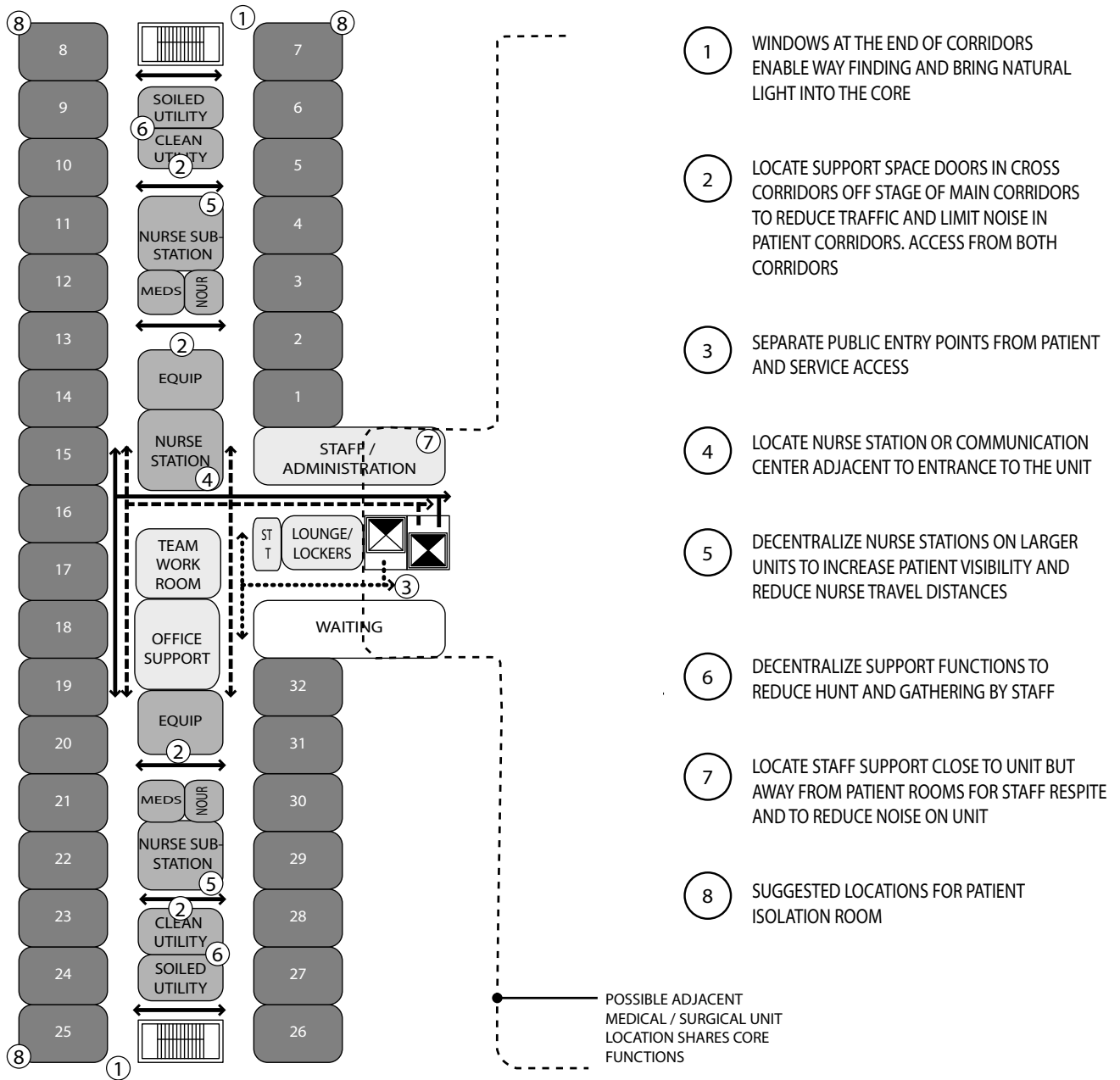
The ability to plan patient units for maximum efficiency in accord with the Functional Diagrams in this section should be reviewed with leaders at specific facilities. Room planning shall be consistent with the basic functional intent as indicated in this Design Guide. These include functional zoning for patient rooms, provider work zone, patient zone, and family zone, location of hand washing sinks to promote easy access and maximize use, and minimum clearances as indicated in guide plates for specific room types.

### *Accessibility*

Accessibility is accommodated by the application of PG 18-13, VA Barrier Free Design Guide; Architectural Barriers Act Accessibility Standards (ABAAS), Appendices C and D to 36 CFR Part 1191 (adopted by GSA and supersedes Uniform Federal Accessibility Standards, UFAS); and ADA Standards for Accessible Design (28 CFR Part 36) to space and fixed equipment layouts.



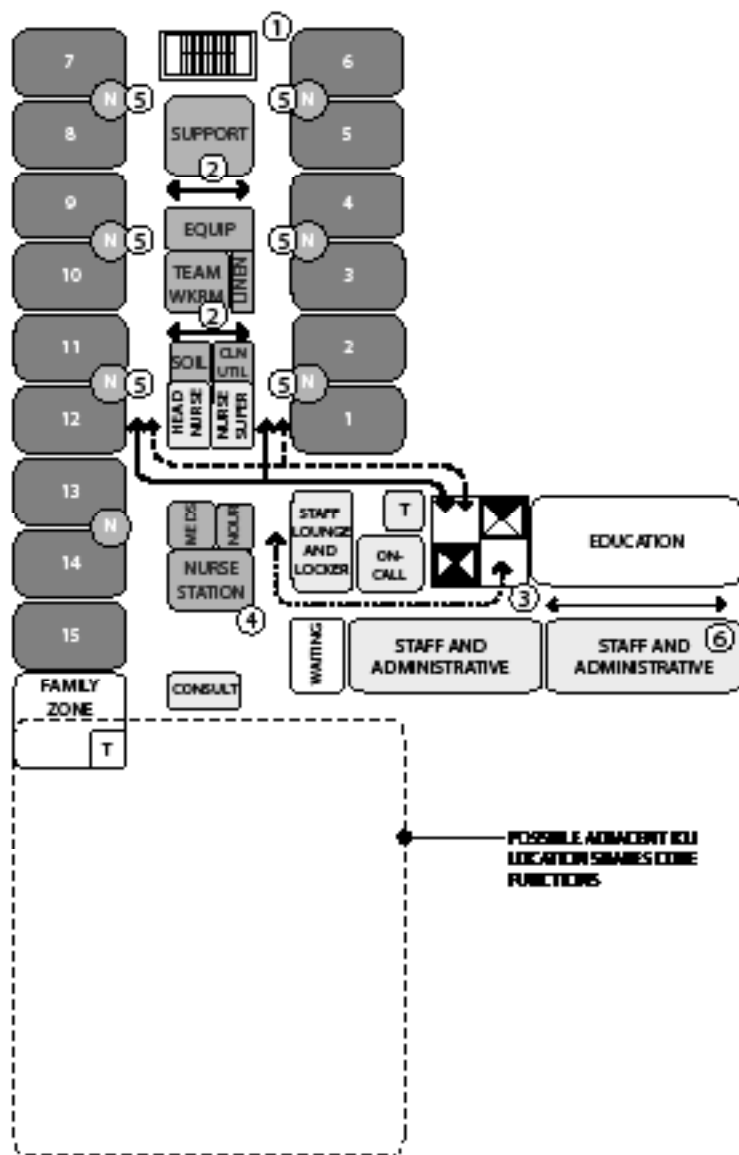
**FUNCTIONAL DIAGRAMS**



**Medical / Surgical Inpatient Unit**

**LEGEND**

- PATIENT ROOM
- CLINICAL SUPPORT AREA
- STAFF SUPPORT AREA
- PUBLIC/ WAITING AREA
- STAFF/ SERVICE
- VISITOR
- INPATIENT
- VISITORS ELEVATORS
- PATIENT & SERVICE ELEVATORS



- 1 WINDOWS AT THE END OF CORRIDORS ENABLE WAY FINDING AND BRING NATURAL LIGHT INTO THE CORE
- 2 LOCATE SUPPORT SPACE DOORS IN CROSS CORRIDORS OFF STAGE OF MAIN CORRIDORS TO REDUCE TRAFFIC AND LIMIT NOISE IN PATIENT CORRIDORS. ACCESS FROM BOTH CORRIDORS
- 3 SEPARATE PUBLIC ENTRY POINTS FROM PATIENT AND SERVICE ACCESS
- 4 LOCATE NURSE STATION OR COMMUNICATION CENTER ADJACENT TO ENTRANCE TO THE UNIT
- 5 DECENTRALIZE NURSE STATIONS TO INCREASE PATIENT VISIBILITY AND REDUCE NURSE TRAVEL DISTANCES
- 6 LOCATE STAFF SUPPORT CLOSE TO UNIT BUT AWAY FROM PATIENT ROOMS FOR STAFF RESPITE AND TO REDUCE NOISE ON UNIT

POSSIBLE ADJACENT ICU LOCATION SHARES CORE FUNCTIONS

### Intensive Care Nursing Unit

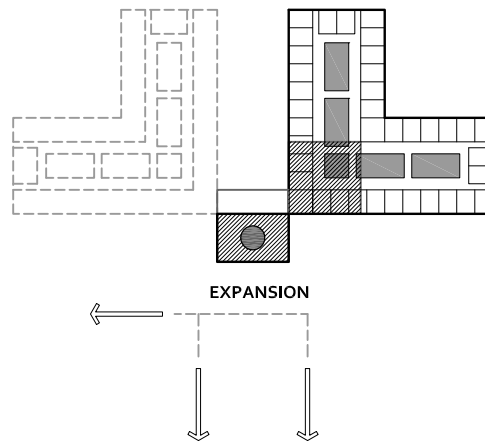
**LEGEND**

- PATIENT ROOM
- CLINICAL SUPPORT AREA
- STAFF SUPPORT AREA
- PUBLIC/ WAITING AREA

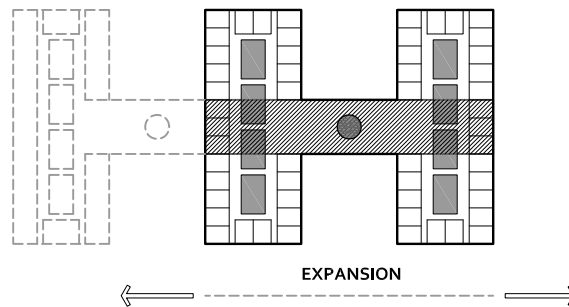
- STAFF SERVICE
- VISITOR
- INPATIENT
- VISITOR & ELEVATOR
- PATIENT & SERVICE ELEVATOR

## UNIT CONFIGURATIONS

### L CONFIGURATION



### H CONFIGURATION



# UNIT CONFIGURATIONS

Medical Surgical Inpatient Units & Intensive Care Units

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.

**RELATIONSHIP MATRIXES**

MEDICAL / SURGICAL INPATIENT UNITS

SERVICE	RELATIONSHIP	REASONS
ICU	3	G, H
Patient Prep and Recovery	4	G
Emergency Department	4	C, G
Main Entrance	4	H
Surgery	3	C, G
Cardiovascular Labs	3	C, G
Endoscopy	3	C, G
Ambulatory Surgery/ Minor Procedure	N	
Radiology	3	C, G
Diagnostic Testing	3	C, G
Pulmonary Clinic / Testing	3	C, G
Cardiology Clinic / Testing	3	C, G
Digestive Disease Clinic/Testing	3	C, G
Neurology Clinic/Testing	3	C, G
Ventilator Storage	3	B, G
Respiratory Therapy	3	G
Pharmacy	5	B, C, G, I
Laboratory	5	B, C, G, I
Social Work / Case Management	1	H
PT/OT	2, 3	H
Food Service / Kitchen	5	E
Sterile Processing Department (SPD)	5	B
Staff On-Call Rooms	4	G
Linen Storage	5	B
Waste Management	5, X	B, E, F
Loading Dock	5	B, D

LEGEND

Relationship:

- 1. Adjacent
- 2. Close / Same Floor
- 3. Close / Different Floor Acceptable
- 4. Limited Traffic
- 5. Connection Needed
- N. Not Applicable
- X. Separation Desirable

Reasons:

- A. Common use of resources
- B. Accessibility of supplies
- C. Urgency of contact
- D. Noise or vibration
- E. Presence of odors or fumes
- F. Contamination hazard
- G. Sequence of work
- H. Patient convenience
- I. Frequent contact
- J. Need for security
- K. Closeness inappropriate

INTENSIVE CARE NURSING UNITS

SERVICE	RELATIONSHIP	REASONS
Medical /Surgical Inpatient Units	3	G, H
Patient Prep and Recovery	3	G, H
Emergency Department	3	G, H
Main Entrance	4	H
Surgery	3	C, G
Cardiovascular Labs	3	C, G
Endoscopy	3	C, G
Ambulatory Surgery/ Minor Procedure	N	
Radiology	3	C, G
Diagnostic Testing	3	C, G
Pulmonary Clinic / Testing	3	C, G
Cardiology Clinic / Testing	3	C, G
Digestive Disease Clinic/Testing	3	C, G
Neurology Clinic/Testing	3	C, G
Ventilator Storage	1	B, G, I
Respiratory Therapy	1	G, I
Pharmacy	5	B, C, G, I
Laboratory	5	B, C, G, I
Social Work / Case Management	1	H
PT/OT	3	H
Food Service / Kitchen	5, X	E
Sterile Processing Department (SPD)	5	B
Staff On-Call Rooms	2	C
Linen Storage	5	B
Waste Management	5, X	B, E, F
Loading Dock	5	B, D

LEGEND

Relationship:

- 1. Adjacent
- 2. Close / Same Floor
- 3. Close / Different Floor Acceptable
- 4. Limited Traffic
- 5. Connection Needed
- N. Not Applicable
- X. Separation Desirable

Reasons:

- A. Common use of resources
- B. Accessibility of supplies
- C. Urgency of contact
- D. Noise or vibration
- E. Presence of odors or fumes
- F. Contamination hazard
- G. Sequence of work
- H. Patient convenience
- I. Frequent contact
- J. Need for security
- K. Closeness inappropriate





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## SECTION 4 - DESIGN STANDARDS

### INTRODUCTION

This section covers technical considerations for planning and designing both the Medical/Surgical Inpatient Unit and the Intensive Care Nursing Unit. The discussion includes detailed technical considerations for architectural, mechanical systems and other related components. To support this discussion, selected rooms are detailed in the form of Guide Plates. Each Guide Plate includes a floor plan, reflected ceiling plan, room data sheet, and an equipment list which provides a comprehensive overview of space planning and utility requirements for the key rooms in this service.

Guide Plates for the following key rooms in this section are as follows:

#### Medical/Surgical Inpatient Unit

Patient Room (BRMS1)

Patient Room, Isolation (BRIT1)

#### Intensive Care Nursing Unit

Patient Room, Intensive Care (BRIC1)

#### Medical/Surgical Inpatient Unit and Intensive Care Nursing Unit

Nurse Station (NSTA1)

Medication Room (MEDP1)

Nourishment Station (NCWD2)

Team Work Room (WRCH1)

Note that room dimensions on the floor plans closely approximate, but may not always reflect the exact programmed room areas stated in Space Planning Criteria, Chapter 100 - Medical/Surgical Inpatient Unit and Chapter 102 - Intensive Care Nursing Unit.

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## TECHNICAL CONSIDERATIONS

### Architectural

#### *Exterior Construction*

Selection of building envelope and enclosure systems shall follow guidance in PG-18-10, Architectural Design Manual for New Hospitals, Replacement Hospitals, Ambulatory Care, Clinical Additions, Energy Centers, and Outpatient Clinics (May 2006).

#### *Interior Design*

Interior materials and finishes and doors shall follow guidance in PG 18-10, Architectural Design Manual and PG 18-14, Room Finishes, Door and Hardware Schedule, and Interior Design Manual (5, 2008). Where a specific guide plate is not provided for a space or function, refer to PG 18-14 and the general design information below.

The goal of the design is to provide an interior environment that fosters healing of both the patient's mind and body, and respects the public funding aspect of VA projects. Design concepts should be comprised of a few simple choices, appear clear to users, and provide a welcoming, calm setting. Materials that have natural origins or clear links to nature and use subtle patterns and colors rather than strong hues will support this goal. Minimal means – few rather than many colors, for example, should be used to achieve these goals.

Key functional and design considerations of finishes and materials include:

1. Durability and cleanliness
2. A timeless quality for materials and colors
3. Creation of a distinctive, clear lead for the planning and selecting of furnishings and art

Elements which create non-functional horizontal surfaces, like decorative moldings which become dirt catchers, or wall coverings that cannot be washed down, should be avoided.

#### *Way-finding*

Patients, visitors and staff need to know where they are, where their destination is, how to get there and how to return to their point of origin. In addition to signage, strategies for way-finding should be part of early design concepts and be integral with architectural planning and finish choices. In this way, way-finding can become a natural, intuitive part of the overall design. Refer to Interior Design Manual for New Construction and Renovations of Hospitals and Clinics and VA Signage Design Guide.

Examples of design strategies to achieve way-finding goals include:

- Utilized specific color, pattern, or artwork cues for different components in a unit or service  
Based on choice of color palette, public areas can be clearly differentiated from procedure areas and further differentiated from service areas. Use of artwork can signal a department entrance.

- Treating corridor ends and junctures as way-finding opportunities.  
Where possible, corridor ends can be sources of daylight or special graphic or color panels can be used to cue destination information from a distance.

### *Partitions*

Partitions should generally be gypsum wallboard on appropriately sized metal studs. Use fiber glass reinforced cementitious panels as recommended by manufacturer for wet conditions in lieu of gypsum board as backup for tile installations in all areas in patient bathrooms.

Provide sound attenuation in accordance with PG 18-3, VA Design and Construction Procedures, Topic 11: Noise Transmission Control. The special condition where patient rooms and toilets have headwalls and plumbing fixtures mounted back-to-back should be specifically addressed for sound attenuation.

Provide wall protection and corner guards in rooms and corridors and other areas where the potential for wall damage from cart traffic is anticipated. Corner guards should be flush to adjacent wall surfaces, not surface mounted, and selected in a color that matches adjacent wall colors.

Provide grab rails with wall protection below wherever patients may walk on the unit and lower wall protection bumper guards throughout the unit to protect walls from stretcher, wheel chair and cart traffic.

Wall finish for spaces which require cleaning with disinfectant such as Soiled Utility Rooms, Soiled Materials Handling Terminal, and Housekeeping Aides Closet shall be paint that provides a hard scrubbable surface finish such as epoxy paint.

Wall finish in patient bathrooms shall be porcelain or ceramic tile. Because open accessible showers are standard, the water shedding tile surface should be continued full height on the wall with the shower head and the two wall surfaces adjacent to it to no less than three feet beyond the line of the shower curtain track. Beyond that line, a tile wainscot no less than twelve inches above sink level shall be provided on all other walls.

Check Centers for Disease Control (CDC) latest guidelines for wall finish requirements in Airborne Infection Isolation Rooms, Protective Environment Rooms, and Anterooms.

### *Floors*

In most spaces, including typical patient rooms, Nurse Stations, corridors, and supply/storage spaces, floors should be a resilient floor tile with a 6 inch (150 mm) high rubber base. Because the floor in a patient room is a large single surface, its color and pattern affect the overall feeling in the room in a significant way. Floor finish choices should strive for warmth and subtle color tones and pattern with which all other finishes in the room can coordinate. Colors and patterns can reinforce functional zones – provider work zone, patient care area, family zone - in the room.

Floors in patient bathrooms should be non-slip porcelain tile with a porcelain tile base. Because patient rooms use open accessible showers as a standard, with no intervening curb, special membrane waterproofing is recommended to be included under the entire tiled bathroom floor and to be turned vertically up, at least eighteen inches, behind the waterproof fiber glass reinforced cementitious backer board used for the tiled partitions in the room.

Note that for the fully accessible flat transitions into toilet/shower rooms and into showers with no intervening curb required in all VA patient rooms, consideration should be given to providing a dropped slab in the toilet/shower room in order to achieve satisfactory pitch to the floor drains required.

Floors in Soiled Utility Rooms, Soiled Materials Handling Terminal, and Housekeeping Aides Closet should be welded seam resilient sheet flooring with integral coved base. Floors in offices, conference rooms, public areas, hallways and waiting areas off the unit, should be carpet with a 4 inch (100 mm) high rubber base to help reduce noise.

Check Centers for Disease Control (CDC) latest guidelines for floor finish requirements in Airborne Infection Isolation Rooms, Protective Environment Rooms, and Anterooms.

### *Ceilings*

In most spaces, including staff and public toilet rooms, ceilings shall be lay-in acoustic ceiling tile. Where required for sanitation or moisture resistance, such as in Soiled Utility Rooms, Soiled Materials Handling Terminal, and Housekeeping Aides Closet, acoustical ceiling tile shall have a washable plastic (mylar) finish. Patient bathrooms shall have painted gypsum board ceilings. Gypsum board ceilings and soffits may be used in some areas to reinforce design intent such as patient bedrooms, Nurse Stations, and critical corridor intersections.

Check Centers for Disease Control (CDC) latest guidelines for ceiling finish requirements in Airborne Infection Isolation Rooms, Protective Environment Rooms, and Anterooms.

### *Interior Doors*

Doors should be 1-3/4 inches (44 mm) thick, solid core, flush wood doors or hollow metal doors in hollow metal frames. Hollow metal doors should be used where high impact is a concern and where fire rated doors are required. Since wheel chairs and wheeled patient transport should be expected in VA inpatient facilities, and for high traffic areas in general, consider use of doors fully clad in solid vinyl guard sheets. These will maximize protection, add durability, ease maintenance, and lessen an institutional feeling. In non-patient service areas, solid vinyl kick or mop plates should be added to both sides of doors. Door widths of 48 inches (1050 mm) are recommended for all wheeled traffic and for extra-wide bariatric wheelchairs.

All M/S patient rooms and Intensive Care rooms include ceiling mounted tracks for patient lifts. When these are planned to run from the bed to above the toilet, a special door frame with the frame head above the ceiling level to permit the track to run level through the door opening will be required.

ICU Patient bedroom doors should be multi panel glass sliding doors with aluminum frames with “break-away” emergency function.

#### *Millwork*

Key locations such as nurse stations and departmental reception points, will be well served with the use of custom millwork to respond to individual facility designs and configurations. Millwork should be used as an architectural encasement for standard modular components, such as files and storage cabinets which are listed in the Equipment List for each relevant space. Millwork would provide both the transaction surface at stand up height as well as the work counter at normal desk height for a receptionist or nursing staff.

Transaction counters should be made of solid surface materials which resist chipping and staining. Work surfaces at desk height may be constructed of solid surface materials or plastic laminate with flush let-in vinyl edges. Consider including task lighting built under the transaction counter. Coordinate locations of computers, printers, keyboards and power and data ports as required by facility needs.

Consider including task lighting built under the transaction counter. Coordinate insertions of computers, printers, keyboards and power and data ports as required by facility needs

#### *Hardware*

Accessible type should be used throughout. Refer to VA Program Guide PG 18-14, Room Finishes, Door and Hardware Schedule and Guide PG 18-4 National CAD Standards and Details for additional information.

For special patient safety and security for women veterans as well as all veterans, patient room doors, patient room toilet/shower room doors, and doors to exam rooms on a nursing unit shall be provided with a lock that can be disengaged by staff from outside the room.

Check Centers for Disease Control (CDC) latest guidelines for door and hardware requirements in Airborne Infection Isolation Rooms, Protective Environment Rooms, and Anterooms.

#### *Security*

Partitions, doors, and hardware inpatient accommodations may have special security requirements. Refer to PG 18-3, VA Design and Construction Procedures, Topic 14: Security and latest VA directives related to safety and security for Women Veterans.

#### **Structural**

Structural design of VA facilities shall comply with the latest editions of the following:

Reinforced concrete design - Building Code Requirements for Reinforced Concrete (ACI Standard 318-02) and Commentary (ACI-318R-02), American Concrete Institute.

Structural steel design - Manual of Steel Construction, Load and Resistance Factor Design, Specifications for Structural Steel Buildings, American Institute of Steel Construction, Second Edition.

International Building Code (IBC), International Conference of Building Officials.

VA Seismic Design Requirements (H-18-8)

In compliance with Executive Order (EO) 12699, and EO 12941, all new and existing buildings constructed or leased by the Federal Government must be seismically safe.

### **Equipment**

Equipment Lists are provided for the Guide Plates in this Section. Additional general information and guidance is available on the VA Technical Information Library (TIL). Refer to Equipment Guide List (PG- 18-5) for list of equipment, furnishings and utility requirements for each space in a functional area. Refer to Equipment Reference Manual (PG-18-6) for graphic representations of each piece of equipment to be purchased and installed by the construction contractor. Refer to equipment manufacturers' data for information specific to a particular equipment item.

**PLEASE NOTE:** The descriptions found in the equipment list do not match those in MIL-STD 1691, in their entirety. The JSN has been used to identify the piece of equipment however the equipment, selected for each particular project, needs to match the description found in this document in lieu of the description in MIL-STD 1691.

### *Casework*

For planning and utilization concerns, casework systems with modular components will provide flexibility and durability. Casework systems should incorporate components dimensioned for ease of multiple re-use installation applications. Casework systems should be planned to avoid corner installations and filler panels.

Counters for all clinical and clinical support areas shall be made of either solid impervious resin materials per PG 18-14, which offer long-term durability, and resist chipping and staining from medical agents expected to be used in clinical environments, or, for areas where strong chemicals are used, such as Soiled Utility, seamless stainless steel counters with integral backsplash. Plastic laminate veneer materials may be used in non-clinical staff and administrative areas.

### **Information Management Systems**

Reference VA Design Guide Office of Information and Technology (OI&T) for Information Management Systems.

In general, ports for data access shall be distributed to all occupied spaces. Specific locations for data access will be per Guide Plates in this document and/or as required by specific project needs

## Heating, Ventilation and Air Conditioning

### *General*

Air conditioning systems will be provided to heat, cool and ventilate the Medical/Surgical Inpatient Units and Intensive Care Units as required to satisfy the VA design criteria. Follow criteria in the TIL HVAC Design Manual (PG-18-10). Also refer to (PG-18-1) Master Construction Specifications and (PG-18-4) Standard Details for items that may apply within the M/S Inpatient Units and ICUs. See Sustainable Design and Energy Reduction Manual for additional information and requirements.

### *Room Data Sheet Criteria*

The number of occupants, air conditioning temperatures, noise criteria and room pressurization indicated on the Room Data Sheets in the Guide Plates are for the purpose of establishing general planning parameters. For rooms not shown on Guide Plates, refer to PG 18-10. The design A/E shall verify the actual occupant load and air conditioning load (CFM) for each specific room on each individual project. Verify equipment loads for actual equipment to be furnished within that room specific to your project. The percent of outside air shall be based on the total supply air quantities determined for your specific project.

### *Air Quality and Distribution*

In general, clean areas shall have positive air pressure and soiled areas should have negative air flow with respect to adjoining areas. Corridors shall not be used to supply or exhaust/return air from adjacent rooms, except that they may be used to ventilate housekeeping closets and small electrical or telephone closets opening directly onto them. Ex-filtration and infiltration from positive/negative pressure rooms adjacent to a corridor must be considered in balancing air flow.

Transfer air should not be more than 100 CFM (2.8m<sup>3</sup>/min) per undercut door within inpatient units.

Care should be taken to minimize the short circuiting of air between supply and return/exhaust openings in rooms, with careful placement of supply registers and return grills inside rooms. Be sure to locate supply above the patient and return closer to the door in typical inpatient rooms.

Positive pressurization and efficient filtration of supply air is required at all clean area locations with filtration. Positive pressure is critical for Medication rooms. Negative pressurization and filtration of air is critical at Airborne Infection Isolation Patient Rooms as is the pressure relationship between isolation anterooms and the corridor. Positive pressurization and filtration of air is critical at Protective Environment rooms as is the pressure relationship between isolation anterooms and the corridor.

Check Centers for Disease Control (CDC) latest guidelines for pressure relationships in Airborne Infection Isolation Rooms, Protective Environment Rooms, and Anterooms.



### *Exhaust System*

The HVAC design shall provide for exhaust air to spaces to control the transfer of odors and provide proper room pressurization and proper air changes per hour that may be required by design manual or code standards. All patient toilet rooms shall have 100 % exhaust air.

### *Energy Conservation*

The need to conserve energy is mandated by the Federal Government by Executive Order and Federal Law. In addition, 19 Federal Agencies, including VA, have signed a Memorandum of Understanding (MOU) outlining specific goals and targets for energy conservation and sustainable design. The following references apply to VA project design, with more detailed information to be found within the HVAC Design Manual for Hospital Projects:

Sustainable Design & Energy Reduction Manual (April 2010)  
DOE Final Rule, and Energy Policy Act (EPACT 2005)  
Energy Conservation Executive Order No. 13423 Dated January 24, 2007

### *Mycobacterium Tuberculosis (TB)*

Centers for Disease Control (CDC) requirements for design of public areas and patient rooms within the building to accommodate patients with mycobacterium tuberculosis or other airborne infectious pathogens must be addressed by architectural and mechanical disciplines. Check current requirements for transmission of mycobacterium tuberculosis and TB Criteria in the latest CDC documents.

### *Seismic Requirements*

Where required, install HVAC systems with seismic provisions as outlined in the PG-18-10, HVAC Design Manual for Hospital Projects and Master Construction Specifications MCS Section 13 05 41, Seismic Restraint Requirements for Non-Structural Components.

### *Noise Class*

Select HVAC equipment, ductwork and distribution devices to achieve noise levels listed in the PG-18-10 HVAC Design Manual and Master Construction Specifications Section 23 05 41, Noise and Vibration Control for HVAC Piping and Equipment.

### *Inside Design Conditions*

Commonly Used Inside Design Temperatures and Humidity Ranges: 70 F to 75 F [21 C to 24 C] and 30% to 60% RH have different implications depending upon the application and system configuration, as shown below:

Year-round Conditions: 70 F to 75 F [21 C to 24 C] and 30% to 60% RH as defined in 2007 ASHRAE Handbook of Applications, the system shall be capable of maintaining temperatures within the range during normal working conditions. The cooling load for these spaces shall be calculated to maintain 70 F [20 C] at 60% RH and the heating load shall be calculated to maintain 75 F [24 C] at 30% RH.



The year around conditions can be used for variable air volume (VAV) or constant volume (CV) systems. Year around design conditions shall be used for all patient areas.

Variable Air Volume (VAV) with Dead-Band: 70 F to 75 F [21 C to 24 C] and 30% to 60% RH as defined in ASHRAE Standard 90.1 – 2007, the space thermostat shall be capable of providing the above range and a dead-band of 5 F [2.8 C] within which the supply of cooling and heating energy to the space is shut off or reduced to a minimum. See HVAC Design Manual for room applicability.

Constant Volume (CV) System: 70 F [21 C] to 75 F [24 C] and 30% to 60% RH

The cooling capacity shall be based on 75 F [24 C] and 60% RH and the heating capacity shall be based on 70 F [21 C] and 30% RH.

Cooling Mode: Generally, the space relative humidity is uncontrolled in cooling season. Specific applications may require high-humidity limiting control.

Heating Mode: 30% RH shall be controlled and maintained at the zone (air-handling unit) level by providing a central humidifier, installed either in the air-handling unit or in the main supply air duct.

The suggested set point is 75 F [24 C] + 0 F/- 3 F [+ 0 C/- 2 C]. The space temperature is allowed to drop to 72 F [22 C] before the reheat is activated. To ensure maximum energy conservation, the maximum offset can be selected as 5 F [2.8 C], where the maximum offset is defined as the difference between the summer and winter set points. Offset is not the same as the dead-band which is defined in ASHRAE Standard 90.1 – 2007. See HVAC Design Manual for room applicability.

#### *Individual Room Temperature Control*

A space is defined as individually controlled only when a dedicated air terminal unit (with reheat) and a room temperature sensor/controller serve it. Individual room temperature control is required for all patient rooms, and other healthcare functions and spaces as identified in the HVAC Design Manual. Group control can be provided in lieu of dedicated room temperature control for applications listed below:

#### Perimeter Office or Consult Rooms

A single terminal unit can serve up to three perimeter rooms located on the same exposure and with identical functions and load characteristics. Corner rooms with multiple exposures shall have individual room temperature control.

#### Interior Spaces

A single terminal unit can serve as many as four interior rooms that have identical functions and load characteristics.

### Open spaces

Open spaces with exterior perimeter exposure and interior areas shall be zoned such that one dedicated air terminal unit serves the exterior perimeter exposure and another serves interior zones. The exterior perimeter exposure zone is defined as an area enclosing perimeter exposure length and 12 to 15 Feet [3.7 to 4.6 Meters] width. An interior zone does not have perimeter exposure walls.

### Special Spaces

Both Airborne Infection Isolation and Protective Environment Patient Rooms may have separate dedicated stand-alone, 24-7 HVAC system sized based on room heat gain. Consider partial recirculation with a separate air system. These rooms require a pressure monitoring system visible in the corridor outside the room.

## Plumbing

### *General*

Plumbing Systems shall be designed as required to meet the needs of the Medical/Surgical Inpatient Units and Intensive Care Units and individual rooms. Follow criteria in the TIL Plumbing Design Manual (PG-18-10). Also, refer to (PG-18-1) Master Construction Specifications and (PG-18-4) Standard Details for items that may apply within M/S Inpatient Units and ICUs.

### *Room Data Sheet Criteria*

The Guide Plates in this section indicate typical locations and quantities of plumbing fixtures and equipment as well as medical gas outlets. They are provided to establish the general planning parameters. The design A/E shall verify the exact fixtures and medical gas locations and quantities for each individual project. For other rooms or spaces,, see PG 18 -10.

### *Water Systems*

Domestic cold, and hot water shall be piped to all plumbing fixtures and equipment requiring these utilities. A hot water return system shall be provided to ensure the design temperature at the farthest fixture. Faucets at patient rooms shall be hands free sensor type.

### *Waste Water Systems*

Plumbing fixtures and drains shall be drained by gravity through sanitary waste and vent stacks. Any fixture that may be below the gravity drainage system shall be pumped as required by a duplex ejector system. Design Engineer shall review the specific substance use that may be poured into any sink waste drain within an inpatient unit. If the substance use requires the need for neutralization, a special waste drainage shall be required with corrosion restraint piping with either a local or centralized waste neutralization system.

### *Medical Gas Systems*

Medical gas distribution is noted on Guide Plates for key selected rooms. For other rooms or spaces see PG 18 -10. The design A/E shall refer to the latest edition (2010) of the Facility Guidelines Institute (FGI) Guidelines for the Design and Construction of Healthcare Facilities for minimum quantities and locations of medical gases. Specific quantities and locations should be determined on a per project basis.

### *Seismic Requirements*

Where required, the plumbing and medical gas systems shall be installed with seismic provisions as outlined in the PG-18-10, Plumbing Design Manual for Hospital Projects and Master Construction Specifications MCS Section 13 05 41, Seismic Restraint Requirements for Non-Structural Components.

## **Electrical**

### *General*

Electrical Systems shall be designed as required to meet the needs of the Medical/Surgical Inpatient Units and Intensive Care Units and individual rooms. Follow criteria in TIL Electrical Design Manual (PG-18-10) Also, refer to (PG-18-1) Master Specifications and (PG-18-4) Standard Details for items that may apply to M/S Inpatient Units and ICUs.

### *Lighting*

Lighting within the M/S Inpatient Units and ICUs is typically provided utilizing recessed fluorescent luminaires with acrylic prismatic lenses. Recessed fluorescent fixtures with parabolic louvers may be used at the nurse/communication station or offices to control glare on monitor screens. Provide under-shelf fluorescent lights above the counter work surface for task lighting. The fixtures typically use F32T5 lamps in compliance with the Energy Policy Act (EPACT 2005). Lamps shall not be high output, and shall have a minimum color rendering index (CRI) of 70 and a color temperature of 3500 degrees Kelvin (K). Attention needs to be given to illumination as a function of reflectance off walls and ceilings, to ensure lighting levels comply with criteria.

The lighting systems shall comply with Federal energy policy, the VA Energy Conservation Policy, and Sustainable Design and Energy Reduction Manual.

Lighting intensities shall conform to the VA design criteria, the IES Lighting Handbook and IES publication RP-29-06, "Lighting for Hospitals and Health Care Facilities". Reducing patient illumination levels below established levels is not recommended. Minimum recommended lighting levels are noted in foot candles on Room Data Sheets for each Guide Plate and in PG 18-10 for all room types.

In alignment with veteran-centered care objectives, lighting in Medical/Surgical Inpatient Unit rooms and Intensive Care Unit patient rooms shall permit a range of light levels for different purposes and to reflect different needs in the Provider zone, the Patient zone, and the Family zone.

Key lighting controls shall be included in a bedside controller for those lights the patient may wish to control. These include the multi-purpose lighting system in the ceiling above the bed, the overbed light on the headwall and room accessory downlights near the footwall. The multi-purpose lighting system in the ceiling is comprised of two light fixtures parallel to and in alignment with the sides of the bed. Each of these fixtures provides two distinct lighting functions using two separate switches. Clinical task lighting shall be operated by the physician or nurse from a switch on the headwall. Ambient room lighting and patient task or reading lighting shall be operated by the patient from a bedside control device. In addition, the overbed light shall be operated from a bedside control device. In this way, the patient does not face into a light fixture directly above the bed and can

adjust light he or she needs in a variety of ways.

The lighting systems shall comply with Federal energy policy, VA Energy Conservation Policy, and Sustainable Design and Energy Reduction Manual.

Lighting energy consumption can be reduced in several ways such as reducing lighting fixture count, using highly efficient fixtures, managing when lighting is used and the amount of illumination delivered, using task lighting, and selecting fixtures, lamps, and controls that best meet the needs of the staff and patient occupants. Fluorescent lamp lumen output can be increased by raising the CRI level without increasing lamp wattage. Specific methods may be used to reduce energy consumption including using occupancy sensors, time-clocks, photocells, daylight dimming, building-wide lighting control systems and replacing incandescent dimming with fluorescent dimming.

As lighting technology is changing rapidly, also consider the use of the most current cost effective fixture type. For example LED fixtures can offer high CRI, energy use significantly below fluorescent fixtures, a range of color temperatures, and highly effective dimming. Although their initial cost will be higher than fluorescent fixtures their much longer replacement cycle may prove to be a more cost effective choice.

Except as noted above for patient rooms, ambient room lighting in M/S Inpatient Units and ICUs shall be controlled by wall mounted switches/dimmers located at the entrance to each room. Ceiling mounted dual technology (Ultrasonic/Infrared) occupancy sensors shall be used in Nourishment Station, Medication Room, Clean Utility and Storage Rooms, Offices and Team Work Room.

Lighting load densities should be verified for the actual design, as they may vary depending on the room configuration, fixture types, lamps, and ballasts used.

## **Power**

### *General*

General purpose duplex receptacles are typically provided on each wall of a room or a space where power is required. Refer to Guide Plates in this section for power locations in key rooms. Dedicated duplex receptacles are provided for select pieces of equipment as follows:

Duplex receptacles energized from the emergency power system are provided for select power outlets located at Nurse Stations to allow for continuous operation of computers and monitors during a power outage. Additional emergency power requirements are also addressed in PG 18-10, Electrical and Telecommunication Design Manual and on the Guide Plates in this section.

Dedicated duplex or special receptacles are provided for select pieces of equipment including emergency crash carts to allow for continuous operation during a power outage.

*Special Purpose*

## Power Requirements for Specific Rooms:

## Nourishment Station:

- Dedicated power outlet for refrigerator
- Dedicated power outlet for coffee maker/Toaster

## Medication room:

- Dedicated power outlet for refrigerator

## Medical / Surgical Patient Rooms:

- One emergency power outlet

## Intensive Care Patients Rooms:

- 50% of outlets shall be on Emergency power.

Workstations with personal computers (PC's) are typically provided with quadruplex receptacles for the PC, monitor, and printer. Junction boxes are to be provided for equipment requiring a hardwired connection.

Provide prefabricated headwalls with bed bumpers in all M/S Inpatient Rooms. Bed bumpers house receptacles for other electrical devices including a low voltage pillow controller. The number of receptacles, receptacle layout, as well as the wiring requirements should be coordinated with the specifications (PG-18-1, Master Construction Specifications).

*Telephone*

Telephone (Telecom) outlets are typically provided in each patient room for patient/family use and at each workstation in an inpatient unit.

*Information Technology (IT)*

Computer Data (Telecom) outlets are typically provided at each workstation with a personal computer (PC) and/or a printer.

*Nurse Call and Code One System:*

The nurse call and code one systems shall be PC based, and consist of patient call stations, staff stations, duty stations, dome lights and head-end equipment located in signal closet. The actual system configuration is dependent on the overall layout of the department and should be coordinated with the functional design.

Medical/Surgical patient rooms shall have three Nurse Call locations. One shall be in the bedside controller; two shall be in the bathroom - one at the toilet and one at the shower.

*Clock system*

Provide battery operated clocks synchronized wirelessly. Both the overall system and the specific locations will be determined on a per facility basis.

### *Television*

Television outlets are provided at selected areas, as authorized.

### *Public Address*

Provide a system in accordance with Master Construction Specifications MCS Section 27 51 16, Public Address and Mass Notification Systems. The public address system is typically part of the telephone system and speakers are typically located in corridors and public spaces. The actual system configuration will depend on the overall design layout and functional requirements. IPCUs will not have an independent public address (PA) system but will be included as part of the hospital-wide PA system.

## **Fire and Life Safety Systems**

### *Fire Protection/Sprinkler Systems*

Fire Protection/Sprinkler Systems shall be designed as required to meet the needs of M/S Inpatient Units and ICUs and individual rooms. Follow criteria in the TIL Fire Protection Design Manual (PG-18-10).

See design standard sheets in the Guide Plates in this section for sprinkler head locations. For rooms or spaces that are not shown in a Guide Plate see PG 18-10. Guide Plates are for the purpose of establishing general planning parameters for each individual room. The Architect/Engineer of record is responsible for actual system design.

### *Fire Alarm System*

Fire Alarm Systems shall be designed as required to meet the needs of the M/S Inpatient Units and ICUs and individual rooms. Follow criteria in the TIL Fire Protection (Fire Alarm) Design Manual (PG-18-10).

## **Waste Management**

Space requirements for waste holding areas will vary with the selection of waste collection and recycling methods and systems, and need to be analyzed to determine the method to be considered for new facilities or coordinated with existing facilities. While space needs are determined by VA Space Planning Criteria on a departmental basis, space provisions for waste collection need to be distributed and dedicated for a variety of uses.

### *Medical Waste*

Medical waste is generated in all patient rooms where it is bagged, collected and transported to the soiled utility rooms. There it is held in separate containers pending transport to the medical waste handling facility or disposal by contract.

### *General Waste*

General waste is generated in all spaces and is held in containers for collection and/or sorting.

*Recyclable Waste*

Methods for sorting, collecting, transporting and disposing of recyclable products must be specifically analyzed for each facility and location. The optional use of disposable and reusable products is an important consideration in recycling and waste disposal alternatives.

*Soiled Linen*

Soiled reusable linens are generated in all patient rooms and at staff gowning in All and PE anterooms. Soiled linens are collected in hampers in each patient room and are transported to the Soiled Materials Handling Terminal for transport to the laundry facility. Disposable linens are included with recyclable waste or medical waste as appropriate.

*Reusable Medical Equipment (RME)*

Reusable utensils and instruments are transported to the Soiled Utility room. They are transported to the Sterile Processing Department. RME reprocessing policy shall be confirmed at each VA facility.

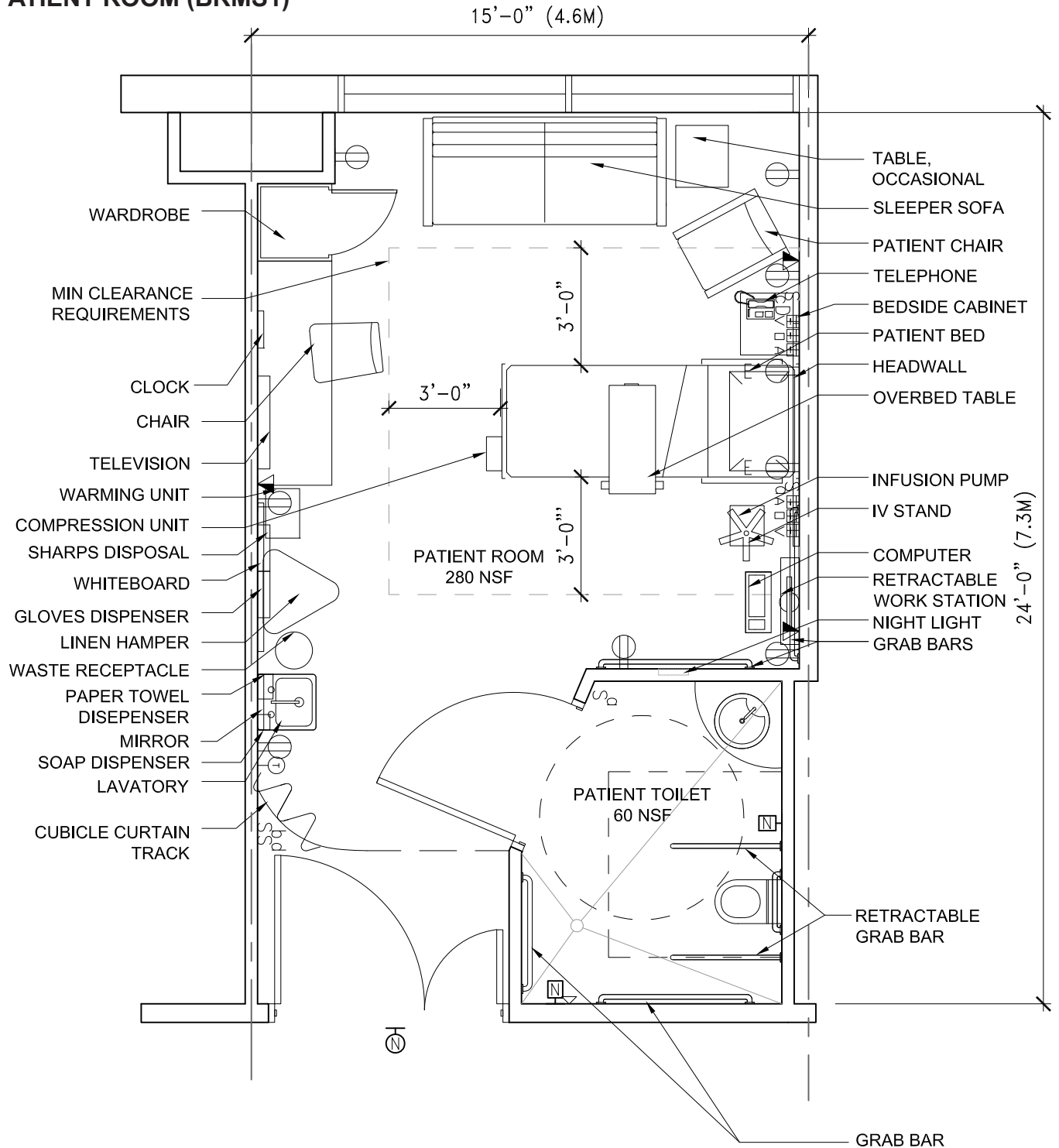




## GUIDE PLATES



**PATIENT ROOM (BRMS1)**



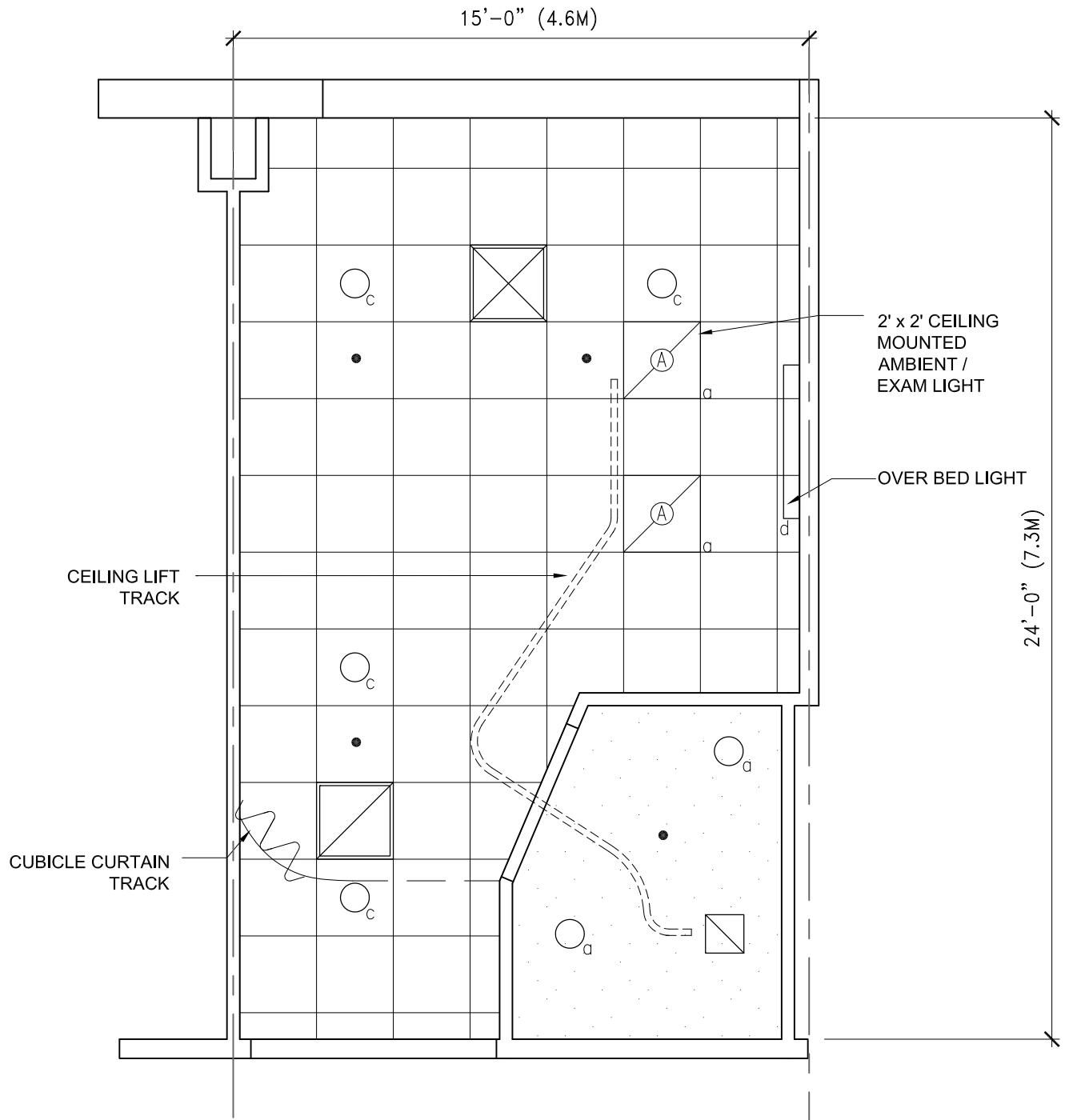
SCALE 1/4" = 1'-0"



# Patient Room (BRMS1)

Medical Surgical Inpatient Units & Intensive Care Nursing Units  
Floor/Equipment Plan (280 NSF / 26.0 NSM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in



SCALE  $\frac{1}{4}'' = 1'-0''$



# Patient Room (BRMS1)

Medical Surgical Inpatient Units & Intensive Care Nursing Units  
 Reflected Ceiling Plan (280 NSF / 26.0 NSM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.

**Patient Room (BRMS1)  
Room Data Sheet**

ARCHITECTURAL	
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Wall Finish:	GWB *1
Base:	RB
Floor Finish:	SVT
Door:	Open 3/4 X-T
Hardware:	N/A / 1B

Notes:

\*1. See design and Construction Procedures PG-18-3, "Noise Transmission Control"

POWER	
General:	Yes
Special:	
Emergency:	Yes
Notes:	

COMMUNICATIONS	
Patient Monitor:	
Nurse Call:	Yes
Security/Duress:	
CCTV:	Yes
Telephone:	Yes
Pub. Address:	Yes
Radio:	Yes
Data:	Yes
Panic Call:	Yes
Battery Operated Clock:	Yes
Intercom (Phone):	Yes
Staff/Duty Station:	Yes

LIGHTING	
General:	
1. Provide dual functioning, overbed reading & ambient light fixture controlled from the bed position	
2. Provide night light to be controlled from bed position, 3fc	
3. Two (2) 2'-0" x 2'-0" (600mm x 600mm) Dual functioning, exam/ambient fluorescent light fixtures.	
4. General Lighting Level: 5-10fc, Task Lighting Level: 50fc, Over Head of Bed Lighting Level: 30fc	
5. Four (4) Down Lights, Dimmable	

HEATING, VENTILATING AND AIR CONDITIONING	
Dry Bulb Temp Cooling:	75° F (24° C)
Dry Bulb Temp Heating:	70° F (21° C)
Minimum % Outside Air:	
100% Exhaust Air:	
Noise Criteria:	NC 35
Steam:	
Relative Humidity/Cooling:	60%
Relative Humidity/Heating:	30%
Minimum Air Changes/Hr.:	6
Room Pressure:	Positive (+)
AC Load Lights:	As Required
AC Load Equipment:	As Required
Number of People:	1
Special Equipment:	Yes

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Domestic Water (HWH):	Yes
Laboratory Air:	
Laboratory Vacuum:	
Sanitary/Vent:	Yes
Medical Air:	2 Outlet
Medical Vacuum:	4 Outlet
Oxygen:	2 Outlet
Nitrogen Oxide:	
Nitrogen:	
Anesthesia Evac:	
Sprinkler:	Yes
Tempered Water:	
Water Control:	

SPECIAL EQUIPMENT	
None	

<b>Patient Room (BRMS1) Equipment List</b>				
<b>JSN</b>	<b>NAME</b>	<b>QTY</b>	<b>ACQ/INS</b>	<b>Description</b>
A1015	Telephone, Desk	1	VV	Telephone, desk
A1066	Mirror, Float Glass, With SS Frame	1	CC	A high quality 1/4" polished float glass mirror 36X18, framed in a one-piece, bright polished, stainless steel channel frame with 90° mitered corners. All edges of the mirror are protected by absorbing filler strips. Mirror has a galvanized steel back with integral horizontal hanging brackets and wall hanger for concealed mounting.
A1110	Headwall, Prefabricated, General, 1 bed	1	CC	1 bed, general, prefabricated headwall. Unit consists of a patient service module for general care, single or double bed type. It contains lighting, medical gases, electrical outlets, nurse call and bed bumper. Specify number and type of medical gas and electrical outlets. Size of module will vary by type and configuration of outlets.
A5075	Dispenser, Soap, Dis posable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5080	Dispenser, Paper Towel, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, single-fold, paper towel dispenser. Dispenser features: tumbler lock; front hinged at bottom; and refill indicator slot. Minimum capacity 400 single-fold paper towels.
A5108	Waste Disposal Unit, Sharps	1	VV	A container with wall mounting brackets for collecting and transporting syringes and other sharps for decontamination and disposal. Available in 2 gallon and 8 gallon with locking rotor. Complies with OSHA regulations for handling sharps.
A5109	Grab Bar, 1-1/4" Dia., SS	2	CC	A 1-1/4" diameter, satin finish stainless steel, peened gripping surface grab bar with concealed mounting flanges. Snap over flanges are provided to conceal mounting screws. A selection of mounting kits and concealed anchor devices are available from the manufacturers for different types of installations. Grab bar shall comply with barrier-free accessibility guidelines for structural strength.
A5180	Track, Cubicle, Surface Mounted, With Curtain	1	CC	Surface mounted cubicle track, with curtain. Track constructed of thick extruded aluminum. Equipped with self lubricating carriers, beaded drop chain hooks, and flame resistant curtain. To include removable end caps. Designed to be suspended around patient areas where privacy is needed.
D0710	Countertop, Epoxy Resin	AR	CC	Modified epoxy resin 3/4" to 1-1/4" thick x 30" deep countertop. Width based on project specific need.

F0275	Chair, Swivel, High Back	1	VV	Highback contemporary swivel chair, 41" high X 23" wide X 23" deep with five (5) caster swivel base and arms. Back and seat are foam padded and upholstered with either woven textile fabric or vinyl.
F0376	Sofa, Sleeper	1	VV	Sleeper sofa, Apx. Dimentions: 86"W x 30"S x 35"H. Sofa designed to convert into a temporary bed.
F0400	Cabinet, Bedside, Door, Drawer	1	VV	Bedside cabinet for storage of both the patient's personal items and small patient support items. Approximately 31" high X 21" wide X 19" deep with one (1) drawer and one (1) closed storage closet. Drawer is removable so interior can be sanitized. May come in a 3 drawer version.
F0725	Table, Occasional, Executive, Wood	AR	VV	Executive chairside table, approximately 21" high X 26" wide X 20" deep.
F2017	Waste Receptacle, 24 Gal	1	VV	Rectangular steel waste receptacle with step-on lid and 24 gallon capacity. The receptacle is used to collect and temporarily store small quantities of paper refuse.
F3050	Whiteboard, Dry Erase	1	CC	Whiteboard unit, approximately 36" H x 48" W consisting of a white porcelain enamel writing surface with an attached chalk tray. Magnetic surface available. Image can be easily removed with a standard chalkboard eraser. For use with water color pens. Unit is ready to hang.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M0500	Television 32" Flat Panel LCD w/Bkt	1	VV	Color television. Unit consists of a color receiver/monitor, with remote control, full off-air channel capability, automatic light sensor, broadcast stereo sound and automatic color balance.
M0750	Flowmeter, Air, Connect w/50 PSI Supply	1	VV	Air flowmeter. Unit has a stainless steel needle valve with clear flowtube for connection to 50 PSI air outlet from central pipeline system. Flowmeter to be provided with appropriate adapter fitting and outlet Database prices reflect fittings with an attached DISS power outlet. Other outlet and adapter configurations are available.
M0755	Flowmeter, Oxygen, Low Flow	1	VV	Oxygen flowmeter. Consists of a clear crystal flowtube calibrated to 3.5 or 8 LPM depending on manufacturer. For oxygen regulation in hospital settings. Flowmeter to be provided with appropriate adapter fitting and outlet Database prices reflect fittings with an attached DISS power outlet. Other outlet and adapter configurations are available.

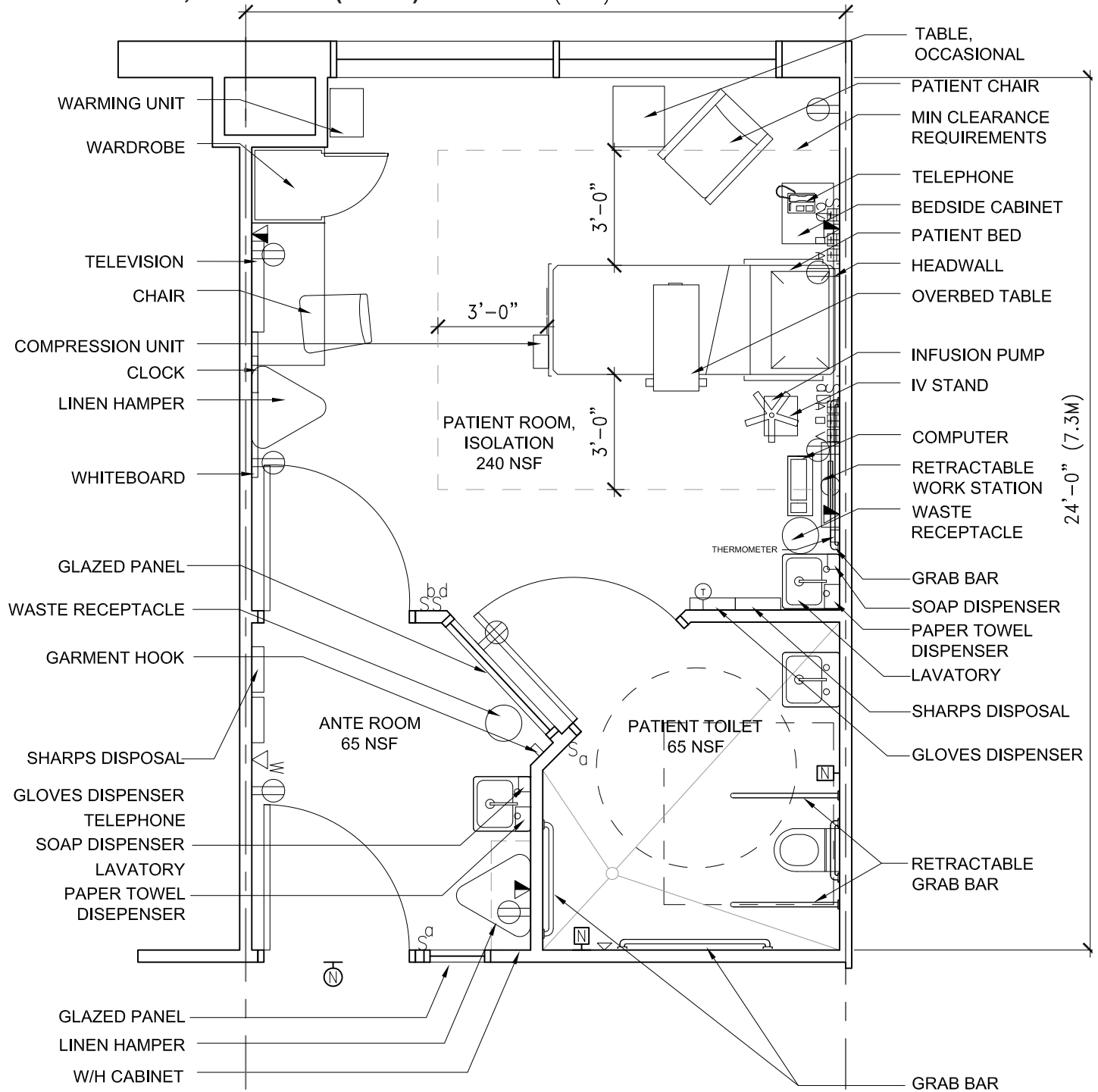
M0765	Regulator, Vacuum	3	VV	Vacuum pressure regulator for connection to central piped vacuum system. Standard display scale is graduated at least from 0 to 200 mm Hg of vacuum. Displays on specialized regulators may cover other vacuum ranges. Regulator type (continuous, intermittent, continuous/intermittent, surgical, pediatric, thoracic, etc.) as required.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse and speakers.
M1802	Work Station, Computer, Retractable, Wall Mounted	1	VV	A wall mounted retractable work station. Work station is used as a computer station in treatment rooms, exam rooms and areas where physical space is limited. To allow full mobility of monitor to allow physician to face patient while in use.
M3070	Hamper, Linen, Mobile, w/Lid	1	VV	Mobile linen hamper with hand or foot operated lid. Made of heavy tubular stainless steel with heavy gauge welded steel platform. Holds 25" hamper bags. Mounted on ball bearing casters.
M4255	Stand, IV, Adjustable	1	VV	Adjustable IV stand with 4-hook arrangement. Stand has stainless steel construction with heavy weight base. It adjusts from 66 inches to 100 inches and is mounted on conductive rubber, ball bearing, swivel casters. Stand is used for administering intravenous solutions.
M4266	Pump, Volumetric, Infusion, Multiple Line	AR	VV	Volumetric infusion pump. Pump is self-regulating with automatic sensor and adjustable rate. Equipped with visual and audible alarms and up to 10 hour capacity battery. For the administration of a wide variety of therapeutic agents where precise control is required. Unit provides individual control to IV lines simultaneously.
M4816	Warming Unit, Patient, Automatic/Manual, Air	1	VV	Automatic/manual patient warming unit. Unit delivers a flow of warmed air through a perforated plastic blanket. Used primarily for postoperative patients to speed recovery of normal body temperature.
M7010	Bed, Patient, Electric	1	VV	Electric patient bed. Includes safety side rails, IV rod insertion slots and patient control panel for a full range of positions. Four wheel locking brakes. Overall bed height adjustable between 16.5 and 31 inches.



M7040	Table, Overbed	1	VV	Overbed table. Adjustable height table constructed of heavy gauge steel. Mounted on 2" diameter twin swivel casters with bumper caps. Table top is constructed with a high pressure plastic laminated surface that resists chipping, scratching, and staining. It includes a vanity tray and a mirror. Table is designed for use over bed, wheelchair or large chair.
M7845	Monitor, Physiological, Bedside, 6 Channel	AR	VV	6 channel bedside physiological monitor. The unit consist of a sixchannel non-fade monochrome display monitor, an alarm system and printer-recording capabilities. The monitor has color coded controls and automatic calibration. The unit displays up to six four waveforms simultaneously. The parameters to be monitored are user selectable. The monitor may be connected to a central monitoring station.
P3100	Lavatory, Vitreous China, Slab Type	1	CC	Wall mounted, slab type, vitreous china, lavatory (approximate bowl size 7"x15"x10") with: faucet holes on 4" centers; gooseneck spout; wrist blade handles; and grid strainer.
	Dispenser, Glove, Triple	1	VV	Triple glove box holder constructed of formed stainless steel for horizontal or vertical mounting.
	Wardrobe, Patient Clothing, small	1	VV	Clothing wardrobe for storage of patient clothing in a patient room. Apx dimentions: 25"W x 25"D x 77"H
	Compression Unit, Intermittent	1	VV	The compression unit is required for use in the prevention of deep venous thrombosis (DVT)



**PATIENT ROOM, ISOLATION (BRIT1)** 16'-6" (5.3M)



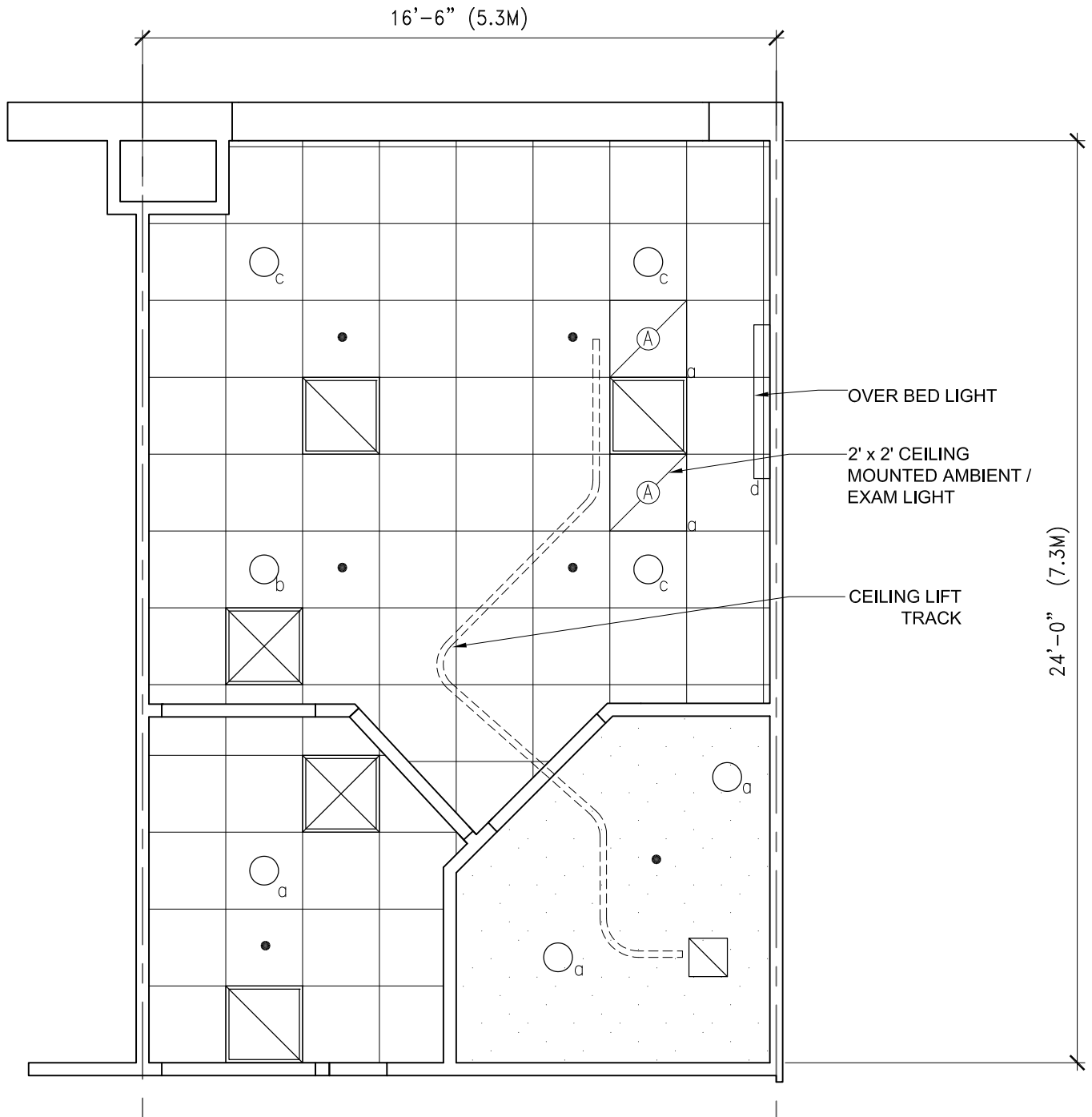
SCALE 1/4" = 1'-0"



# Patient Room, Isolation (BRIT1)

Medical Surgical Inpatient Units & Intensive Care Nursing Units  
Floor/Equipment Plan (240 NSF / 22.3 NSM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.



SCALE 1/4" = 1'-0"

# Patient Room, Isolation (BRIT1)



Medical Surgical Inpatient Units & Intensive Care Nursing Units  
Reflected Ceiling Plan (240 NSF / 22.3 NSM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.

**Patient Room, Isolation (BRIT1)  
Room Data Sheet**

**ARCHITECTURAL**

Ceiling:	GWB/AT *6
Ceiling Height:	9'-0" (2700 mm)
Wall Finish:	GWB *1
Base:	WSF
Floor Finish:	WSF
Door:	3/4 X - A8
Hardware:	4P

Notes:

- \*1. See design and Construction Procedures PG-18-3, "Noise Transmission Control"
- \*6. Clipped down ACT w/Smooth/Washable

**POWER**

General:	Yes
Special:	
Emergency:	Yes
Notes:	Headwall power

**COMMUNICATIONS**

Patient Monitor:	
Nurse Call:	Yes
Security/Duress:	
CCTV:	Yes
Telephone:	Yes
Pub. Address:	Yes
Radio:	Yes
Data:	Yes
Panic Call:	Yes
Battery Operated Clock:	Yes
Intercom (Phone):	
Staff/Duty Station:	Yes

**LIGHTING**

- General:
1. Provide dual functioning, overbed reading & ambient light fixture controlled from the bed position
  2. Provide night light to be controlled from bed position, 3fc
  3. Two (2) 2'-0" x 2'-0" (600mm x 600mm) dual functioning, exam/ambient fluorescent light fixtures.
  4. Four (4) Down Lights, Dimmable
  5. General Lighting Level: 5-10fc, Task Lighting Level: 50fc, Over Head of Bed Lighting Level: 30fc, Ante Room: 10fc

**HEATING, VENTILATING AND AIR CONDITIONING**

Dry Bulb Temp Cooling:	75° F (24° C)
Dry Bulb Temp Heating:	70° F (21° C)
Minimum % Outside Air:	2
100% Exhaust Air:	
Noise Criteria:	NC 40
Steam:	
Relative Humidity/Cooling:	
Relative Humidity/Heating:	
Minimum Air Changes/Hr.:	12
Room Pressure:	Negative (-)
AC Load Lights:	As Required

AC Load Equipment:	As Required
Number of People:	1
Special Equipment:	Yes

**PLUMBING AND MEDICAL GASES**

Cold Water:	Yes
Hot Water:	Yes
Domestic Water (HWH):	
Laboratory Air:	
Laboratory Vacuum:	
Sanitary/Vent:	Yes
Medical Air:	2 Outlet
Medical Vacuum:	4 Outlet
Oxygen:	2 Outlet
Nitrogen Oxide:	
Nitrogen:	
Anesthesia Evac:	
Sprinkler:	Yes
Tempered Water:	
Water Control:	

**SPECIAL EQUIPMENT**

Must be 100% exhaust if not self-contained system

**Patient Room, Isolation (BRIT1)  
Equipment List**

JSN	NAME	QTY	ACQ/INS	Description
A1015	Telephone, Desk	1	VV	Telephone, desk
A1110	Headwall, Prefabricated, General, 1 bed	1	CC	1 bed, general, prefabricated headwall. Unit consists of a patient service module for general care, single or double bed type. It contains lighting, medical gases, electrical outlets, nurse call and bed bumper. Specify number and type of medical gas and electrical outlets. Size of module will vary by type and configuration of outlets.
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5080	Dispenser, Paper Towel, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, single-fold, paper towel dispenser. Dispenser features: tumbler lock; front hinged at bottom; and refill indicator slot. Minimum capacity 400 single-fold paper towels.
A5108	Waste Disposal Unit, Sharps	1	VV	A container with wall mounting brackets for collecting and transporting syringes and other sharps for decontamination and disposal. Available in 2 gallon and 8 gallon with locking rotor. Complies with OSHA regulations for handling sharps.
A5109	Grab Bar, 1-1/4" Dia., SS	2	CC	A 1-1/4" diameter, satin finish stainless steel, peened gripping surface, grab bar with concealed mounting flanges. Snap over flanges are provided to conceal mounting screws. A selection of mounting kits and concealed anchor devices are available from the manufacturers for different types of installations. Grab bar shall comply with barrier-free accessibility guidelines for structural strength.
D0710	Countertop, Epoxy Resin	AR	CC	Modified epoxy resin 3/4" to 1-1/4" thick x 30" deep countertop. Width based on project specific need.
F0260	Chair, High Back, Patient	1	VV	High back patient chair, approximately 45" H X 24" W X 30" D with padded and upholstered back and seat. Straight legs have floor glides. Upholstery material is vinyl.
F0275	Chair, Swivel, High Back	1	VV	Highback contemporary swivel chair, 41" high X 23" wide X 23" deep with five (5) caster swivel base and arms. Back and seat are foam padded and upholstered with either woven textile fabric or vinyl.

F0400	Cabinet, Bedside, Door, Drawer	1	VV	Bedside cabinet for storage of both the patient's personal items and small patient support items. Approximately 31" high X 21" wide X 19" deep with one (1) drawer and one (1) closed storage closet. Drawer is removable so interior can be sanitized. May come in a 3 drawer version.
F0725	Table, Occasional, Executive, Wood	AR	VV	Executive chairside table, approximately 21" high X 26" wide X 20" deep.
F2017	Waste Receptacle, 24 Gal	1	VV	Rectangular steel waste receptacle with step-on lid and 24 gallon capacity. The receptacle is used to collect and temporarily store small quantities of paper refuse.
F3050	Whiteboard, Dry Erase	1	CC	Whiteboard unit, approximately 36" H x 48" W consisting of a white porcelain enamel writing surface with an attached chalk tray. Magnetic surface available. Image can be easily removed with a standard chalkboard eraser. For use with water color pens. Unit is ready to hang.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M0500	Television 32" Flat Panel LCD w/Bkt	1	VV	Color television. Unit consists of a color receiver/monitor, with remote control, full off-air channel capability, automatic light sensor, broadcast stereo sound and automatic color balance.
M0750	Flowmeter, Air, Connect w/50 PSI Supply	1	VV	Air flowmeter. Unit has a stainless steel needle valve with clear flowtube for connection to 50 PSI air outlet from central pipeline system. Flowmeter to be provided with appropriate adapter fitting and outlet Database prices reflect fittings with an attached DISS power outlet. Other outlet and adapter configurations are available.
M0755	Flowmeter, Oxygen, Low Flow	1	VV	Oxygen flowmeter. Consists of a clear crystal flowtube calibrated to 3.5 or 8 LPM depending on manufacturer. For oxygen regulation in hospital settings. Flowmeter to be provided with appropriate adapter fitting and outlet Database prices reflect fittings with an attached DISS power outlet. Other outlet and adapter configurations are available.
M0765	Regulator, Vacuum	3	VV	Vacuum pressure regulator for connection to central piped vacuum system. Standard display scale is graduated at least from 0 to 200 mm Hg of vacuum. Displays on specialized regulators may cover other vacuum ranges. Regulator type (continuous, intermittent, continuous/intermittent, surgical, pediatric, thoracic, etc.) as required.

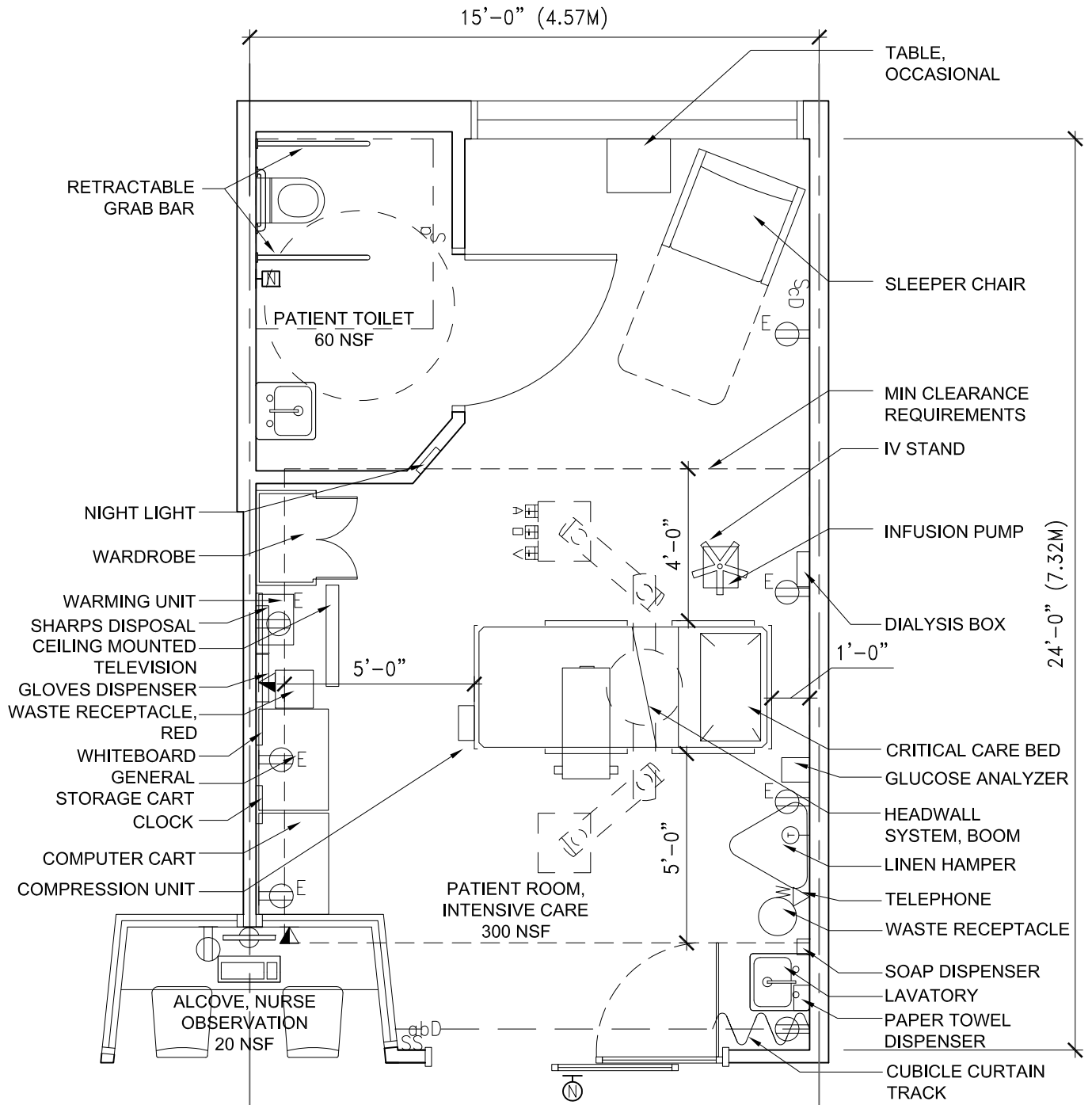
M1802	Work Station, Computer, Retractable, Wall Mounted	1	VV	A wall mounted retractable work station. Work station is used as a computer station in treatment rooms, exam rooms and areas where physical space is limited. To allow full mobility of monitor to allow physician to face patient while in use.
M3070	Hamper, Linen, Mobile, w/Lid	1	VV	Mobile linen hamper with hand or foot operated lid. Made of heavy tubular stainless steel with heavy gauge welded steel platform. Holds 25" hamper bags. Mounted on ball bearing casters.
M4116	Monitor, Vital Signs	1	VV	Electronic sphygmomanometer. LCD displays non-invasive blood pressure, pulse rate, temperature and SpO2. Used in hospitals and clinics. Includes an optional mobile stand.
M4255	Stand, IV, Adjustable	1	VV	Adjustable IV stand with 4-hook arrangement. Stand has stainless steel construction with heavy weight base. It adjusts from 66 inches to 100 inches and is mounted on conductive rubber, ball bearing, swivel casters. Stand is used for administering intravenous solutions.
M4266	Pump, Volumetric, Infusion, Multiple Line	AR	VV	Volumetric infusion pump. Pump is self-regulating with automatic sensor and adjustable rate. Equipped with visual and audible alarms and up to 10 hour capacity battery. For the administration of a wide variety of therapeutic agents where precise control is required. Unit provides individual control to IV lines simultaneously.
M4816	Warming Unit, Patient, Automatic/ Manual, Air	1	VV	Automatic/manual patient warming unit. Unit delivers a flow of warmed air through a perforated plastic blanket. Used primarily for postoperative patients to speed recovery of normal body temperature.
M7010	Bed, Patient, Electric	1	VV	Electric patient bed. Includes safety side rails, IV rod insertion slots and patient control panel for a full range of positions. Four wheel locking brakes. Overall bed height adjustable between 16.5 and 31 inches.
M7040	Table, Overbed	1	VV	Overbed table. Adjustable height table constructed of heavy gauge steel. Mounted on 2" diameter twin swivel casters with bumper caps. Table top is constructed with a high pressure plastic laminated surface that resists chipping, scratching, and staining. It includes a vanity tray and a mirror. Table is designed for use over bed, wheelchair or large chair.



M7910	Thermometer, Electronic	1	VV	Electronic thermometer. Pocket size unit with easy to read zero Fahrenheit or zero Centigrade LCD display in approximately 40 seconds. Battery operated and enclosed in a heavy duty plastic case. Unit is hand-held portable and may be stand or wall mounted. For patient body temperature readings.
P3100	Lavatory, Vitreous China, Slab Type	1	CC	Wall mounted, slab type, vitreous china, lavatory (approximate bowl size 7"x15"x10") with: faucet holes on 4" centers; gooseneck spout; wrist blade handles; and grid strainer.
	Dispenser, Glove, Triple	1	VV	Triple glove box holder constructed of formed stainless steel for horizontal or vertical mounting.
	Wardrobe, Patient Clothing, small	1	VV	Clothing wardrobe for storage of patient clothing in a patient room. Apx dimentions: 25"W x 25"D x 77"H
	Compression Unit, Intermittent	1	VV	The compression unit is required for use in the prevention of deep venous thrombosis (DVT)



**PATIENT ROOM, INTENSIVE CARE (BRIC1)**



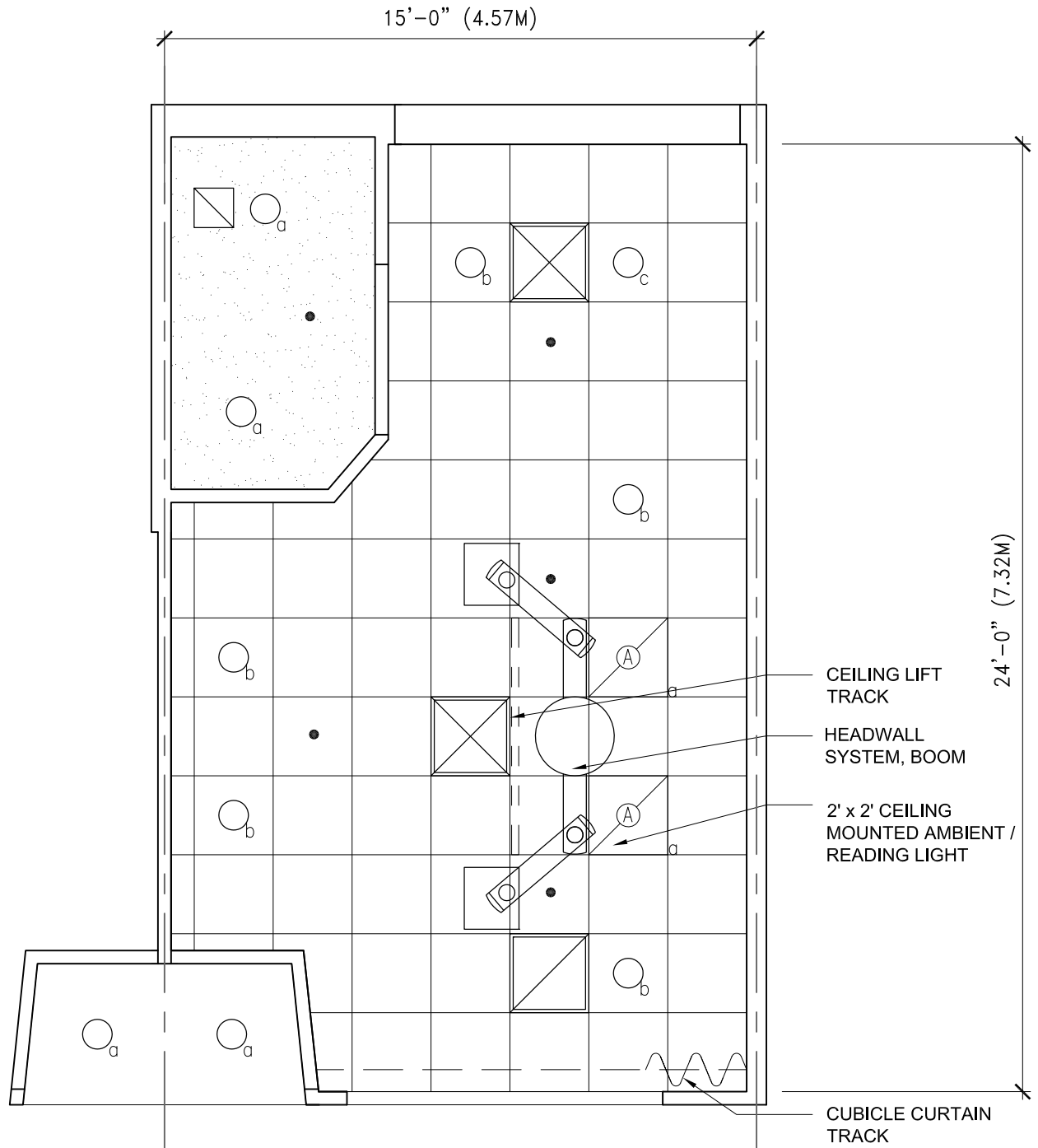
SCALE 1/4" = 1'-0"

# Patient Room, Intensive Care (BRIC1)



Medical Surgical Inpatient Units & Intensive Care Nursing Units  
Floor/Equipment Plan (300 NSF / 27.9 NSM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.



SCALE 1/4" = 1'-0"

# Patient Room, Intensive Care (BRIC1)



Medical Surgical Inpatient Units & Intensive Care Nursing Units  
Reflected Ceiling Plan (300 NSF / 27.9 NSM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.

**Patient Room, Intensive Care (BRIC1)  
Room Data Sheet**

**ARCHITECTURAL**

Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Wall Finish:	GWB *1
Base:	RB
Floor Finish:	SVT
Door:	Open 3/4 X-T
Hardware:	N/A / 1B

Notes:

\*1. See design and Construction Procedures PG-18-3, "Noise Transmission Control"

**POWER**

General:	Yes
Special:	
Emergency:	Yes
Notes:	

**COMMUNICATIONS**

Patient Monitor:	Yes
Nurse Call:	Yes
Security/Duress:	
CCTV:	Yes
Telephone:	Yes
Pub. Address:	Yes
Radio:	Yes
Data:	Yes
Panic Call:	Yes
Battery Operated Clock:	Yes
Intercom (Phone):	Yes
Staff/Duty Station:	Yes

**LIGHTING**

- General:
1. Two (2) 2'-0" x 2'-0" (600mm x 600mm) Fluorescent Light Fixtures for reading & ambient lighting controlled from the boom
  2. Exam light mounted on articulating arm on boom
  3. Provide a night light, 3fc
  4. Six (6) Down Lights, Dimmable
  5. General Lighting Level: 5-10fc, Task Lighting Level: 50fc, Over Head of Bed Lighting Level: 30fc

**HEATING, VENTILATING AND AIR CONDITIONING**

Dry Bulb Temp Cooling:	75°F (24°C)
Dry Bulb Temp Heating:	70°F (21°C)
Minimum % Outside Air:	2
100% Exhaust Air:	
Noise Criteria:	NC 35
Steam:	
Relative Humidity/Cooling:	
Relative Humidity/Heating:	
Minimum Air Changes/Hr.:	6
Room Pressure:	Positive (+)
AC Load Lights:	As Required

AC Load Equipment:	As Required
Number of People:	1
Special Equipment:	Yes

**PLUMBING AND MEDICAL GASES**

Cold Water:	Yes
Hot Water:	Yes
Domestic Water (HWH):	
Laboratory Air:	
Laboratory Vacuum:	
Sanitary/Vent:	Yes
Medical Air:	2 Outlet
Medical Vacuum:	4 Outlet
Oxygen:	4 Outlet
Nitrogen Oxide:	
Nitrogen:	
Anesthesia Evac:	
Sprinkler:	Yes
Tempered Water:	
Water Control:	

**SPECIAL EQUIPMENT**

Refer to Equipment List

**Patient Room, Intensive Care (BRIC1)  
Equipment List**

JSN	NAME	QTY	ACQ/INS	Description
A1015	Telephone, Wall Mounted	1	VV	Telephone, wall mounted
A1120	Column, Service, Prefab, Surgical, Ceiling Mounted	1	CC	Prefabricated surgical service column. Strong 18 gauge stainless steel shell ceiling mounted unit with the following services: oxygen, nitrous oxide, nitrogen, medical air, medical vacuum, gas evacuation, electrical outlets, monitoring connectors, and IV holders. Specify type of column (fixed or retractable) and number of outlets required for each service. Size will vary with number of service outlets required. Designed to be used in the operating room, recovery and ICU-CCU rooms.
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5080	Dispenser, Paper Towel, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, single-fold, paper towel dispenser. Dispenser features: tumbler lock; front hinged at bottom; and refill indicator slot. Minimum capacity 400 single-fold paper towels.
A5108	Waste Disposal Unit, Sharps	1	VV	A container with wall mounting brackets for collecting and transporting syringes and other sharps for decontamination and disposal. Available in 2 gallon and 8 gallon with locking rotor. Complies with OSHA regulations for handling sharps.
A5180	Track, Cubicle, Surface Mounted, With Curtain	1	CC	Surface mounted cubicle track, with curtain. Track constructed of thick extruded aluminum. Equipped with self lubricating carriers, beaded drop chain hooks, and flame resistant curtain. To include removable end caps. Designed to be suspended around patient areas where privacy is needed.
A6305	Drapes, Pair	AR 1	VV	This JSN is to be used for determining and defining the location of drapes. Fabric to be flame retardant, variable colors and patterns with backing. Price based on a pair of drapes for a window approximately 36" W X 60" H.

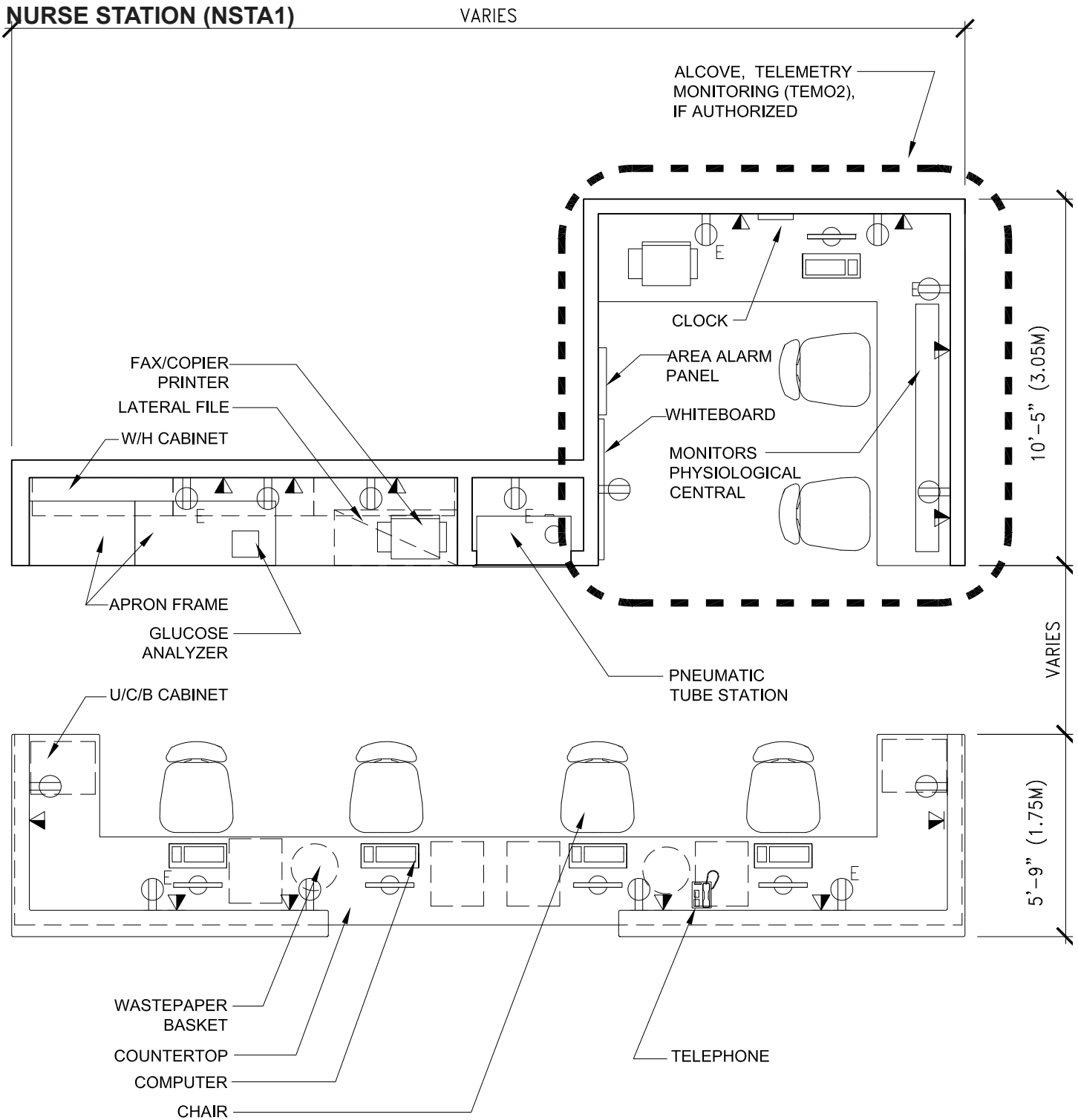
E0945	Cart, Computer, Mobile, 36"H x 32"W x 22"D	1	CC	<p>“THIS TYPICAL INCLUDES:</p> <ul style="list-style-type: none"> <li>1 Cart Body, Style-A Narrow, w/Raised Edge Top</li> <li>1 Flip-Up Shelf</li> <li>1 Sharps Container Holder</li> <li>1 Wastebasket and Holder</li> <li>1 Chart Holder</li> <li>2 Drawers, 3”H (76mm)</li> <li>2 Drawers, 6”H (152mm)</li> <li>Drawer Organizer Bins”</li> </ul>
F0315	Chair, Sleeper	1	VV	Sleeper chair, 39" high X 36" wide X 74" deep (as a bed). Chair designed to convert (either fold-out or reclining) into a temporary bed.
F0725	Table, Occasional, Executive, Wood	AR	VV	Executive chairside table, approximately 21" high X 26" wide X 20" deep.
F2017	Waste Receptacle, 24 Gal	1	VV	Rectangular steel waste receptacle with step-on lid and 24 gallon capacity. The receptacle is used to collect and temporarily store small quantities of paper refuse.
F2018	Waste Receptacle Step-on, Red 7 Gal	1	VV	7 Gallon steel infectious waste receptacle w/step-on lid (12x12x17)
F3050	Whiteboard, Dry Erase	1	CC	Whiteboard unit, approximately 36" H x 48" W consisting of a white porcelain enamel writing surface with an attached chalk tray. Magnetic surface available. Image can be easily removed with a standard chalkboard eraser. For use with water color pens. Unit is ready to hang.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M0500	Television 32" Flat Panel LCD w/Bkt	1	VV	Color television. Unit consists of a color receiver/monitor, with remote control, full off-air channel capability, automatic light sensor, broadcast stereo sound and automatic color balance.
M0750	Flowmeter, Air, Connect w/50 PSI Supply	2	VV	Air flowmeter. Unit has a stainless steel needle valve with clear flowtube for connection to 50 PSI air outlet from central pipeline system. Flowmeter to be provided with appropriate adapter fitting and outlet Database prices reflect fittings with an attached DISS power outlet. Other outlet and adapter configurations are available.

M0755	Flowmeter, Oxygen, Low Flow	4	VV	Oxygen flowmeter. Consists of a clear crystal flowtube calibrated to 3.5 or 8 LPM depending on manufacturer. For oxygen regulation in hospital settings. Flowmeter to be provided with appropriate adapter fitting and outlet Database prices reflect fittings with an attached DISS power outlet. Other outlet and adapter configurations are available.
M0765	Regulator, Vacuum	3 4	VV	Volume ventilator with options for pressure controlled respiration, respiratory mechanics, graphics and display. Unit allows variable flow according to the balance between control pressure and the patient resistance. The respiration unit features adjustable control pressure, cycling rate, sensitivity and oxygen concentration. The respiration unit functions as an assistor and controller of the patient's breathing.
M3070	Hamper, Linen, Mobile, w/Lid	1	VV	Mobile linen hamper with hand or foot operated lid. Made of heavy tubular stainless steel with heavy gauge welded steel platform. Holds 25" hamper bags. Mounted on ball bearing casters.
M4255	Stand, IV, Adjustable	AR	VV	Adjustable IV stand with 4-hook arrangement. Stand has stainless steel construction with heavy weight base. It adjusts from 66 inches to 100 inches and is mounted on conductive rubber, ball bearing, swivel casters. Stand is used for administering intravenous solutions.
M4266	Pump, Volumetric, Infusion, Multiple Line	AR	VV	Volumetric infusion pump. Pump is self-regulating with automatic sensor and adjustable rate. Equipped with visual and audible alarms and up to 10 hour capacity battery. For the administration of a wide variety of therapeutic agents where precise control is required. Unit provides individual control to IV lines simultaneously.
M4816	Warming Unit, Patient, Automatic/ Manual, Air	1	VV	Automatic/manual patient warming unit. Unit delivers a flow of warmed air through a perforated plastic blanket. Used primarily for postoperative patients to speed recovery of normal body temperature.
M7040	Table, Overbed	1	VV	Overbed table. Adjustable height table constructed of heavy gauge steel. Mounted on 2" diameter twin swivel casters with bumper caps. Table top is constructed with a high pressure plastic laminated surface that resists chipping, scratching, and staining. It includes a vanity tray and a mirror. Table is designed for use over bed, wheelchair or large chair.



M7435	Light, Overbed, Direct And Indirect	1	VV	Overbed patient room light which provides direct light for patient activity and indirect light for patient examination. The indirect portion of the light can be flipped down or redirected to provide dual intensity direct lighting. Unit is fully enclosed and is available in varying lengths. Some units feature a controlled power shut off to the light and patient bed when bumped by any item. Unit is designed to be wired directly to a junction box in the wall, a headwall service rail or patient service column. Dimensions are for a three foot light.
M7845	Monitor, Physiological, Bedside, 6 Channel	1	VV	6 channel bedside physiological monitor. The unit consist of a sixchannel non-fade monochrome display monitor, an alarm system and printer-recording capabilities. The monitor has color coded controls and automatic calibration. The unit displays up to six four waveforms simultaneously. The parameters to be monitored are user selectable. The monitor may be connected to a central monitoring station.
M7910	Thermometer, Electronic	1	VV	Electronic thermometer. Pocket size unit with easy to read zero Fahrenheit or zero Centigrade LCD display in approximately 40 seconds. Battery operated and enclosed in a heavy duty plastic case. Unit is hand-held portable and may be stand or wall mounted. For patient body temperature readings.
P3100	Lavatory, Vitreous China, Slab Type	1	CC	Wall mounted, slab type, vitreous china, lavatory (approximate bowl size 7"x15"x10") with: faucet holes on 4" centers; gooseneck spout; wrist blade handles; and grid strainer.
P8705	Dialysis Box, Recessed, Single Valve	1	V/V	A single cold water valve supply, recessed dialysis box with door. Box is constructed of stainless steel and includes the following standard equipment: cold water valve with 1/2" nom. copper female inlet, 3/4" male hose thread outlet and vacuum breaker; discharge hose bracket, waste water receptor, and removable wall flange. For use only in the ICU and other acute areas when a patient cannot be moved to the dialysis unit.
	Dispenser, Glove, Triple	1	VV	Triple glove box holder constructed of formed stainless steel for horizontal or vertical mounting.
	Wardrobe, Patient Clothing, small	1	VV	Clothing wardrobe for storage of patient clothing in a patient room. Apx dimentions: 25"W x 25"D x 77"H

	Bed Critical Care w/ Scale	1	VV	Electric patient bed for special care areas. Unit features a control panel for the patients operation, integral scale, rotation, and percussion/vibration therapy, IV rod locations and a full range of positions. Includes safety sides, thermal overload protection in the motors, provisions for chest x-rays and fluoroscopy. Bed deck is x-ray translucent.
	Percussion/Vibration Module CC Bed	1	VV	Percussion / vibration module for use with special care bed. Therapy module will provide aggressive pulmonary toileting for the prevention and treatment of pulmonary complications related to immobility.
	Rotation Module CC Bed	1	VV	Rotation module for use with special care bed. Therapy module will provide continuous lateral rotation therapy (CLRT) allowing for customizable rotation therapy for patient at risk of pulmonary complications.
	Analyzer, Glucose, Wall Mounted	AR	V/V	Portable point of care blood glucose testing system.
	Compression Unit, Intermittent	1	VV	The compression unit is required for use in the prevention of deep venous thrombosis (DVT)
	Cart, General Storage, Mobile with Keyless Lock, 42"H x 32"W x 22"D	1	VV	<p>“THIS TYPICAL INCLUDES:</p> <ul style="list-style-type: none"> <li>1 Cart Body, Style-A Narrow, w/Raised Edge Top</li> <li>1 Accessory Rail, Side</li> <li>2 Drawers, 3” H (76mm)</li> <li>4 Drawers, 6” H (152mm)</li> <li>Drawer Organizer Bins and Keyless Lock”</li> </ul>



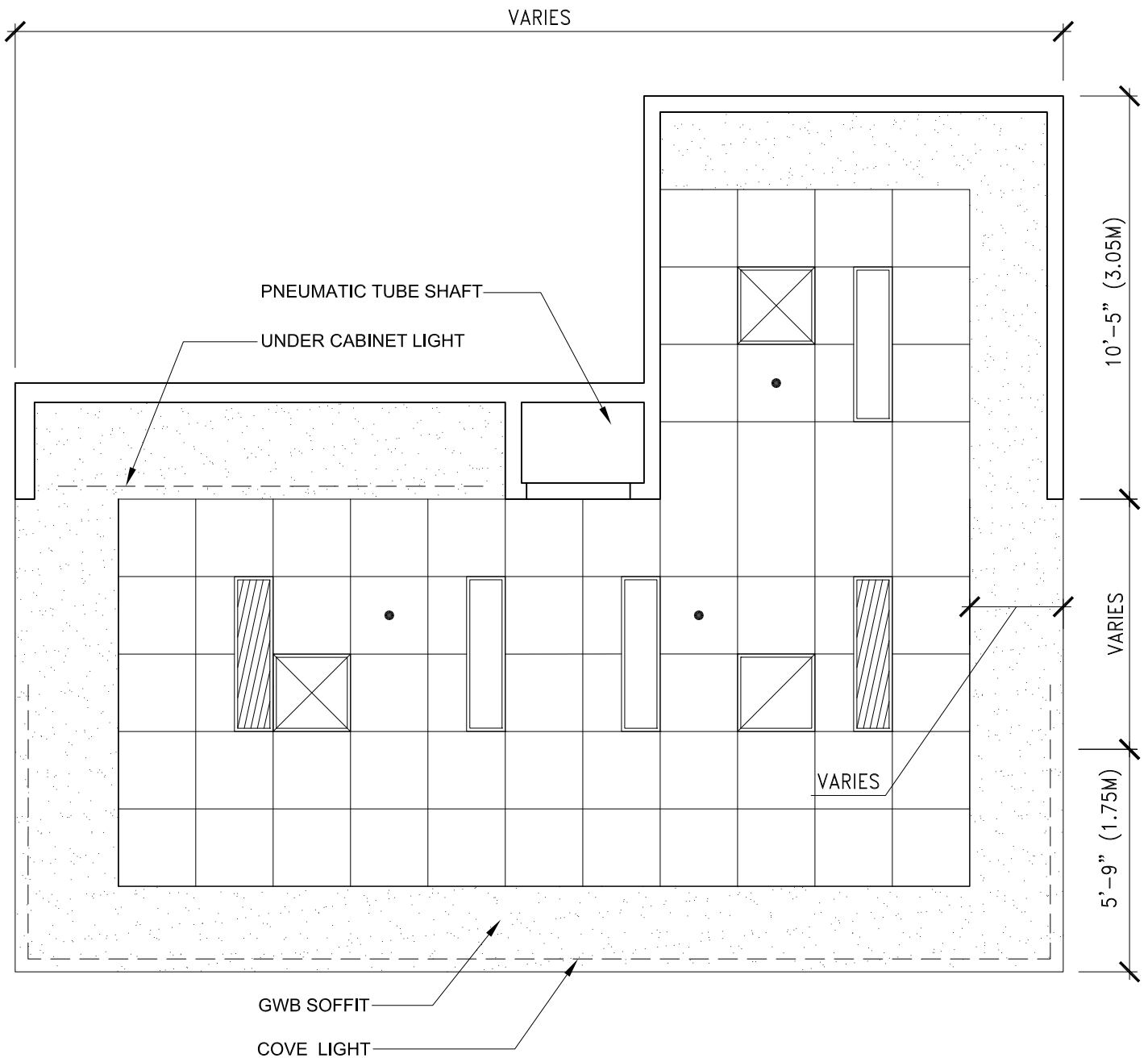
SCALE 1/4" = 1'-0"



# Nurse Station (NSTA1)

Medical Surgical Inpatient Units & Intensive Care Nursing Units  
Floor/Equipment Plan (260 NSF / 24.2 NSM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.



SCALE 1/4" = 1'-0"



# Nurse Station (NSTA1)

Medical Surgical Inpatient Units & Intensive Care Nursing Units  
 Reflected Ceiling Plan (260 NSF / 24.2 NSM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.

**Nurse Station (NSTA1)  
Room Data Sheet**

ARCHITECTURAL	
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Wall Finish:	GWB *1, *2
Base:	RB
Floor Finish:	RF/SVT
Door:	Open
Hardware:	N/A

Notes:  
 \*1. See design and Construction Procedures PG-18-3, "Noise Transmission Control"  
 \*2. Acoustical/Tackable wall covering one wall

POWER	
General:	Yes
Special:	Yes
Emergency:	Yes
Notes:	

COMMUNICATIONS	
Patient Monitor:	
Nurse Call:	Yes
Security/Duress:	Yes
CCTV:	
Telephone:	Yes
Pub. Address:	
Radio:	
Data:	Yes
Panic Call:	
Battery Operated Clock:	Yes
Intercom (Phone):	Yes
Staff/Duty Station:	

LIGHTING	
General:	
1. Five (5) of 1'x4' (300mm x 1200mm) Fluorescent Light Fixture, Acrylic, Prismatic Lens with F32T8 Lamps, 3500°K, CRI=70 (minimum)	
2. Linear Fluorescent Cove in Soffit above Nurse Transaction Counter	
3. Provide Ballasts per Fixture for Desired Switching Configuration	
4. Under Cabinet Light	
5. Lighting Level: 50fc	

HEATING, VENTILATING AND AIR CONDITIONING	
Dry Bulb Temp Cooling:	75°F (24°C)
Dry Bulb Temp Heating:	70°F (21°C)
Minimum % Outside Air:	
100% Exhaust Air:	
Noise Criteria:	NC 40
Steam:	
Relative Humidity/Cooling:	60%
Relative Humidity/Heating:	30%
Minimum Air Changes/Hr.:	6
Room Pressure:	Neutral (0)
AC Load Lights:	As Required

AC Load Equipment:	As Required
Number of People:	6
Special Equipment:	

PLUMBING AND MEDICAL GASES	
Cold Water:	
Hot Water:	
Domestic Water (HWH):	
Laboratory Air:	
Laboratory Vacuum:	
Sanitary/Vent:	
Medical Air:	
Medical Vacuum:	
Oxygen:	
Nitrogen Oxide:	
Nitrogen:	
Anesthesia Evac:	
Sprinkler:	Min 1" Pipe to Heads
Tempered Water:	
Water Control:	

SPECIAL EQUIPMENT	
Refer to Equipment List - Area Alarm Panel	

### Nurse Station (NSTA1) Equipment List

JSN	NAME	QTY	ACQ/INS	Description
A1015	Telephone, Desk	AR	VV	Telephone, desk
A6165	Station, Pneumatic Tube System	1	CC	The basic pneumatic tube system consists of a tube linking two or more different locations, a carrier to carry the payload and a power source to move the carrier from one location to another. The systems becomes more complex when the system is expanded to a network containing hundreds of locations and dozens of zones that need to transport the payload simultaneously.
C0045	Frame, Apron, 1 Drawer, 4x36x22	2	CC	Apron frame with one standard drawer. Also referred to as a drawer frame or table frame. Used for a knee space as a combination frame and drawer to support a top between base cabinets or a base cabinet and a wall.
C0046	Frame, Apron, 2 Drawer, 4x48x22	2	CC	Apron frame with two standard drawers. Also referred to as a drawer frame or table frame. Used for a knee space as a combination frame and drawers to support a top between base cabinets or a base cabinet and a wall.
C06M0	Cabinet, U/C/B, 1 PBD, 2 DR, 1 File DR, 30x18x22	6	CC	Sitting height under counter base cabinet with a pullboard above two drawers and file drawer. Also referred to as a drawer cabinet.
C09F0	Cabinet, U/C/B, 2 Half Drawer, 2 Door	1	CC	Sitting height under counter base cabinet, 30" H x 36" W x 22" D with two half width drawers above solid hinged doors. Also referred to as a combination cabinet or drawer and cupboard cabinet. For general purpose use throughout the facility.
C09G0	Cabinet, U/C/B, 1 Shelf, 2 Doors, 30x36x22	1	CC	Sitting height under counter base cabinet with one adjustable shelf and solid hinged doors. Also referred to as a cupboard or door cabinet. For general purpose use throughout the facility.
CG040	Cabinet, W/H, 2SH, S SGDO, Sloping Top 38x36x13	1	CC	Wall hung cabinet with two adjustable shelves, framed-glass sliding doors, and sloping top. Also referred to as a framed-glass sliding double door wall case. For general purpose use throughout the facility.
CG050	Cabinet, W/H, 2SH, 2 SGDO, Sloping Top 38x48x13	1	CC	Wall hung cabinet with two adjustable shelves, framed-glass sliding doors, and sloping top. Also referred to as a framed-glass sliding double door wall case. For general purpose use throughout the facility.

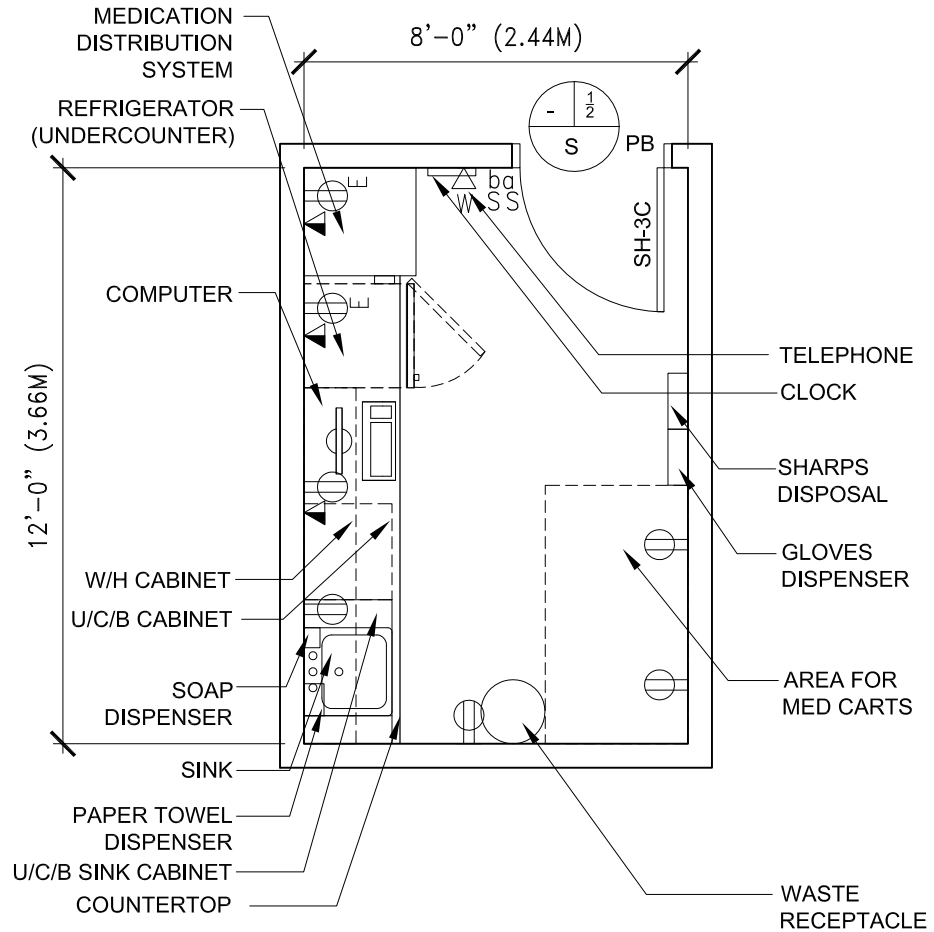
CT030	Countertop, High Pressure Laminate	2	CC	High pressure laminate countertop (composition of wood particle core with plastic laminate surface) having a hard smooth surface finish, standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a wide choice of colors, patterns, and depths. Used in general purpose areas requiring a basic work surface arrangement, has limited heat resistance and poor chemical resistance. Pricing based upon a 24" depth.
F0280	Chair, Swivel, Low Back	4	VV	Low back contemporary swivel chair, 37" high X 25" wide X 31" deep with a five (5) caster swivel base, arms and foam padded seat and back upholstered with either woven textile fabric or vinyl.
F0420	Cabinet, Filing, Lateral, Half Height(36" Wide)	AR	VV	Half height two (2) or three (3) drawer lateral filing cabinet, 28" high X 42" wide X 18" deep with recessed handles, locking device and drawer label holders. Drawers are adaptable to either letter or legal size materials.
F2000	Basket, Wastepaper, Round, Metal	1	VV	Round wastepaper basket, approximately 18" high X 16" diameter. This metal unit is used to collect and temporarily store small quantities of paper refuse.
F3050	Whiteboard, Dry Erase	1	CC	Whiteboard unit, approximately 36" H x 48" W consisting of a white porcelain enamel writing surface with an attached chalk tray. Magnetic surface available. Image can be easily removed with a standard chalkboard eraser. For use with water color pens. Unit is ready to hang.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
L1186	Analyzer, Glucose, Wall Mounted	AR	VV	Portable point of care blood glucose testing system.
M1801	Computer, Micro-processing, w/Flat Panel Monitor	AR	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse and speakers.
M1840	Printer/Copier/Fax Combination	AR 2	VV	Multifunctional printer, fax, scanner and copier (PFC) all-in-one machine.
M7850	Monitor, Physiological, Central, 8 Bed, Color	AR	VV	Eight bed central physiologic monitoring station. System consists of a central monitor that displays patient information from bedside monitors. It also centralizes alarm and recording functions from ECG tracings to vital signs display. Up to eight patients monitoring capabilities. Designed for use in the ICU, CCU, emergency room or recovery room.

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	Telemetry Transmitter/ Receiver	AR	VV	The telemetry transmitter/receiver must be capable of interfacing with the telemetry monitoring system by UHF digital transmission and allow patients to ambulate without connections to bedside monitors.
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**MEDICATION ROOM (MEDP1)**



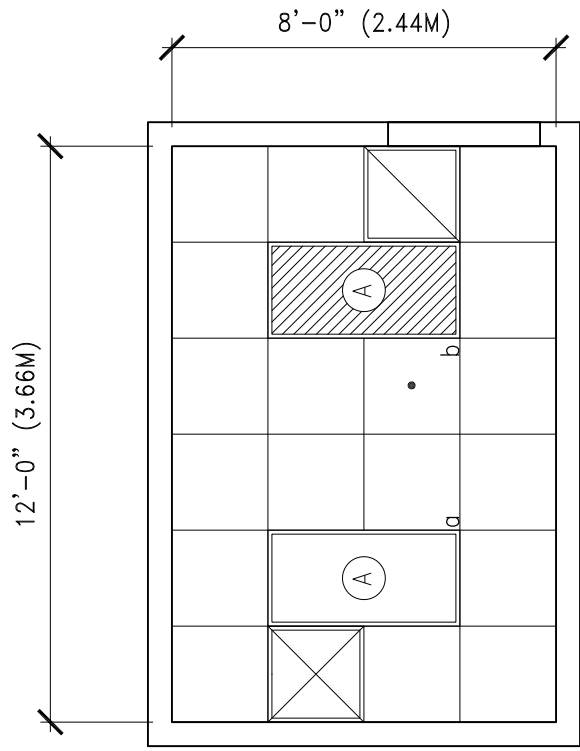
SCALE 1/4" = 1'-0"



# Medication Room (MEDP1)

Medical Surgical Inpatient Units & Intensive Care Nursing Units  
Floor/Equipment Plan (100 NSF / 9.3 NSM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.



SCALE  $\frac{1}{4}$ " = 1'-0"



# Medication Room (MEDP1)

Medical Surgical Inpatient Units & Intensive Care Nursing Units  
Reflected Ceiling Plan (100 NSF / 9.3 NSM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.

**Medication Room (MEDP1)  
Room Data Sheet**

**ARCHITECTURAL**

Ceiling: AT  
 Ceiling Height: 9'-0" (2700 mm)  
 Wall Finish: GWB  
 Base: RB  
 Floor Finish: VCT  
 Door: 1/2 S, PB  
 Hardware: SH-3C

Notes:

**POWER**

General: Yes  
 Special: Yes  
 Emergency: Yes  
 Notes:

**COMMUNICATIONS**

Patient Monitor:  
 Nurse Call:  
 Security/Duress:  
 CCTV:  
 Telephone: Yes  
 Pub. Address:  
 Radio:  
 Data: Yes  
 Panic Call:  
 Battery Operated Clock: Yes  
 Intercom (Phone):  
 Staff/Duty Station:

**LIGHTING**

General:  
 1. Two (2) of 2'x4' (600mm x 1200mm) Fluorescent Light Fixture, Acrylic, Prismatic Lens with F32T8 Lamps, 3500°K, CRI=70. (minimum)  
 2. Provide Ballasts per Fixture for Desired Switching Configuration  
 3. Under Cabinet Light  
 4. Lighting Level: 50fc

**HEATING, VENTILATING AND AIR CONDITIONING**

Dry Bulb Temp Cooling: 75° F (24° C)  
 Dry Bulb Temp Heating: 70° F (21° C)  
 Minimum % Outside Air:  
 100% Exhaust Air:  
 Noise Criteria: NC 40  
 Steam:  
 Relative Humidity/Cooling: 60%  
 Relative Humidity/Heating: 30%  
 Minimum Air Changes/Hr.: 4  
 Room Pressure: Positive (+)  
 AC Load Lights: As Required  
 AC Load Equipment: As Required  
 Number of People: 3  
 Special Equipment:

**PLUMBING AND MEDICAL GASES**

Cold Water: Yes, 1/2" for Sink  
 Hot Water: Yes, 1/2" for Sink  
 Domestic Water (HWH): As Required  
 Laboratory Air:  
 Laboratory Vacuum:  
 Sanitary/Vent: 2" for Sink, 1 1/2" Vent  
 Medical Air:  
 Medical Vacuum:  
 Oxygen:  
 Nitrogen Oxide:  
 Nitrogen:  
 Anesthesia Evac:  
 Sprinkler: Min 1" Pipe to Heads  
 Tempered Water:  
 Water Control:

**SPECIAL EQUIPMENT**

Refer to Equipment List

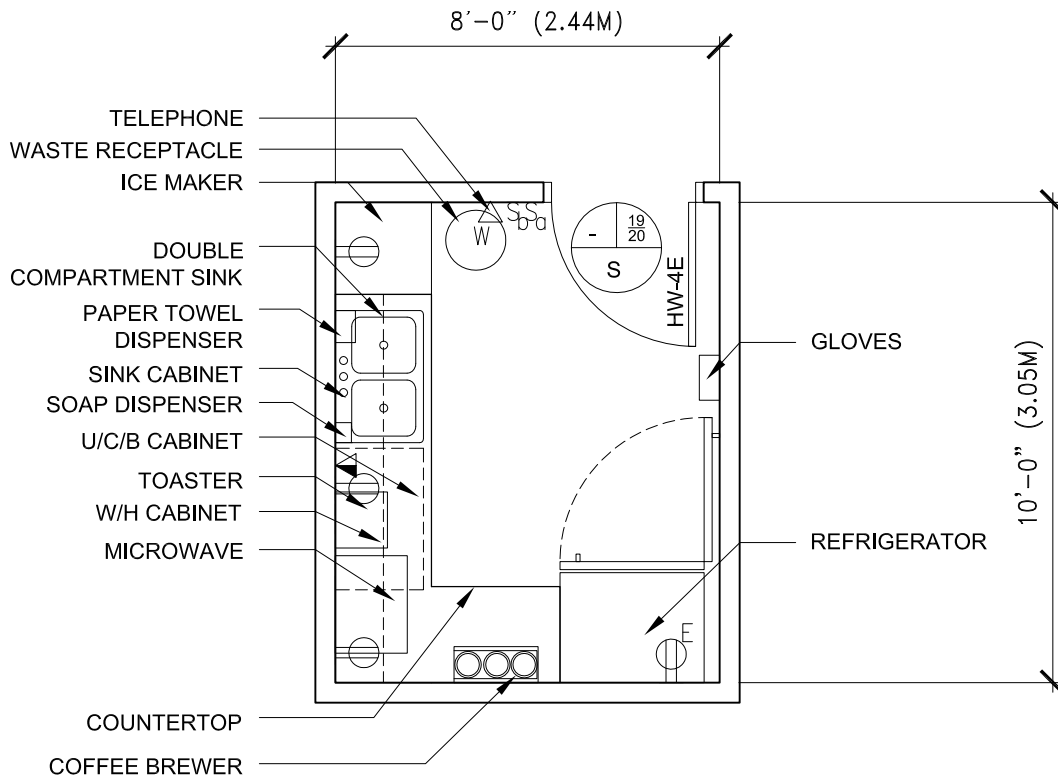
**MEDICATION ROOM (MEDP1)  
Equipment List**

JSN	NAME	QTY	ACQ/INS	Description
A1017	Telephone, Wall Mounted	1	VV	Telephone, wall mounted
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5080	Dispenser, Paper Towel, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, single-fold, paper towel dispenser. Dispenser features: tumbler lock; front hinged at bottom; and refill indicator slot. Minimum capacity 400 single-fold paper towels.
A5108	Waste Disposal Unit, Sharps	1	VV	A container with wall mounting brackets for collecting and transporting syringes and other sharps for decontamination and disposal. Available in 2 gallon and 8 gallon with locking rotor. Complies with OSHA regulations for handling sharps.
	Dispenser, Glove, Triple	1	VV	Triple glove box holder constructed of formed stainless steel for horizontal or vertical mounting.
C04P0	Cabinet, Sink, U/C/B, 2 Door, 36x36x22	1	CC	Standing height under counter base sink cabinet with solid hinged doors. Also referred to as a double-door sink cabinet. For general purpose use throughout the facility where a sink is to be used. Coordinate actual clear cabinet dimension with the actual outside dimension of sink that is specified to ensure that they are compatible.
C02C0	Cabinet, U/C/B, 1 Shelf, 1 Drawer, 1 DO, 36x24x22	1	CC	Standing height under counter base cabinet with an adjustable shelf and a full width drawer above a solid right or left-hinged door (appropriate door hinge configuration to be indicated on equipment elevation drawings). Also referred to as a combination cabinet or a drawer and cupboard cabinet.
C04H0	Cabinet, U/C/B, 2 Half Drawer, 3 Drawer, 36x36x22	1	CC	Standing height under counter base cabinet with two half width drawers side-by-side above three full width drawers. Also referred to as a drawer cabinet. For general purpose use throughout the facility.
CG040	Cabinet, W/H, 2 SH, 2 SGDO, Sloping Top, 38x36x13	1	CC	Wall hung cabinet with two adjustable shelves, framed-glass sliding doors, and sloping top. Also referred to as a framed-glass sliding double door wall case. For general purpose use throughout the facility.

CG050	Cabinet, W/H, 2 SH, 2 SGDO, Sloping Top, 38x48x13	1	CC	Wall hung cabinet with two adjustable shelves, framed-glass sliding doors, and sloping top. Also referred to as a framed-glass sliding double door wall case. For general purpose use throughout the facility.
CS090	Sink, SS, Single Compartment, 7.5x19x16 ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.
CT030	Countertop, High Pressure Laminate	AR	CC	High pressure laminate countertop (composition of wood particle core with plastic laminate surface) having a hard smooth surface finish, standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a wide choice of colors, patterns, and depths. Used in general purpose areas requiring a basic work surface arrangement, has limited heat resistance and poor chemical resistance. Pricing based upon a 24" depth.
F2017	Waste Receptacle, 24 Gal	1	VV	Rectangular steel waste receptacle with step-on lid and 24 gallon capacity. The receptacle is used to collect and temporarily store small quantities of paper refuse.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M1801	Computer, Micro-processing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse and speakers.
M3150	Distribution System, Medication, Automatic	1	VV	An automated dispensing system that provides controlled dispensing, inventory and security. Size and cost will vary dependent on number of modules selected.
A0919	Distribution System, Medication, Lock Assembly, Refrigerator	1	VV	Locking interface assembly between main medication distribution unit and refrigerator (Size: 7"H x 5"W x 2"D note adds 2" refrig with)

M3155	Refrigerator, Undercounter w/ Med Distribution Sys. Lk	1	VV	Undercounter all-refrigerator unit with stainless steel interior and exterior, external digital display thermometer, wire adjustable shelves and medication dispensing system lock mounting plate 26W x 27.5D x 34H
	Cart Medication w/ Computer	AR	VV	Mobile medication/computer cart with patient drawers and power supply.

**NOURISHMENT STATION (NCWD2)**



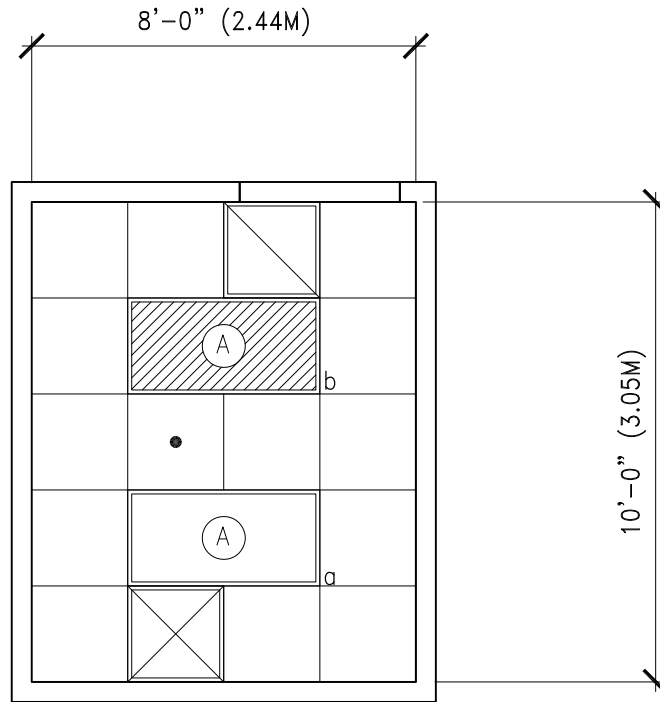
SCALE 1/4" = 1'-0"



# Nourishment Station (NCWD2)

Medical Surgical Inpatient Units & Intensive Care Nursing Units  
Floor/Equipment Plan (80 NSF / 7.4 NSM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.



SCALE  $\frac{1}{4}'' = 1'-0''$



# Nourishment Station (NCWD2)

Medical Surgical Inpatient Units & Intensive Care Nursing Units  
Reflected Ceiling Plan (80 NSF / 7.4 NSM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.



**Nourishment Station (NCWD2)  
Room Data Sheet**

ARCHITECTURAL	
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Wall Finish:	GWB
Base:	RB
Floor Finish:	SVT
Door:	19/20 S
Hardware:	4E

Notes:

POWER	
General:	Yes
Special:	Yes
Emergency:	Yes
Notes:	

COMMUNICATIONS	
Patient Monitor:	
Nurse Call:	
Security/Duress:	
CCTV:	
Telephone:	Yes
Pub. Address:	
Radio:	
Data:	Yes
Panic Call:	
Battery Operated Clock:	Yes
Intercom (Phone):	
Staff/Duty Station:	

LIGHTING	
General:	
1. Two (2) of 2'x4' (600mm x 1200mm) Fluorescent Light Fixture, Acrylic, Prismatic Lens with F32T8 Lamps, 3500°K, CRI=70 (minimum)	
2. Provide Ballasts per Fixture for Desired Switching Configuration	
3. Under Cabinet Light	
4. Lighting Level: 50fc	

HEATING, VENTILATING AND AIR CONDITIONING	
Dry Bulb Temp Cooling:	75° F (24° C)
Dry Bulb Temp Heating:	70° F (21° C)
Minimum % Outside Air:	15
100% Exhaust Air:	
Noise Criteria:	NC 40
Steam:	
Relative Humidity/Cooling:	60%
Relative Humidity/Heating:	30%
Minimum Air Changes/Hr.:	6
Room Pressure:	Negative (-)
AC Load Lights:	As Required
AC Load Equipment:	As Required
Number of People:	2
Special Equipment:	

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes, 1/2" for Sink, 1/2" for Coffee Maker w/ Filter
Hot Water:	Yes, 1/2" for Sink
Domestic Water (HWH):	As Required
Laboratory Air:	
Laboratory Vacuum:	
Sanitary/Vent:	2" for Sink, 1 1/2" Vent
Medical Air:	
Medical Vacuum:	
Oxygen:	
Nitrogen Oxide:	
Nitrogen:	
Anesthesia Evac:	
Sprinkler:	Min 1" Pipe to Heads
Tempered Water:	
Water Control:	

SPECIAL EQUIPMENT	
Refer to Equipment List	

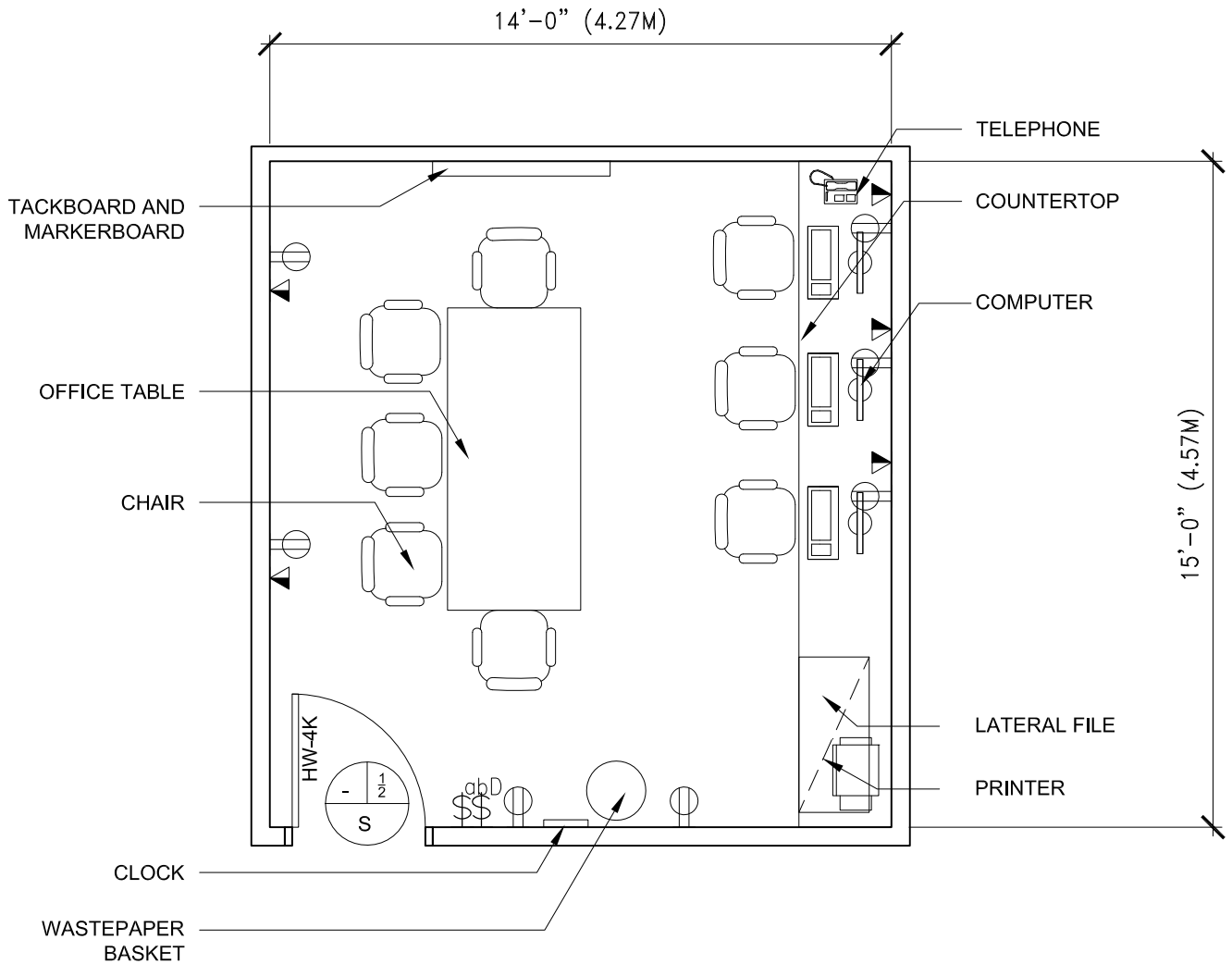
**Nourishment Station (NCWD2)  
Equipment List**

JSN	NAME	QTY	ACQ/INS	Description
A1017	Telephone, Wall Mounted	1	VV	Telephone, wall mounted
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5080	Dispenser, Paper Towel, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, single-fold, paper towel dispenser. Dispenser features: tumbler lock; front hinged at bottom; and refill indicator slot. Minimum capacity 400 single-fold paper towels.
C04J0	Cabinet, U/C/B, 8 Half Drawer, 36x36x22	1 2	CC	Standing height under counter base cabinet with eight half width drawers of equal height. Also referred to as a drawer cabinet. For general purpose use throughout the facility.
C05P0	Cabinet, Sink, U/C/B, 2 Door, 36x48x22	1	CC	Standing height under counter base sink cabinet with solid hinged doors. Also referred to as a double-door sink cabinet. Coordinate actual clear cabinet dimension with the actual outside dimension of sink that is specified to ensure that they are compatible.
CS230	Sink, SS, Double Compartment, 10x14x16 ID	1	CC	Double compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.
CT050	Countertop, Stainless Steel	AR	CC	Stainless steel countertop (composition of heavy-gauge Type No. 304 stainless steel) having a smooth satin finish and integral 4" backsplash/curb. Also referred to as a corrosion-resistant steel work surface or work top. Available in various depths. Used in areas where excellent ease of cleaning, abrasion resistance, bacteria resistance, impact resistance, load capacity and moisture resistance, are of concern.

F2017	Waste Receptacle, 24 Gal	1	VV	Rectangular steel waste receptacle with step-on lid and 24 gallon capacity. The receptacle is used to collect and temporarily store small quantities of paper refuse.
K1552	Brewer, Coffee, Auto, Elect, 3 Burner, Front/Back	1	VV	Space saving front to back automatic coffee maker. This unit includes a heating tank, connection for a cold water supply, decanter service with three burners, funnel and a water flow controller. The unit is used for semi-automatic coffee brewing in cafeterias and commercial institutions. The unit automatically shuts off the water flow when enough has passed through to fill the pot. The unit is normally provided plumbed with a hot water faucet to the side for making other hot drinks (tea, cider, cocoa, etc.). The database height dimension does not include the clearance for coffee decanters warming on the upper burners.
K4660	Oven, Microwave, Heavy Duty, 1000 Watts	1	VV	Heavy duty, counter mounted, microwave oven which delivers 1000 watts of microwave energy for rapid reheating, defrosting or cooking. The unit's cabinet is made from stainless steel or other rugged material. The touchpad has programmable keys for timing the cooking of specific items and a multiple portion cooking time adjustment key. The unit features an electronic timer with a digital readout. Some models have an additional manual dial timer. The unit can be mounted in a cabinet recess or on a shelf.
R4650	Ice Maker, Flaked, With Dispenser	1	CC	Ice maker dispenser approximately 71" H x 19"D x 24"W This unit provides flaked ice and cooled water automatically. The unit has a daily capacity up to 650 pounds and a 100 pound capacity stainless steel storage compartment with water station. It is a freestanding, automatic load ice dispenser for food service and healthcare use. The unit stores 50 pounds of ice and produces approximately 400 pounds of ice in a 24 hour period. The unit is used in healthcare institutions and various commercial food service operations for dispensing ice.
R7250	Refrigerator, Undercounter SS	1	VV	Refrigerator/freezer unit. This type unit includes a food saver system that helps keep food fresher. It also includes roll out wheels and is equipped for an optional automatic icemaker. This unit is of commercial or residential design and use.
	Dispenser, Glove, Triple	1	VV	Triple glove box holder constructed of formed stainless steel for horizontal or vertical mounting.



**TEAM WORK ROOM (WRCH1)**



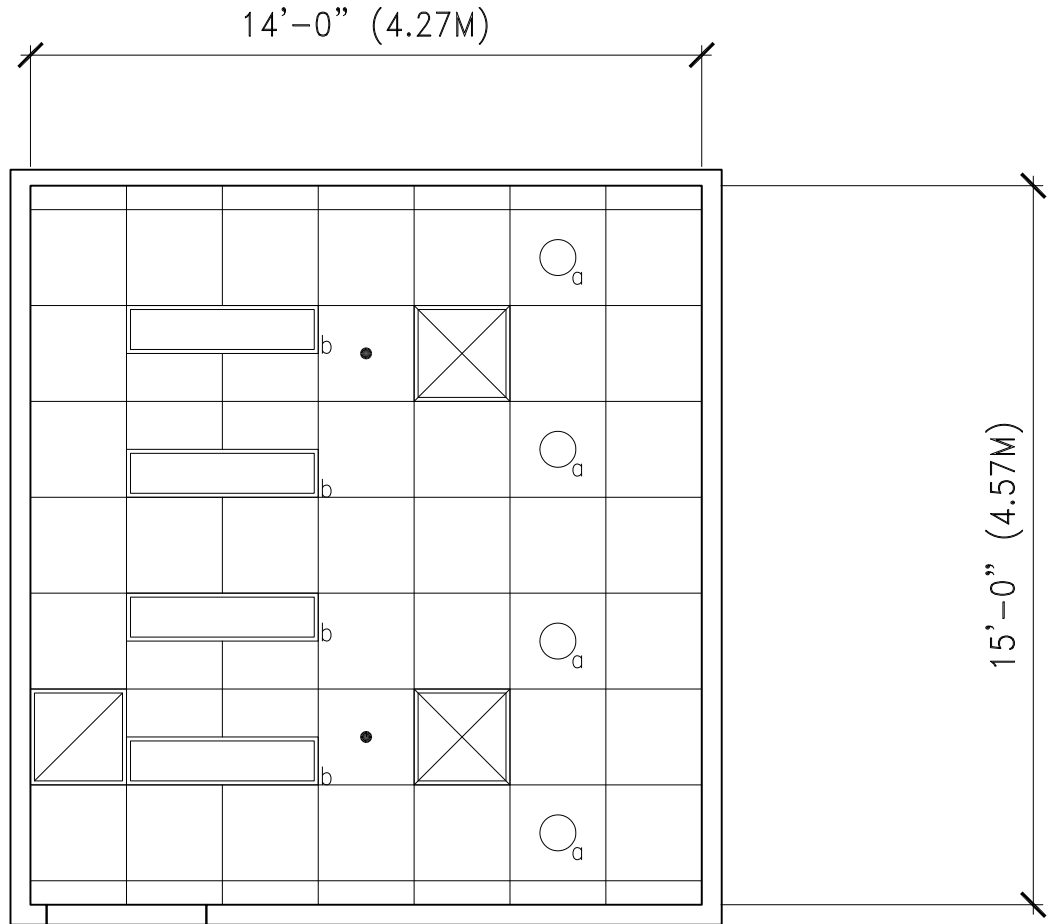
SCALE 1/4" = 1'-0"



# Team Work Room (WRCH1)

Medical Surgical Inpatient Units & Intensive Care Nursing Units  
Floor/Equipment Plan (220 NSF / 20.4 NSMM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.



SCALE  $\frac{1}{4}'' = 1'-0''$



# Team Work Room (WRCH1)

Medical Surgical Inpatient Units & Intensive Care Nursing Units  
 Reflected Ceiling Plan (220 NSF / 20.4 NSM)

NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are contained in VA Design Manuals and Space Planning Criteria located in the VA Technical Information Library.

**Team Work Room (WRCH1)  
Room Data Sheet**

ARCHITECTURAL	
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Wall Finish:	GWB *2
Base:	RB
Floor Finish:	VCT
Door:	1/2 S-T
Hardware:	4K

Notes:  
\*2. Acoustical/Tackable wall covering one wall

POWER	
General:	Yes
Special:	Yes
Emergency:	
Notes:	

COMMUNICATIONS	
Patient Monitor:	
Nurse Call:	
Security/Duress:	
CCTV:	
Telephone:	Yes
Pub. Address:	
Radio:	
Data:	Yes
Panic Call:	
Battery Operated Clock:	Yes
Intercom (Phone):	Yes
Staff/Duty Station:	

LIGHTING	
General:	
1. Four (4) of 1'x4' (300mm x 1200mm) Fluorescent Light Fixture, Acrylic, Prismatic Lens with F32T8 Lamps, 3500°K, CRI=70 (minimum)	
2. Provide Ballasts per Fixture for Desired Switching Configuration	
3. General Lighting Level: 50fc, Task Lighting Level: 100fc	
4. Dimmable	

HEATING, VENTILATING AND AIR CONDITIONING	
Dry Bulb Temp Cooling:	75° F (24° C)
Dry Bulb Temp Heating:	70° F (21° C)
Minimum % Outside Air:	
100% Exhaust Air:	
Noise Criteria:	NC 40
Steam:	
Relative Humidity/Cooling:	60%
Relative Humidity/Heating:	30%
Minimum Air Changes/Hr.:	6
Room Pressure:	Neutral (0)
AC Load Lights:	As Required
AC Load Equipment:	As Required
Number of People:	8
Special Equipment:	

PLUMBING AND MEDICAL GASES	
Cold Water:	
Hot Water:	
Domestic Water (HWH):	
Laboratory Air:	
Laboratory Vacuum:	
Sanitary/Vent:	
Medical Air:	
Medical Vacuum:	
Oxygen:	
Nitrogen Oxide:	
Nitrogen:	
Anesthesia Evac:	
Sprinkler:	Min 1" Pipe to Heads
Tempered Water:	
Water Control:	




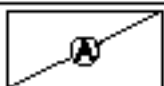




SPECIAL EQUIPMENT	
Refer to Equipment List	

**TEAM WORK ROOM (WRCH1)  
Equipment List**





















JSN	NAME	QTY	ACQ/INS	Description
A1015	Telephone, Desk	1	VV	Telephone, desk
CT030	Countertop, High Pressure Laminate	AR	CC	High pressure laminate countertop (composition of wood particle core with plastic laminate surface) having a hard smooth surface finish, standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a wide choice of colors, patterns, and depths. Used in general purpose areas requiring a basic work surface arrangement, has limited heat resistance and poor chemical resistance. Pricing based upon a 24" depth.
E0851	Display, Tackboard & Markerboard, Wall Mtd	1	VV	Tack/Marker-board approx. 48"W. THIS TYPICAL INCLUDES: 2 Vertical Hanging Strips 1 Tack board 1 Marker Board
F0280	Chair, Swivel, Low Back	AR	VV	Low back contemporary swivel chair, 37" high X 25" wide X 31" deep with a five (5) caster swivel base, arms and foam padded seat and back upholstered with either woven textile fabric or vinyl.
F0420	Cabinet, Filing, Lateral, Half Height	1	VV	Half height two (2) or three (3) drawer lateral filing cabinet, 28" high X 42" wide X 18" deep with recessed handles, locking device and drawer label holders. Drawers are adaptable to either letter or legal size materials.
F0750	Table, Office, (size as required)	AR	VV	Office table, sized as required.
F2000	Basket, Wastepaper, Round, Metal	1	VV	Round wastepaper basket, approximately 18" high X 16" diameter. This metal unit is used to collect and temporarily store small quantities of paper refuse.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M1801	Computer, Microprocessing, w/Flat Panel Monitor	AR	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse and speakers.
M1840	Printer/Copier/Fax Combination	1	VV	Multifunctional printer, fax, scanner and copier (PFC) all-in-one machine.



GUIDE PLATE SYMBOLS LEGEND

SYSTEM	DESCRIPTION OF SYMBOLS	SYMBOL
Wiring devices switches	BLANK = SINGLE POLE 3 = THREE-WAY D = DIMMER LV = LOW VOLTAGE LM = LOW VOLTAGE MASTER PB = PUSH BUTTON STATION T = TIMER OPERATED X = EXPLOSION PROOF Z = DOUBLE POLE 4 = FOUR-WAY K = KEY OPERATED L = LOCK P = WITH PILOT LIGHT RC = REMOTE CONTROL WP = WEATHER PROOF M = OCCUPANCY SENSOR	S <sub>2</sub>
	Single pole switch	S
	Single pole switch - suffix of "a", "b", or "c" indicates separate control of fixture(s) with same designation	S <sup>a</sup>
	Door switch	DS
	Emergency power off (EPO) push button	EPO 
Lighting Fixtures	2'x2' (600mm x 600mm) fluorescent fixture	
	1'x4' (300mm x 1200mm) fluorescent fixture	
	2'x4' (600mm x 1200mm) fluorescent fixture	
	Wall-mounted fluorescent fixture	
	2'x2' (600mm x 600mm) fluorescent fixture- emergency power	
	2'x4' (600mm x 1200mm) fluorescent fixture- emergency power	
	Wall-mounted fluorescent fixture-emergency power	
	Under-cabinet light fixture	--- A ---
	Wall-mounted light fixture-type as noted	W(A)
	Ceiling mounted light fixture-type as noted	C(A)
	Emergency recessed light fixture	ER(A)
	Recessed light fixture	R(A)

SYSTEM	DESCRIPTION OF SYMBOLS	SYMBOL
Wiring devices receptacles	Duplex receptacle, NEMA 5-20R-20 amp-mounted 18" (450mm) A.F.F. Unless otherwise noted	
	Duplex receptacle, NEMA 5-20R-20 amp-mounted above counter top/counter top back splash	
	Duplex receptacle, Dedicated	
	Duplex receptacle with ground fault interrupter, NEMA 5-20R- 20 amp-mounted 18" (450mm) A.F.F. Unless otherwise noted	
	Duplex receptacle with ground fault interrupter, NEMA 5-20R- 20 amp-mounted above counter top/counter top back splash	
	Weatherproof while in use duplex receptacle with GFI, NEMA 5-20R-20 amp-mounted 18" (450mm) A.F.F. Unless otherwise noted	
	Quadruplex outlet, NEMA 5-20R-20 amp-mounted 18" (450mm) A.F.F. Unless otherwise noted.	
	Quadruplex outlet, NEMA 5-20R-20 amp-mounted above counter top/counter top back splash	
	Quadruplex outlet with ground fault interrupter, NEMA 5- 20R- 20 amp-mounted 18" (450mm) A.F.F. Unless otherwise noted	
	Quadruplex outlet with ground fault interrupter, NEMA 5-20R- 20 amp- mounted above counter top/counter top back splash	
	Duplex receptacle on emergency power, NEMA 5-20R-20 amp-mounted 18" (450mm) A.F.F. unless otherwise noted	
	Quadruplex receptacle, NEMA 5-20R-20 amp- emergency power	
	Special receptacle of the type required	
	Single receptacle, NEMA 5-20R-20 amp	
	Single receptacle, NEMA 5-20R grounding type	
	Electrical surface mounted multi-outlet raceway assembly, NEMA 5-20R receptacles at 2'-0" (600mm) intervals, single or multiple channel as required- mounted 12" (300mm) above counter.	
Junction box - purpose and location as noted		

SYSTEM	DESCRIPTION OF SYMBOLS	SYMBOL
Auxiliary Systems	Telephone data outlet-mounted 18" (450mm) A.F.F. unless otherwise noted	
	Telephone data outlet-mounted above counter top/counter top back splash	
	Wall-mounted telephone outlet-mounted 48" (1200mm) A.F.F. unless otherwise noted	
	Video outlet type as noted in equipment list	
	Speaker-ceiling mounted	
	Intercom outlet	
	Nurse call dome light-ceiling mounted	
	Nurse call dome light-wall mounted	
	Nurse call duty station	
	Emergency nurse call	
	Nurse call staff station	
	Volume control-wall mounted	
	Security/duress-alarm button wall mounted	
	Junction box-purpose and location as noted	
Mechanical	Room thermostat-mounted 5'-0" (1520mm) A.F.F.	
	Room humidistat-mounted 5'-0" (1520mm) A.F.F.	
	Supply	
	Return	
Plumbing	Medical gas outlet (letter designates service)	
	Sprinkler	



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## SECTION 5 - APPENDIX

### TECHNICAL REFERENCES

The references listed below are comprised of both a summary of current relevant VA standards and criteria followed by a summary of current industry standards, all of which have guided the information in this Pulmonary Medicine Service Design Guide. The Design Guide refers to the sources throughout the text when information is more detailed or extensive than would be appropriate to be included in this guide. VA sources can be accessed on VA website.

#### VA Standards and Criteria

VA Space Planning Criteria Chapter 212

Accessibility and Barrier-Free Design Guide PG-18-13

Design and Construction Procedures H-18-3

Equipment Information PG-18-5

Master Construction Specifications PG-18-1

Standard Details PG-18-4

Room Finishes, Door and Hardware Schedule PG-18-14

Seismic (Structural) Design Requirements H-18-8

Signage Design Guide

Space Planning Criteria PG-18-9

Sustainable Design and Energy Reduction Manual April 2010

VA Technical Criteria (PG-18-10 Design Manuals) pertaining to Architectural,

Interior Design, HVAC, Plumbing, and Electrical Ambulatory Care/Outpatient Clinic/Interior Design Manual for New Construction and Renovations of Hospitals and Clinics

Design Guide Office of Information and Technology (OI&T) for Information Management Systems Physical Security Design Manual (Final Draft)

Emergency Power & Water Supply During Natural Disasters, Phase 2

VA Fire Protection Design Manual 2009

Energy Conservation (EPACT 2005 and DOE – Final Rule)

Energy Conservation (Executive Order No. 13423 Dated January 24, 2007: Strengthening Federal Environmental, Energy, and Transportation Management)

Memorandum of Understanding (MOU): Federal Leadership in High Performance and Sustainable Buildings.

Commissioning Guidelines (issuance pending)

#### Industry Standards and Criteria

ADA Standards for Accessible Design 2010

International Building Code, 2009

NFPA 101, 2009

FGI Guidelines for Design and Construction of Health Care Facilities - 2010



**ABBREVIATIONS & ACRONYMS**

**-A-**

A	Air, Medical
ABAAS	Architectural Barriers Act Accessibility Standards
AC	Air Conditioning
ACI	American Concrete Institute
ADA	Americans with Disabilities Act of 1990
A/E	Architect/Engineer
AIA	American Institute of Architects
All	Airborne Infection Isolation
ASHRAE	American Society of Heating, Refrigeration, and Air-Conditioning Engineers
AT	Acoustical Ceiling Tile

**-B-**

**-C-**

C	Celsius
CAB	Cabinet
CAD	Computer Aided Drafting
CCTV	Closed Circuit Television
CDC	Centers for Disease Control
CFM	Construction & Facilities Management or Cubic Feet per Minute
CPT	Carpet Tile
CRI	Color Rendering Index
CT	Computed Tomography
CV	Constant Volume

**-D-**

DEPT	Department
DGSF	Department Gross Square Feet
DOE	Department of Energy
DNSF	Department Net Square Feet
DNTG	Department Net-to-Gross
DWG	Drawing

**-E-**

EHR	Electronic Health Record
EO	Executive Order
EPACT	Energy Policy Act

**-F-**

F	Fahrenheit or Filter
FA	Functional Area
FC	Footcandle
FGI	Facilities Guidelines Institute

**-G-**

GFI, GFCI	Ground Fault Circuit Interrupter
GSA	General Services Administration
GWB	Gypsum Wall Board System

**-H-**

HAC	House Keeping Aides Closet
HIPAA	Health Insurance Portability and Accountability Act of 1996
Hr	Hour
HVAC	Heating, Ventilation and Air Conditioning

**-I-**

IBC	International Building Code
ICRA	Infection Control Risk Assessment
ICU	Intensive Care Unit
IES	Illuminating Engineering Society
IPCU	In Patient Care Unit
IT	Information Technology

**-J-**

**-K-**

K	Kelvin (degrees)
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**-L-**

LOS	Length of Stay
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<b>-M-</b>		RF	Radio Frequency or Rubber Flooring
MCS	Master Construction Specifications	RH	Relative Humidity or Right Hand
MIN	Minimum	RME	Reusable Medical Equipment
MM	Millimeters		
MOU	Memorandum of Understanding	<b>-S-</b>	
MRCP	Magnetic Resonance Cholangiopancreatography	SP	Sprayed Plastic Finish
MRI	Magnetic Resonance Imaging	SPD	Sterile Processing Department
MS&N	Medical Surgical and Nursing	SVT	Solid Vinyl Floor Tile (Luxury Vinyl Tile)
		<b>-T-</b>	
<b>-N-</b>		TB	Tuberculosis or Through Bolt or Towel Bar
NEMA	National Electrical Manufacturers Association	TIL	Technical Information Library
NFPA	National Fire Protection Association		
NSF	Net Square Feet	<b>-U-</b>	
NSM	Net Square Meters	U/C/B	Under Counter Base
		UFAS	Uniform Federal Accessibility Standard
<b>-O-</b>		<b>-V-</b>	
O	Oxygen	V	Vacuum
OI&T	Office of Information & Technology	VA	Veteran's Administration] or Volt Ampere
OND	Operation New Dawn		
OSHA	Occupational Safety and Health Administration	VACO	Veteran's Affairs Central Office
OT	Occupational Therapy	VAV	Variable Air Volume
		VCT	Vinyl Composition Tile
<b>-P-</b>		<b>-W-</b>	
PA	Public Address	W	Watts, Waste or Workload (input data statements)
PC	Personal Computer or Piece or Polycarbonate or Portland Cement	WH	Wall Hung
PE	Protective Environment	WM	Wall-Mounted
PG	Program Guide or Page	WSF	Welded Seam Sheet Flooring
PRB	Profile Base		
PMS	Public Messaging System	<b>-X-</b>	
PSG	Polysomnography	<b>-Y-</b>	
PTSD	Post Traumatic Stress Disorder	<b>-Z-</b>	
<b>-Q-</b>			
<b>-R-</b>			
RB	Resilient Base		
RCP	Reflected Ceiling Plan		