



U.S. Department
of Veterans Affairs

Office of Construction &
Facilities Management

Office of Facilities Planning
Facilities Standards Service

DESIGN ALERT

JANUARY 15, 2025

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CONTACT: Facilities Standards Service at til@va.gov



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DESIGN ALERT

JUNE 1, 2014, REV NOVEMBER 1, 2014
003C2B-DA-142

For Immediate Application on all Current Projects Patient Safety in VHA Bathrooms

ISSUE: The VA National Center for Patient Safety has identified three recent VA projects with the following patient safety issues: a lack of slip resistant flooring and water ponding in Inpatient Bathrooms and Tub rooms. These conditions increase the potential for patient and staff falls.

DISCUSSION: CFM standards are consistent in calling for slip resistant flooring materials in bathrooms. The current VA Master Specification for Ceramic & Porcelain Tiles for Bathroom Floors (09 30 13, CERAMIC/PORCELAIN TILING) calls for Slip Resistance with a coefficient of friction equal to or greater than 0.42 for interior tile floors when wet in accordance with ANSI A137.1.

VA combats ponding and standing water in accessible bathrooms by calling for 3" slab depressions coupled with a maximum floor slope of a $\frac{1}{4}$ " per foot tapered to a floor drain. This VA standard is found in section 4.30.2 entitled Shower Floors, under Chapter 4 of the Architectural Design Manual of PG 18 10. The intent is to have the slab depression for the entire bathroom floor area to allow for a gentle taper to a floor drain in the shower.

CONCLUSION: Patient & staff safety is a very serious concern. VA Design Criteria and Construction Standards in the [Technical Information Library \(TIL\)](#) are in place to assure the safety, security, and quality of optimum healthcare. VA Standards are required for all VA projects, whether new, renovation, or retrofit projects. Architects, Engineers, Designers, Contracting Officers, Project Managers, and Administrators should work closely with CFM to apply Standards appropriately to every project, to ensure consistency and safety to every VA project. The need for bathroom floors made of slip resistant materials and a proper slope to drain needs to be clearly understood as an essential design component.

CORRECTIVE ACTIONS: Revise Peer Review Checklist to include verification of slip resistant material and verification of floor slope to drain in submittal requirements for entire bathroom and tub room floor areas.

Revise Spec. Section 09 30 13, CERAMIC/PORCELAIN TILING. Under Article 3.3, Paragraph C, add Subparagraph 6 requesting verification of slope to drain.

Revise appropriate Design Guides, Manuals, and other criteria for consistency and enforcement of standard.

ACKNOWLEDGEMENTS: This Design Alert was developed by a mutual collaborative effort which included the following VA Participants:

- National Center for Patient Safety
- CFM, Consulting Support Service
- CFM, Facilities Standards Service

CONTACT: Facilities Standards Service at til@va.gov





U.S. Department
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DESIGN ALERT

JUNE 1, 2017
003C2B-DA-148

VA Standards Application and User Design Input Requirements

ISSUE: There have been reports that clinicians, users and stakeholders have not been included to provide critical input in the design process, and VA Planning, Design, and Construction Standards have not been consistently applied as a basis of planning and design to VA projects, resulting in partial or complete functional and operational failures of completed and/or recently activated projects.

BACKGROUND: VA Program Offices, project teams, designers and constructors, are obligated to our Nation's Veterans and taxpayers to make the most effective and efficient use of resources, by providing a continuum of safe, secure, high quality, high performance, and high value environments of care and service for Veterans. The Office of Construction & Facilities Management (CFM) supports the Department's mission through development and application of standards as a basis for disciplined planning, design, and construction of VA facilities.

DISCUSSION: Following VA Technical information Library (TIL) Standards (<https://www.cfm.va.gov/TIL>) and active participation of facility user/stakeholder groups in the application of Standards for all projects will ensure VA provides optimally functional, high quality, high performance, and flexible facilities within scope, on budget, and on time in accomplishment of VA's missions.

REQUIREMENT: In all phases of Planning, Design, and Construction, for all VA projects it is required:

- 1) All applicable VA Standards published in the VA Technical Information Library (TIL) (<https://www.cfm.va.gov/TIL>) shall be applied as a basis, foundation, and framework in planning, design, and construction. Any substantial variance from Standards shall be considered only as required to accommodate specific site, functional, and operational conditions. Upon consideration of variance CFM shall be consulted, and each Administration will function as Authority Having Jurisdiction for decision. Each substantial variance shall have a basis rationale and be documented in the project record;

- 2) Clinicians, providers, primary users, and other stakeholders shall be involved in all phases of project development to best adapt Standards for specific functional, operational, and site conditions, and to provide optimum service environments for Veterans. This also includes installations and modifications of systems or technology involving safety, security, functionality, or environmental quality. Stakeholder involvement shall be documented in the project record.

All parties in the planning, design, and construction process must embrace these requirements as fundamental in providing optimum environments for Veterans' care and services, in fulfilling VA's mission.

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U.S. Department
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DESIGN ALERT

OCTOBER 1, 2018
003C2B-DA-149

Design for Patient Privacy and Women Veterans' Health

ISSUE: Per VHA Directive 1330.01, dated (February 15, 2017- Amended: July 23, 2018) Health Care Services for Women Veterans and direction given by the Principal Executive In Charge Veterans Health Administration, in meeting on April 9, 2018, changes in VA Design Guides and other criteria are necessary to implement environment of care requirements for Women Veterans and to extend these requirements to healthcare environments for all Veterans.

BACKGROUND: VHA Program Offices, VAMCs, project teams, designers and constructors, are obligated to our Nation's Veterans and taxpayers to make the most effective and efficient use of resources and provide safe, secure, quality, and high value environments of care. The Office of Construction & Facilities Management (CFM) supports the Department's mission through development and application of Standards as a basis for disciplined planning, design, and construction (PDC) of VA facilities. PDC Standards are published in the VA Technical Information Library (TIL) (<https://www.cfm.va.gov/TIL>). Pursuant to the revised Directive and VHA Executive direction it is necessary to make adjustments to certain VA PDC standards including PG-18-12 Design Guides (<https://www.cfm.va.gov/til/dGuide.asp>).

DISCUSSION: VA Planning Design and Construction (PDC) Standards are required as a basis of design for all new, renovation and retrofit projects. The following outlines changes to basic Standards for planning and design of the environment of care supporting patient privacy and dignity. Illustrations are provided showing the basic principles of patient privacy and modifications to selected room templates. Many of the elements listed below are confirmations of existing criteria and its importance in meeting the privacy and dignity requirements. The basic principles driving these changes are included so-as-to provide a vehicle for adaptation of standards to existing environments.

REQUIREMENT:

- 1) Design Principles for Patient privacy/dignity.
 - a) Door Hardware/Privacy Locks- Specify all locksets shall allow a safe exit from a locked room without the use of a key or code. Staff members shall be provided key(s) or code(s) to allow operation of locks for emergency access into the room. Ref. VA

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

(<https://www.cfm.va.gov/til/spclRqmts.asp#room>). Locksets are required on the rooms identified for the rooms, but not limited to those, listed below:

(1) Private toilets, baths, and showers: appropriate, function specific, privacy locks (either electronic or manual) are required at entry door(s), allowing staff members to have key or code access in case of emergency.

(2) Examination, procedure, and treatment rooms: appropriate privacy locks (either electronic or manual) are required at entry door(s), allowing staff members to have key or code access in case of emergency.

(3) Resident sleeping rooms: appropriate privacy locks (either electronic or manual) are required at entry door(s).

Exception: Inpatient Acute Care and Intensive Care patient rooms do not require privacy locks.

b) Privacy Curtains / Screens – See attached Room Illustrations. In extenuating conditions, disposable privacy curtains, portable screens, integrated blinds in glass, or other similar systems must be considered. If, due to specific existing conditions or operational requirements, it is not possible to provide a visually private patient changing area, the facility must establish a policy to ensure patient privacy while changing.

(1) Examination, procedure, and treatment rooms- provide privacy curtains/screens to encompass adequate space for the healthcare provider to perform examination unencumbered by the curtain, and provide a visually private patient changing area that allows the provider to remain in the room.

Exception: Patient care rooms where a patient does not have potential for exposure of breast or genital areas.

(2) In-patient rooms (private / semi-private / multi-patient) - Provide privacy curtains to encompass adequate space for healthcare provider to perform bed-side examination unencumbered by the curtain. In these rooms the primary purpose of the bedside curtain is to provide the patient visual privacy from the room entry door during an examination or treatment and secondarily a visually private patient changing area where the provider, or other healthcare staff, can remain in the room.

Exception: Patient rooms in: Mental Health in-patient units, Intensive Care Units, Recovery, Emergency Departments, dedicated airborne infection isolation rooms, and other rooms with infection control concerns. In these rooms, provide disposable privacy curtains, portable screens, integrated blinds in glass, or other similar systems.

(3) Resident sleeping rooms (multi-bed sleeping rooms) – provide privacy curtains which encompass adequate space for healthcare provider to perform bed-side examination unencumbered, and provide a visually private patient changing area where the provider or other healthcare staff can remain in the room.

Exception: Private resident sleeping rooms do not require curtains.



c) Diaper Changing Tables and Signage

(1) Provide diaper changing tables in designated public male, female, unisex, toilet rooms /restrooms, and all family restrooms; Provide a minimum of one per floor in male, female, and unisex restrooms. Toilet rooms/restrooms shall be no more than 300 feet within a building from areas accessible to a patient.

(2) Public toilet rooms/restrooms with changing tables must be appropriately identified in accordance with the VA's Signage and Wayfinding Design Guide <https://www.cfm.va.gov/ti/spclRqmts.asp#SIGN> .

(3) Public toilet rooms/restrooms without diaper changing tables shall have signage directing users to the nearest appropriate facility with a changing table. Signage shall be posted outside near the toilet room/restroom entrance and conspicuously within the toilet room/restroom.

(4) Toilet rooms/restrooms that include Baby Changing Stations must include the appropriate identification on the signage. Below are the VA signage graphics that comply with the VA Signage Design Guide. CFM Signage Manual requirements. Ref. <https://www.cfm.va.gov/ti/spclRqmts.asp#SIGN> , Chapter 09: Interior Signs: pages 9-4-3 and 9-5-29.



(5) For restrooms not designated as containing Diaper Changing Tables, signage shall be placed to indicate to users where the nearest available diaper changing table can be accessed. Signage shall be posted outside the restroom, near the restroom entrance and conspicuously within the restroom.



d) Tampon/Sanitary Napkin Dispensers and Disposal Bins – Applicable to toilet rooms / restrooms listed below:

(1) Public toilet rooms/restrooms- sanitary napkin/tampon dispensers and disposal bins are required in each Women, Unisex, and Family toilet room/restroom.

(2) Non-public toilet rooms/restrooms accessible from or adjacent to examination rooms where pelvic examinations are performed- sanitary napkin/tampon dispensers and disposal bins are required in each restroom.

(3) Multi-stall public female toilet rooms/restrooms- disposal bins are required in each stall.

e) Gender Specific Clothing – Provide space, shelving, or casework required to stock appropriate clothing (e.g. robes, pajamas, patient gowns, etc.) for distribution for use in all healthcare settings.

f) Exam/Treatment/Procedure/Diagnostic Table Orientation - See attached Room Illustrations. All examination, treatment, procedure, and diagnostic tables must be placed in such a way that the genital area is not visible from the doorway. Exception: Treatment/procedure bays (e.g. PACU, ED, Dental) and immovable diagnostic tables in imaging rooms including: Radiology, R & F, Mammography, Ultra-Sound, PET, CT, MRI, Nuclear Medicine, and Surgical Suites are exempted from this requirement.

g) Visual Privacy in Reception/Check-in/Waiting Areas - Veterans must be provided adequate visual privacy at clinic check-in, waiting areas and non-public clinic areas. This privacy includes the following:

(1) Patient names or other PII information shall not be posted in corridors or in public and restricted access clinic areas.

(2) At check-in locations a designated “queue line” is to be marked to provide an identifiable physical distance separation between the person checking in and the



queue. The minimum distance from the front edge of the Check-in/Reception desk to the queue line shall be five (5) feet.

(3) Acoustical partitions are to be installed to provide visual privacy at multi-patient check-in counters.

(4) Provide a private room/area (e.g. private interview room, separate interview station) to accommodate private discussions such as conversations requiring more details than basic patient identification

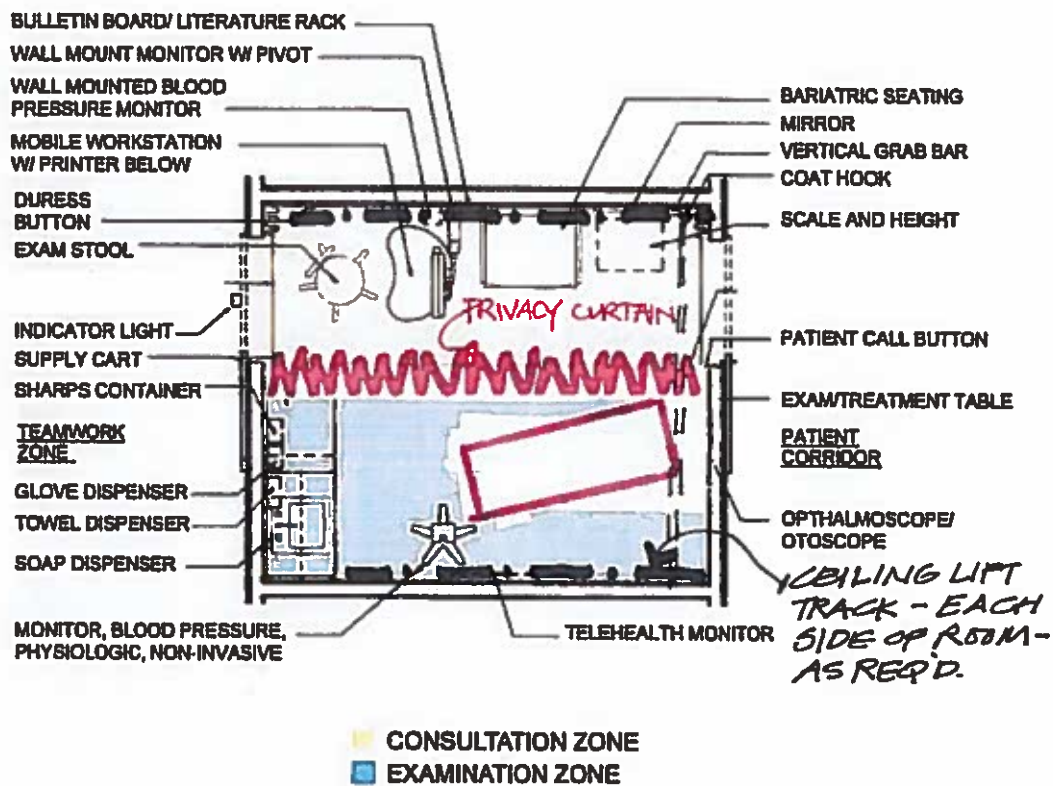
2) Design Guides and Room Templates will be systematically revised to include the requirements of this Design Alert.

3) All parties in the planning, design, and construction process must comply with these requirements as fundamental in providing optimum environments for Veterans' care and services, in fulfilling VA's mission.

CONTACT: Don Myers (202-632-5388), Donald.Myers@va.gov

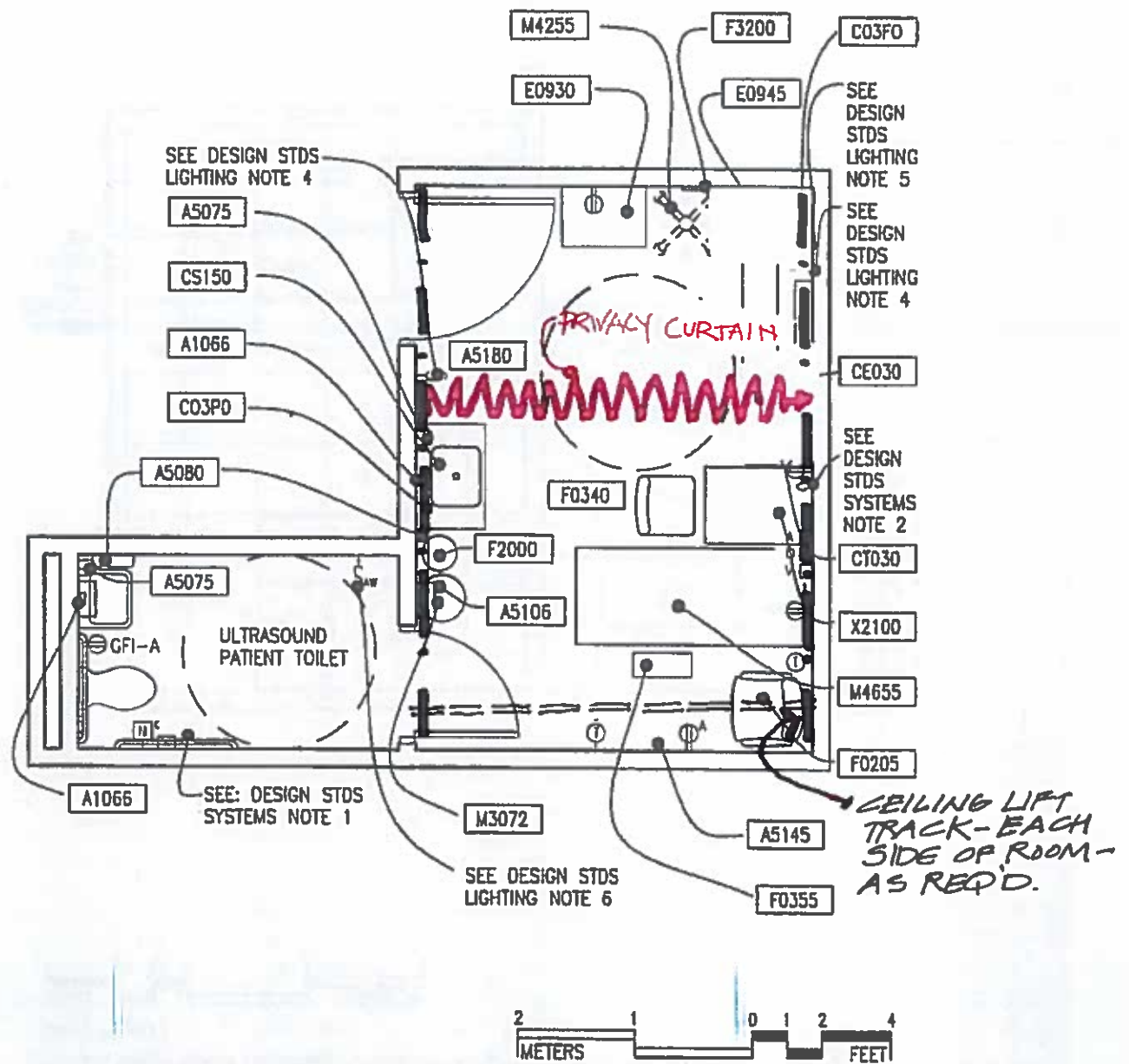


4.3.4A Patient Care Room, Exam Function ("Exam Room")



Ultrasound Room (XDUS1)
Floor Plan

180 NSF
16.8 NSM



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.



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Illustration 2

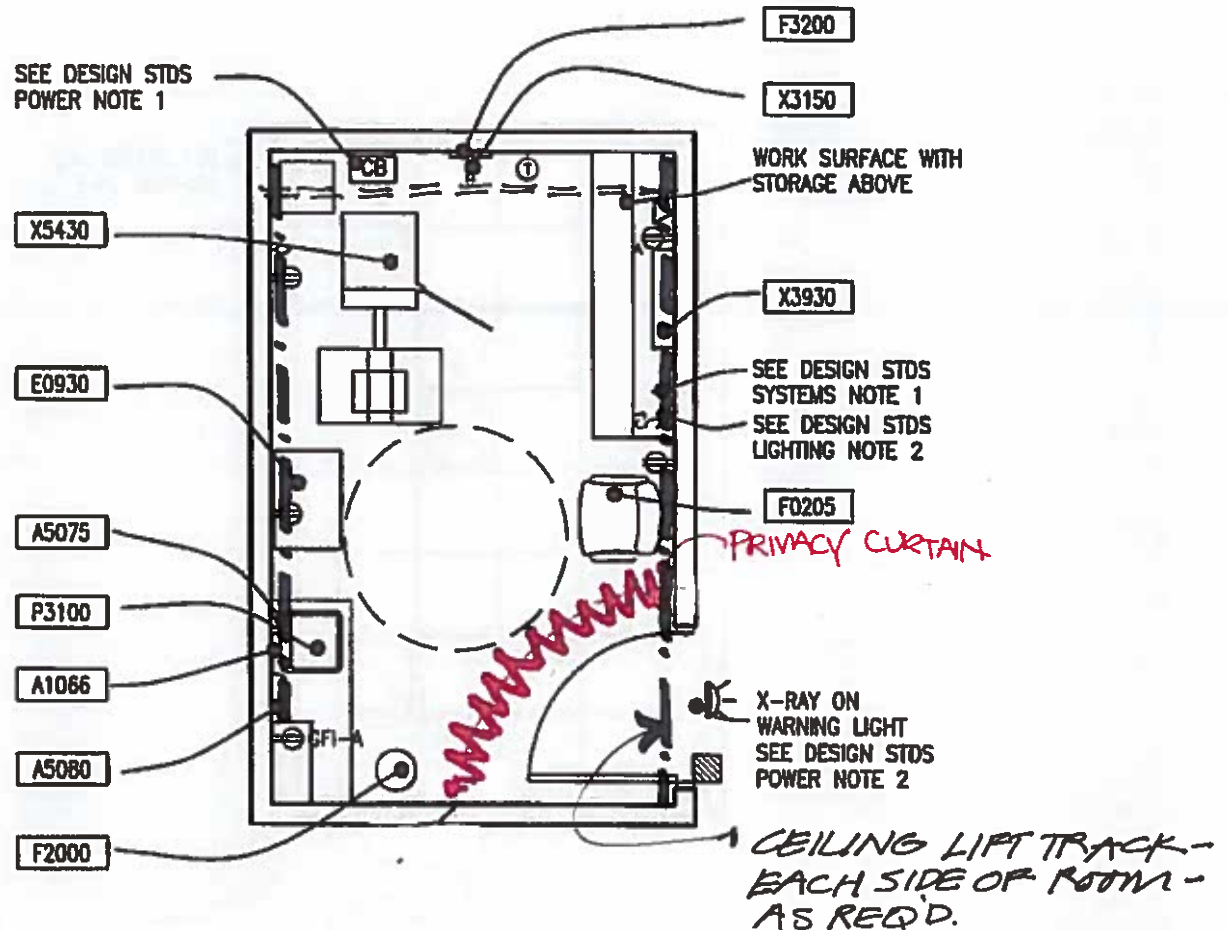
October 1, 2018
003C2B-DA-149

Mammography Room (XDM01)

Floor Plan

160 NSF

14.9 NSM

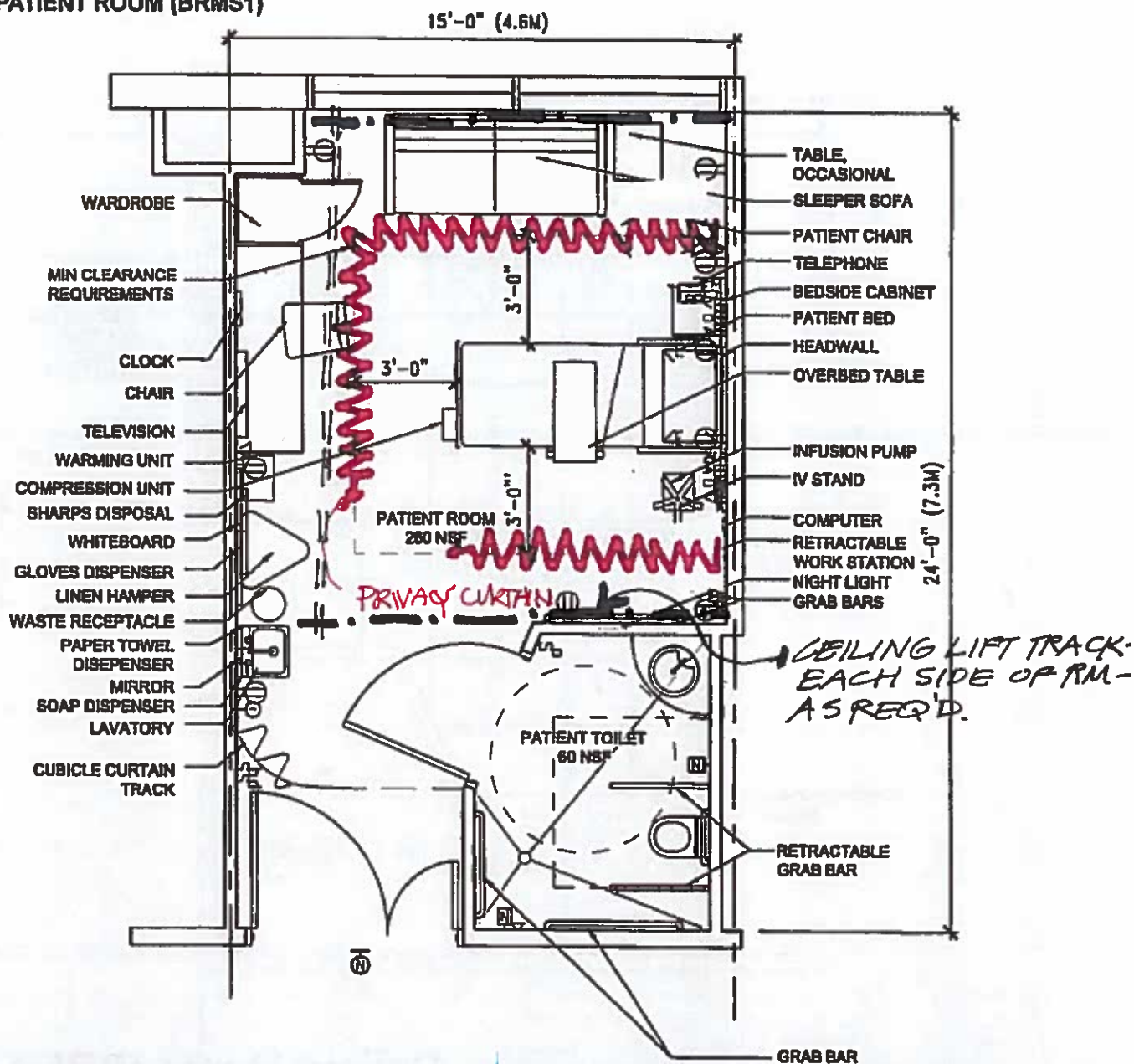


Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements are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



Illustration 3

PATIENT ROOM (BRMS1)



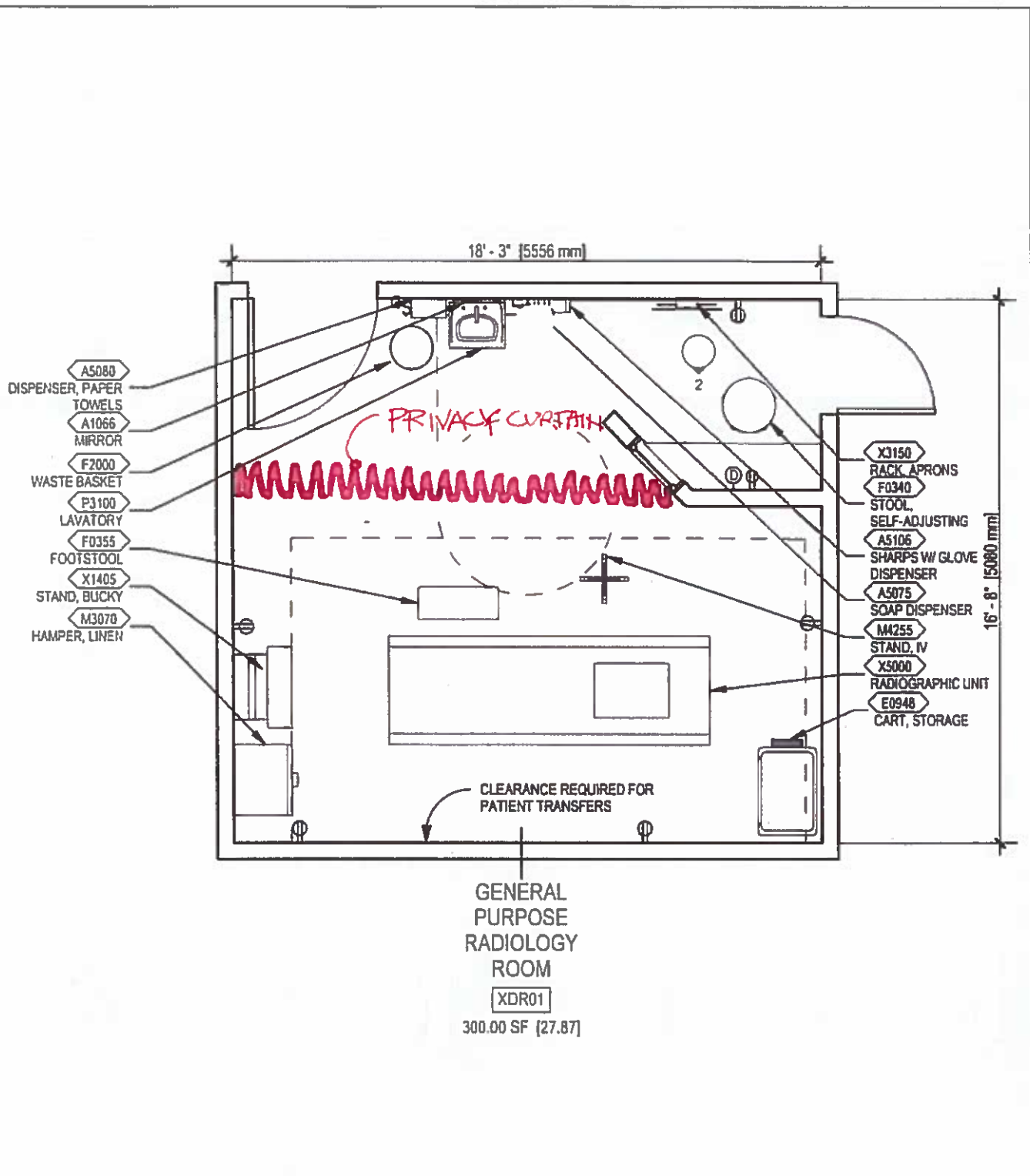
Patient Room (BRMS1)



Medical Surgical Inpatient Units & Intensive Care Nursing Units
Floor/Equipment Plan (280 NSF / 28.0 NSM)

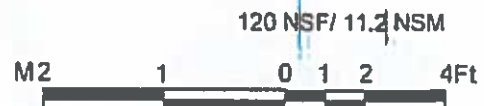
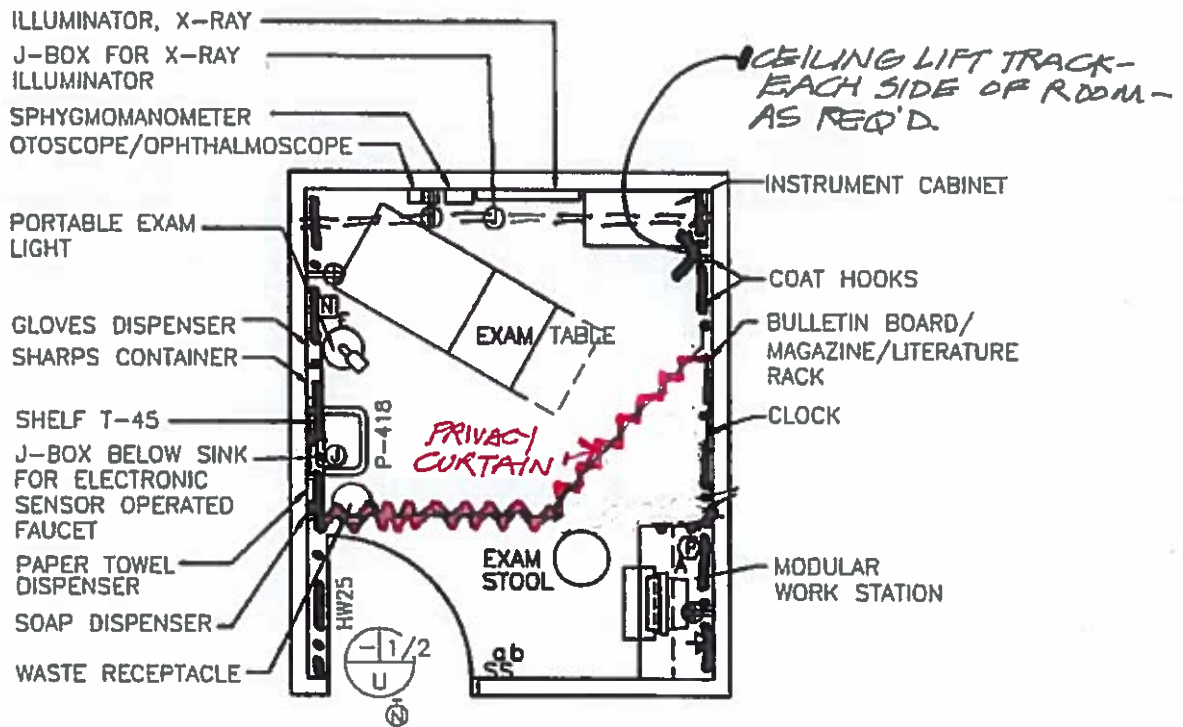
NOTE: Guide plans are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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



CBOC, XDR01, GENERAL PURPOSE
RADIOLOGY ROOM - PLAN

DISCLAIMER: ROOM TEMPLATES ARE GRAPHICAL REPRESENTATIONS OF SELECTED ROOM TYPES THAT ILLUSTRATE VA PLANNING REQUIREMENTS FOR SPACE, ROOM CONTENTS, AND ROOM SPECIFIC ENGINEERING SYSTEMS. THEY PROVIDE TYPICAL CONFIGURATIONS, PLANNING CRITERIA, AND GENERAL TECHNICAL GUIDANCE, AND ARE NOT INTENDED TO BE PROJECT SPECIFIC REQUIREMENTS. EQUIPMENT NOT TAGGED IN PLAN WILL BE TAGGED IN ELEVATION OR RCP.

ETM: Exam Room (Multi-Purpose) (EXRG3) Floor Plan

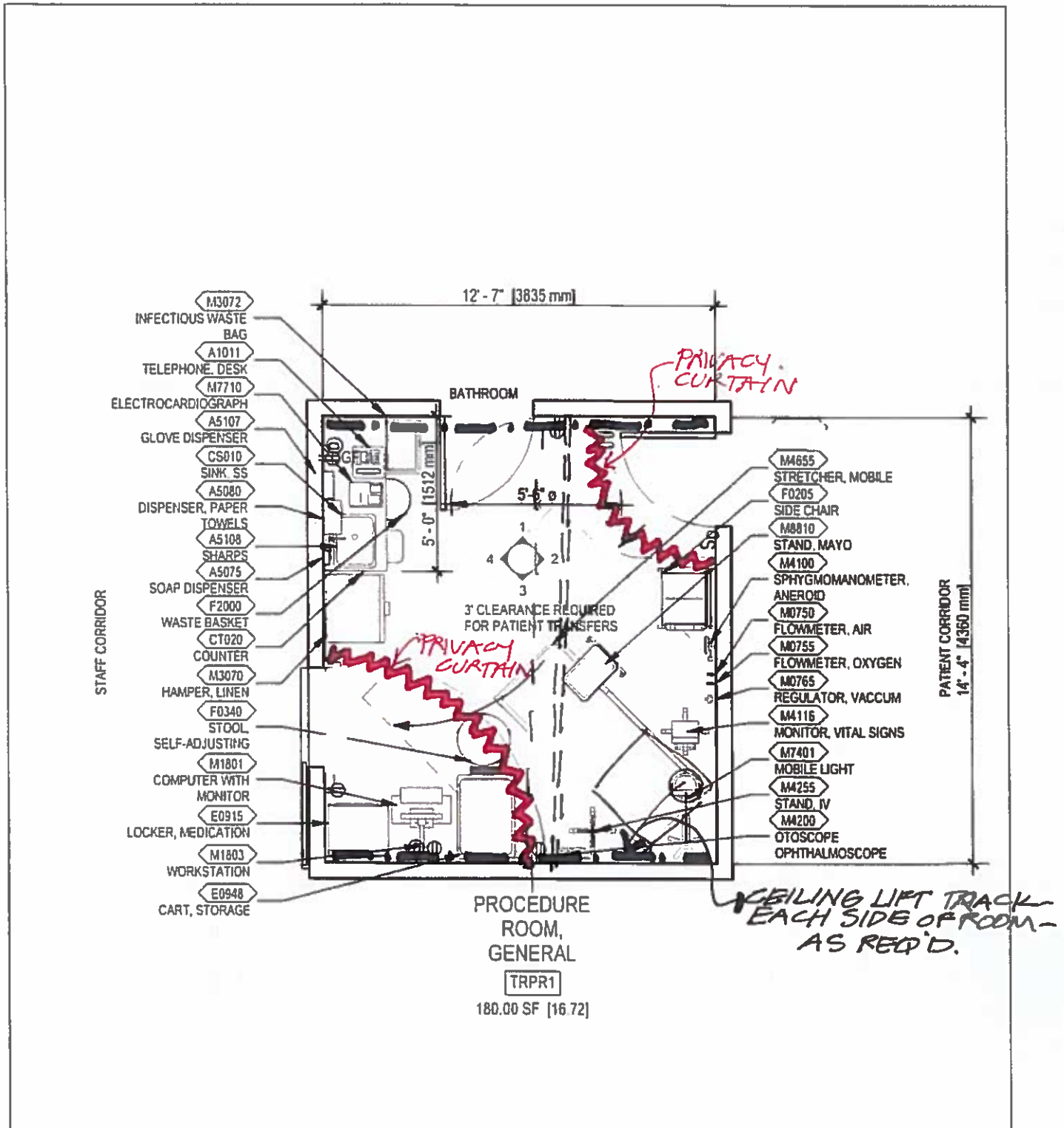


NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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



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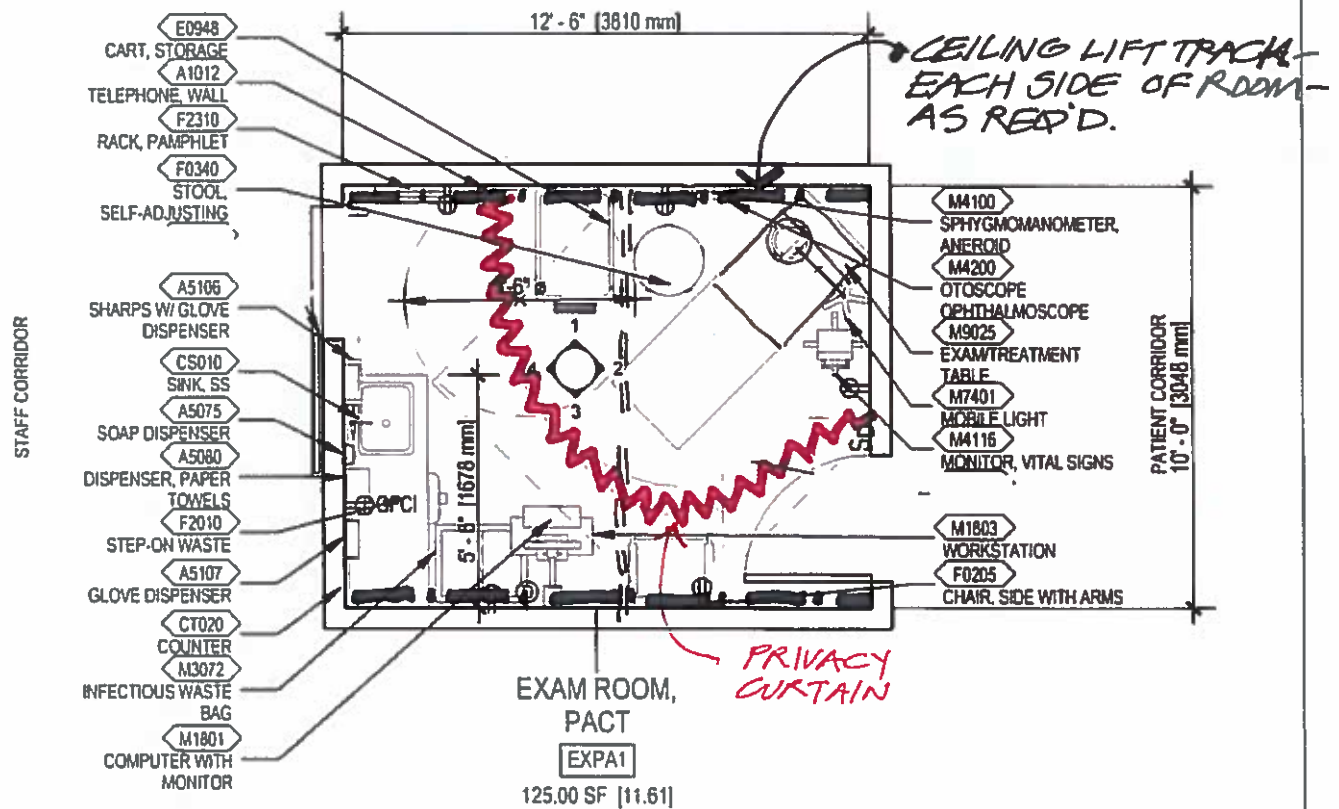
CBOC, TRPR1, PROCEDURE ROOM, GENERAL - PLAN



DISCLAIMER: ROOM TEMPLATES ARE GRAPHICAL REPRESENTATIONS OF SELECTED ROOM TYPES THAT ILLUSTRATE VA PLANNING REQUIREMENTS FOR SPACE, ROOM CONTENTS, AND ROOM SPECIFIC ENGINEERING SYSTEMS. THEY PROVIDE TYPICAL CONFIGURATIONS, PLANNING CRITERIA, AND GENERAL TECHNICAL GUIDANCE, AND ARE NOT INTENDED TO BE PROJECT SPECIFIC REQUIREMENTS. EQUIPMENT NOT TAGGED IN PLAN WILL BE TAGGED IN ELEVATION OR RCP.



CBOC, EXPA1, EXAM ROOM-PATIENT
ALIGNED CARE TEAM - PLAN

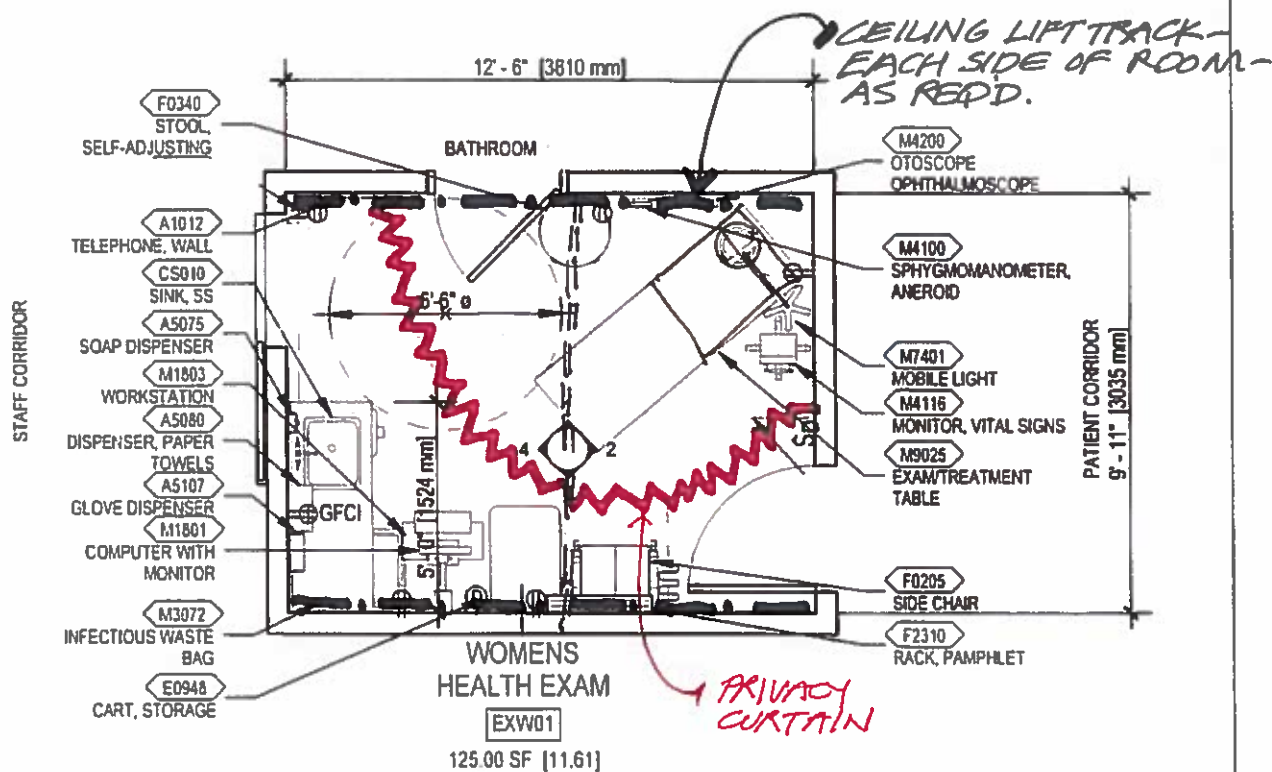


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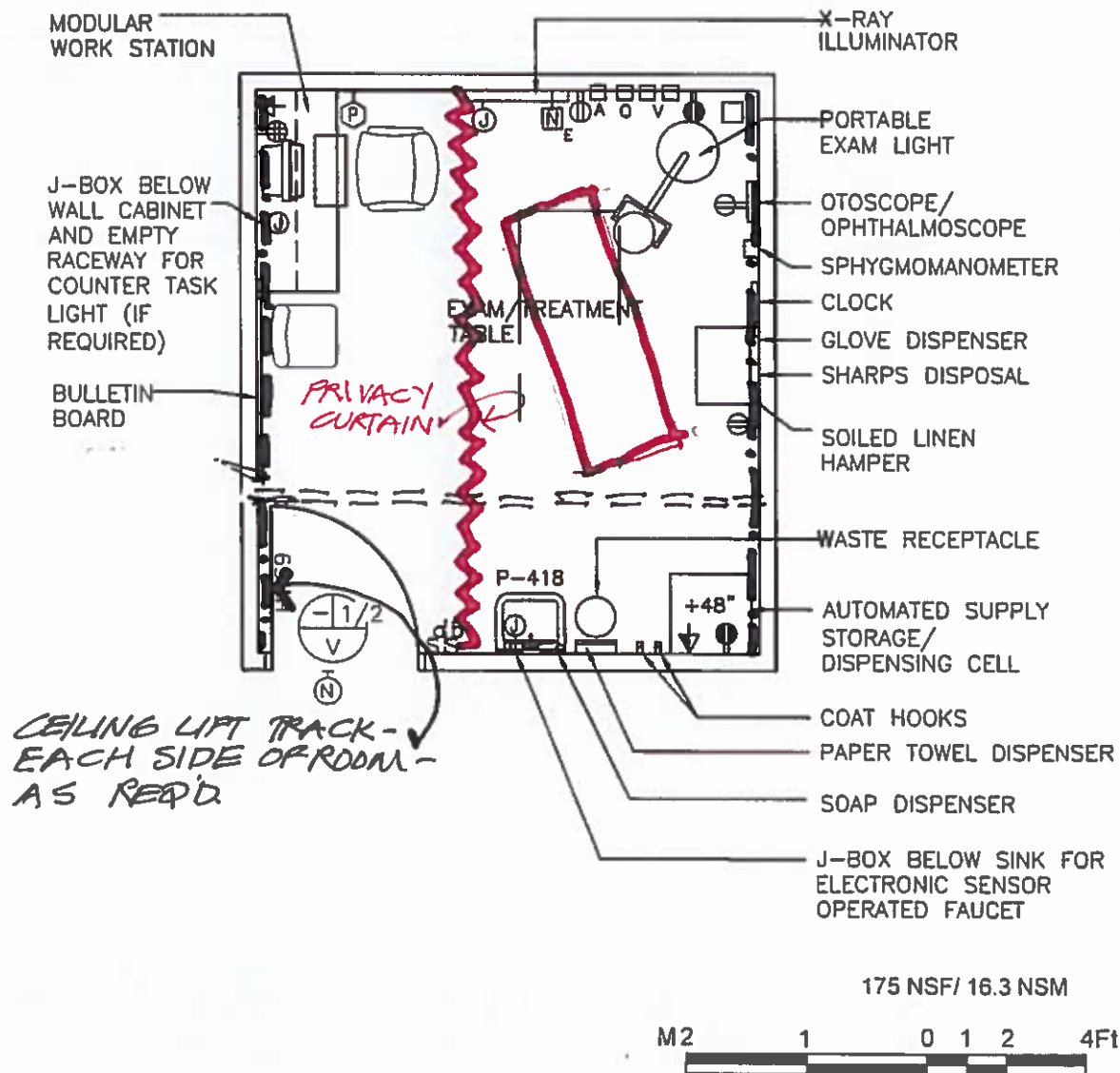
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CBOC, EXW01, WOMENS HEALTH EXAM ROOM - PLAN



DISCLAIMER: ROOM TEMPLATES ARE GRAPHICAL REPRESENTATIONS OF SELECTED ROOM TYPES THAT ILLUSTRATE VA PLANNING REQUIREMENTS FOR SPACE, ROOM CONTENTS, AND ROOM SPECIFIC ENGINEERING SYSTEMS. THEY PROVIDE TYPICAL CONFIGURATIONS, PLANNING CRITERIA, AND GENERAL TECHNICAL GUIDANCE, AND ARE NOT INTENDED TO BE PROJECT SPECIFIC REQUIREMENTS. EQUIPMENT NOT TAGGED IN PLAN WILL BE TAGGED IN ELEVATION OR RCP

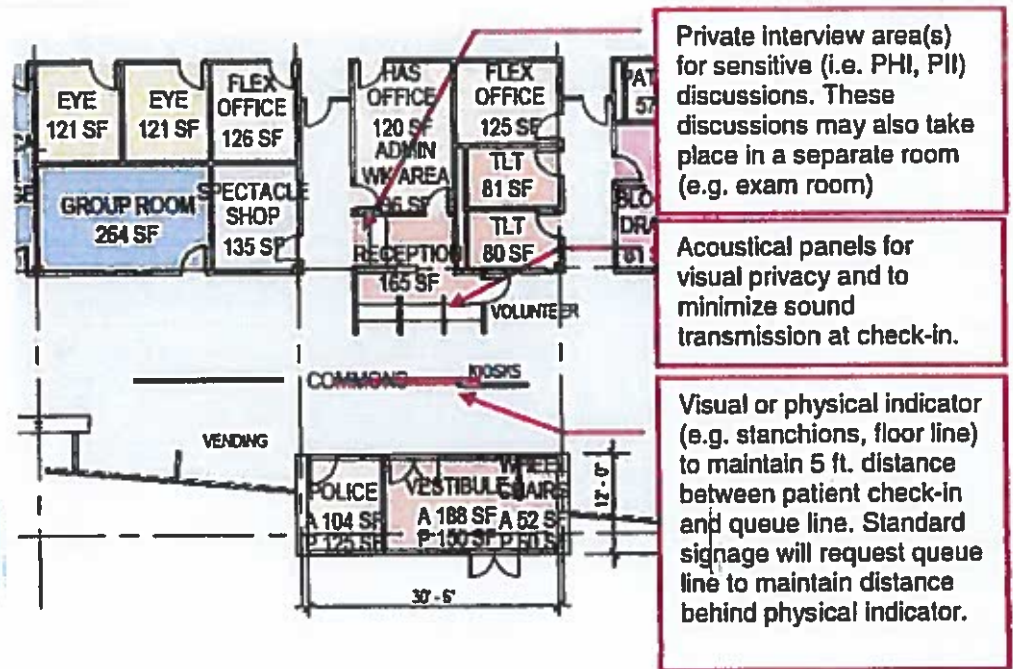
ETM: Procedure Room, General Purpose (TRGM1)
Floor Plan



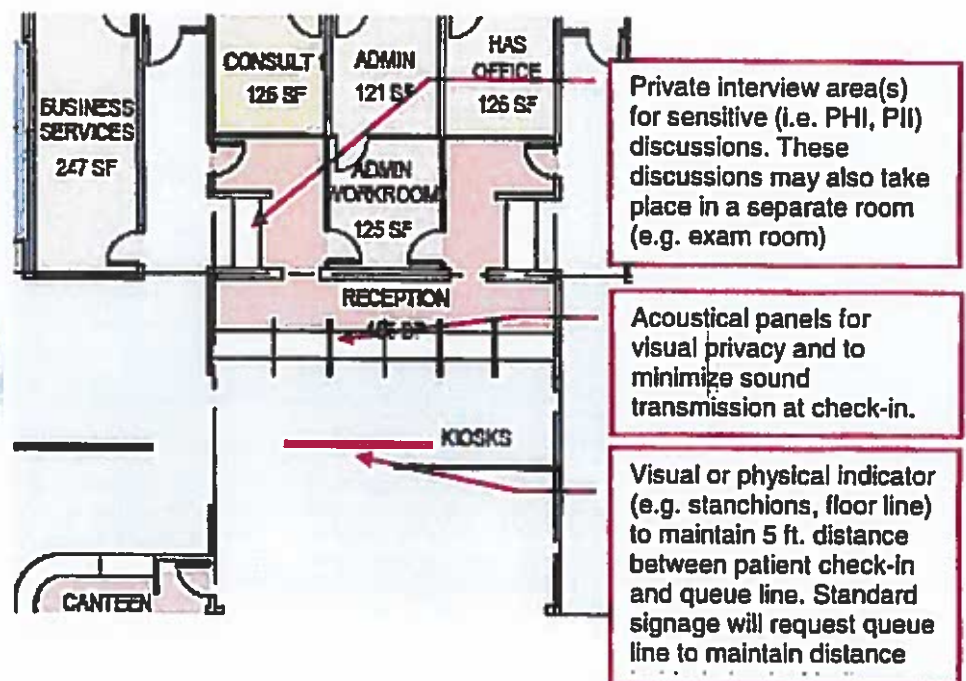
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

Subject: Visual Privacy in Waiting Rooms

One PACT
CBOC Test
and Fit Layout



Two PACT
CBOC Test
and Fit Layout





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Office of Construction &
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*Office of Facilities Planning
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DESIGN ALERT

DECEMBER 1, 2021
003C2B-DA-150

Testing, Adjusting, and Balancing Firm Certification

ISSUE: Prior to February 2020, the Veterans Affairs only allowed Associated Air Balance Council (AABC) or National Environmental Balancing Bureau (NEBB) as the standard under which the Testing Adjusting and Balancing (TAB) firm's qualifications were approved in accordance with VA Master Construction Specification Section 23 05 93, TESTING, ADJUSTING, AND BALANCING FOR HVAC.

DISCUSSION: The National Energy Management Institute's (NEMI) Testing, Adjusting and Balancing Bureau (TABB) contractor certification program, which is only available to Sheet Metal Contractors National Association (SMACNA) members and chapters, was added to VA specification section 23 05 93, TESTING, ADJUSTING, AND BALANCING FOR HVAC as a third optional standard for certifying TAB firms. The VA specification change was effective February 1, 2020.

REQUIREMENTS: Program offices shall coordinate with contracting officers to ensure specifications are updated on existing contracts and included in solicitations for new requirements. Program officers shall also ensure that Designers include the new criteria in future designs. Refer to VA specification section 23 05 93, TESTING, ADJUSTING, AND BALANCING FOR HVAC (<https://www.cfm.va.gov/til/spec.asp>).

ACKNOWLEDGEMENTS: If there are any questions on this CFM Design Alert, please contact Don Myers, Director of Facilities Standards Service, (202) 632-5388.

CONTACT: Facilities Standards Service at til@va.gov



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DESIGN ALERT

DECEMBER 15, 2021
003C2B-DA-151

Cast Iron Fittings/Valve Housings, Prohibition of Use in High and Medium Pressure Steam Distribution Systems

ISSUE: The VA has generally prohibited the use of Cast Iron fittings and pipe components (valves, steam traps, etc.) due to the risk of failure with shock loading. A recent accident involving the loss of human life has heightened the concern with the use of cast iron material on steam systems.

DISCUSSION: Based on the brittle nature of cast iron and the accident at a VA Medical Center, VA and VHA leadership has made the decision to discontinue the use of any cast iron or malleable fittings and components in high and medium pressure steam systems, whether existing or new. Facilities shall always use due diligence to avoid any sudden shocks to the steam distribution system, such as water hammer or energizing a cold steam system without a proper warm-up sequence.

REQUIREMENTS: New Construction, NRM, or any repair or replacement project must not use cast iron fittings and components or malleable fittings anywhere in the high-pressure and medium pressure steam system (15psi or above). All new construction must use cast steel or forged steel fittings only.

ACKNOWLEDGEMENTS: If there are any questions on this CFM Design Alert, please contact Douglas Ryan, Consulting Support Service, at douglas.ryan@va.gov.

CONTACT: Facilities Standards Service at til@va.gov



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DESIGN ALERT

OCTOBER 14, 2022

003C2B-DA-152

Medical Gases for Surgical OR's and Endovascular Procedure Rooms

ISSUE: Discrepancies in the number and types of medical gases between room criteria and graphic templates utilized for surgical and endovascular projects:

The current Surgical and Endovascular Design Guide was found to have discrepancies between the written Room Data Sheets for room templates and the graphical representation indicated within the Reflected Ceiling Plans (RCP).

DISCUSSION: While reviewing each specific design data sheet against its accompanying graphical template, coordination issues between the two were found that require clarification. The Room Data Sheet medical gases indicated do not correspond with the count and type of medical gases required by the Reflected Ceiling Plan. Therefore, to alleviate these discrepancies, all types, quantities, and locations of medical gas outlets will be as indicated on the Reflected Ceiling Plan. The Room Data Sheet will NOT be utilized regarding location, type and number of gas outlets.

Additionally, all proposed medical gases shall be reviewed and verified by local VA Medical Center Clinical Team Members as to type, quantity and location.

REQUIREMENTS: Refer attached Surgical and Endovascular Design Guide Template Corrections.

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Facilities Standards Service at til@va.gov

4.2. PATIENT BAY, PRE-OPERATIVE HOLDING / PHASE II RECOVERY (RRPR1)

Room Data Sheet (continued)

HEATING, VENTILATING AND AIR CONDITIONING

General Requirement: 70-75 Degree F, 20-60%
Relative Humidity, Room Return Air

Special Requirement:

Notes:

- 1) Six Minimum Total Air Changes
- 2) Two Minimum Outdoor Air Changes
- 3) Positive Pressure

PLUMBING AND MEDICAL GASES

Cold Water: Yes

Hot Water: Yes

Waste: Yes

Reagent Grade Water: No

Medical Air: Yes (1)

Medical Vacuum: Yes (1)

Oxygen: Yes (1)

REMOVE QUANTITY

FIRE PROTECTION AND LIFE SAFETY

Fire Alarm: Yes

Sprinkler: Yes

Hazard Type: Light Hazard

4.2. PATIENT BAY, PRE-OPERATIVE HOLDING / PHASE II RECOVERY (RRPR1)

4.3. PATIENT ROOM, PRE-OPERATIVE HOLDING / PHASE II RECOVERY (RRPR2)

Room Data Sheet (continued)

HEATING, VENTILATING AND AIR CONDITIONING

General Requirement: 70-75 Degree F, 20-60%
Relative Humidity, Room Return Air

Special Requirement:

Notes:

- 1) Six Minimum Total Air Changes
- 2) Two Minimum Outdoor Air Changes
- 3) Positive Pressure

PLUMBING AND MEDICAL GASES

| | |
|----------------------|---------|
| Cold Water: | Yes |
| Hot Water: | Yes |
| Waste: | Yes |
| Reagent Grade Water: | No |
| Medical Air | Yes (1) |
| Medical Vacuum | Yes (1) |
| Oxygen | Yes (1) |

← REMOVE QUANTITY

FIRE PROTECTION AND LIFE SAFETY

| | |
|--------------|--------------|
| Fire Alarm: | Yes |
| Sprinkler: | Yes |
| Hazard Type: | Light Hazard |

4.3. PATIENT ROOM, PRE-OPERATIVE HOLDING / PHASE II RECOVERY (RRPR2)

POWER

| | |
|------------------|--|
| Normal Power: | Connect selected receptacles and equipment to Normal power IPS. |
| Emergency Power: | Connect selected receptacles and equipment to Critical Branch emergency IPS. |

Notes:

- 1) Provide IPS power & ground modules – 3 duplex receptacles & 3 ground jacks
- 2) IPS Power & ground modules mounted at +24" AFF
- 3) Provide Laser Receptacle Module. Module shall be connected to Special Equipment IPS located outside the Surgery Room.
- 4) Provide power connections for articulating utility columns.

1) Provide connections for articulating utility columns.

2) Provide connections for video monitor pendants. Video monitor pendants will be part of the video integration system. The extent of the system is to be selected on a project basis.

HEATING, VENTILATING AND AIR CONDITIONING

General Requirement: Refer to Operating Rooms data sheet in the current version of the VA HVAC Design Manual for room temperatures, humidity range, room air change requirements, and pressurization

Notes:

1) Refer to the latest version of the VA HVAC Design Manual for quantity and location of low air return grilles and ceiling diffusers.

PLUMBING AND MEDICAL GASES

| | |
|----------------------|---------|
| Cold Water: | No |
| Hot Water: | No |
| Waste: | No |
| Reagent Grade Water: | No |
| Medical Air | Yes (1) |
| Medical Vacuum | Yes (7) |
| Oxygen | Yes (2) |
| Special Requirement: | |

Notes:

1) Provide Waste Anesthesia Gas Disposal (WAGD), Nitrogen (1), Nitrous Oxide (1), Carbon Dioxide (1)

2) For gas quantities per boom refer to the reflected ceiling plan.

3) Nitrogen Control Cabinets are to be located on the articulating utility columns as determined by the project

4) Medical Gas Zone Valve Boxes are to be provided in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the operating room it serves.

FIRE PROTECTION AND LIFE SAFETY

| | |
|--------------|-------------------------|
| Fire Alarm: | Yes |
| Sprinkler: | Yes |
| Hazard Type: | Ordinary Hazard Group 1 |

REMOVE QUANTITIES

COMMUNICATIONS

| | |
|--|-------------|
| Data: | Yes |
| Telephone: | Yes |
| Cable Television: | No |
| Duress Alarm: | No |
| Electronic Access and Door Control: | Yes |
| Intercom: | Yes (Phone) |
| Motion Intrusion Detection (MID): | No |
| Nurse Call: | Yes |
| Code Blue: | |
| Public Address: | No |
| Security Surveillance Television (SSTV): | No |
| VA Satellite TV: | No |
| Video Teleconferencing (VTEL): | No |
| Special Requirement: | |

Notes:

4.5. OPERATING ROOM, GENERAL (ORGS1)

POWER

| | |
|------------------|--|
| Normal Power: | Connect selected receptacles and equipment to Normal power IPS. |
| Emergency Power: | Connect selected receptacles and equipment to Critical Branch emergency IPS. |

Notes:

- 1) Provide IPS power & ground modules – 3 duplex receptacles & 3 ground jacks
- 2) IPS Power & ground modules mounted at +24" AFF
- 3) Provide Laser Receptacle Module. Module shall be connected to Special Equipment IPS located outside the Surgery Room.
- 4) Provide power connections for articulating utility columns.

REMOVE QUANTITIES**COMMUNICATIONS**

| | |
|--|-------------|
| Data: | Yes |
| Telephone: | Yes |
| Cable Television: | No |
| Duress Alarm: | No |
| Electronic Access and Door Control: | Yes |
| Intercom: | Yes (Phone) |
| Motion Intrusion Detection (MID): | No |
| Nurse Call: | Yes |
| Code Blue: | Yes |
| Public Address: | No |
| Security Surveillance Television (SSTV): | No |
| VA Satellite TV: | No |
| Video Teleconferencing (VTEL): | No |
| Special Requirement: | |

Notes:

1) Provide connections for articulating utility columns.

2) Provide connections for video monitor pendants. Video monitor pendants will be part of the video integration system. The extent of the system is to be selected on a project basis.

HEATING, VENTILATING AND AIR CONDITIONING

General Requirement: Refer to Operating Room data sheet in the current version of the VA HVAC Design Manual for room temperatures, humidity range, room air change requirements, and pressurization

Notes:

1) Refer to the HVAC Design Manual for number and location of low air return grilles and ceiling diffusers.

PLUMBING AND MEDICAL GASES

| | |
|----------------------|----------|
| Cold Water: | No |
| Hot Water: | No |
| Drain: | No |
| Reagent Grade Water: | No |
| Medical Air | Yes (2) |
| Medical Vacuum | Yes (14) |
| Oxygen | Yes (4) |
| Special Requirement: | |

Notes:

1) Provide Waste Anesthesia Gas Disposal (WAGD), Nitrogen (2), Nitrous Oxide (2), Carbon Dioxide (2).

2) For gas quantities per room refer to the reflected ceiling plan.

3) Nitrogen Control Cabinets are to be located on the articulating utility columns as determined by the project.

4) Medical Gas Zone Valve Boxes are to be provided in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the operating room it serves.

FIRE PROTECTION AND LIFE SAFETY

| | |
|--------------|-------------------------|
| Fire Alarm: | Yes |
| Sprinkler: | Yes |
| Hazard Type: | Ordinary Hazard Group 1 |

4.6. OPERATING ROOM, ORTHOPEDIC (OROS1)

POWER

| | |
|------------------|--|
| Normal Power: | Connect selected receptacles and equipment to Normal power IPS. |
| Emergency Power: | Connect selected receptacles and equipment to Critical Branch emergency IPS. |

Notes:

- 1) Provide IPS power & ground modules – 3 duplex receptacles & 3 ground jacks
- 2) IPS Power & ground modules mounted at +24" AFF
- 3) Provide Laser Receptacle Module. Module shall be connected to Special Equipment IPS located outside the Surgery Room.
- 4) Provide power connections for articulating utility columns.

1) Provide connections for articulating utility columns.

2) Provide connections for video monitor pendants. Video monitor pendants will be part of the video integration system. The extent of the system is to be selected on a project basis.

HEATING, VENTILATING AND AIR CONDITIONING

General Requirement: Refer to Operating Room data sheet in the current version of the VA HVAC Design Manual for room temperatures, humidity range, room air change requirements, and pressurization.

Notes:

1) Refer to the HVAC Design Manual for number and location of low air return grilles and ceiling diffusers.

PLUMBING AND MEDICAL GASES

| | |
|----------------------|----------|
| Cold Water: | No |
| Hot Water: | No |
| Waste: | No |
| Reagent Grade Water: | No |
| Medical Air | Yes (2) |
| Medical Vacuum | Yes (14) |
| Oxygen | Yes (4) |
| Special Requirement: | |

Notes:

1) Provide Waste Anesthesia Gas Disposal (WAGD), Nitrogen (2), Nitrous Oxide (2), Carbon Dioxide (2).

2) For gas quantities per boom refer to the reflected ceiling plan.

3) Nitrogen Control Cabinets are to be located on the articulating utility columns as determined by the project

4) Medical Gas Zone Valve Boxes are to be provided in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the operating room it serves.

FIRE PROTECTION AND LIFE SAFETY

| | |
|--------------|-------------------------|
| Fire Alarm: | Yes |
| Sprinkler: | Yes |
| Hazard Type: | Ordinary Hazard Group 1 |

REMOVE QUANTITIES

COMMUNICATIONS

| | |
|--|-------------|
| Data: | Yes |
| Telephone: | Yes |
| Cable Television: | No |
| Duress Alarm: | No |
| Electronic Access and Door Control: | Yes |
| Intercom: | Yes (Phone) |
| Motion Intrusion Detection (MID): | No |
| Nurse Call: | Yes |
| Code Blue: | Yes |
| Public Address: | No |
| Security Surveillance Television (SSTV): | No |
| VA Satellite TV: | No |
| Video Teleconferencing (VTEL): | No |
| Special Requirement: | |

Notes:

4.7. OPERATING ROOM, UROLOGY / CYSTOSCOPY (ORCS1)

POWER

| | |
|------------------|--|
| Normal Power: | Connect selected receptacles and equipment to Normal power IPS. |
| Emergency Power: | Connect selected receptacles and equipment to Critical Branch emergency IPS. |

Notes:

- 1) Provide IPS power & ground modules – 3 duplex receptacles & 3 ground jacks
- 2) IPS Power & ground modules mounted at +24" AFF
- 3) Provide Laser Receptacle Module. Module shall be connected to Special Equipment IPS located outside the Surgery Room.
- 4) Provide power connections for articulating utility columns.

REMOVE QUANTITIES**COMMUNICATIONS**

| | |
|--|-------------|
| Data: | Yes |
| Telephone: | Yes |
| Cable Television: | No |
| Duress Alarm: | No |
| Electronic Access and Door Control: | Yes |
| Intercom: | Yes (Phone) |
| Motion Intrusion Detection (MID): | No |
| Nurse Call: | Yes |
| Code Blue: | Yes |
| Public Address: | No |
| Security Surveillance Television (SSTV): | No |
| VA Satellite TV: | No |
| Video Teleconferencing (VTEL): | No |
| Special Requirement: | |

Notes:

1) Provide connections for articulating utility columns.

2) Provide connections for video monitor pendants. Video monitor pendants will be part of the video integration system. The extent of the system is to be selected on a project basis.

HEATING, VENTILATING AND AIR CONDITIONING

General Requirement: Refer to Operating Room data sheet in the current version of the VA HVAC Design Manual for room temperatures, humidity range, room air change requirements, and pressurization

Notes:

1) Refer to the HVAC Design Manual for number and location of low air return grilles and ceiling diffusers.

PLUMBING AND MEDICAL GASES

| | |
|----------------------|----------|
| Cold Water: | No |
| Hot Water: | No |
| Drain: | No |
| Reagent Grade Water: | No |
| Medical Air | Yes (4) |
| Medical Vacuum | Yes (17) |
| Oxygen | Yes (6) |
| Special Requirement: | |

Notes:

1) Provide Waste Anesthesia Gas Disposal (WAGD), Nitrogen (3), Nitrous Oxide (2), Carbon Dioxide (2).

2) For gas quantities per boom refer to the reflected ceiling plan.

3) Nitrogen Control Cabinets are to be located on the articulating utility columns as determined by the project.

4) Medical Gas Zone Valve Boxes are to be provided in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the operating room it serves.

FIRE PROTECTION AND LIFE SAFETY

| | |
|--------------|-------------------------|
| Fire Alarm: | Yes |
| Sprinkler: | Yes |
| Hazard Type: | Ordinary Hazard Group 1 |

4.8. OPERATING ROOM, CARDIOTHORACIC (ORCT1)

POWER

| | |
|------------------|--|
| Normal Power: | Connect selected receptacles and equipment to Normal power IPS. |
| Emergency Power: | Connect selected receptacles and equipment to Critical Branch emergency IPS. |

Notes:

- 1) Provide IPS power & ground modules – 3 duplex receptacles & 3 ground jacks
- 2) IPS Power & ground modules mounted at +24" AFF
- 3) Provide Laser Receptacle Module. Module shall be connected to Special Equipment IPS located outside the Surgery Room.
- 4) Provide power connections for articulating utility columns.

1) Provide connections for articulating utility columns.

2) Provide connections for video monitor pendants. Video monitor pendants will be part of the video integration system. The extent of the system is to be selected on a project basis.

HEATING, VENTILATING AND AIR CONDITIONING

General Requirement: Refer to Operating Room data sheet in the current version of the VA HVAC Design Manual for room temperatures, humidity range, room air change requirements, and pressurization

Notes:

- 1) Refer to the HVAC Design Manual for number and location of low air return grilles and ceiling diffusers.

PLUMBING AND MEDICAL GASES

| | |
|----------------------|----------|
| Cold Water: | No |
| Hot Water: | No |
| Drain: | No |
| Reagent Grade Water: | No |
| Medical Air | Yes (2) |
| Medical Vacuum | Yes (14) |
| Oxygen | Yes (4) |
| Special Requirement: | |

Notes:

- 1) Provide Waste Anesthesia Gas Disposal (WAGD), Nitrogen (2), Nitrous Oxide (2), Carbon Dioxide (2).

2) For gas quantities per boom refer to the reflected ceiling plan.

3) Nitrogen Control Cabinets are to be located on the articulating utility columns as determined by the project.

4) Medical Gas Zone Valve Boxes are to be provided in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the operating room it serves.

FIRE PROTECTION AND LIFE SAFETY

| | |
|--------------|-------------------------|
| Fire Alarm: | Yes |
| Sprinkler: | Yes |
| Hazard Type: | Ordinary Hazard Group 1 |

REMOVE QUANTITIES

COMMUNICATIONS

| | |
|--|-------------|
| Data: | Yes |
| Telephone: | Yes |
| Cable Television: | No |
| Duress Alarm: | No |
| Electronic Access and Door Control: | Yes |
| Intercom: | Yes (Phone) |
| Motion Intrusion Detection (MID): | No |
| Nurse Call: | Yes |
| Code Blue: | Yes |
| Public Address: | No |
| Security Surveillance Television (SSTV): | No |
| VA Satellite TV: | No |
| Video Teleconferencing (VTEL): | No |
| Special Requirement: | |

Notes:

4.10. OPERATING ROOM, NEUROSURGICAL (ORNS1)

POWER

Normal Power: Connect selected receptacles and equipment to Normal power IPS.

Emergency Power: Connect selected receptacles and equipment to Critical Branch emergency IPS.

Notes:

- 1) Provide IPS power & ground modules – 3 duplex receptacles & 3 ground jacks
- 2) IPS Power & ground modules mounted at +24" AFF
- 3) Provide Laser Receptacle Module. Module shall be connected to Special Equipment IPS located outside the Surgery Room.
- 4) Provide power connections for articulating utility columns.

Notes:

- 1) Provide connections for articulating utility columns.
- 2) Provide connections for video monitor pendants. Video monitor pendants will be part of the video integration system. The extent of the system is to be selected on a project basis.

HEATING, VENTILATING AND AIR CONDITIONING

General Requirement: Refer to Operating Room data sheet in the current version of the VA HVAC Design Manual for room temperatures, humidity range, room air change requirements, and pressurization

Notes:

- 1) Refer to the HVAC Design Manual for number and location of low air return grilles and ceiling diffusers.

PLUMBING AND MEDICAL GASES

| | |
|----------------------|----------|
| Cold Water: | No |
| Hot Water: | No |
| Waste: | No |
| Reagent Grade Water: | No |
| Medical Air | Yes (2) |
| Medical Vacuum | Yes (14) |
| Oxygen | Yes (4) |
| Special Requirement: | |

Notes:

- 1) Provide Waste Anesthesia Gas Disposal (WAGD), Nitrogen (2), Nitrous Oxide (2), Carbon Dioxide (2).
- 2) For gas quantities per boom refer to the reflected ceiling plan.
- 3) Nitrogen Control Cabinets are to be located on the articulating utility columns as determined by the project
- 4) Medical Gas Zone Valve Boxes are to be provided in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the operating room it serves.

FIRE PROTECTION AND LIFE SAFETY

| | |
|--------------|-------------------------|
| Fire Alarm: | Yes |
| Sprinkler: | Yes |
| Hazard Type: | Ordinary Hazard Group 1 |

REMOVE QUANTITIES**COMMUNICATIONS**

| | |
|--|-------------|
| Data: | Yes |
| Telephone: | Yes |
| Cable Television: | No |
| Duress Alarm: | No |
| Electronic Access and Door Control: | Yes |
| Intercom: | Yes (Phone) |
| Motion Intrusion Detection (MID): | No |
| Nurse Call: | Yes |
| Code Blue: | Yes |
| Public Address: | No |
| Security Surveillance Television (SSTV): | No |
| VA Satellite TV: | No |
| Video Teleconferencing (VTEL): | No |
| Special Requirement: | |

4.11. OPERATING ROOM, ROBOTICS (ORRB1)

POWER

| | |
|------------------|--|
| Normal Power: | Connect selected receptacles and equipment to Normal power IPS. |
| Emergency Power: | Connect selected receptacles and equipment to Critical Branch emergency IPS. |

Notes:

- 1) Provide IPS power & ground modules – 3 duplex receptacles & 3 ground jacks
- 2) IPS Power & ground modules mounted at +24" AFF
- 3) Provide Laser Receptacle Module. Module shall be connected to Special Equipment IPS located outside the Surgery Room.
- 4) Provide power connections for articulating utility columns.

Notes:

- 1) Provide connections for articulating utility columns.
- 2) Provide connections for video monitor pendants. Video monitor pendants will be part of the video integration system. The extent of the system is to be selected on a project basis.

HEATING, VENTILATING AND AIR CONDITIONING

General Requirement: Refer to Operating Room data sheet in the current version of the VA HVAC Design Manual for room temperatures, humidity range, room air change requirements, and pressurization

Notes:

- 1) Refer to the HVAC Design Manual for number and location of low air return grilles and ceiling diffusers.

PLUMBING AND MEDICAL GASES

| | |
|----------------------|----------|
| Cold Water: | No |
| Hot Water: | No |
| Waste: | No |
| Reagent Grade Water: | No |
| Medical Air | Yes (2) |
| Medical Vacuum | Yes (14) |
| Oxygen | Yes (4) |
| Special Requirement: | |

Notes:

- 1) Provide Waste Anesthesia Gas Disposal (WAGD), Nitrogen (2), Nitrous Oxide (2), Carbon Dioxide (2).
- 2) For gas quantities per boom refer to the reflected ceiling plan.
- 3) Nitrogen Control Cabinets are to be located on the articulating utility columns as determined by the project
- 4) Medical Gas Zone Valve Boxes are to be provided in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the operating room it serves.

FIRE PROTECTION AND LIFE SAFETY

| | |
|--------------|-------------------------|
| Fire Alarm: | Yes |
| Sprinkler: | Yes |
| Hazard Type: | Ordinary Hazard Group 1 |

REMOVE QUANTITIES**COMMUNICATIONS**

| | |
|--|-------------|
| Data: | Yes |
| Telephone: | Yes |
| Cable Television: | No |
| Duress Alarm: | No |
| Electronic Access and Door Control: | Yes |
| Intercom: | Yes (Phone) |
| Motion Intrusion Detection (MID): | No |
| Nurse Call: | Yes |
| Code Blue: | Yes |
| Public Address: | No |
| Security Surveillance Television (SSTV): | No |
| VA Satellite TV: | No |
| Video Teleconferencing (VTEL): | No |
| Special Requirement: | |

4.12. OPERATING ROOM, TRANSPLANT (ORTR1)

Emergency Power: Connect selected receptacles and equipment to Critical Branch emergency IPS.

Notes:

- 1) Provide IPS power & ground modules – 3 duplex receptacles & 3 ground jacks
- 2) IPS Power & ground modules mounted at +24" AFF
- 3) Provide Laser Receptacle Module. Module shall be connected to Special Equipment IPS located outside the Surgery Room.
- 4) Provide power connections for articulating utility columns.

REMOVE QUANTITIES

COMMUNICATIONS

| | |
|--|-------------|
| Data: | Yes |
| Telephone: | Yes |
| Cable Television: | No |
| Duress Alarm: | No |
| Electronic Access and Door Control: | Yes |
| Intercom: | Yes (Phone) |
| Motion Intrusion Detection (MID): | No |
| Nurse Call: | Yes |
| Code Blue: | Yes |
| Public Address: | No |
| Security Surveillance Television (SSTV): | No |
| VA Satellite TV: | No |
| Video Teleconferencing (VTEL): | No |
| Special Requirement: | |

Notes:

- 1) Provide connections for articulating utility columns.
- 2) Provide connections for video monitor pendants. Video monitor pendants will be part of the video integration system. The extent of the system is to be selected on a project basis.

HEATING, VENTILATING AND AIR CONDITIONING

General Requirement: Refer to Operating Room data sheet in the current version of the VA HVAC Design Manual for room temperatures, humidity range, room air change requirements, and pressurization

Notes:

- 1) Refer to the HVAC Design Manual for number and location of low air return grilles and ceiling diffusers.
- 2) Room does not contain multiple slot diffusers and uses laminar flow perforated face outlets only for supply air.
- 3) Suggested minimum laminar flow array over the entire sterile field area as imaging equipment gantry creates excessive turbulence. Mechanical design engineer shall be responsible to design the array in such manner as to minimize turbulence and to maintain the sterile aseptic field.

PLUMBING AND MEDICAL GASES

| | |
|----------------------|----------|
| Cold Water: | No |
| Hot Water: | No |
| Waste: | No |
| Reagent Grade Water: | No |
| Medical Air | Yes (4) |
| Medical Vacuum | Yes (17) |
| Oxygen | Yes (6) |
| Special Requirement: | |

Notes:

- 1) Provide Waste Anesthesia Gas Disposal (WAGD), Nitrogen (3), Nitrous Oxide (2), Carbon Dioxide (2).
- 2) For gas quantities per boom refer to the reflected ceiling plan.
- 3) Nitrogen Control Cabinets are to be located on the articulating utility columns as determined by the project
- 4) Medical Gas Zone Valve Boxes are to be provided in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the operating room it serves.

FIRE PROTECTION AND LIFE SAFETY

| | |
|--------------|-------------------------|
| Fire Alarm: | Yes |
| Sprinkler: | Yes |
| Hazard Type: | Ordinary Hazard Group 1 |

4.13. OPERATING ROOM, MONOPLANE HYBRID (ORHY1)

Emergency Power: Connect selected receptacles and equipment to Critical Branch emergency IPS.

Notes:

- 1) Provide IPS power & ground modules – 3 duplex receptacles & 3 ground jacks
- 2) IPS Power & ground modules mounted at +24" AFF
- 3) Provide Laser Receptacle Module. Module shall be connected to Special Equipment IPS located outside the Surgery Room.
- 4) Provide power connections for articulating utility columns.

REMOVE QUANTITIES

COMMUNICATIONS

| | |
|--|-------------|
| Data: | Yes |
| Telephone: | Yes |
| Cable Television: | No |
| Duress Alarm: | No |
| Electronic Access and Door Control: | Yes |
| Intercom: | Yes (Phone) |
| Motion Intrusion Detection (MID): | No |
| Nurse Call: | Yes |
| Code Blue: | Yes |
| Public Address: | No |
| Security Surveillance Television (SSTV): | No |
| VA Satellite TV: | No |
| Video Teleconferencing (VTEL): | No |
| Special Requirement: | |

Notes:

- 1) Provide connections for articulating utility columns.
- 2) Provide connections for video monitor pendants. Video monitor pendants will be part of the video integration system. The extent of the system is to be selected on a project basis.

HEATING, VENTILATING AND AIR CONDITIONING

General Requirement: Refer to Operating Room data sheet in the current version of the VA HVAC Design Manual for room temperatures, humidity range, room air change requirements, and pressurization

Notes:

- 1) Refer to the HVAC Design Manual for number and location of low air return grilles and ceiling diffusers.
- 2) Room does not contain multiple slot diffusers and uses laminar flow perforated face outlets only for supply air.
- 3) Suggested minimum laminar flow array over the entire sterile field area as imaging equipment gantry creates excessive turbulence. Mechanical design engineer shall be responsible to design the array in such manner as to minimize turbulence and to maintain the sterile aseptic field.

PLUMBING AND MEDICAL GASES

| | |
|----------------------|----------|
| Cold Water: | No |
| Hot Water: | No |
| Waste: | No |
| Reagent Grade Water: | No |
| Medical Air | Yes (4) |
| Medical Vacuum | Yes (17) |
| Oxygen | Yes (6) |
| Special Requirement: | |

Notes:

- 1) Provide Waste Anesthesia Gas Disposal (WAGD), Nitrogen (3), Nitrous Oxide (2), Carbon Dioxide (2).
- 2) For gas quantities per boom refer to the reflected ceiling plan.
- 3) Nitrogen Control Cabinets are to be located on the articulating utility columns as determined by the project
- 4) Medical Gas Zone Valve Boxes are to be provided in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the operating room it serves.

FIRE PROTECTION AND LIFE SAFETY

| | |
|--------------|-------------------------|
| Fire Alarm: | Yes |
| Sprinkler: | Yes |
| Hazard Type: | Ordinary Hazard Group 1 |

4.14. OPERATING ROOM, BIPLANE HYBRID (ORHY2)

4.16. CARDIAC CATHETERIZATION LABORATORY (XCCE1) INTERVENTIONAL RADIOLOGY (IR) LABORATORY (XACR1)

Room Data Sheet (continued)

PLUMBING AND MEDICAL GASES

| | |
|----------------------|---------|
| Cold Water: | No |
| Hot Water: | No |
| Waste: | No |
| Reagent Grade Water: | No |
| Medical Air | Yes (4) |
| Medical Vacuum | Yes (4) |
| Oxygen | Yes (4) |
| Special Requirement: | |

Notes:

- 1) For gas quantities per boom refer to the reflected ceiling plan.
- 2) Provide Nitrogen (2).
- 3) Medical Gas Zone Valve Boxes are to be provided in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the room it serves.

REMOVE QUANTITIES

ADD WAGD

FIRE PROTECTION AND LIFE SAFETY

| | |
|--------------|----------------------------|
| Fire Alarm: | Yes |
| Sprinkler: | Yes |
| Hazard Type: | Ordinary Hazard Group 1 |

4.16. CARDIAC CATHETERIZATION LABORATORY (XCCE1) INTERVENTIONAL RADIOLOGY (IR) LABORATORY (XACR1)

4.17. PROCEDURE ROOM, ELECTROPHYSIOLOGY (XCEP1)

Room Data Sheet (continued)**HEATING, VENTILATING AND AIR CONDITIONING**

General Requirement: Refer to Operating Room data sheet in the current version of the VA HVAC Design Manual for room temperatures, humidity range, room air change requirements, and pressurization

Notes:

- 1) Refer to the HVAC Design Manual for number and location of low air return grilles.
- 2) Room does not contain multiple slot diffusers and uses laminar flow perforated face outlets only for supply air.
- 3) Suggested minimum laminar flow array over the entire sterile field area as imaging equipment gantry creates excessive turbulence. Mechanical design engineer shall be responsible to design the array in such manner as to minimize turbulence and to maintain the sterile aseptic field.

PLUMBING AND MEDICAL GASES

| | |
|----------------------|---------|
| Cold Water: | No |
| Hot Water: | No |
| Waste: | No |
| Reagent Grade Water: | No |
| Medical Air | Yes (5) |
| Medical Vacuum | Yes (7) |
| Oxygen | Yes (6) |
| Special Requirement: | |

Notes:

- 1) Provide Waste Anesthesia Gas Disposal (WAGD), Nitrogen (2), Nitrous Oxide (1).
- 2) For gas quantities per boom refer to the reflected ceiling plan.
- 3) Nitrogen Control Cabinets are to be located on the articulating utility columns as determined by the project
- 4) Medical Gas Zone Valve Boxes are to be provided in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the operating room it serves.

FIRE PROTECTION AND LIFE SAFETY

| | |
|--------------|-------------------------|
| Fire Alarm: | Yes |
| Sprinkler: | Yes |
| Hazard Type: | Ordinary Hazard Group 1 |

REMOVE QUANTITIES**ADD WAGD****4.17. PROCEDURE ROOM, ELECTROPHYSIOLOGY (XCEP1)**

4.18. TRANSESOPHAGEAL ECHOCARDIOGRAPH (TEE)

PROCEDURE ROOM (TRTE1)

Room Data Sheet (continued)

FIRE PROTECTION AND LIFE SAFETY

| | |
|--------------|--------------|
| Fire Alarm: | Yes |
| Sprinkler: | Yes |
| Hazard Type: | Light Hazard |

COMMUNICATIONS

| | |
|--|-------------|
| Data: | Yes |
| Telephone: | Yes |
| Cable Television: | No |
| Duress Alarm: | No |
| Electronic Access and Door Control: | Yes |
| Intercom: | Yes (Phone) |
| Motion Intrusion Detection (MID): | No |
| Nurse Call: | Yes |
| Code Blue: | Yes |
| Public Address: | No |
| Security Surveillance Television (SSTV): | No |
| VA Satellite TV: | No |
| Video Teleconferencing (VTEL): | No |
| Special Requirement: | |

Notes:

HEATING, VENTILATING AND AIR CONDITIONING

General Requirement: Refer to the current version of the VA HVAC Design Manual for temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES

| | |
|----------------------|---------|
| Cold Water: | Yes |
| Hot Water: | Yes |
| Waste: | Yes |
| Reagent Grade Water: | No |
| Medical Air | Yes (2) |
| Medical Vacuum | Yes (2) |
| Oxygen | Yes (2) |

REMOVE QUANTITY

ADD WAGD

4.18. TRANSESOPHAGEAL ECHOCARDIOGRAPH (TEE) PROCEDURE ROOM (TRTE1)



U.S. Department
of Veterans Affairs

Office of Construction &
Facilities Management

*Office of Facilities Planning
Facilities Standards Service*

DESIGN ALERT

SEPTEMBER 27, 2023
003C2B-DA-153

Biosafety Level 3 (BSL-3) Architectural & Engineering Considerations Update

ISSUE: Engineering and Architectural Considerations in Biosafety Level 3 (BSL-3) Laboratories.

DISCUSSION: Due to safety and security protocols of BSL-3 laboratories, this design alert updates the BSL 3 requirements from the Mycobacterial Laboratories – BSL 3 Labs Architectural and Engineering Controls Update design alert (003C2B-DA-121) dated September 15, 2004. Design Alert 121 is hereby rescinded.

REQUIREMENTS: For new construction or major renovation of clinical infectious diseases, infection control and epidemiology testing laboratories, the following architectural and engineering controls are recommended as per the following:

1. The BSL-3 laboratory area shall be identified based on discussions with the medical center personnel and Office of Research and Development program office.
2. The architectural and engineering design/contract documents shall identify the area requiring BSL-3 compliance.
3. Laboratory Facilities (Secondary Barriers) for Biosafety Level 3 Laboratories must comply with, but not limited to the following, VA directives and standards, along with nationally recognized standards:
 - a. VA Handbook 1106.01 – Pathology and Laboratory Medicine Service (P&LMS) Procedures
 - b. VA Handbook 1200.06 – Control of Hazardous Agents in VA Research Laboratories
 - c. VA Directive 1200.08 – Safety of Personnel and Security of Laboratories Involved in VA Research
 - d. Biosafety Level (BSL) 3 Research Laboratory Physical Security Inspections, dated March 23, 2007
 - e. VA Electrical Design Manual
 - f. VA HVAC Design Manual
 - g. VA Plumbing Design Manual
 - h. VA PG 18-14 - Room Finishes, Door, & Hardware Schedule
 - i. VA Physical Security and Resiliency Design Manual
 - j. VA Research and Development Design Guide

- k. VA Structural Design Manual
- l. National Institute of Health (NIH) Design Requirements Manual
- m. Biosafety in Microbiological and Biomedical Laboratories (BMBL)

The following list of specific sections for the above references is intended to assist with navigating the documents for BSL-3 specific planning and design criteria but is not all inclusive.

- a. VA PG 18-14 - Room Finishes, Door, & Hardware Schedule
 - i. Chapter 278 Research and Development, FA3: Biomedical Research Unit Biosafety Laboratory Area.
- b. VA Physical Security and Resiliency Design Manual must be followed with specific attention to the following sections for BSL-3 laboratories, 5 Functional Areas – 5.15 Research Laboratory and Vivarium:
 - i. 5.15.2.2 Interior Entry and Emergency Egress Doors
 - ii. 5.15.3 Construction
 - iii. 5.15.3.2 Interior Construction
 - iv. 5.15.3.3 Partitions
 - v. 5.15.3.5 HVAC
 - vi. 5.15.4.1 SSTV
 - vii. 5.15.4.2 Intercom
 - viii. 5.15.4.3 Biometric
 - ix. 5.15.4.5 Alarm
 - x. 5.15.6 Alteration/Renovation of Existing Facilities – Research Laboratory and Vivarium
 - xi. 7.4 Prevention of Progressive Collapse
- c. VA Research and Development Design Guide must be followed with specific attention to the following sections for BSL-3 laboratories:
 - i. 3.0 Building Technical Considerations: 3.5.6 Exhaust Hoods
- d. NIH – Design Requirements Manual (DRM) must be followed with specific attention to the following sections for BSL-3 laboratories:
 - i. Chapter 1 – Administration, section 1.13 Security Requirements and Procedures: Applicable for VA leased facilities. For VA owned facilities, follow VA’s PSRDM, VA Handbook 0730 and the references listed within.
 - ii. Chapter 2 – Planning and Programming, section 2.5 Biocontainment Facility Predesign
 - iii. Chapter 4 – Architectural Design, section 4.4.5 Wall and Ceiling Finishes for Aseptic Facilities, BSL-3, ABSL-3 and Similar Facilities
 - iv. Chapter 4 – Architectural Design, section 4.9 BSL-3 and ABSL-3
 - v. Chapter 6 – Mechanical Design, section 6.6 BSL-3 and ABSL-3
 - vi. Chapter 7 – Building Automation Systems, section 7.7 BSL-3 and ABSL-3



- vii. Chapter 8 – Plumbing Design, section 8.6 BSL-3 and ABSL-3
- viii. Chapter 10 – Electrical Design, section 10.8.4 Lighting BSL-3 and ABSL-3 Biocontainment

Notes:

- i. NIH's DOHS BioRisk Program: VA equivalent is Institutional Biosafety Committee (IBC).
 - ii. NIH's Division of Fire Marshal (DFM): VA equivalent is HEFP Fire Protection Engineer.
 - iii. NIH's Division of Occupational Health & Safety (DOHS): VA Environmental Programs Services
 - iv. NIH's Design Requirements Manual (DRM): VA's Research and Development Design Guide
 - v. NIH's Division of Technical Resources (DTR): VA, CFM Offices of Facilities Standards Service and Consulting Support Services
 - vi. NIH's Office of Research Facility (ORF): VA equivalent is Office of Research and Development
- e. Biosafety in Microbiological and Biomedical Laboratories (BMBL) must be followed with specific attention to the following sections for BSL-3 laboratories:
- i. Section IV - Laboratory Biosafety Level Criteria - Biosafety Level 3, D Laboratory Facilities (Secondary Barriers)

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VA



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Office of Construction &
Facilities Management

Office of Facilities Planning
Facilities Standards Service

DESIGN ALERT

OCTOBER 19, 2023
003C2B-DA-154

Interstitial Space – Interim Guidance

ISSUE: Minimum requirements for Interstitial Space need to be published for implementation in the design and construction of VA projects.

DISCUSSION: This Interim Guidance provides minimum requirements for the design and construction of Interstitial Space for VA medical facilities and will be in effect until the design standard is completed and updated. Implementation of this Interim Guidance shall be in coordination with applicable national/local building codes, standards, and VA criteria.

REQUIREMENTS: See attached document entitled *Interstitial Space – Interim Guidance, October 19, 2023*.

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Interstitial Space – Interim Guidance

October 19, 2023

I. Introduction and Background:

This Interim Guidance provides minimum requirements for the design and construction of Interstitial Space for VA medical facilities and will be in effect until the design standard is completed and updated. Implementation of this Interim Guidance shall be in coordination with applicable national/local building codes, standards, and VA criteria.

The Interstitial Space is the unfinished or non-habitable space utilized for building service subsystems, of sufficient size to accommodate workers and permit maintenance and alteration without disruption of activities in functional spaces. The term usually refers to the portion of the service zone between the finished ceiling and the floor above. Equipment (e.g., building service equipment such as pumps, air handlers, etc.) is not to be placed within the interstitial space.

Infrastructure distribution, branches, and terminations to point of use occurs in the interstitial space. The ceiling is suspended below a shallow girder-and-beam structure rather than from a truss and is designed as a continuous platform to allow workmen to move freely over its entire surface. Minimum clearance under the beams is required to provide full headroom between beams.

The interstitial space is highly organized into reserved subzones for various services. The utilities in the area must be coordinated to provide clear access and passage for all trades, to minimize crossovers and other conflicts, for future extensions and additions, and to permit positive location of all components. While developing specific designs for the integrated subsystems, it is imperative that each decision be made in the context of its possible effects on the characteristics of all other subsystems. Early coordination is critical for an efficient and successful design. BIM modeling and associated clash detection are required to be utilized and demonstrated throughout the design process. Subzone organization of various subsystems is discussed and detailed throughout the [VA Hospital Building Development Study](#). These examples are not intended provide a prescribed resolution to the total service module distribution challenge but attempt to show a general approach to a solution. The successful integration of the subsystem layout in a rational network depends on early study of the immediate and potential requirements for service. The general character of the service layouts needs to be developed simultaneously with structural and functional decisions. All services except gravity drains down feed into the functional zone below.

All partitions except two-hour fire partitions stop at the ceiling-platform and thus do not interrupt the service zone.

To the greatest practical extent, service drops are surface-mounted and enclosed in furred-out partition components, proprietary containers, or vertical chases or wall systems to the point of service. The interstitial space is not to be used as a plenum.

II. Design Requirements:

A. Planning and Architectural:

1. During Project Book (PB), the Architects/Engineers (AE) shall work with the VA Medical Center (VAMC) user groups to identify all areas being considered to have interstitial and co-locate departments with first and second priorities for the incorporation of interstitial space. The PB AE shall provide a cost breakout of the interstitial areas with the PB cost estimate.
2. Early planning in conceptual design shall confirm and validate all PB assumptions on the use of interstitial space and look to utilize entire floors with the interstitial departments for a cost-effective design.
3. The AE will still be responsible for using cost studies/ evaluations for projects with interstitial floors per the PG18-15.
4. Interstitial space is intended to provide increased efficiency and reduced disruption by accommodating access to infrastructure outside the patient care space. Provide interstitial space for the following departments. Unless noted otherwise, these departments have 1st priority for interstitial space.
 - Cardiovascular Lab Service
 - Electroencephalography Lab
 - Emergency Dept. (ED)-Urgent Care Clinic (UCC)
 - Intensive Care Nursing
 - Magnetic Resonance Imaging
 - Med-Surg Inpatient Units (2nd priority)
 - Mental Health Inpatient Patient Care
 - Nuclear Medicine Service
 - Pathology and Lab Medicine Service
 - Radiation Therapy Service
 - Radiology Service
 - Research and Development (Wet)^a
 - Spinal Cord Injury/Disorder Center
 - Surgical and Endovascular Services

NOTE:

If Research and Development Dry Research space is adjacent to Wet Research, provide interstitial space over Dry space. If the Dry space is stacked over the Wet space, then interstitial space over the Dry space is not a priority.

5. At a minimum, provide vertical clearances as follow:
 - a) 6'-0" between the top of the interstitial space floor deck and the bottom of the structural beams/girders above
 - b) 2'-0" between the ceiling of the functional area below and the bottom of the interstitial space floor deck
- B. Structural:
 1. For load requirements, see Structural Design Manual.
- C. Mechanical:
 1. Mechanical system design shall comply with the VA HVAC Design Manual.
 2. HVAC Systems serving the interstitial space shall be designed to achieve environmental criteria required for Air Handling Equipment Rooms.
 3. Interstitial spaces may house mechanical ductwork and associate controls and appurtenances for horizontal distribution and its supporting distribution control components, such as volume control dampers and smoke detection devices. Installation of air handlers, Fans and other equipment is prohibited in within the interstitial space.
- D. Lighting:
 1. General lighting system design shall comply with the Lighting Design Manual (LDM) – Chapter 1 General Requirements, Chapter 2 Lighting Design Requirements.
 2. Service Bay Area: Lighting system design shall comply with the LDM – Chapter 7.9 Electrical and Mechanical Rooms. The lighting requirement in this chapter is applicable for rooms dedicated for other engineered systems, as well.
 3. Service Zone and Sub-zone Area - Walking Paths: Lighting system design shall comply with the Lighting Design Manual (LDM) – Chapter 5.4 Primary Corridors.
 4. Service Zone and Sub-zone Area – Equipment Areas: Lighting system design shall comply with the LDM – Chapter 5.5 Secondary Corridors. Due to the location of equipment, the design does not have to conform to the Uniform Ratio required in Chapter 5.5 of the LDM.

E. Electrical:

1. Interstitial spaces may house electrical conduit and junction boxes for horizontal distribution serving zones in the occupied floors both above and below the interstitial space. Installation of electrical panel disconnects or other energy control mechanisms is prohibited within interstitial spaces.
2. At a minimum, electrical power system design shall comply with the latest NFPA 70 and the VA Electrical Design Manual.
3. Electrical room shall be located adjacent to the Functional Floor. Electrical room shall be a separate room from other engineered systems. Electrical rooms shall house normal power system and essential electrical system (EES) equipment associated with the Service Module. Size of the electrical room shall be sufficient to house all associated electrical equipment, as well as future wall/floor space reserved for future expansion. Size of electrical room's future expansion is to be determined by the Medical Center's Chief Engineer.
4. Electrical power system equipment shall be low voltage (1000V or below). Step-down transformers shall be located on the floor to ease maintenance and repair. Step-down transformers shall not be stack-mounted. If steel grate "mezzanine" level is installed in the electrical room, and the "mezzanine" is readily accessible with industrial stair, step-down transformers may be located in the "mezzanine".

F. Plumbing:

1. Interstitial spaces may house plumbing infrastructure including valves and controls lines for horizontal distribution serving zones in the occupied floors both above and below the interstitial space. Installation of pumps and other equipment is prohibited in the interstitial space.

G. Fire Protection:

1. Interstitial spaces shall comply with the requirements in (a) VA Fire Protection Design Manual, section 2.3, VA Hospital Building System (Interstitial); and (b) NFPA 101, 2021 edition, section 7.14, Normally Unoccupied Building Service Equipment Support Areas.

H. Telecommunications / Information Technology Systems

1. For cabling infrastructure requirement, see Infrastructure Standard for Telecommunications Spaces (ISTS)

2. Interstitial spaces may be used for telecommunications media pathways (campus backbone fiber, UTP copper horizontal distribution, and copper backbone, etc.). Telecommunications media shall be supported by j-hooks, basket-type cable tray, or other industry accepted support for distribution within interstitial spaces. Media shall not be attached to wire hangers or rely on piping for support.
 3. Telecommunications cabling may not be installed or transit any interstitial or similar space classified as a permit-required confined space by OSHA standard 1910.146.
 4. Penetrations from the interstitial space to an occupied space for telecommunications cabling shall be via UL-rated manufactured sleeves with bushing, firestop and innerduct for fiber.
 5. IT equipment may not be installed in interstitial spaces.
 6. Fiber transitions (such as Intermediate Cross Connects or patching fields) shall not be located within an interstitial space.
 7. All interstitial spaces containing telecommunications distribution media should be scheduled for periodic rodent surveillance.
- I. Electronic Security Systems (ESS)
1. Provide ESS per Physical Security & Resiliency Design Manual.

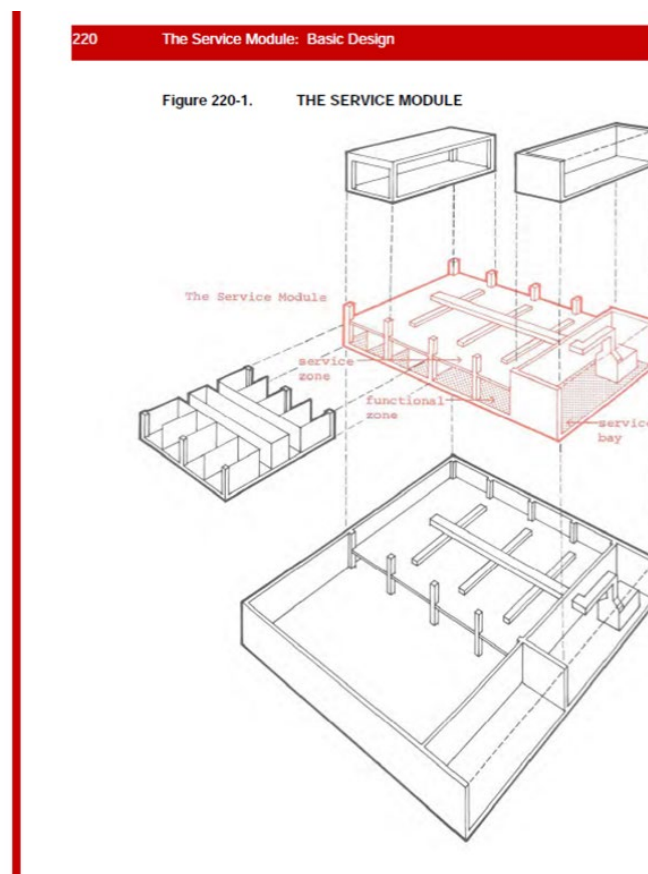
III. Glossary

Functional Space: Habitable room or area not assigned exclusively to building service equipment.

Interstitial Platform: The deck system that provides the walk-on surface for the above ceiling (interstitial) service zone; and constitutes the bottom of the two-hour separation between floors (Refer to fire test reports NBSIR 85-3158, Fire Performance of Interstitial Space Construction System; and NISTIR 5560, Fire Performance of an Interstitial Space Construction System). Platform construction is continuous across a service module, except for the service bay.

Interstitial Space: Unfinished or non-habitable space utilized for building service subsystems, of sufficient size to accommodate workers and permit maintenance and alteration without disruption of activities in functional spaces. The term usually refers to the portion of the service zone between the finished ceiling and the floor above.

Service Module: A planning module containing, and served by, an independent horizontal distribution network; typically including its own air handling unit. See image below.



Service Zone: The horizontal layer or building volume between the bottom of a finished ceiling and the top of the finished floor immediately above; and the adjoining service bay. See Interstitial Space.

Subsystem:

- A system considered as a component of a larger or more general system.
- Any component, or group of components, which has internally the characteristics of a system (e.g., the distribution components of a mechanical system).

DESIGN ALERT RESCISSION DATES

| Design Alert Number | Issue Date | Subject | Rescission Date |
|---------------------|------------|-----------|-----------------|
| FM-187C-DA-01 | 3/14/1994 | rescinded | 4/15/2010 |
| FM-187C-DA-02 | 3/28/1994 | rescinded | 3/31/2011 |
| FM-187C-DA-03 | 4/4/1994 | rescinded | 4/15/2010 |
| FM-187C-DA-04 | 5/11/1994 | rescinded | 3/31/2011 |
| FM-187C-DA-05 | 7/7/1994 | rescinded | 4/15/2010 |
| FM-187C-DA-06 | 7/11/1994 | rescinded | 9/1/2016 |
| FM-187C-DA-07 | 7/19/1994 | rescinded | 3/31/2011 |
| FM-187C-DA-08 | 10/3/1994 | rescinded | 4/15/2010 |
| FM-187C-DA-09 | 10/25/1994 | rescinded | 10/16/2018 |
| FM-187C-DA-10 | 10/25/1994 | rescinded | 4/15/2010 |
| FM-187C-DA-11 | 10/25/1994 | rescinded | 10/11/2018 |
| FM-187C-DA-12 | 10/31/1994 | rescinded | 4/15/2010 |
| FM-187C-DA-13 | 11/1/1994 | rescinded | 10/11/2018 |
| FM-187C-DA-14 | 11/3/1994 | rescinded | 9/1/2016 |
| FM-187C-DA-15 | 11/3/1994 | rescinded | 10/12/2018 |
| FM-187C-DA-16 | 11/7/1994 | rescinded | 10/11/2018 |
| FM-187C-DA-17 | 11/9/1994 | rescinded | 10/11/2018 |
| FM-187C-DA-18 | 11/9/1994 | rescinded | 10/12/2018 |
| FM-187C-DA-19 | 11/18/1994 | rescinded | 4/15/2010 |
| FM-187C-DA-20 | 11/18/1994 | rescinded | 3/31/2011 |
| FM-187C-DA-21 | 11/21/1994 | rescinded | 9/1/2016 |
| FM-187C-DA-22 | 11/21/1994 | rescinded | 10/16/2018 |
| FM-187C-DA-23 | 11/23/1994 | rescinded | 4/15/2010 |
| FM-187C-DA-24 | 11/30/1994 | rescinded | 9/1/2016 |
| FM-187C-DA-25 | 12/1/1994 | rescinded | 4/15/2010 |
| FM-187C-DA-26 | 12/1/1994 | rescinded | 4/15/2010 |
| FM-187C-DA-27 | 12/22/1994 | rescinded | 4/15/2010 |
| FM-187C-DA-28 | 12/22/1994 | rescinded | 4/15/2010 |
| FM-187C-DA-29 | 1/11/1995 | rescinded | 4/15/2010 |
| FM-187C-DA-30 | 2/27/1995 | rescinded | 3/31/2011 |
| FM-187C-DA-31 | 3/7/1995 | rescinded | 10/16/2018 |
| FM-187C-DA-32 | 4/13/1995 | rescinded | 9/1/2016 |
| 00CFM1A-DA-33 | 5/3/1995 | rescinded | 9/1/2016 |



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|----------------------------|-------------------|----------------|------------------------|
| FM-187C-DA-34 | 5/5/1995 | rescinded | 4/15/2010 |
| FM-187C-DA-35 | 2/19/1998 | rescinded | 4/15/2010 |
| FM-187C-DA-36 | 5/18/1995 | rescinded | 4/15/2010 |
| FM-187C-DA-37 | 6/12/1995 | rescinded | 4/15/2010 |
| FM-187C-DA-38 | 6/21/1995 | rescinded | 4/15/2010 |
| FM-187C-DA-39 | 8/17/1995 | rescinded | 9/1/2016 |
| FM-187C-DA-40 | 8/31/1995 | rescinded | 10/12/2018 |
| FM-187C-DA-41 | 9/6/1995 | rescinded | 10/12/2018 |
| FM-187C-DA-42 | 9/20/1995 | rescinded | 3/17/2017 |
| FM-187C-DA-43 | 9/20/1995 | rescinded | 10/11/2018 |
| FM-187C-DA-44 | 10/16/1995 | rescinded | 10/17/2018 |
| FM-087C-DA-45 | 11/7/1995 | rescinded | 5/26/2017 |
| FM-087C-DA-46 | 11/8/1995 | rescinded | 10/11/2018 |
| FM-187C-DA-47 | 12/6/1995 | rescinded | 9/1/2016 |
| FM-187C-DA-48 | 2/5/1996 | rescinded | 10/12/2018 |
| FM-187C-DA-49 | 6/3/1997 | rescinded | 9/15/2004 |
| FM-187C-DA-50 | 3/8/1996 | rescinded | 4/20/2017 |
| FM-187C-DA-51 | 4/2/1996 | rescinded | 11/14/2018 |
| FM-187C-DA-52 | 4/8/1996 | rescinded | 4/15/2010 |
| FM-187C-DA-53 | 7/9/1996 | rescinded | 4/15/2010 |
| FM-187C-DA-54 | 7/10/1996 | rescinded | 10/11/2018 |
| FM-187C-DA-55 | 7/11/1996 | rescinded | 9/1/2016 |
| FM-187C-DA-56 | 7/12/1996 | rescinded | 12/10/2018 |
| FM-187C-DA-57 | 7/23/1996 | rescinded | 9/1/2016 |
| FM-187C-DA-58 | 8/29/1996 | rescinded | 4/15/2010 |
| FM-187C-DA-59 | 9/10/1996 | rescinded | 4/15/2010 |
| FM-187C-DA-60 | 9/11/1996 | rescinded | 4/15/2010 |
| FM-187C-DA-61 | 1/14/1997 | rescinded | 3/31/2011 |
| FM-187C-DA-62 | 1/22/1997 | rescinded | 4/15/2010 |
| FM-187C-DA-63 | 2/18/1997 | rescinded | 3/31/2011 |
| FM-187C-DA-64 | 2/18/1997 | rescinded | 4/15/2010 |
| FM-187C-DA-65 | 2/20/1997 | rescinded | 9/1/2016 |
| FM-187C-DA-66 | 3/10/1997 | rescinded | 4/15/2010 |
| FM-187C-DA-67 | 4/14/1997 | rescinded | 4/15/2010 |
| FM-187C-DA-68 | 4/21/1997 | rescinded | 10/12/2018 |



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|---------------------|------------|-----------|-----------------|
| FM-187C-DA-69 | 4/23/1997 | rescinded | 10/16/2018 |
| FM-187C-DA-70 | 4/25/1997 | rescinded | 4/15/2010 |
| FM-187C-DA-71 | 5/23/1997 | rescinded | 3/31/2011 |
| FM-187C-DA-72 | 5/27/1997 | rescinded | 4/15/2010 |
| FM-187C-DA-73 | 7/2/1997 | rescinded | 3/31/2011 |
| FM-187C-DA-74 | 8/4/1997 | rescinded | 4/15/2010 |
| FM-187C-DA-75 | 8/14/1997 | rescinded | 3/31/2011 |
| FM-187C-DA-76 | 10/15/1997 | rescinded | 12/5/2017 |
| FM-187C-DA-77 | 10/23/1997 | rescinded | 12/5/2017 |
| FM-187C-DA-78 | 11/7/1997 | rescinded | 10/16/2018 |
| FM-187C-DA-79 | 12/11/1997 | rescinded | 3/31/2011 |
| FM-187C-DA-80 | 12/22/1997 | rescinded | 3/31/2011 |
| FM-187C-DA-81 | 12/24/1997 | rescinded | 3/31/2011 |
| FM-187C-DA-82 | 1/15/1998 | rescinded | 4/15/2010 |
| FM-187C-DA-83 | 1/29/1998 | rescinded | 4/15/2010 |
| FM-187C-DA-84 | 2/6/1998 | rescinded | 4/15/2010 |
| FM-187C-DA-85 | 3/2/1998 | rescinded | 9/1/2016 |
| FM-187C-DA-86 | 3/4/1998 | rescinded | 4/15/2010 |
| FM-187C-DA-87 | 3/20/1998 | rescinded | 3/31/2011 |
| FM-187C-DA-88 | 4/9/1998 | rescinded | 4/15/2010 |
| FM-187C-DA-89 | 7/10/1998 | rescinded | 3/31/2011 |
| FM-187C-DA-90 | 8/17/1998 | rescinded | 4/15/2010 |
| FM-187C-DA-91 | 10/22/1998 | rescinded | 5/5/2014 |
| FM-187C-DA-92 | 10/26/1998 | rescinded | 4/15/2010 |
| FM-187C-DA-93 | 11/10/1998 | rescinded | 3/31/2011 |
| FM-187C-DA-94 | 11/19/1998 | rescinded | 4/15/2010 |
| FM-187C-DA-95 | 1/13/1999 | rescinded | 12/5/2017 |
| FM-187C-DA-96 | 1/19/1999 | rescinded | 4/15/2010 |
| FM-181A-DA-97 | 3/9/1999 | rescinded | 4/15/2010 |
| FM-181A-DA-98 | 7/30/1999 | rescinded | 10/16/2018 |
| FM-181A-DA-99 | 8/16/1999 | rescinded | 4/15/2010 |
| FM-181A-DA-100 | 9/23/1999 | rescinded | 9/1/2016 |
| FM-181A-DA-101 | 10/12/1999 | rescinded | 4/15/2010 |
| FM-181A-DA-102 | 10/25/1999 | rescinded | 12/5/2017 |
| FM-181A-DA-103 | 12/10/1999 | rescinded | 3/31/2011 |



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|---------------------|------------------------|-----------|-----------------|
| FM-181A-DA-104 | 4/12/2000 | rescinded | 11/7/2018 |
| FM-181A-DA-105 | 6/19/2000 | rescinded | 10/17/2018 |
| FM-181A-DA-106 | 6/22/2000 | rescinded | 3/31/2011 |
| FM-181A-DA-107 | 4/16/2001 | rescinded | 3/31/2011 |
| FM-181A-DA-108 | 5/16/2001 | rescinded | 3/31/2011 |
| FM-181A-DA-109 | 5/13/2003 | rescinded | 10/16/2018 |
| FM-181A-DA-110 | 1/16/2002 | rescinded | 11/7/2018 |
| FM-181A-DA-111 | 6/19/2002 | rescinded | 9/1/2016 |
| 00CFM1A-DA-112 | 7/23/2002 4/19/2011 | rescinded | 11/8/2018 |
| FM-181A-DA-113 | 8/5/2002 | rescinded | 12/31/2018 |
| FM-181A-DA-114 | 9/15/2002 | rescinded | 9/1/2016 |
| FM-181A-DA-115 | 9/20/2002 | rescinded | 4/15/2010 |
| FM-181A-DA-116 | 2/15/2006 | rescinded | 4/15/2010 |
| FM-181A-DA-117 | 5/13/2003 | rescinded | 10/16/2018 |
| FM-181A-DA-118 | 2/19/2004 | rescinded | 4/15/2010 |
| FM-181A-DA-119 | 3/23/2004 | rescinded | 4/15/2010 |
| FM-181A-DA-120 | 4/13/2004 | rescinded | 9/1/2016 |
| 003C2B-DA-121 | 9/15/2004 | rescinded | 9/27/2023 |
| FM-181A-DA-122 | 10/26/2004 | rescinded | 4/15/2010 |
| FM-181A-DA-123 | 4/5/2005 | rescinded | 4/15/2010 |
| FM-181A-DA-124 | 2/23/2006 | rescinded | 4/15/2010 |
| FM-181A-DA-125 | 3/24/2006 | rescinded | 6/1/2012 |
| FM-181A-DA-126 | 4/25/2006 | rescinded | 6/1/2012 |
| FM-181A-DA-127 | 4/25/2006 | rescinded | 6/1/2012 |
| FM-181A-DA-128 | 4/27/2006 | rescinded | 9/1/2016 |
| FM-181A-DA-129 | 1/18/2007 | rescinded | 11/7/2018 |
| FM-181A-DA-130 | 1/18/2007 | rescinded | 11/7/2018 |
| 00CFM1A-DA-131 | 9/17/2007 | rescinded | 9/1/2016 |
| 003C2B-DA-132 | 2/1/2006 5/1/2008 | rescinded | 8/2/2022 |
| 00CFM1A-DA-133 | 3/4/2010 | rescinded | 9/1/2016 |
| 00CFM1A-DA-134 | 5/17/2010 | rescinded | 12/5/2017 |
| 00CFM1A-DA-135 | 5/14/2010 | rescinded | 10/16/2018 |
| 00CFM1A-DA-136 | 3/8/2011 | rescinded | 3/17/2017 |



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|----------------------------|-------------------|----------------|------------------------|
| 003C2B-DA-137 | 4/28/2011 | rescinded | 11/5/2020 |
| 003C2B-DA-138 | 4/19/2012 | rescinded | 2/9/2021 |
| 003C2B-DA-139 | 7/1/2012 | rescinded | 7/17/2012 |
| 003C2B-DA-140 | 12/1/2012 | rescinded | 1/1/2013 |
| 003C2B-DA-141 | 8/1/2013 | rescinded | 11/14/2018 |
| 003C2B-DA-143 | 6/1/2014 | rescinded | 9/1/2016 |
| 003C2B-DA-144 | 5/19/2015 | rescinded | 5/19/2022 |
| 003C2B-DA-145 | 8/1/2015 | rescinded | 12/5/2017 |
| 003C2B-DA-146 | 9/1/2015 | rescinded | 12/5/2017 |
| 003C2B-DA-147 | 9/1/2016 | rescinded | 1/15/2025 |

