Preface

The goal of this Surgical Design Guide is to ensure the quality of VA facilities while controlling construction and operating costs.

This document is intended to be used as a guide and a supplement to current technical manuals and other VA criteria in the planning of Surgical Suites. The Design Guide is not to be used as a standard design. Use of this Design Guide does not preclude the need for a functional and physical design program for each specific project, nor the project Architects' and Engineers' responsibilities to develop a complete and accurate project design that best meets the users' needs and applicable code requirements.

Lloyd H. Siegel, FAIA
Associate Chief Facilities Management Officer
Strategic Management Office

_____

Ralph G. Deplama, MD
National Director of Surgery

_____

Table of Contents

Section 1

Introduction

Credits

Abbreviations

Legend of Symbols

Guide Plates

Introduction

This Surgical Service Design Guide was developed as a design tool to assist the medical profession in better understanding the choices that designers ask them to make and to help the designers understand the functional requirements necessary for patient care, and is intended to be a graphic consolidation of existing Department of Veterans Affairs' criteria. It contains data from the VA Technical Information Library (TIL); www.va.gov/facmgt/standard.

Master Construction Specifications

Design and Construction Procedures PG-18-1

Standard Details PG-18-3

Equipment Reference Manual PG-18-4

Design Manuals PG-18-6; www.va.gov/facmgt/standard/equipment.asp

Barrier Free Design Handbook PG-18-10

Room Finishes, Door and Hardware Schedules PG-18-13; www.va.gov/facmgt/standard/dguide/barrfree.doc

Equipment Guide List PG-18-14

Personnel, VACO and the Consultants PG-7610; www.va.gov/facmgt/standard/equipment.asp

- Consensus information received from Advisory Committee; comprised of VA Surgery Department, Surgical Field

The purpose is to make this Design Guide *user friendly* and to serve as an index for the design of surgical suites.

The guide plates contained in this Design Guide are intended as an illustration of VA's furniture, equipment and personnel space needs. They are not meant to limit design opportunities; while they do contain the majority of spaces that now are required in the surgical suite, it is not possible to encompass all future requirements. Therefore, it is recommended that the project-specific space program be the starting point for any individual project design. In addition, it is important to note that the guide plates are a graphic representation only, utilizing the standard details that have been developed by VA to act as generic representation in order to determine spatial requirements. Specific contracts for equipment will be awarded after the project has been bid. Where needed to establish space and service design requirements, a minimum of three manufacturers should be consulted for specific equipment. The maximum space and service requirements should be used for planning purposes.

Credits

Credit is due to the following individuals whose guidance, advice, and effort made this publication possible.

Veterans Health Administration

Surgical Service

Ralph G. DePalma, MD, National Director of Surgery
Gerald O. McDonald, MD, Senior Surgical Consultant

Office of Facilities Management

Robert L. Neary, Acting Chief Facilities Management Officer
Lloyd H. Siegel, FAIA, Associate Chief Facilities Management Officer for Strategic Management
Kurt D. Knight, Director Facilities Quality Service
Donald L. Myers, AIA, NCARB, Senior Architect

Advisory Group

Beverly Green-Rashad, MSN, RN, CNAA, BC; VAMC Houston, TX
Daniel M. Colagrande, Senior Architect; VACO
Douglas L. Rotter, Program Specialist, Central Office Anesthesiology Service; VAMC Seattle, WA
Jatinder M. Kumar, Senior Architect; VACO
Jon A. Skelton, MSN, RN, Nurse Manager; VAMC Columbia, SC
Michael J. Bishop, MD, Director, Central Office Anesthesiology Service; VAMC Seattle, WA
Nancy J. Shatto, RN, MSN, CNOR Nurse Manager, OR/PACU/Ambulatory Surgery; VA Eastern Colorado Health Care System, Denver, CO
Rochelle Howard, RN; VAMC Reno, NV
Satish C. Sehgal, Program Manager; VACO
William H. Cable, Architect/CAD Manager and Dana Badeen, Engineering Intern; VAMC Ann Anbor, MI

Consultants

NIKA Technologies, Inc.
Hammel, Green and Abrahamson (HGA), Inc.

Abbreviations

A Amps
ABV Above
ADO Automatic Door Opener
AF After Filter
AFF Above Finished Floor
AI Acquisition Information
AR As Required
AT Acoustical Tile
CBB Concrete Backer Board
CC Contractor Furnished, Contractor Installed, Construction Funds
CD Construction Detail, see Standard Detail
CF Construction Funds, VA Furnished, Installed by VA or Contractor
CFM Cubic Feet per Minute
CLG Ceiling
CP Carpet
CPT Carpet Tile
CRP Corrosion Resistant Piping
CRS Corrosion Resisting Steel
CS Construction Standard
CT Ceramic Tile
EA Exhaust Air
ES Equipment Symbol
FC Footcandle
FD Floor Drain
FLUOR Fluorescent
FPS Fire Protection System
GEN General
GP Guide Plate
GWB Gypsum Wallboard Systems
HAC Housekeeping Aids Closet
HIPAA Health Insurance Portability and Accountability Act
HVAC Heating, Ventilating and Air-Conditioning
IPU Isolated Power Unit
KVA Kilovolt Ampere
L/T/S Lockers, Toilets, Showers
MAT Materials
MCS Master Construction Specification
mm,MM Millimeter
MTD Mounted
NFPA National Fire Protection Association
NSF Net Square Feet
NSM Net Square Meters
NTS Not To Scale
OC On Center
OCC Occupied
OR Operating Room
P Paint
PACU Post Anesthesia Care Unit
PBPU Prefabricated Bedside Patient Unit
PF Pre-filter
PG Program Guide
PL Plaster
PSF Pounds Per Square Foot
RB Resilient Base
RA Return Air
REC Receptacle
REFL Reflected
RH Relative Humidity
RSF Resilient Sheet Flooring
SA Supply Air
SC High Build Glazed Coating (Special Coating)
SD Standard Details
SF Square Foot, Square Feet
SPD Supply Processing and Distribution
SPDT Single Pole, Double Throw
SRC Semi-Restricted Corridor
SS Stainless Steel
TIL Technical Information Library (http://www.va.gov/facmgt/standard/)
UNOCC Unoccupied
V Volts
VA Volt-ampere
VC VA Furnished Contractor Installed, Medical Care Funds for Purchase, Construction Funds for Installation
VCT Resilient Tile Flooring (Vinyl Composition Tile)
VL Laboratory (Conventional) Furniture
VS Sterilizer and Associated Equipment
VV VA Furnished, VA Installed; Medical Care Appropriation
W Wallcovering (Vinyl Coated Fabric)
W Watts
WSF Welded Seam Sheet Flooring
WVF Welded Vinyl Flooring

Legend of Symbols

System	Description of Symbol	Symbols
Power Receptacles	DUPLEX RECEPTACLE, NEMA 5-20R-20 AMP- MOUNTED 18" AFF UNLESS OTHERWISE NOTED	
	DUPLEX RECEPTACLE NEMA 5-20R-20 AMP- MOUNTED ABOVE COUNTER TOP	A
	DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER, NEMA 5-10R-20 AMP-MOUNTED 18" AFF	GFI
	DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER, NEMA 5-20R-20 AMP- MOUNTED ABOVE COUNTER TOP	GFI-A
	WATERPROOF DUPLEX RECEPTACLE WITH GFI, NEMA 5-20R-20 AMP- MOUNTED 18" AFF UNLESS OTHERWISE NOTED	WP
	QUADRUPLEX OUTLET, NEMA 5-20R-20 AMP- MOUNTED 18" AFF UNLESS OR QUADRUPLEX OUTLET, NEMA 5-20R-20 AMP- PEDESTAL MOUNTED	
	QUADRUPLEX OUTLET, NEMA 5-20R-20 AMP- MOUNTED ABOVE COUNTER TOP	A
	QUADRUPLEX OUTLET WITH GROUND FAULT INTERRUPTOR, NEMA 5-20R-20 AMP MOUNTED 18" AFF UNLESS OTHERWISE NOTED	GFI
	QUADRUPLEX OUTLET WITH GROUND FAULT INTERRUPTOR, NEMA 5-20R-20 AMP MOUNTED ABOVE COUNTER TOP	GFI-A
	SPECIAL RECEPTACLE	
	TELEVISION OUTLET	TV
	ELECTRICAL STRIP MOLD, NEMA-5-20R-20 AMP RECEPTACLES AT 2'-0" INTERVALS	
	ELAPSED TIME CLOCK	C ET
	SWEEP SECOND HAND CLOCK	C SW
	ELECTRICAL POWER MODULE	

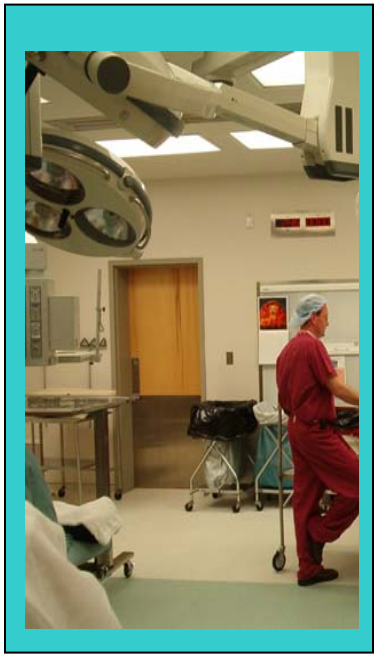
System	Description of Symbol	Symbols
Switches	SINGLE POLE SWITCH	S
	SINGLE POLE SWITCH- SUFFIX OF "a", "b", "c" INDICATES SEPARATE CONTROL OF FIXTURES WITH SAME DESIGNATION	S a
	DIMMER SWITCH	S D
	THREE-WAY SWITCH	S 3
	VARIABLE INTENSITY CONTROL FOR SURGICAL LIGHTS	V A
	DOOR SWITCH (AUTOMATIC DOOR OPENER)	DS (ADO)
	FUSED OR UNFUSED DISCONNECT SWITCH	
Lighting	EMERGENCY POWER OFF (EPO) PUSH BUTTON	EPO
	2' X 2' RECESSED FLUORESCENT FIXTURE	
	1' X 4' RECESSED FLUORESCENT FIXTURE	
	2' X 4' RECESSED FLUORESCENT FIXTURE	
	2' X 2' RECESSED FLUORESCENT FIXTURE EMERGENCY POWER	
	2' X 4' RECESSED FLUORESCENT FIXTURE EMERGENCY POWER	
	WALL MOUNTED LIGHT FIXTURE TYPE AS NOTED	

System	Description of Symbol	Symbols
Communi-cations	TELEPHONE OUTLET MOUNTED 18" AFF UNLESS OTHERWISE NOTED	
	WALL MOUNTED TELEPHONE OUTLET MOUNTED 48" AFF UNLESS OTHERWISE NOTED	W
	COMPUTER TERMINAL OUTLET, VERIFY EXACT NEEDS. PROVIDE SIGNAL AND POWER OUTLET AS REQUIRED	
	SPEAKER- CEILING MOUNTED	S
	INTERCOM OUTLET	I
	NURSE CALL DOME LIGHT- CEILING MOUNTED	N
	NURSE CALL DOME LIGHT- WALL MOUNTED	N
	NURSE CALL DUTY STATION	N D
	EMERGENCY NURSE CALL STATION	N E
	NURSE CALL STAFF STATION	N S
	VOLUME CONTROL- WALL MOUNTED	V

System	Description of Symbol	Symbols
Special Outlets	JUNCTION BOX- PURPOSE AND LOCATION AS NOTED	J
Mechanical	SUPPLY AIR DIFFUSER	
	RETURN OR EXHAUST AIR REGISTER OR GRILLE	
	ROOM THERMOSTAT- MOUNTED 5' AFF	T
	ROOM HUMIDISTAT- MOUNTED 5' AFF	H
Plumbing	COMBINATION FAUCET HOSE BIBB	
	MEDICAL GAS OUTLET	
	OXYGEN OUTLET	O
	AIR OUTLET	A
	VACUUM OUTLET	V
Other	DOOR DESIGNATION - REFER TO PG-18-14 FOR DESCRIPTION	# # XX X

Section 2

Narrative



Guide Plates

THE SURGICAL SUITE

General Description, Function and Concepts

The VA Medical Center's Role as a Teaching Hospital

Most Veterans Affairs Medical Centers are affiliated with major medical schools. Residents from these schools as well as students in nursing and medical technology perform many functions within the Medical Center during their medical education. Because of the teaching mission of the VA, additional space is required in the Operating Room and staff support areas to accommodate the residents, faculty, and students. Also, surgical procedures may have a longer duration. This additional space and time must be kept in mind when determining the size and number of Operating Rooms and support spaces for a teaching hospital.

The Surgical Department

The Surgical Department is comprised of all areas required for patient surgical services. It includes the Surgical Suite (defined below), Post Anesthesia Care Unit (PACU), Phase II Recovery, Surgical Intensive Care Unit (SICU) and the Procedure Suite (including Cystoscopy and Endoscopy Procedure Rooms).

The Surgical Suite

The Surgical Suite is a group of spaces consisting of the individual Operating Rooms in which surgery is performed, plus all the required supporting areas. These supporting areas include a clean core, a semi-restricted corridor (previously termed peripheral corridor) and the following spaces:

1. Control and Communication Area; Patient Holding/ Prep;
2. Staff Lockers and Lounge, Toilets and Showers (LLTS) including the Auto-Valet scrub suit dispensing machines;
3. Anesthesia Workroom;
4. Scrub Areas for the staff;
5. Blood Gas Analysis Laboratory;
6. On-Site Sterilization serving a pod of Operating Rooms;
7. Equipment Storage Space;
8. Connection to the Supply Processing and Distribution (SPD) - usually mechanical cart lifts or elevators;

9. Medical Gas Storage Area;
10. Dedicated Housekeeping Aides Closets (HAC) for Clean Core and other areas within the Clean Core;
11. Dedicated Housekeeping Aides Closets (HAC) for Operating Rooms and areas directly served by the Semi-Restricted Corridor.
12. Appropriate Staff Offices, including Charge Nurse Office, and Surgical and Anesthesia Offices as required for supervision;
13. Other support areas as deemed appropriate.

Traffic within the Surgical Suite

Surgical Staff: There are two approved patterns of traffic flow for the surgical staff. One pattern is from the staff lockers/lounge through the semi-restricted corridor to the Scrub Stations and then into the individual Operating Rooms, with exit through the semi-restricted corridor. The second pattern of staff traffic is from the staff lockers/lounge directly into the clean core to the Scrub Stations and then into the individual Operating Rooms, with exit from the Operating Rooms through the semi-restricted corridor. Possible exceptions to this flow are the "circulators," who retrieve supplies and equipment from the clean core, and the supervising anesthesia staff, who are permitted to move from Operating Room to Operating Room via the clean core.

Patients: The patients are brought into the Operating Room from the Prep Area on a gurney. They are then transferred to the operating table. Following surgery, the patients are brought out of the Operating Room through the semi-restricted corridor and taken either to the PACU, Phase II Recovery or directly to the SICU.

Case Carts: Case carts to be used in procedures are brought to the Operating Rooms via the clean core on a dedicated cart lift or dedicated clean elevator from the "clean" side of SPD. When the surgical procedure is completed, these case carts are returned via the semi-restricted corridor to the "soiled" side of SPD on another dedicated cart lift or dedicated soiled elevator. In the event that SPD is not located below the Surgical Suite, an alternative traffic pattern for the case carts must be established that isolates clean and soiled case cart traffic.

Linens: Linens are brought into the Operating Rooms by way of the semi-restricted corridor. Soiled linen is bagged and removed from the Operating Room via the semi-restricted corridor.

The "Sterile Field"

The term "sterile field" is used to describe the sterile zone in the Operating Room, which includes the space immediately surrounding the patient's incision. The term "sterile" indicates that no undesirable microorganisms are present. The hands of the scrub team are gloved and everything that enters this field must be sterile.

The operating table, the surgical instrument table, and special equipment to be used in the sterile field is cleaned prior to each case. X-ray machines, surgical microscopes, and other items that are difficult to clean are draped in sterilized plastic to maintain asepsis.

The anesthesiologist/nurse anesthetist remains outside of the sterile field and is separated from the sterile field by a sterile drape.

Maintaining Asepsis (Sterility)

With regard to asepsis, the three areas of concern (to minimize the number of undesirable organisms present) within the Surgical Suite are:

1. The "sterile field" itself as described above. Only fully scrubbed staff (known as the "scrub team") is permitted in this area in the center of each Operating Room.
2. Within the Operating Room, both the scrub team as well as the additional staff that are not in the sterile field must abide by strict rules established by the Medical Center.
3. Semi-restricted areas, including spaces such as the pre-op and patient holding areas, PACU, instrument workroom, non-sterile supply storage, staff lockers/lounges/toilets/showers, control desk, and surgery administration offices.

Internal Operating Room Circulation

It is critical to plan an Operating Room in such a way that a high level of sterile technique can be achieved.

The circulator places the packs on the instrument table from the side of the instrument table away from the sterile field. The scrub nurse unwraps the sterile instruments and places them on the surgical instrument table prior to the procedure. With the exception of some specialty surgical procedures, the surgical instrument table is positioned toward the foot of the operating table, but always within the sterile field. A single instrument table may be up to 8.0 feet (2440 mm) in length, or there could be more than one instrument table. Once the procedure starts, the scrub nurse constantly draws from this source to supply the surgeons during the operation. The circulator also assists the surgeon with devices used in the sterile field such as lasers.

No one walks between the operating room table and the surgical instrument table, except those in sterile garb who have thoroughly scrubbed. When portable X-ray equipment is used, space for these items must be considered. Surgical microscopes or video

monitors on carts and other large pieces of equipment (including robotics) may also be needed in an Operating Room, and space for them must be considered.

The Surgical Team in a VA Teaching Hospital

Surgeon: The surgical team leader, under whose supervision the operation is performed. Assisting the surgeon in major operations are one or more assistants, frequently the surgical residents. Under controlled teaching programs, medical students may also participate as assistants. The maximum number of surgeons and/or assistants is typically four: two on each side of the operating table.

Anesthesia Staff: Anesthesia is administered by the anesthesia staff, which can include anesthesiologists, anesthesia assistants, anesthesia residents, anesthesia technicians, and certified registered nurse anesthetists (CRNAs). One or more anesthesia staff may be assigned to each Operating Room. It is the responsibility of the anesthesia staff to consult with the patient before surgery and identify family/friends that will speak to the surgeon after the procedure, to administer the anesthetic agent before and during surgery, and to monitor the patient's vital signs. Anesthesia staff remain with the patient during the entire surgical procedure. Following the surgery, the patient remains under the care of the anesthesia staff and the assigned recovery room nurse until the patient has met the discharge criteria.

Nursing Staff: Every major surgical procedure performed in the Operating Room is staffed by at least one registered nurse and scrub personnel. The scrub person, together with the first assistant to the surgeon, is the main support person for the operating surgeon. The scrub personnel are responsible for the sterile supplies and instruments and for handing them to the surgeon. More complicated surgical procedures may require the presence of two scrub personnel, one assisting the surgeon at the operating room table and one responsible for the instruments at the instrument table.

The circulating nurse, known as the circulator, does not function within the sterile field, but performs many of the required tasks outside the sterile field. This person also acts as the "non-sterile" hands of the surgeons and scrub person, placing films in the X-ray view box, bringing required supplies, instruments and equipment into the Operating Room, maintaining surgical records in the Operating Room, etc. Although the surgeon performing the operation has the ultimate responsibility for the care of the patient in the Operating Room, it is the circulator who is responsible for maintenance of sterile conditions and is in charge of personnel. This person is the primary advocate ensuring that correct surgery is performed by confirming proper patient identification and surgical site(s), confirming that a history and physical is on the patient chart, and confirming that a signed surgical consent is present. The circulator also enters safety measures into the computer, records time out, and assures that the proper prosthetics, if required, are available.

Surgical Technician and/or Nursing Assistant: This individual has received special training in sterile technique and in assisting in the Operating Room. If appropriately trained, this individual may perform the same duties as a scrub person. This individual cannot serve as the circulator, as only a registered nurse may be assigned that function.

Perfusionist: In cardiovascular surgery, the patient's blood may have to bypass the heart to allow the surgeon to perform the required surgical procedure. The blood supply bypasses the heart and circulates through a heart-lung machine (which is both a mechanical pump and artificial lung) after which it is returned to the patient as oxygenated and purified blood. The perfusionist, who oversees this process, works in the Operating Room, usually at the side of the operating table, but well outside the sterile field area. The heart/lung machine must be connected to both a water supply and the electrical supply. Two perfusionists may be required for each cardiovascular operation, in the event that a cell-saver (auto-transfusion) device is used.

EEG Technician: This individual operates the electroencephalograph in the Neurosurgery Operating Room to record the brain waves of the patient. Usually this monitoring is required only in patients undergoing brain surgery. This individual operates the EEG machine outside of the sterile field.

Imaging Technician: The imaging technician is in-charge of taking either film or digital images when needed within the Surgical Suite.

X-ray Film: A portable X-ray unit is moved into the Operating Room whenever it is necessary to take an X-ray. The image is taken by the imaging technician and then developed by him/her in a darkroom installed within the Surgical Suite. If preferred by the radiology and surgical staff, films can be taken directly to the Radiology Department for processing. The X-ray films may then be interpreted by a radiologist who communicates the results to the surgeons waiting in the Operating Room over the intercom or telephone. If necessary, the films can then be returned to the Surgical Suite and placed on film illuminators.

Fluoroscopy: Some Operating Rooms may have radiographic equipment permanently installed within the room. An example of this is a ceiling mounted fluoroscopic unit used in vascular surgery. More often than not, portable radiology equipment is used. For these procedures, a portable c-arm unit is brought into the room along with a portable video cart. When imaging equipment is used in the Operating Room, staff is required to wear lead aprons or work from behind leaded glass shields. Often a single imaging machine will be used in several different Operating Rooms. The imaging technician (who is assigned to the surgical suite) will move the portable imaging equipment into each Operating Room when and where it is needed.

Digital Imaging: Many Operating Rooms now utilize digital images as well as X-ray film mounted on film illuminators. High quality digital images (including those generated on cat-scan and ultrasound machines can be viewed instantly on a CRT or boom mounted plasma screen within the sterile field of the Operating Room. This means that the surgeon does not have to leave the sterile field.

Orderly: The orderly is responsible for transporting patients to the Surgical Suite from other parts of the hospital. When a patient is very heavy, the orderly might assist in transferring the patient from the transporting gurney to the operating room table. The orderly also helps in moving equipment in and out of the Operating Room before the patient is brought into the room.

Charge Nurse: The charge nurse supervises all activities that occur within the individual Operating Rooms. The charge nurse is also available to temporarily replace the scrub nurse during long operations. The office of the charge nurse may be located within the clean core.

Nurse Manager: This nurse is the administrative supervisor of the entire Operating Room Suite. She/he is responsible for maintaining the scheduling of patients for operations, as well as purchasing and maintaining supplies and equipment for use in the Operating Room Suite. The office of the nurse manager is located inside the Surgical Suite.

Surgical Room Pathologist: The surgical pathologist does not function within the clean core area or within the individual Operating Rooms. Tissue specimens removed from a patient are sent to the surgical pathologist, who prepares and examines the tissue in a frozen section laboratory within Pathology. The pathologist then electronically communicates his/her findings to the surgeon.

Consultant: If the operating surgeon desires a consultation for a patient under anesthesia or during the operation, he/she may request that a consultant come to the Operating Room to examine the patient. In most instances, the individual consulted is an internist or cardiologist. This individual usually does not work within the sterile field but examines the physiologic data regarding the patient and presents his advice regarding additional appropriate treatment.

Visitors / Technical Support: In most hospitals affiliated with a Medical School, visitors may be invited into the Operating Room to view a particular type of operative procedure. Technical support personnel may be invited into the Operating Room to consult on the use of specialized equipment. In all cases, the patient must have given prior consent to the presence of these non-surgical staff in order to maintain patient privacy and follow HIPAA regulations. These individuals must be appropriately attired. They also wear head covering and shoe covers, but not necessary gloves, since they do not work within the sterile field. It is the circulator's responsibility to monitor the visitors and technical support personnel activities.

Bio-medical Engineering Technician: It is desirable to have a bio-medical technician assigned to the Surgical Suite. This technician's home base should be a small office/lab (near the Operating Rooms), approximately 120 net square feet (11.16 net square meters) where tests, maintenance, and repairs of equipment used in the Operating Rooms can be performed.

Housekeeping Staff (Operating Rooms): Specially trained housekeeping staff is assigned to decontaminate and sterilize the Operating Rooms and equipment after each procedure. They work out of a dedicated housekeeping closet accessed from the semi-restricted corridor.

PLANNING CRITERIA

The following is a list of basic planning criteria, which are desirable as standards for the Surgical Suite. For further information, see Technical Information Library (TIL), Space Planning Criteria for VA Facilities - Handbook 7610.

Size of Holding, Prep and Phase II Recovery Areas

The inpatient or outpatient is brought into the Prep Area, or Holding Room, prior to the surgical procedure. Last minute consultations with the patient by the staff take place here. Shunts for IV solutions may be inserted here. To comply with HIPAA requirements, patient areas must provide acoustical and visual privacy at all times.

Prep Areas and Phase II Recovery Spaces can be three-walled with a cubicle curtain, but it is recommended that they be four-walled rooms with a minimum dimension of 9.0 feet (2.72 meters) wide and 12.0 feet (3.66 meters) deep. The door to the corridor may be a 4.0 feet (1.22 meters) swinging door or a sliding glass door with breakaway hardware.

It is recommended that the ratio of 1 Prep Room to 1 Operating Room and 1.5 Phase II Recovery Rooms to 1 Operating Room be provided.

The Phase II Recovery Room is utilized for recovery of the patient after the PACU and/or for ambulatory surgery patients who come directly from the surgery. The Prep Area should be co-located with the Phase II Recovery Room to provide maximum flexibility for the patient room assignment. Since most surgical procedures are started in the morning, the Prep Area can occupy underutilized Phase II Recovery Space in the morning but the same area can be used for additional Phase II recovery in the afternoon.

Size of Operating Rooms

General Comments: In renovation situations, there may not be sufficient space to provide the recommended sizes of Operating Rooms. In such instances, concurrence of the VA Surgical Office should be obtained before proceeding further in the design process. Recessed wall storage cabinets, if requested, should be in addition to the square footage noted for each Operating Room. These cabinets should be used for storage of routine supplies only. When the provision of substantial numbers of storage cabinets in each Operating Room is the desire of the local staff, then the space in the clean core reserved for exchange carts with sterile supplies on them can be reduced.

General Operating Room: This includes Operating Rooms for general surgery, ENT surgery, eye surgery, neurosurgery, orthopedic surgery and plastic surgery. Ideally, a General Operating Room should be 650 net square feet (60.45 net square meters) with a minimum dimension of 25.0 feet (7.63 meters), but not less than 450 net square feet (41.85 net square meters) with a minimum dimension of 21.0 feet (6.41 meters), but not less than 600 net square feet (55.80 net square meters). For Cardiac Operating Rooms, minimum is 700 net square feet (65.11 net square meters).

Special Purpose Operating Room: This room is mainly for cardiovascular surgery, but may be used for any other special surgery which requires this larger room. The Special Purpose Operating Room should not be larger than 800 net square feet (74.40 net square meters) with a minimum dimension of 26.0 feet (7.93 meters).

Ceiling Height in an Operating Room

The finished ceiling height of an Operating Room should be 10.0 feet (3.05 meters) above the floor. Any height less than this is considered a compromise that is not acceptable.

Post Anesthesia Care Unit (PACU)

The PACU is utilized immediately after surgery for patients recovering from anesthesia. Patient vital signs are monitored until the patient regains consciousness and discharge criteria are met. At this time, the patient may be transferred to the appropriate post-operative unit.

PACUs are typically arranged with patient cubicles around a Central Nursing Station. The minimum width of each cubicle should be 9.0 feet (2.75 meters). It is recommended that the ratio of one PACU station to one Operating Room be used. The ratio of PACU stations may be increased based on the surgical load or if other departments utilize the PACU for recovery of their patients.

Clean Core

Operating Rooms are grouped around a clean core. The clean core is used for sterile supply storage. This is the cleanest area of the entire Operating Suite. Only staff wearing appropriate surgical attire should be allowed in the clean core. Sterile supplies are retrieved from the clean core by the circulator. If supplies are to be stored on multiple exchange carts brought up from SPD each day, the clean core must be sized to accommodate these carts. When the provision of substantial numbers of storage cabinets in each Operating Room is the desire of the local staff, then the space in the clean core reserved for exchange carts with sterile supplies on them can be reduced. Case carts are held in a clean staging area until required at the start of the surgical procedure. Many facilities also utilize automated supply units, which store and electronically track usage of supplies.

Sterile supplies are transported to the clean core via dedicated elevators from the clean side of SPD. An optional dedicated stairway may be included if SPD is vertically separated from the clean core by no more than two floors.

In renovation situations where space is not available to create a true clean core, one corridor outside the Operating Room may be considered a clean space where sterile supplies are stored. Appropriate staff and materials flow must be followed to maintain the separation of clean and soiled traffic. However, this arrangement should only be considered for a small complement of Operating Rooms.

Supplies may be bar-coded or may utilize a more recent technology involving radio-frequency identification (RFID) chips. Both systems are designed to monitor use of supplies and to allow computerized reorder to maintain the appropriate inventory. In addition, scanning the bar code (or tracking supplies with RFID chips) provides a more complete system for charging for supplies used during a surgical procedure. It also expedites the removal of stored items in the Operating Room when their shelf life has expired.

Case Carts

Case carts are used to bring sterile materials and instruments from SPD to the Operating Room. A typical case cart contains specific items required for each specific case, including all required surgical instruments and other supplies. On some occasions, more complicated procedures require several case carts. Some case carts may remain in the Operating Room during the procedure. After the operation is completed, all the case carts and used supplies are removed from the room via the semi-restricted corridor.

On-Site Sterilization

Sterilizers for flash sterilization of instruments should be located as close as possible to the Operating Rooms, preferably in a shared space adjacent to the Operating Rooms with immediate access from the semi-restricted corridor for service. Surgical instruments needing flash sterilization are carried by the circulator in a tray from the Operating Room, through the semi-restricted corridor, into the Sterilizing/Decontamination Room, and then returned to the Operating Room. Sterilizers may be steam, electric or plasma. A minimum of two Sub Sterile Rooms with on-site sterilizers should be provided in each core of a Surgical Suite. A minimum of 3'-8"(1.1 meters) door width should be provided to the on-site sterilization area to accommodate equipment movement in and out of the room.

Scrub Alcoves

There are two alternative locations for scrub sink alcoves. In the alternative most typically seen in existing VA surgical suites, the scrub sink alcoves are located within the clean core. The appropriately attired staff exits the staff lockers/lounge directly into the clean core, use the scrub sinks, and then enter the Operating Room. In the other alternative, the scrub sink alcoves are located in the semi-restricted corridor. This alternative reduces traffic through the clean core and is the current industry standard. As ties to Medical Schools increase and more surgical residents are trained at the VA, the preferred arrangement for new Surgical Suites should reflect the current industry standard.

All surgical team members must thoroughly wash (scrub) their hands prior to each surgical intervention. It is desirable to have at least one scrub sink adjacent to the Operating Room, with an observation window above it, so that at least one member of the surgical team can monitor the patient and the general status of the Operating Room prior to entering the room. Transfer of the patient to the operating table and induction of anesthesia takes place while the surgical team scrubs for the operation.

Even though the use of alcohol gels is taking the place of traditional scrubbing at surgical scrub sinks, scrub sinks are still required since some surgical staff members are allergic to the gels.

Provide laser shades at all window openings into all Operating Rooms. This includes the scrub area and all observation windows in Operating Room doors and Control Rooms.

HVAC System in the Operating Room

This Design Guide continues to recommend 100 % outside air for Surgical HVAC systems. Air change CFM requirements are increased to a minimum of 20 air changes per hour. This increase reflects the fact that a minimum of 20 air changes are necessary in modern surgical rooms to handle the generated cooling load.

VA experience, based on historical data collection of surgical performance measures, demonstrates the VA systems and practices provide outcomes equivalent to the best in the industry. The VA ventilation system provides equivalent performance to the system recommended by the American Society of Heating, Refrigerating & Air-Conditioning Engineers (ASHRAE) standard which is more commonly used. The ASHRAE system requires a minimum of 5 air changes of outside air, 20 air changes of recirculated air, for a minimum total of 25 total air changes in the surgical room. It is recognized that design guides should be tools for discussion for architects, engineers, designers and health care professionals to use in fashioning facilities to best meet local needs, under the umbrella of providing the best environment possible for Veterans' health care. Therefore, VA is expanding its data collection on surgical infection rates and energy usage. Until such time as further study leads to revision of current VA standards, the 100 % outside air requirement remains in effect.

Supply Air: In addition to keeping the remaining Operating Room as clean as possible, the air supply system must be designed to minimize the entrance of airborne bacteria into the sterile field as well as the area occupied by the anesthesiology staff. This is accomplished by washing these areas with a vertical column of slow moving sterile air emanating from a supply air plenum directly above the operating table. In addition to this plenum, a surrounding array of slot diffusers is adjusted to direct the air at an outward angle toward the perimeter of the Operating Room. A pseudo-laminar flow system is the desired result.

It is highly desirable to identify the supply air zone described above by installing a patch of flooring material that is a different color from the rest of the room. This patch should be located in the center of the Operating Room by aligning it with the slot diffusers above. This will indicate the sterile field.

Air supplied to the Operating Room as mentioned above is supplemented with additional clean air entering the Operating Room from the clean core. Operating Rooms and Clean Corridors shall both be maintained under positive pressure.

Exhaust Air/Return Air: During an operation, all of the space from the floor itself to a distance 15'' (380 mm) above is considered contaminated. Therefore, all exhaust/return grilles must be positioned low on the wall approximately 18'' (460 mm) above floor. The Operating Room exhaust system should include a minimum of two low exhaust/return air grills located in opposite corners to minimize recirculation of contaminated air within the Operating Room.

Power Requirements

As many as possible of the 110 volt outlets for equipment should be mounted on articulating columns. This will minimize tripping hazards at the floor of the operating room. A set of three dedicated 110-volt electrical outlets should also be placed at the center of each wall of the operating room at 18" above the floor. All electrical outlets in the operating room should be on dedicated circuits and powered from the nearest isolated power panel mounted in two opposite corners of the room. Due to the increasing use of lasers, it is very important that one 208-volt outlet is provided in each OR. The overall design of the power distribution system must accommodate the use of lasers in all operating rooms at the same time.

Communication Systems in the Operating Room

Intercom, telephone and computer systems are all required in the operating rooms. In addition, a "code blue" system is required in the event of a cardiac arrest summoning designated staff to the OR from other areas of the hospital. It is highly desirable for the articulating utility column serving the anesthesia machine to have a telephone mounted on it since the anesthesia staff cannot leave the head of the table. This will allow him/her to summon assistance from the chief anesthesiologist when required or to request a replacement when a break is needed.

Gurney Alcove

Surgical patients are brought into the operating room on a gurney or on a combination gurney/recovery room bed. In some cases such as eye surgery, a recovery bed is used instead of a standard operating table for the procedure. Normally, the patient is transferred to the operating table in the room and the gurney is removed from the OR. An alcove should be provided directly outside the operating room in the semi-restricted corridor where the vehicle is parked during the procedure. After surgery, the patient is placed back on the gurney and moved to the Recovery Area. The patient may be transferred to a hospital bed at this point. There are occasions when a patient is transferred directly from the operating room onto a hospital bed and taken directly to the Surgical Intensive Care Unit. The gurney alcove outside each OR should be large enough to accommodate a standard hospital bed in its maximum configuration with IV poles, etc. attached. For this reason the alcove should measure 4'-0" (1.2 meters) wide by 10'-0" (3.04 meters) long.

Housekeeping Aids Closet (HAC)

Operating rooms are thoroughly cleaned at the end of each surgical day. The room also must be cleaned between each case.

Dedicated housekeeping closets are required in the main areas of the surgical suite. This requirement is based upon differing levels of asepsis in these main areas. One HAC is located in the Clean Core and is used only for cleaning that area. One HAC is accessed from the semi-restricted corridor. It is used for cleaning all of the operating rooms and balance of the Surgical Suite. One HAC is located in the PACU.

Doors

The entrance from the semi-restricted corridor, from which patients are moved in and out of the operating room, should be at least 6'-0" (1.82 meters) wide with a pair of doors, each measuring 3'-0" (.914 meter) wide, or set of doors with one leaf of 4'-0" (1.21 meters) and the other 2'-0" (.6 meter) wide. It is important that the corridor doors are located in such a way as to permit the bed or gurney to move as directly as possible from the corridor to the side of the operating room table. For this reason, these doors are best located toward the foot of the operating table away from the anesthesia equipment. If lead lining in the walls of any/or each of the operating rooms is required by a qualified physicist, then it is mandatory that the doors into these rooms have automatic door openers. Automatic doors must be swinging doors operated by push plates. For doors between the Clean Core and the operating rooms, a double acting door, 3'-8" (1.17 meters) wide, is required.

Radiographic Equipment

Cardiovascular and Neurosurgery Operating Rooms may have fixed radiographic equipment installed within the room. Orthopedic and other operating rooms may use mobile x-ray machines including both sheet film and C-arm units. When not in use in the operating rooms, they are usually stored in alcoves in the semi-restricted corridor so they can be efficiently moved in and out of the operating rooms. Image intensification is utilized in fluoroscopic procedures and is provided by ceiling mounted or cart mounted video monitors.

Plaster and Splint Room

A storage area for orthopedic equipment is directly accessible from the Orthopedic Operating Room. This room provides storage for expendable cast and splint equipment, as well as for some of the special equipment required for attachment to the orthopedic operating room table. In addition, this serves as a preparation and workroom for the mixing of plaster. A stainless steel counter and sink is required with a plaster trap below the sink.

Heart/Lung Bypass Machine Room

In cardiovascular surgery, the patient's blood may have to bypass the heart to permit the surgeons to perform the required procedure. The blood supply bypasses the heart, circulates through a mechanical pump (called the heart/lung machine) and then returns oxygenated blood to the patient. The heart lung machine is stored in the Heart Lung Prep Room adjacent to and directly accessible from the Cardiac Operating Room. Particular attention should be given to the width of the doorway so the Heart/Lung machine will fit through it.

Accessory supplies required for bypass procedures also are stored in the Heart/Lung Prep Room. The room is sufficiently large to allow breakdown, essential cleanup and storage of parts, and to accommodate at least two heart/lung machines, one of which provides back up function in case of mechanical failure of the other machine. Clean bypass machines are transported to the Cardiovascular Operating Room via the Clean Core. Soiled bypass machines are moved from the Cardiovascular Operating Room to the Heart Lung Prep Room where they are cleaned.

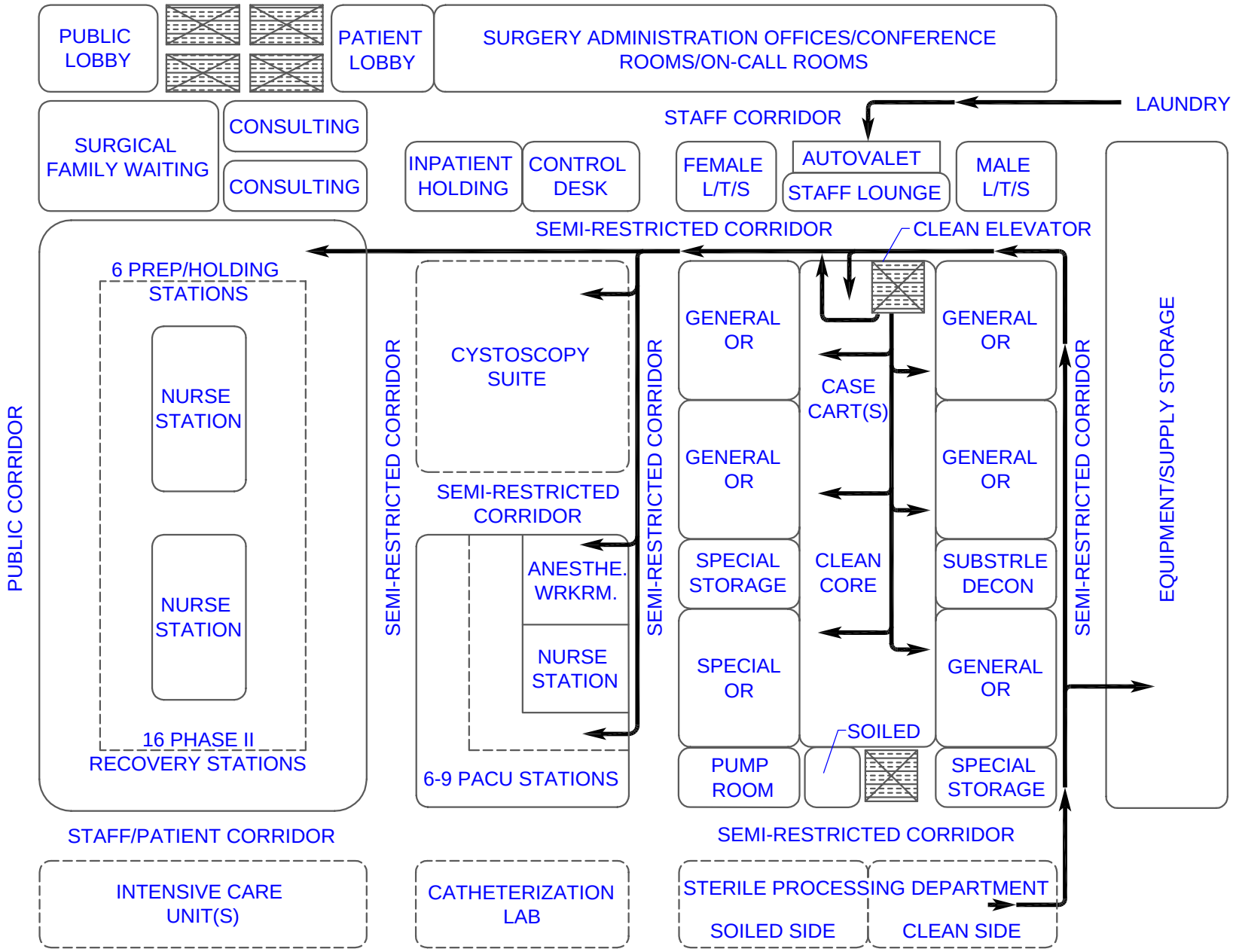
Section 3

Relationship and Flow Diagrams

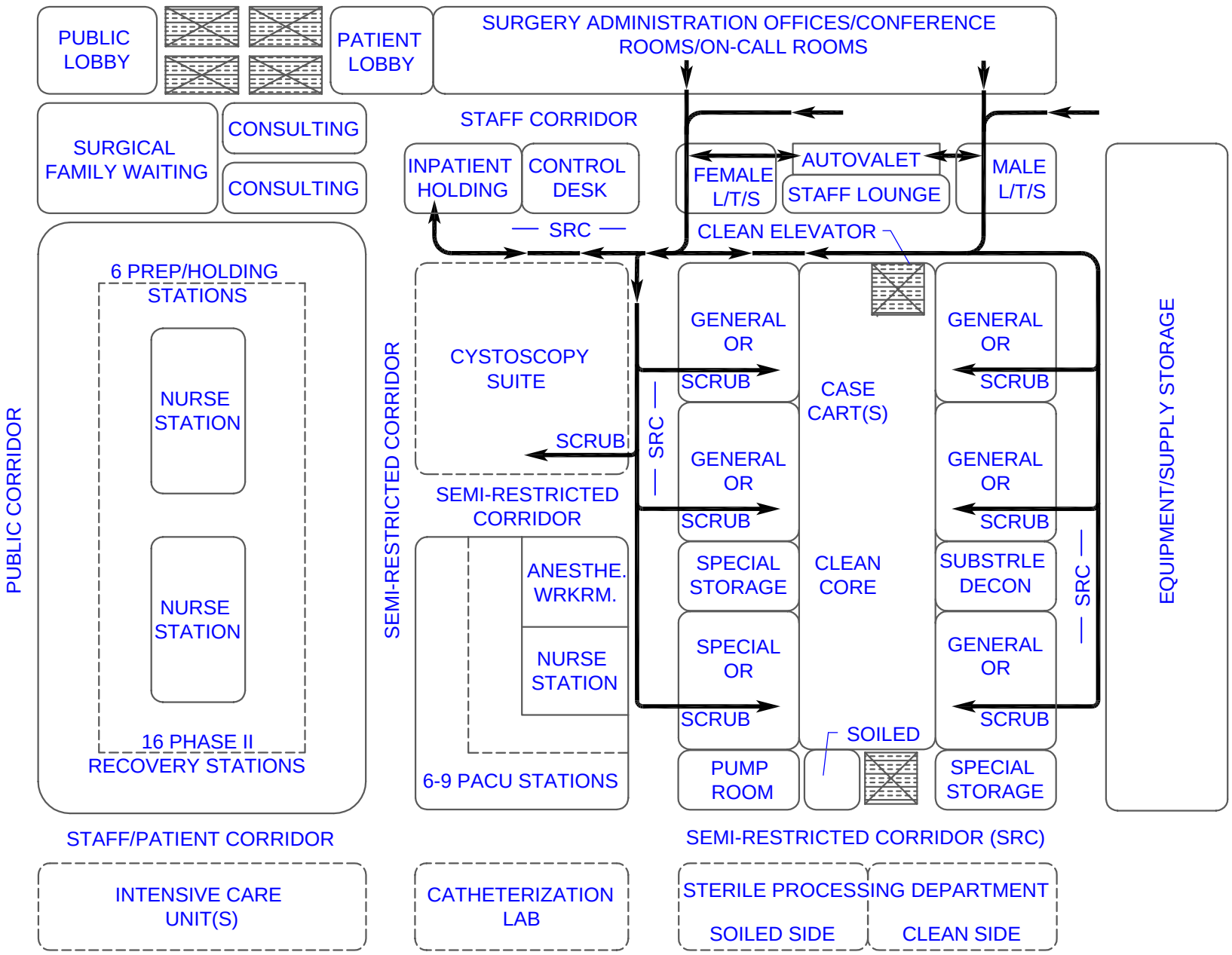
Guide Plates

Introduction

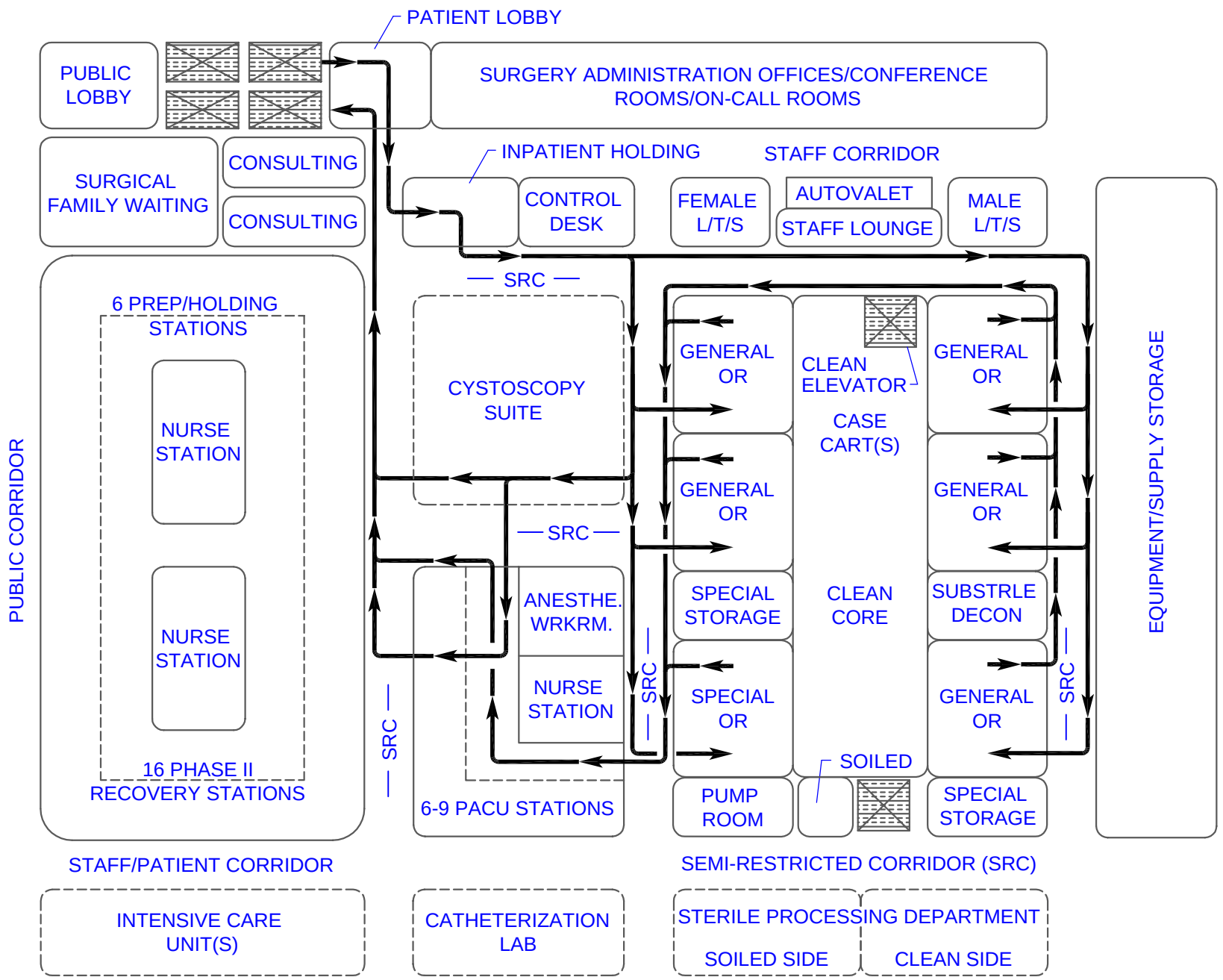
The intent of the relationship and flow diagrams is to show interrelationships of functions and spaces within the surgical suite, and the movement of staff, patients and materials. They are also intended to assist medical professionals and designers in understanding the function of a VA surgical suite. These diagrams represent the preference of the program officials in VA Central Office; however, they are not intended to limit the input of the surgical staff at the VAMC. Their basic intent is to enhance communication between all parties involved.



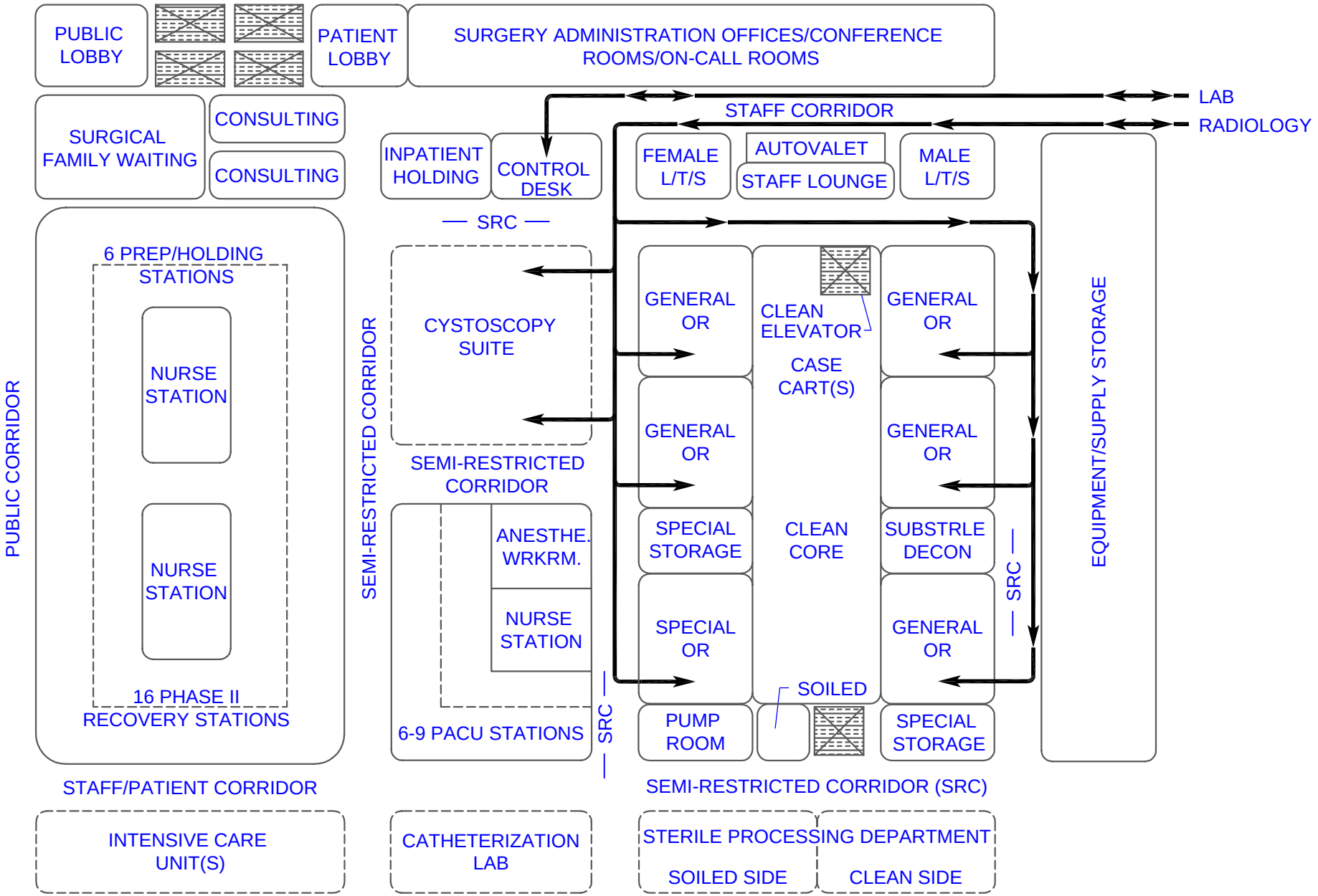
Design Guide - Surgical Service Department of Veterans Affairs	Clean Materials/Clean Scrub Suits	Flow Diagram Scale: None	Guide Plate: 3-2 Date: August 2005



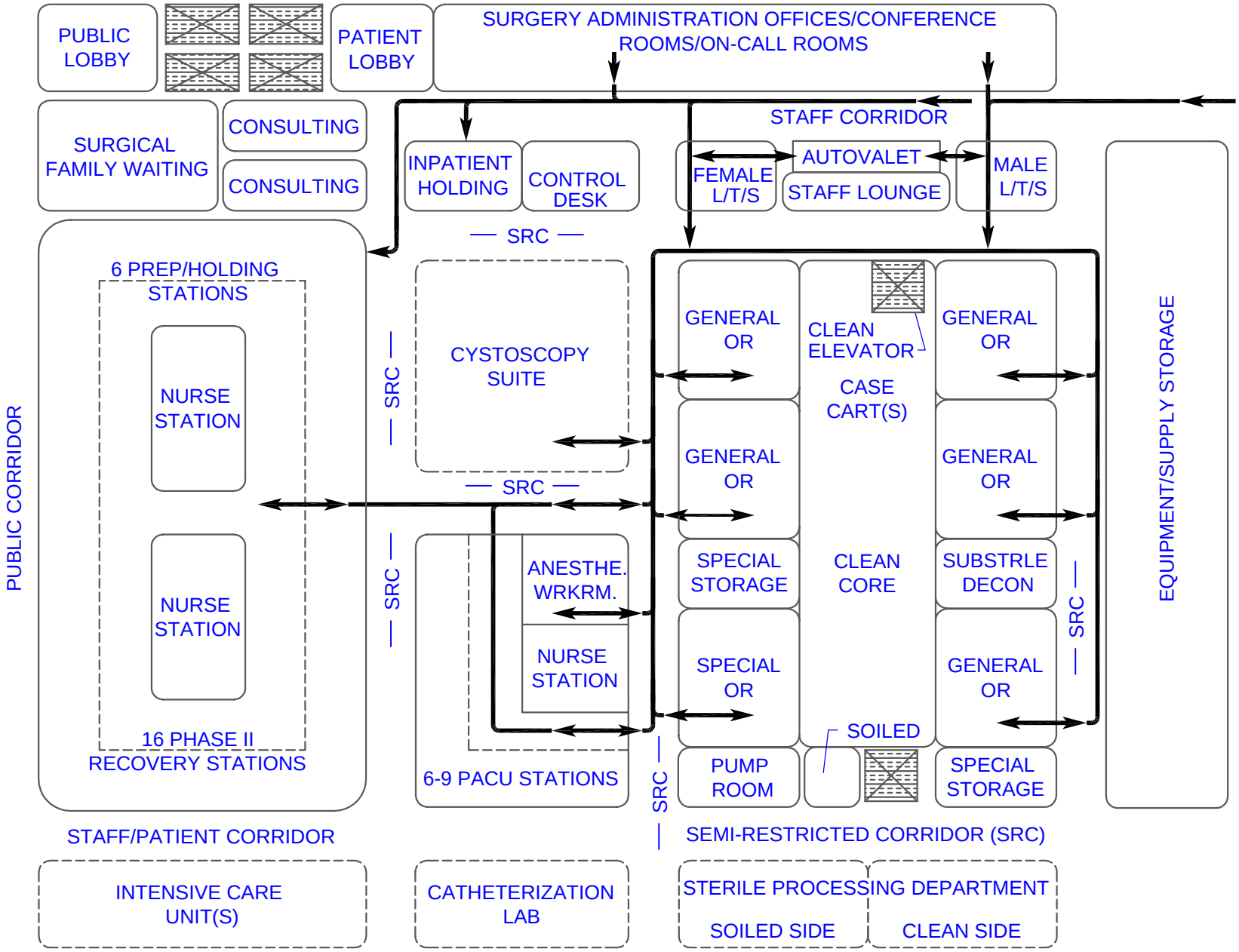
Design Guide - Surgical Service Department of Veterans Affairs	Surgical Staff Pre-Operative CLEAN CORE: SEE NARRATIVE REGARDING ALTERNATIVE TRAFFIC PATTERN FOR SURGICAL STAFF.	Flow Diagram Scale: None	Guide Plate: 3-3 Date: August 2005



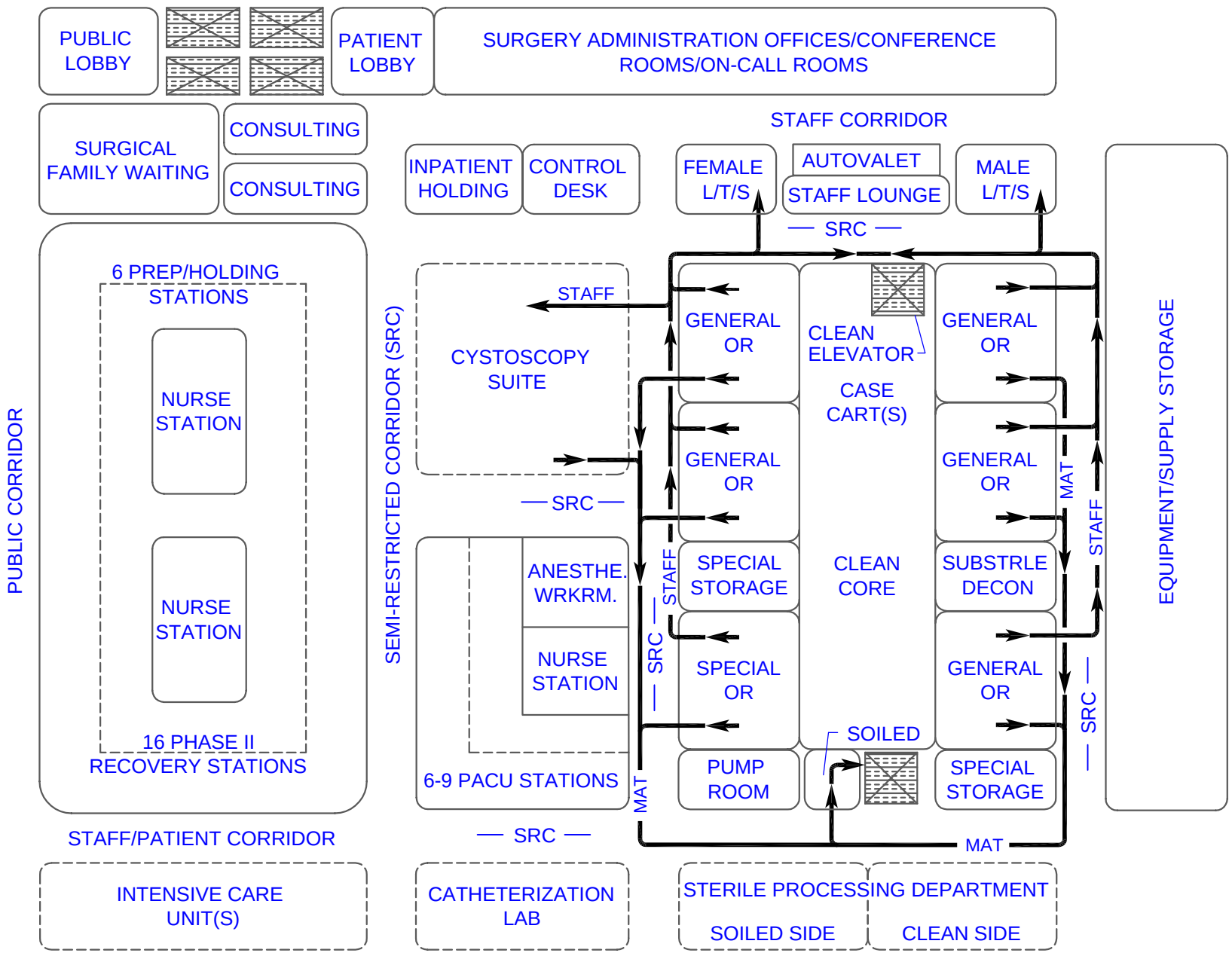
Design Guide - Surgical Service Department of Veterans Affairs	Surgical Inpatients	Flow Diagram Scale: None	Guide Plate: 3-4 Date: August 2005



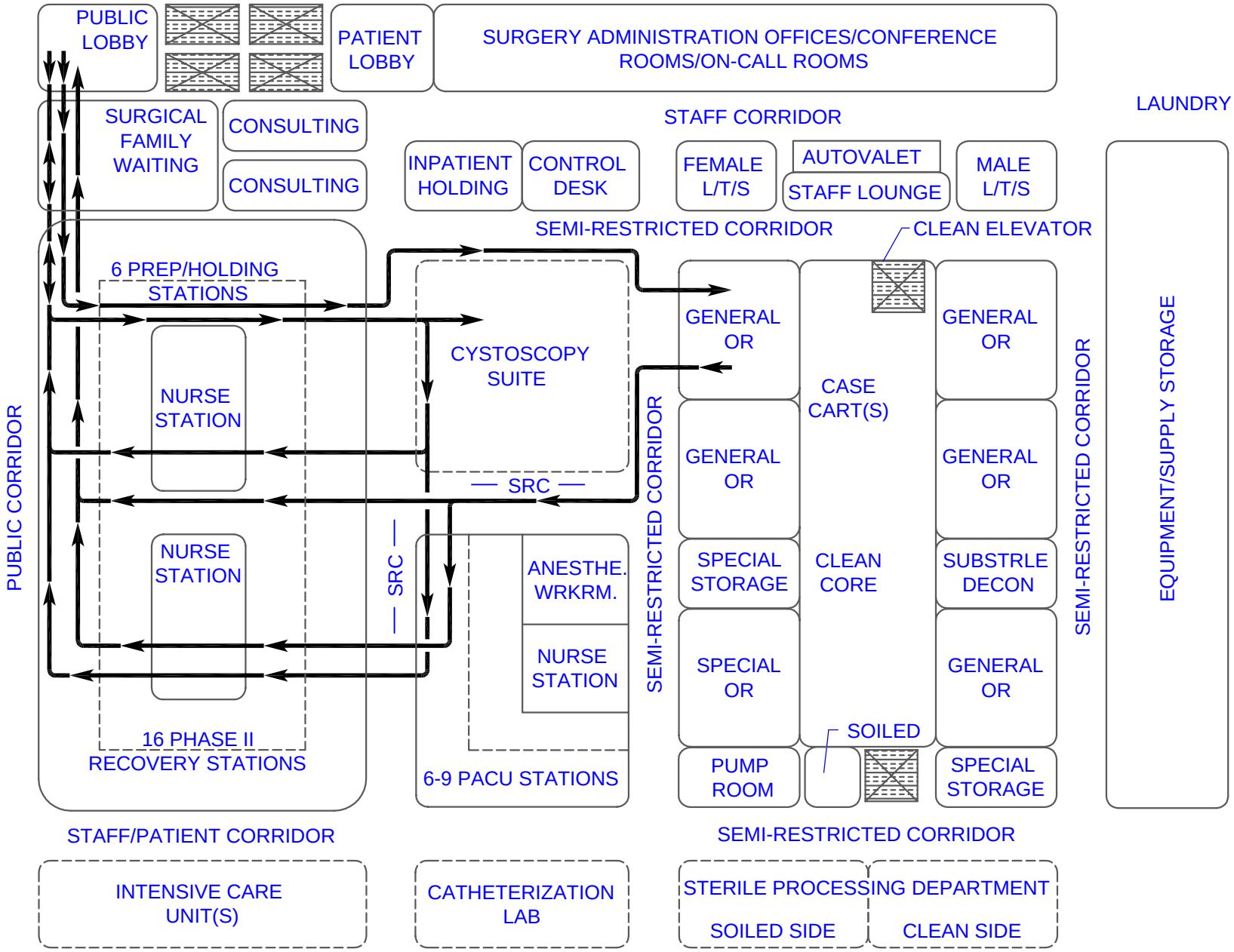
Design Guide - Surgical Service Department of Veterans Affairs	Radiology Staff and Equipment, Clinical Lab Staff and Materials	Flow Diagram Scale: None	Guide Plate: 3-5 Date: August 2005



Design Guide - Surgical Service Department of Veterans Affairs	Anesthesiology Staff	Flow Diagram Scale: None	Guide Plate: 3-6 Date: August 2005



Design Guide - Surgical Service Department of Veterans Affairs	Surgical Staff and Soiled Materials- Post Operative	Flow Diagram Scale: None	Guide Plate: 3-7 Date: August 2005

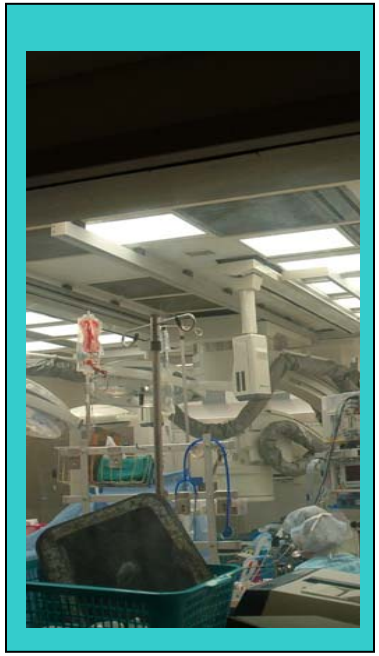


Design Guide - Surgical Service Department of Veterans Affairs	Ambulatory Surgery Patients	Flow Diagram Scale: None	Guide Plate: 3-8 Date: August 2005

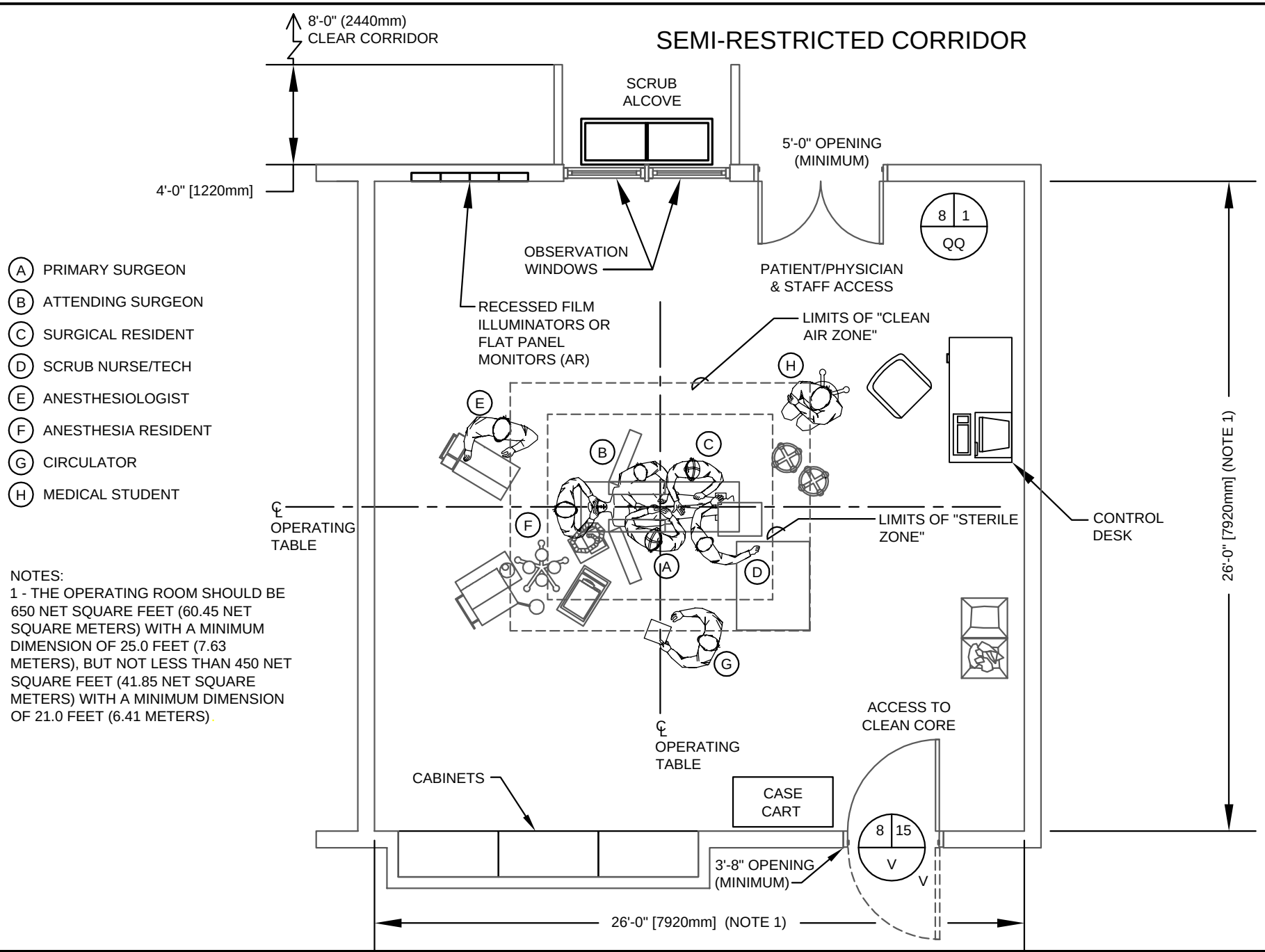
Section 4

Design Guide Plates and Data Sheets Operating Rooms

Guide Plates



General Operating Room



Design Guide - Surgical Service

Department of Veterans Affairs

General Operating Room

MAX: 650 NSF (60.45 NSM)
MIN: 450 NSF (41.86 NSM)

Ergonomic Plan

(METERS) 1 0 1 2 4 (FEET)

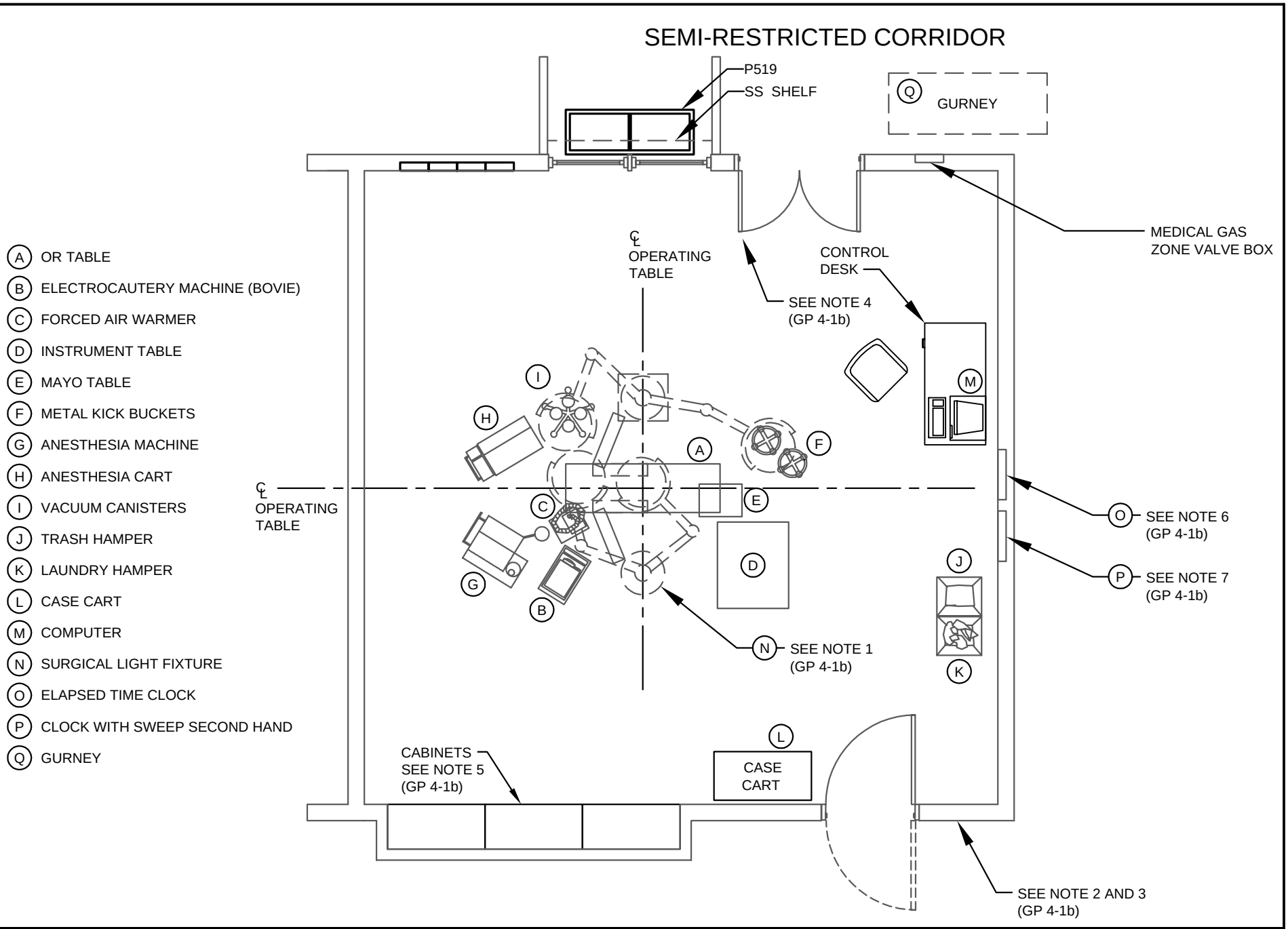
Scale: 3/16"=1'- 0"

Guide Plate: 4-1a

Date: August 2005

Notes:

1. The surgical light fixtures are (CC) unless the VAMC chooses to select a specific surgical light fixture during design development. If the VAMC chooses the fixtures, they should be either (VV) or (CF). Coordination involving structural support, utility connections, and other details are the responsibility of the designer.
2. Nominal thickness of walls should be shown as 8 inches (203 mm) through design development. This is based upon the need to accommodate a variety of panel boards, return air ducts, and miscellaneous elements of construction that require a thicker partition than in other areas of a hospital building. Partitions other than the operating room enclosure should be nominally 6 inches through design development unless a special requirement dictates otherwise.
3. Inclusion of x-ray shielding, consisting of a lead membrane in the partition, lead lined doors, and leaded glass observation windows, is determined on a project basis. According to the VA policy, the final determination of whether or not lead lined walls and other protective measures are required is the responsibility of the hospital's radiation staff officer and VA's National Health Physics Program Official (PH: 501-257-1571).The need for radiation protection is based upon the degree to which portable x-ray equipment is to be used in each of the operating rooms, and continuous occupancy of adjacent spaces. Once it is determined that a lead membrane is required, the exact location of that membrane and details related to it are the designer's responsibility.
4. An automatic door is to be provided between the operating room and the semi-restricted corridor. A wall-mounted switch for the automatic door opener is preferred.
5. Modular Casework - The VAMC has the option of choosing modular casework in lieu of built-in casework. However, this decision must be made during the design development phase of the project. If modular casework that is wall mounted is selected by the VAMC, the partitions must be designed to support the casework. It should be noted that the standard studs found in the master specifications are insufficient to carry this added weight; therefore, the equipment manufacturer's recommendations for supporting partitions should be followed where appropriate.
6. Elapsed Time Clock: Flush Mounted Clock above, with wall mounted accessible controls below. For more information regarding clocks in the operating room see MCS, Division 16, Electrical. (CC)
7. Clock With Sweep Second Hand: Flush mounted clock above, with wall mounted accessible controls below. For more information regarding clocks in the operating room see MCS, Division 16, Electrical. (CC)
8. See Chapter 286 of the Equipment Guide List, PG-7610, Technical Information Library (TIL).



Design Guide - Surgical Service

Department of Veterans Affairs

General Operating Room

MAX: 650 NSF (60.45 NSM)
MIN: 450 NSF (41.86 NSM)

Equipment Plan

(METERS) 1 0 1 2 4 (FEET)

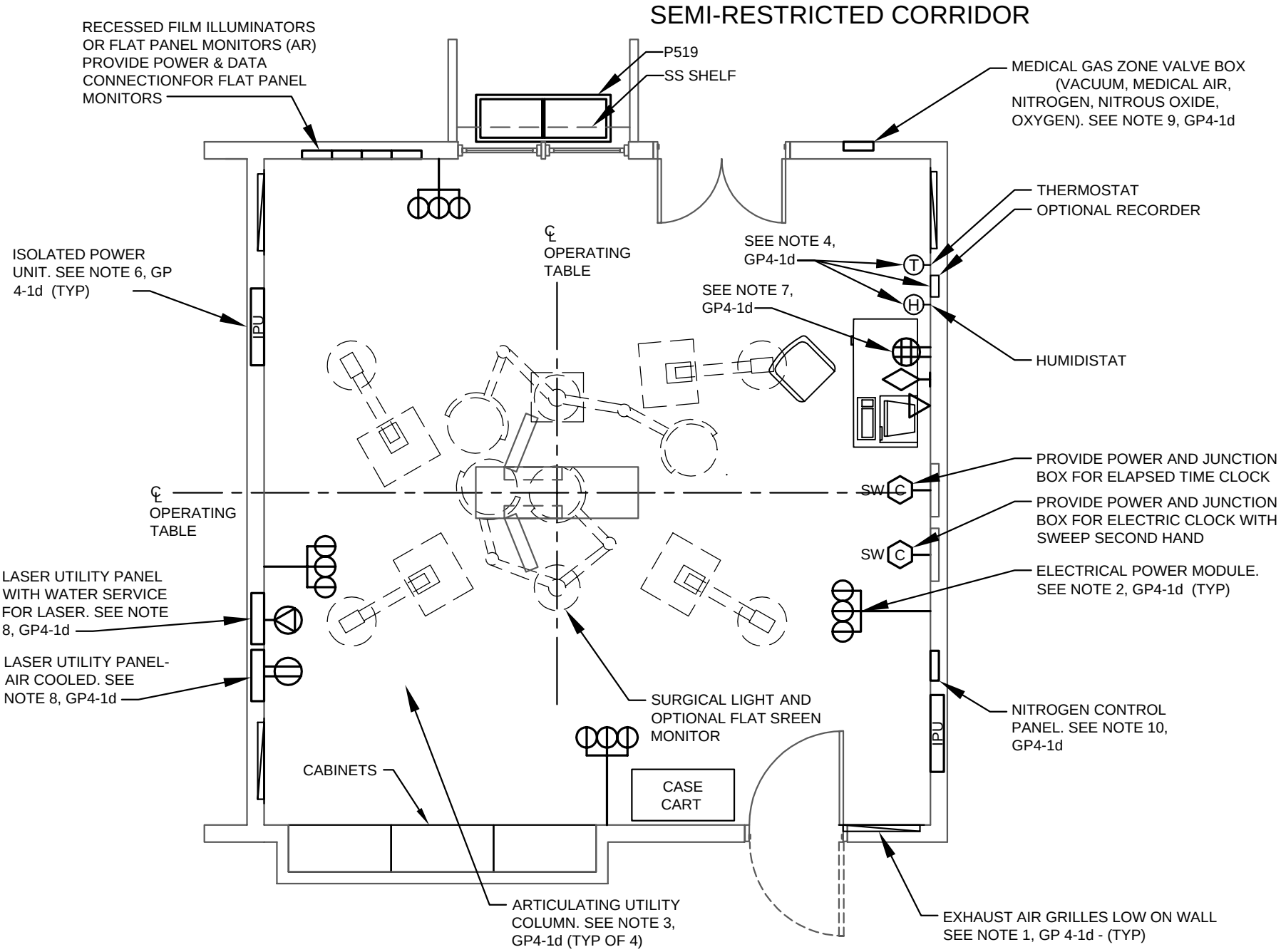
Scale: 3/16"=1'- 0"

Guide Plate: 4-1c

Date: August 2005

Notes:

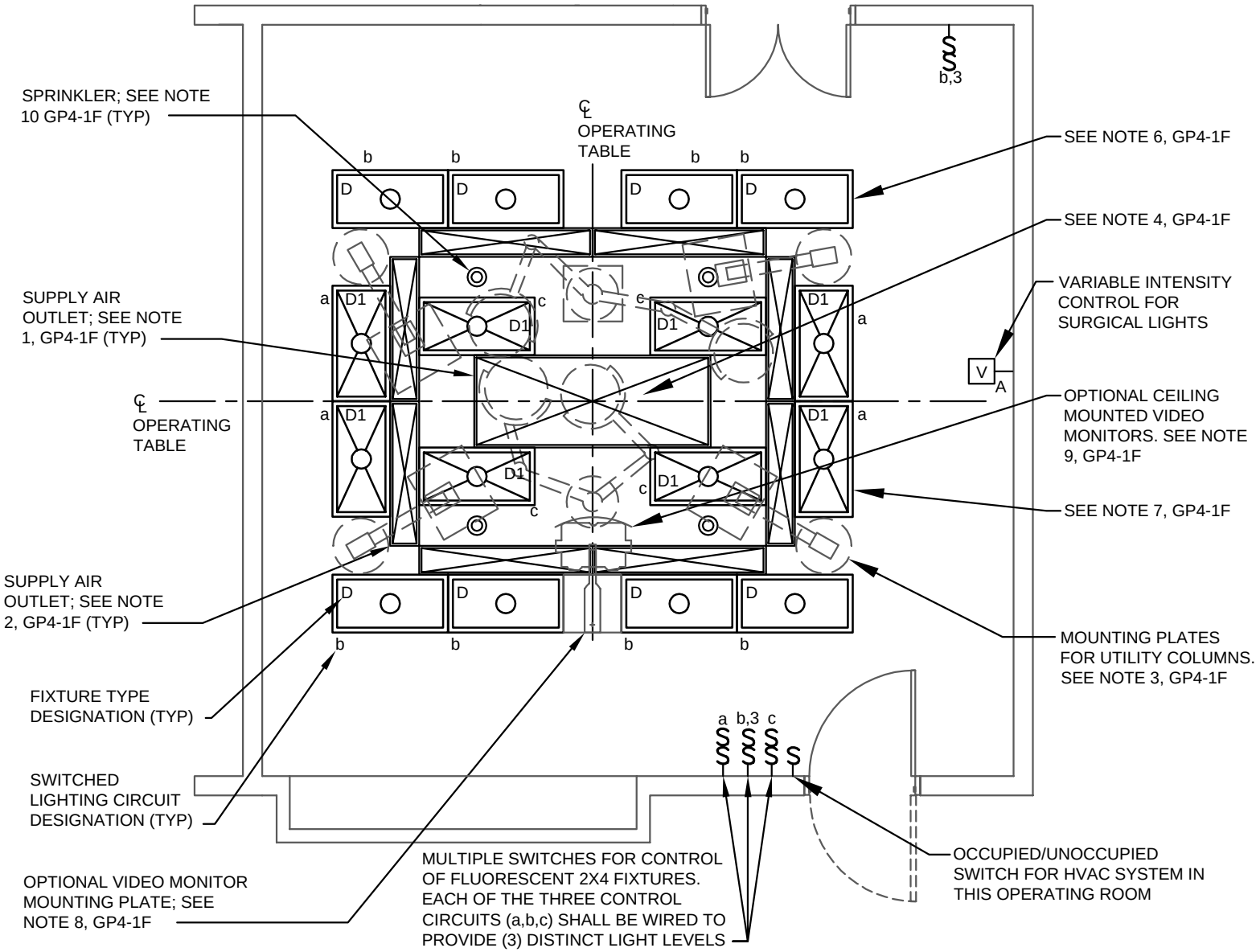
1. Exhaust/Return Air Grilles - Provide four exhaust air grilles, (but not less than two), in operating rooms as shown or locate them on center of each wall of the operating room. The bottom of each exhaust air grille is to be seven inches above finished floor. See HVAC Design Manual for Hospital Projects PG-18-10, for additional information.
2. Electrical Power Module - Provide a separate power module near the center of each wall of the operating room. Each power module is to have 3 single power receptacles. These power receptacles are to be located 18 inches above finished floor. Provide power receptacles in each utility column; quantity as required by VAMC. See Electrical Design Manual for Hospital Projects PG-18-10, for additional information.
3. Articulating Utility Column(s) - Provide connections on each utility column as delineated in Chapter 286, Equipment Guide List PG-7610. Provide data/communications connection at each utility column. Provide a telephone outlet on utility column serving anesthesia machine. Number of utility columns and the utilities in each one of them shall be discussed with medical center.
4. HVAC Controllers - Provide one of the two systems for controlling operating room temperature and humidity. The first system as indicated on the utility plan. It involves locating a thermostat, a humidistat, and a recorder in the operating room. The second system involves temperature and humidity sensors located in the operating room, with a recorder located remotely. See HVAC Design Manual for Hospital Projects PG-18-10 for additional information.
5. Video Monitors - The increasing use of fluoroscopy in surgical procedures has increased the need for video monitors located in the vicinity of the "sterile field". With x-ray film soon to be replaced by digitized images displayed on a video screen, the use of these monitors in surgery will increase even further. This emerging technology is called "PACS" (Picture Archiving and Communications System). The VAMC has a choice to make regarding these monitors. A set of video monitors can be mounted on a cart, or the set of flat sreen monitors can be mounted on an articulating arm that is suspended from the ceiling. The latter concept is shown on these guideplates. In either case, the A/E is to determine utility requirements for the video system selected by the VAMC and the VHA program official. These requirements include: power supply; provisions for grounding of the monitors and communications linkage to other areas of the hospital. See Reflected Ceiling Plan Note 9 for a concept that links the Frozen Section area of the clinical laboratory with the video monitors in each of the operating rooms.
6. Isolated Power Unit - Locate two (2) isolated power units near the corners of the room and diagonally opposite from each other. See Electrical Design Manual for Hospital Projects PG-18-10 for additional information. Units shall be flush mounted - adjust wall depth to accommodate unit.
7. Computer Terminal - Utility requirements for the in-room computer terminal are to be determined by the VAMC based upon the computer system to be used, and this information is to be incorporated into the construction documents. The printer for the in-room computer terminals is to be located remotely. Data/communications connections are to be provided at each utility column.
8. Laser Panel - It is understood that air cooled lasers are soon to replace water cooled lasers. For this reason, the future impact of air cooled lasers on the design of the HVAC system must be considered by the designer. In spite of this anticipated change, water and drainage should be provided in operating rooms where existing water cooled lasers are to be continued in use. Coordinate utility requirements with laser manufacturer.
9. Zone Valve Box - Provide a separate medical gas zone valve box for each operating room in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the door to the operating room it serves. See MCS, Division 15, Mechanical for a description.
10. Nitrogen Control Panel - See NFPA 99 and MCS, Division 15, Mechanical for information regarding this panel.



Design Guide - Surgical Service Department of Veterans Affairs	General Operating Room MAX: 650 NSF (60.45 NSM) MIN: 450 NSF (41.86 NSM)	Utility Plan (METERS) 1 0 1 2 4 (FEET) Scale: 3/16"=1'- 0"	Guide Plate: 4-1e Date: August 2005

Notes:

1. Supply Air Outlet - Perforated stainless steel panel centered over operating table with no obstructions. A/E is to design it. (Do not scale.) This outlet is to provide 30 percent of supply air for the operating room. Air distribution is to be in a downward vertical direction. See HVAC Design Manual for Hospital Projects, PG-18-10.
2. Supply Air Outlets - Stainless steel multiple slot panel diffusers to be located above the perimeter of the "clean air zone". (See Ergonomic Plan.) A/E is to design them. (Do not scale.) These outlets are to provide 70 percent of supply air for the operating room. This air is to be discharged in a vertical air stream inclined at an outward angle of fifteen degrees from the center of the room. See HVAC Design Manual Hospital Projects, PG-18-10.
3. Mounting Plate for Articulating Utility Column - (Do not scale.) Size of mounting plate varies with manufacturer. Exact type, size, type, and location are to be determined by the A/E in coordination with the VA. Structural support & mounting details by A/E.
4. Surgical Light Fixture - Note that the location of the mounting plate is not to be placed directly over the operating table. That zone must be kept unobstructed for the supply air outlet and the plenum serving it above the ceiling. See Electrical Design Manual for Hospital Projects, PG-18-10. Exact type and quantity to be determined by the A/E in coordination with the VA.
5. Surgical Microscope - If VAMC chooses a ceiling-mounted microscope in lieu of a floor-mounted unit, it must be supported by a fixed mounting plate. A ceiling track-mounted system is not to be used for the microscope due to concerns regarding asepsis. The exact size of the mounting plate depends upon the microscope selection. (Do not scale.) Coordinate details and utilities requirements with the VAMC.
6. Fluorescent Light Fixtures - General illumination. Only 2 x 4 recessed fixtures are to be used in the operating room due to the fact that this size of fixture (with 6 lamps - Type D) is required in order to deliver enough ambient illumination while also producing color corrected light in the operating room. The design is not to include 1 x 4 fluorescent fixtures. Each group of fixtures (a,b,c) shall be controlled by switches (dimmers are not acceptable) so that 3 distinct levels of illumination are provided. For example, in the fixtures designated by "a," "b" and "c," the (2) outside lamps shall be controlled by one switch; the (4) inside lamps shall be controlled by a second switch.
7. General Illumination on Emergency Power - 50 percent of the fluorescent light fixtures above the operating table are to be on emergency power with battery backup (Type D1). The fluorescent fixtures above the head of the patient (where the nurse anesthetist administers anesthesia and monitors the patient's vital signs) are to be on emergency power. Since the "head of the table" may be reversed on occasions when the ceiling-mounted microscope is in use, fluorescent fixtures above both ends of the table are to be on emergency power.
8. Mounting Plate for Video Monitors - If the VAMC chooses a suspended video system instead of a cart-mounted system, the mounting plate must be integrated into the ceiling layout. The exact size and location of this plate must be determined. The mounting plate for the video monitors is not to be supported on tracks due to asepsis considerations. Structural support & mounting details by A/E.
9. Video Monitors - A proposal to be considered is to provide a fiber-optic connection (enclosed in conduit) from the video monitors in the operating room to the microscope in the frozen section area of the clinical laboratory. This would permit the surgical team in the operating room to see what the pathologist is talking about over the intercom while examining the biopsy specimen. This installation would reduce the need for anatomical pathologist to leave a contaminated area. Also, the surgical team would not have to wait for the pathologist to clean up, gown, and come to the operating suite to examine the tissue specimen.
10. Sprinkler System - Coordinate the location of the sprinklers with other ceiling systems in accordance with MCS, Division 15 Mechanical and Plumbing Design Manual for Hospital Projects.
11. Provide no ceiling tracks for intravenous solutions in the design. This restriction is based upon concerns for asepsis in the operating room.



Design Guide - Surgical Service Department of Veterans Affairs	General Operating Room MAX: 650 NSF (60.45 NSM) MIN: 450 NSF (41.86 NSM)	Reflected Ceiling Plan (METERS) 1 0 1 2 4 (FEET) Scale: 3/16"=1'- 0"	Guide Plate: 4-1g Date: August 2005

ARCHITECTURAL

Floor Area	650 NSF (60.45 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD(SC)	Wainscot	ACROVYN ON CBB
Ceiling Height	10'-0" (3.0 METERS)	Base	INTEGRAL 6" (152 mm) COVE BASE
Floor Load	100 PSF	Floor finish	WSF
Note:		Lead Lining	TO BE DETERMINED SEE NOTE 3, GP 4-1b

Refer to PG-18-1 and PG-18-6

*ADDITIONAL 8" (203 mm) ACCESSIBLE SPACE ABV CLG FOR MICROSCOPE OR 10'-2" (3.05 METERS)

ELECTRICAL

Lighting		Power	
General	200 FC, 6.0 W/SF*	General	(1) MODULE EA WALL RECEPTACLES ON COLUMN
Special	SURGICAL LIGHT**		(2) LASER OUTLETS
Emergency	50% GEN FLUOR***	Special	****
		Emergency	*****

*COLOR IMPROVED FLUOR LAMPS MATCHING COLOR TEMPERATURE OF SURGICAL LIGHT
**(AR) TYPE B, 1500 W
***BATTERY BACKUP IN (8) FIXTURES
****(2) 7-1/2 KVA 12-CIRCUIT IPU
*****EACH IPU & X-RAY UNIT, (1) FILM PROCESSOR PER SUITE

TELECOMMUNICATIONS

Patient Monitor	YES	Data	WALL TERMINAL @ EACH UTIL. COL.
Nurse Call	-	Telephone	WALL MTD HAND FREE @ EACH UTIL. COL.
Code One	YES	Intercom	COMB. W/TELEPHONE
CCTV	EMPTY CONDUIT	Public Addr.	EMPTY CONDUIT
		ADP	EMPTY CONDUIT
		Radio	EMPTY CONDUIT

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	8.5 W/SF
AC Load Equipment	13.7 W/SF
Number of People	12
Noise Criteria	NC-40
Room Pressure	POSITIVE
Dry Bulb Temp Cooling (Range)	62-80°F (17-27°C)
Dry Bulb Temp Heating (Range)	62-80°F (17-27°C)
Minimum Air Changes per Hour	20 OCC/8 UNOCC
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity Range	45-55 %
Relative Humidity Range	45-55 %

PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	YES
Hot Water	YES	Medical Vacuum	YES
Sanitary Drain	NO	Oxygen	YES
Acid Waste	-	Nitrous Oxide	YES
Silver Recovery	-	Nitrogen	YES
		Anesthesia Evac	YES

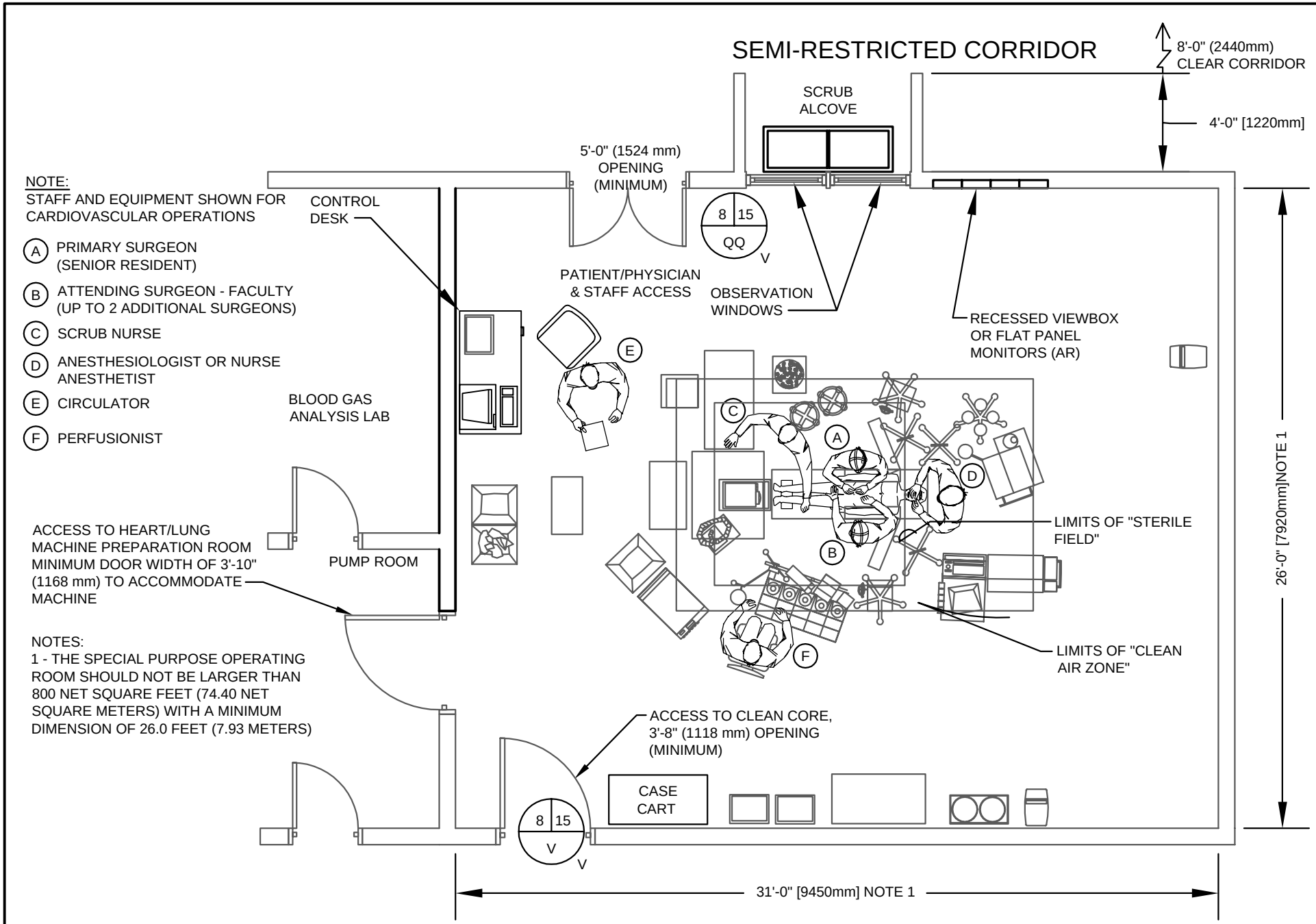
SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
	AR	CC	WINDOW, VIEWING, FOR PATIENT OBSERVATION	13091
	AR	CC	RECEPTACLE MODULES; ONE MODULE ON EACH WALL, EACH MODULE SHALL CONSIST OF THREE SINGLE, 120V, 20 AMP, HOSPITAL GRADE TYPE RECEPTACLES, EACH ON EMERGENCY POWER & ON SEPARATE CIRCUIT.	16140
	AR	CC	ILLUMINATOR, FILM, X-RAY, RECESSED, 120 VOLT, 20 AMP, 14" X 17" (355 mm X 430 mm) (INSTALLATION NOT TO BE COMBINED WITH IPU'S OR OTHER ELECTRICAL DEVICES)	16510
	AR	CC	ILLUMINATION, GENERAL, RECESSED, WITH THREE LEVEL CONTROL	16510
	AR	CC	COLUMN, ARTICULATING OR TELESCOPING, CEILING MOUNTED COLUMN A: LOCATE AT HEAD OF TABLE, 48" (1220 mm) TO 72" (1830 mm) FROM THE CENTERLINE AND 24" (610 mm) TO 48" (1220 mm) TO THE LEFT OF THE CENTERLINE OF TABLE. COLUMN B: LOCATE AT THE FOOT OF THE TABLE, 48" (1220 mm) TO 72" (1830 mm) FROM THE CENTERLINE AND 24" (610 mm) TO 48" (1220 mm) TO THE RIGHT OF THE CENTERLINE OF THE TABLE EACH COLUMN CONTAINS THE FOLLOWING (EXACT TYPE AND QUANTITY SHALL BE COORDINATED WITH VAMC).	15491
			INLET, VACUUM	
	AR		OUTLET, NITROUS OXIDE	15491
	AR			15491
	AR		OUTLET, OXYGEN	15491
	AR		OUTLET, MEDICAL AIR	15491
	AR		OUTLET, NITROGEN	15491
	AR		INLET, VACUUM, DEDICATED ANESTHESIA GAS EVACUATION	15491
	AR		INLET, MASS SPECTROMETER (BLANK OUTLET) DATA CONNECTION TELECOMMUNICATIONS CONNECTION 4 SINGLE, 120V, 20 AMP HOSPITAL GRADE TYPE RECEPTACLES	16140
	2	CC	ISOLATED POWER UNIT PROVIDES ISOLATED ELECTRICAL POWER, INCLUDES LINE ISOLATION MONITOR, ISOLATION TRANSFORMER AND CIRCUIT BREAKERS	16675
	AR	CF	LIGHT, MAJOR, SURGICAL WITH VARIABLE INTENSITY CONTROL, SUSPENSION AS REQUIRED, CEILING MOUNTED	16515

SYMBOL	QTY	AI	DESCRIPTION	MCS
	AR	VV	TABLE, OPERATING, MOBILE-ELECTRIC	
	1	CC	ELECTRIC WITH SWEEP SECOND HAND, RECESSED	16665
	1	CC	CLOCK, ELECTRIC TIME ELAPSED, RECESSED	16665
	AR	CC	OUTLET, ELECTRICAL, 120 VOLT, 20 AMP, RECESSED FOR CLOCK(S)	
	AR	VV	X-RAY, MOBILE UNIT, C-ARM	
	1	CC	RECEPTACLE, ELECTRICAL, ELECTRICAL CHARACTERISTICS AS REQUIRED, FOR WATER COOLED LASERS	16140
	AR	VV	MICROSCOPE, MOBILE UNIT OR CEILING MOUNTED	
	AR	VV	MONITOR, VIDEO	
	AR	CC	OUTLETBOX, LASER - AIR COOLED	
	1	CC	RECEPTACLE, ELECTRICAL, ELECTRICAL CHARACTERISTICS AS REQUIRED, FOR AIR COOLED LASERS	16140
T-14	AR	CC	CABINET, STORAGE, STAINLESS STEEL RECESSED, 2 HINGED PANEL DOORS, LOCK AND 5 GLASS ADJUSTABLE SHELVES, 48"W X 22"D X 84"H (1220mm X 560mm X 2135mm)	12301
	1	VV	CRT, COMPUTER SYSTEM, WITH KEYBOARD	
	1	CC	RECEPTACLE, ELECTRICAL, QUADRUPLEX, FOR COMPUTER EQUIPMENT ITEMS	16140
	AR	VV	SURGICAL LASER(S)	
	1	VV	UNIT, ELECTRO-SURGICAL (BOVIE)	
	AR	VV	LOCKER, STORAGE, MODULAR	
	AR	VV	KICKBUCKETS	
	AR	VV	STOOL, SURGICAL	
	1	VV	STAND, MAYO	
	AR	VV	TABLE, SURGICAL INSTRUMENT	

SYMBOL	QTY	AI	DESCRIPTION	MCS
	1	VV	TABLE, BACK, LARGE	
	1	VV	TABLE, BACK, SMALL	
	1	VV	STAND, PREP	
	AR	VV	CART, CASE	
	1	CC	INTERCOM, STATION	16760
	1	CC	OUTLET, INTERCOM (EMPTY CONDUIT SYSTEM)	16111
	1	VV	UNIT, HYPER/HYPOTHERMIA	
	1	VV	HAMPER, SOILED LINEN, WITH HINGED SELF CLOSING TOP, 20" (510 mm) DIA.	
	1	VV	RECEPTACLE, WASTE, COVERED	
	1	VV	CART, EMERGENCY, "CRASH CART" APPROX. 36"W X 21"D (915 mm X 535 mm)	
	1	VV	DEFIBRILLATOR	
	AR	VV	SURGILIFT	
	1	VV	GURNEY, ELECTRIC	
	1	VV	CELL SAVER	
	1	VV	MACHINE, ANESTHESIA, PORTABLE	
	1	VV	CART, ANESTHESIA EQUIPMENT	
	1	VV	RACK, SURGICAL SPONGE	
	1	VV	STAND, IV, MOBILE	
	1	VV	MACHINE, SUCTION	
	1	VV	CART, PHYSIOLOGICAL MONITORING	
	1	VV	HEAD LAMP DEVICE	
	1	VV	MOBILE NURSE CONTROL DESK	

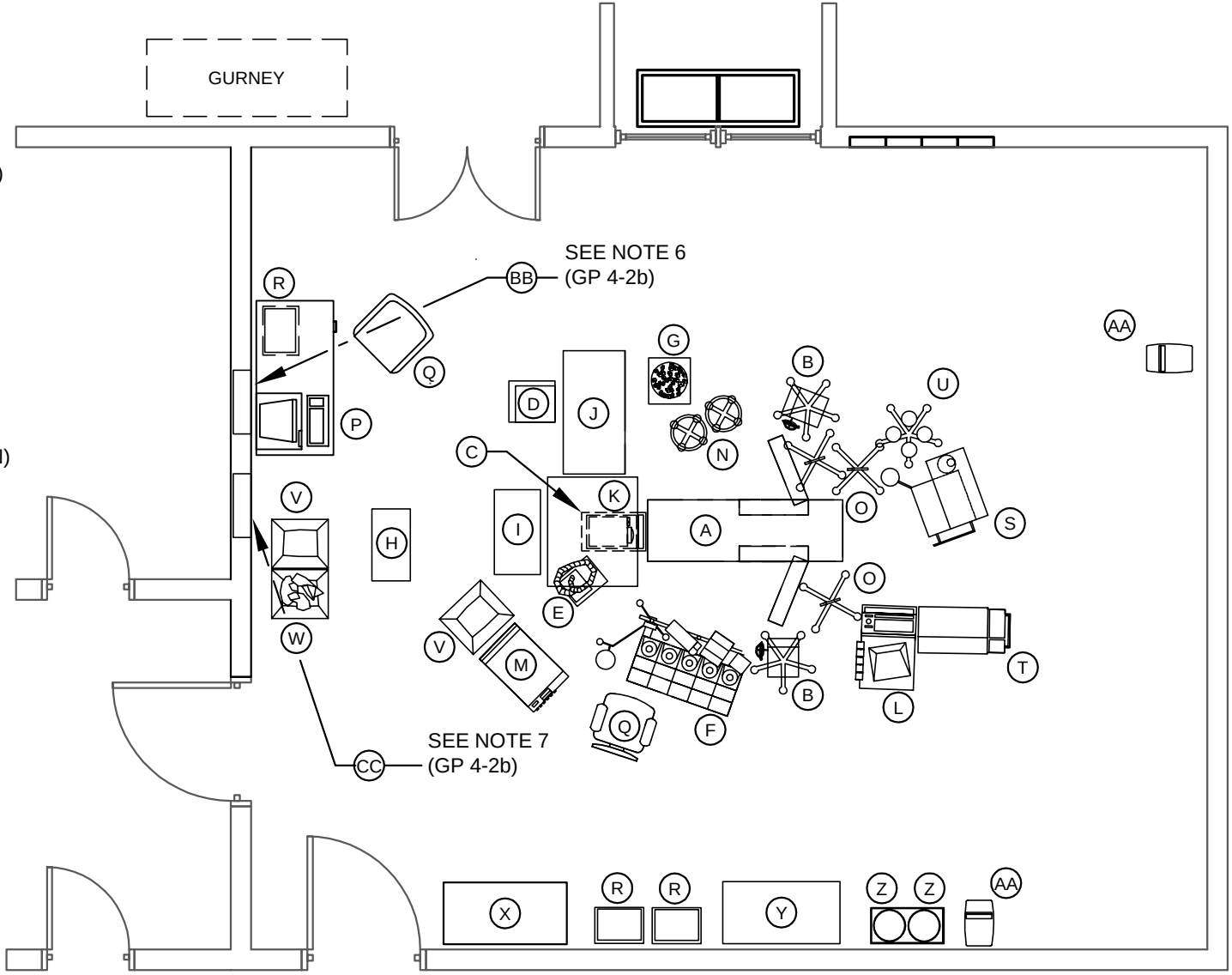


Design Guide - Surgical Service Department of Veterans Affairs	Special Purpose Operating Rm MAX: 800 NSF (74.40 NSM) MIN: 600 NSF (55.80 NSM) MIN: 700 NSF (65.10 NSM) CARDIAC	Ergonomic Plan (METERS) 1 0 1 2 4 (FEET) Scale: 3/16"=1'- 0"	Guide Plate: 4-2a Date: August 2005

Notes:

1. The surgical light fixtures are (CC) unless the VAMC chooses to select a specific surgical light fixture during design development. If the VAMC chooses the fixtures, they should be either (VV) or (CF). Coordination involving structural support, utility connections, and other details are the responsibility of the A/E.
2. Nominal thickness of walls should be shown as 8 inches (203 mm) through design development. This is based upon the need to accommodate a variety of panel boards, return air ducts, and miscellaneous elements of construction that require a thicker partition than in other areas of a hospital building. Partitions other than the operating room enclosure should be nominally 6 inches through design development unless a special requirement dictates otherwise.
3. Inclusion of x-ray shielding, consisting of a lead membrane in the partition, lead lined doors, and leaded glass observation windows, is determined on a project basis. According to the VA policy, the final determination of whether or not lead lined walls and other protective measures are required is the responsibility of the hospital's radiation staff officer and VA's National Health Physics Program Official (PH: 501-257-1571).The need for radiation protection is based upon the degree to which portable x-ray equipment is to be used in each of the operating rooms, and continuous occupancy of adjacent spaces. Once it is determined that a lead membrane is required, the exact location of that membrane and details related to it are the designer's responsibility.
4. An automatic door is to be provided between the operating room and the semi-restricted corridor. A wall-mounted switch for the automatic door opener is preferred.
5. Modular Casework - The VAMC has the option of choosing modular casework in lieu of built-in casework. However, this decision must be made during the design development phase of the project. If modular casework that is wall mounted is selected by the VAMC, the partitions must be designed to support the casework. It should be noted that the standard studs found in the master specifications are insufficient to carry this added weight; therefore, the equipment manufacturer's recommendations for supporting partitions should be followed where appropriate.
6. Elapsed Time Clock: Flush Mounted Clock above, with wall mounted accessible controls below. For more information regarding clocks in the operating room see MCS, Division 16, Electrical. (CC)
7. Clock With Sweep Second Hand: Flush mounted clock above, with wall mounted accessible controls below. For more information regarding clocks in the operating room see MCS, Division 16, Electrical. (CC)
8. See Chapter 286 of the Equipment Guide List, PG-7610, Technical Information Library (TIL).

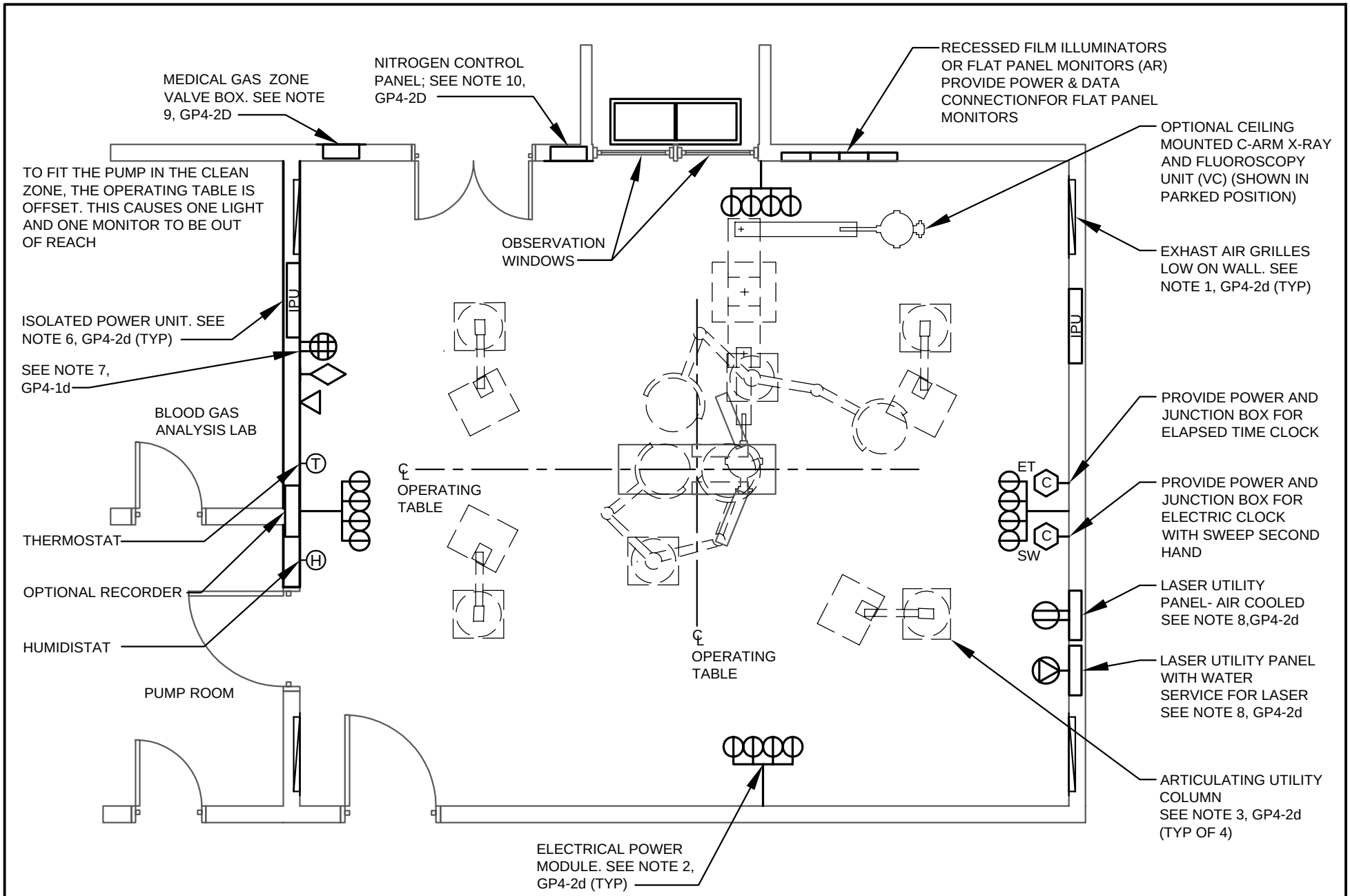
- (A) OR TABLE
- (B) HEAD LIGHT
- (C) BOVIE (UNDER TABLE)
- (D) DEFIBRILLATOR
- (E) BAIR HUGGER (UNDER TABLE)
- (F) HEART PUMP
- (G) SLUSH MACHINE
- (H) BACK TABLE
- (I) GOWN TABLE
- (J) PREP TABLE
- (K) OVERHEAD TABLE
- (L) TRANSESOPHAGEAL ECHO MACHINE
- (M) HEATER/COOLER (PERFUSION)
- (N) METAL BUCKET
- (O) IV POLE
- (P) COMPUTER
- (Q) CHAIR
- (R) LIFTS
- (S) ANESTHESIA MACHINE
- (T) ANESTHESIA CART
- (U) CANISTERS
- (V) TRASH HAMPER
- (W) LAUNDRY HAMPER
- (X) CASE CART
- (Y) MED CART
- (Z) RING STAND
- (AA) SHARP TRASH
- (BB) ELAPSED TIME CLOCK
- (CC) CLOCK WITH SWEEP SECOND HAND



Design Guide - Surgical Service Department of Veterans Affairs	Special Purpose Operating Rm MAX: 800 NSF (74.40 NSM) MIN: 600 NSF (55.80 NSM) MIN: 700 NSF (65.10 NSM) CARDIAC	Equipment Plan (METERS) 1 0 1 2 4 (FEET) Scale: 3/16"=1'- 0"	Guide Plate: 4-2c Date: August 2005

Notes:

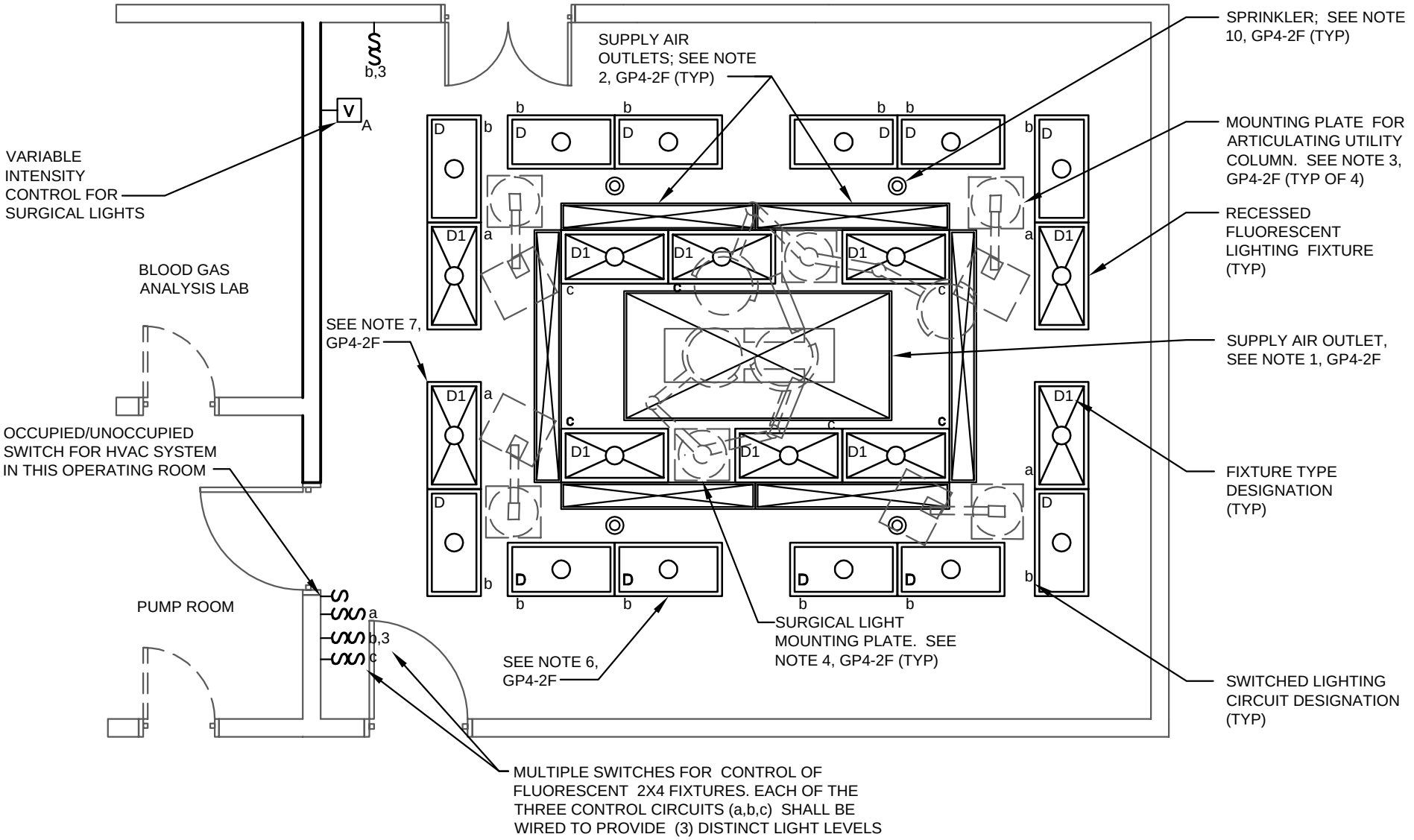
1. Exhaust/Return Air Grilles - Provide four exhaust air grilles, (but not less than two), in operating rooms as shown or locate them on center of each wall of the operating room. The bottom of each exhaust air grille is to be seven inches above finished floor. See HVAC Design Manual for Hospital Projects PG-18-10, for additional information.
2. Electrical Power Module - Provide a separate power module near the center of each wall of the operating room. Each power module is to have 4 single power receptacles. These power receptacles are to be located 18 inches above finished floor. Provide power receptacles in each utility column; quantity as required by VAMC. See Electrical Design Manual for Hospital Projects PG-18-10, for additional information.
3. Articulating Utility Column(s) - Provide connections on each utility column as delineated in Chapter 286, Equipment Guide List PG-7610. Provide data/communications connection for each utility column.
4. HVAC Controllers - Provide one of the two systems for controlling operating room temperature and humidity. The first system as indicated on the utility plan. It involves locating a thermostat, a humidistat, and a recorder in the operating room. The second system involves temperature and humidity sensors located in the operating room, with a recorder located remotely. See HVAC Design Manual for Hospital Projects PG-18-10 for additional information.
5. Video Monitors - The increasing use of fluoroscopy in surgical procedures has increased the need for video monitors located in the vicinity of the "sterile field". With x-ray film soon to be replaced by digitized images displayed on a video screen, the use of these monitors in surgery will increase even further. This emerging technology is called "PACS" (Picture Archiving and Communications System). The VAMC has a choice to make regarding these monitors. A set of video monitors can be mounted on a cart, or the set of flat screen monitors can be mounted on an articulating arm that is suspended from the ceiling. The latter concept is shown on these guideplates. In either case, the A/E is to determine utility requirements for the video system selected by the VAMC and the VHA program official. These requirements include: power supply; provisions for grounding of the monitors and communications linkage to other areas of the hospital. See Reflected Ceiling Plan Note 9 for a concept that links the Frozen Section area of the clinical laboratory with the video monitors in each of the operating rooms.
6. Isolated Power Unit - Locate two (2) isolated power units near the corners of the room and diagonally opposite from each other. See Electrical Design Manual for Hospital Projects PG-18-10 for additional information. Units shall be flush mounted - adjust wall depth to accommodate unit.
7. Computer Terminal - Utility requirements for the in-room computer terminal are to be determined by the VAMC based upon the computer system to be used, and this information is to be incorporated into the construction documents. The printer for the in-room computer terminals is to be located remotely.
8. Laser Panel - It is understood that air cooled lasers are soon to replace water cooled lasers. For this reason, the future impact of air cooled lasers on the design of the HVAC system must be considered by the designer. In spite of this anticipated change, water and drainage should be provided in operating rooms where existing water cooled lasers are to be continued in use. Coordinate utility requirements with laser manufacturer.
9. Zone Valve Box - Provide a separate medical gas zone valve box for each operating room in accordance with NFPA 99. Locate this cabinet in the semi-restricted corridor near the door to the operating room it serves. See MCS, Division 15, Mechanical for a description.
10. Nitrogen Control Panel - See NFPA 99 and MCS, Division 15, Mechanical for information regarding this panel.



Design Guide - Surgical Service Department of Veterans Affairs	Special Purpose Operating Rm MAX: 800 NSF (74.40 NSM) MIN: 600 NSF (55.80 NSM) MIN: 700 NSF (65.10 NSM) CARDIAC	Utility Plan (METERS) 1 0 1 2 4 (FEET) Scale: 3/16"=1'- 0"	Guide Plate: 4-2e Date: August 2005

Notes:

1. Supply Air Outlet - Perforated stainless steel panel centered over operating table with no obstructions. A/E is to design it. (Do not scale.) This outlet is to provide 30 percent of supply air for the operating room. Air distribution is to be in a downward vertical direction. See HVAC Design Manual for Hospital Projects, PG-18-10.
2. Supply Air Outlets - Stainless steel multiple slot panel diffusers to be located above the perimeter of the "clean air zone". (See Functional Plan.) A/E is to design them. (Do not scale.) These outlets are to provide 70 percent of supply air for the operating room. This air is to be discharged in a vertical air stream inclined at an outward angle of fifteen degrees from the center of the room. See HVAC Design Manual for Hospital Projects, PG-18-10.
3. Mounting Plate for Utility Column - (Do not scale.) Size of mounting plate varies with manufacturer. Exact type, size, type, and location are to be determined by the A/E in coordination with the VAMC and Central Office program officials.
4. Surgical Light Fixture - Note that the location of the mounting plate is not to be placed directly over the operating table. That zone must be kept unobstructed for the supply air outlet and the plenum serving it above the ceiling. See Electrical Design Manual for Hospital Projects, PG-18-10.
5. Surgical Microscope - If VAMC chooses a ceiling-mounted microscope in lieu of a floor-mounted microscope, it must be supported by a fixed mounting plate. A ceiling track-mounted system is not to be used for the microscope due to concerns regarding asepsis. The exact size of the mounting plate depends upon the microscope selection. (Do not scale the guideplate.) Coordinate details and utilities requirements with the VAMC.
6. Fluorescent Light Fixtures - General illumination. Only 2 x 4 recessed fixtures are to be used in the operating room due to the fact that this size of fixture (with 6 lamps - Type D) is required in order to deliver enough ambient illumination while also producing color corrected light in the operating room. The design is not to include 1 x 4 fluorescent fixtures. Each group of fixtures (a,b,c) shall be controlled by switches (dimmers are not acceptable) so that 3 distinct levels of illumination are provided. For example, in the fixtures designated by "a," "b" and "c," the (2) outside lamps shall be controlled by one switch; the (4) inside lamps shall be controlled by a second switch.
7. General Illumination on Emergency Power - 50 percent of the fluorescent light fixtures above the operating table are to be on emergency power with battery backup (Type D1). The fluorescent fixtures above the head of the patient (where the nurse anesthetist administers anesthesia and monitors the patient's vital signs) are to be on emergency power. Since the "head of the table" may be reversed on occasions when the ceiling-mounted microscope is in use, fluorescent fixtures above both ends of the table are to be on emergency power.
8. Mounting Plate for Video Monitors - If the VAMC chooses a suspended video system instead of a cart-mounted system, the mounting plate must be integrated into the ceiling layout. The exact size and location of this plate must be determined. The mounting plate for the video monitors is not to be supported on tracks due to asepsis considerations.
9. Video Monitors - A proposal to be considered is to provide a fiber-optic connection (enclosed in conduit) from the video monitors in the operating room to the microscope in the frozen section area of the clinical laboratory. This would permit the surgical team in the operating room to see what the pathologist is talking about over the intercom while examining the biopsy specimen. This installation would reduce the need for anatomical pathologist to leave a contaminated area. Also, the surgical team would not have to wait for the pathologist to clean up, gown, and come to the operating suite to examine the tissue specimen.
10. Sprinkler System - Coordinate the location of the sprinklers with other ceiling systems in accordance with MCS, Division 15, Mechanical and Plumbing Design Manual for Hospital Projects
11. Provide no ceiling tracks for intravenous solutions in the design. This restriction is based upon concerns for asepsis in the operating room.



Design Guide - Surgical Service Department of Veterans Affairs	Special Purpose Operating Rm MAX: 800 NSF (74.40 NSM) MIN: 600 NSF (55.80 NSM) MIN: 700 NSF (65.10 NSM) CARDIAC	Reflected Ceiling Plan (METERS) 1 0 1 2 4 (FEET) Scale: 3/16"=1'- 0"	Guide Plate: 4-2g Date: August 2005

ARCHITECTURAL

Floor Area	800 NSF (74.40 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD(SC)	Wainscot	ACROVYN ON CBB
Ceiling Height	10-0"* (3.0 METERS)	Base	INTEGRAL 6" (152 mm) COVE BASE
Floor Load	100 PSF	Floor finish	WSF
		Lead Lining	-

Note:

Refer to PG-18-1 and PG-18-6

*ADDITIONAL 8" (203 MM) ACCESSIBLE SPACE ABV CLG FOR MICROSCOPE OR 10'-2" (3.05 METERS)

ELECTRICAL

Lighting

General	200 FC, 6.0 W/SF*
Special	SURGICAL LIGHT**
Emergency	50% GEN FLUOR***

Power

General	(1) MODULE EA WALL (1) MODULE EA COLUMN (2) LASER OUTLETS
Special	****
Emergency	*****

*COLOR IMPROVED FLUOR LAMPS MATCHING COLOR TEMPERATURE OF SURGICAL LIGHT
**(2) TYPE B, 1500 W
***BATTERY BACKUP IN (10) FIXTURES
****(2) 7-1/2 KVA 12-CIRCUIT IPU
*****EACH IPU & X-RAY UNIT, (1) FILM PROCESSOR PER SUITE

TELECOMMUNICATIONS

Patient Monitor	YES	Data	WALL TERMINAL @ EACH UTIL. COL.
Nurse Call	-	Telephone	WALL MTD HAND FREE @ EACH UTIL. COL.
Code One	YES	Intercom	COMB. W/TELEPHONE
CCTV	EMPTY CONDUIT	Public Addr.	EMPTY CONDUIT
		ADP	EMPTY CONDUIT
		Radio	EMPTY CONDUIT

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	9.8 W/SF
AC Load Equipment	11.0 W/SF
Number of People	20
Noise Criteria	NC-40
Room Pressure	POSITIVE
Dry Bulb Temp Cooling (Range)	62-80°F (17-27°C)
Dry Bulb Temp Heating (Range)	62-80°F (17-27°C)
Minimum Air Changes per Hour	20 OCC/8 UNOCC
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity Range	45-55 %
Relative Humidity Range	45-55 %

PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	YES
Hot Water	YES	Medical Vacuum	YES
Sanitary Drain	YES	Oxygen	YES
Acid Waste	-	Nitrous Oxide	YES
Silver Recovery	-	Nitrogen	YES
		Anesthesia Evac	YES

SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
	AR	CC	WINDOW, VIEWING, FOR PATIENT OBSERVATION NOTE: CONSTRUCTION TO COMPLY WITH NFPA 101.	13091
	4	CC	RECEPTACLE MODULES; ONE MODULE ON EACH WALL, EACH MODULE SHALL CONSIST OF FOUR SINGLE, 120V, 20 AMP, HOSPITAL GRADE TYPE RECEPTACLES, EACH ON EMERGENCY POWER & ON A SEPARATE CIRCUIT.	16140
	AR	CC	ILLUMINATOR, FILM, X-RAY, RECESSED, 120 VOLT, 20 AMP, 14" X 17" (355 mm X 430 mm) (INSTALLATION NOT TO BE COMBINED WITH IPU'S OR OTHER ELECTRICAL DEVICES)	16510
	AR	CC	ILLUMINATION, GENERAL, RECESSED, WITH THREE LEVEL CONTROL	16510
	AR	CC	COLUMN, ARTICULATING OR TELESCOPING, CEILING MOUNTED COLUMN A: LOCATE AT HEAD OF TABLE, 48" (1220 mm) TO 72" (1830 mm) FROM THE CENTERLINE AND 24" (610 mm) TO 48" (1220 mm) TO THE LEFT OF THE CENTERLINE OF TABLE. COLUMN B: LOCATE AT THE FOOT OF THE TABLE, 48" (1220 mm) TO 72" (1830 mm) FROM THE CENTERLINE AND 24" (610 mm) TO 48" (1220 mm) TO THE RIGHT OF THE CENTERLINE OF THE TABLE. EACH COLUMN CONTAINS THE FOLLOWING:	15491
	2		INLET, VACUUM	15491
	1		OUTLET, NITROUS OXIDE	15491
	2		OUTLET, OXYGEN	15491
	1		OUTLET, MEDICAL AIR	15491
	1		OUTLET, NITROGEN	15491
	1		INLET, VACUUM, DEDICATED ANESTHESIA GAS EVACUATION	15491
	1		INLET, MASS SPECTROMETER (BLANK OUTLET) DATA CONNECTION TELECOMMUNICATIONS CONNECTION 4 SINGLE, 120V, 20 AMP HOSPITAL GRADE TYPE RECEPTACLES	16140
	AR		TYPE RECEPTACLES	16140

SYMBOL	QTY	AI	DESCRIPTION	MCS
	AR	VV	TABLE, OPERATING, MOBILE	
	AR	VV	X-RAY, MOBILE UNIT, C-ARM	
	AR	CC	SHIELDING, RADIATION, FOR ROOMS WITH FIXED X-RAY EQUIPMENT, (IN ACCORDANCE WITH SD AND NCRP REPORT NO. 33, 35 AND 49).	13091
	1	CC	CLOCK, ELECTRIC WITH SWEEP SECOND HAND, RECESSED	16665
	1	CC	CLOCK, ELECTRIC TIME ELAPSED, RECESSED	16665
	AR	CC	OUTLET, ELECTRICAL, 120 VOLT, 20 AMP, RECESSED FOR CLOCK(S)	
	AR	VV	X-RAY UNIT, RADIOGRAPHIC AND FLUOROSCOPIC EXTENDED ARM FROM WALL OR CEILING MOUNT (TO BE DETERMINED ON AN INDIVIDUAL BASIS)	
	AR	CC	SERVICE, ELECTRICAL, SPECIAL, AS REQUIRED FOR X-RAY EQUIPMENT	
	AR	CC	OUTLETBOX, LASER	
	1	CC	RECEPTACLE, ELECTRICAL, 208 VOLT, 30 AMP, SINGLE PHASE, FOR LASERS	16140
	AR	VV	MICROSCOPE, MOBILE UNIT OR CEILING MOUNTED UNIT	
	AR	VV	MONITOR, VIDEO	
	1	VV	CRT, COMPUTER SYSTEM, WITH KEYBOARD	
	1	CC	RECEPTACLE, ELECTRICAL, QUADRUPLEX, FOR COMPUTER EQUIPMENT ITEMS	16140
	1	VV	SURGICAL LASER(S)	
	1	VV	UNIT, ELECTROCAUTERY	
T-44	AR	CC	SHELF, CORROSION RESISTING STEEL, WIDTH AS REQUIRED	10801
	1	CC	COUNTER, CORROSION RESISTING STEEL TOP AND SPLASHBACKS, OPEN BELOW, PORTABLE, 30"D X 36"H X LENGTH (760 mm X 915 mm X L) AS REQUIRED	12303
	2	VV	LOCKER, STORAGE, MODULAR	

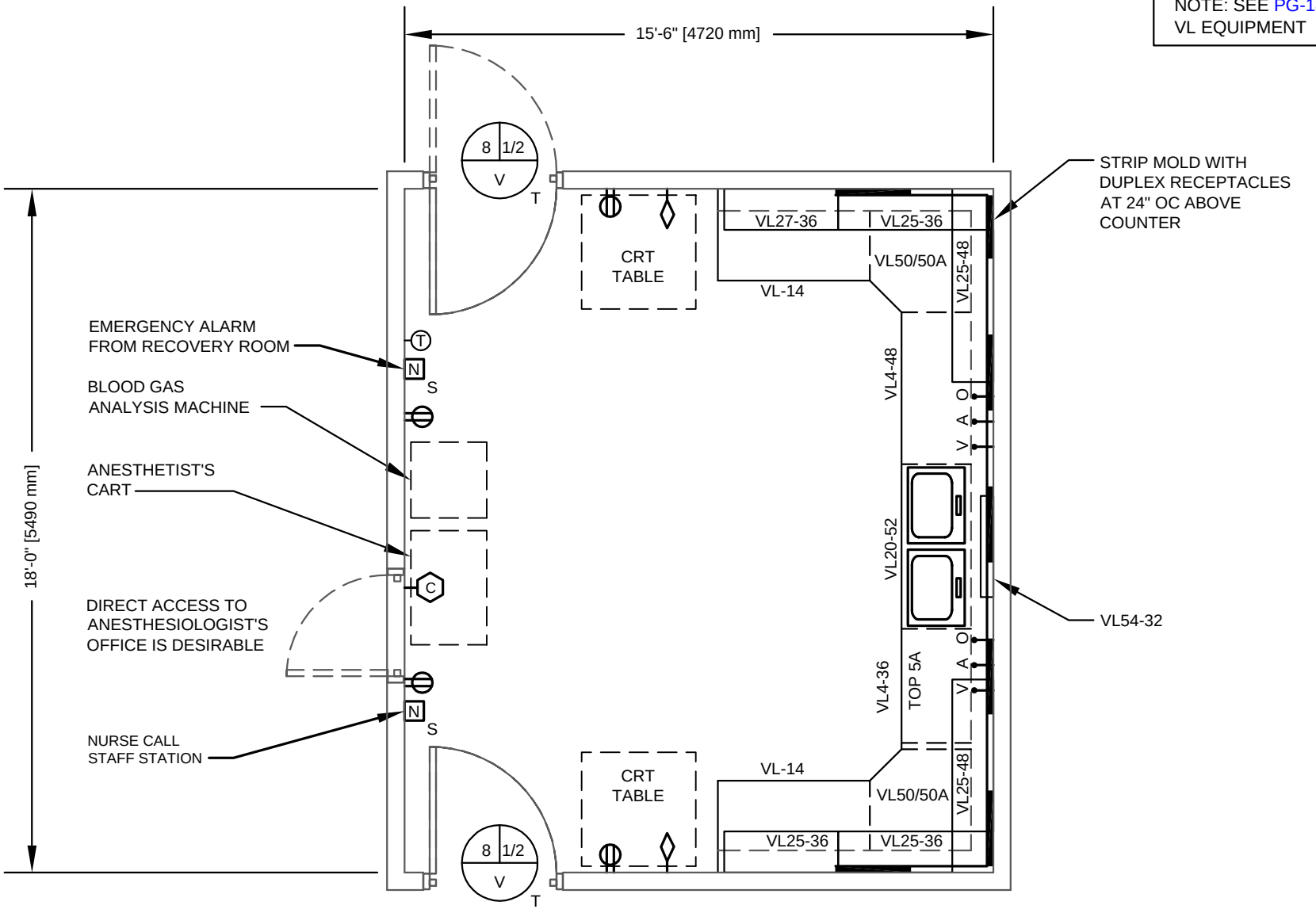
SYMBOL	QTY	AI	DESCRIPTION	MCS
	AR	VV	KICKBUCKETS	
	AR	VV	STOOL, SURGICAL	
	1	VV	STAND, MAYO	
	2	VV	TABLE, SURGICAL INSTRUMENT	
	1	VV	TABLE, BACK, LARGE	
	1	VV	TABLE, BACK, SMALL	
	AR	VV	CART, CASE	
	1	CC	INTERCOM, STATION	16760
	1	CC	OUTLET, INTERCOM (EMPTY CONDUIT SYSTEM)	16111
	1	VV	UNIT, HYPER/HYPOTHERMIA	
	2	VV	HAMPER, SOILED LINEN, WITH HINGED SELF CLOSING TOP, 20" (510 mm) DIA.	
	1	VV	DEFIBRILLATOR	
	AR	VV	SURGILIFT	
	1	VV	GURNEY	
	1	VV	CELL SAVER	
	1	VV	MACHINE, ANESTHESIA, PORTABLE	
	1	VV	CART, ANESTHESIA	
	1	VV	RACK, SURGICAL SPONGE	
	1	VV	STAND, IV, MOBILE	
	1	VV	SUCTION BOTTLE STAND	
	1	VV	CART, PHYSIOLOGICAL MONITORING	
	AR	VV	MONITOR, PHYSIOLOGICAL	

SYMBOL	QTY	AI	DESCRIPTION	MCS
	1	CC	OUTLET, JUNCTION BOX WITH BLANK COVER, CONNECTED BY EMPTY CONDUIT TO A SIMILAR OUTLET BOX IN THE SPECIAL RECORDING EQUIPMENT ROOM. (THIS PROVISION IS FOR PHYSIOLOGICAL MONITORING AND/OR RECORDING EQUIPMENT WHICH WILL BE FURNISHED)	
	AR	VV	HEAD LAMP DEVICE	
	1	VV	MACHINE, SLUSH	
	1	VV	MACHINE, HEART/LUNG BYPASS	
	1	VV	BALLOON PUMP	
	2	CC	ISOLATED POWER UNIT PROVIDES ISOLATED ELECTRICAL POWER, INCLUDES LINE ISOLATION MONITOR, ISOLATION TRANSFORMER AND CIRCUIT BREAKERS	16675
	2	CF	LIGHT, MAJOR, SURGICAL WITH VARIABLE INTENSITY CONTROL, SINGLE POINT SUSPENSION, CEILING MOUNTED	16515

Section 5

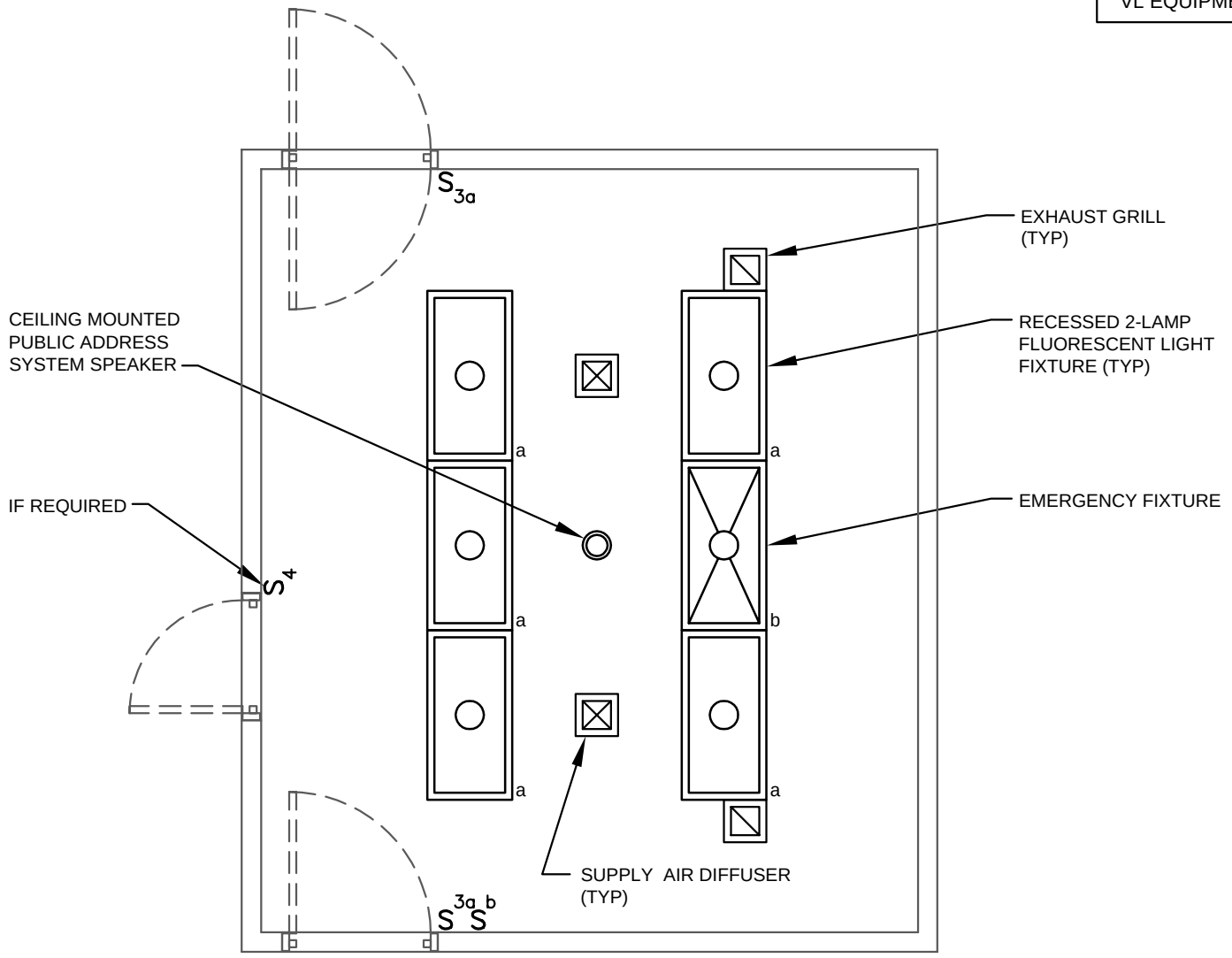
Design Guide Plates and Data Sheets
Operating Room Support Spaces

Guide Plates



Design Guide - Surgical Service Department of Veterans Affairs	Anesthesia Workroom and Equipment Storage 280 NSF (26.0 NSM)	Equipment and Utility Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 5-1a Date: August 2005

NOTE: SEE PG-18-6 FOR VL EQUIPMENT



Design Guide - Surgical Service Department of Veterans Affairs	Anesthesia Workroom and Equipment Storage 280 NSF (26.0 NSM)	Reflected Ceiling Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 5-1b Date: August 2005

ARCHITECTURAL

Floor Area	280 NSF* (26.0 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD	Wainscot	ACROVYN ON CBB
Ceiling Height	9'-0" (2.75 METERS)	Base	WSF
Floor Load	100 PSF	Floor finish	6" (152 mm) INTEGRAL COVE BASE
		Lead Lining	-

Notes:
Refer to PG-18-1 and PG-18-6

*ADD 70 NSF FOR EACH O.R. OVER 4 INCLUDING CYSTOSCOPY

ELECTRICAL

Lighting		Power	
General	50 FC, 1.5 W/SF	General	800 WATTS
Special	-	Special	*
Emergency	(1) FIXTURE	Emergency	-

*(1) STRIP MOLD W/DUPLEX RECEPTACLES 24" OC ABOVE COUNTER

TELECOMMUNICATIONS

Patient Monitor	-	Telephone	YES
Nurse Call	YES	Intercom	-
Code One	BEEPER*	Public Address	YES
CCTV	-	ADP	EMPTY CONDUIT
		Radio	-

*AUDIO EMERGENCY ALARM FROM RECOVERY BEDS

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	1.8 W/SF
AC Load Equipment	4.0 W/SF
Number of People	2
Noise Criteria	NC-40
Room Pressure	(0)
Dry Bulb Temp Cooling Range	78° F (25° C)
Dry Bulb Temp Heating Range	72° F (22° C)
Minimum Air Changes per Hour	-
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity	50 %
Relative Humidity	30 %

PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	YES
Hot Water	YES	Medical Vacuum	YES
Sanitary Drain	YES	Oxygen	YES
Acid Waste	-	Nitrous Oxide	-
Silver Recovery	-	Nitrogen	-
		Anesthesia Evac	-

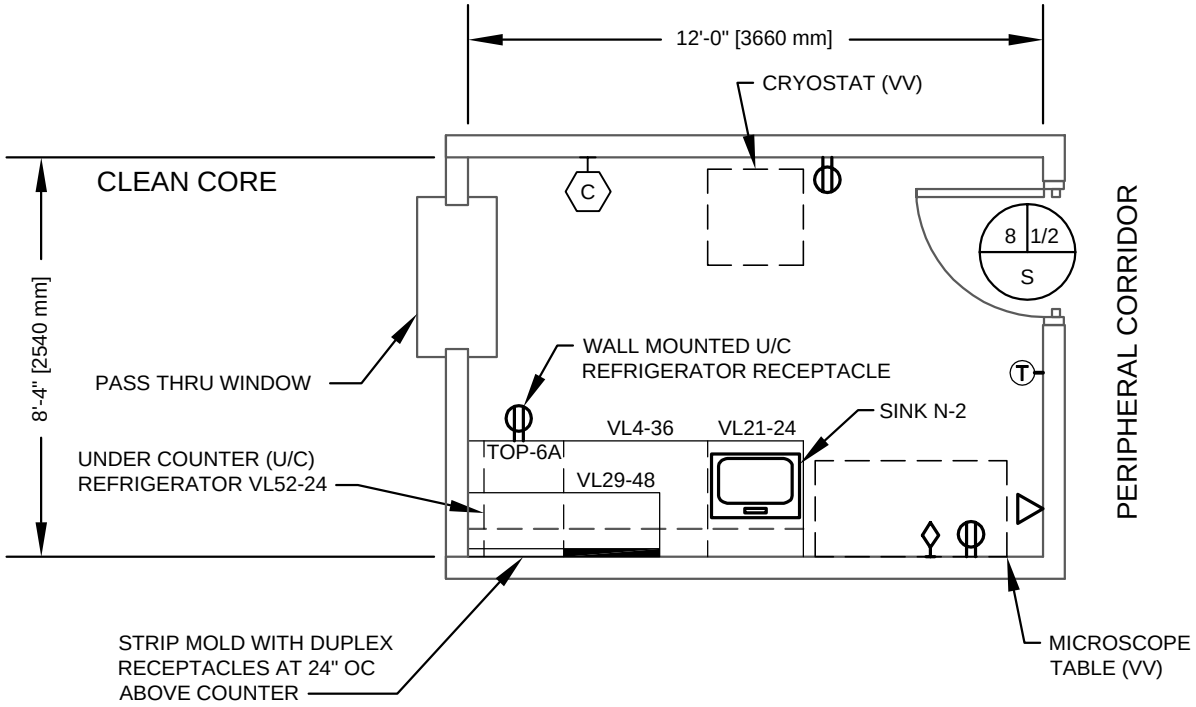
SPECIAL EQUIPMENT

None

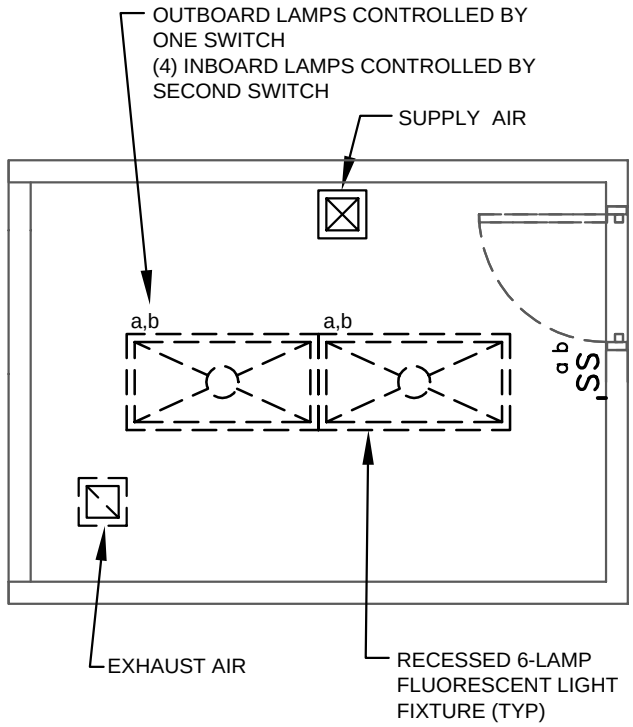
SYMBOL	QTY	AI	DESCRIPTION	MCS
TOP 5A	AR	CF	COUNTER TOP, CORROSION RESISTING STEEL, 1-1/4" (32 mm) THICK WITH INTEGRAL DOUBLE SINK, 26" X 23"X 11" DEEP (660 mm X 584 mm X 279 mm), EACH	12303
VL20/20A	AR	CF	CABINET, UNDERCOUNTER, SINK UNIT, 2 HINGED PANEL DOORS, AVAILABLE WIDTHS 30" (760 mm), 36" (915 mm), 42" (1065 mm), 48" (1220 mm); DEPTH 22" (560 mm); HEIGHTS 31" (790 mm), 25" (635 mm), FOR FLOOR MOUNTED ADD 5" (130 mm) TOE BASE	12301
Q-2	2	CF	SINK, CORROSION RESISTING STEEL, WITH END OR CORNER DRAIN OUTLET, 24" X 18" X 11" DEEP (610 mm X 460 mm X 280 mm)	12303
VL4/4A	AR	CF	CABINET, UNDERCOUNTER, WITH 2 DRAWERS, 2 HINGED DOORS AND 1 ADJUSTABLE SHELF, AVAILABLE WIDTHS 30" (760 mm), 36" (915 mm), 48" (1220 mm); DEPTH 22" (495 mm); HEIGHTS 31" (780 mm), 25" (635 mm), FOR FLOOR MOUNTED ADD 5" (130 mm) TOE BASE	12301
VL50/50A	AR	CF	CABINET, UNDERCOUNTER, CORNER UNIT, FLOOR MOUNTED, WITH 5" (130 mm) TOE BASE, SINGLE DOOR, FIXED SHELF, 32" (815 mm) ALONG WALLS, HEIGHTS 31" (790 mm), 25" (635 mm)	12301
VL14	AR	CF	TABLE FRAME, WITH DRAWER(S), KNEE SPACE UNIT, AVAILABLE WIDTHS 18" (460 mm), 24" (610mm), 30" (760 mm), 36" (915 mm), 42" (1065 mm), 48" (1220 mm); DEPTH 22" (559 mm); HEIGHT 31" (780 mm)	12301
VL25	AR	CF	CABINET, WALL, WITH SLOPING TOP, 2 GLAZED SLIDING DOORS AND 2 ADJUSTABLE SHELVES, AVAILABLE WIDTHS 30" (760 mm), 36" (915 mm), 42" (1065 mm), 48" (1220 mm); DEPTH 13" (330 mm); HEIGHT 30" (760 mm)	12301
VL27	1	CF	CABINET, WALL, WITH SLOPING TOP, 1 HINGED DOOR AND 2 ADJUSTABLE SHELVES, AVAILABLE WIDTHS - 18"(460 mm), 24" (610 mm); DEPTH - 13" (330 mm); HEIGHT - 30" (760 mm)	12301
VL54	AR	CF	PEGBOARD, 32 PEGS, 20"W X 30"H (510 mm X 760 mm) OR 53 PEGS, 32"W X 30"H (815 mm X 760 mm)	06200
	AR	CC	OUTLET, WALL, OXYGEN (LOCATE OUTLETS ABOVE COUNTER)	15491
	AR	CC	OUTLET, WALL, MEDICAL AIR (LOCATE OUTLETS ABOVE COUNTER)	15491
	AR	CC	OUTLET, WALL, VACUUM (LOCATE OUTLETS ABOVE COUNTER)	15491
	AR	CC	FLOWMETER, 15 LITER PER MINUTE	

SYMBOL	QTY	AI	DESCRIPTION	MCS
	1	CC	AUDIO, EMERGENCY ALARM (BEEPER) FROM RECOVERY BEDS	16761
	1	CC	CONDUIT FOR ABOVE EQUIPMENT TO RECOVERY BEDS	16111
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 15 AMP, STRIP MOLD WITH OUTLETS, WIRED ALTERNATELY ON SEPARATE CIRCUITS 24" (610 mm) ON CENTERS ABOVE COUNTER	16140
	1	VV	DISPENSER, SOAP, LIQUID, WALL MOUNTED	
	1	VV	DISPENSER, BIFOLD PAPER TOWEL, SURFACE MOUNTED	
	1	VV	FLAME PHOTOMETER	
	2	VV	TABLE, CRT, APPROX., 36" X 36' (914 mm X 914 mm)	
	1	VV	MACHINE, BLOOD GAS ANALYSIS	
	1	VV	CART, ANESTHESIA EQUIPMENT	
	1	VV	CLOCK, BATTERY OPERATED	
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP	16140
	2	CC	COMPUTER TERMINAL OUTLETS, SIGNAL AND POWER	
	1	CC	SPEAKER, CEILING MOUNTED FOR PA SYSTEM	16770
	1	CC	NURSE CALL STAFF STATION	16761

NOTE: SEE PG-18-6 FOR VL EQUIPMENT



Equipment and Utility Plan



Reflected Ceiling Plan

Design Guide - Surgical Service Department of Veterans Affairs	Frozen Section Laboratory 100 NSF (9.2 NSM)	Equip, Utility and Refl Clg Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 5-2a Date: August 2005

ARCHITECTURAL

Floor Area	100 NSF (9.2 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD	Wainscot	-
Ceiling Height	-	Base	WSF
Floor Load	100 PSF	Floor finish	6" (152 mm) INTEGRAL COVE BASE
		Lead Lining	-

Note:
Refer to PG-18-1 and PG-18-6

ELECTRICAL

Lighting		Power	
General	100 FC, 4.0 W/SF	General	1000 WATTS
Special	-	Special	*
Emergency	ALL	Emergency	1000 WATTS

*(1) STRIP MOLD WITH DUPLEX RECEPTACLES 24" OC ABOVE COUNTER

TELECOMMUNICATIONS

Patient Monitor	-	Telephone	YES
Nurse Call	-	Intercom	PART OF TELEPHONE
Code One	-	Public Addr.	-
CCTV	-	ADP	EMPTY CONDUIT
		Radio	-

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	4.5 W/SF
AC Load Equipment	12.0 W/SF
Number of People	1
Noise Criteria	NC-45
Room Pressure	NEGATIVE
Dry Bulb Temp Cooling Range	78° F (25° C)
Dry Bulb Temp Heating Range	72° F (22° C)
Minimum Air Changes per Hour	12(SA)
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity	50 %
Relative Humidity	30 %

PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	-
Hot Water	YES	Medical Vacuum	-
Sanitary Drain	-	Oxygen	-
Acid Waste	YES*	Nitrous Oxide	-
Silver Recovery	-	Nitrogen	-
		Anesthesia Evac	-

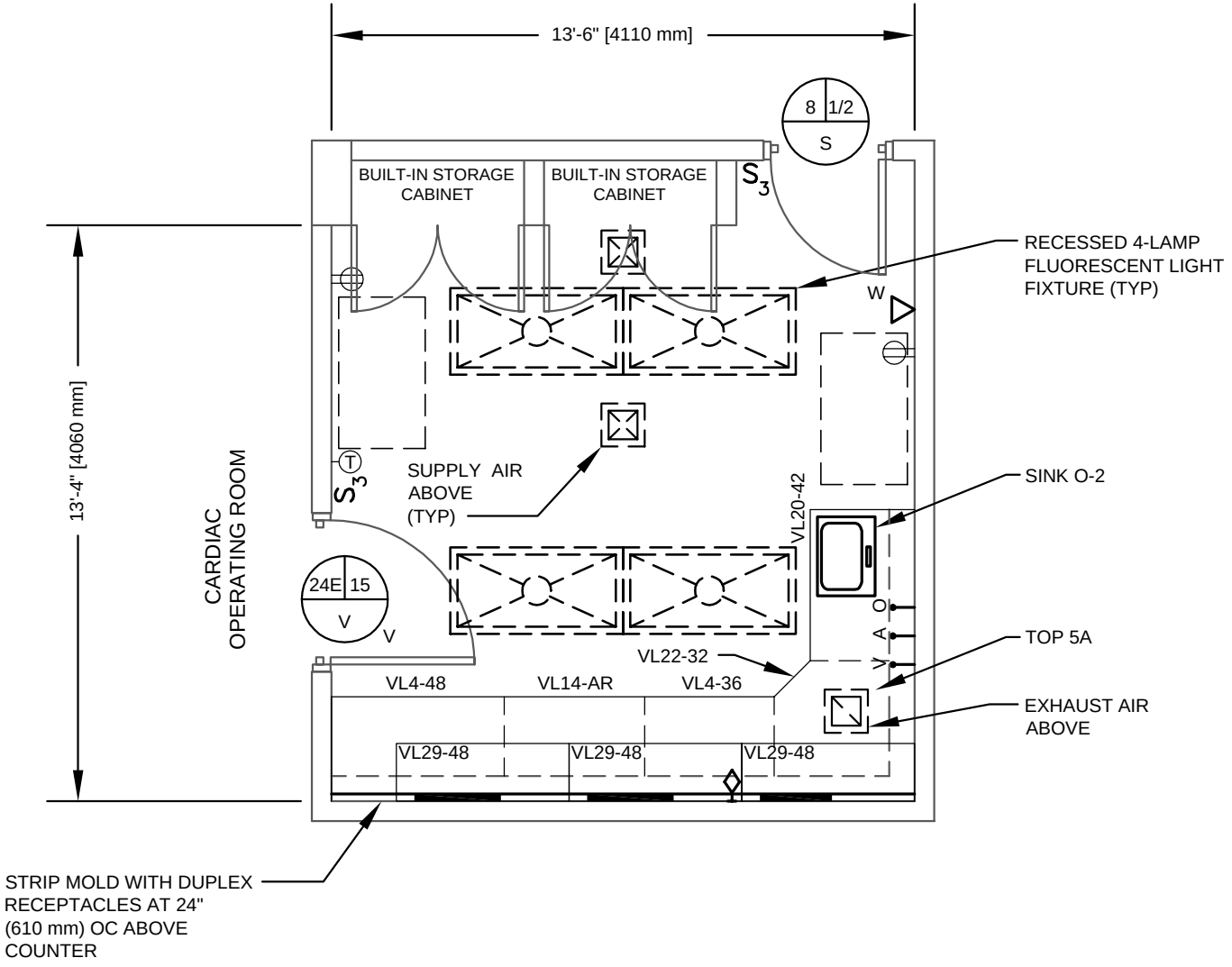
*CONNECT CRP WASTE AND VENT TO NORMAL STACKS

SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
TOP 6/6A	1	CF	COUNTER TOP, HIGH PRESSURE PLASTIC LAMINATE, ACID RESISTANT COMPOSITION OVER PLYWOOD OR PARTICLE BOARD CORE, 1-1/4" (30 mm) THICK	12303
N-2	1	CF	SINK, CORROSION RESISTING STEEL, WITH END OR CORNER DRAIN OUTLET, 22" X16" X 11" DEEP (560 mm X 405 mm X 280 mm)	12303
VL21/21A	1	CF	CABINET, UNDERCOUNTER, SINK UNIT, 1 DOOR, AVAILABLE WIDTHS 18" (460 mm), 24" (610 mm); DEPTH 22" (560 mm); HEIGHTS 31" (790 mm), 25" (635 mm), FOR FLOOR MOUNTED ADD 5" (130 mm) TOE BASE	12301
VL4/4A	1	CF	CABINET, UNDERCOUNTER, WITH 2 DRAWERS, 2 HINGED DOORS AND 1 ADJUSTABLE SHELF, AVAILABLE WIDTHS 30" (760 mm), 36" (915 mm), 48" (1220 mm); DEPTH 22" (560 mm); HEIGHTS 31" (790mm), 25" (635mm), FOR FLOOR MOUNTED ADD 5" (130 mm) TOE BASE	12301
VL29	1	CF	CABINET, WALL, WITH SLOPING TOP, 2 GLAZED SLIDING DOORS AND 2 ADJUSTABLE SHELVES, AVAILABLE WIDTHS 36" (915 mm), 48" (1220 mm); DEPTH 16" (405 mm); HEIGHT 30" (760 mm)	12301
VL52	1	CF	REFRIGERATOR, 5 CU. FT., 120 VOLT, 20 AMP, UNDERCOUNTER	11415
	1	VV	TABLE, MICROSCOPE (DUAL SEATS) 48" (1220 mm) X 24" (610 mm) X 30" (760 mm)	
	1	VV	CRYOSTAT, FLOOR STANDING, APPROX. 27" (685 mm) W X 27" (685 mm) D X 48" (685 mm) H	
	1	VV	MICROSCOPE, DOUBLE HEAD	
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP, STRIP MOLD WITH OUTLETS ON 24" (610mm) CENTERS, 9" (229 mm) ABOVE COUNTER	16140
	1	CC	WINDOW, PASS THRU FROM PERIPHERAL CORRIDOR AREA	05500 08665
	1	VV	CLOCK, BATTERY OPERATED	
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP	16140
	1	CC	FIBER OPTIC SYSTEM	
	1	CC	COMPUTER TERMINAL OUTLET	

NOTE: SEE PG-18-6 FOR VL EQUIPMENT



Design Guide - Surgical Service Department of Veterans Affairs	Heart/Lung Machine Preparation Room 180 NSF (17.4 NSM)	Equip, Utility and Refl Clg Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 5-3a Date: August 2005

ARCHITECTURAL

Floor Area	180 NSF (17.4 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD	Wainscot	-
Ceiling Height	9'-0" (2.75 METERS)	Base	WSF
Floor Load	100 PSF	Floor finish	6" (152 mm) INTEGRAL COVE BASE
		Lead Lining	-

Note:
Refer to PG-18-1 and PG-18-6

*LEAD LINED DOORS FROM SUPPORT SPACES INTO O.R.

ELECTRICAL

Lighting		Power	
General	70 FC, 2.8 W/SF	General	1000 WATTS
Special	-	Special	*
Emergency	ALL	Emergency	1000 WATTS

*(1) STRIP MOLD WITH DUPLEX RECEPTACLES 24" OC ABOVE COUNTER

TELECOMMUNICATIONS

Patient Monitor	-	Telephone	WALL MTD
Nurse Call	-	Intercom	PART OF TELEPHONE
Code One	-	Public Addr.	-
CCTV	-	ADP	EMPTY CONDUIT
		Radio	-

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	3.5 W/SF
AC Load Equipment	2.5 W/SF
Number of People	2
Noise Criteria	NC-40
Room Pressure	(0)
Dry Bulb Temp Cooling Range	78° F (25° C)
Dry Bulb Temp Heating Range	72° F (22° C)
Minimum Air Changes per Hour	-
Minimum % Outside Air	100
100 % Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity	50 %
Relative Humidity	30 %

PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	YES
Hot Water	YES	Medical Vacuum	YES
Sanitary Drain	YES	Oxygen	YES
Acid Waste	-	Nitrous Oxide	-
Silver Recovery	-	Nitrogen	-
		Anesthesia Evac	-

*CONNECT CRP WASTE AND VENT TO NORMAL STACKS

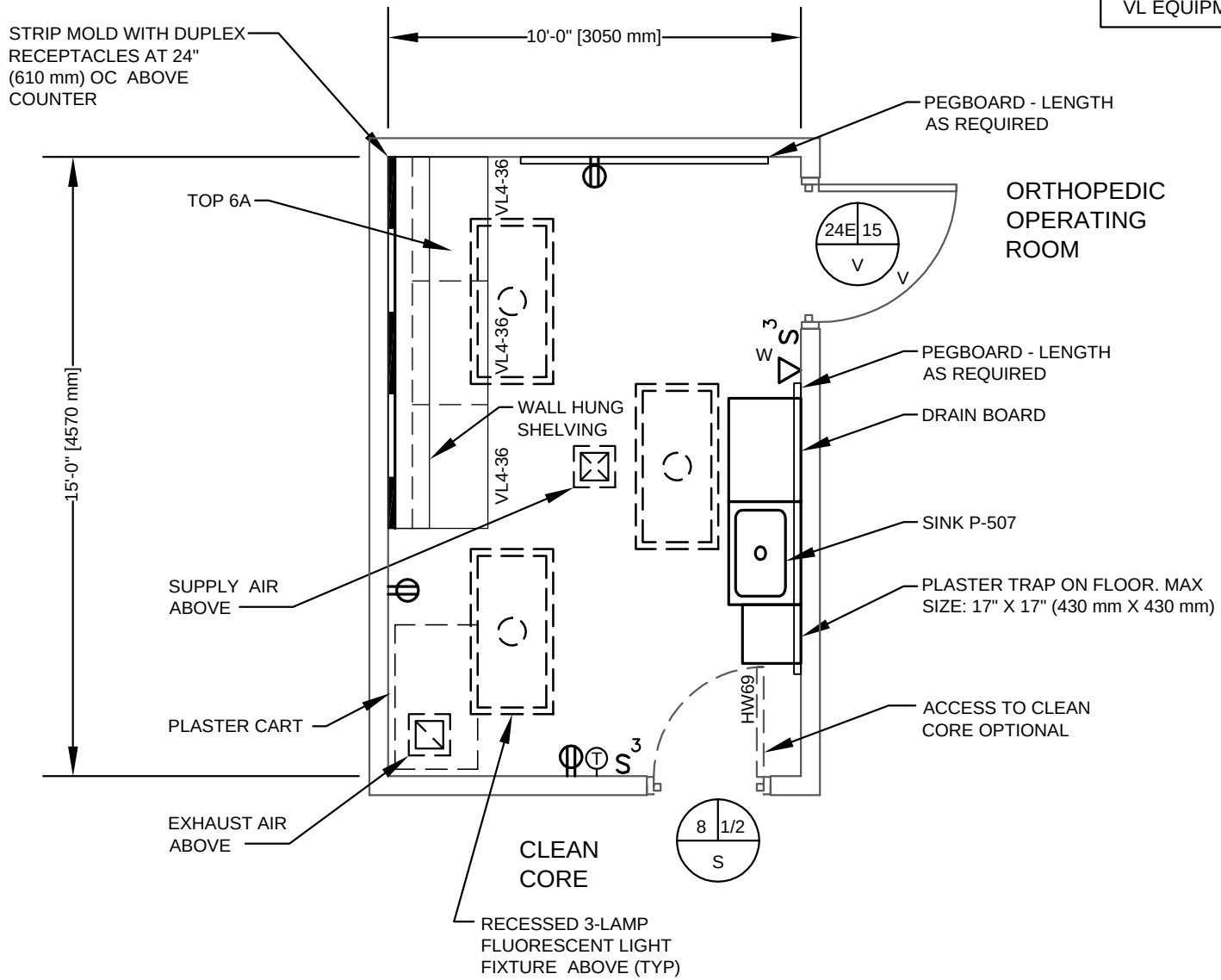
SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
TOP 5A	AR	CF	COUNTER TOP, CORROSION RESISTING STEEL, 1-1/4" (32 mm) THICK WITH INTEGRAL DOUBLE SINK, 26" X 23" X 11" (660 mm X 585 mm X 280 mm) DEEP, EACH	12303
VL20/20A	1	CF	CABINET, UNDERCOUNTER, SINK UNIT, 2 HINGED PANEL DOORS, AVAILABLE WIDTHS 30" (760 mm), 36" (915 mm), 42" (1065 mm), 48" (1220 mm); DEPTH 22" (560 mm); HEIGHTS 31" (790 mm), 25" (635 mm), FOR FLOOR MOUNTED ADD 5" (130 mm) TOE BASE	12301
O-2	1	CF	SINK, CORROSION RESISTING STEEL, WITH CENTER DRAIN OUTLET, 22" X 16" X 12" (560 mm X 405 mm X 305 mm) DEEP	12303
VL4/4A	AR	CF	CABINET, UNDERCOUNTER, WITH 2 DRAWERS, 2 HINGED DOORS AND 1 ADJUSTABLE SHELF, AVAILABLE WIDTHS 30" (760 mm), 36" (915 mm), 48" (1220 mm); DEPTH 22" (560 mm); HEIGHTS 31" (790 mm), 25" (635 mm), FOR FLOOR MOUNTED ADD 5" (130 mm) TOE BASE	12301
VL50/50A	1	CF	CABINET, UNDERCOUNTER, CORNER UNIT, FLOOR MOUNTED, WITH 5" (130 mm) TOE BASE, SINGLE DOOR, FIXED SHELF, 32" (815 mm) ALONG WALLS, HEIGHTS 31" (790 mm), 25" (635 mm)	12301
VL14	1	CF	TABLE FRAME, WITH DRAWER(S), KNEE SPACE UNIT, AVAILABLE WIDTHS 18" (460 mm), 24" (610 mm). 30" (760 mm), 36" (915 mm), 42" (1065 mm), 48" (1220 mm) DEPTH 22" (560 mm); HEIGHT 31" (790 mm)	12301
VL29	AR	CF	CABINET, WALL, WITH SLOPING TOP, 2 GLAZED SLIDING DOORS AND 2 ADJUSTABLE SHELVES AVAILABLE WIDTHS 36" (915 mm), 48" (1220 mm); DEPTH 16" (405 mm); HEIGHT 30" (760 mm)	12301
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 15 AMP, STRIP MOLD WITH OUTLETS, WIRED ALTERNATELY ON SEPARATE CIRCUITS ON 24" (610 mm) CENTERS ABOVE COUNTER	16140
	AR	CC	OUTLET, WALL, OXYGEN (LOCATE OUTLETS ABOVE COUNTER)	15491
	AR	CC	OUTLET, WALL, MEDICAL AIR (LOCATE OUTLETS ABOVE COUNTER)	15491
	AR	CC	OUTLET, WALL, VACUUM (LOCATE OUTLETS ABOVE COUNTER)	15491
	1	VV	FLOWMETER, 15 LITER PER MINUTE	
	1	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP, COMPATIBLE WITH EXTRACORPOREAL PERFUSION PUMP	16140

SYMBOL	QTY	AI	DESCRIPTION	MCS
	AR	VV	CABINET, STORAGE, STEEL, FLOORSTANDING WITH, 2 DOORS, 5 ADJUSTABLE SHELVES AND LOCK 36" X 18" X 84" (915 mm X 460 mm X 2135 mm)	
	1	VV	DISPENSER, SOAP, LIQUID, WALL MOUNTED	
	1	VV	DISPENSER, BIFOLD PAPER TOWEL, SURFACE MOUNTED	
	AR	VV	STOOL, ADJUSTABLE ON SWIVEL CASTERS WITH HEEL RIM	
	AR	VV	MACHINE, HEART/LUNG BYPASS	
	1	VV	CLOCK, BATTERY OPERATED	
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP	16140
	1	CC	COMPUTER TERMINAL OUTLET, SIGNAL AND POWER	

NOTE: SEE PG-18-6 FOR VL EQUIPMENT



Design Guide - Surgical Service Department of Veterans Affairs	Plaster and Splint Storage Room 150 NSF (14.0 NSM)	Equip, Utility and Refl Clg Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 5-4a Date: August 2005

ARCHITECTURAL

Floor Area	150 NSF (14.0 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD	Wainscot	-
Ceiling Height	-	Base	WSF
Floor Load	100 PSF	Floor finish	6" (152 mm) INTEGRAL COVE BASE
		Lead Lining	-

Note:
Refer to PG-18-1 and PG-18-6

ELECTRICAL

Lighting		Power	
General	50 FC, 2.0 W/SF	General	1200 WATTS
Special	-	Special	*
Emergency	-	Emergency	-

*(1) STRIP MOLD WITH DUPLEX RECEPTACLES
24" (610 mm) OC ABOVE COUNTER

TELECOMMUNICATIONS

Patient Monitor	-	Telephone	YES
Nurse Call	-	Intercom	-
Code One	-	Public Addr.	-
CCTV	-	ADP	-
		Radio	-

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	2.2 W/SF
AC Load Equipment	1.2 W/SF
Number of People	1
Noise Criteria	NC-40
Room Pressure	Negative
Dry Bulb Temp Cooling Range	78° F (25° C)
Dry Bulb Temp Heating Range	72° F (22° C)
Minimum Air Changes per Hour	4
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity	50 %
Relative Humidity	30 %

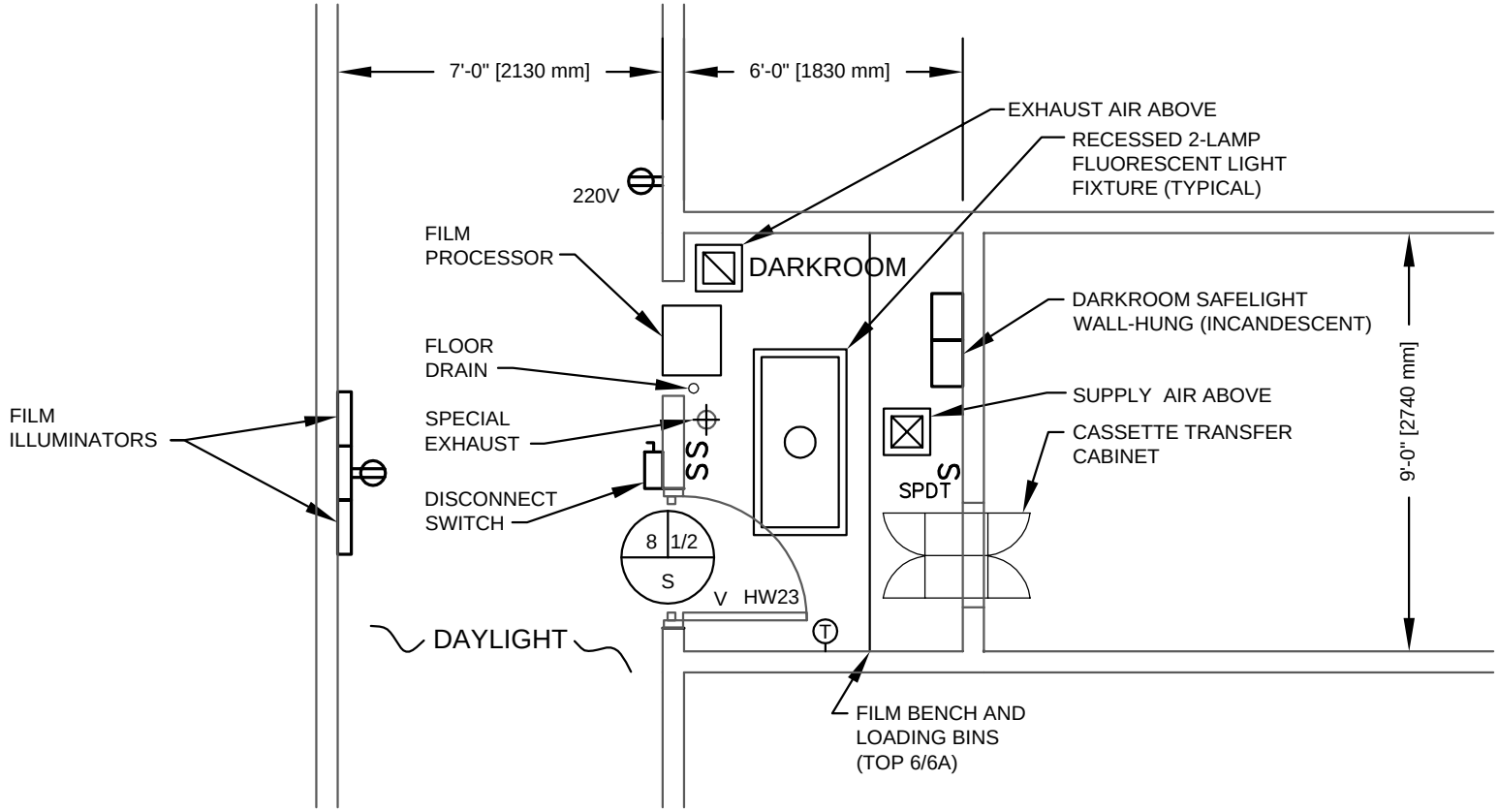
PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	-
Hot Water	YES	Medical Vacuum	-
Sanitary Drain	YES	Oxygen	-
Acid Waste	-	Nitrous Oxide	-
Silver Recovery	-	Nitrogen	-
Plaster Trap	YES	Anesthesia Evac	-

SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
TOP 6/6A	AR	CF	COUNTER TOP, HIGH PRESSURE PLASTIC LAMINATE, ACID RESISTANT COMPOSITION OVER PLYWOOD OR PARTICLE BOARD CORE, 1-1/4" (30 mm) THICK	12303
VL4/4A	AR	CF	CABINET, UNDERCOUNTER, WITH 2 DRAWERS, 2 HINGED DOORS AND 1 ADJUSTABLE SHELF AVAILABLE WIDTHS 30" (760 mm), 36" (915 mm), 48" (1220 mm); DEPTH 22" (560 mm); HEIGHTS 31" (790 mm), 25" (635 mm), FOR FLOOR MOUNTED ADD 5" (130 mm) TOE BASE	12301
	AR	CC	SHELVING, WALL HUNG, WITH ADJUSTABLE SHELVES, 12" (305 mm) DEEP X LENGTH AS REQUIRED	06200
	1	CC	PEGBOARD, PERFORATED COMPOSITION BOARD, 1/4" (30 mm) THICK WITH ADJUSTABLE HANGARS ABOVE COUNTER	06200
P-507	1	CC	SINK, PLASTER, SINGLE COMPARTMENT, CRS DRAINBOARD WITHOUT CORRUGATIONS	15450
	1	VV	CART, PLASTER	
	1	VV	DISPENSER, SOAP, LIQUID, WALL MOUNTED	
	1	VV	DISPENSER, BIFOLD PAPER TOWEL, SURFACE MOUNTED	
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP	16140
	AR	CC	RECEPTACLE, ELECTRICAL DUPLEX, 120 VOLT, 15 AMP MOLD STRIP WITH OUTLETS WIRED ALTERNATELY ON SEPARATE CIRCUITS ON 24" (610 mm) CENTERS ABOVE COUNTER	16140



Design Guide - Surgical Service Department of Veterans Affairs	Radiographic Film Processing Room 120 NSF (11.0 NSM)	Equip, Utility and Refl Clg Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 5-5a Date: August 2005

ARCHITECTURAL

Floor Area	120 NSF (11.0 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD	Wainscot	-
Ceiling Height	9'-0" (2.75 METERS)	Base	WSF
Floor Load	100 PSF	Floor finish	6" (152 mm) INTEGRAL COVE BASE
		Lead Lining	-

Note:
Refer to PG-18-1 and PG-18-6

ELECTRICAL

Lighting		Power	
General	40 FC, 1.5 W/SF*	General	360 WATTS
Special	0-10 FC, 0.5 W/SF* SAFETY LIGHT*	Special	-
		Emergency	-
Emergency	-		

*INCANDESCENT

TELECOMMUNICATIONS

Patient Monitor	-	Telephone	-
Nurse Call	-	Intercom	-
Code One	-	Public Addr.	-
CCTV	-	ADP	-
		Radio	-

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	1.5 W/SF
AC Load Equipment	7.5 W/SF
Number of People	1
Noise Criteria	NC-40
Room Pressure	NEGATIVE
Dry Bulb Temp Cooling Range	78° F (25° C)
Dry Bulb Temp Heating Range	72° F (22° C)
Minimum Air Changes per Hour	8(SA)
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	4" ROUND DUCT*
Steam	-
Relative Humidity	50 %
Relative Humidity	30 %

*FOR FILM PROCESSOR
DUCTS REQUIRE LEAD SHIELDING

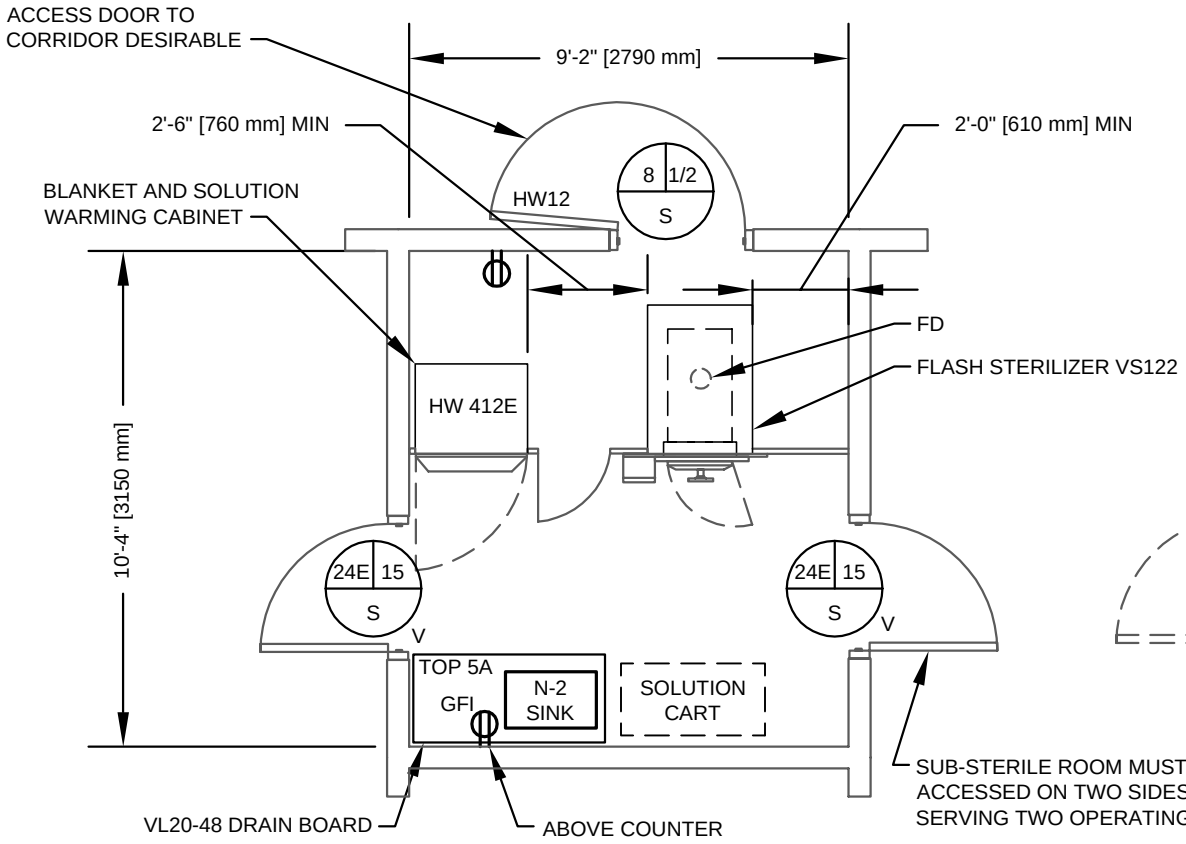
PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	-
Hot Water	YES	Medical Vacuum	-
Sanitary Drain	-	Oxygen	-
Acid Waste	YES	Nitrous Oxide	-
Silver Recovery	YES	Nitrogen	-
		Anesthesia Evac	-

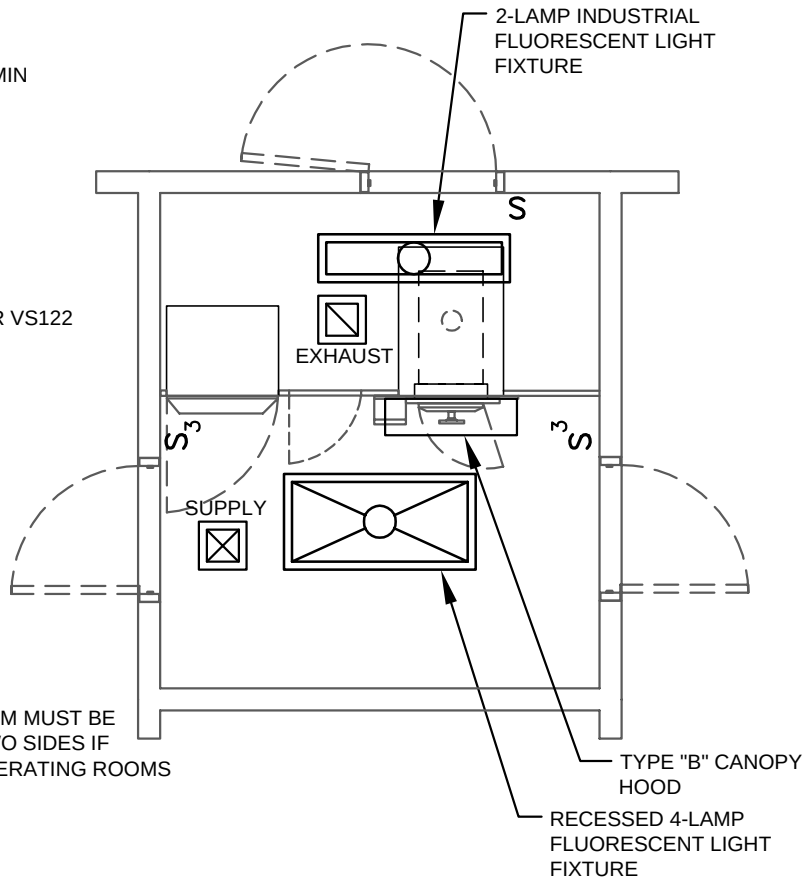
SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
	1	VC	PROCESSOR, FILM, AUTOMATIC, 90 SECOND PROCESSING CYCLE, THRU WALL	
	AR	VC	TANK, REPLENISHER, 25 GAL. CAPACITY AND CURBING, 2 FOR EACH PROCESSOR	
TOP 6/6A	1	CF	COUNTER TOP, HIGH PRESSURE PLASTIC LAMINATE, ACID RESISTANT COMPOSITION OVER PLYWOOD OR PARTICLE BOARD CORE, 1-1/4" (30 mm) THICK	12302
	AR	VV	BENCH, FILM LOADING AND STORAGE BINS	
	1	VV	ILLUMINATOR, X-RAY FILM, 120 VOLT, 150 WATTS, WALL MOUNTED, INDIVIDUAL SWITCH FOR THREE, 14" X 17" (355 mm X 430 mm) RADIOGRAPHS, 31"W X 20"H (790 mm X 510 mm)	
	1	CC	SAFELIGHT, WALL MOUNTED, SWITCH ON WALL	
	AR	CC	DOORS, LIGHTPROOF OR LIGHT LOCK DOOR IF SPECIFIED	11471
	1	CC	CASSETTE TRANSFER CABINET, THRU WALL	13091
	1	VV	DISPENSER, SOAP, LIQUID, WALL MOUNTED	
	1	VV	DISPENSER, BIFOLD PAPER TOWEL, SURFACE MOUNTED	
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP	16140
	1	CC	RECEPTACLE, ELECTRICAL, SINGLE	16140



Equipment and Utility Plan



Reflected Ceiling Plan

Design Guide - Surgical Service Department of Veterans Affairs	Sub-Sterile Room (Recessed Equipment) 95 NSF (8.8 NSM)	Equip, Utility and Refl Clg Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 5-6a Date: August 2005

ARCHITECTURAL

Floor Area	95 NSF (8.8 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD	Wainscot	-
Ceiling Height	AS REQUIRED	Base	6" (152 mm) INTEGRAL COVE BASE
Floor Load	-	Floor finish	WSF
Note: Refer to PG-18-1 and PG-18-6		Lead Lining	-

ELECTRICAL

Lighting		Power	
General	100 FC, 2.5 W/SF	General	180 WATTS
Special	-	Special	*
Emergency	ALL	Emergency	ALL

*(1) STERLIZER 600W CONTROL, (1) WARMER 1500W

TELECOMMUNICATIONS

Patient Monitor	-	Telephone	-
Nurse Call	-	Intercom	-
Code One	-	Public Addr.	-
CCTV	-	ADP	-
		Radio	-

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	2.5 W/SF
AC Load Equipment	3.0 W/SF+VS-122*
Number of People	1
Noise Criteria	NC-40
Room Pressure	POSITIVE**
Dry Bulb Temp Cooling Range	78° F (25° C)
Dry Bulb Temp Heating Range	72° F (22° C)
Minimum Air Changes per Hour	-
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	HOOD*
Steam	YES
Relative Humidity	50 %
Relative Humidity	30 %

*SEE TYPE "B" CANOPY HOOD OVER VS-122;
SEE PG-18-6, CADD DETAIL NO. 11710-2.DWG
FOR STEAM AND HEAT GAIN CAPACITIES.

**NEGATIVE PRESSURE IN EQUIPMENT ROOM.

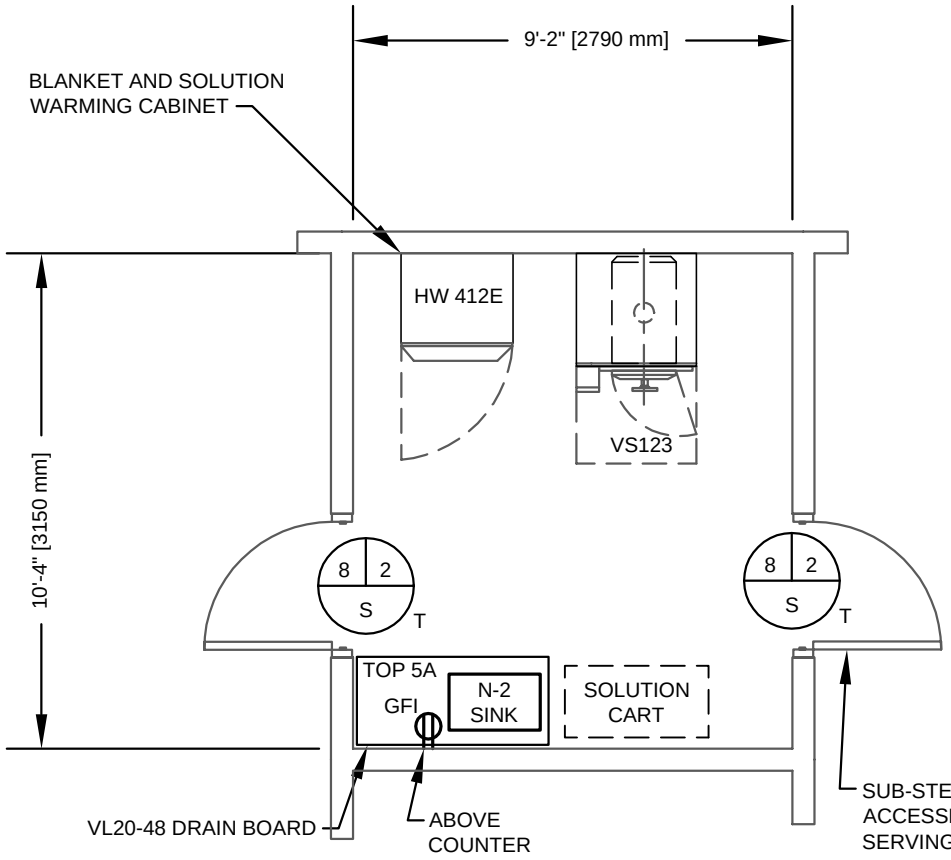
PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	-
Hot Water	YES	Medical Vacuum	-
Sanitary Drain	YES	Oxygen	-
Acid Waste	-	Nitrous Oxide	-
Silver Recovery	-	Nitrogen	-
		Anesthesia Evac	-

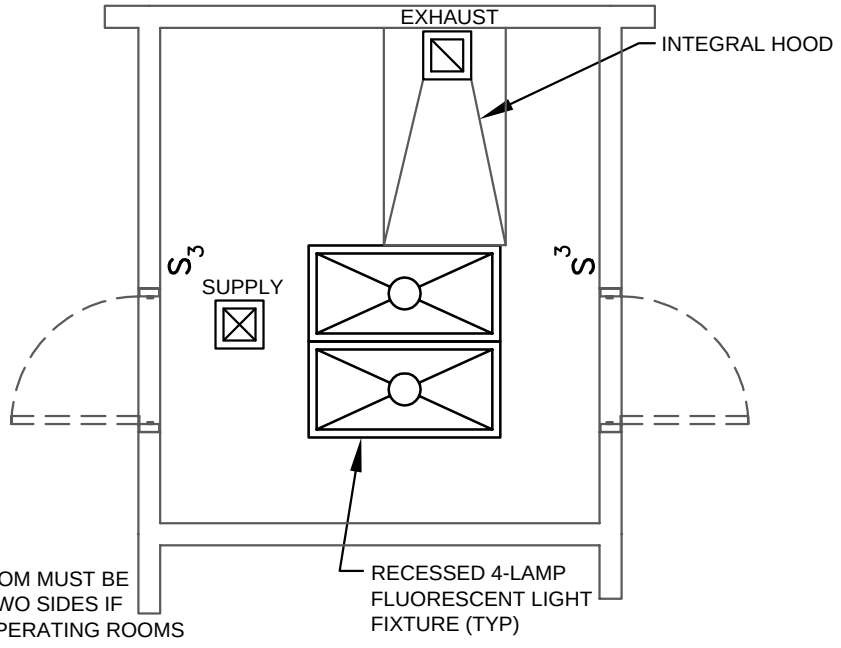
SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
VS-122	1	CC	STERILIZER, SINGLE DOOR, RECESSED THROUGH ONE WALL, CHAMBER SIZE: 16" X 16" X 26"/3.8 Cu. Ft., (405 mm X 665 mm / 0.11 m^3), PROVED STEAM, WATER, COMPRESSED AIR, DRAIN, ELECTRIC AND EXHAUST AS REQUIRED -OR-	11710
VS-123	1	CC	STERILIZER, SINGLE DOOR, CABINET ENCLOSED, CHAMBER SIZE: 16" X 16" X 26" / 3.8 Cu.Ft. (405 mm X 405 mm X 665 mm / 0.11m^3) PROVIDE STEAM, WATER, COMPRESSED AIR, DRAIN, ELECTRIC AND EXHAUST AS REQUIRED	11710
HW-412E	1	CC	CABINET, SOLUTION WARMING, TWO COMPARTMENTS, ELECTRICAL (SERVICE AS REQUIRED), RECESSED, 30" X 27" X 76" (760 mm X 685 mm X 1930 mm)	11710
	1	CC	DRAIN, FLOOR	15400
TOP 5A	1	CF	COUNTER TOP, CORROSION RESISTING STEEL, 1-1/4" (30 mm) THICK WITH INTEGRAL DOUBLE SINK, 26" X 23" X 11" DEEP (660 mm X 585 mm X 280 mm), EACH	12303
VL20/20A	1	CF	CABINET, UNDERCOUNTER, SINK UNIT, 2 HINGED PANEL DOORS, AVAILABLE WIDTHS 30" (760 mm), 36" (915 mm), 42" (1065 mm), 48" (1220 mm); DEPTH 22" (560 mm); HEIGHTS 31" (790 mm), 25" (635 mm), FOR FLOOR MOUNTED ADD 5" (130 mm) TOE BASE	12301
N-2	1	CF	SINK, CORROSION RESISTING STEEL, WITH END OR CORNER DRAIN OUTLET, 22" X 16" X 11" DEEP (560 mm X 405 mm X 280 mm)	12301
	1	VV	DISPENSER, PAPER TOWEL, SURFACE MOUNTED	
	1	VV	DISPENSER, SOAP, LIQUID, WALL MOUNTED	
	1	VV	CART, SOLUTION	
	1	VV	CLOCK, BATTERY OPERATED	
	1	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP, WITH GROUND FAULT INTERRUPTER	16140



Equipment and Utility Plan



Reflected Ceiling Plan

Design Guide - Surgical Service Department of Veterans Affairs	Sub-Sterile Room (Cabinet Enclosed Equipment) 95 NSF (8.8 NSM)	Equip, Utility and Refl Clg Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 5-7a Date: August 2005

ARCHITECTURAL

Floor Area	95 NSF (8.8 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD	Wainscot	-
Ceiling Height	AS REQUIRED	Base	WSF
Floor Load	-	Floor finish	6" (152 mm) INTEGRAL COVE BASE
		Lead Lining	-

Note:
Refer to PG-18-1 and PG-18-6

ELECTRICAL

Lighting		Power	
General	150 FC, 4.5 W/SF	General	180 WATTS
Special	-	Special	*
Emergency	ALL	Emergency	ALL

Note:

*(1) STERLIZER 600W CONTROL, (1) WARMER 1500W

TELECOMMUNICATIONS

Patient Monitor	-	Telephone	-
Nurse Call	-	Intercom	-
Code One	-	Public Addr.	-
CCTV	-	ADP	-
		Radio	-

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	4.0 W/SF
AC Load Equipment	1.9 W/SF+VS-123*
Number of People	1
Noise Criteria	NC-40
Room Pressure	NEGATIVE
Dry Bulb Temp Cooling Range	78° F (25° C)
Dry Bulb Temp Heating Range	72° F (22° C)
Minimum Air Changes per Hour	-
Minimum% Outside Air	100
100% Exhaust Air	YES
Special Exhaust	VS-123 HOOD*
Steam	YES
Relative Humidity	50 %
Relative Humidity	30 %

Notes:
*INTEGRAL CANOPY HOOD; SEE PG-18-6 CADD DETAIL NO. 11710-1.DWG. FOR STEAM HEAT GAIN.

PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	-
Hot Water	YES	Medical Vacuum	-
Sanitary Drain	YES	Oxygen	-
Acid Waste	-	-	-
Silver Recovery	-	Nitrous Oxide	-
		Nitrogen	-
		Anesthesia Evac	-

SPECIAL EQUIPMENT

None

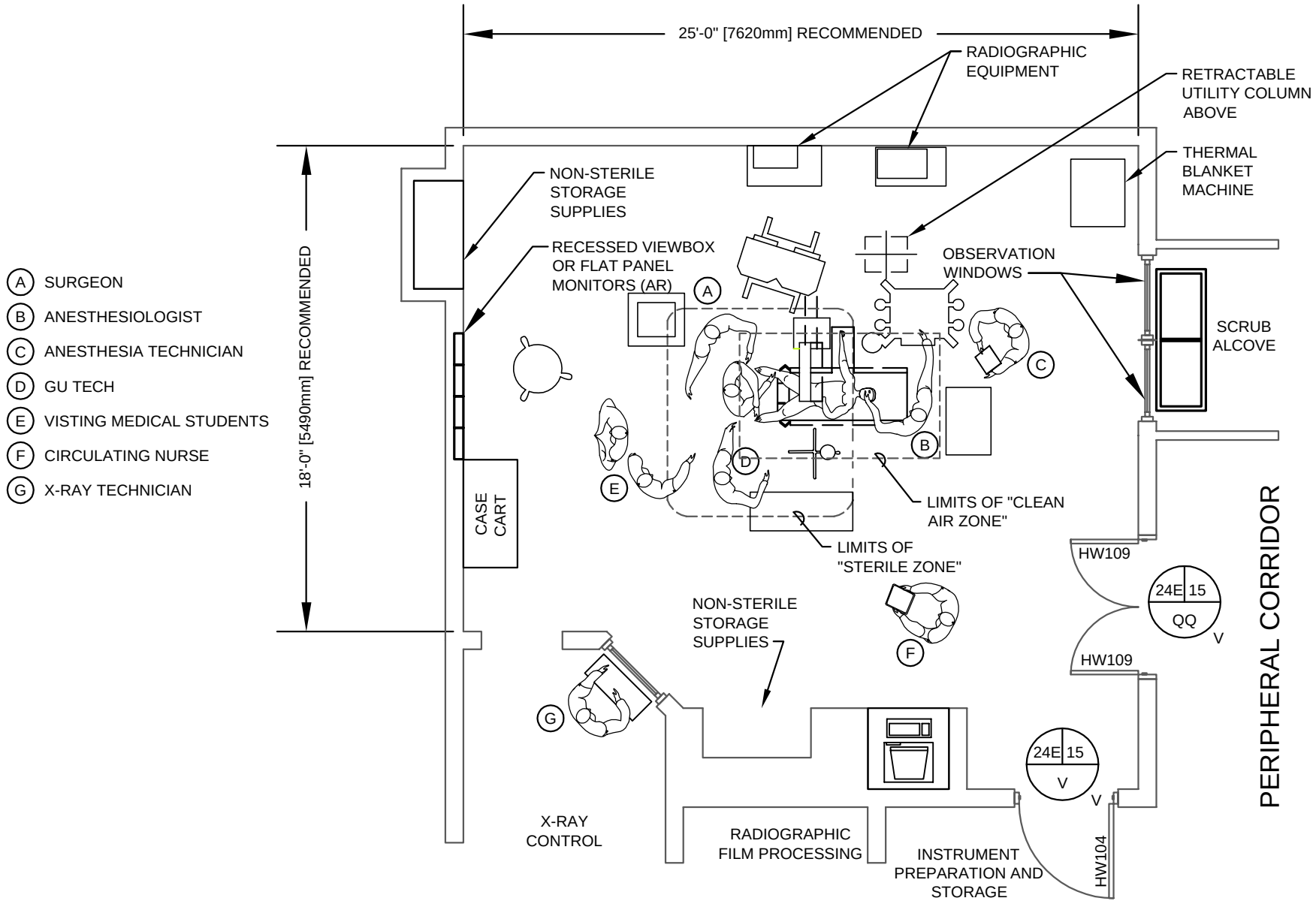
SYMBOL	QTY	AI	DESCRIPTION	MCS
VS-122	1	CC	STERILIZER, SINGLE DOOR, RECESSED THROUGH ONE WALL, CHAMBER SIZE: 16" X 16" X 26"/3.8 Cu. Ft., (405 mm X 665 mm / 0.11 m^3), PROVED STEAM, WATER, COMPRESSED AIR, DRAIN, ELECTRIC AND EXHAUST AS REQUIRED -OR-	11710
VS-123	1	CC	STERILIZER, SINGLE DOOR, CABINET ENCLOSED, CHAMBER SIZE: 16" X 16" X 26" / 3.8 Cu.Ft. (405 mm X 405 mm X 665 mm / 0.11 m^3) PROVIDE STEAM, WATER, COMPRESSED AIR, DRAIN, ELECTRIC AND EXHAUST AS REQUIRED	11710
HW-412E	1	CC	CABINET, SOLUTION WARMING, TWO COMPARTMENTS, ELECTRICAL (SERVICE AS REQUIRED), RECESSED, 30" X 27" X 76" (760 mm X 685 mm X 1930 mm)	11710
	1	CC	DRAIN, FLOOR	15400
TOP 5A	1	CF	COUNTER TOP, CORROSION RESISTING STEEL, 1-1/4" (30 mm) THICK WITH INTEGRAL DOUBLE SINK, 26" X 23" X 11" DEEP (660 mm X 585 mm X 280 mm), EACH	12303
VL20/20A	1	CF	CABINET, UNDERCOUNTER, SINK UNIT, 2 HINGED PANEL DOORS, AVAILABLE WIDTHS 30" (760 mm), 36" (915 mm), 42" (1065 mm), 48" (1220 mm); DEPTH 22" (560 mm); HEIGHTS 31" (790 mm), 25" (635 mm), FOR FLOOR MOUNTED ADD 5" (130 mm) TOE BASE	12301
N-2	1	CF	SINK, CORROSION RESISTING STEEL, WITH END OR CORNER DRAIN OUTLET, 22" X 16" X 11" DEEP (560 mm X 405 mm X 280 mm)	12301
	1	VV	DISPENSER, PAPER TOWEL, SURFACE MOUNTED	
	1	VV	DISPENSER, SOAP, LIQUID, WALL MOUNTED	
	1	VV	CART, SOLUTION	
	1	VV	CLOCK, BATTERY OPERATED	
	1	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP, WITH GROUND FAULT INTERRUPTER	16140

Section 6

Design Guide Plates and Data Sheets Cystoscopy Rooms

Guide Plates

Cystoscopy Room



Design Guide - Surgical Service Department of Veterans Affairs	Cystoscopy Room 450 NSF (41.85 NSM)	Ergonomic Plan 1 0 1 2 4 (METERS) (FEET) Scale: 3/16"=1'- 0"	Guide Plate: 6-1a Date: August 2005

Notes:

1. The surgical light fixtures are to be (CC) unless the VAMC chooses to select a specific surgical light fixture during the development of construction documents. If the VAMC chooses the fixtures, they may be either (CC), (CF), or (VC). All coordination involving structural support, utility connections, and other details regarding these lights are the responsibility of the A/E.

Nominal thickness of walls during design development should be shown as 8 inches (203 mm) thick by the A/E. This requirement is based upon the need to accommodate a variety of panel boards, return air ducts, and miscellaneous elements of construction that require a thicker partition than in other areas of a hospital building. Partitions other than the cystoscopy room enclosure should be shown nominally as 6 inches (152 mm) during design development by the A/E unless some special requirement dictates otherwise.

3. Provide x-ray shielding (see CAD Detail 13091-1.DWG) consisting of a lead membrane in the partitions; lead lined doors; and leaded glass observation windows. The exact location of that membrane and details related to it are the A/E's responsibility.

4. An automatic door opener is to be provided in the corridor at the doors between the cystoscopy room and the peripheral corridor. A wall-mounted type of automatic door opener with a push-plate is preferred.

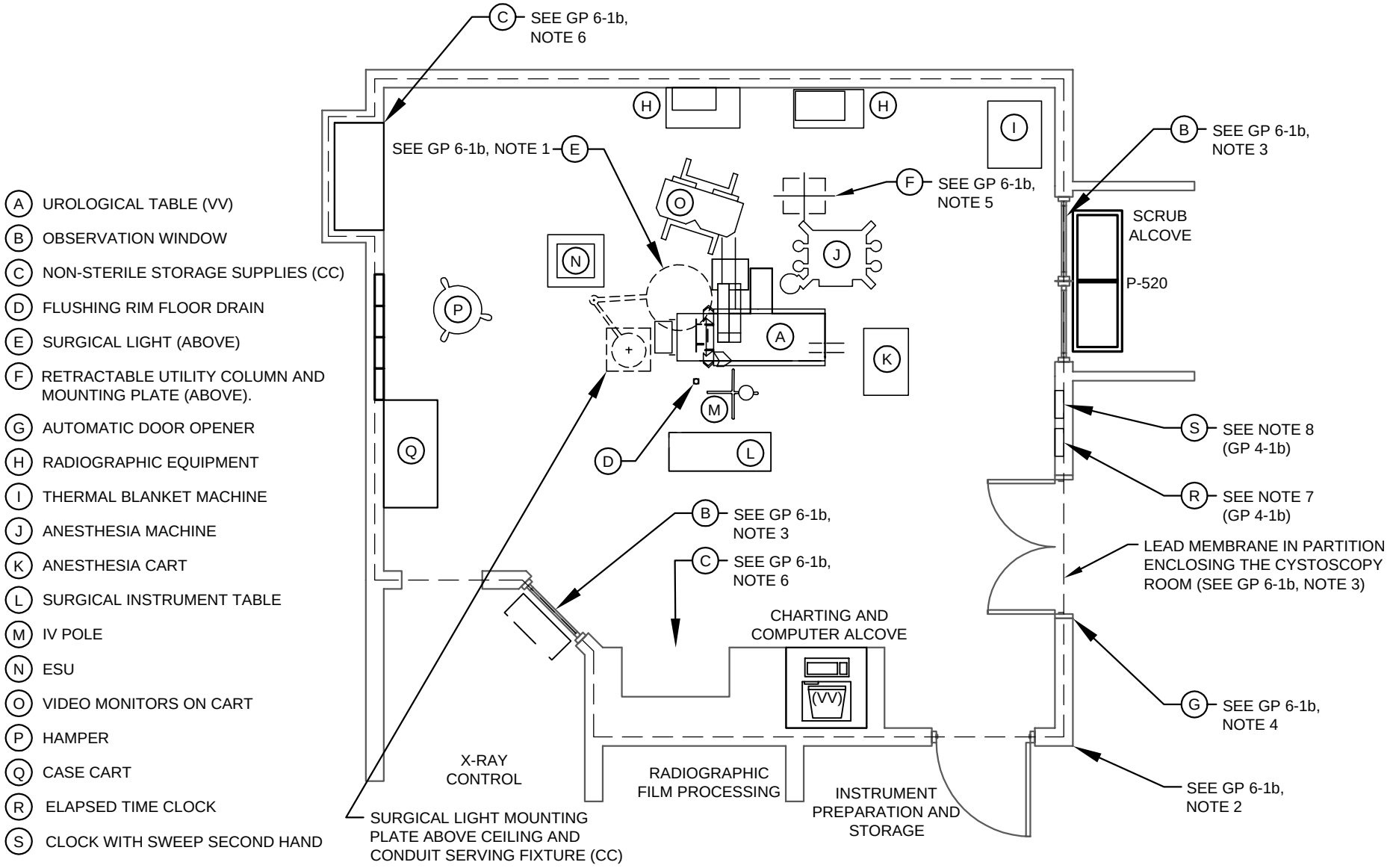
5. The ceiling mounted utility column may be one of two types: articulating, or retractable (telescoping) (as indicated on this guide plate series). (See guide plates series General Operating Room for a graphic representation of an articulating utility column used in a General Operating Room.) The VAMC must decide which type of utility column to use during the design development phase of the project. If a choice is made at this point, the utility columns may be (VV), (CF) or (CC). If the VAMC declines to make a timely decision, then the utility columns will be (CC). Coordination involving structural support, utility connections, and other details is the responsibility of the designer.

6. Modular Equipment - The VAMC has the option of choosing modular equipment in lieu of built-in casework. However, this decision must be made during the design development phase of the procurement. If wall-mounted modular casework is selected by the VAMC, the A/E must design the partitions to support the casework. It should be noted that the standard studs found in the master specifications are insufficient to carry this added weight; therefore, the equipment manufacturer's recommendations for supporting partitions should be followed where appropriate.

7. Elapsed Time Clock: Flush Mounted Clock above, with wall mounted accessible controls below. For more information regarding clocks in the operating room see MCS, Division 16, Electrical. (CC)

8. Clock With Sweep Second Hand: Flush mounted clock above, with wall mounted accessible controls below. For more information regarding clocks in the operating room see MCS, Division 16, Electrical. (CC)

9. See Chapter 286 of the Equipment Guide List for additional equipment not shown.



- A UROLOGICAL TABLE (VV)
- B OBSERVATION WINDOW
- C NON-STERILE STORAGE SUPPLIES (CC)
- D FLUSHING RIM FLOOR DRAIN
- E SURGICAL LIGHT (ABOVE)
- F RETRACTABLE UTILITY COLUMN AND MOUNTING PLATE (ABOVE).
- G AUTOMATIC DOOR OPENER
- H RADIOGRAPHIC EQUIPMENT
- I THERMAL BLANKET MACHINE
- J ANESTHESIA MACHINE
- K ANESTHESIA CART
- L SURGICAL INSTRUMENT TABLE
- M IV POLE
- N ESU
- O VIDEO MONITORS ON CART
- P HAMPER
- Q CASE CART
- R ELAPSED TIME CLOCK
- S CLOCK WITH SWEEP SECOND HAND

Design Guide - Surgical Service Department of Veterans Affairs	Cystoscopy Room 450 NSF (41.85 NSM)	Equipment Plan 1 0 1 2 4 (METERS) (FEET) Scale: 3/16"=1'- 0"	Guide Plate: 6-1c Date: August 2005

General Notes:

Exhaust Air Grilles - Provide a minimum of two exhaust air grilles in this operating room. If only two grilles are provided, locate them opposite from each other. Where there are more than two exhaust grilles, locate them at the corner of the operating room. The bottom of each exhaust air grille is to be seven inches above the finished floor. See HVAC Design Manual for Hospital Projects, PG-18-10, for additional information.

Electrical Power Module - Provide single/ separate power module near the center of each wall of the operating room. Each power module is to have 3 power receptacles. These power receptacles are to be located 18 inches above the finished floor. Provide 4 power receptacles in one utility column. See Electrical Design Manual for Hospital Projects, PG-18-10, for additional information.

Retractable Utility Column: Provide connections on utility column as delineated in Chapter 286, Equipment Guide List, PG-7610. Provide data/ communication connections at each column.

HVAC Controllers - Provide one of the two following systems for controlling room temperature and humidity in the design of the mechanical system. The first system is indicated on the utility plan below. It involves locating a thermostat, a humidistat, and a recorder in the operating room. The second system involves temperature and humidity sensors located in the operating room with a recorder located remotely. See HVAC Design Manual for Hospital Projects, PG-18-10 and MCS, Division 15 Mechanical, for additional information.

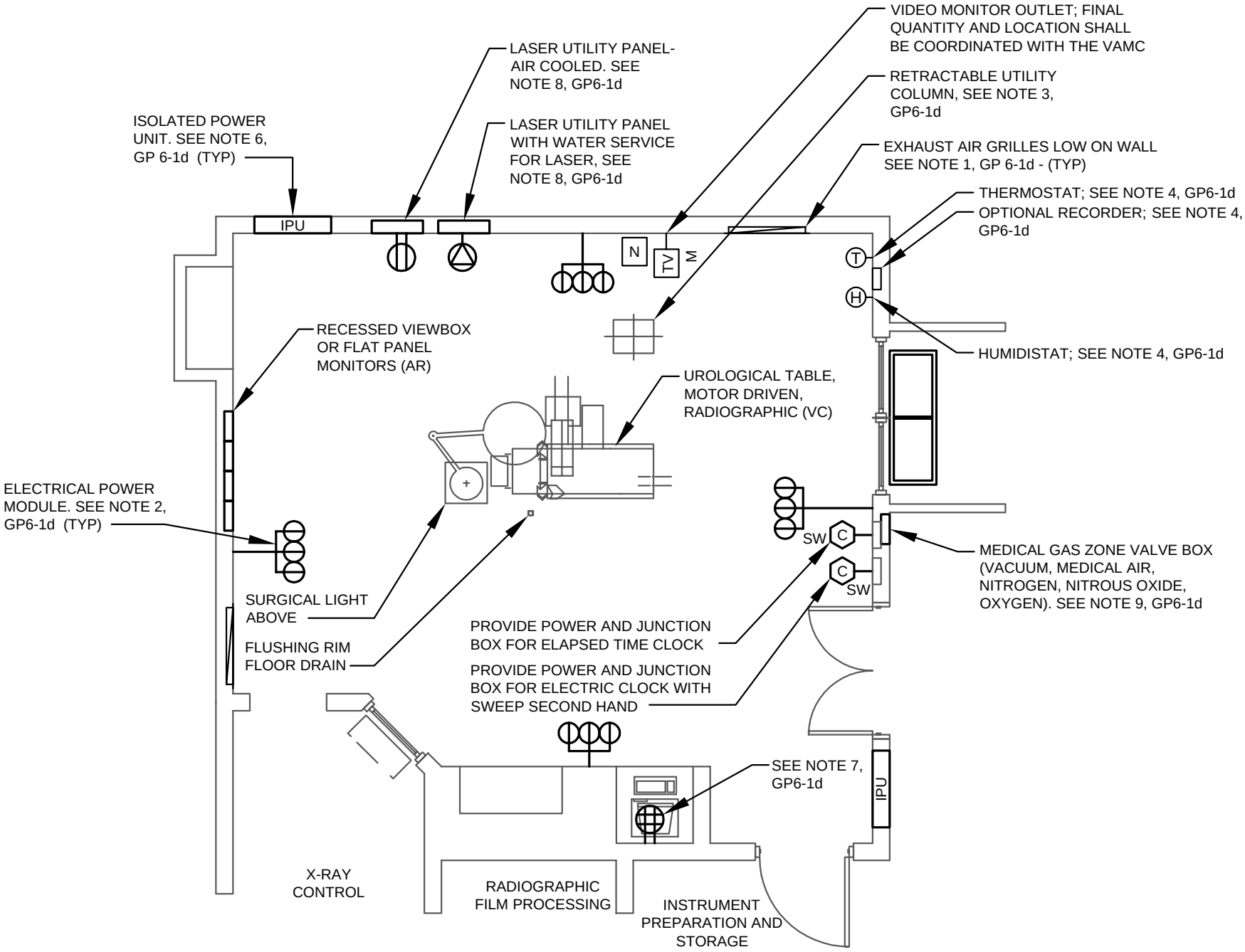
Nitrogen Control Panel - For information regarding this panel see NFPA 99, and Master Specifications, Section 15491.

Isolated Power Unit - Each of the isolated power units is to serve two adjacent walls. For this reason the units are to be located near the corners of the room and diagonally opposite from each other. See Electrical Design Manual for Hospital Projects, PG-18-10, for more information regarding isolated power.

Computer terminal - Utility requirements for the in-room computer terminal are to be determined by the VAMC based upon the computer system to be used. This information is to be given to the A/E for incorporation into the construction documents. The printer for the in-room computer terminals is to be located remotely.

Laser Panel - It is understood that air-cooled lasers are soon to replace water cooled lasers. For this reason, the future impact of air cooled lasers on the design of the HVAC system must be considered by the designer. In spite of this anticipated change, it is the policy of the VHA program official that water service is to be provided in any operating rooms where existing water cooled lasers are to be continued in use.

Zone Valve Box - A separate zone valve box is to be provided for each operating room (anesthetizing location) in accordance with NFPA 99. This cabinet is to be located in the semi-restricted corridor near the door to the operating room it serves. See MCS, Division 15 Mechanical for a description.



Design Guide - Surgical Service

Department of Veterans Affairs

Cystoscopy Room

450 NSF (41.85 NSM)

Utility Plan

1 0 1 2 4

(METERS) (FEET)

Scale: 3/16"=1'- 0"

Guide Plate:

6-1e

Date: August 2005

1. General Notes:

2. Supply Air Outlet - Perforated stainless steel panel centered over operating table with no obstructions. A/E is to design it. (Do not scale.) This outlet is to provide 30 percent of supply air for the operating room. Air distribution is to be in a downward vertical direction. See HVAC Design Manual for Hospital Projects, PG-18-10.

3. Supply Air Outlets - Stainless steel multiple slot panel diffusers to be located above the perimeter of the "clean air zone". (See Functional Plan.) A/E is to design them. (Do not scale.) These outlets are to provide 70 percent of supply air for the operating room. This air is to be discharged in a vertical air stream inclined at an outward angle of fifteen degrees from the center of the room. See HVAC Design Manual for Hospital Projects, PG-18-10.

4. Mounting Plate for Utility Column - (Do not scale.) Size of mounting plate varies with manufacturer. Exact type, size, type, and location are to be determined by the A/E in coordination with the VAMC and Central Office program officials.

5. Surgical Light Fixture - Note that the location of the mounting plate is not to be placed directly over the operating table. That zone must be kept unobstructed for the supply air outlet and the plenum serving it above the ceiling. See Electrical Design Manual for Hospital Projects, PG-18-10.

6. Surgical Microscope - If VAMC chooses a ceiling-mounted microscope in lieu of a floor-mounted microscope, it must be supported by a fixed mounting plate. A ceiling track-mounted system is not to be used for the microscope due to concerns regarding asepsis. The exact size of the mounting plate depends upon the microscope selection. (Do not scale the guideplate.) Coordinate details and utilities requirements with the VAMC.

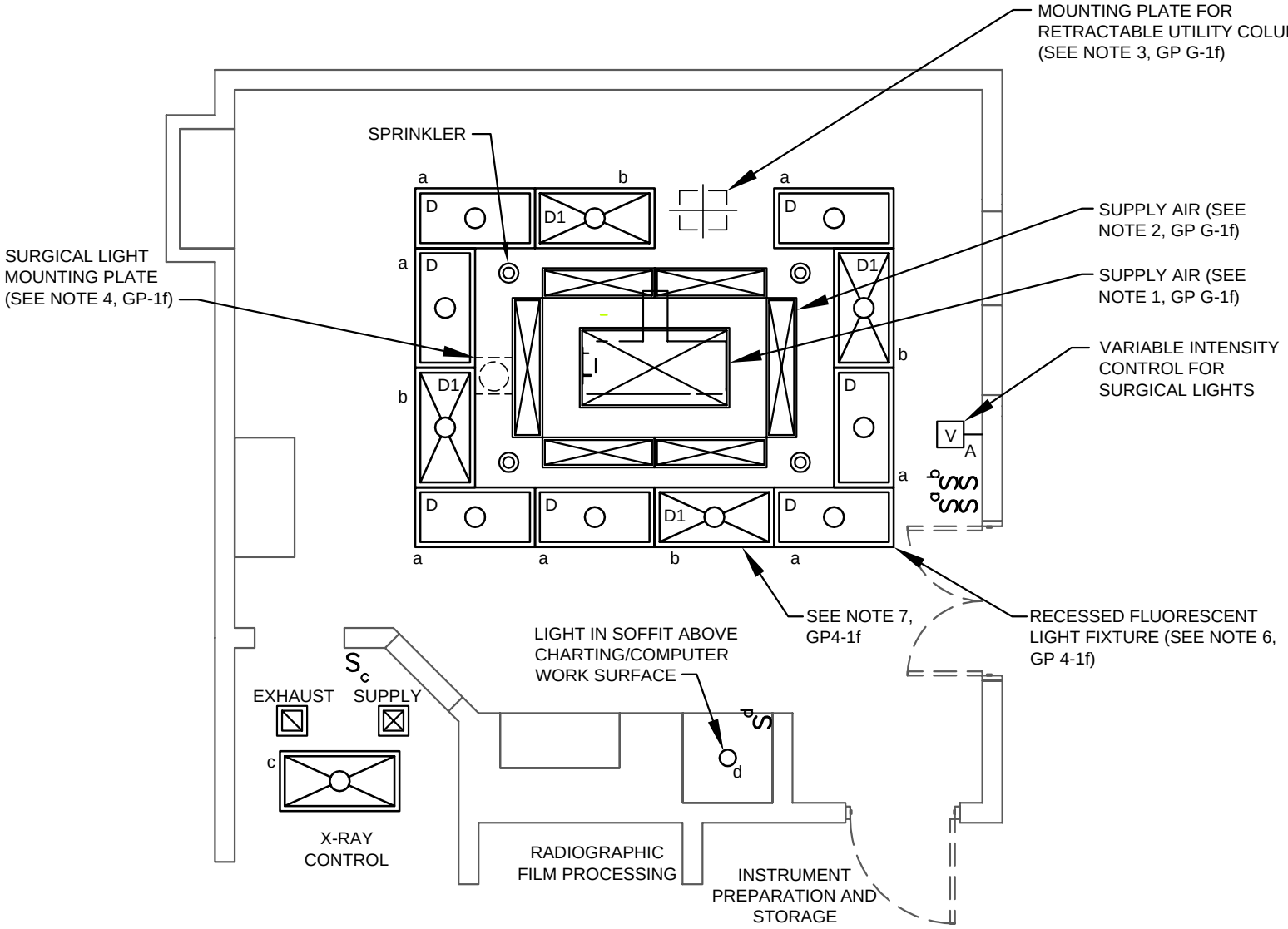
7. Fluorescent Light Fixtures - General illumination. Only 2 x 4 recessed fixtures are to be used in the operating room because this size of fixture (with 6 lamps - Type D) is required in order to deliver enough ambient illumination while also producing color corrected light in the operating room. The design is not to include 1 x 4 fluorescent fixtures.

8. General Illumination on Emergency Power - 50 percent of the fluorescent light fixtures above the operating table are to be provided emergency power with battery backup (Type D1). The fluorescent fixtures above the head of the patient (where the nurse anesthetist administers anesthesia and monitors the patient's vital signs) are to be provided emergency power.

9. Video Monitors (A proposal to be considered by the VAMC and the A/E) - Is to provide a fiber-optic connection (enclosed in conduit) from the video monitors in the operating room to the microscope in the frozen section area of the clinical laboratory. This would permit the surgical team in the operating room to see what the pathologist is talking about over the intercom while examining the biopsy specimen. This installation would reduce the need for anatomical pathologist to leave a contaminated area. Also, the surgical team would not have to wait for the pathologist to clean up, gown, and come to the operating suite to examine the tissue specimen.

10. Sprinkler System - Coordinate the location of the sprinklers with other ceiling systems in accordance with MCS, Division 15 Mechanical and Plumbing Design Manual, Medical Centers for Hospital Projects.

Provide no ceiling tracks for intravenous solutions in the design. This restriction is based upon concerns for asepsis in the operating room.



Design Guide - Surgical Service Department of Veterans Affairs	Cystoscopy Room 450 NSF (41.85 NSM)	Reflected Ceiling Plan 1 0 1 2 4 (METERS) (FEET) Scale: 3/16"=1'- 0"	Guide Plate: 6-1g Date: August 2005

ARCHITECTURAL

Floor Area	450 NSF (41.85 NSM)	Wall Finish	GYP. BOARD (SC)
Ceiling	GYP. BOARD	Wainscot	ACROVYN ON CBB
Ceiling Height	10'-0"* (3.0 METERS)	Base	6" (152 mm) INTEGRAL COVE BASE
Floor Load	100 PSF	Floor finish	WSF
		Lead Lining	AS REQUIRED

Note:
Refer to PG-18-1 and PG-18-6

*ADD 8" ACCESSIBLE SPACE ABV CLG FOR MICROSCOPE OR 10'-2" (3.05 METERS)

ELECTRICAL

Lighting

General	200 FC, 6.0 W/SF*
Special	SURGICAL LIGHT**
Emergency	(4) FIXTURES***
Notes:	

Power

General	(1) MODULE EA WALL (1) MODULE EA COLUMN
Special	****
Emergency	*****

*COLOR IMPROVED FLUOR LAMPS MATCHING COLOR TEMPERATURE OF SURGICAL LIGHT
**(1) TYPE A, 1000 W
***BATTERY BACKUP IN (4) FLUOR FIXTURES
****(2) 5 KVA 10-CIRCUIT IPU
*****EACH IPU & X-RAY UNIT, (1) FILM PROCESSOR PER SUITE

TELECOMMUNICATIONS

Patient Monitor	YES	Data	WALL TERMINAL @ EACH UTILITY COLUMN
Nurse Call	-	Telephone	WALL MTD HAND FREE @ EACH UTILITY COLUMN
Code One	-	Intercom	COMB. W/TELEPHONE
CCTV	EMPTY CONDUIT	Public Addr.	EMPTY CONDUIT
		ADP	EMPTY CONDUIT
		Radio	EMPTY CONDUIT

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	8.5 W/SF
AC Load Equipment	16.0 W/SF
Number of People	12
Noise Criteria	NC-40
Room Pressure	POSITIVE
Dry Bulb Temp Cooling Range	62° - 80°F (17° - 27°C)
Dry Bulb Temp Heating Range	62° - 80°F (17° - 27°C)
Minimum Air Changes per Hour	15 OCC/8 UNOCC
Minimum% Outside Air	100
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity	45-55 %
Relative Humidity	45-55 %

PLUMBING AND MEDICAL GASES

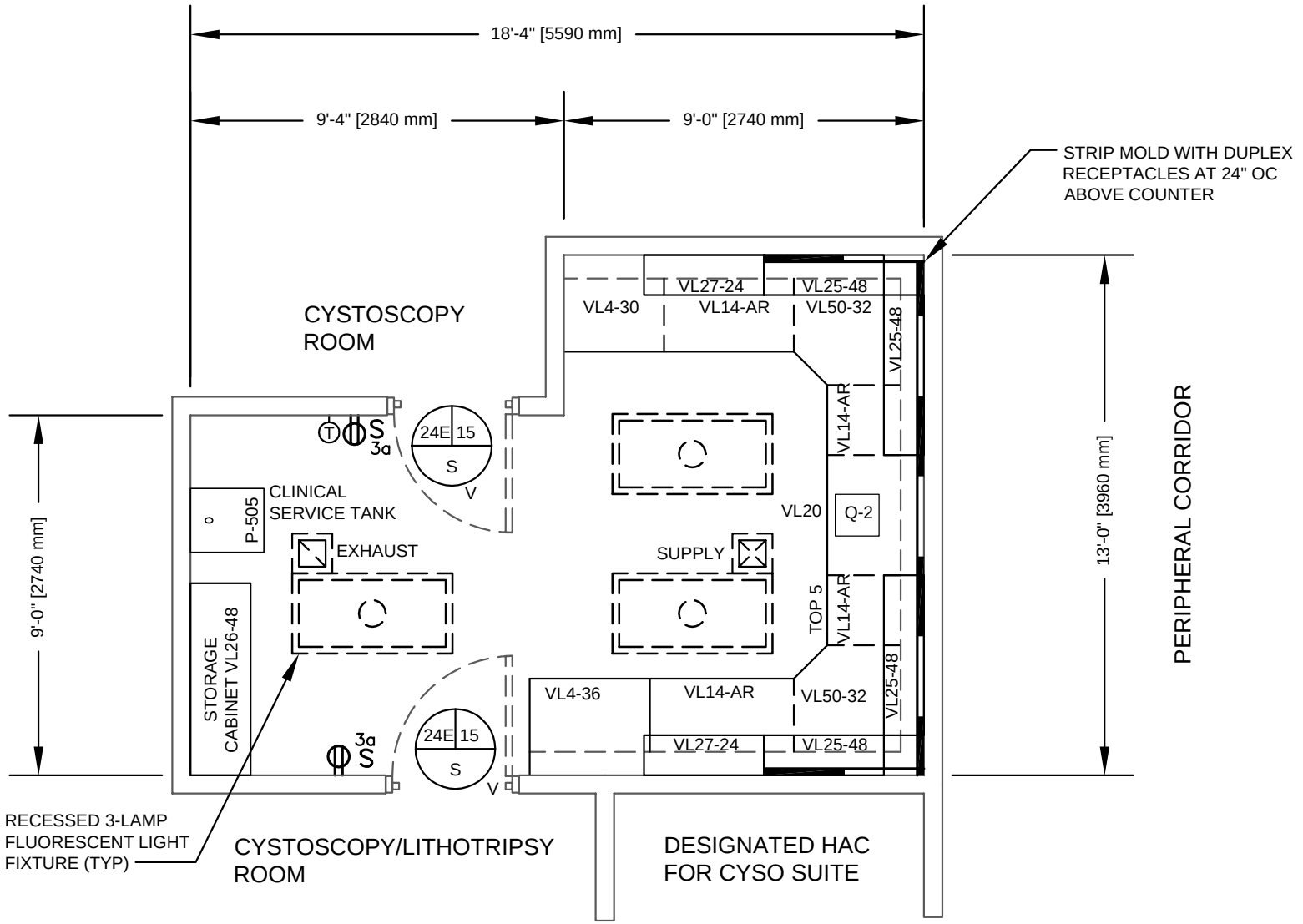
Cold Water	YES	Medical Air	YES
Hot Water	FLUSHING RIM FLR. DRAIN	Medical Vacuum	YES
		Oxygen	YES
		-	-
Sanitary Drain	YES	Nitrous Oxide	YES
Acid Waste	-	Nitrogen	YES
Silver Recovery	-	Anesthesia Evac	YES

SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
	1	VV	TABLE, UROLOGICAL, RADIOGRAPHIC, MOTOR DRIVEN, WITH X-RAY TUBE SUPPORT	
	1	CC	FLOOR DRAIN, AUTOMATIC FLUSHING TYPE (PG-18-4 CAD DETAIL 15400-1.DWG)	15400
	4	CC	RECEPTACLE MODULES; ONE MODULE ON EACH WALL, EACH MODULE SHALL CONSIST OF THREE SINGLE, 120V, 20A HOSPITAL GRADE TYPE RECEPTACLES	16140
	1	VV	RADIOGRAPHIC TUBE AND HIGH VOLTAGE CABLES, 500 MA, SINGLE PHASE	
	AR	CC	SERVICES, ELECTRICAL, SPECIAL AS REQUIRED FOR THE ABOVE EQUIPMENT	
	4	CC	ILLUMINATOR, FILM, X-RAY, RECESSED, 120 VOLT, 20 AMP, 14" X 17" (355 mm X 430 mm) (INSTALLATION NOT TO BE COMBINED WITH IPU'S OR OTHER ELECTRICAL DEVICES)	16510
	1	CF	LIGHT, MAJOR, SURGICAL WITH VARIABLE INTENSITY CONTROL, SINGLE POINT SUSPENSION, CEILING MOUNTED	16515
	AR	CC	ILLUMINATION, GENERAL, RECESSED, WITH THREE LEVEL CONTROL	16510
	1	CC	NURSE CALL, EMERGENCY STATION, ACTIVATED BY PUSH BUTTON ON WALL, WITH CORRIDOR SIGNAL LIGHT	16761
	1	CC	COLUMN, TELESCOPING UTILITY, CEILING MOUNTED, LOCATED AT HEAD OF TABLE 48" (1220 mm) TO 72" (1830 mm) FROM THE CENTERLINE AND 24" (610 mm) TO 48" (1220 mm) TO THE LEFT OF THE CENTERLINE OF THE TABLE COLUMN CONTAINS THE FOLLOWING:	15491
	AR		2 INLETS, MEDICAL VACUUM	15491
	AR		1 OUTLET, NITROUS OXIDE	15491
	AR		2 OUTLETS, OXYGEN (PG-18-1)	15491
	AR		1 OUTLET, MEDICAL AIR	15491
	AR		1 OUTLET, NITROGEN	15491
			1 INLET, DEDICATED ANESTHESIA GAS EVACUATION	15491
			1 INLET, MASS ATOMIC SPECTROMETER (BLANK OUTLET)	
			DATA CONNECTION TELECOMMUNICATIONS CONNECTION	
			4 SINGLE, 120V, 20 AMP HOSPITAL GRADE TYPE RECEPTACLES	16140

SYMBOL	QTY	AI	DESCRIPTION	MCS
	2	CC	ISOLATED POWER UNIT PROVIDES ISOLATED ELECTRICAL POWER, INCLUDES LINE ISOLATION MONITOR, ISOLATION TRANSFORMER AND CIRCUIT BREAKERS	
	1	CC	CLOCK, ELECTRIC TIME ELAPSED, RECESSED	16665
	1	CC	CLOCK, ELECTRIC WITH SWEEP SECOND HAND, RECESSED	16665
	AR	CC	OUTLET, ELECTRICAL, 120 VOLT, 20 AMP, RECESSED FOR CLOCK	
	AR	VV	MONITOR, VIDEO	
T-14 AR		CC	CABINET, STORAGE, STAINLESS STEEL, WITH SLOPING TOP, 2 HINGED PANEL DOORS, LOCK AND 5 ADJUSTABLE SHELVES, 48"W X 22"D X 84"H (1220 mm X 560 mm X 2135 mm)	12301
	1	VV	CRT, COMPUTER SYSTEM, WITH KEYBOARD	
	1	CC	RECEPTACLE, ELECTRICAL, QUADRUPLEX, FOR COMPUTER EQUIPMENT ITEMS	16140
	AR	VV	KICKBUCKETS	
	AR	VV	STOOL, SURGICAL	
	1	VV	TABLE, SURGICAL INSTRUMENT	
	AR	VV	CART, CASE	
	AR	CC	INTERCOM, STATION	16760
	AR	CC	OUTLET, INTERCOM (EMPTY CONDUIT SYSTEM)	16111
	AR	VV	UNIT, ELECTROCAUTERY	
	AR	VV	UNIT, HYPER/HYPOTHERMIA	
	AR	VV	HAMPER, SOILED LINEN, WITH HINGED SELF CLOSING TOP, 20" (510 mm) DIA.	
	AR	VV	CART, EMERGENCY, "CRASH CART" APPROX. 36"W X 21"D (915 mm X 535 mm)	
	AR	VV	MACHINE, ANESTHESIA, PORTABLE	
	AR	VV	CART, ANESTHESIA EQUIPMENT	
	AR	VV	STAND, IV, MOBILE	
	AR	VV	MACHINE, SUCTION	



Design Guide - Surgical Service Department of Veterans Affairs	Instrument Preparation and Storage Room 200 NSF (18.6 NSM)	Equip, Utility and Refl Clg Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 6-2a Date: August 2005

ARCHITECTURAL

Floor Area	200 NSF (18.6 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD(SC)	Wainscot	-
Ceiling Height	9'-0" (2.75 METERS)	Base	6" (152 mm) INTEGRAL COVE BASE
Floor Load	100 PSF	Floor finish	WSF
		Lead Lining	-

Note:
Refer to PG-18-1 and PG-18-6

ELECTRICAL

Lighting		Power	
General	30 FC, 1.5 W/SF	General	1980 W
Special	-	Special	*
Emergency	-	Emergency	-

*(1) STRIP MOLD WITH DUPLEX RECEPTACLES 24" OC ABOVE COUNTER

TELECOMMUNICATIONS

Patient Monitor	-	Telephone	YES
Nurse Call	-	Intercom	-
Code One	-	Public Address	-
CCTV	-	ADP	-
		Radio	-

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	1.5 W/SF
AC Load Equipment	2.5 W/SF
Number of People	2
Noise Criteria	NC-40
Room Pressure	POSITIVE
Dry Bulb Temp Cooling Range	78°F (25°C)
Dry Bulb Temp Heating Range	72°F (22°C)
Minimum Air Changes per Hour	8(SA)
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity	50 %
Relative Humidity	30 %

PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	-
Hot Water	YES	Medical Vacuum	-
Sanitary Drain	YES	Oxygen	-
Acid Waste	-	Nitrous Oxide	-
Silver Recovery	-	Nitrogen	-
		Anesthesia Evac	-

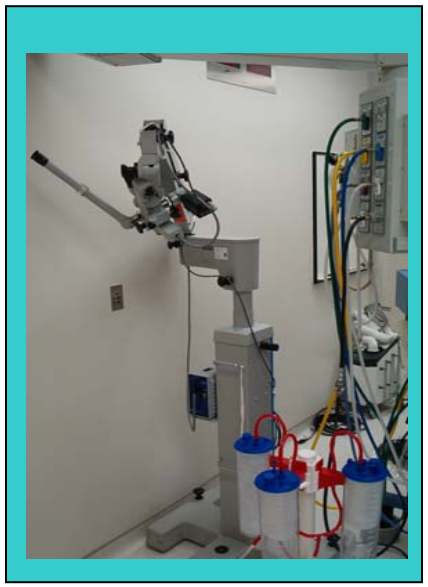
SPECIAL EQUIPMENT

None

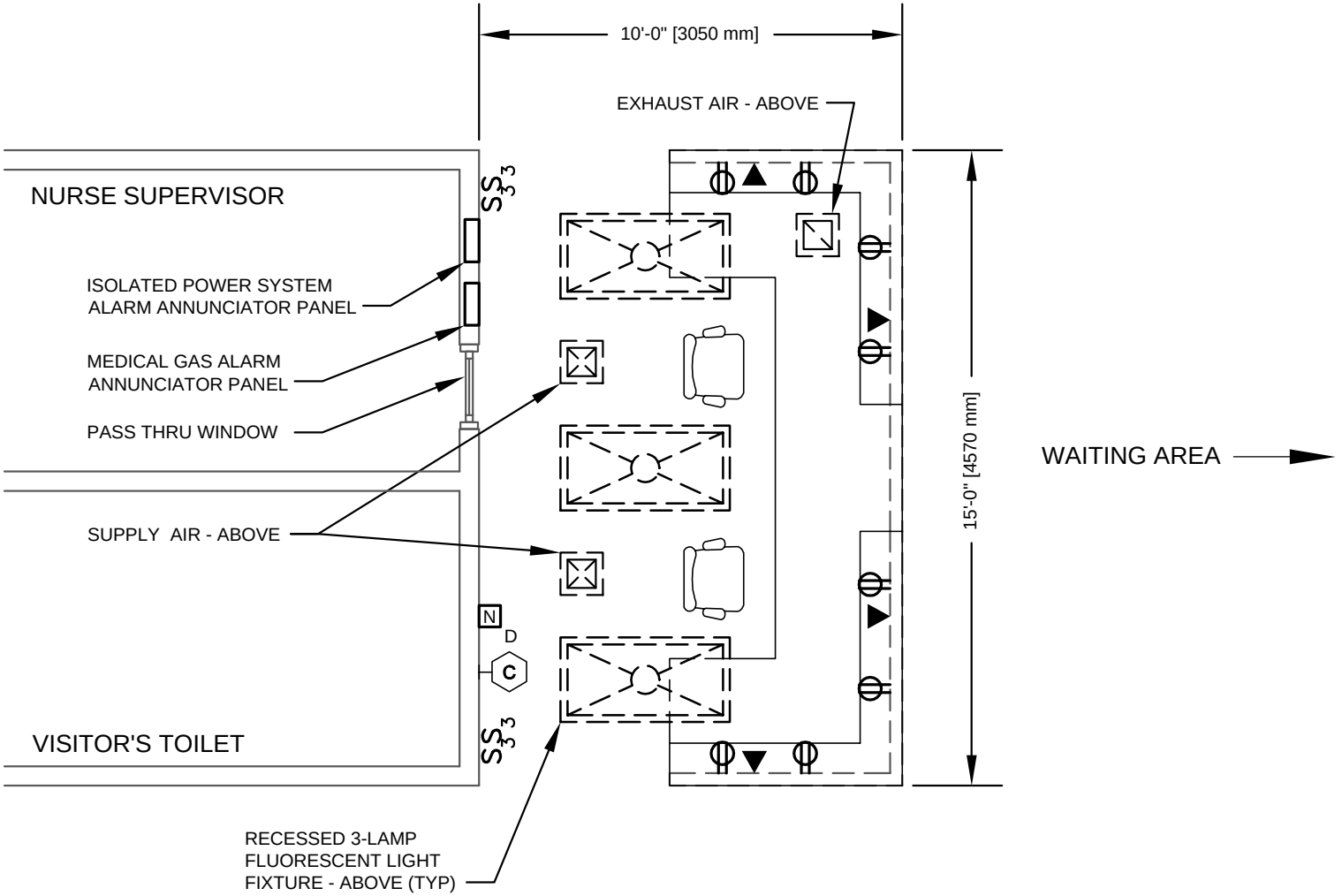
SYMBOL	QTY	AI	DESCRIPTION	MCS
VS-122	1	CC	STERILIZER, SINGLE DOOR, RECESSED THROUGH ONE WALL, (CHAMBER SIZE: 16" X 16" X 26"/3.8 Cu. Ft.), (405 mm X 405 mm X 660 mm / 0.11 m^3) PROVIDE STEAM, WATER COMPRESSED AIR, DRAIN, ELECTRIC AND EXHAUST AS REQUIRED	11710
TOP 5	AR	CF	COUNTER TOP, CORROSION RESISTING (STAINLESS) STEEL, RAISED RIM, WITH INTEGRAL SINK AND SPLASHBACKS	12303
VL20/20A	AR	CF	CABINET, UNDERCOUNTER, SINK UNIT, 2 HINGED PANEL DOORS, AVAILABLE WIDTHS 30" (760mm), 36" (915mm), 42" (1065 mm), 48" (1220 mm); DEPTH 22" (560 mm); HEIGHTS 31" (790mm), 25" (635 mm), FOR FLOOR MOUNTED ADD 5" (130 mm) TOE BASE	12301
VL4/4A	AR	CF	CABINET, UNDERCOUNTER, WITH 2 DRAWERS, 2 HINGED DOORS AND 1 ADJUSTABLE SHELF, AVAILABLE WIDTHS 30" (760 mm), 36" (915 mm), 48" (1220 mm); DEPTH 22" (560 mm); HEIGHTS 31" (790 mm), 25" (635 mm), FOR FLOOR MOUNTED ADD 5" (130 mm) TOE BASE	12301
VL26	AR	CF	CABINET, WALL, WITH SLOPING TOP, 2 GLAZED SLIDING DOORS AND 2 ADJUSTABLE SHELVES, AVAILABLE 36" X 18" (915 mm X 460 mm) WIDTHS 30" (760 mm), 36" (915 mm), 42" (1065 mm), 48" (1220 mm); DEPTH 16" (405 mm), HEIGHT 48" (1220 mm)	12301
T-7D	AR	CC	SHELVING, WALL HUNG, STANDARD AND BRACKET TYPE, 4 ADJUSTABLE SHELVES, 36" X 18" X 48" (915 mm X 460 mm X 1220 mm)	12301
	1	VV	DISPENSER, PAPER TOWEL, SURFACE MOUNTED	
	1	VV	DISPENSER, SOAP, LIQUID, WALL MOUNTED	
	1	VV	CLOCK, BATTERY OPERATED	
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP	16140
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX 120 VOLT, 15AMP STRIP MOLD WITH OUTLETS, WIRED ALTERNATELY ON SEPARATE CIRCUITS 24" (610 mm) ON CENTERS ABOVE COUNTER	16140
P-505	1	CC	SINK SERVICE, CLINIC, FLUSHING RIM WALL HUNG (PG-18-1, CAD DETAIL 15450.DWG)	15450

Section 7

Design Guide Plates and Data Sheets
Surgical Suite Support Spaces



Guide Plates



Design Guide - Surgical Service Department of Veterans Affairs	Control and Communications Center 150 NSF (14.0 NSM)	Equip, Utility and Refl Clg Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 7-1a Date: August 2005

ARCHITECTURAL

Floor Area	150 NSF (14.0 NSM)	Wall Finish	GYP. BOARD
Ceiling	GYP. BOARD	Wainscot	-
Ceiling Height	8'-0" (2.66 METERS)	Base	6" (152 mm) INTEGRAL COVE BASE
Floor Load	100 PSF	Floor finish	WSF
		Lead Lining	-

Note:
Refer to PG-18-1 and PG-18-6

ELECTRICAL

Lighting		Power	
General	70 FC, 2.0 W/SF*	General	1440 W**
Special	UNDERCOUNTER	Special	-
Emergency	ALL	Emergency	ALL

*3 LEVELS OF ILLUMINATION WITH DOUBLE SWITCHING
**RECEPTACLES ON (2) CIRCUITS, ALTERNATING

TELECOMMUNICATIONS

Patient Monitor	-	Telephone	YES
Nurse Call	DUTY STATION*	Intercom	PART OF TELEPHONE
Code One	-	Public Add.	-
CCTV	-	ADP	-
		Radio	-

*CONNECTED TO RECOVERY

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	2.5 W/SF
AC Load Equipment	3.0 W/SF
Number of People	2
Noise Criteria	NC-40
Room Pressure	(0)
Dry Bulb Temp Cooling Range	78°F (25°C)
Dry Bulb Temp Heating Range	72°F (22°C)
Minimum Air Changes per Hour	-
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity	50 %
Relative Humidity	30 %

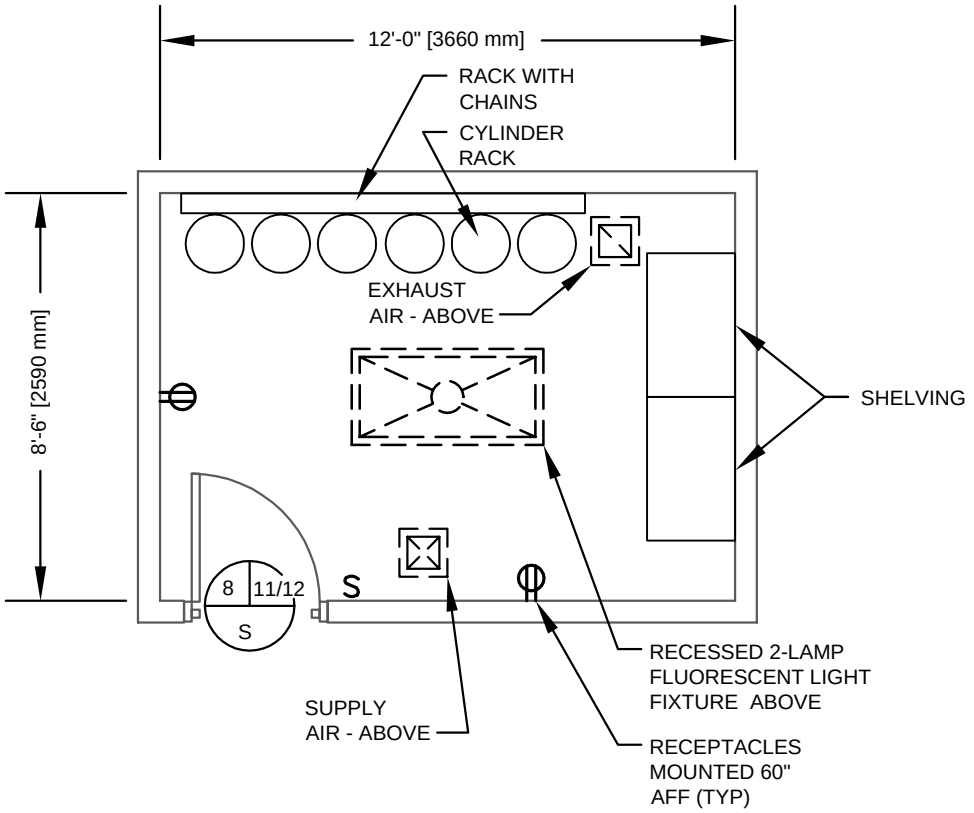
PLUMBING AND MEDICAL GASES

Cold Water	-	Medical Air	-
Hot Water	-	Medical Vacuum	-
Sanitary Drain	-	Oxygen	-
Acid Waste	-	Nitrous Oxide	-
Silver Recovery	-	Nitrogen	-
		Anesthesia Evac	MED GAS AREA ALARM

SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
	AR	CC	COUNTER, CONTROL, WITH PLASTIC LAMINATE TOP, 36" (915 mm) HIGH, ON CORRIDOR	12302
	AR	VV	CHAIR, ROTARY, WITH ARMS	
	1	CC	PASS-WINDOW FROM OFFICE, OPERATING ROOM SUPERVISOR	05500 08665
	1	CC	ALARM, AUDIO-VISUAL, SURGICAL SUITE PIPED GAS SYSTEM, WITH PILOT LIGHT AND BUZZER TO SIGNAL FAILURE DUE TO LOW PRESSURE OR LOW VACUUM, IN THE OXYGEN, NITROUS OXIDE, AIR AND VACUUM SYSTEMS	15491
	AR	CC	ALARM, AUDIO-VISUAL, FOR EACH UNGROUNDED ISOLATED POWER SYSTEM ELECTRICAL SERVICE	16761
	1	VV	CLOCK, BATTERY OPERATED	
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP	16140



Design Guide - Surgical Service Department of Veterans Affairs	Gas Cylinder Storage Room 102 NSF (9.5 NSM)	Equip, Utility and Refl Clg Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 7-2a Date: August 2005

ARCHITECTURAL

Floor Area	102 NSF (9.5 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD	Wainscot	-
Ceiling Height	8'-0" (2.66 METERS)	Base	6" (152 mm) INTEGRAL COVE BASE
Floor Load	-	Floor finish	WSF
		Lead Lining	-

Note:
Refer to PG-18-1 and PG-18-6

ELECTRICAL

Lighting		Power	
General	20 FC, 1.0 W/SF	General	720 W
Special	-	Special	-
Emergency	ALL FIXTURES	Emergency	-

TELECOMMUNICATIONS

Patient Monitor	-	Telephone	-
Nurse Call	-	Intercom	-
Code One	-	Public Addr.	-
CCTV	-	ADP	-
		Radio	-

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	1.0 W/SF
AC Load Equipment	1.0 W/SF
Number of People	1
Noise Criteria	NC-40
Room Pressure	NEGATIVE
Dry Bulb Temp Cooling Range	78°F (25°C)
Dry Bulb Temp Heating Range	72°F (22°C)
Minimum Air Changes per Hour	SEE NOTE *
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity	50 %
Relative Humidity	30 %

NOTE:
*INDEPENDENT EXHAUST, MINIMUM 1.0 CFM/SF, BUT NOT LESS THAN 50 CFM

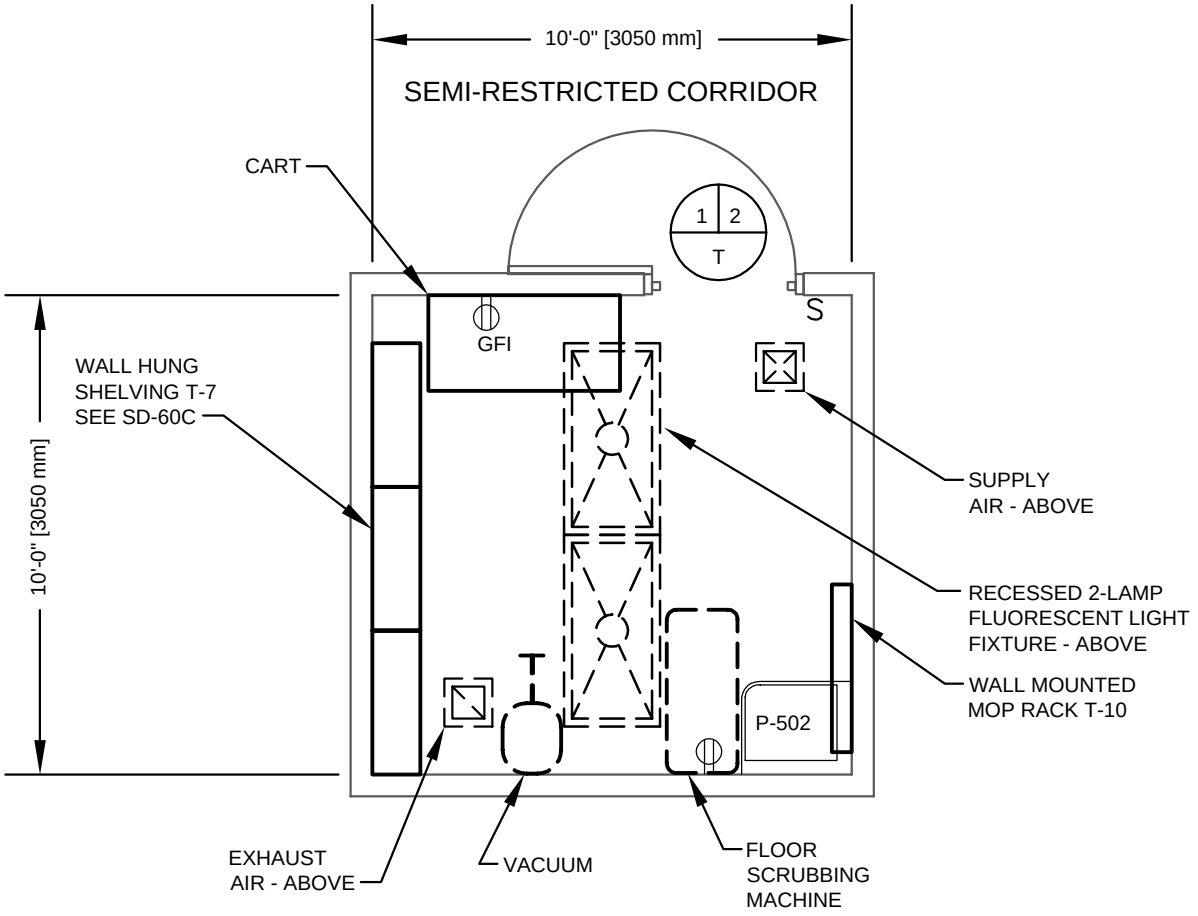
PLUMBING AND MEDICAL GASES

Cold Water	-	Medical Air	-
Hot Water	-	Medical Vacuum	-
Sanitary Drain	-	Oxygen	-
Acid Waste	-	Nitrous Oxide	-
Silver Recovery	-	Nitrogen	-
		Anesthesia Evac	-

SPECIAL EQUIPMENT

IF REQUIRED, HAZARDOUS/EXPLOSIONPROOF ROOM CONSTRUCTION TO COMPLY WITH NFPA 99, CHAPTERS 4, 5, 9 AND ELECTRICAL CONSTRUCTION REQUIREMENTS OF NFPA 70.

SYMBOL	QTY	AI	DESCRIPTION	MCS
	AR	CC	RACK, CHAIN (PG-18-1)	05500
	AR	CC	RACK, CYLINDER, 28"W X 22"D X 76"H (710 mm X 560 mm X 1930 mm)	05500
	AR	CC	SHELVING, FLOORSTANDING, STEEL, WITH SLOPING TOP AND 5 ADJUSTABLE SHELVES, 36"W X 22"D X 84"H (915 mm X 560 mm X 2135 mm)	12301
	AR	CC	EXHAUST FAN	15822
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP	16140



Design Guide - Surgical Service Department of Veterans Affairs	Housekeeping Aids Closet (Serving Operating Rooms) 100 NSF (9.3 NSM)	Equip, Utility and Refl Clg Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 7-3a Date: August 2005

ARCHITECTURAL

Floor Area	100 NSF (9.3 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD	Wainscot	CT 4'-0" (1.22 METERS)
Ceiling Height	8'-0" (2.66 METERS)	Base	6" (152 mm) INTEGRAL COVE BASE
Floor Load	-	Floor finish	WSF
		Lead Lining	-

Note:
Refer to PG-18-1 and PG-18-6

ELECTRICAL

Lighting		Power	
General	40 FC, 1.5 W/SF	General	180 WATTS
Special	-	Special	-
Emergency	ALL	Emergency	-

TELECOMMUNICATIONS

Patient Monitor	-	Telephone	-
Nurse Call	-	Intercom	-
Code One	-	Public Addr.	-
CCTV	-	ADP	-
		Radio	-

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	1.5 W/SF
AC Load Equipment	0.8 W/SF
Number of People	1
Noise Criteria	NC-40
Room Pressure	NEGATIVE
Dry Bulb Temp Cooling Range	78°F (25°C)
Dry Bulb Temp Heating Range	72°F (22°C)
Minimum Air Changes per Hour	10 (EA)
Minimum % Outside Air	-
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity	50 %
Relative Humidity	30 %

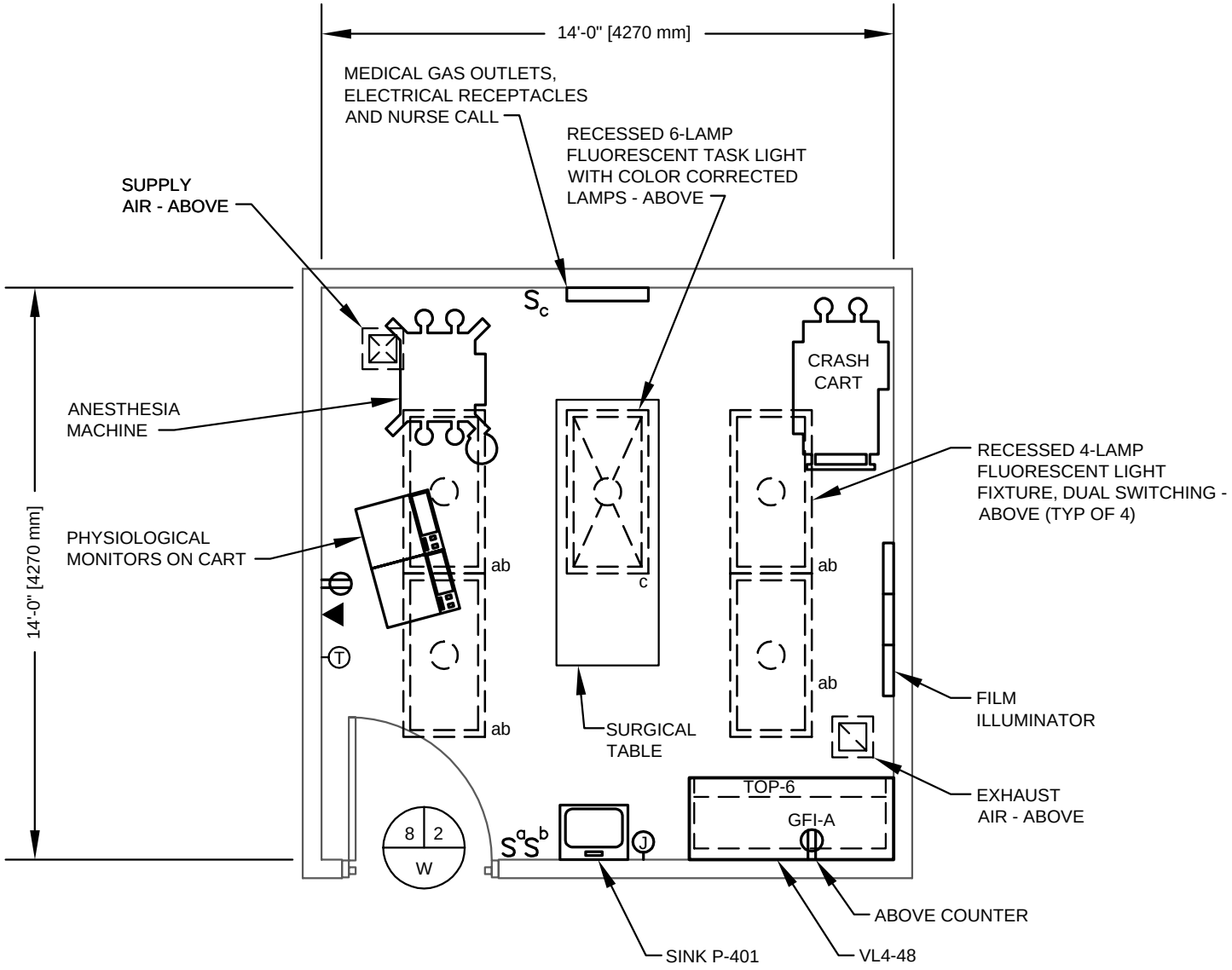
PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	-
Hot Water	YES	Medical Vacuum	-
Sanitary Drain	YES	Oxygen	-
Acid Waste	-	Nitrous Oxide	-
Silver Recovery	-	Nitrogen	-
		Anesthesia Evac	-

SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
P-502	1	CC	SINK, SERVICE, CORNER, FLOOR MOUNTED	15450
T-10	AR	CC	RACK, MOP, WALL MOUNTED	10360
T-7	AR	CC	SHELVING, WALL HUNG, CORROSION RESISTING STEEL, TWO FIXED SHELVES, TWO DOORS WITH LOCKS, 36" X 12" X 48" (915 mm X 305 mm X 1220 mm), 60" (1525 mm) ABOVE FINISHED FLOOR	12301
	1	VV	VACUUM CLEANER, BATTERY POWERED	
	1	VV	MACHINE, SCRUBBING, WALL, BATTERY POWERED	
	1	VV	CART, SUPPLIES, 24" X 48" (610 mm X 1220 mm)	
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP, GROUND FAULT INTERRUPTER TYPE	16140



Design Guide - Surgical Service Department of Veterans Affairs	Nerve Block Induction Room 200 NSF (19.0 NSM)	Equip, Utility and Refl Clg Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 7-4a Date: August 2005

ARCHITECTURAL

Floor Area	200 NSF (19.0 NSM)	Wall Finish	GYP .BOARD(SC)
Ceiling	GYP. BOARD	Wainscot	-
Ceiling Height	9'-0" (2.75 METERS)	Base	6" (152 mm) INTEGRAL COVE BASE
Floor Load	-	Floor finish	WSF
		Lead Lining	-

Note:
Refer to PG-18-1 and PG-18-6

ELECTRICAL

Lighting		Power	
General	100 FC, 3.0 W/SF	General	1800 WATTS*
Special	-	Special	-
Emergency	-	Emergency	-

*X-RAY ILLUMINATOR, (6) 300W

TELECOMMUNICATIONS

Patient Monitor	YES	Telephone	YES
Nurse Call	YES	Intercom	PART OF TELEPHONE
Code One	-	Public Addr.	-
CCTV	-	ADP	-
		Radio	-

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	3.5 W/SF
AC Load Equipment	5.0 W/SF
Number of People	5
Noise Criteria	NC-40
Room Pressure	POSITIVE
Dry Bulb Temp Cooling Range	78°F (25°C)
Dry Bulb Temp Heating Range	72°F (22°C)
Minimum Air Changes per Hour	12(SA)
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity	50 %
Relative Humidity	30 %

PLUMBING AND MEDICAL GASES

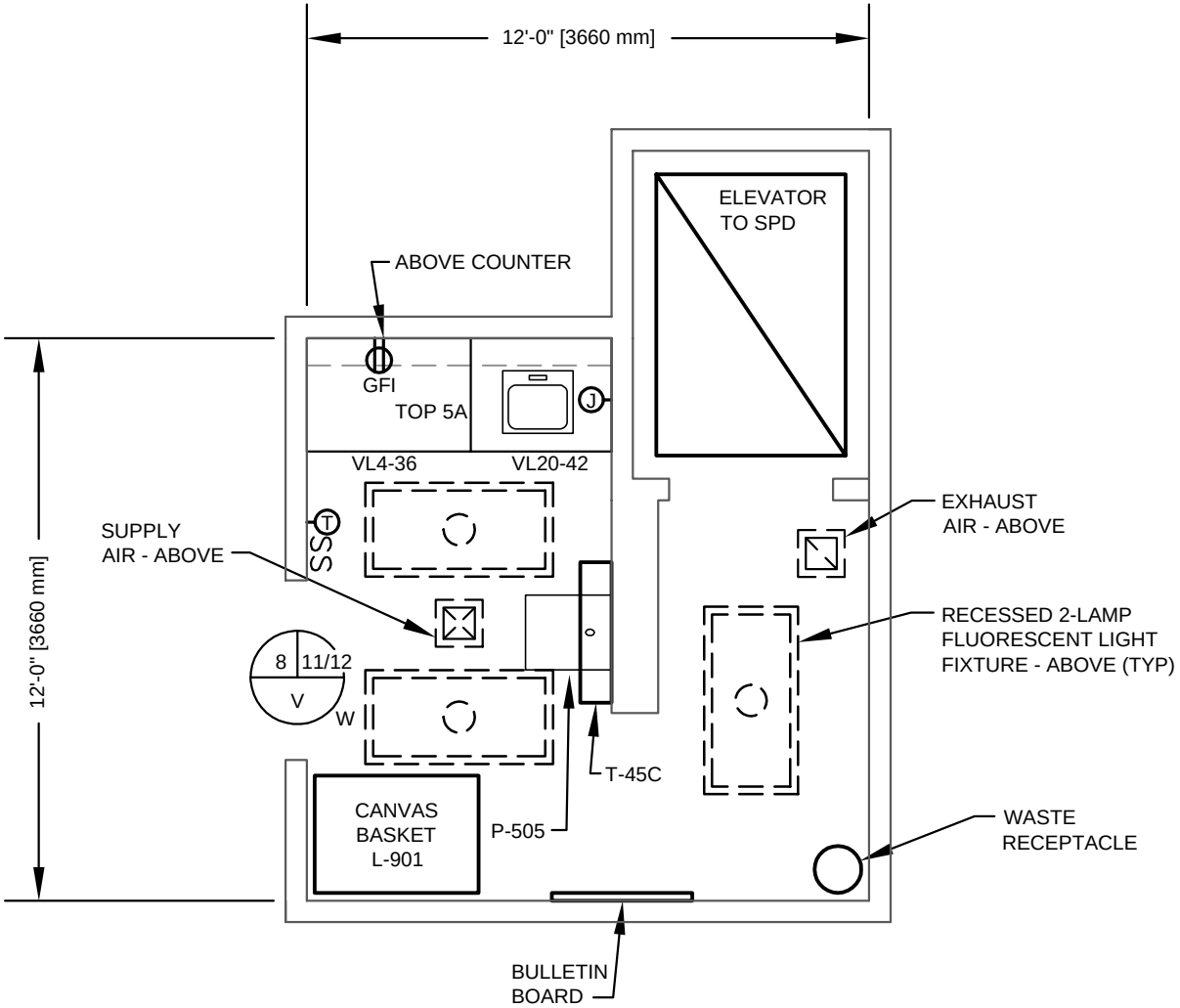
Cold Water	YES	Medical Air	YES
Hot Water	YES	Medical Vacuum	YES
Sanitary Drain	YES	Oxygen	YES
Acid Waste	-	Nitrous Oxide	YES
Silver Recovery	-	Nitrogen	-
		Anesthesia Evac	YES

SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
VL4/4A	AR	CF	CABINET, UNDERCOUNTER, WITH 2 DRAWERS, 2 HINGED DOORS AND 1 ADJUSTABLE SHELF, AVAILABLE WIDTHS 30" (760 mm), 36" (915 mm), 48" (1220 mm); DEPTH 22" (560 mm); HEIGHTS 31" (790 mm), 25" (635 mm), FOR FLOOR MOUNTED ADD 5" (130 mm) TOE BASE	12301
TOP 6/6A	AR	CF	COUNTER TOP, HIGH PRESSURE PLASTIC LAMINATE, ACID RESISTANT COMPOSITION OVER PLYWOOD OR PARTICLE BOARD CORE, 1-1/4" (30 mm) THICK	12302
	1	VV	TABLE, EXAMINING, PADDED, ADJUSTABLE, UPHOLSTERED TOP WITH STORAGE SPACE, 30"W X 78"L X 32"H (760 mm X 1980 mm X 815 mm)	
	1	VV	ILLUMINATOR, X-RAY, 120 VOLT, 20 AMP, WALL MOUNTED, APPROX., 40" X 45" (1015 mm X 1145 mm) 6 IN 1 (3 OVER 3)	
	AR	CC	OUTLET, WALL, MEDICAL AIR	15491
	AR	CC	OUTLET, WALL, OXYGEN	15491
	AR	CC	OUTLET, WALL, VACUUM	15491
	AR	CC	BRACKET, VACUUM BOTTLE SLIDE	15491
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP	16140
	1	VV	CART, EMERGENCY, "CRASH CART"	
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP, GROUND FAULT INTERRUPTOR TYPE	16140
	1	VV	ANESTHESIA MACHINE	
	1	VV	PHYSIOLOGICAL MONITOR ON CART	
P-401	1		LAVATORY(SINGLE LEVER HANDLE CONTROL) 20"(500 mm) X 18"(450 mm), VITROUS CHINA.	

NOTE: SEE PG-18-6 FOR VL EQUIPMENT



Design Guide - Surgical Service Department of Veterans Affairs	Soiled Holding/Disposal Room 120 NSF (11.0 NSM)	Equip, Utility and Refl Clg Plan 1 0 1 2 4 (METERS) (FEET) Scale: 1/4"=1'- 0"	Guide Plate: 7-5a Date: August 2005

ARCHITECTURAL

Floor Area	120 NSF (11.0 NSM)	Wall Finish	GYP. BOARD(SC)
Ceiling	GYP. BOARD	Wainscot	-
Ceiling Height	9'-0" (2.75 METERS)	Base	6" (152 mm) INTEGRAL COVE BASE
Floor Load	-	Floor finish	WSF
		Lead Lining	-

Note:
Refer to PG-18-1 and PG-18-6

ELECTRICAL

Lighting		Power	
General	40 FC, 1.5 W/SF	General	360 W
Special	-	Special	-
Emergency	ALL	Emergency	-

TELECOMMUNICATIONS

Patient Monitor	-	Telephone	YES
Nurse Call	-	Intercom	-
Code One	-	Public Addr.	-
CCTV	-	ADP	-
		Radio	-

HEATING, VENTILATING AND AIR CONDITIONING

AC Load Lights	1.7 W/SF
AC Load Equipment	1.0 W/SF
Number of People	1
Noise Criteria	NC-40
Room Pressure	NEGATIVE
Dry Bulb Temp Cooling Range	78°F (25°C)
Dry Bulb Temp Heating Range	72°F (22°C)
Minimum Air Changes per Hour	6
Minimum % Outside Air	100
100% Exhaust Air	YES
Special Exhaust	-
Steam	-
Relative Humidity	50 %
Relative Humidity	30 %

PLUMBING AND MEDICAL GASES

Cold Water	YES	Medical Air	-
Hot Water	YES	Medical Vacuum	-
Sanitary Drain	YES	Oxygen	-
Acid Waste	-	Nitrous Oxide	-
Silver Recovery	-	Nitrogen	-
		Anesthesia Evac	-

SPECIAL EQUIPMENT

None

SYMBOL	QTY	AI	DESCRIPTION	MCS
P-505	1	CC	SINK, SERVICE, CLINIC, FLUSHING RIM, WALL HUNG (PG-18-1, MCS 15450; CAD DETAIL 15450-3.DWG) T45C 1 CC SHELF, CORROSION RESISTING STEEL, 36"W X 8"D (915 mm X 205 mm); (PG-18-4, CAD DETAIL 10801-1.DWG)	10801
	1	VV	DISPENSER, SOAP, LIQUID, WALL MOUNTED	
	1	VV	DISPENSER, BIFOLD PAPER TOWEL, SURFACE MOUNTED	
	1	VV	RECEPTACLE, WASTE, STEP ON TYPE, APPROX., 12" (305 mm) DIAMETER	
	AR	VV	BASKET, CANVAS, 16 BU., REMOVABLE BODY, WITH CASTERS, 42" X 30" (1065 mm X 760 mm)	
	1	VV	BULLETIN BOARD, 36" X 30" (915 mm X 760 mm)	
TOP 5A	1	CF	COUNTER TOP, CORROSION RESISTING STEEL, 1-1/4" (130 mm) THICK, WITH INTEGRAL SINK COMPARTMENT, 18" X 16" X 8" DEEP (460 mm X 405 mm X 205 mm)	12303
J-2	1	CC	SINK, STAINLESS STEEL 18"X16"X8" DEEP (460 mm X 405 mm X 205 mm) MOUNTED IN TOP 5A	
VL20/20A	AR	CF	CABINET, UNDERCOUNTER, SINK UNIT, 2 HINGED PANEL DOORS, AVAILABLE WIDTHS 30" (760 mm), 36" (915 mm), 42" (1065 mm), 48" (1220 mm) DEPTH 22" (560 mm) HEIGHTS 31" (790 mm), 25" (625 mm), FOR FLOOR MOUNTED ADD 5" (130 mm) TOE BASE	12301
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP (MCS 16140)	
	AR	CC	RECEPTACLE, ELECTRICAL, DUPLEX, 120 VOLT, 20 AMP, GROUND FAULT INTERRUPTOR TYPE	16140
VL4-36		CC	CABINET , UNDER COUNTER, 2 DRAWERS AND 2 DOORS, 36" WIDE (915 mm) , 22" DEEP (560 mm) HEIGHT 31" (790 mm)	