VA | U.S. Department of Veterans Affairs

Audiology and Speech Pathology Service

design guide

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Audiology and Speech Pathology Design Guide

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1.0 GENERAL

1.1 Foreword

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

VA Standards are the culmination of a partnership among the Department of Veterans Affairs (VA), the Veterans Health Administration, Program Officials, Clinicians, Industry, Academic and Research Organizations, Expert Consultants, and the Office of Construction and Facilities Management. Design Guides are developed through integration of VA-specific requirements, Federal law and regulation, benchmarking of industry best practice, evidence-based research and design, and value-based analysis of leading edge innovation. The result is the establishment of best value standards for optimum functionality, safety, operability, performance, and quality throughout the VA environment of care and service.

Design Guides (PG-18-12) are a critical component of the VA Technical Information Library (TIL) (www.cfm.va.gov/TIL) which provides standards for all VA planning, design, and construction projects. Design Guides focus on selected healthcare departments and services and include an overview narrative of VA-specific planning and design principles and concepts, room templates, equipment lists, and basic technical/engineering requirements. They communicate the basis of design and are required to be utilized by project teams working on new construction and renovations of existing facilities. Design Guides will maximize the effectiveness and efficiency of the planning and design process and ensure a high level of design, while controlling construction, operating, and maintenance costs.

The material contained in Design Guides constitutes a Standard for VA Planning, Design, and Construction. For all VA projects, it is required that project teams comply with the following in all phases of project development:

1. All applicable VA Standards published in the VA Technical Information Library (TIL) shall be applied as a basis, foundation, and framework in planning, design, and construction. Any substantial variance from Standards shall be considered only as required to accommodate specific site, functional, and operational conditions. Upon consideration of variance CFM shall be consulted, and each Administration will function as Authority Having Jurisdiction for decision. Each substantial variance shall have a basis rationale and be documented in the project record
2. Clinicians, providers, primary users, and other stakeholders shall be involved in all phases of project development to best adapt Standards for specific functional, operational, and site conditions, and to provide optimum service environments for Veterans. This also includes installations and modifications of systems or technology involving safety, security, functionality, or environmental quality. Stakeholder involvement shall be documented in the project record.

Design Guides are not project-specific. It is impossible to foresee all rapidly evolving requirements of healthcare facilities and each site or project will have unique requirements or conditions. Site-specific issues must be addressed within the context of these standards and applied to each individual project. Use of this Guide does not preclude the need for, nor absolve planners, designers, and constructors of their responsibility to provide complete, functional, safe, and secure designs suited to the unique requirements of each project, within budget, and on schedule.

Materials, equipment, and systems are shown in an illustrative, performance-based format and are not intended to depict, suggest, or otherwise constitute endorsement of any specific product or manufacturer. Manufacturers should be consulted for actual dimensions, configurations, and utility requirements.

All participants in the project development process must embrace VA Planning, Design, and Construction Standards as fundamental in providing optimum environments for Veterans' care and services, in fulfilling VA's mission.

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1.3 Introduction

The Audiology and Speech Pathology Design Guide (PG-18-12) is a design tool for VA Medical Center staff, planners architects, interior designers, project design teams, and consulting architects and engineers (A/E's) to assist with understanding the unique functional and technical requirements associated with these patient care services. The Audiology and Speech-Language Pathology Design Guide is the first edition of this publication and supplements *PG-18-9, Chapter 204: Audiology and Speech-Language Pathology Services (ASPS) Space Planning Criteria*, which has been concurrently updated. The ASPS Design Guide enhances CFM's Technical Information Library (TIL) of published Design Guides for other services (VA TIL Design Guides).

The Design Guide represents the planning and design standards that have been developed to support the delivery of care for ASPS and is not intended to be project-specific, nor is it crafted as a code. It addresses general space and equipment planning, as well as the functional, technical, and systems requirements for functional areas associated with Audiology and Speech-Language Pathology services. The narrative and graphic material developed in this document are based on site visits of both recently built/renovated and older facilities, staff interviews, collaborative work sessions and meetings, and research of relevant publications and standards.

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1.4 VA Policies/Standards and Industry Codes/Standards

Design and construction projects for the VA shall comply with the most current applicable VA policies and Standards available on CFM's Technical Information Library (TIL) (VA TIL Index). These include, but are not limited to the following documents:

- *Master Construction Specifications (PG-18-1)*
- *Design and Construction Procedures (PG-18-3)*
- *Standard Details and CAD Standards (PG-18-4)*
- *Equipment Guide List (PG-18-5)*
- *List of Equipment Symbols (PG-18-6)*
- *Seismic Design Handbook (H-18-8)*
- *Space Planning Criteria, and VA Space & Equipment Planning System (PG-18-9)*
- *Design Manuals (by discipline) (PG-18-10)*, including: Architectural, BIM Standards, Electrical, Elevators, Equipment, Estimating, Fire Protection, Heating Ventilating and Air Conditioning (HVAC), Interior Design, Lighting Design, Physical Security, Plumbing, Signage & Wayfinding, Site, Structural, Sustainability, Telecommunications (VA TIL Design Manuals by Discipline)
- *Barrier-Free Design Standard (PG-18-13)* A Supplement to the Architectural Barriers Act Accessibility Standards (ABAAS)
- *Room Finishes, Door, and Hardware Schedule (PG-18-14)*
- *Minimum Requirements for A/E Submissions (PG-18-15)*

Planning, design, and construction projects for the Audiology and Speech-Language Pathology Services shall follow the guidance provided in this Design Guide, PG-18-12, along with associated documents, *PG-18-9 Chapter 204: Audiology and Speech-Language Pathology Services Space Planning Criteria*, and the *Equipment Guide List (204), PG-18-5*. Additional VHA reference publications include:

- *VHA Audiology and Speech-Language Pathology Services, VHA Directive*, including the following specific contents/references:
  - *Appendix D for Compensation and Pension Exam Procedures for Audiology*
  - *ANSI S3.1-1999 [R2013] Criteria for Permissible Ambient Noise during Audiometric Testing*
- *VHA Handbook 1170.02*, *Appendix D Booth Audiometric Examination Specifications (IB 11-87, June 1993)*

Applicable industry codes and standards related to the design of facilities for Audiology and Speech-Language Pathology include, but are not limited to the following additional publications:

- Centers for Disease Control and Prevention (CDC): *Guidelines from Environmental control in Healthcare Facilities*
- Facility Guidelines Institute (FGI): *Guidelines for Design and Construction of Hospital and Outpatient Facilities*
- The Joint Commission (TJC): *Comprehensive Accreditation Manual for Hospitals*
- The Joint Commission (TJC): *Environment of Care Emergency Management and Life Safety Standards*
- *National Building Codes and Standards*
- U.S. Department of Health and Human Services: *Health Information Privacy (HIPAA)*

- U.S. Department of Labor, Occupational Safety and Health Administration: *OSHA 1910-1030 Blood Borne Pathogens*
- U.S. Department of Labor, Occupational Safety and Health Administration: *OSHA 3151-12R Personal Protective Equipment*

Refer to Section 2.3 Technical Considerations for additional discussion of Codes and Standards pertaining to this service.

1.5 Abbreviations

Refer to Chapter 4.0 for A/E discipline material and finish code abbreviations related to Room Templates and Room Data Sheets.

A	
ABA	Architectural Barriers Act
ABR	Auditory Brainstem Response
ACC	Ambulatory Care Center
ADA	Americans with Disabilities Act
A/E	Architectural/Engineering
AFF	Above Finish Floor
AHJ	Authority Having Jurisdiction
AIA	American Institute of Architects
ANSI	American National Standards Institute
ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASPS	Audiology and Speech-Language Pathology Service
ASTM	American Society for Testing and Materials International
ATA	American Telemedicine Association
A/V	Audiovisual
B	
BAEP	Brainstem Auditory Evoked Potentials
BIM	Building Information Modeling
BLDG	Building
BMI	Body Mass Index
BPPV	Benign Paroxysmal Positional Vertigo
C	
CAC	Ceiling Attenuation Class
CBOC	Community Based Outpatient Clinic
CCTV	Closed Circuit Television
CDC	Centers for Disease Control
CFM	Construction & Facilities Management (VA)
CLC	Community Living Center
Comp & Pen	Compensation and Pension (C&P)
CTBIE	Comprehensive TBI Evaluation
D	
dB	Decibel
dBA	A-Weighted Decibel
Dept.	Department
DG	Design Guide
DOE	Department of Energy

DPOAE	Distortion Product Otoacoustics Emissions
E	
ECOG	Electrocochleography
EES	Essential Electrical System
EKG/ECG	Electrocardiogram
EMG	Electromyogram
ENT	Ear Nose Throat (Otolaryngology)
EO	Executive Order
F	
F_F	Floor Flatness
F_L	Floor Levelness
FA	Functional Area
FEES	Fiberoptic Endoscopic Examination
FGI	Facilities Guidelines Institute
FMS	Facility Management Service
FTE	Full Time Equivalent
G	
GSF	Gross Square Feet
H	
HAC	Housekeeping Aides Closet
HIPAA	Healthcare Insurance Portability and Accountability Act
HME	Heat and Moisture Exchanger
HVAC	Heating Ventilation Air Conditioning
Hz	Hertz
I	
IBC	International Building Code
ICU	Intensive Care Unit
IDS	Input Data Statement
IEST	Institute of Environmental Sciences and Technology
IIC	Impact Insulation Class
IOPI	Iowa Oral Performance Instrument
J	
JCAHO	Joint Commission of Accreditation of Health Care Organizations, currently The Joint Commission.
JSN	Joint Services Number

L

LAN	Local Area Network
Lbs.	Pounds
LED	Light Emitting Diode
LEED	Leadership in Energy and Environmental Design

M

M	Meters
MBS	Modified Barium Swallow
MEP	Mechanical, Electrical, and Plumbing
MIN	Minimum
mm	Millimeters
MRI	Magnetic Resonance Imaging

N

n.d.	No Date
NC	Balanced Noise-Criteria
NCB	Balanced-Noise Criterion
NCS	Nurse Call and Code Blue
NFPA	National Fire Protection Association
NIC	Noise Isolation Class
NRC	Noise Reduction Coefficient
NSF	Net Square Feet/Footage
NSM	Net Square Meters

O

OAE	Otoacoustic Emissions
OCAMES	Office of Capital Asset Management Engineering and Support
OCFM	Office of Construction and Facilities Management
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
OIT	Office of Information & Technology
OND	Operation New Dawn
OPC	Outpatient Clinic
OSHA	Occupational Safety and Health Administration

P

p.	Page
PACT	Patient Aligned Care Team
PAS	Phonatory Aerodynamic System
PG	Program Guide
PM&R	Physical Medicine and Rehabilitation Services
PPE	Personal Protective Equipment
PRC	Polytrauma Rehabilitation Center

PTM	Progressive Tinnitus Management
R	
Rehab	Rehabilitation Medicine
RME	Reusable Medical Equipment
RVU	Relative Value Unit
S	
SCI	Spinal Cord Injury
sEMG	Surface Electromyography
SEPS	Space and Equipment Planning System
SF	Square Feet
SPS	Sterile Processing Service
Sq. Ft.	Square Feet
STAR	Service member Transitional Advance Rehabilitation
STC	Sound Transmission Class
STL	Sound Transmission Loss
T	
TBI	Traumatic Brain Injury
TCT	Telehealth Clinical Technician
TDD	Teletext Devices for the deaf
TEP	Tracheosophageal Voice Prosthesis
TIL	Technical Information Library provided by the VA online at VA TIL
TJC	The Joint Commission
TOAE	Transient-Evoked Otoacoustic Emissions
TTY	Teletype Devices
TV	Television
U	
UPS	Uninterruptible Power Supply
US	United States
USB	Universal Serial Bus
USGBC	United States Green Building Council
V	
VA	US Department of Veterans Affairs
VAMC	Veterans Affairs Medical Center
VHA	Veterans Health Administration
VNG	Videonystagmography
VTS	Video Teleconferencing System

1.6 Glossary of Terms

A

Accessible – A site, building, facility, or portion thereof that complies with provisions outlined in the Architectural Barriers Act of 1968 (ABA).

Acoustic Immittance (Tympanometry) – A battery of tests that includes tympanometry, acoustic reflex threshold testing, and acoustic reflex decay testing.

Alerting Devices/Assistive Listening Devices – Alerting devices include, but are not limited to, alarm systems, alarms clocks, doorbell, and telephone signalers. Assistive listening devices include personal amplifiers, FM systems, voice carry over phones (VCO), teletype devices (TTY), and teletext devices for the deaf (TDD), telephone, and television amplifiers.

American National Standards Institute (ANSI) – A private, non-profit organization that oversees the development of voluntary consensus standards for products, services, processes, systems, and personnel in the United States. The organization also coordinates U.S. standards with international standards so that American products can be used worldwide. ANSI develops accreditation programs, and serves as the U.S. representative to the International Standards Organization (ISO).

Americans with Disabilities Act (ADA) – Legislates access for disabled persons in most privately owned buildings or businesses that serve the public.

Anechoic – Free from echoes and reverberations.

Architectural Barriers Act (ABA) – A set of standards developed to ensure that all buildings financed with federal funds are designed and constructed to be fully accessible to everyone. This law requires all construction, renovation, or leasing of sites, facilities, buildings, and other elements, financed with federal funds, to comply with the Architectural Barriers Act Accessibility Standards (ABAAS). The ABAAS replaces the Uniform Federal Accessibility Standards (UFAS).

Assistive Technology Lab – A dedicated space that includes a variety of state of the art products, devices, and equipment that may enable patients with disabilities to accomplish daily living tasks, assist them in communication, education, work or recreation activities helping them achieve greater independence and enhance their quality of life.

Association for the Advancement of Medical Instrumentation (AMMI) – AMMI is the source for all practice and design standards for decontamination, disinfection, and sterilization.

Audiologist – A person who, by virtue of academic degree, clinical training, and professional credentials, is uniquely qualified to provide independently a comprehensive array of professional services related to the prevention of hearing loss and vestibular dysfunction and the identification, evaluation, diagnosis, and treatment of persons with impairment of auditory and vestibular function. The central focus of the profession of audiology is concerned with all auditory impairments and their relationship to disorders of communication.

Audiology – A clinical specialty involving the prevention, identification, evaluation, and remediation, and treatment of hearing loss, tinnitus, and vestibular disorders.

Audiology and Speech-Language Pathology – A combined service or equivalent service-level department. Audiology and Speech-Language Pathology may be collocated or physically separated.

A-Weighted Sound Level (dBA) – The sound level measured in decibels using the A-weighting which simulates the way people hear sound at typical levels. In the audible sound frequency range human hearing is less sensitive to low frequency sound than it is to middle and high frequency sound.

B

Balance Testing – A Vestibular Rehabilitation Therapy system is used to assess and retrain the sensory and voluntary motor control of balance with visual biofeedback on either a stable or unstable support surface and in a stable or dynamic visual environment using a dynamic dual force plate with rotation capabilities to measure the vertical forces exerted by the patient's feet and a moveable visual surround.

Bariatric – (As defined per VA TIL) A patient who has limitations in health due to physical size, health, mobility, and limitations in health due to physical size, health, mobility, and environmental access (Bushard, 2002). For using VA assessment form and bariatric algorithms, VA defines bariatric as individuals exceeding standard capacity equipment (300 lbs.) with a BMI of 50.

Benign Paroxysmal Positional Vertigo (BPPV) – A balance disorder that results in the sudden onset of dizziness, spinning or vertigo, caused by changes in the position of the head.

Biomedical Engineering – A support department that inspects, repairs, tests, and maintains a wide range of patient care equipment. Biomedical Engineering may provide primary response for maintaining SPS equipment. It also works closely with Logistics Service for the temporary storage of new equipment items before they are released for medical use in the facility, and for existing items awaiting repair or parts. Biomedical Engineering may also be called Clinical Engineering.

Bulk Item Storage – A high-bay storage of supplies method for items purchased in large quantities, including full pallets, and case-lots. If not available for purchase in a more convenient format, bulk supplies may be broken down into packages or low unit of measure before being transferred to Unit Item Storage. Bulk item storage may also accommodate pandemic supplies, disaster preparedness supplies, and similar items not typically required for routine operation in the healthcare facility.

C

Case Mix – Method of categorizing patients into statistically and clinically homogenous groups based on the collections of clinical and administrative data. Adjusting for patients of different levels of acuity forms the basis for healthcare organization comparisons and case mix adjusted resource utilization.

Ceiling Attenuation Class (CAC) – A measure for rating the performance of a ceiling system as a barrier to airborne sound transmission through a common plenum between adjacent closed spaces, such as offices. A ceiling system with a CAC < 25 is considered low performance, whereas one with a CAC > 35 is considered high performance. CAC is important between closed spaces and from closed rooms to adjacent spaces, such as corridors and open office spaces.

Cerumen – A natural wax-like substance secreted by special glands in the skin on the outer part of the ear canal. Also referred to as ear wax, cerumen protects the skin of the human ear canal, assists in cleaning and lubrication, and also provides some protection against bacteria, fungi, insects, and water. Excess production and accumulation of cerumen can cause ear problems like infection, and temporary hearing loss, if not removed.

Circulation Area – Entrances, vestibules, corridors, passages, elevators, escalators, stairs, etc. included in gross areas and excluded in net areas.

Clinic Stop – One encounter of a patient with a health care provider. Per these criteria, the clinic stop is the workload unit of measure for space planning. One individual patient can have multiple clinic stops (encounters) in a single visit or in one day.

Cochlear Implant – A device that is surgically implanted in the ear to bypass the damaged hearing receptors in the cochlea and directly provide electrical stimulation to the hearing nerve.

Computerized Speech Lab (CSL) – A speech and signal processing computer workstation (software and hardware) used for research and clinical speech therapy.

CPT (Current Procedural Terminology) Code – A five Digit code intended to describe procedures and services performed by physicians and other health care providers. There can be multiple CPT codes associated with a single encounter. Sometimes the same CPT code is performed multiple times on the same encounter.

D

Decibel (dB) – A unit for expressing the ratio of two amounts of electric or acoustic signal power equal to 10 times the common logarithm of this ratio.

Dysphagia – A swallowing disorder, including difficulty with eating and drinking, which may coexist with a wide variety of neurological and structural problems.

E

Ear, Nose & Throat (ENT) – A branch of medicine and surgery, also known as Otolaryngology or ENT, that specializes in the diagnosis and treatment of disorders of the head and neck.

Electromyogram (EMG) – A test used to record the electrical activity of muscles. When muscles are active, they produce an electrical current that is usually proportional to the level of muscle activity. Electromyogram is also sometimes referred to as a myogram.

Electrophysiology – Special diagnostic tests involving the measurement of auditory evoked potentials from the cochlea, auditory nerve, brain or otolith organs including: electrocochleography, auditory brainstem response (ABR), middle latency potentials (MLR), late potentials, vestibular evoked myogenic potentials, and other specialized evoked potential techniques.

Encounter – A count of clinic stops made by patients where duplicates have not been removed. A duplicate clinic stop occurs when a patient makes more than one of the same type of PRIMARY clinic stop at the same substation on the same day. An encounter is a professional contact between patient and a practitioner vested with primary responsibility for diagnosing, evaluating, and/or treating the patient's condition. Encounters occur in both the outpatient and inpatient setting. Contact can include face-to-face interactions or those accomplished via telemedicine technology.

Endoscope – An illuminated usually fiber-optic flexible or rigid tubular instrument for visualizing the interior of a hollow organ or part (as the bladder or esophagus) for diagnostic or therapeutic purposes that typically has one or more channels to enable passage of instruments (as forceps or scissors).

Essential Electrical – A system comprised of alternate sources of power, all connected System (EES). Distribution systems, and ancillary equipment, designed to ensure continuity of electrical power to designated areas and functions of a health care facility during disruption of normal power sources, and designed to minimize disruption within the internal wiring system.

F

Flexible Naso Laryngoscope Fluoroscopy – An instrument used chiefly in industry and in medical diagnosis for observing the internal structure of opaque objects (as the living body) by means of the shadow cast by the object examined upon a fluorescent screen when placed between the screen and a source of X-rays.

Fluoroscopy – An instrument used chiefly in industry and in medical diagnosis for observing the internal structure of opaque objects (as the living body) by means of the shadow cast by the object examined upon a fluorescent screen when placed between the screen and a source of X-rays.

Full-Time Equivalent (FTE) or Full-Time Equivalent Employee (FTEE) – A staffing parameter equal to the amount of time assigned to one full time employee. It may be composed of several part-time employees whose total time commitment equals that of a full-time employee. One FTE equals 40 hours per week.

Functional Area (FA) – The grouping of rooms and spaces based on their function within a clinical service. Typical Functional Areas are Reception Areas, Patient Areas, Support Areas, Staff and Administrative Areas, and Residency Program. For the PRC, the Functional Area is further defined by Inpatient Unit Areas, Outpatient Unit Areas, and Transitional Unit Areas.

G

Gross Square Feet (GSF) – Total building gross areas measured from exterior faces of exterior walls.

H

Heat and Moisture Exchanger (HME) – A device used in mechanically ventilated patients intended to help prevent complications due to drying of the respiratory mucosa, such as mucus plugging and endotracheal tube (ETT) occlusion.

Hertz (Hz) – A unit measure of sound frequency in cycles per second.

I

Impact Insulation Class (IIC) – A single number rating of the impact noise reduction performance of a floor-ceiling construction tested over a standard frequency range. The higher the IIC rating, the more efficient the construction will be for reducing impact noise transmission.

Infection Control Risk Assessment (ICRA) – A multidisciplinary, organizational, documented process that considers the medical facility's patient population and mission to reduce the risk of infection based on knowledge about infectious agents and the care environment, permitting the facility to anticipate its potential impact.

Input Data Statement (IDS) – A set of questions designed to elicit information about the healthcare project in order to create a Program for Design (PFD) based on the criteria parameters set forth in this document. Input Data Statements could be Mission related; Workload or Staffing related. Workload IDSs use projections and data provided by the VHA or the VISN about the estimated number of patients by model of operation. This information is processed through mathematical and logical operations in SEPS.

Iowa Oral Performance Instrument (IOPI) – A device that provides an assessment of non-speech tongue function via measurement of the peak pressure a patient can produce by pressing a tongue bulb against the roof of the mouth with the tongue.

K

Kinesiotherapy (KT) – The application of scientifically based exercise principles adapted to enhance the strength, endurance, and mobility of individuals with functional limitations or those requiring extended physical conditioning.

L

Leadership in Energy and Environmental Design (LEED™) – LEED™ includes a rating system for building design as well as professional accreditation for people working in the design and building industry.

LOOP – A wireless hearing technology (induction loop system) which magnetically delivers sound to hearing aids and cochlear implant (getting hard of hearing people “in the LOOP”).

M

Manometry – A study which measures the pressure changes produced by contractions of the muscular portions of the esophagus. This may be used when an endoscopy yields normal results.

N

National Fire Protection Association (NFPA) – Organization that produces a code used in many jurisdictions to define fire protection requirements of building codes.

Net Square Feet (NSF) – The area of a room or space derived by multiplying measurements of the room or space taken from the inside surface of one wall to the inside surface of the opposite wall.

Net-to-Department Gross Factor (NTDG) – This number, when multiplied by the programmed net square foot (NSF) area, determines the departmental gross square feet (DGSF).

Noise Criteria Rating (NC) – A single number rating of noise based on the relative loudness and speech interference aspects of a noise. Following the tangential method, to determine the NC rating of a noise, the octave band noise levels from 63 Hz to 8000 Hz are plotted over a family of NC curves with increments of 1 NC. The lowest NC curve not exceeded by the octave band spectrum is the NC rating for the noise.

Noise Isolation Class (NIC) – A single number rating derived from the noise reduction measured between two adjacent spaces. The NIC rating is a measure of the acoustical isolation between spaces whereas the STC rating is a measure of the acoustical performance of a partition or building component.

Noise Reduction – The difference in sound pressure level between two locations along the path of sound propagation.

Noise Reduction Coefficient (NRC) – A measure for rating the overall sound absorption of a material when used in an enclosed architectural space such as an office, where sound is reflected at many angles of incidence. A ceiling system with an NRC < 0.50 is considered low performance, whereas one with NRC > 0.70 is considered high performance. NRC is important in any closed space where reverberation time and noise levels are an issue, and in open spaces used for both focus work and collaboration.

O

Occupational Therapy (OT) – Therapy based on engagement in meaningful activities of daily life such as self-care skills, education, work, and social interaction, to enable or encourage participation in such activities despite impairments or limitations in physical or mental functioning.

Octave-Band – A band of frequencies one octave in width identified by the center frequency within the band. The ratio of the center frequencies of contiguous octave bands is 2.

Octave-Band Level – The sound pressure level of the octave-band of sound in decibels (dB).

Oropharyngeal – Of or relating to the mouth and pharynx.

Otoacoustic Emissions – Electrical potentials generated in the inner ear. Clinically, two Otoacoustic emissions (OAE) are measured: transient-evoked OAE (TOAE) and distortion product OAE (DPOAE). These measures are used to assess hearing loss objectively.

Ototoxicity Monitoring – Audiologic testing performed to detect changes to hearing status presumably attributed to a drug/treatment regime so that modifications in the drug regimen may be considered to provide audiologic intervention when handicapping hearing impairment has occurred.

Outpatient Clinic – A freestanding ambulatory care facility that is physically separated but administratively attached to a VA Medical Center providing a specific set of outpatient services.

P

Personal Protective Equipment (PPE) – Specialized clothing worn by clinical personnel to prevent exposure to blood borne pathogens and other infectious elements.

PG-18-12 Design Guide – Standard that provides in-depth planning and design information for VA facilities. A PG-18-12 standard can cover more than one department in a VA healthcare facility.

PG-18-5 Equipment Guide List – Standard for planning and developing equipment requirements, also known as Room Contents. There is a PG-18-5 standard corresponding to each PG-18-9 standard for each clinical and non-clinical department in a VA healthcare facility.

PG-18-9 Space Planning Criteria, and VA Space & Equipment Planning System – Standard for allocating and planning space requirements for VA facilities. There is a PG-18-9 corresponding to each clinical and non-clinical department in a VA healthcare facility.

Phonatory Aerodynamic System (PAS) – Device which measures airflow, pressure, and other parameters related to voice production.

Physical Medicine and Rehabilitation Service – A medical, multidisciplinary, team-oriented, treatment process designed to reduce the dysfunctional effects of a wide variety of social and physical disabilities.

Physical Therapy (PT) – A treatment that provides therapeutic interventions for patients whose ability to function is impaired by disease, injury, or other causes. This includes those with pain, neuromuscular, musculoskeletal, cardiopulmonary, and integumentary conditions. Physical Therapy includes prevention of injury and impairment through the promotion and maintenances of fitness.

Posturography – A battery of tests (also known as Computerized Dynamic Posturography) to evaluate balance function using a series of tasks to simulate situations encountered in daily life. Tests measure sensory organization, motor control, and proprioceptive aspects of balance. Tests can be used to assess postural stability and movement strategies in patients who experience disequilibrium or who are prone to falling.

Program for Design (PFD) – A space program based on criteria set forth in this document, *PG-18-9: Space Planning Criteria* and specific information about Concept of Operations, workload projections and staffing levels authorized.

Proprioception – The ability to sense stimuli arising within the body regarding position, motion, and equilibrium.

Provider – An individual who examines, diagnoses, treats, prescribes medications, and manages the care of patients within the scope of their practice as established by the governing body of a healthcare organization.

R

Rehabilitation – Retraining of an individual to highest level of function using physical, occupational, and speech therapy.

Reusable Medical Equipment (RME) – Medical equipment designed by the manufacturer to be reused for multiple patients. SPS must follow the reprocessing instructions provided by the manufacturer to ensure proper use.

Reverberation – The decaying continuation of reflected sound in an enclosed or partially enclosed space after the source of the sound has stopped.

Reverberation Time – The time it takes for a sound in a frequency band to decay 60 dB after the source of the sound has stopped.

Reverse Osmosis Deionized (RO/DI) Purified Water – Water suitable for sterile processing applications with specific resistivity of 0.1 megohm per cm. RO/DI purified water is required for the final rinse cycle of instrument washer-decontaminators, at the clean-up sinks, and is used in ultrasonic cleaners.

S

Sound Transmission Class – An integer rating of the effectiveness of a building partition or building component to reduce the transmission of airborne sound.

Sound Transmission Loss – In a frequency band, the reduction of sound intensity transmitted through a partition or building component.

Space and Equipment Planning System (SEPS) – A digital tool developed by the Department of Veterans Affairs and the Department of Defense (DoD) to generate a Program for Design (PFD) and a Project Room Contents list (PRC) for a VA healthcare project based on approved Space Planning Criteria, and specific project-related Mission, Workload and Staffing information entered in response to the Program Data Required – Input Data Statements (IDSs).

Speech-Language Pathologist – A person who by virtue of academic degree, clinical training, and professional credentials, is uniquely qualified to provide, independently, a comprehensive array of professional services related to human communication and swallowing. This includes the identification, evaluation, diagnosis, and treatment of persons with speech, voice, language, fluency, cognitive, swallowing, and respiratory disorders. The domain of speech-language pathology includes human communication behaviors and disorders, as well as swallowing or other upper aerodigestive functions and disorders.

Speech-Language Pathology – A clinical specialty involving the prevention, identification, evaluation, treatment, and rehabilitation of speech, language, voice, fluency, cognitive, and swallowing disorders.

Sterilization – The elimination of all living microorganisms through the use of high temperature and, in some cases, chemical elements.

Stop Code – A measure of workload including clinic stops forecasted by the Office of Policy and Planning (OPP) for all Strategic Planning Categories at Medical Center and Outpatient Clinic levels.

Surface EMG (sEMG) – Device which measures the amount of electrical activity muscles release when they are contracting (more commonly known as muscle tension).

Swallow Solutions – Instrument, which is used for oropharyngeal therapy to improve lingual strength and swallow function. It consists of a mouthpiece, electronic tablet, and software.

T

Task Lighting – Specific types of lighting directed to specific/individual areas or surfaces (such as countertop, chair, or desk). Rather than providing general illumination for a whole room, task lighting may provide a work light for a desk, reading light for a chair, and general ambient lighting for a couch area. The type of light and its placement is based on an area use. Lights for each area are controlled individually so the unused areas do not need to be lit until necessary. USGBC energy efficiency requirements for LEED Certification call for individual controls for task lighting.

Technical Information Library (TIL) – The Office of Construction & Facilities Management (CFM) provides support for all major construction and lease projects. The TIL contains design and construction standards for the Department of Veterans Affairs. The TIL is aimed at VA employees in medical centers, community based clinics, regional offices, and national cemeteries as well as A/E consultants and provides relevant technical information for project development. Department of Veterans Affairs' Technical Information Library (VA TIL).

Telehealth – The use of technology, such as computers and mobile devices, to manage healthcare remotely. It includes a variety of health care services, including but not limited to online support groups, online health information and self-management tools, email and online communication with health care providers, remote monitoring of vital signs, video or online doctor visits. Depending on the concept of operations for this space, it may be equipped as an exam room or as a consult room with video/camera capability.

Tinnitus – A sensation of noise (as a ringing or roaring) that is caused by a bodily condition (as a disturbance of the auditory nerve or wax in the ear) and typically is of the subjective form which can only be heard by the one affected.

Tracheoesophageal Voice Prosthesis (TEP) – A device that is placed in the wall that separates the trachea and esophagus in order to enable a total laryngectomy patient to make voice.

Transport Cart – A mobile cart used to transport instruments, scopes, or supplies within a medical facility, most often between Sterile Processing Service and patient care areas; also referred to as Transfer Cart.

U

Uninterruptible Power Supply (UPS) – Generators, batteries, and/or associated equipment that provide continuous electrical power, preventing power loss to critical functions that rely on absolute continuity of service.

Unique Patients – Count of unduplicated social security numbers (SSNs), using health care services provided by or funded by VA, to include VHA, VISN, Medical Center, or division/CBOC, for the selected time period.

V

Vestibular Rehabilitation Therapy – An exercise-based program designed to promote central nervous system compensation for inner ear deficits.

Vestibulography – A general class of special balance tests including, videonystagmography (VNG), and sinusoidal vertical axis rotational testing (rotary chair). These tests record nystagmus and eye movements to diagnosis peripheral and central vestibular disorders.

Videonystagmography (VNG) – A technology for testing inner ear and central motor functions, a process known as vestibular assessment. It involves the use of infrared goggles to trace eye movements during visual stimulation and positional changes.

Vocational Rehabilitation Therapy (VRT) – An assessment process that determines the jobs that are best suited for an individual through the use of interviews, evaluation of abilities, and tests of manual and physical skills. VRT services are associated most often with Employment Services Program and there is a renewed interest in this program associated with the VA's younger population.

W

Wait times – Time elapsed from when a Veteran requests an appointment for medical services and when the appointment is scheduled.

Workload – The anticipated number of procedures that are processed through a department/service area. The total workload applied to departmental operational assumptions will determine overall room requirements by modality.

Workplane – An imaginary horizontal plane situated at the nominal working height in an interior space. Most illuminance and daylight factor measurements and calculations are made for points on this plane.

Workstation – Area outfitted with equipment and furnishings, typically allocated 56 NSF each. Managers and other staff with no direct reports as well as part-time, seasonal, and job-sharing staff may qualify for a workstation. Such environments are particularly conducive to team-oriented office groupings. These environments work best when they have access to conference and small group meeting spaces.

2.0 NARRATIVE

2.1 General

2.1.1 Clinical and Operational Summary

1. Service Structure/Organization

General

Audiology and Speech-Language Pathology are organizationally linked within Veterans Health Administration Patient Care Services. Along with other parallel programs, the VA Audiology and Speech-Language Pathology Service (ASPS) falls under the Office of Rehabilitation and Prosthetic Services (refer to Figure 1).

The Audiology and Speech-Language Pathology Service is dedicated to three major goals (U.S. Department of Veterans Affairs - Patient Care Services):

- Providing high quality, comprehensive, state-of-the-art clinical services to veterans with hearing, tinnitus, balance, speech, language, voice, and swallowing disorders
- Supporting the training of developing audiologists and speech pathologists
- Conducting research to improve technologies, methodologies, treatment efficacy, and associated elements of patient care

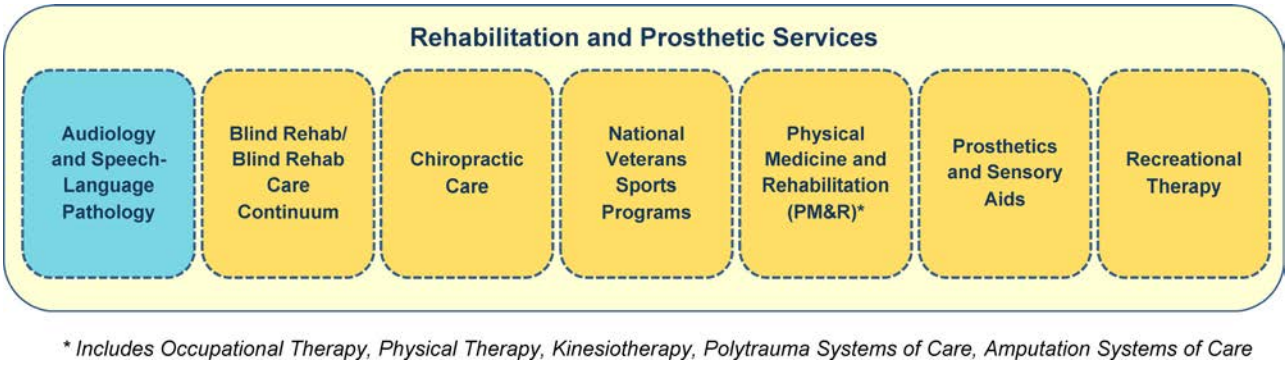


Figure 1: *Rehabilitation and Prosthetic Service Diagram (based on the following source: VA Patient Care-Rehabilitation Services)*

Organizational Structure and Staffing

The specific organizational structure of the Audiology and Speech-Language Pathology Service is determined locally. Most commonly, the Chief of Audiology and Speech-Language Pathology reports as a Service Chief to the Chief of Staff, or as a Section Chief(s) to the Chief of Physical Medicine and Rehabilitation Service. Audiology and Speech-Language Pathology clinic caregivers and staff at a VA Medical Center typically include the following:

- Service and/or Section Chief (Audiologist and/or Speech Pathologist)
- Assistant Section Chief
- Audiologist(s)
- Speech-Language Pathologist(s)
- Audiology and/or Speech-Language Pathology Health Technician(s)
- Administrative Officer

- Administrative Assistant(s)/Clerical Staff
- Residents/Students

The Audiology and Speech-Language Pathology service at Community Based Outpatient Clinic (CBOC) locations (or other non-VAMC locations) is staffed with associated service providers depending on the size of the facility:

- Audiologist(s)
- Speech-Language Pathologist(s)
- Audiology and/or Speech-Language Pathology Health Technician(s)

CBOC locations generally do not house the Service or Section Chief and associated administrative staff (such as, Assistant Service Chief, Administrative Officer, etc.). Other administrative staff (such as, receptionist/check-in clerk) may be shared with adjacent specialty clinics. Providers may conduct administrative functions in a shared office or team work area.

Care Delivery and Patient Demographics

In accordance with the VHA Directive for the services, it is policy that "facilities provide access to integrated, specialized, evidence-based audiology, and speech pathology services. These services should optimize the individual Veteran patient's ability to function by eliminating or reducing his/her impairment, activity limitations, participation restrictions, and environmental barriers related to hearing, tinnitus, balance, speech, language, voice, and swallowing disorders" (Dept. of Veterans Affairs, VHA Draft Service Directive ASPS, 2016).

Audiology and Speech-Language Pathology services are ideally collocated as a dedicated specialty clinic within either a VA Medical Center (VAMC) or Outpatient Clinic setting. While space constraints have, in some cases, led to dispersed services, collocation of Audiology and Speech Pathology allows for sharing of administrative staff as well as staff collaboration for the care of a common patient population, including those with traumatic brain injuries (TBI) and neurocognitive disorders. Often, patients seeking treatment in both services have multiple physical and cognitive disabilities.

The VA patient population for Audiology is predominantly outpatient; however, Audiologists also regularly perform diagnostics and treatments for inpatients. By comparison, the patient population for Speech-Language Pathology is approximately 50% inpatient and 50% outpatient. Speech-Language Pathology services have historically been located at VA Medical Centers due to the complexity of procedures, strong relationship with other VAMC based services, required competencies, and the cost of specialized equipment. However, Speech Pathology is beginning to have a presence in outpatient clinics. Advances in Telemedicine technologies have permitted remote treatment and diagnosis of patients for both services. Refer to.2.1.2.2 Telehealth for further discussion.

Service Relationships

Significant inpatient/outpatient service relationships for Audiology and Speech-Language Pathology at VAMC and offsite facilities are illustrated in Figure 2. Both Audiologists and Speech Pathologists provide care for Community Living Center (CLC) residents and, to a limited degree, Polytrauma, and Spinal Cord Injury (SCI) patients at VAMCs. Dedicated space for Speech Therapists/Therapy may be authorized at CLCs and Polytrauma Rehab Centers (PRCs) to accommodate these functions at VAMC campuses. Likewise, offsite CBOCs likely

have both Audiology and, to a limited degree, Speech Pathology space, while offsite CLCs may have dedicated Speech Pathology space only, necessitating travel by Audiologists between the medical center and CLC to administer care.

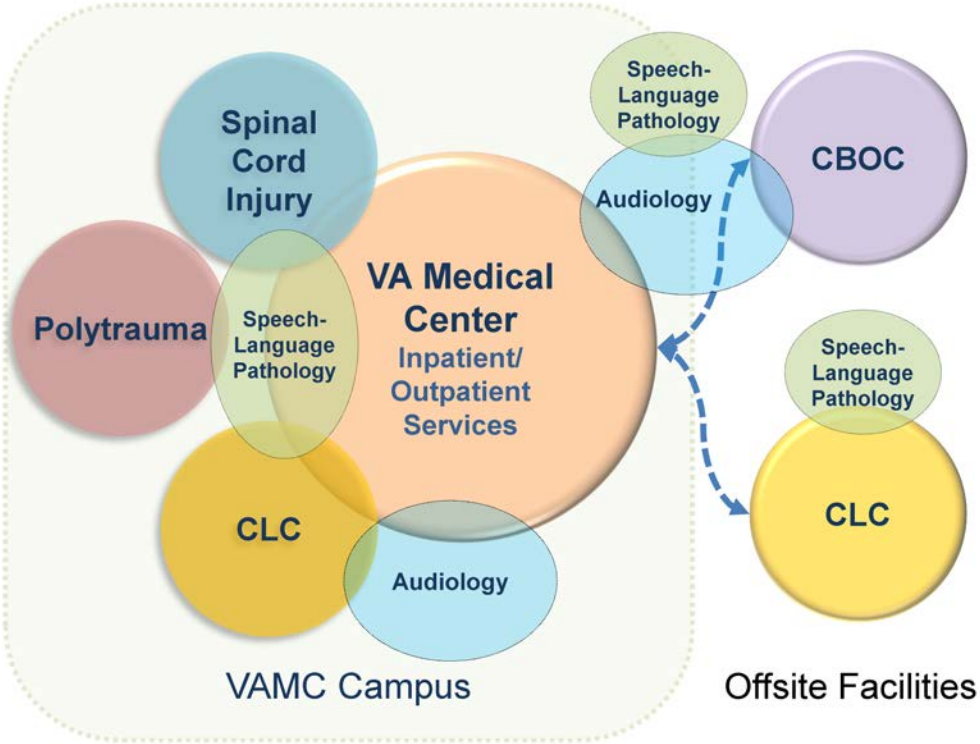


Figure 2: *VAMC and Offsite Service Relationships – Audiology and Speech Pathology*

2. Audiology Service Summary and Activities

Audiology services include:

- Aural rehabilitation
- Assessment of balance problems
- Cochlear implant and/or bone-anchored hearing management in some locations
- Evaluation and treatment of hearing loss
- Evaluation and management of tinnitus
- Evaluation/issue of hearing aids and assistive/alerting devices to eligible veterans

Activities commonly performed include:

- Balance Testing, including videonystagmography (VNG)
- Cerumen Management (ear wax removal)
- Hearing Aid Adjustments
- Hearing Exams
- Hearing Aid Fitting and Programming
- Ototoxic Monitoring

Compensation and Pension examinations for auditory disorders, whose results are used to determine service connection and disability compensation for hearing loss and tinnitus (Dept. of Veterans Affairs, VHA Draft Service Directive ASPS, 2016, p. D1), are an integral part of the

Audiology practice within Veterans Affairs (VA). Examination procedures have strict compliance guidelines requiring specialized space to meet test performance criteria (Dept. of Veterans Affairs, VHA Draft Service Directive ASPS, 2016, p. D2).

3. Speech Pathology Service Summary and Activities

Speech-Language Pathology services include:

- Evaluation and treatment of speech, language, and cognitive-communication disorders
- Diagnostic assessment and treatment of swallowing disorders
- Diagnostic assessment and rehabilitation of voice disorders
- Selection and training for assistive technology devices including augmentative and alternative communication devices

Activities most commonly performed include:

- Evaluation, treatment and management of swallowing disorders
- Differential diagnosis of voice disorders
- Treatment for alaryngeal speech (example: tracheoesophageal puncture (TEP))
- Treatment of speech, language, and cognitive-communication disorders
- Patient and family education and counseling

2.1.2 Trends

1. VA Trends

The growing number of older Veterans and an influx of a new generation of combat Veterans from Operation Enduring Freedom/Operation Iraqi Freedom/Operation New Dawn (OEF/OIF/OND) are resulting in an increased prevalence of Veterans with disorders of hearing, balance, speech, language, cognition, and swallowing. Auditory system disabilities, including hearing loss and tinnitus, are among the most common service-related disabilities. High incidences of traumatic brain injury and post-concussive symptoms reported over the last decade have resulted in increased rates of sensory and cognitive-communication complaints (Dept. of Veterans Affairs, VHA Draft Service Directive ASPS, 2016).

Emerging challenges for VHA audiology and speech pathology programs include: increasing prevalence of age-related and trauma-related disorders of communication, cognition, swallowing, hearing, and balance; greater demand for compensation and pension evaluation services; rapidly changing treatment technologies and paradigms; expanding scope of practice; changing care delivery models; and an aging workforce (Dept. of Veterans Affairs, VHA Draft Service Directive ASPS, 2016). Additional challenges and trends include:

- Open access leading to unscheduled/walk-in patients
- Telehealth

2. Telehealth

The expanding opportunities relative to telehealth/telemedicine for the delivery of both Audiology and Speech Pathology services in VA are well documented in numerous recent JRRD (Journal of Rehabilitation and Research Development) publications (Jacobs PG, 2014) (Smith, 2013) (Henry, 2012) and U.S. Department of Veterans Affairs publications (for instance: (Vantage Point, 2015)). Rapidly emerging technologies, recognition of the benefits,

wider acceptance of the service model by both providers and patients, and the gradual erosion of barriers have contributed to the advancement of programs. The VA has provided significant leadership in the development of teleaudiology programs, particularly in the U.S. since 2009 (Jacobs PG, 2014).

Benefits

Research findings indicate that teleaudiology and other telehealth services (such as for Speech Pathology) greatly improve access in rural communities, are cost effective, and benefit integrated care (such as between Audiologists and Mental Health professionals) (Jacobs PG, 2014); (Smith, 2013); (Henry, 2012).

With an estimated 37% of enrolled Veterans living in rural areas and drive times exceeding two hours or more for those in highly rural areas (Jacobs PG, 2014), VA's efforts to expand access via CBOC's over the last five years coincides with the recognition of the potential benefits of telehealth. In one study which analyzes telehealth use relative to Comprehensive TBI Evaluation (CTBIE) (Smith, 2013), research data indicate that the highest percentage of requested telehealth consults were for speech-language pathology and audiology.

Programs

Emerging and established teleaudiology and telehealth programs include (Jacobs PG, 2014):

Figure 3: *Teleaudiology Encounter; Source*: *VA Blogs-Telehealth saves Florida-veteran time travel*

- Clinical video telehealth: face-to-face video-conferencing between patients and providers involves synchronous/real-time data collection for conducting hearing tests, hearing aid fittings and audiologist-directed real-ear measures, hearing-aid counseling, and tinnitus management (refer to Figure 3).
- Store and forward telehealth: data acquired and stored by a technician at a remote facility is later forwarded to a specialist for interpretation and diagnosis. Examples include video otoscopy, audiometry, immittance, otoacoustic emissions, and auditory brain stem (ABR) response readings.
- Remote monitoring ("home telehealth"): uses mobile devices to collect data that can be monitored by healthcare providers, such as monitoring hearing aid use or changes in hearing over time.
- Progressive Tinnitus Management (PTM): Uses education and counseling to help patients learn how to self-manage their reactions to tinnitus; the program has been adapted by delivering the intervention via telephone and adding cognitive-behavioral therapy. Research indicates that this treatment facilitates an integrated approach to tinnitus management for persons with or without TBI since there is a correlation between patients experiencing significant tinnitus and depression/anxiety (Henry, 2012).

- Mobile health: Smartphone applications (apps) or other software is used for self-management, independent of the practitioner. Readily available apps include those for hearing testing, auditory training, tinnitus management, and hearing aid counseling. This software is also being used to remotely adjust hearing aids (refer to Figure 4).

For Speech Pathology services, speech and language therapy, and some swallow evaluations may be conducted via telehealth.

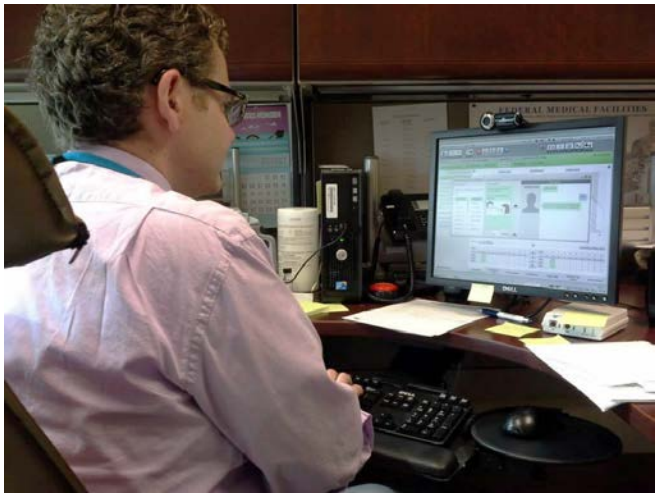


Figure 4: *An audiologist at the Cleveland Medical Center adjusts his patient's hearing aids during a telehealth appointment; Source: VA Blogs-Need an audiologist? There's an app for that.*

Barriers and Facility Considerations

Reported barriers to implementation of teleaudiology and telehealth programs include ((Jacobs PG, 2014) (Smith, 2013)):

- Scheduling challenges (coordinating schedules between two sites, scheduling space); "setting up the clinic" (equipment and space)
- Conducting a physical exam over a virtual modality (providers rely on the telehealth clinical technician [TCT] to be their hands); ensuring privacy of personal health information
- Ensuring reimbursement; training and skills development relative to the technologies; and user/patient access to technology

As Audiology and Speech Pathology clinicians gain acceptance of telehealth as a form of practice, development of appropriate space and equipment to support the clinical activities will help facilitate adoption and implementation. These considerations are further discussed relative to teleaudiology and telehealth for Speech-Language Pathology in the functional and technical sections (2.2 and 2.3, respectively) of this document.

2.2 Functional Considerations

2.2.1 General

Audiology and Speech-Language Pathology services involve complex diagnostics and treatments requiring highly specialized space, equipment, and infrastructure (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17). Although the two services are organizationally joined, distinct differences exist with respect to functions, patient care, and support activities. On the other hand, the services have significant common functional relationships with other Rehabilitation and Prosthetics Services, including Physical Medicine and Rehab (PM&R) and Traumatic Brain Injury (TBI), as well as with other hospital/inpatient and outpatient services, including ENT (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17).

1. Functional Areas

For planning purposes, based on distinct functions, the Audiology and Speech-Language Pathology Service (ASPS) is organized into six Functional Areas (FAs). Refer to *PG-18-9 Chapter 204: Audiology and Speech-Language Pathology Services Space Planning Criteria*. These are:

- FA-1 Reception Area
- FA-2 Audiology Clinic Patient Area
- FA-3 Speech-Language Pathology Clinic Patient Area
- FA-4 Support Area
- FA-5 Staff and Administrative Area
- FA-6 Education Area

Refer to Sections 2.2.4 and 2.2.5 for discussion of key spaces associated with the Functional Areas.

2.2.2 Medical Center/Hospital Setting

1. Department Location

At VA Medical Centers, Audiology and Speech-Language Pathology (ASPS) is best collocated in a clinical setting with dedicated space planned to accommodate the specialized functional requirements of the services. Convenient access to the main or outpatient building entrance is preferred; however, if the department is located on a floor other than the entry level, proximity to vertical transportation is recommended. Although it is critical to maintain separation from busy and noisy areas, such as the main lobby or canteen, wayfinding to the department is a significant consideration due to the large number of outpatients, particularly for Audiology. Clear and intuitive wayfinding as well as convenient location are also important since patients and family members may have a variety of physical and cognitive disabilities, including balance disorders.

Audiology and Speech-Language Pathology may be located in an outpatient area of a Medical Center or in a clinic close to other related services, such as PM&R and ENT. When planning for the location of the service at a VAMC, the relationship between ASPS and other inpatient, residential, and support services such as Intensive Care, CLC, and Sterile Processing shall also be considered. Proximity to vertical transportation for access to departments that may be

on other floors of the facility for staff convenience and to facilitate efficient workflow is important. Refer to Figure 5 and Appendix 5.2 for diagrams of representative VAMC ASPS clinics, such as at Bay Pines (C.W. Young VAMC) and Orlando VAMC (Lake Nona), which illustrate examples of these functional relationships.

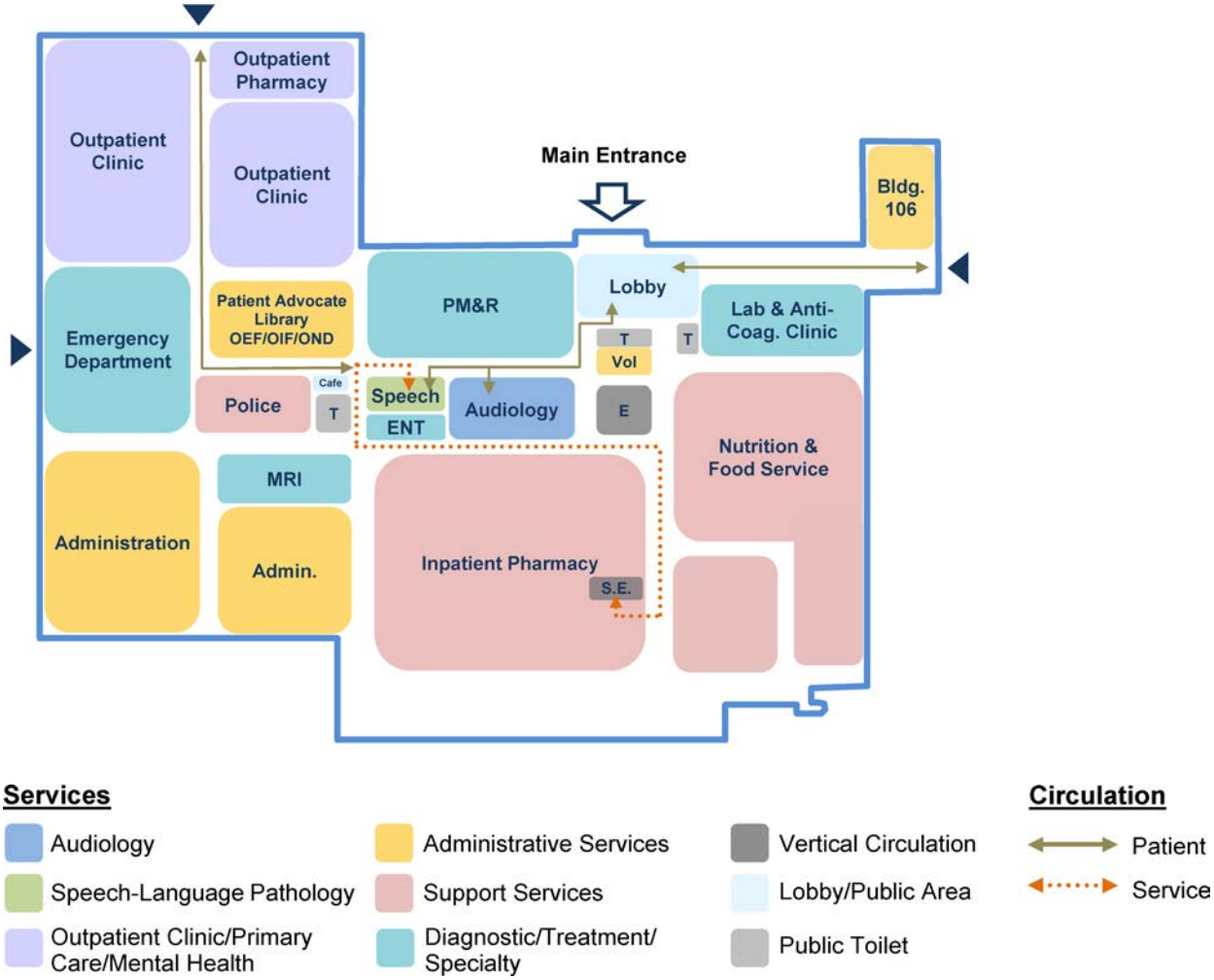


Figure 5: *Functional Relationship Diagram – Bay Pines, FL*

2. Department Functional Relationships

Audiology and Speech-Language Pathology have direct service relationships with other departments at a typical VA Medical Center. ASPS and PM&R often have common patients, and a strong adjacency between ENT and Audiology is important for patients who often need to navigate between these departments during a single visit. The functional relationship between ASPS and inpatient nursing units as well as the Emergency Department is an important planning consideration. Providers treat patients at their bedside, and patients are sometimes transported to the department on beds/gurneys. Fluoroscopic exam of swallow function (also known as Modified Barium Swallow (MBS)) is performed in Radiology and is a consideration for service proximity between Speech Pathology and Radiology.

A key support service relationship exists between Sterile Processing (SPS) and ASPS. Speech Pathology has unique requirements relative to scope handling protocols. Some

Audiology devices, such as small instruments used for cerumen management, may also be processed through SPS, although Medical Centers are increasingly requiring that all instruments for cerumen removal be single use/disposable.

While direct adjacency between the Canteen and ASPS is not advised due to noise/traffic, convenient access is helpful for patients, family members, and staff due to the length of some procedures.

Key services and departmental relationships in a VAMC setting are illustrated in Figure 6.

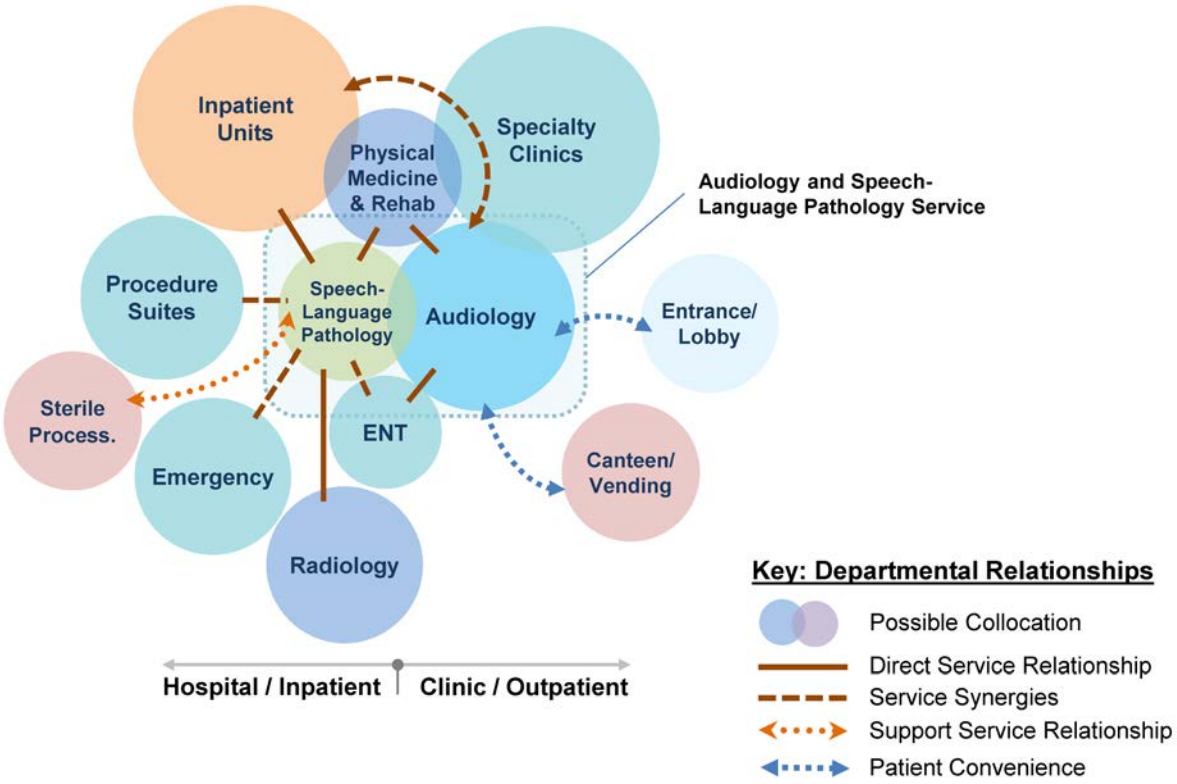


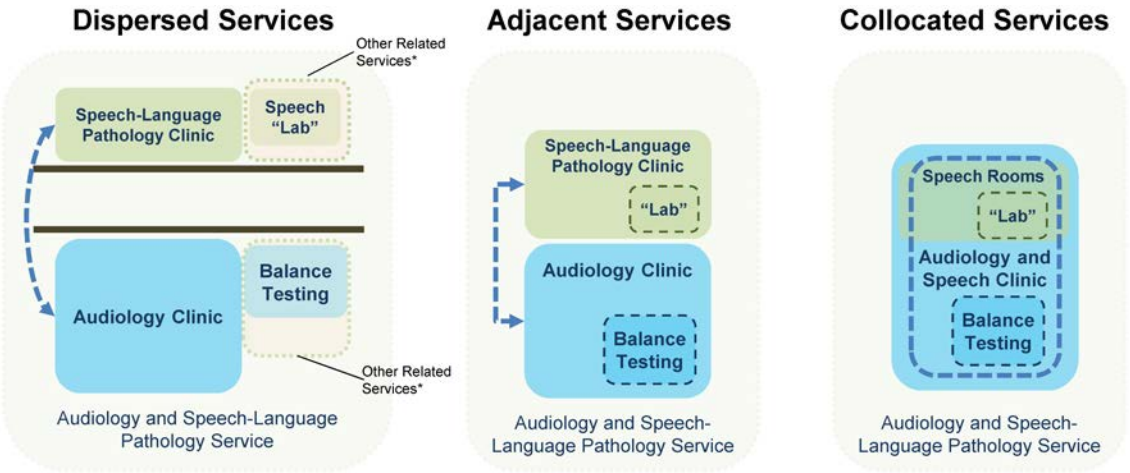
Figure 6: *Departmental Relationships – VAMC Audiology and Speech Pathology Service*

3. Service Proximity

Audiology and Speech-Language Pathology services along with all associated functions/activities are ideally collocated in a single clinic at a VA Medical Center, in order to facilitate staff collaboration for the care of common patients, and for operational efficiencies in terms of shared support and administrative/staff functions.

In circumstances where space constraints or other limitations require service separation, Speech-Language Pathology may be located in another part of the facility, such as on another level proximate to inpatient services and/or an outpatient procedure area. If Speech-Language Pathology is separated, it must have all associated support and administrative functions collocated in order to function as an independent clinic. Provisions for connections to other patient care or support services via vertical transportation and good wayfinding are also important in such circumstances, particularly since Speech-Language Pathology is, in general, a smaller service in terms of both workload and footprint relative to Audiology.

Additional examples of service dispersion include the location of certain specialty functions associated with ASPS within other departments of the Medical Center. For instance, Posturography is often located in PM&R or Polytrauma (in locations that have PRC's) rather than in the Audiology Clinic (refer to Section 2.2.4.1 Posturography Room). Swallow studies and videostroboscopy may be performed in an Endoscopy Procedure Room (also referred to as Speech "Lab" at some Medical Centers) located in an outpatient procedure setting, and both Audiology and Speech Pathology may have dedicated space in a CLC.



Note: The terms, "Balance Testing" and "Speech Lab" encompass several diagnostic/treatment functions within Audiology and Speech Pathology, respectively; they do not represent individual rooms described later in this Design Guide.

***Figure 7**: Functional Relationships – Service Proximity*

Figure 7 illustrates three alternative scenarios for the location of Audiology and Speech Pathology services; collocated services and functions are preferred. Refer to Appendix 5.2 for examples and discussion of these scenarios for facilities that were visited as part of the development of this Design Guide.

4. Telehealth Considerations

At VA Medical Centers, teleaudiology and other telehealth services (such as for Speech Pathology) may involve consultations/diagnostics, clinical education, or group therapy programs. As such, the VA Medical Center is considered the "hub" location for delivery of teleaudiology and Speech-Language Pathology telehealth services. ASPS Clinics at VAMC's require both individual office/consultation spaces and group rooms/classrooms that are specifically planned and equipped to conduct teleaudiology and telehealth. Refer to key room descriptions in 2.2.4 and 2.2.5 for Telehealth and Group Rooms for specific criteria.

2.2.3 Outpatient Setting – Community Based Outpatient Clinic (CBOC)/Ambulatory Care Centers (ACC)

1. Department Location

The Audiology and Speech Pathology Clinic at Community Based Outpatient Clinics (CBOCs) and Ambulatory Care Centers (ACCs) shall be located in close proximity to the main or secondary entrance and adjacent to other specialty clinics for potential sharing of administrative resources (such as reception), and support space. Since Audiology and Speech Pathology are specialty services, patient care functions are not readily accommodated in multi-

function examination/treatment rooms; a dedicated clinic for the service shall be planned. If ASPS is at a large multiple-story Outpatient Clinic or Ambulatory Care/Surgery Center, it may be located on a non-entry level, with convenient access to vertical transportation and intuitive wayfinding. ASPS shall never be located immediately adjacent to noisy areas or noise-generating functions.

2. Department Functional Relationships

Compatible functional adjacencies with ASPS include PM&R and the Eye Clinic. If the facility has an ambulatory procedure/surgery suite, there may be synergies with ASPS in terms of the types of procedures and patients treated. Fluoroscopic exam of swallow function (also known as Modified Barium Swallow (MBS)) is performed in Radiology and is a consideration for service proximity between Speech Pathology and Radiology, if these services are authorized at the facility. If endoscopic swallow studies are performed, the process for handling scopes and functional relationship to Sterile Processing and other support spaces, such as Clean Supply and Soiled Utility/Holding Rooms, needs to be a consideration. Patient and staff toilets shall be located within the clinic.

Compensation and Pension (Comp & Pen) exams are performed in sound suites located within the outpatient Audiology Clinic, or in a separate Comp & Pen facility. In such circumstances, consideration for patient and staff flow and proximity between the two locations shall be evaluated during the facility planning phase.

Access to a Canteen Service, coffee shop, or vending is important for patient, family, and staff convenience, but should not be adjacent.

Key services and departmental relationships between ASPS and other services at CBOCs are illustrated in Figure 8. Also, refer to the Functional Relationship Matrices in *PG-18-9 Chapter 204: Audiology and Speech-Language Pathology Services Space Planning Criteria*, Section 7.

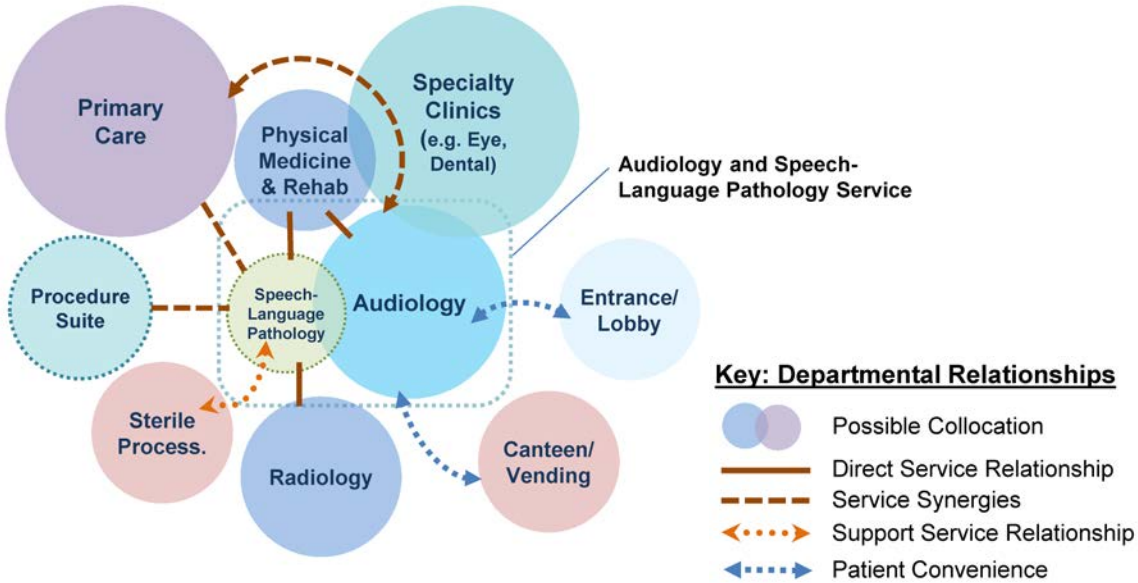


***Figure 8**: Department Relationships – ACC/CBOC Audiology and Speech Pathology Service Telehealth Considerations*

3. Telehealth Considerations

Outpatient Clinics (CBOCs) will typically be utilized as the "spoke" location for teleaudiology and other telehealth services (such as Speech Pathology). Depending on the size of ASPS, a dedicated Telehealth Exam Room may be allocated. This room accommodates the patient and telehealth clinical technician (TCT) and is equipped to connect with the remote clinician/provider (typically at the associated VAMC) via telemedicine technology. Refer to key room descriptions in section 2.2.4.1 Telehealth Exam Room and Telehealth Room for specific room criteria.

2.2.4 Audiology Functional Considerations

Services performed in Audiology range from routine activities for established patients which take from 5 to 20 minutes, such as hearing aid adjustments and cerumen management, to complex procedures and treatments, which range from 20 minutes to over an hour, such as balance testing (including Vestibulography, Posturography, Sinusoidal Vertical Axis Rotation), hearing aid assessments for new patients, and exams to establish benefits eligibility (Comp & Pen Exams). Audiometric exams for new patients average about 60 minutes, while those for established patients require between 30 to 45 minutes. Other patient care activities include (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17):

- Acoustic Immittance tests (Tympanometry)
- Hearing Aid Fitting/Programming
- Auditory Evoked Potentials (BAEP)
- Otoacoustic Emissions
- Tinnitus Assessment
- Aural Rehabilitation
- ENT Procedures/Services

Some key considerations for the planning of Audiology services are:

Table 1: Audiology Service Summary

Cerumen Management Hearing Aid Adjustments	• Most frequent and walk-ins
Hearing Exams Hearing Aid Adjustments	• New and established patients, generally performed in booth
Balance Testing	• Subspecialty with 1-3 rooms. Generally in Audiology Clinic, but may be collocated with Polytrauma at sites with PRC's
Comp & Pen Exams	• Integral part of Audiology practice for VA

1. Functional Areas/Key Rooms (FA-2 and FA-4)

Clinical activities for Audiology are accommodated in a series of specialty diagnostic/treatment rooms and several dedicated support functions. Standard Support and Staff & Administrative Area functions, such as Clean Supply and Soiled Holding Rooms, Equipment Storage, Patient and Staff Toilet Rooms, Staff Lounge, Conference and Group Room(s), Reception/Waiting, and administrative offices may potentially be shared with Speech Pathology, based on local

operations and service size when the services are collocated. Audiology Clinic Patient and Support Area spaces (FA-2 and FA-4), including Telehealth, are individually described in this section; the functional relationship between key rooms is illustrated in Figure 9.

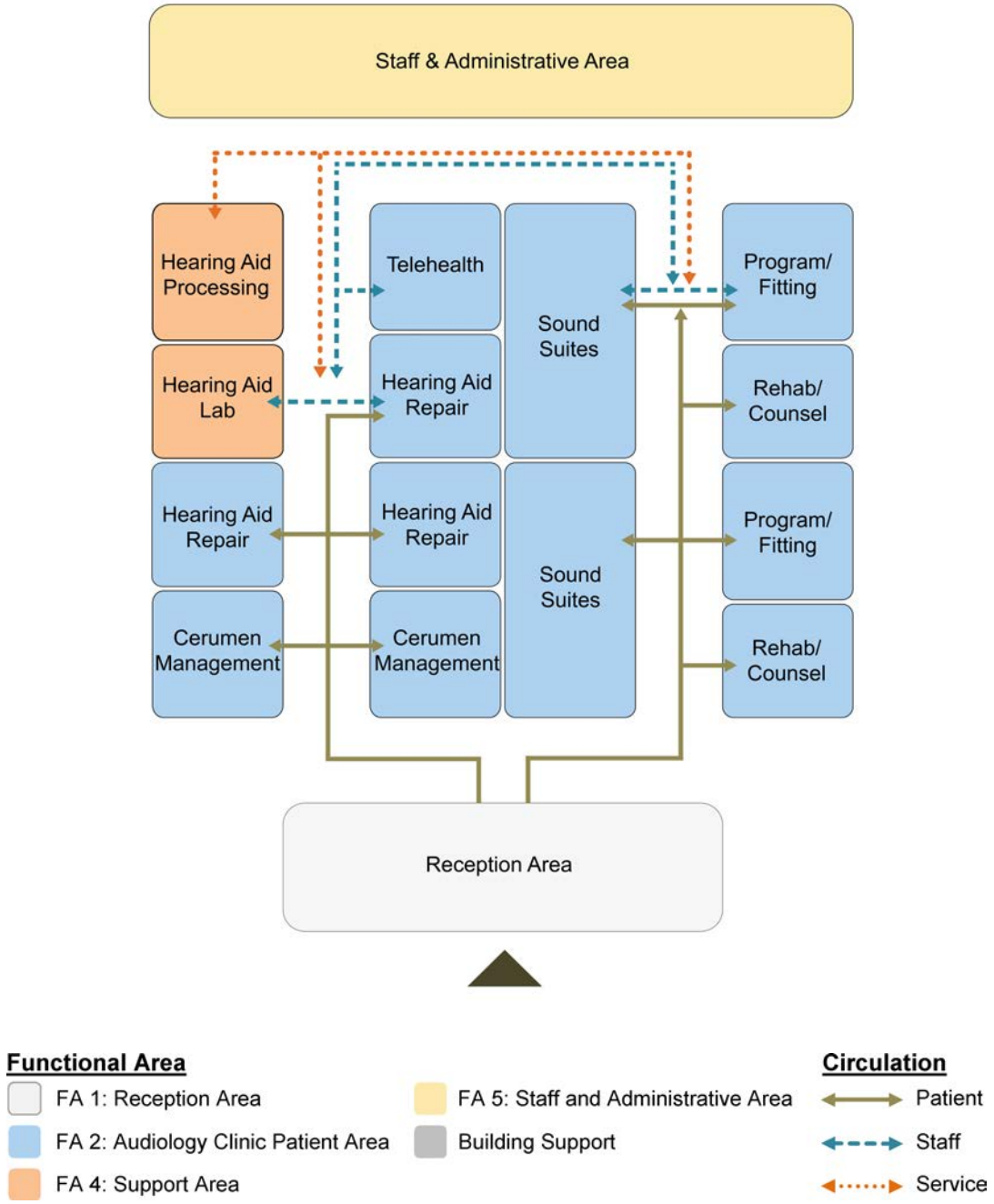


***Figure 9**: Functional Relationships Diagram: Audiology Key Spaces*

Audiology Rehabilitation/Counseling Room

The Audiology Rehabilitation/Counseling Room is a patient care space where Audiologists perform one-on-one auditory rehabilitation, device demonstrations, and counseling for assistive devices, including cochlear implants. Additional activities include quick fittings demonstrations of how to charge programmers, patient documentation, and other administrative work functions. Patient encounters are conducted one-on-one in the room, over the telephone, or via telehealth, and average 15 to 20 minutes (U.S. Department of Veterans Affairs (3), 2016) (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17). The patient is usually accompanied by a family member.

The Rehabilitation/Counseling Room is most closely associated with the Audiometric Examination Suites ("sound suites") and Programming/Fitting rooms. While the tasks described above may be performed in the sound suite, it is beneficial for booth turnover/efficiency to conduct these activities in the Rehabilitation/Counseling Room. Close proximity to the sound suites also facilitates handwashing, not available in the prefabricated booths, and provides relief for both patients and staff from the sense of confinement that may be experienced in the sound booths.

Figure 10: *Audiology Consultation/Demonstration; Source: VA Blogs-Helping Deaf Veterans*

Locating the Rehabilitation/Counseling Rooms and Programming/Fitting Rooms along a perimeter/exterior wall with windows, if available, is beneficial for access to natural daylight outside of the sound suites; however, glare from windows must be controlled. Lighting control/adjustability should accommodate a variety of tasks and conditions. Sound attenuation to produce a quiet environment is an additional important consideration for this space.

The layout of the Rehabilitation/Counseling Room supports consultation and demonstration activities, while maintaining safety considerations by locating the service provider close to the door (refer to Section 2.3.11 Physical Safety), and providing ample space for maneuvering a wheelchair or scooter. Key room contents include:

- Provider Workstation: desk with sufficient surface area to accommodate paperwork functions, space for charging programmers, and standard desktop equipment, including a computer workstation with dual monitor setup for telehealth. The mounting and location of monitors on a flexible arm shall permit viewing by both the provider and patient.
- Storage: space for small devices and paperwork associated with performing services, including space for demo items and manuals. This need may be accommodated with a combination of mobile pedestal file and overhead "flipper door" cabinets at the provider workstation.

- Mobile, adjustable height table for demonstrations, layout of hearing aids, and consultations positioned between the Audiologist and patient.
- Small mobile table for assistive device demonstrations and additional teaching.
- Handwash sink; faucet with electronic sensor controls preferred.

Wire management is addressed via numerous outlet locations above and below the workstation and on all sides of the room.

Refer to the Room Template, Audiology Rehabilitation/Counseling Room (AUD01) in Section 4.2 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

Hearing Aid Repair Room

Hearing Aid Repair is a patient care room where minor hearing aid adjustments and repairs are performed and ear impressions are made. This room should be located close to the department entry due to frequency of use, for both routine/scheduled appointments and walk-in patients. Additional activities may include demonstrations, consultations, patient documentation ("charting") and other administrative/work functions. Encounters are one-on-one with an average duration of 20 to 30 minutes. The patient is usually accompanied by a family member.

Figure 11: *Hearing Aid Repair, Storage Needs; Washington, DC VAMC*

Workflow in the room involves documentation of the patient's medical history at a computer workstation followed by diagnosis/treatment (ear exam, adjust hearing aid, make ear impression, etc.). The patient will be seated in either the exam/treatment chair or wheelchair, depending upon his/her mobility. Sufficient space for working and movement in either scenario, including wheelchair transfer, is accommodated in the room layout. Space for at least one side chair for a family member shall be provided.

The room requires sufficient standing height work/counter space and good overhead and task lighting to perform the meticulous tasks associated with making hearing aid repairs and adjustments. Working space and storage for repair supplies, tubing, receivers, wax guards, wax loops, brushes, battery cases, and many small parts shall be accommodated either in a modular casework system with countertop, drawers and cabinets, or a combination of adjustable height work bench, tool chest, and storage cabinets (such as utility cabinets, lateral files). Additional countertop equipment includes multi-drawer "bins" for storage of small hearing aid parts (refer to Figure 11).

The provider computer workstation shall include dual monitors with webcam capability for telehealth; a wall hung configuration maximizes floor and working space in the room. A sink for handwashing may be wall hung or incorporated into a modular casework system; electronic sensor controls are preferred for the faucet. Accommodations for disposable waste, including biohazard container, are required; a sharps container is optional based on local requirements.

Hearing aid modifications requiring buffing/grinding activities are performed in the Hearing Aid Lab. The Hearing Aid Lab should be proximate to this room for staff convenience and workflow efficiency.

Refer to the Room Template, Hearing Aid Repair Room (AUD02) in Section 4.3 and *PG-18-5 Equipment Guide List* for the recommended layout and additional room contents associated with this room.

Audiometric Examination Suites

The Audiometric Examination Suite (alternatively referred to as "sound suite") is the key component room of the Audiology Service. The preferred configuration (Suite 1) is a prefabricated suite, which typically consists of an examination side and a control side with a view window between the two sides (see Figure 12). Audiometric Examination Suite 2 may be provided as an option to accommodate overall facility planning and direction. It consists of a prefabricated sound booth inside of a conventional construction, sound attenuated room (see Figure 13). While manufacturers offer various standard configurations and sizes for prefabricated booths, the Audiometric Examination Suite templates in this Design Guide are larger to accommodate the unique functional requirements and room contents associated with performing hearing assessments for Veterans.

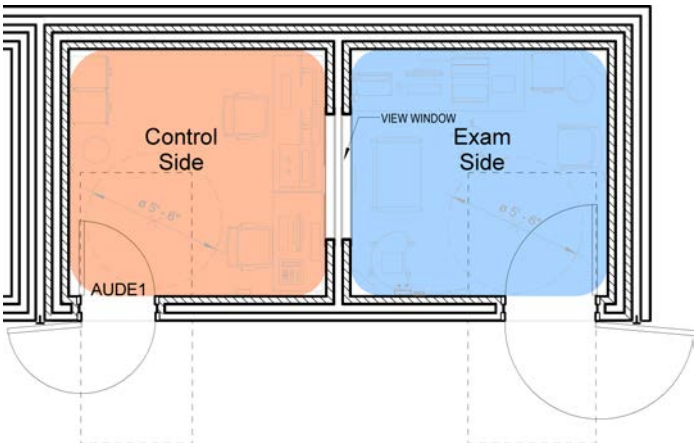


***Figure 12**: Audiometric Suite 1 Plan*

Prefabricated sound suites/booths are used for audiometric examinations, acoustic immittance tests, otoacoustics emission tests, disability (compensation and pension (C & P)) examinations for auditory disorders, and for research activities that require a highly controlled acoustic and electromagnetically shielded environment. Hearing aid fitting/ programming may be accommodated on the examination side of the suite, allowing for greater flexibility in space utilization within the department and minimizing the need for patient movement. An alternative (and supplemental) approach is to perform this function in the Programming/Fitting Room, which facilitates patient through-put

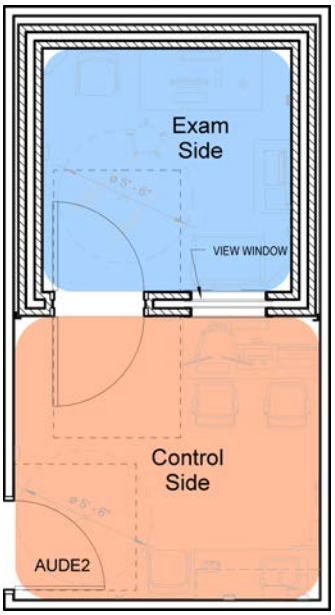


***Figure 13:** Audiometric Suite 2 Plan*

of the sound suites, and provides relief from booth-related stresses (such as the sense of confinement, etc.). A determination regarding the extent to which hearing aid fitting/programming is to be conducted in the prefabricated booth shall be made during initial facility planning in order to appropriately plan/program the department and respective spaces. For the purposes of this Design Guide, Suite 1 is planned to accommodate this function; Suite 2 may accommodate the function based on facility direction/operations, but the booth configuration is a limiting factor.

Additional patient care activities in the Audiometric Examination Suites include entering case histories into the computer, adjusting hearing aids, and searching the internet for available products. The control side of the suites shall provide for telehealth capability. Hearing assessments for new patients average about 60 minutes, while those for established patients range from 30 to 45 minutes. The duration of C&P exams, including chart review and medical opinion, is typically about 90 minutes.

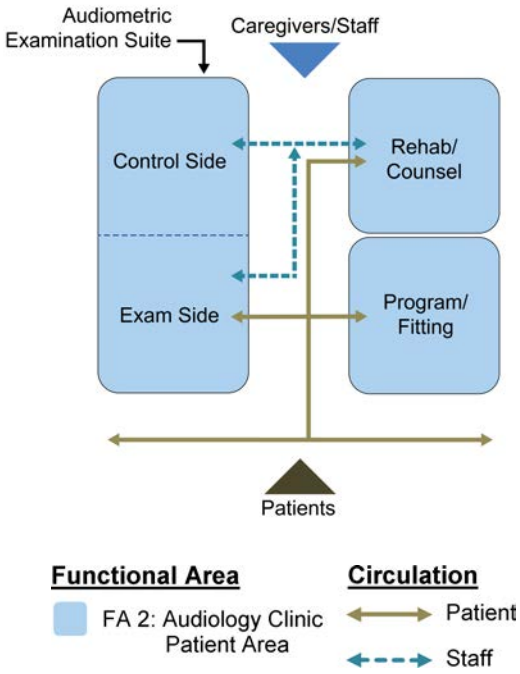
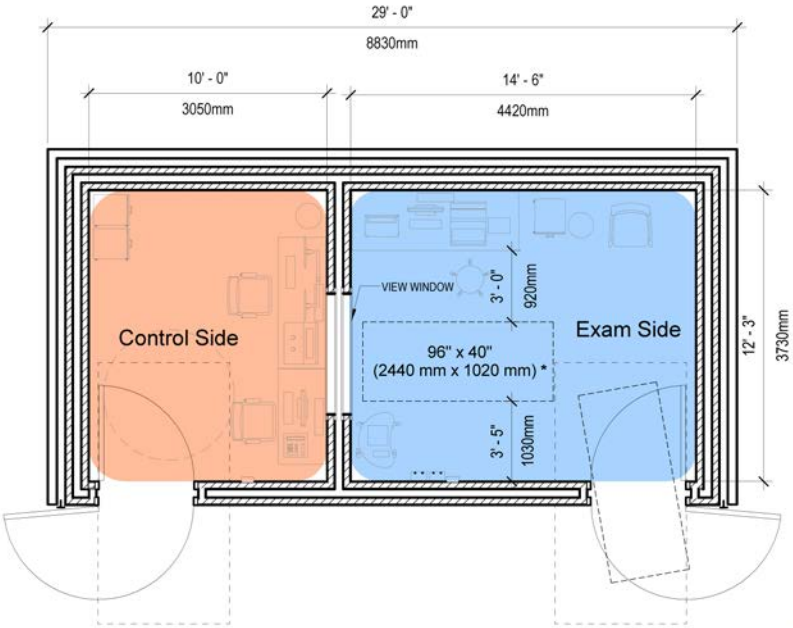


Figure 14: *Functional Relationship Diagram - Audiometric Exam Suite*

Audiometric Examination Suites are most closely associated with Audiology Rehabilitation/Counseling and Programming/Fitting Rooms (see Figure 14). Close proximity between these rooms facilitates movement of staff and patients between the spaces during a single appointment. For instance, the testimony portion of a C&P encounter is conducted in the Rehab/Counseling Room, while the hearing assessment and other clinical aspects of the appointment must be performed inside of the booth. Since plumbing fixtures cannot be located in the prefabricated sound suites/booths, access to handwashing in the Rehabilitation/Counseling Room, Programming/Fitting Room, or another convenient location is also an important consideration.



** Based on Bed Size defined in Guidelines for Design and Construction of Hospitals and Outpatient Facilities (FGI).*

Figure 15*: Gurney Suite Plan*

Special attention must be given to the privacy, acoustic, and electromagnetic radiation environments in which sound suites/booths will be located. Prefabricated sound suites shall be double-wall construction and conform to 1B 11-87 Booth Audiometric Examination Specifications which can be found on the ASPS SharePoint (VA Intranet - VHA Handbooks). Prefabricated sound suites/booths must conform to ambient noise attenuation according to current standards as published by the American National Standards Institute or other standards organization.

The space criteria for both Suites 1 and 2 include maneuvering space for wheelchairs, working space around the patient, and minimum door width/clearances (on both the control and exam room sides). At VAMCs, at least one sound suite shall be large enough to accommodate a patient bed or gurney on the exam side (refer to Figure 15).

Considerable advance planning and interdisciplinary/construction trade coordination is required for installation of a prefabricated sound suite/booth. The A/E firm and general contractor shall coordinate closely with unique vendor installation requirements. Specific provisions must be made for weight/concentrated load, structural slab depressions/slab preparation, clearances between the booth and surrounding construction, air distribution/temperature control, numerous power/data outlets, lighting, and fire protection.

(a) Suite 1, Audiometric Examination

Audiometric Suite 1 maximizes control/shielding of interference from ambient noise and electromagnetic sources, and provides sufficient space for all equipment associated with the full range of audiologic assessment procedures as well as hearing aid evaluations, programming, and fitting. The recommended configuration of Audiometric Examination Suite 1 provides for equally sized exam and control sides with double wall construction and dual inswing/outswings doors on both sides so that each side may be used interchangeably. Each side is accessed directly from the corridor or adjacent common space.

Figure 16: *Corridor with Sound Suites; VAMC Washington, DC*

In prefabricated, double-wall, two-sided audiometric suites with inswing/outswing or tandem outswing doors, adequate clear space adjacent to and in front of the door must be considered. If suites are located opposite from one another along a corridor, doors must be offset so that they do not block movement/egress in the corridor when doors on opposite sides are simultaneously open. Doors shall not block the clear egress width of the corridor, and transitions/thresholds into the prefabricated sound suite must be flush with the adjacent finish floor surface (refer to Figure 16).

The control side of the sound suite accommodates a service provider and one or two student(s)/trainee(s); the exam side accommodates a single patient, family member, provider, and trainee. The patient's position in the booth varies during the screening process. The patient will always face away from the view window and be positioned either near the window or in the center of the booth for some tests.

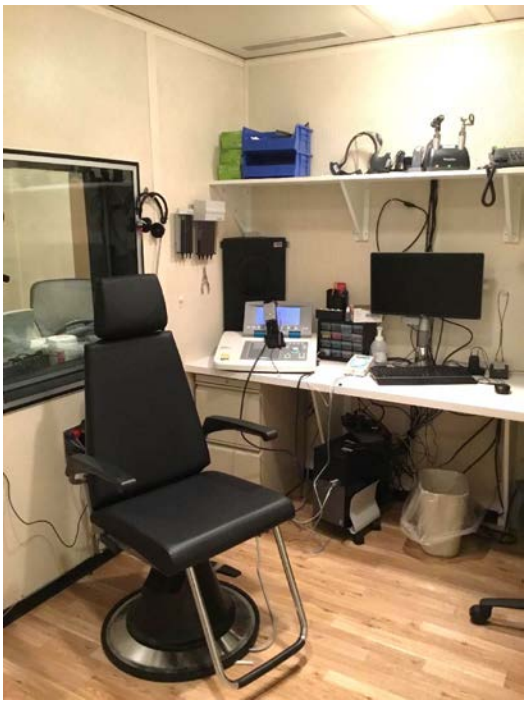


Figure 17: *Sound Suite; Orlando VAMC, FL*

Key room contents for the Audiometric Examination Suite 1 include various sizes of adjustable height tables to accommodate the numerous diagnostic testing devices, multiple computer workstations, monitors, and system components such as speakers. The control side includes dual monitors with webcam capability to accommodate telehealth.

Refer to the Room Template, Suite 1, Audiometric Examination (prefab, 2-sided suite) (AUDE1) in Section 4.4 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

(b) Suite 2, Audiometric Examination

Audiometric Examination Suite 2, if provided, offers an alternative that does not require prefabricated construction on both the exam and control sides. The prefabricated booth is for examination only, while the service provider conducts tests and records observations in the room, outside of the prefabricated enclosure. C&P exams may be performed in Suite 2 if ambient noise from surrounding spaces is mitigated on the control side per the room criteria.

This Audiometric Suite configuration requires access to the prefabricated booth through the control room/control side rather than directly from the corridor. Sufficient clearances are to be maintained to accommodate wheelchair maneuvering space at both the room entry and the inswing/outswing doors into the booth. Transitions/thresholds for doorways into the sound booth shall be flush with the adjacent finish floor surface.

Figure 18: *Audiometric Examination; Source: VA Blogs - VA offers Full Continuum of Care*

The control side accommodates a service provider and one student/trainee; the booth/exam side of the suite accommodates a single

patient, family member, and provider. The patient's position in the booth varies during the screening process. The patient will always face away from the view window and be positioned either near the window or in the center of the booth for some tests.

Key room contents for the Audiometric Examination Suite 2 include adjustable height tables to accommodate the numerous diagnostic testing devices, multiple computer workstations, monitors, and system components such as speakers. The control side includes dual monitors with webcam capability to accommodate telehealth. The control side also accommodates modular casework for storage of point-of-use supplies and countertop/work surface with a hand wash sink (electronic sensor faucet preferred).

Refer to the Room Template, Suite 2, Audiometric Examination (single prefab booth in room) (AUDE2) in Section 4.5 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

Programming/Fitting Room

This room accommodates the equipment used to program and fit digital hearing aids and bioelectric implants. Additional activities include orientation and auditory demonstrations, patient consultations, documentation, and other administrative work functions.

Figure 19: *Programming/Fitting; Orlando VAMC, FL*

The Programming/Fitting Room is most closely associated with the Audiometric Examination Suites ("sound suites") and Rehabilitation/Counseling rooms. While hearing aid programming/fitting may be performed in the sound suite, this room offers additional flexibility and efficiency within the department, particularly at smaller facilities with a limited number of sound suites (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17). A separate Programming/Fitting Room also accommodates handwashing, not available in the prefabricated booths, and provides relief for both patients and staff from the sense of confinement associated with the sound booths. It is recommended to locate the Programming/Fitting Rooms along a perimeter/exterior wall with windows for natural daylight; however, glare from windows must be controlled. A quiet environment and sound attenuation considerations are important for this space.

The unique equipment associated with this room is the Hearing Aid Analyzer/Real Ear Measurement System; this is located on an adjustable height workstation where the patient is seated. Activities associated with this system include initial otoscopic examination, insertion of a probe tube into the patient's ear, and conducting a real ear measurement with the device (John Pumford, 2001). Patient positioning relative to speakers that are components of the system is an important consideration for accurate measurements. Hearing aids may also be tested using this system without the patient being present.

Additional room contents include a separate provider workstation with sufficient surface area to accommodate paperwork functions, programmers being charged, and computer workstation, including dual monitors with webcam capability for telehealth. Cabinet space for storage of demonstration items, amplified phones, and brochures is needed; a countertop/work surface accommodates a small storage container for hearing aid parts and hand wash sink (electronic sensor faucet preferred). A wall-mounted mirror facilitates hearing aid demonstrations and a desktop video magnifier located on a mobile cart, is used to assist visually impaired patients. Wire management is a significant consideration for this room.

Refer to the Room Template, Programming/Fitting Room (AUD03) in Section 4.6 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

Cerumen Management Room

The Cerumen Management Room is a patient care space where the primary function is to perform ear irrigations and ear wax removal. Additional activities may include triage of walk-in patients, consultations, patient documentation ("charting"), and other administrative/work functions. It is best located close to the department entry due to frequency of use, for both routine/scheduled appointments and walk-in patients. This function is most closely associated with the ENT service at a VA Medical Center; emergency/urgent care treatments (such as removal of foreign objects from the ear) may also be performed in this room. Encounters are one-on-one with an average duration of 10 to 20 minutes. The patient is usually accompanied by a family member.

This patient care space accommodates the preferred diagnostic and treatment equipment required for cerumen management, including an ENT console diagnostic microscope, and video otoscope. Workflow in the room involves documentation of the patient's medical history at a computer workstation, followed by diagnosis and treatment while the patient is seated in either the exam/treatment chair or wheelchair, depending upon his/her mobility. Sufficient space for working and movement in either scenario, including space for wheelchair transfer, is accommodated in the room layout. Space for at least one side chair for a family member shall be provided.

Figure 20: *Cerumen Management Room; VAMC Washington, DC*

Enclosed cabinet space is required for storage of many single use items, including bottles and paper products, such as absorbent pads to capture moisture. A sink for handwashing may be wall hung or incorporated into modular casework; electronic sensor controls are preferred for the faucet.

The provider computer workstation shall include dual monitors with webcam capability for telehealth; a wall hung configuration maximizes floor and working space in the room. The video otoscope

requires consideration for placement relative to the display monitor and computer. Accommodations for disposable waste, including biohazard and sharps container, are required.

Refer to the Room Template, Cerumen Management Room (AUD04) in Section 4.7 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

Electrophysiology Room

This room accommodates the equipment utilized in measuring auditory evoked potentials, such as brainstem auditory evoked potentials (ABR) or electrocochleography (ECOG) for diagnostic purposes. This room is most closely associated with balance testing functions, including Posturography, Vestibulography, and Rotary Chair. While this function may be performed in multiple locations via a mobile system (on an equipment cart), if a dedicated room is authorized at the facility, it should be located in a relatively quiet area with limited traffic. The timeframes involved with ABR and ECOG are approximately 30 to 60 minutes, respectively. Alternate locations for the function are in a sound suite or Audiology Rehabilitation/Counseling Room equipped to accommodate the tests.

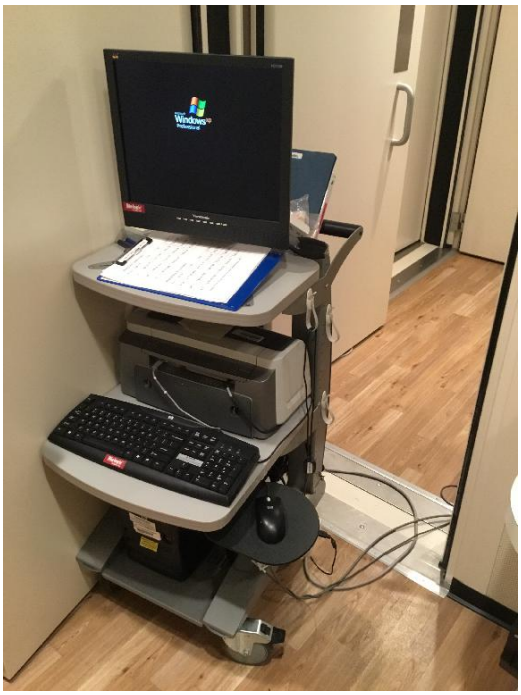


Figure 21: *Auditory Evoked Potential System; Orlando, FL*

The Electrophysiology Room shall be planned as a diagnostic/treatment room which minimizes noise transmission from adjacent spaces, and incorporates controlled lighting with dimmable fixtures. The type of patient chair will differ based on local requirements (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17). For instance, a side chair with arms is sufficient for otoneurological screening, which does not require a lot of time, but a chair that reclines or an exam table may be preferred for longer tests (e.g. middle, late potentials and threshold searches (Crumley, 2013)).

Additional room contents include modular casework for storage of a small quantity of supplies, countertop/work surface with hand wash sink (electronic sensor faucet preferred), and provider computer workstation with dual monitors and webcam capability for telehealth; a wall hung configuration maximizes floor and working space in the room. The testing equipment, which is laptop based, will be located on a mobile computer/equipment cart.

Adequate space for working and movement around the patient exam chair is required, including space for wheelchair or scooter access. Space for at least one side chair for a family member shall be provided.

Refer to Room Template, Electrophysiology Room (AUDP1) in Section 4.8 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

Balance Testing

Assessment and treatment of balance disorders is a specialty subset of Audiology, and may account for a large number of referrals to those medical centers and clinics that offer the services. Depending on clinical need and provider competencies, these diagnostic/treatment services may include some or all of the following:

- Computerized Dynamic Posturography
- Sinusoidal Axial Rotational Test (Rotary Chair)
- Videonystagmography (VNG)
- BPPV (Benign Paroxysmal Positional Vertigo) treatments

Videonystagmography (VNG) is the minimum test required to assess balance issues in patients. VNG along with the Rotary Chair are the most common balance diagnostics /treatments in Audiology clinics. Posturography, on the other hand, is more closely associated with Physical Therapy (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17), and therefore may be located elsewhere in a facility, such as with Physical Medicine and Rehab, Community Living Center, or Polytrauma. Each subtest lasts about 20 minutes; the duration for a full series of tests is about two hours (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17).

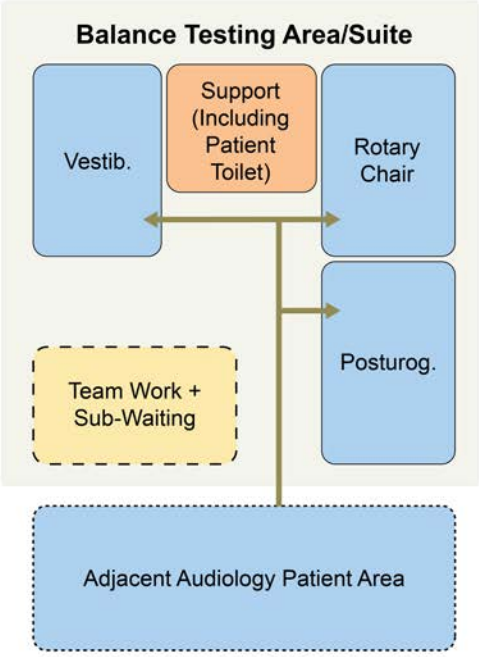


Figure 22: *Balance Testing Area (or Suite) with Posturography*

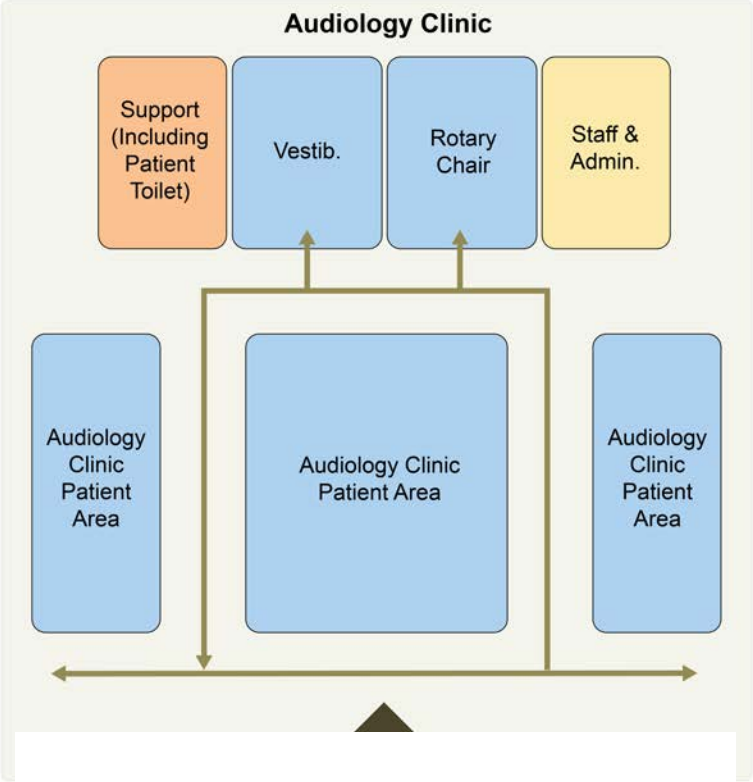


Figure 23: *Alternate Balance Testing Room Relationships (without Posturography)*

Functional Area

FA 2: Audiology Clinic Patient Area
FA 4: Support Area
FA 5: Staff and Administrative Area
Building Support

Circulation

Patient

Balance testing rooms are best collocated in a quiet area of the Audiology Clinic with limited traffic; a patient toilet room shall be located as part of the grouping or nearby. Diagnostics and treatments may be performed in a single large room to minimize the requirement for patient movement while they may be disoriented and dizzy; for instance, the VNG system and Rotary Chair are most commonly collocated. Alternatively, rooms may be planned for individual functions to minimize the amount of time a room is occupied. For the purpose of the ASPS Design Guide, separate room templates have been developed for Vestibulography (VNG), Rotary Chair, and Posturography Rooms. Refer to Figure 22 and Figure 23 for alternative functional relationships with and without Posturography Room.

Finishes and furnishings in Balance Testing Rooms should consider stress reduction strategies (environment of care), sound attenuation, cleanability/infection control, and minimizing clutter. Strategies for helping patients regain equilibrium following each test may include lighting control, size of the treatment table (extra width allows patient to adjust position for personal comfort), and a soothing color palette.

Individual Balance Testing Rooms are described below.

(a) Posturography Room

Posturography accommodates the equipment used to evaluate balance disorders utilizing a moving platform device to quantify a patient's ability to maintain balance under varying conditions when cues for vision, proprioception, and vestibular function are manipulated in both static and dynamic conditions.

***Figure 24**: Computerized Dynamic Posturography System; C.W. Bill Young VAMC, Bay Pines, FL*

The primary equipment associated with the room is the computerized dynamic posturography booth ("tilt booth") and computer/software system/control devices on a separate mobile cart. During testing, the patient is positioned and harnessed in a standing position, on the moving platform, facing the back of the booth, which houses a monitor. Small movements made by the patient are measured while the booth and/or floor platform is slowly tilted backwards and forwards to help isolate the source of balance disorder. The platform is contained in an enclosure which can also be used to generate apparent visual surround motions.

Additional room contents include modular casework for storage of a small quantity of supplies, countertop/work surface with hand wash sink (electronic sensor faucet preferred), and provider computer workstation with dual monitors and webcam capability for telehealth; a wall hung configuration maximizes floor and working space in the room.

The room shall also accommodate at least one side chair for a family member and/or resident/trainee. Although conventional best practice related to the room and fixture accessibility shall be maintained (ABA/ADA), accommodations for wheelchair-bound patients are not required for this room since the test requires the patient to be in an upright position.

Alternate locations for this function/room are Rehab Medicine (PM&R) and Polytrauma (limited to facilities with a PRC). In instances where the function is located elsewhere, proximity to the Audiology Clinic is recommended for both patient and staff convenience.

Refer to the Room Template, Posturography Room (AUDP2) in Section 4.9 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

(b) Vestibulography Room

This room provides visual and vestibular systems testing to determine if the vestibular (inner ear) or neurological system is the cause of a balance disorder. The room accommodates the equipment utilized in performing videonystagmography (VNG) and BPPV (Benign Paroxysmal Positional Vertigo) treatments. VNG measures eye movement during each of three tests (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17):

- Ocular Motor Test
- Positional Test ("Dix Hall")
- Caloric Test

Figure 25: *Vestibulography Room; Orlando VAMC, FL*

During the tests, the patient's orientation is varied from lying down to a seated position; positioning the patient's head at specified angles (such as 30 degrees) is a consideration for selection of the exam/treatment table.

Caloric testing involves stimulation of motion sensors in the inner ear using either air or water irrigators to elicit dizziness. For water caloric irrigators, direct connection to a sink is required; the source and flow depend on local and national infection control protocols. For instance, bottled distilled water may be supplied by Sterile Processing and manual control of water flow may be required; water temperature is controlled by the irrigator. The Ocular Motor Test requires the patient to follow dots on a screen; the screen may be wall mounted, but floor mounted equipment provides flexibility in positioning.

The layout of Vestibulography provides for a wide treatment table which accommodates flexible positioning of the patient, facilitates transfer from a wheelchair, and supports patient recovery from the tests (such as from nausea or dizziness). Additional space is

needed for the VNG system and its various components, including control equipment which must reach the patient's head. A modular casework system with countertop and sink, base and wall cabinets, accommodates workspace and storage of supplies needed for the tests.

Adequate space for working and movement around the procedure table is required, including space for wheelchair or scooter access. The provider computer workstation shall include dual monitors with webcam capability for telehealth; a wall hung configuration maximizes floor and working space in the room. Space for at least one side chair for a family member is recommended.

Refer to the Room Template, Vestibulography Room (AUDP3) in Section 4.10 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

(c) Rotary Chair Room

This room accommodates the equipment utilized in performing vertical axis rotational tests for patients with vestibular disorders. The primary equipment associated with the room is the Rotary Chair booth which, depending on vendor, may be either a circular or hexagonal configuration. The booth is a fully enclosed dark/black chamber with an integral rotational chair inside. During testing, the patient is harnessed in the chair while continuous communication between the provider and patient is conducted via an infrared camera, and a 2-way communication system. The test typically lasts between 20 to 60 minutes (U.S. Department of Veterans Affairs (3), 2016) (U.S. Department of Veterans Affairs (4), 2016).

Figure 26: *Rotary Chair; C.W. Bill Young VAMC, Bay Pines, FL*

Additional components associated with the Rotary Chair System include an electrical console located immediately close to the booth and control console/workstation located on a desk nearby; an emergency shut off switch is also located close to the booth. An isolation transformer is to be located in a separate facility Electrical Closet. The A/E and general contractor shall coordinate closely with unique vendor installation requirements; there are specific requirements for room layout and maximum distances between component parts.

Additional space must be planned for patient movement and access into the booth. Although the Rotary Chair cannot accommodate wheelchair-bound or bariatric patients, adequate space for maneuvering a wheelchair or scooter to the booth entrance shall be provided. Depending on the shape of the booth, space for housekeeping around the

perimeter is also a consideration. Additional room contents include modular casework for storage of a small quantity of supplies, countertop/work surface with hand wash sink (faucet with electronic sensor controls preferred), and at least one side chair for family member and/or trainee.

Refer to the Room Template, Rotary Chair Room (AUDP4) in Section 4.11 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

Cochlear Implant Mapping/Fitting Room

This room accommodates devices and equipment that are used to train patients who have recently received cochlear implants and are learning to hear for the first time with their implant. This room is also used for follow up mapping and adjustments. While this function is limited to VA Medical Centers or associated facilities where Cochlear Implants are performed, the room description and template are provided for planning guidance due to the specialty nature of functions and devices.

Figure 27: *Cochlear Implant Mapping; N. 46th St. Tampa, FL*

The layout of the Cochlear Implant Mapping/Fitting Room supports consultation and demonstration activities, while maintaining safety considerations by locating the service provider close to the door (refer to Section 2.3.11 Physical Safety), and providing ample space for the movement of a wheelchair or scooter. Key room contents include:

- Provider Workstation: desk with sufficient surface area to accommodate paperwork functions, space for charging programmers, and standard desktop equipment, including a computer workstation with dual monitor setup for telehealth. The mounting and location of monitors on a flexible arm shall permit viewing by both the provider and patient.
- Storage: space for small devices and paperwork associated with performing services, including space for demo items and manuals. This need may be accommodated in a combination of mobile pedestal file and “flipper door” cabinets at the provider workstation.
- A mobile, adjustable height table for demonstrations, layout of hearing aids, and consultations positioned between the Audiologist and patient.
- A second adjustable height table where assistive listening devices are displayed for patient training and demonstrations.
- Video conferencing system.
- Handwash sink; faucet with electronic sensor controls preferred.

Refer to the Room Template, Cochlear Implant Mapping/Fitting Room (AUD05) in Section 4.12 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

Telehealth Exam Room and Telehealth Room

The type of Telehealth room to be provided depends on whether it is located at a Medical Center or Outpatient Clinic/CBOC. If the room is at a CBOC, it will be developed as a *Telehealth Exam Room (EXTH1)* per current VA space criteria. Providing access to audiology services, including consultation with an Audiologist at remote sites via teleconferencing technology, this room accommodates a patient and a telehealth technician (refer to Figure 28). This room should be near other patient care spaces/exam rooms for patient convenience; however, noise transmission from adjacent spaces must be considered.

Figure 28: *Telehealth Exam Room; Source: VA Blogs-Telemedicine*

At a Medical Center the "hub" location is a clinician space based upon the remote "Clinician's Consultation Room", per the *Telemedicine Room Design Program Guide* (California Telemedicine and eHealth Center, 2011) and current VA space criteria for *Telehealth Room (WKTM2)*. Since this room is not a direct patient care space, an exam table is not required. This room will be a shared space which may be used for both teleaudiology and Speech Pathology telehealth appointments. The Telehealth Room shall be located in a quiet area with limited traffic, close to the Staff and Administrative Functional Area. Windows should be avoided, especially behind the subject because the light may wash out the video image or create extreme shadows.

Planning for both scenarios must consider camera/equipment placement relative to background (windows, doors, etc.) in order to avoid distractions and to establish optimal viewing angles and lighting conditions. The variety of telemedicine solutions has diverse infrastructure requirements; the impact includes room size, flooring, wall color, lighting, power, data, and conduit pathways. Refer to additional details discussed in Section 2.3 Technical Considerations.

Hearing Aid Lab

The Hearing Aid Lab is an Audiology Support Area space which accommodates the equipment used to modify custom hearing aids and ear molds; the room also incorporates storage for parts and supplies. Since the equipment in this room is shared by all Audiologists and Audiology Technicians, it should be convenient to the Audiology Clinic Patient Area. Due to noisy

Figure 29: *Hearing Aid Lab; Orlando VAMC, FL*

equipment such as the buffer/grinder, the room should not be located immediately adjacent to spaces requiring special sound attenuation such as Audiometric Exam Suites and Programming/Fitting Room.

The Hearing Aid Lab is a workroom which requires sufficient standing height counter space for equipment, working space, and a sink. The size of the room depends on the number of FTE's anticipated; the room template is based upon accommodating at least two people working simultaneously. Significant equipment in the room includes:

- Buffer/grinder/polishing workstation: the room template accommodates two self-contained workstations that incorporate dust collection. Countertop alternatives are available (as illustrated in Figure 29).
- Hearing Aid Vacuum Cleaner: this is a countertop vacuum/suction device which removes debris from hearing aids.

Storage for spare parts, tools, and supplies may be accommodated using a modular casework system or adjustable height workbench setup to maintain flexibility and adaptability. A combination of enclosed drawers and cabinets is necessary to support the storage needs. Additional countertop equipment includes multi-drawer "bins" for storage of small hearing aid parts and magnifier task light.

Sufficient general overhead and task lighting is required to perform meticulous tasks; numerous electrical outlets are required to plug in equipment. Additional considerations include provisions for adequate room exhaust due to the buffer/grinder, depending on the model purchased (self-contained, or countertop). Dust generated by the buffer/grinder may also cause slippery floors.

Refer to the Room Template, Hearing Aid Lab (AUDS1) in Section 4.17 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

Hearing Aid Processing Room

The Hearing Aid Processing Room is an Audiology Support Area space which accommodates activities associated with shipping and receiving hearing aids and hearing aid parts. Due to patient privacy considerations and the high cost of devices, the room shall be locked at all times. The room should be in a location convenient for ASPS staff, and adjacent to, or near the Copy/Mail Distribution Room, if possible.

The size of the room will depend on the number of providers. A separate open shelving unit is assigned to each provider for temporary storage of the boxes labeled with individual patient information. A single patient may have up to five boxes of devices and parts. A wall-mounted,

Figure 30: *Hearing Aid Processing; Washington, DC VAMC*

adjustable height computer workstation with counter (for layout and packaging functions) and cabinet space (for shipping boxes, paper, supplies), will accommodate the work/storage needs and occasional use by an FTE during each day. A multi-function printer/copier may also be located in this room.

Refer to the Room Template, Hearing Aid Processing Room (AUDS2) in Section 4.18 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

Additional Audiology Support Area Spaces

The Audiology Clinic requires access to additional support functions, including a Clean Supply, Soiled Holding, and Equipment Storage Rooms. If the service is small, some of these rooms may be shared with Speech Pathology; however, there are special requirements for these rooms if they also need to accommodate Speech Pathology activities (refer to discussion in Soiled Utility Room, Clean Supply Room, and Equipment Storage Room).

2. Workflow and Functional Relationships

The Audiology Clinic Patient and Support Area spaces may be organized in a variety of ways depending on the size of the program and available space. For locations with comprehensive services, zoning the patient care spaces in a way that corresponds to the type of treatment activity and level of complexity is suggested. Refer to Figure 9 which illustrates the functional relationships between key Audiology spaces, as well as patient/work flow between them. Refer to Section 3.0 Functional Diagrams for additional recommendations and discussion.

3. Functional Requirements

Significant forethought and technical coordination is required to plan for the space associated with Audiology functions. Refer to Section 2.3 Technical Considerations and Section 4.0 Room Templates for detailed technical criteria. Some key considerations include:

- Wayfinding to the Service incorporating both intuitive visual cues and clear, visible, barrier-free signage.
- Sufficient, waiting and seating, immediately adjacent to the clinic, configured so that the receptionists have direct visualization of patients and family members; a linear layout is preferred since patients are hearing impaired and may have other disabilities as well. Noise mitigation, a calming environment, connection to daylight/natural light, and proximity to toilet rooms and vending are also important considerations. The size of the waiting area shall allow for a certain percentage of walk-in patients and have sufficient maneuvering space for movement of wheelchairs and scooters.
- Patient Toilet(s) shall be located in the Audiology Clinic Patient Area.
- Staff support functions, such as a Staff Toilet, Staff Lounge, and Conference Room may be shared with Speech Pathology, but are to be located within the department. If ASPS is small, the Staff Lounge may be shared with an adjacent clinic or service.
- Planning for accessibility/barrier-free design is very important due to patients' disabilities. Wheelchairs and scooters must be accommodated in both public areas and corridor areas, as well as in the patient care rooms. Wide door widths, smooth transitions (avoid thresholds); flooring materials which facilitate movement, mounting heights of devices, and assistive devices such as handrails, grab bars, and adjustable height furnishings are all

considerations. Assistive technologies, such as CCTV, LOOP and *iseewhatyousay* have direct application for Audiology patients, and may be considered for supplementing standard barrier-free design at these facilities (Kickstarter) (Myers, A Technological godsend to Counter Hearing Loss, 2015) (Getting hard of hearing people "in the loop") (Myers, Hearing Aids Can Serve a Second Purpose as Wireless Speakers, 2013). Barrier-free considerations shall extend to staff spaces as well. Refer to *ADA/ABA* and the VA *Barrier-Free Design Standard (PG-18-13)* for additional information (assistive technologies are only *required* in high occupancy public spaces; however, may be considered for the public spaces of ASPS due to the patient demographics).

Figure 31: *Assistive Technologies: Hearing Loop*

- At VA Medical Centers, space for movement of gurneys/stretchers and patient beds is required within the Audiology clinic. Some rooms must also be able to accommodate a stretcher or bed. Refer to specific room descriptions and space criteria.
- Sound attenuation and noise mitigation is a significant component of design for these facilities. Audiometric examinations can have no background noise; hearing assessments for Comp and Pen have specific criteria and must be performed in Audiometric Sound Suites to meet the requirements. Refer to Section 2.3 Technical Considerations for additional discussion and Section 4.0 Room Templates for acoustical and noise criteria for key rooms.
- Finishes must balance infection control with sound attenuation requirements.
- Lighting is an important factor for the functional areas of Audiology. Many spaces require a high level of task lighting to perform detailed/meticulous tasks; other spaces need lighting control and dimming capabilities. Appropriately designed lighting throughout helps reduce patient and caregiver stress.
- Wire management and provision for adequate electrical devices is extremely important. Many rooms, particularly those where hearing exams and programming/fitting activities occur have many devices requiring an ample number of receptacles.
- Significant interdisciplinary and construction trade coordination is required for the installation of a prefabricated audiometric exam suite or booth. Refer to the Audiometric Examination Suite discussion, specific requirements addressed in Technical Considerations 2.3, and Room Templates/Room Data Sheets for Audiometric Examination Suite 1 (Section 4.4) and Audiometric Examination Suite 2 (Section 4.5).

2.2.5 Speech-Language Pathology Functional Considerations

Speech-Language Pathology services include a broad range of evaluations and treatments for individuals with communication and swallowing disorders. Services are provided for inpatients and outpatients, and rooms should accommodate access for wheelchairs, motorized wheelchairs, and small stretchers. Most standardized tests and specialized diagnostic procedures average 60 to 90 minutes. Individual treatment/therapy sessions are scheduled for 45 to 60 minutes and may be offered in person or via telehealth technology (U.S. Department

of Veterans Affairs (7), 2016) (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17). Treatment and education may also be provided in a group setting with 3 to 5 patients at a time.

Due to the complexity of procedures, provider competencies, equipment needs, and inpatient case mix, the Speech-Language Pathology services have historically been located at a VA Medical Center and are best collocated with the Audiology Service. Speech-Language Pathology services may be provided at Outpatient Clinics (OPC or CBOC) and space may be allocated based upon the number of full-time or part-time clinicians, specialized procedures offered, and anticipated workload and growth.

Specialized procedures to evaluate voice and swallow function include endoscopic examinations and warrant special considerations for mobile carts, storage, and cleaning of flexible and rigid endoscopes following RME policies and procedures. With ever expanding technology to assist individuals with disabilities, space and storage should be allocated for evaluation and treatment for a variety of assistive technology and prosthetic devices (including tablets, smart phones, computerized speech devices, cognitive aids, and voice prosthetic devices).

Special procedures performed in the clinic that require specific equipment and consideration for cleaning or reprocessing include:

- Laryngoscopy including rigid and flexible endoscopic examination of vocal cord function Fiberoptic Endoscopic Examination of Swallow function/safety (FEES)
- Evaluation and fitting of voice prostheses
- Evaluation and treatment of tracheostomy speaking valves

Patient care activities that do not involve instrumental evaluation and treatment include:

- Evaluation and treatment of language disorders
- Evaluation and treatment of cognitive disorders

A summary of Speech-Language Pathology services and associated spaces for evaluation or treatment is listed in Table 2. Refer to Paragraph 2.2.41, Functional Areas/Key Rooms for detailed descriptions of key rooms.

Table 2: Speech-Language Pathology Summary of Services & Evaluation/Treatment Locations

Common Disorder	Brief Description	Evaluation	Treatment
Language Disorders (Aphasia)	Difficulty in speaking, listening, reading, writing, and gesturing.	Office/Treatment Room	1. Office/Treatment Room 2. Assistive Technology Room
Cognitive Disorders	Difficulty with attention, memory, orientation, organization, and problem-solving.	Office/Treatment Room	1. Office/Treatment Room 2. Assistive Technology Room
Speech Disorders	Difficulty pronouncing sounds or stuttering are examples of speech disorders.	Office/Treatment Room	1. Office/Treatment Room 2. Voice Treatment Room 3. Assistive Technology Room
Voice Disorders	Difficulty with pitch, loudness, and nasal resonance.	1. Special Procedure Room 2. Voice Treatment Room	1. Voice Treatment Room 2. Special Procedure Room
Swallowing Disorders (Dysphagia)	Difficulty swallowing (eating and drinking).	Special Procedure Room	1. Special Procedure Room 2. Office/Treatment Room

1. Functional Areas/Key Rooms (FA-3 and FA-4)

The number and type of Speech Pathology rooms is determined by the range of services provided by the speech-language pathologist(s) at the facility, the variety of equipment purchased, and the workload anticipated. Clinical support functions, including a Soiled Utility Room, close proximity to a Clean Supply Room, and Equipment Storage Room are essential components of this service. Other standard clinical support and administrative functions, including Patient and Staff Toilet Rooms, Staff Lounge, Conference and Group Room, Reception/Waiting, and administrative offices may be shared with Audiology when the services are collocated. Although Speech-Language Pathology functions occupy a smaller footprint than Audiology, if services are separated, essential support, and administrative space must be incorporated in order for Speech Pathology to operate as an independent clinic. For instance, reception/waiting areas should be directly adjacent to clinical areas of the service. Speech Pathology Clinic Patient and Support Area spaces (FA-3 and FA-4) are individually described in this section; the functional relationship between key rooms is illustrated in Figure 40.

Office/Treatment Room

The Speech Pathology Office/Treatment Room is a patient care space that will be utilized for the evaluation and treatment of communication disorders that do not require instrumental evaluation. Activities include private counseling and speech therapy for patients who have language, cognitive and fluency disorders, as well as review of medical records and documentation. Routine speech-therapy sessions utilize standard desktop computer equipment (with specialized software) and face-to-face coaching/therapy exercises between the provider and patient. Patient encounters are conducted one-on-one in the room or via telehealth technology. Speech-language pathologists are more likely to conduct telehealth appointments from the Office/Treatment Room rather than using a separate space (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17). A family member/caregiver may accompany the patient during the appointment.

Figure 32: *Speech/Office Treatment Room; Source- VA Speech-Language Pathology Fact Sheet (U.S. Deptartment of Veterans Affairs (8), 2017)*

The recommended location of the Office/Treatment Room is adjacent to other Speech Pathology patient care spaces, including the Voice Treatment, Special Procedure, and Assistive Technology Rooms; it may be collocated with Audiology Rehabilitation/Counseling Rooms, if proximity to the Speech Pathology specialty rooms is maintained. Additional considerations for location include the need to maintain speech privacy; in this case, sound should not transmit to the corridor or adjacent spaces. It is recommended to locate the Office/Treatment Rooms along a perimeter/exterior wall with windows for natural daylight, if available, but privacy must be maintained and glare/sunlight controlled.

The Office/Treatment Room contents include a provider workstation with sufficient surface area and storage space for small speech therapy devices, standard desktop office equipment, and manuals. A mobile, adjustable height table is provided for consultations between the Speech Pathologist and patient. There should be sufficient space to accommodate wheelchair and scooter access.

Refer to Room Template, Office/Treatment Room, Speech-Language Pathology (SPL01) in Section 4.13 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

Voice Treatment Room

The Voice Treatment Room is a patient care space that will be utilized for the diagnosis and treatment of speech and voice disorders, including interventions for individuals before and after head and neck cancers. This room accommodates special equipment to measure and analyze the acoustic properties of speech and voice, including alaryngeal communication, for the purpose of diagnostic evaluation and treatment.

Figure 33: *Speech Pathology, Office/Speech Lab; Orlando VAMC, FL*

Procedures performed in this room include prosthetic speech devices fittings/changes and repairs including:

- Tracheoesophageal puncture voice prosthesis (TEP) fittings/changes and repairs
- Heat/moisture exchanger system (HME) fittings/changes and repairs

Patient encounters range from about thirty minutes (for instrumental voice evaluations) (U.S. Department of Veterans Affairs (2), 2016) to over two hours (for prosthetic device evaluations) (U.S. Department of Veterans Affairs (7), 2016). Encounters are one-on-one between the speech-language pathologist and patient, who may be accompanied by a family member/caregiver. One to two students/residents may also be present to observe and/or train in techniques, procedures, and equipment use.

The size and layout of the room shall be zoned to facilitate workflow and differentiate the patient evaluation and treatment area from staff work and clinical support functions (refer to Figure 34). The patient treatment zone includes an “ENT” exam/treatment chair, space for mobile carts and instruments related to treatment functions, an adjustable height table to accommodate the speech analysis computer equipment (including the Phonatory Aerodynamic System (PAS)), and space for family/caregiver seating. A sink for handwashing in the treatment zone may be wall hung or incorporated into modular casework; electronic sensor controls are preferred for the faucet. A ceiling mounted exam light in this zone is preferred to supplement general lighting in the room. Accommodations for disposable waste, including biohazard and sharps container are required near the treatment zone.

Adequate space for working and movement around the ENT chair is required, including space for wheelchair or scooter transfer. Since the treatment chair is heavy and not easily moved, it is critical to coordinate its physical placement relative to other fixed elements in the room. Refer to the Room Template, Voice Treatment Room (SPP01) in Section 4.15 for the recommended clearances.

The clinical support/staff zone of the Voice Treatment Room accommodates a provider workstation, working counter space and storage for a significant quantity of specialty items. A secondary door in this zone, with direct adjacency to a service corridor and providing convenient access to all support/off-stage functions is recommended to facilitate the movement of supplies and equipment.

The provider workstation supports routine patient documentation and communication activities associated with services performed in the room; it incorporates desk space, storage for literature and manuals, and computer workstation, with dual monitor and webcam for telehealth capability. Storage needs are accommodated with a combination of mobile carts and modular casework system, including working counter space needed for preparation of food/liquids, layout of devices, and other activities related to care delivery.

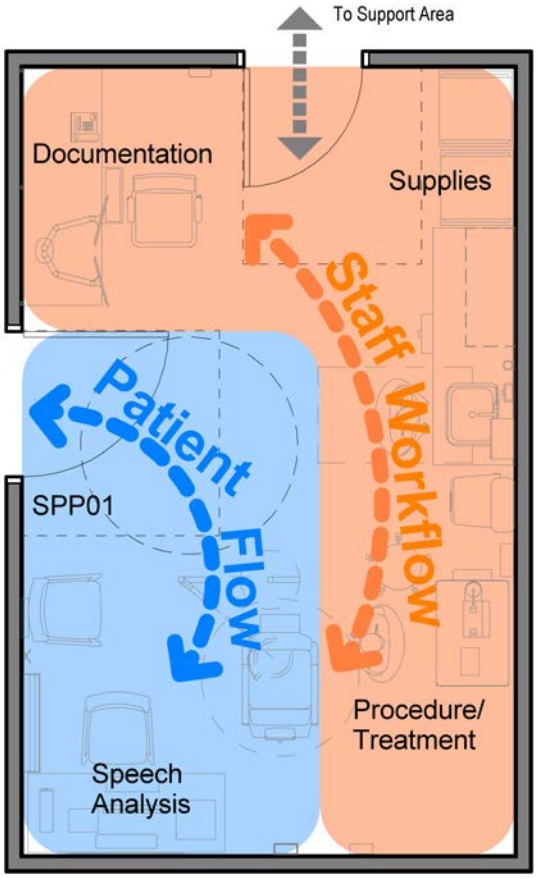


Figure 34: *Voice Treatment Room Workflow Diagram*

Supplies and devices to be stored include:

- Gauze, tongue depressors, facial tissues
- Small bottles/tubes
- Wipes/cavi and Clorox
- Hemostats and suture removal kits
- Catheters
- Cups
- Small supply of food/liquid items for testing oral intake (sealed and dated packages)
- Supplies to attach to equipment, including sEMG electrodes, nasal cannulas
- Inspiratory/expiratory devices to issue
- Many small boxes (TEP supplies, dilators, HME, adhesive)
- Stoma covers (foam, cloth, crochet)
- Storage for trial electrolarynx (Cooper Rand, Servox, Romet)
- Speaking valves

Storage of these items is to be accommodated both in the Voice Treatment Room and a shared or dedicated Clean Supply Room in close proximity; medical devices and instruments may alternatively be stored in a shared Equipment Storage Room. Point-of-use items may be contained in the general storage cart in the treatment zone. Larger mobile storage carts located in the staff zone facilitate “refills” from a bulk supply of stock items stored elsewhere.

Storage of packaged items needs to be in a temperature and humidity controlled environment and contained in enclosed cabinets; cabinets do not require locks.

Refer to the Room Template, Voice Treatment Room (SPP01) in Section 4.15 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

Special Procedure Room

The Speech Pathology Special Procedure Room accommodates the equipment used for instrumental evaluation and treatment of voice and swallowing disorders as follows:

- Voice

  Diagnostic laryngeal endoscopy involves the careful evaluation of both the anatomic and physiologic aspects of the nasopharynx/velum, pharynx, base of tongue, and larynx. Vocal folds are visualized and examined using high magnification, video recording, and stroboscopy techniques.

- Swallow function (Dysphagia)

  Evaluation includes one or more instrumental procedures, including fiberoptic endoscopic examination (FEES) as the patient swallows food and liquid, surface EMG (sEMG), tongue pressures, respiration, and manometry.

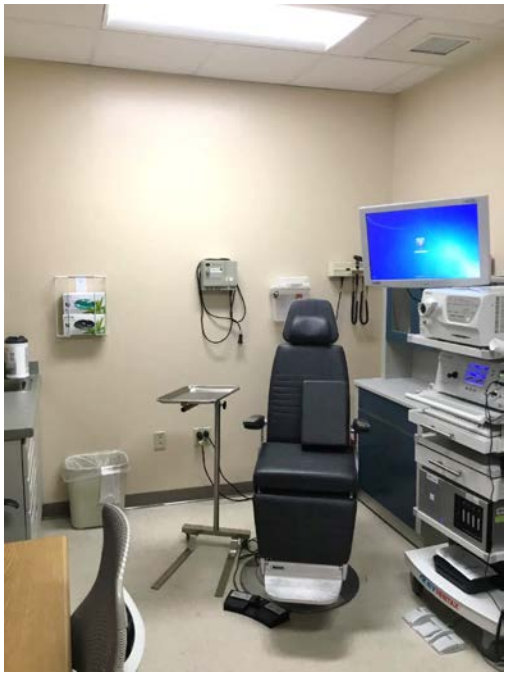


Figure 35: *Endoscopy Procedure Room; J.A. Haley Veterans' Hospital, Tampa, FL*

Patient encounters range from about thirty minutes (for basic screening and endoscopic exams) to over one hour (U.S. Department of Veterans Affairs (7), 2016). Encounters are one-on-one between the speech-language pathologist and patient, who may be accompanied by a family member/caregiver. One to two students/residents may also be present to observe and/or train in techniques, procedures, and equipment use.

The size and layout of the room shall be zoned to facilitate workflow and differentiate the patient evaluation and treatment area from staff work and clinical support functions. Equipment for voice and swallow evaluations is typically placed on mobile carts to allow for clinical and bedside evaluations (at VA Medical Centers). The room requires sufficient space to accommodate the procedure carts, consideration for cleaning, and storage of supplies and scopes.

(a) Patient Procedure/Treatment Zone

The patient treatment zone shall have adequate space for the mobile equipment carts (digital swallowing workstation, stroboscopy cart), an "ENT" exam/procedure chair, and space for family/caregiver seating. The videostroboscopy cart and digital swallowing workstation are typically positioned adjacent to the procedure chair, on one or both sides. Adequate space for working and movement around the patient exam chair is required,

including space for wheelchair or scooter transfer. Since the treatment chair is heavy and not easily moved, it is critical to coordinate its physical placement relative to other fixed elements in the room. Refer to the Room Template, Special Procedure Room, Speech Pathology (SPP02) in section 4.16 for the recommended clearances. A ceiling mounted exam light located above the treatment chair is preferred to supplement general lighting in the room.

A sink for handwashing may be wall hung or incorporated into modular casework; electronic sensor controls are preferred for the faucet. Accommodations for disposable waste, including biohazard and sharps container are required near the treatment zone.

(b) Caregiver/Clinical Support Zone

The recommended layout and location of staff and clinical support components in the procedure room facilitates a lean workflow, and process continuity relative to caregiver activities, supplies, and instruments. A secondary door in the staff zone, with direct adjacency to a service corridor and providing convenient access to all support/off-stage functions facilitates the movement of supplies, equipment, and soiled instruments.

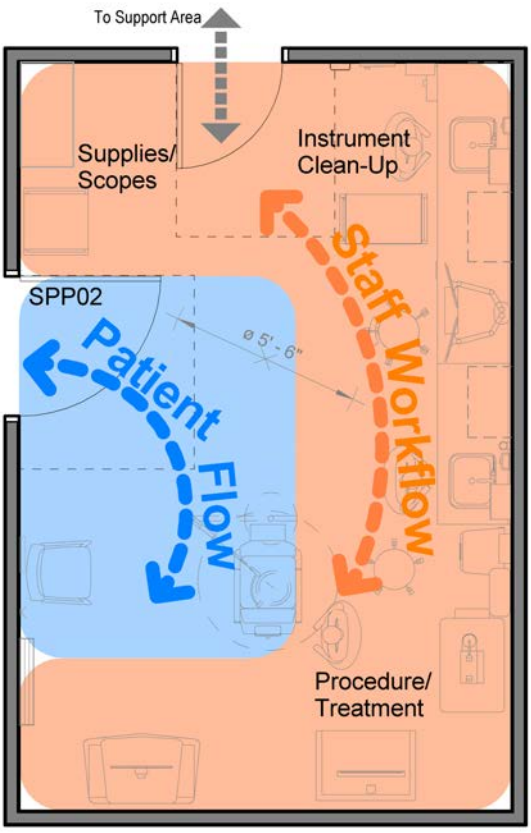


Figure 36: *Special Procedure Room Workflow Diagram*

A critical function in the staff zone involves protocols associated with handling soiled scopes (RMEs), which are to be pre-treated using an enzymatic solution immediately following use, either at the point of care or Soiled Utility Room (U.S. Department of Veterans Affairs (9), 2016) (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17). The Room Template in this Design Guide accommodates this activity in the clinical support zone of the room with a sink and work area separate from the handwashing sink. After soiled RME is pre-treated over the sink, it may be placed in either a biohazard rigid container or enclosed cart for transfer to the Soiled Utility Room where additional procedures are to be followed prior to pick-up by Sterile Processing Service (SPS) staff within a limited time period, depending on the type of scope utilized. Due to this process, it is critical that a Soiled Utility Room is located immediately adjacent to or in very close proximity to the Special Procedure Room.

A continuous solid surface work area that incorporates the handwashing sink on the treatment side, provider workstation in the center, and a second sink for pre-treatment of scopes on the opposite end aligns with the caregiver process. Working counter space on the treatment side is needed for the preparation of food/liquids, layout of devices, and

other activities related to care delivery, while working counter space on the cleanup side facilitates implementation of scope handling protocols. The provider workstation supports routine patient documentation and communication activities associated with services performed in the room; it incorporates a knee space, adjacent storage for literature and manuals, and computer workstation, with dual monitor and webcam for telehealth capability.

Devices and supplies required for procedures in the room include packaged sterile instruments (other than scopes/RME), disposable clean supplies, and food items such as:

- Flexible and rigid endoscopes
- A variety of small diagnostic devices (IOPI, sEMG, Swallow Solutions)
- Gauze, tongue depressors, facial tissues
- Small bottles/tubes
- Wipes/cavi and Clorox
- Endoscope kits for cleaning
- Catheters
- Cups
- Small supply of food/liquid items for testing oral intake (sealed and dated packages, such as juice, applesauce, and pudding)
- Supplies to attach to equipment, including sEMG electrodes, nasal cannulas
- Inspiratory/expiratory devices to issue
- Syringes (no needles)
- Hemostats and suture removal kits
- Education literature or brochures for patients/families

Figure 37: *Special Procedure Room Storage Requirements; C.W. Bill Young VAMC, Bay Pines, FL*

Storage of these items is to be accommodated both in the Special Procedure Room and a shared or dedicated Clean Supply Room in close proximity. A scope cabinet must be located in the room. Packaged medical devices and instruments may alternatively be stored in specialized enclosed mobile carts/cabinets in the Clean Supply Room. Storage needs in the procedure room are accommodated with a combination of mobile carts and modular casework system. A mobile storage cart located in the staff zone facilitates refills from a bulk supply of stock items stored elsewhere. Point-of-use items may be contained in the general storage cart in the treatment zone. A double-locked cabinet is required for storage of a small quantity of numbing anesthetics; other cabinets do not require locks. Storage of packaged items needs to be in a temperature and humidity controlled environment.

Refer to the Room Template, Special Procedure Room, Speech Pathology (SPP02) in Section 4.16 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room.

Assistive Technology Rooms (1 and 2)

The Assistive Technology Room is a dedicated space that includes a variety of state-of-the art products, devices, and equipment that may enable patients with disabilities to accomplish daily living tasks, assist them in communication, education, work, or recreation activities, helping them to achieve greater independence and enhance their quality of life. If an Assistive Technology Program is offered at a Medical Center, it is often a multidisciplinary program associated with PM&R; the program includes a variety of therapies, including Speech, Occupational, Vocational Rehabilitation, and Kinesiotherapy (James A Haley Veterans' Hospital) (Hunter Holmes McGuire VA Medical Center - Richmond, VA). Multiple Assistive Technology Labs with different functions (such as the individual rooms for the "return to school" and STAR programs at the J.A. Haley VAMC in Tampa) may be collocated with Polytrauma at locations with a PRC.

Figure 38: *Assistive Technology Room; J.A. Haley Veterans' Hospital PRC, Tampa, FL*

The Speech Pathology Assistive Technology Room supplements treatment options for veterans with language, cognitive, and speech disorders. Speech-Language Pathologists are specialists in providing recommendations for a wide range of technology for individuals that are unable to speak or may need compensatory strategies to assist with memory or organization (U.S. Department of Veterans Affairs Rehabilitation and Prosthetic Services, 2015). Examples of assistive technology include a picture board paired with a laser pointer, utilization of applications (apps) for smart phones or a tablet, or devices that produce computerized speech accessed by an eye gaze switch. Refer to the following links for additional examples: Speech Generating Devices (Speech Generating Devices), speech-to-language devices (Devices), and other language systems (Prentrom).

For the purposes of planning guidelines established in this Design Guide, an Assistive Technology Room is to be collocated with the ASPS Clinic. The size of the room will be determined based upon the population served. Assistive Technology Room 1 is an outpatient clinic-based room that accommodates a minimum of two adjacent tables where a single patient can simultaneously try out a variety of assistive technology devices. Assistive Technology Room 2 accommodates an inpatient on a stretcher or a hospital bed in the center of the room, up to three tables, and storage for additional devices and technology (refer to space criteria established in *PG-18-9 Chapter 204: Audiology and Speech-Language Pathology Services Space Planning Criteria*). In both cases, key room contents include:

- Adjustable height tables in a variety of configurations around the perimeter where devices are set up and rotated based on the needs of the patient
- Storage for devices, manuals, and supplies

- A small countertop/work area with sink
- Provider workstation
- Telehealth/video conferencing equipment:
  - Telehealth cart in Room 1
  - Wall mounted TV with video conferencing equipment on a cart in Room 2

In Assistive Technology Room 2, there shall be sufficient clear floor area in the center of the room to accommodate a wheelchair, scooter, or stretcher, as well as work space around them. The center of this room may accommodate an adjustable height table to facilitate specialized therapies and training for severely disabled patients in wheelchairs, in lieu of a hospital bed.

Additional equipment, such as mobile device stands (table and floor mounted) may be stored in the Assistive Technology Room or a separate Equipment Storage Room in close proximity.

Refer to the Room Template, Assistive Technology Room 1 (Outpatient/Clinic) (SPAT1) in Section 4.14 and *PG-18-5, Equipment Guide List* for the recommended layout and additional room contents associated with this room. Two Assistive Technology Lab Room Templates in *PG-18-12 Polytrauma Rehabilitation Center Design Guide* may also be referenced for additional information.

Group Room

Depending on the size of the service and workload, Speech Pathology may have a dedicated Group Room or share one with Audiology. For Speech Pathology, the room shall accommodate treatment and education in a group setting for 3 to 5 patients at a time, along with family members and staff. The minimum room size (small Group Room) established in *PG-18-9 Chapter 204: Audiology and Speech-Language Pathology Services Space Planning Criteria* accommodates approximately eight people and three tables. A larger room with acoustically appropriate divider partition may be appropriate for combined Speech and Audiology Group Rooms, and permit greater flexibility. Additional considerations include:

- Provide storage for educational supplies
- Furnish with stackable chairs with arms to facilitate multiple group configurations
- Provide connectivity for computer workstations and telehealth as needed

The Group Room shall be located close to the clinic entry to shorten walking distances for veterans and their family members, and to minimize disruption of the clinic flow. (U.S. Department of Veterans Affairs Office of Construction & Facilities Management, 2015).

Soiled Utility Room

The Soiled Utility Room is a significant clinical support component of the Speech Pathology Clinic. Although there may be a shared Soiled Utility Room if the ASPS Clinic is small, soiled scope (RME) handling protocols must be accommodated in the room if a Special Procedure Room is authorized.

Depending on local operations or requirements, the Soiled Utility Room may accommodate both the pre-treatment of soiled scopes immediately following a procedure, as well as the protocols upon receipt of the RME from point-of-use. Activities in the Soiled Utility Room related to these procedures may include any of the following (U.S. Department of Veterans Affairs (9), 2016):

- Pre-treatment of scopes with enzymatic solution immediately following RME use
- Placement of RME in biohazard containers with enzymatic solution
- Exchange transport container process – the container with the soiled RME is placed in the utility room and a clean container (which has been intermediate level disinfected between uses) acquired from clean storage is taken back to the point of use
- Point of use transport container process – the container with soiled RME at point of care is transported to the soiled utility room where the end user will don PPE to transfer soiled RME to designated collection container that is properly labeled medical grade puncture resistant biohazard rigid container. The point of care transport container must be intermediate level disinfected before returning to patient care area for subsequent use
- Staff arrange for transport to facility decontamination area (Sterile Processing), or to offsite location per strict protocols, (including time limitation and vehicle restrictions for offsite transport)

Please refer to current VA practice procedures for specific requirements. The protocols are listed in this Design Guide as guidance for consideration in the establishment of essential space criteria for this room, including:

- Work counter area and sink
- Space for a minimum of two endoscope transport carts
- Cabinet for storage of disposable PPE
- Space for an infectious waste container and sharps disposal unit
- Space for a step-on wastepaper basket
- Room exhaust

Large mobile trash and biohazard containers are not required room contents for ASPS. Refer to *PG-18-5 Equipment Guide List* for a complete list of room contents.

Clean Supply Room

A temperature and humidity controlled Clean Supply Room shall be located close to the Speech Pathology procedure rooms. This room will accommodate storage of bulk items as well as packaged RME, and will supplement the storage of point-of-use items in the procedure rooms. The room will house a combination of open wire shelving units and enclosed mobile cabinets to meet local requirements. There must be sufficient space for stocking mobile carts from procedure rooms. The Clean Supply Room may be shared with Audiology in a small department scenario. Refer to *PG-18-5 Equipment Guide List* for a complete list of room contents.

Figure 39: *ASPS Clinic Clean Supply Room; Orlando VAMC, FL*

Equipment Storage Room

An Equipment Storage Room shall be located close to the Speech Pathology Procedure Rooms, including the Assistive Technology Room. It may be shared with Audiology and shall accommodate spare equipment and devices used in the department. The room may also house shared medical equipment, such as the portable suction/aspirator.

2. Workflow and Functional Relationships

Speech Pathology requires direct access from a shared or dedicated reception/waiting area, which is ideally located in a quiet area with limited traffic. While Speech Pathology Office/Treatment spaces and the Assistive Technology Room may be located close to the clinic entry for patient convenience, the Voice Treatment and Special Procedure Rooms should be more remote, with direct or very convenient access to key Support Area spaces, including the Soiled Utility and Clean Supply Rooms. Sound attenuation considerations are also a consideration for location of the Voice Treatment Room, in particular. "Off-stage" access to patient care spaces from team work areas, administrative functions, and service corridors is recommended best practice in terms of functional planning. Locating Office/Treatment spaces along the facility exterior wall with controlled natural daylight and windows is recommended; however, equipment and privacy needs are an additional consideration. Refer to Figure 40 which illustrates the functional relationships between key Speech Pathology spaces as well as patient/staff flow between them. Refer to Section 3.0 Functional Diagrams for additional recommendations and discussion relative to planning for a collocated Audiology and Speech Pathology Clinic.

3. Functional Requirements

There are specific functional and technical requirements associated with Speech Pathology. Refer to Section 2.3 Technical Considerations and Section 4.0 Room Templates for detailed technical criteria. Some key considerations include:

- Wayfinding to the Service incorporating both intuitive visual cues and clear, visible, barrier-free signage. The service must be individually identified in facility signage, particularly if it is not collocated with Audiology.

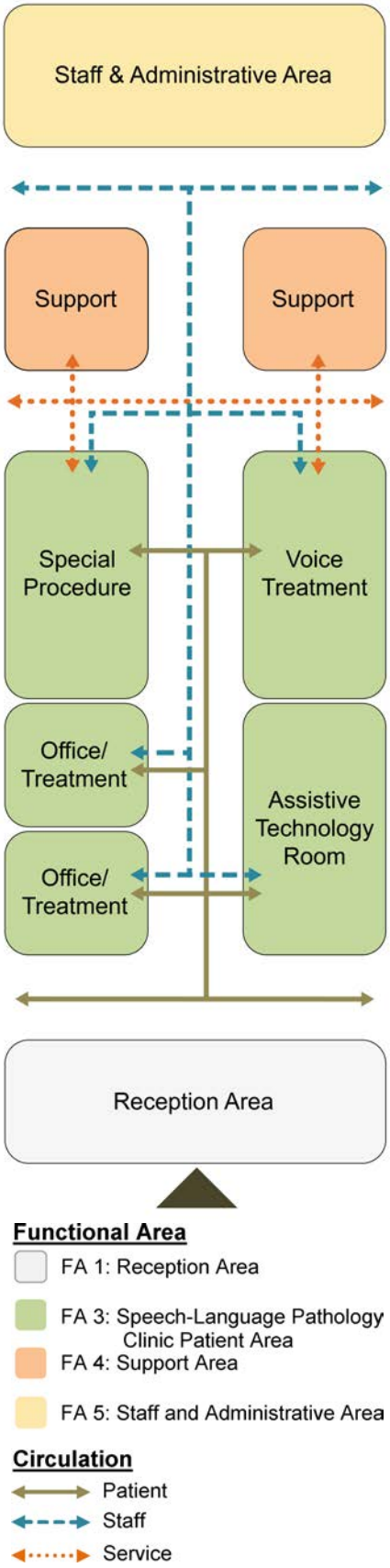


Figure 40: *Speech-Language Pathology Functional Relationships*

- Sufficient, waiting and seating, immediately adjacent to the clinic, configured so that the receptionists have direct visualization of patients and family members. Noise mitigation, a calming environment, connection to daylight/natural light, and proximity to toilet rooms and vending are also important considerations. The size of the waiting area should have sufficient aisle space for movement of wheelchairs and scooters. Access to the clinic must also accommodate hospital beds/gurneys.
- Patient Toilet(s) shall be located in the Speech Pathology Clinic Patient Area.
- Staff support functions, such as a Staff Toilet, Staff Lounge, and Conference Room may be shared with Audiology, but are to be located within the department. If ASPS is small, the Staff Lounge may be shared with an adjacent clinic or service.
- Planning for accessibility/barrier-free design is very important due to patients' disabilities. Wheelchairs and scooters must be accommodated in both the public and corridor areas, as well as in the patient care rooms themselves. Wide door widths, smooth transitions (avoid thresholds); flooring materials which facilitate movement, mounting heights of devices, and assistive devices such as handrails, grab bars, and adjustable height furnishings are all considerations.
- At VA Medical Centers, space for movement of gurneys/stretchers and patient beds is required within the Speech Pathology clinic. Key patient care spaces must also be able to accommodate a stretcher or bed. Refer to specific room descriptions and space criteria.
- Sound attenuation and noise mitigation is a significant component of design for Speech Pathology. Speech privacy must be maintained and sound transmission from the patient care spaces to the corridor and adjacent rooms' spaces must be mitigated. Refer to the Room Templates in Section 4.0 for specific criteria.
- Finishes must balance infection control with sound attenuation requirements. Non-porous, easily cleanable flooring (such as Welded Seam Sheet Flooring with backing) is recommended for the Special Procedure and Voice Treatment Rooms.
- Lighting levels and types of fixtures should be developed based on industry standards for clinical and procedure areas, and VA criteria for these spaces. Good overall general lighting is required throughout, and carefully designed lighting to help reduce patient stress in specific locations should be a consideration.
- Incorporate best practices and lean planning principles to organize equipment, supplies, and devices to minimize clutter and provide a patient/veteran centered environment of care. Enclosed modular storage systems, built-in or modular casework, and equipment rails all serve to facilitate clean/uncluttered procedure/treatment environments.

2.2.6 Environment of Care/Design Considerations

Environment of Care considerations identified in the FGI publication, *Guidelines for Design and Construction of Hospitals and Outpatient Facilities* (Facility Guidelines Institute, 2014) include the following:

- Delivery of care model, including key functional elements and relationships
- Physical environment for operational efficiencies and ease of use by patients, families, visitors, staff, and physicians
- Building infrastructure and systems support the organizational and delivery of care model and technology. Design criteria for healthcare facilities are to address:

- Light/Lighting: natural light and illumination
- Views and access to nature
- Wayfinding
- User control of the environment
- Privacy and confidentiality
- Security (patients, staff, and visitors)
- Surfaces, finishes, architectural details
- Cultural responsiveness

The Joint Commission defines additional requirements in their various publications, such as *Environment of Care Essentials for Healthcare* (The Joint Commission, 2017). These include, but are not limited to, those related to infection prevention and control, life safety measures, and reduction of clutter.

The design of Audiology and Speech Pathology facilities and clinics shall incorporate industry-wide and VA best practice guidelines to achieve a Veteran-centric, healing environment that addresses these principles. In particular, designs shall be mindful of the specific disabilities of veterans served by ASPS, including:

- Hearing impairment
- Visual impairment
- Cognitive issues
- Mobility issues

Eliminating physical barriers and tight spaces that create treatment obstacles and may lead to both patient and staff stress and anxiety are essential considerations for the design of this clinic. The sense of confinement and disorientation that may be associated with specific assessments and treatments in ASPS is also a consideration (for instance, hearing assessments in the audiometric booth and balance testing in the Rotary Chair). Provisions for assistive listening devices in public spaces, handrails in corridors, and direct visualization of patients and visitors in waiting areas are relevant design and planning tools for this service.

Additional design strategies which have been documented to mitigate stress include various positive distractions:

- Views to the exterior: the use of large expanses of glass to allow natural light in, and should include landscaping or natural vistas where possible
- Access to exterior courtyards: provisions for exterior seating, fountains, sculpture gardens, or well landscaped settings to provide a level of comfort for the patient
- Proximity to refreshments: coffee bars, snacks
- Interior accoutrements: artwork, adequate seating, and interior finishes
- Lighting design: the use of adequate lighting is essential to the comfort of the healthcare environment. While significant for reading and the performance of caregiver tasks, proper lighting levels (and types of lighting) are a factor in affording levels of emotional and psychological comfort for the patient.

An increasing trend of patients with service animals has been observed since the update to the VA regulation regarding Animals on VA Property, which provides access for service animals (such as guide dogs for visually impaired patients); therefore, accommodations for service

animals such as proximity to outdoor space and selection of easily cleanable finishes, may also be a consideration.

Specific room criteria, significant functional relationships, and other design strategies and considerations related to the design of ASPS facilities are discussed in greater detail in other sections of this Design Guide.

2.2.7 Considerations for Women Veterans

Provisions for female veterans in the Audiology and Speech Pathology Clinic shall follow the guiding principles and standards established in the current version of *PG-18-9: Space Planning Criteria, Chapter 258: Women Veterans Clinical Service.* While designated service/functional areas are not required for female veterans in the ASPS Clinic, considerations for privacy and safety are important, particularly in the Reception Area, Waiting, and Patient Toilet Rooms. In ASPS patient care spaces, staff is always present with patients when they are in the rooms. Privacy curtains are not needed since patients do not disrobe for any of the care.

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2.3 Technical Considerations

2.3.1 Codes and Standards

VA functions as the Authority Having Jurisdiction (AHJ) for all VA facilities and projects, and has the responsibility to guard public health and safety through enforcement of its adopted codes. Planning, design, and construction of all VA Audiology and Speech Pathology facilities shall be in accordance with this document and with the latest editions and/or revisions of all VA and industry applicable codes and standards. The more stringent code and/or standard shall be applied to VA facilities. Requirements in this Design Guide shall not be construed as authorization to disregard or violate applicable local codes and regulations. If there is a conflict, the A/E shall provide VA with a recommendation for action to mitigate the conflict.

Please refer to the *PG-18-3* (Topic 1) for a list of Codes, Standards, and Executive orders.

1. Other Recommended Reference Standards

Planning, design, and construction of VA Audiology and Speech Pathology facilities shall also consider recommendations and best practices associated with the following standards and regulations:

- *Guidelines for Design and Construction of Hospital and Outpatient Facilities (FGI),* Current Edition, published by the Facilities Guidelines Institute (FGI) with the assistance of the U.S. Department of Health & Human Services (Facility Guidelines Institute, 2014).
- *The Healthcare Insurance Portability and Accountability Act of 1996 (HIPAA)*: This law protects individuals' rights to audible as well as visual privacy, and is specifically applicable to protection of each individual's medical records, private information, and communications. The law protects all conversations between patients and admission interviewers, caregivers, nurses, physicians, and families. The American Recovery and Reinvestment Act (ARRA) passed by U.S. government in 2009 enacts special provisions and legal enforcement tools for patient privacy, protection, and security. Office of Civil Rights (OCR) monitors HIPAA security rule compliance based on ARRA provisions. Current penalties that can be implied by OCR for non-compliance with HIPAA are divided in four categories: (i) without knowledge; (ii) based on reasonable cause; (iii) willful neglect and (iv) willful neglect, not corrected. Penalties differ per violation versus maximum penalty according to these four categories and vary between $100 and up to $1,500,000.

In locations subject to flooding during severe storms, VA protocols for protection of valuable equipment/technology shall be considered (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17).

2.3.2 Architectural Systems

In addition to previously cited reference codes and standards, refer to the current version of *Room Finishes, Door & Hardware Schedule Program Guide (PG-18-14)* and the Room Data Sheets associated with Room Templates in Section 4.0 of this Design Guide as the basis of design for Architectural Systems in an Audiology and Speech Pathology clinic. Specific considerations for ASPS are discussed in this section.

1. Location of Spaces

A key consideration for the location and layout of the Audiology and Speech Pathology Clinic is noise mitigation. Noise-sensitive spaces should be located away from noisy areas since the acoustical performance of rooms depends on the function of adjacent spaces.

Where a project necessitates location of the ASPS clinic near sources of transportation noise such as roadways, railways, and airports, a noise study is recommended to determine the noise levels impacting the project. Based on the results of the study, the exterior building shell may require design enhancements to control the transmission of the exterior noise to achieve acceptable levels for the clinic:

- The highest one-hour average A-weighted noise level (dBA) in a space shall not exceed the value of the NC criterion for a space by more than 5 dBA. For example, if the HVAC noise criterion for a space is NC-35, the highest one-hour average A-weighted transportation noise level shall not exceed 40 dBA.

In order to avoid the necessity of enhanced exterior building construction, including expensive window systems in high noise level areas, locate noise-sensitive spaces in the interior of the building away from windows or on the side of the building shielded from the transportation noise.

2. Corridors

The width of corridors shall be designed in accordance with building codes and standards; however, there are specific considerations associated with an ASPS clinic:

- At VAMCs, patients in hospital beds or gurneys may be transported to and treated in the clinic
- Corridors at both inpatient and outpatient locations must accommodate the movement of wheelchairs (including motorized wheelchairs (scooters)), and mobile medical equipment
- Audiometric Examination Suites have out-swinging doors

It is recommended that patient area corridors within the Audiology and Speech Pathology clinic at a hospital/medical center be designed with a minimum 8’-0” (2440 mm) clear width to accommodate the passage of equipment or beds and two stretchers and/or wheelchairs. This minimum width is also recommended in order to accommodate clear passage in front of the Audiometric Examination Suites (refer to Figure 16 and Figure 57). In non-patient areas and outpatient clinical spaces without gurneys, corridors may be a minimum of 6’-0” (1830 mm) in clear width.

3. Ceilings

The typical ceiling height of corridor, patient care, staff, and support spaces in the ASPS clinic shall be 9’-0” (2740 mm) above finished floor (AFF). The recommended finished interior height of a prefabricated Audiometric Exam Suite/Booth is 8 ‘-0” (2440 mm) minimum clear (refer to Figure 41); this is greater than the height of a standard prefabricated sound suite/booth (approximately 6’-6” (1980 mm)). The taller interior dimension is recommended in order to reduce the sense of confinement inside the booth. However, additional consideration must be given to ensure there is adequate space above the prefabricated booth to accommodate mechanical, lighting, and fire protections systems; the overall height of the prefabricated

system is approximately 19” (480 mm) greater than the interior dimension. Careful coordination with vendor equipment drawings and specific requirements is required, particularly for renovation projects.

Refer to Section 2.3.3 Interior Design for discussion of ceiling finishes. Refer to Paragraph 8 Acoustics and the Room Templates for recommended noise reduction criteria and discussion.

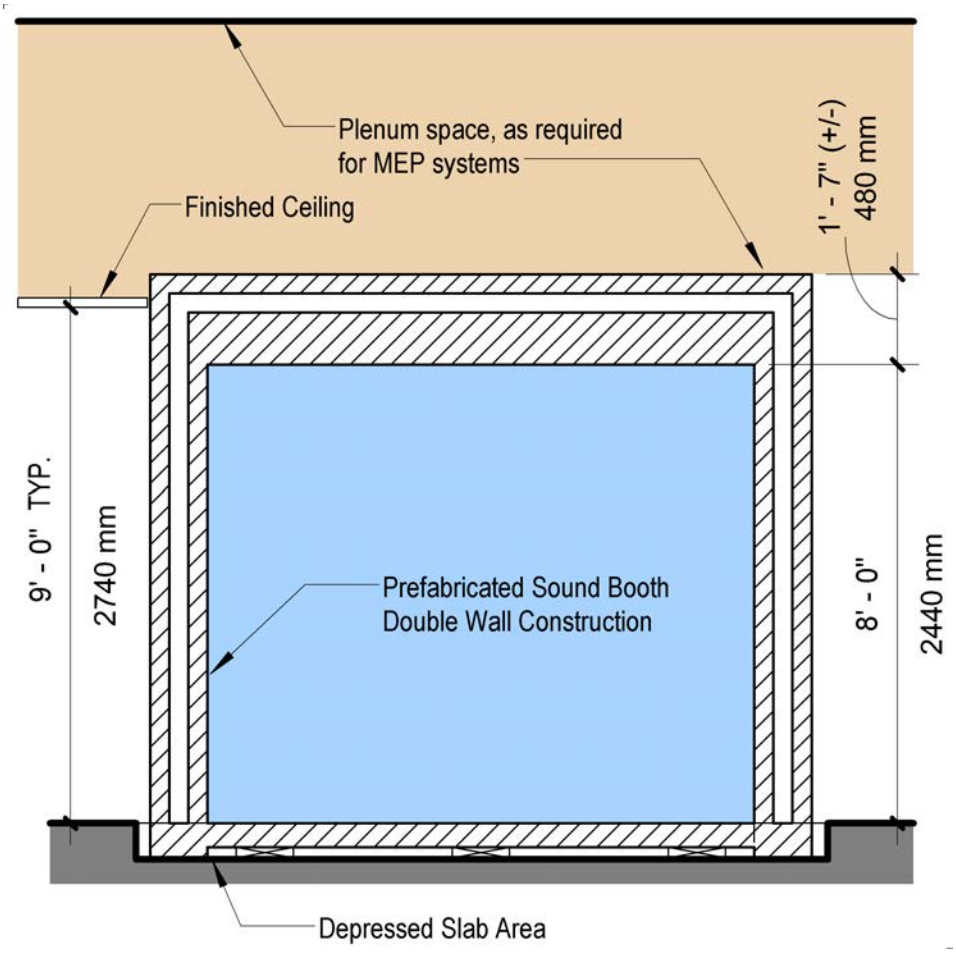

Figure 41: *Diagrammatic Prefabricated Sound Booth Cross-Section*

4. Floors

Refer to Section 2.3.3 Interior Design for discussion of flooring finishes. Prefabricated sound suites/booths have a built-up sub floor.

5. Walls

Partitions shall be designed based on the sound transmission criteria established in the Room Data Sheets for specific rooms. Refer to Paragraph 8 Acoustics for additional discussion of sound attenuation considerations, and Section 2.3.3 Interior Design for discussion of wall finishes.

6. Doors

Most doors in the ASPS clinic shall be 1-3/4” (40 mm) thick, solid core, flush wood doors in hollow metal frames. Specialty doors include the Audiometric Examination Suites doors, which

are pre-manufactured, insulated steel components of the sound suite/booth assembly. Alternative door materials such as hollow metal or high-impact doors fully clad in solid vinyl guard sheets may be considered in order to achieve specific fire ratings or to increase durability provided that other criteria established in this Design Guide are met.

The nominal door opening width for all patient care and Support Area spaces shall be 44" (1120 mm) in order to accommodate the movement of wheelchairs, scooters and mobile medical equipment/carts; at VA Medical Centers an additional 12" (300 mm) or 24" (610 mm) opening width may be considered to facilitate maneuvering hospital beds or gurneys into specific rooms. These rooms include:

- At least one Audiometric Examination Suite
- Special Procedure Room
- Voice Treatment Room
- Assistive Technology Room 2

Doors indicated on room templates are a single leaf; additional width may be accommodated with a second inactive leaf.

The ASPS clinic/suite entry door(s) shall be 48" (1220 mm) minimum width; additional opening width is recommended for suite entry doors at medical centers (i.e. via a 36" (910 mm) or 44" (1120 mm) pair of doors to achieve a 6'-0" (1830 mm) or 7'-4" (2240 mm) opening width). Entry doors into the ASPS clinic shall have automatic operators.

Audiometric Examination Suite Doors

Room templates for the Audiometric Sound Suites are developed based on a two-door configuration on each side of the double-wall assembly (one interior/in-swinging and one outer/out-swinging) on both the control side and exam side in order to maximize flexibility. A single-leaf 44" (1120 mm) wide door is preferred; however, an uneven pair (such as 36" (910 mm) plus 12" (300 mm) or 24" (610 mm) leaf) may be utilized in lieu of a single leaf in order to minimize the weight of the door, or to achieve a larger opening width. Doors shall swing clear (180 degrees or 90 degrees where applicable) against the sound booth outer and interior walls; maintaining the required corridor widths in front of booths is a significant planning consideration (refer to Figure 16). Vision panels shall be provided in sound suite/booth doors.

Sound Attenuation Considerations

While standard doors with mechanical sound seals that achieve an STC rating of approximately 27 are acceptable for some Audiology and Speech Pathology spaces, most of the doors in the clinic should be acoustical door systems with ratings of at least 40 STC. For specific door sound attenuation criteria, please refer to the Room Data Sheets and Paragraph 8 Acoustics of this guide. Also, refer to *PG-18-3: Topic 11 - Noise Transmission Control and FGI Guidelines* (Facility Guidelines Institute, 2014) for acoustical requirements/standards not addressed in this Design Guide.

7. Casework

For planning and utilization concerns, casework systems with modular components will provide flexibility and durability. Casework systems shall incorporate components dimensioned for

ease of multiple re-use applications. Facilities may consider a variety of available solutions including:

- standardized modular “box” casework, including a combination of wall hung and floor mounted storage components, and sink cabinet
- horizontal rail system with interchangeable storage components, including sink unit

Casework systems shall be integrated with space planning to avoid corner installations and filler panels.

Countertops for all clinical and clinical support areas shall be solid impervious resin material which offers long-term durability, and resists chipping and staining from medical agents expected to be used in clinical environments. For areas where strong chemicals are used, such as soiled utility rooms, seamless stainless steel counters with integral backsplash should be used. Plastic laminate veneer material shall only be used for vertical and non-clinical horizontal applications.

8. Acoustics

General

Properly functioning Audiology and Speech Pathology spaces require appropriate acoustical design of interior room acoustics, and acoustical isolation measures to control sound transmission, background noise, and vibration. For spaces used for speech communication, well-controlled reverberation characteristics are recommended to achieve sound clarity and good speech intelligibility. Proper design and installation of partitions (including walls, floors, ceilings, and roofs) as well as building components (such as windows and doors) are required to control sound transmission into and out of spaces. These considerations are discussed in this Section and Section 2.3.6 Noise and Vibration. For specific room sound attenuation criteria, please refer to the Room Data Sheets. Also, refer to *PG-18-3: Topic 11 - Noise Transmission Control and FGI* (Facility Guidelines Institute, 2014) for acoustical requirements/standards not addressed in this Design Guide.

Acoustical criteria for key Audiology and Speech Pathology spaces are established based on the functions and acoustical sensitivities of each room. A space not found in the Room Data Sheets shall be treated comparably to the space to which it is most similar (for example, the Telehealth Room should be treated the same as the Audiology Rehabilitation/Counseling Room). The STC (Sound Transmission Class), IIC (Impact Insulation Class), CAC (Ceiling Attenuation Class), and Noise Reduction Coefficient (NRC) ratings are minimum criteria. Higher values than listed will result in better acoustics.

The acoustical criteria for walls around spaces are provided in terms of STC ratings. Where two spaces with different partition STC criteria are located next to each other, the higher STC rating criterion should be used. Partition intersection and termination details which control sound transmission and meet the criteria shall be implemented.

The acoustical isolation criteria in the Room Data Sheets are based on the assumption that typical healthcare spaces are located above and below the noise-sensitive Audiology and Speech Pathology spaces. It is also assumed that noise-sensitive spaces are not being located such that the room entrance doors connect to a main lobby or corridor with a lot of

people activity. If this noisier condition occurs, the STC rating criteria for the corridor walls and doors should be increased by 5-10 STC to account for it.

To ensure that the acoustical design goals for the Audiology and Speech Pathology spaces are achieved, post construction testing should be performed. The noise reduction between spaces can be measured following ASTM E336; NIC (Noise Isolation Class) ratings for these tests can be determined following ASTM E413. Typically, for the Audiology and Speech Pathology spaces, an NIC rating no more than 5 points below the STC rating of the partition or door between tested spaces indicates compliance with the acoustical isolation design criteria.

Audiology

Numerous diagnostic tests performed in Audiology are highly sensitive to reverberation and interference from sound transmission, background noise, as well as electromagnetic sources. Site visit observations/interviews, a recent Post-Occupancy Evaluation of an ASPS Clinic in a new VA facility (U.S. Department of Veterans Affairs (1), 2017), and acoustical criteria listed for comparable healthcare spaces in FGI (Facility Guidelines Institute, 2014) suggest that current VA criteria for Audiology and Speech Pathology spaces (STC 40 or 45 listed in *PG-18-3: Topic 11 - Noise Transmission Control and FGI* may be too low). Therefore, STC 50 is the minimum criterion established in the Room Data Sheets for most of the partitions around Audiology and Speech Pathology spaces. The rationale for acoustical criteria developed for key Audiology rooms is briefly described in the following paragraphs.

(a) Audiometric Examination Suite 1

Audiometric Examination Suite 1 provides a highly controlled environment for a wide range of audiologic assessments, including hearing screening, speech recognition, tympanometry, C&P Examinations, and hearing aid assessments. A two-sided, double wall prefabricated suite is typically used in VA health care facilities to perform these activities. Specifications for the prefabricated rooms are documented in the VHA Handbook 1170.02 Appendix D; these rooms shall meet ANSI S3.1-1999 [R2008] Maximum Permissible Ambient Noise Levels for Audiometric Test Rooms.

(b) Audiometric Examination Suite 2

For Audiometric Examination Suite 2, where there is a prefabricated booth inside of a room, specific acoustical criteria are provided in the Room Data Sheets for the control side, including high STC partitions and room door, effective sound absorbing ceiling, and sound absorptive wall treatment. The exam side/booth shall comply with the same requirements as Audiometric Examination Suite 1. Post-construction acoustical testing of the control side shall be required to ensure room compliance with ANSI and other acoustical criteria established in this Design Guide. This audiometric testing configuration may be preferred over Audiometric Examination Suite 1 for retrofitting in existing buildings or where more flexibility is desired.

(c) Other Diagnostic and Treatment Spaces

Additional Audiology diagnostic and treatment rooms which require a significant level of acoustical control are the Programming/Fitting, Cochlear Implant Mapping, and Electrophysiology Rooms.

- The Hearing Aid Analyzer/Real Ear Measurement System, which measures the performance of hearing aid devices in the Programming/Fitting Room, is sensitive to interference from external and background noise.
- In Cochlear Implant Mapping, patients learning to hear for the first time with their implants require a quiet environment where reverberation is well controlled.
- Testing conducted in Electrophysiology also requires a quiet environment with minimal interference. High STC partitions and room door(s), effective sound absorbing ceiling systems, and sound absorptive wall treatment will result in acoustical environments conducive for the functions in these rooms.

(d) Hearing Aid Lab

Partitions with high acoustical performance are required for the Hearing Aid Lab to control the transmission of noise to surrounding spaces that is generated by operation of the buffer/grinder workstation(s). Consideration for sound transmission at the door is addressed in the Room Data Sheet as well.

Speech-Language Pathology

The basis for determining the acoustical criteria for the Speech-Language Pathology spaces is similar to those for the Audiology spaces. However, since speech therapy and diagnostics involve the generation of sound, the resulting acoustical criteria for the Speech Pathology spaces incorporates more consideration for controlling patient speech transmission out of the spaces. The louder the speech levels generated, the higher the acoustical performances required for the partitions to control the speech transmission to other spaces and maintain speech privacy.

(a) Voice Treatment Room

Since this room accommodates equipment that measures and analyzes the acoustic properties of speech and voice, higher acoustically rated partitions are specified for this room compared to other Speech Pathology spaces.

(b) Other Diagnostic and Treatment Spaces

The Office/Treatment, Assistive Technology, and Special Procedure Rooms have similar requirements for acoustical isolation and speech privacy. The acoustical criteria for partitions, ceilings, and doors in these rooms are identified in the Room Data sheets.

2.3.3 Interior Design

In addition to previously cited reference codes and standards, refer to *Interior Design Manual for New Construction of Hospitals and Clinics*, *Room Finishes, Door & Hardware Schedule Program Guide PG-18-14* and the Room Data Sheets in Section 4.0 of this Design Guide as the basis of design and selection of finishes for interior spaces in an Audiology and Speech Pathology clinic. Specific considerations for ASPS are discussed in this section.

1. Interior Finishes

Extensive criteria are addressed in the above-referenced documents for the selection of surface and furnishing material products, (such as non-flammable/flame spread characteristics, resilience/impact resistance, durability, reduce user fatigue, joints/seams/assembly, safe and efficient for use in occupied patient settings, supports clinical needs, acoustic properties, non-

toxic, minimize reflectivity and glare, patient and staff safety, etc.). These are all applicable for the design of Audiology and Speech Pathology facilities; however, there are several key considerations:

- Acoustical control/sound attenuation
- Infection control
- Movement of wheeled traffic
- Staff Safety
- Patient mobility

Selection of wall, flooring, and ceiling materials shall meet the noise reduction and sound attenuation requirements specified for the key functional spaces in this department. However, sound attenuation characteristics of materials such as carpet tile and acoustical wall treatment panels must be balanced with considerations for infection control and the movement of wheeled traffic, including gurneys, stretchers, mobile equipment/supply carts, and motorized wheelchairs/scooters. Carpet tile (with anti-microbial and other properties suitable for the healthcare environment) may be used in spaces such as the Audiometric Sound Suites, Programming Fitting, Rehab/Counseling, Speech Pathology Office/Treatment, Cochlear Implant Mapping, Group Rooms, Staff Offices, and Conference Rooms to help achieve sound attenuation criteria. Carpet tile may also be considered for use in public spaces including the Waiting Room/Area and Audiology patient corridor areas, but careful evaluation of the selected product is required:

> "…different types of and brands of carpet may have significantly different levels of resistance to wheeled devices. Installation of a mock-up to test flooring materials in relationship to wheeled equipment and devices used in a facility is recommended. Carpet should not be automatically discounted as inappropriate due to this challenge as it has major advantages over hard-surface flooring in terms of noise reduction, acoustics, and residential appearance, all of which are important in creating a comfortable, attractive living environment for patients" (Facility Guidelines Institute, 2014).

Carpet tile is not an option for use in ASPS exam, treatment, and procedure spaces, including Cerumen Management, Hearing Aid Repair, Voice Treatment, Special Procedure Rooms, and Support Area spaces. In these rooms, Luxury Vinyl Tile (LVT) or Welded Seam Sheet Flooring (WSF) is required. Considerations for material selection shall include:

- Ease of maintenance
- Readily cleanable
- Impact by germicidal cleaning solutions (if any)

Partition construction (STC rating), sound attenuation at doors (via sound gasketing and/or door material/properties), and high NRC/CAC rated ceiling materials will help balance sound reflective properties of impervious flooring materials in noise generating spaces, such as the Cerumen Management Room, Hearing Aid Lab, and Speech Procedure Room. Where sound absorptive wall treatment is called for in the Room Data Sheets, materials shall be non-porous, soil resistant, and washable.

Flooring material selection for the Hearing Aid Lab must also consider slip resistance. Dust and water generated by buffing/grinding activities, particularly if open, countertop mounted

equipment is used, may cause slippery conditions on the floor (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17).

Patients needing Audiology and Speech Pathology services may have multiple disabilities that affect both cognitive skills and mobility; patients may be disoriented, either because of their disability or due to certain diagnostics/treatments in the clinic. All floor transitions shall be flush to avoid tripping hazards and to facilitate the movement of wheeled traffic. Minimizing color contrast in flooring patterns and between walls and floors may reduce falling risk, particularly for visually impaired patients. Handrails in the patient corridor areas are required to assist mobility-impaired patients.

Wall protection shall be provided as called for in *Room Finishes, Door & Hardware Schedule Program Guide PG-18-14*, including solid surface material behind wall-mounted lavatories.

Telehealth Room (Remote Clinician Consultation) and Telehealth Exam Room

Special considerations for the interior environment and finishes in telehealth rooms are discussed in the *Telemedicine Room Design Program Guide* (California Telemedicine and eHealth Center, 2011).

As with other spaces in the Audiology and Speech Pathology Clinic, sound absorptive materials are an important consideration for telehealth. Rooms that echo make conversation between the patient and remote clinician difficult. Noise transmission from external sources, such as adjacent spaces and mechanical noise will also interfere with effective communication. While the remote clinician consultation Telehealth Room may utilize carpet tile, the Telehealth Exam Room may require use of an impervious flooring material; room function and specific activities are to be verified for selection of appropriate materials.

The backdrop of the video should be free of distractions and clutter. Facilities may consider signage with the site location in the background to help orient the participants.

The choice of paint color and sheen is also important. Light neutral or blue shades to provide contrast with flesh tones are recommended in lieu of white or dark walls. Paint finish should be matte, rather than glossy to reduce glare.

2. Furniture/Furnishings

Furniture and furnishings may be selected based on local requirements and standards; however, specific considerations and key elements that have been incorporated into room templates for ASPS are listed below.

Figure 42*: Integral Power Strip*

- Adjustable height tables:
  - Provide a transactional/layout area for demonstrations of hearing aids, programming devices, speech therapy devices, etc.
  - Accommodate patients in wheelchairs and scooters
  - Provide an ergonomic, flexible/adaptable working environment for staff

Planners shall consider specifying an integral power strip to facilitate wire management and convenient point-of-use plug locations (refer to Figure 42).

- Workstations:
  - Where indicated, these include a work surface, accommodate desktop equipment/technology (dual monitors, keyboard, telephone, etc.), and storage for a basic (point-of-use) office supplies, manuals, demonstration items, and therapy devices.
  - A systems furniture approach on wall-hung, horizontal, or vertical rails supports the clinical function and increases flexibility.
- Side chairs with arms may be used for standard hearing screenings and assessments (in the Audiometric Examination Suites), as well as other diagnostics, such as ABR. Patient seating/side chairs in waiting and treatment spaces:
  - Shall not have casters
  - Upholstery fabrics, if provided, shall be specified in accordance with applicable building codes and standards, and address infection control/safety measures (such as anti-microbial properties, special coatings, moisture resistant backings)
  - Provide accommodations for bariatric patients and family members

Task seating for staff may be selected based on local requirements.

3. Wayfinding

Whether ASPS is located in a remote part of a large Medical Center or in a small outpatient clinic, signage and appropriate wayfinding so that patients and family members can find and identify the service is important. Clear, visible and barrier free signage, as well as visual cues via the ceiling design and floor pattern are elements that will facilitate wayfinding for individuals who may be disabled or disoriented. Depending on the size of the service and facility plan, the Audiology and Speech Clinic may have a dedicated entrance.

Refer to the most current version of VA Signage Design Guide for specific requirements and standards for signage and wayfinding.

2.3.4 Medical Equipment/Technology

1. General

Medical equipment will be selected and documented based upon the preference of VHA clinicians and input from VA administration/project management. Medical equipment for each service shall be identified with descriptions, quantities, and alternate manufacturers provided for all items, when available. Some equipment is specialized with limited alternate vendors. Note that, although graphic representations/images of room contents are exhibited in this Design Guide to assist with room planning and visualization of minimum sizes and component parts, no implied preference for a particular manufacturer is intended.

2. Audiology

Specialized equipment associated with Audiology requiring significant coordination includes the following items:

- General audiology equipment – Audiometers, analyzers, diagnostic sets, and other small countertop devices for audiologic testing (such as Figure 43 and Figure 44). These often have multiple components including computers and speakers which require space and electrical/network connectivity.

Figure 43: *Diagnostic Audiometer*

- Hearing Aid Analyzer/Real Ear Measurement System – the device used for hearing aid fitting and programming, consists of a desktop measurement device/microphone system and small speakers (refer to Figure 45 and Figure 46). Advance planning relative to alternative systems is a consideration; for instance, one vendor's system has built-in speakers, while another has separate accessories, such as speakers, outside of the main device. The hearing aid test box is an additional component of the system which requires desk space.

Figure 44*: Tympanometer*

- Prefabricated sound booth – consists of multiple pre-manufactured components which are field assembled to achieve a highly controlled, sound attenuated, and electromagnetically shielded environment for audiometric testing. This equipment requires extensive coordination with other building systems, including structural, mechanical, electrical, and fire protection. Refer to Audiometric Examination Suite descriptions in Section 2.2.4 and Suite 1, Audiometric Examination (prefab, 2-sided suite) (AUDE1) and Suite 2, Audiometric Examination (single prefab booth in room) (AUDE2) for additional detail. Refer to discussions related to coordination with applicable building systems in Section 2.3.2 Architectural Systems, 2.3.5 Structural Systems and 2.3.10 Fire Protection and Life Safety.

Figure 45: *Hearing Aid Analyzer/Real Ear Measurement System-Example 1*

- Rotary Chair System – This equipment consists of freestanding booth with rotary chair inside, electrical control console, and operator workstation, requires significant advance planning for space (including ceiling height), structural, electrical, and network systems. An isolation transformer must be accommodated in a separate facility electrical closet (refer to Figure 26 and Figure 122).

Figure 46*: Hearing Aid Analyzer /Real Ear Measurement System-Example 2*

- Buffer/Grinder – Equipment used to shape and smooth hearing aids. Provisions for dust collection and noise mitigation are crucial (refer to Figure 47). This equipment produces vibrations, so location in the department and sound attenuation are a consideration. This equipment has electrical requirements and may be attached to a vacuum/suction device depending on model selected.

***Figure 47**: Buffer/Grinder*

- VNG System – This equipment is used to monitor eye movement for the clinical study of dizziness and balance disorders. This equipment has electrical and network requirements (refer to Figure 48).

***Figure 48**: VNG System*

- Air or Water Caloric Irrigators – These are used in conjunction with the VNG system for stimulating the motion sensors in the ear of patients with dizziness or balance problems; facility/user preference will determine which type is to be utilized. The air caloric irrigator (refer to Figure 49) is used for stimulating the horizontal semi-canal by pumping warmed or cooled room air into the external ear canal. The caloric water irrigator (refer to Figure 50) stimulates motion sensors in the ear using warm or cool water pumped into the external canal. The irrigator is typically placed on a mobile cart; the water irrigator requires a plumbing connection at a sink/faucet.

***Figure 49**: Air Caloric Irrigator*

- ENT Console – A customizable cabinet used for ear irrigations and other cerumen management procedures, with several options and accessories (refer to Figure 20). This equipment has electrical requirements.

3. Speech-Language Pathology

Specialized equipment associated with Speech-Language Pathology requiring significant coordination includes the following items:

- Computerized Speech Lab –Equipment used for voice and speech analysis is typically located on a table or countertop and is connected to a non-network computer and monitor (refer to Figure 51). The Speech Lab has electrical requirements.
- Phonatory Aerodynamic System – equipment for voice analysis. If utilized, this is located on a countertop and is usually connected to the Speech Lab computer.

***Figure 50**: Water Caloric Irrigator*

- Digital Swallowing Workstation (FEES) – a mobile digital swallowing workstation system for swallowing evaluations in speech therapy rooms and procedural rooms with Fiberoptic Endoscopy (refer to Figure 111). This equipment has electrical and network requirements.
- Stroboscopy System – equipment used to digitally record stroboscopic and other endoscopic exams to a fully-integrated video capture and playback workstation. This equipment has electrical and network requirements (refer to Figure 52).
- Digital speech therapy devices – various electronic devices utilized for speech therapy, which require electrical outlets for charging. They are sometimes placed on mounts that occupy additional floor or counter space (refer to Figure 53).

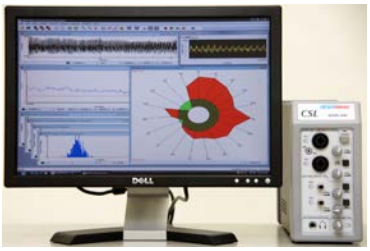

Figure 51: *Computerized Speech Lab*

Figure 52*: Stroboscopy System*

Figure 53*: Speech Therapy Device*

4. Exam/Treatment Chairs and Tables

ENT Chair

Audiology and Speech Pathology both use an ENT exam/treatment chair in the following rooms (refer to Figure 54):

- Cerumen Management Room
- Hearing Aid Repair Room
- Voice Treatment Room
- Special Procedure Room

The ENT chair shall be height adjustable and capable of rotating at least 330 degrees; the chair may be reclined to a variety of angles, including horizontal, although this is typically not a treatment position required for Audiology or Speech procedures. Additional features shall include an adjustable headrest, arm rests which raise to facilitate patient access/transfer, and solid footrest (avoid an open metal bar, which is a tripping hazard). A chair-mounted exam light is an optional accessory, which may be included based on local requirements; it is typically needed for the Cerumen Management Room. Since the chair is heavy and requires an electrical outlet nearby, the planner shall coordinate in advance its physical placement relative to other fixed elements in the room. Recommended clearances for working space around the chair as well as the recommended location of the floor outlets are indicated on the applicable room templates. A surface mounted floor outlet is preferred to avoid the tripping hazard of a cord running to an electrical outlet on the wall.

Figure 54*: ENT Chair*

Hi-Lo Treatment Table

A multi-sectional, height adjustable table is recommended for Vestibulography. During tests, the patient's orientation is varied from horizontal to a seated position. The head section of the table must be adjustable to a minimum of 30 degrees; height adjustability facilitates patient transfers from wheelchairs. Extra (bariatric) width is recommended to support flexible positioning and patient recovery. Alternative exam/procedure tables are acceptable in lieu of the Hi-Lo Table as long as the various treatment positions can be achieved.

2.3.5 Structural Systems

Executive Orders (EO's) 12699 and 12941 require that all new and existing buildings constructed or leased by the Federal Government be seismically safe. The EO's require that nationally recognized building codes be used for the seismic design and construction of new buildings, and for the seismic safety assessment of existing buildings. For structural systems design, refer to the current editions of the *International Building Code* (IBC) and VA Structural Design Manuals for the applicable building type. To achieve acceptable vibration levels for sensitive Audiology and Speech Pathology functions, building structures should be designed to minimize footfall vibration.

1. Loads

The structural system shall be designed to support all equipment loads and meet required deflection criteria which shall be the maximum deflection allowed by manufacturer, IBC, or VA Structural Design Manuals. Significant equipment identified in this Design Guide requiring structural design and analyses for load carrying capacity are:

- Rotary Chair
- Audiometric Examination Suite (Prefabricated Sound Suite)
- Computerized Dynamic Posturography

2. Slab Requirements

Slab Depression

Refer to vendor site preparation requirements and the VA *Design and Construction Procedures PG-18-3* Topic 6: Floor Slab Depressions, for slab depressions needed for the Audiometric Examination Suites. Slabs shall be depressed to accommodate prefabricated Audiometric Examination Suites while maintaining load carrying capacity requirements. The minimum slab depression depth shall be coordinated with vendor requirements (approximately 6 1/8" (160 mm)) plus additional allowance for adjacent flooring material. The overall dimensions of the slab depression shall be established based on project requirements and the overall size of the prefabricated sound suite, providing for no less than a minimum clear dimension of 4" (100 mm) between the outer wall of the sound suite and inside edge of the slab depression.

Concrete slab levelness shall be level and true to meet vendor requirements and shall have a minimum flatness and levelness of F_F=45 and F_L=35.

Slab Thickness and Equipment Anchoring

Slab thickness and anchoring of equipment into the slab are a consideration for the Rotary Chair. Refer to manufacturer site preparation instructions, which identify the minimum slab thickness needed, type of anchors, and diameter of threaded rods.

2.3.6 Heating, Ventilation and Air Conditioning Systems (HVAC)

1. General

HVAC systems should be provided to condition individual rooms or areas as required to satisfy design criteria. The HVAC system shall comply with the current version of Department of Veterans Affairs (VA) *HVAC Design Manuals (PG-18-10)*, VA *Design and Construction Procedures (PG-18-3)*, VA *Master Construction Specifications (PG-18-1)* and VA *Standard Details (PG-18-4)*, where applicable. The current VA design and construction criteria are available on the VA Technical Information Library (TIL) at VA TIL. Any deviations from the VA guidelines shall be submitted and approved by the VA authority. Where specific VA requirements are not available or indicated in this document, design criteria from industry standards such as ASHRAE, ANSI, NFPA, DOE and/or other industry recognized standards may be submitted to the VA authority for review and approval.

2. Exterior Design Conditions

Exterior summer and winter design conditions, as well as cooling tower wet bulb design temperatures, should be based on the current edition of the VA *HVAC Design Manuals (PG-18-10)*. The A/E may, based on local knowledge, recommend more severe outdoor climatic conditions for review and approval by the VA authority.

3. Interior Design Conditions

Interior design conditions for all spaces should be maintained in accordance with the current version of the VA *HVAC Design Manuals (PG-18-10)*.

4. Supply Air Requirements

For all air systems, the supply air minimum airflows shall follow the recent version of the VA *HVAC Design Manuals (PG-18-10)*.

5. Filtration

For additional filtration requirements, refer to the VA *HVAC Design Manuals (PG-18-10)*.

6. Outdoor Air Requirements

For the minimum recommended quantity of outdoor air requirements, refer to the recent version of the VA *HVAC Design Manuals (PG-18-10)*.

7. Exhaust Air Requirements

Exhaust air and pressurization shall be provided as indicated in the VA *HVAC Design Manuals (PG-18-10)*, as well as applicable Room Data Sheets, where applicable.

8. Noise and Vibration

In Audiology and Speech Pathology spaces, background noise from HVAC and other equipment needs to be controlled to prevent it from interfering with hearing assessments and

other activities in the department (counseling, speech therapy, test signals from audiometers, hearing aid programming, etc.). For HVAC noise, NC criteria are provided on the Mechanical Room Data Sheets (Ref. PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets, 4.19). The NC ratings are maximum criteria. Although lower NC ratings are better for the testing rooms, lower ratings are not necessarily better for spaces where the primary acoustical concern is speech privacy. Some background noise in such spaces helps to mask intrusive speech transmission from adjacent spaces.

NC criteria are based on octave band noise levels (in dB units) in the 63 Hz to 8000 Hz frequency range. However, lower frequency noise not taken into account by the NC system can cause problems (see *Chapter 48 Sound and Vibration Control* of the *2015 ASHRAE Handbook – HVAC Applications* (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE), 2015). Although newer systems of evaluating HVAC noise such as the NCB system include this lower frequency noise and could be used, the NC system is well established and can be used as long as this lower frequency noise is afforded due consideration. Therefore, in addition to compliance with the NC ratings in the Mechanical Room Data Sheets, in the 16 Hz and 31.5 Hz octave bands, noise levels should not exceed 65 dB.

If the lower frequency noise exceeds 65 dB, noise-induced vibration can be perceptible and human discomfort can occur. In the 65-75 dB range lower frequency octave bands, for lightweight wall and ceiling systems, noise levels are *likely* to generate vibration that may be perceptible and that have a *slight possibility* of generating rattles in light fixtures, doors, windows, and other similar objects. In the 75-85 dB range lower frequency octave bands, for lightweight wall and ceiling systems, noise levels have a *high probability* of generating easily perceptible noise-induced vibration, and audible rattling in light fixtures, doors, windows, and other similar objects may be anticipated. Within the 16-31.5 Hz octave band range, noise above 65 dB *may be objectionable* to some people who experience a sense of oppressiveness or depression in such an environment. Such a feeling may not occur until subjected to hours of continuous exposure to this lower frequency high energy noise and may be felt more than it is heard.

Vibration levels in a healthcare facility should not disturb the functioning of vibration-sensitive equipment, conduction of medical tests and procedures, and the comfort of patients. Barring more stringent criteria for special medical equipment, vibration criteria appropriate for hospital operating rooms are also appropriate for Audiology and Speech Pathology areas. Based on the Institute of Environmental Sciences and Technology (IEST) *Building Vibration Criteria for Vibration Measured on Building Structure* (Chapter 48 Sound and Vibration Control of the 2015 ASHRAE Handbook – HVAC Applications), operating room floor vibration velocity levels should not exceed 0.004 in/s in the 8-80 Hz range. Below 8 Hz, the maximum allowable vibration velocity level curve rises with decreasing frequency to slightly over 0.020 in/s at 1 Hz. Vibration velocity levels below these criteria are not expected to be perceptible.

In sections of the VA *HVAC Design Manual (PG-18-10)*, including Section 2.3.1, *Acoustic Analysis*, guidelines are provided to control HVAC noise. Note that, contrary to the guidelines, in Subsection 2.3.1.4, Unitary Equipment, allowing the NC rating criteria in spaces with unitary equipment to be increased 5 NC points is not recommended. Additional guidelines include the location of air volume dampers and selection of air diffusers. Dampers should be remotely

located with noise attenuation (such as non-metallic insulated flexible ducts) between any damper and duct termination. Diffusers and grilles should be selected to achieve the NC criteria based on the specific acoustical characteristics of each space rather than the standard room characteristics used to determine the published NC ratings of the diffusers and grilles. In order to meet the recommended NC criteria, Audiology and Speech Pathology spaces will require diffusers and grilles that have published NC ratings 5-10 NC points lower than the NC criteria for the rooms.

To control low frequency noise, equipment capable of generating high levels of such noise should be located far away from noise-sensitive spaces; the main supply and return air ductwork from such equipment should not run through ceiling plenums over noise-sensitive spaces. This equipment should be located on stiff heavy structures (not lightweight roof systems) and be equipped with appropriate vibration isolation. To achieve acceptable vibration levels and structure borne noise levels, mechanical equipment should be properly vibration isolated following the guidelines in Chapter 48 Sound and Vibration Control of the *2015 ASHRAE Handbook – HVAC Applications*. See also *Section 2.6, Vibration Control, of the VA HVAC Design Manual 2011.*

Compliance Testing

Analyses of mechanical system generated noise shall be performed to demonstrate that noise criteria will be met in accordance with this Design Guide, and based on sound data for the equipment used as the Basis for Design, per Section 2.3.1 of the VA *HVAC Design Manual 2011 (PG-18-10)*. Specifications shall require the sound levels of the actual equipment installed to be no higher than the sound data levels used in the analyses, otherwise excessive noise levels may occur.

To ensure that the HVAC noise criteria are met in the Audiology and Speech Pathology spaces, octave band noise levels should be measured in representative spaces with the HVAC equipment operating. With octave band noise levels measured from 16 Hz to 8000 Hz, NC ratings can be determined, and the 16 Hz and 31.5 Hz octave band noise levels can be compared to the 65 dB criterion. Tests and analyses are best performed by a qualified acoustical consultant.

9. Automatic Temperature Control Criteria

The automatic temperature controls system, including the use of individual temperature controls for specific spaces, shall be provided in accordance with the VA *HVAC Design Manuals (PG-18-10)*.

10. Seismic Requirements

Where applicable, earthquake resistive HVAC design should comply with the seismic requirements of the most current version of VA *Seismic Design Handbook (H-18-8)* and VA *HVAC Design Manuals (PG-18-10)*.

11. Design Features

HVAC design features considered by the A/E that are not specifically outlined in the VA *HVAC Design Manuals (PG-18-10)* shall specifically be submitted and approved by the VA authority prior to implementation into the design.

2.3.7 Plumbing Systems

1. General

The plumbing and medical gas systems shall comply with the current version of Department of Veterans Affairs (VA) *Plumbing Design Manual (PG-18-10)*, VA *Design and Construction Procedures (PG-18-3)*, VA *Master Construction Specifications (PG-18-1)* and VA *Standard Details (PG-18-4)*, where applicable. Deviations from the VA guidelines and standards may be made provided approval is obtained from the VA.

Electronic sensor operated faucets are preferred for most lavatory and countertop sinks in ASPS, except for Vestibulography, where manual operation may be required, depending upon the type of caloric irrigator equipment purchased. Confirm based on local requirements. The type of controls specified may also be adjusted based on local facility standards.

2. Domestic Water Systems

Design of the domestic water system shall follow the VA *Plumbing Design Manual (PG-18-10)*.

3. Plumbing Fixtures

Plumbing fixture types and fixture flow rates should be in accordance with the current version of the VA *Plumbing Design Manual (PG-18-10)*.

4. Medical Gas and Vacuum Systems

Medical gas and medical vacuum supply outlets should be provided in accordance with the current versions of the VA *Plumbing Design Manual (PG-18-10)*. Coordinate project specific requirements with the VA authority.

5. Seismic Requirements

Where applicable, earthquake resistive plumbing design should comply with the seismic requirements of the most current version of VA *Seismic Design Handbook (H-18-8)* and VA *Plumbing Design Manual (PG-18-10)*.

6. Design Features

Plumbing design features considered by the A/E that are not specifically outlined in the VA *Plumbing Design Manual (PG-18-10)* shall be submitted and approved by the VA authority prior to implementation into the design.

2.3.8 Electrical Systems

1. General

Power distribution systems, lighting, and lighting controls shall provide reliable, energy efficient infrastructure to support the rooms or areas within the Audiology and Speech-Language Pathology spaces.

The electrical systems shall comply with the current version of Department of Veterans Affairs (VA) *PG-18-10, Electrical Design Manuals*, *PG-18-3, Design and Construction Procedures*, *PG-18-1, Master Construction Specifications*, and *PG-18-4, Standard Details*, as applicable. Where state or local codes are more stringent than the VA electrical standards and industry codes, the A/E shall submit recommendations for deviation to VA for review and approval.

2. Lighting

Lighting design parameters are shown on the Room Data Sheet for each room type. Lighting levels specified are applicable at the work plane for each room, as noted on the Room Data Sheet. The work plane shall be 2'-6" (760 mm) where not indicated on the Room Data Sheet. Lighting shall comply with the general requirements of the VA *Lighting Design Manual (PG-18-10)* and this Design Guide. Where conflicts exist, the more stringent requirement shall take precedence.

The A/E has the option of using either fluorescent or LED lighting technologies, but shall comply with the Reflected Ceiling Plan in Section 4 of this Design Guide for the placement of luminaires. Where deviations are required due to field conditions or coordination with other trades, the A/E shall provide lighting design to achieve the parameters specified. The design A/E shall select appropriate lumen output or quantity of lamps for each luminaire to render the required illuminance level for each room and task.

Because many rooms have multiple uses which may require different illuminance values, flexibility of the lighting system is required in these spaces. The design A/E must implement multiple-level lighting strategies by selecting luminaires with linear or step-dimming capabilities, or using multi-level switching, or both. Multi-level switching solutions shall be configured such that each lighting level results in even illumination throughout the space. The A/E shall perform point-to-point foot-candle calculations for each room or area using commercially available computer software to validate compliance with lighting level and energy conservation requirements. These calculations shall be documented by the A/E and provided to VA for review and concurrence.

Telehealth Room

Lighting is important for sufficient image quality. Ambient overhead lighting alone is often insufficient, requiring an additional task light source. Provide a diffuse linear light fixture, wall mounted in front of the subject for even illumination without strong shadows. Where practical, provide additional wall mounted diffuse fixtures on either side of the subject to further eliminate shadows.

3. Normal Power

The A/E shall provide electrical design for all electrically operated devices and equipment within the Audiology and Speech-Language Pathology spaces. The A/E shall base design on the latest vendor electrical requirement information for each piece of equipment.

Consideration should be taken for the routing of cords and cables between equipment and connections. Coordinate final locations of receptacles and connections with equipment and furniture layouts to minimize or eliminate exposed cords and cables.

4. Emergency Power

For sites provided with an Essential Electrical System (EES), provide emergency power to life safety systems (exit and egress lighting) from the life safety branch of the EES. Connect ceiling mounted exam lights in the Voice Treatment Room (SPP01) and Special Procedure Room (SPP02) to the critical branch of the EES. Where no EES exists, provide emergency fixtures and the above referenced exam lights with battery backup per NFPA 101 requirements.

Confirm with the VA if additional selected loads are to be connected to the EES or optional standby power system.

2.3.9 Telecommunications

1. General

Refer to the current edition of *PG-18-10 Telecommunications and Special Telecommunications Systems Design Manual* for communications and special systems requirements.

Telephone and computer systems are required in Audiology and Speech Pathology departments. Many tests and procedures rely on computers and specialized software. These computers may be standard computer workstations or come as a component of a medical device or system. Audiology devices such as hearing aid programmers may connect to computer workstations through universal serial bus (USB), Bluetooth, or other connections, so additional peripherals like USB hubs and Bluetooth adaptors may be required. Where used for telehealth, computers should be provided with dual monitors, speakers, camera, and microphone.

2. Systems, Monitoring, and Signal Systems

Telephone and Data

Facilities shall provide at least one teletypewriter (TTY), also known as telecommunications device for the deaf (TDD), at each reception area.

Data/LAN infrastructure (aka Telecommunications Plant (TIP)) should be provided where required for Videonystagmography (VNG), Rotary Chair, Computerized Dynamic Posturography, ENT microscopes, Digital Swallowing Workstation (FEES), Stroboscopy System, Computerized Speech Lab, Phonatory Aerodynamic System, and other medical equipment requiring data connections.

Nurse Call and Code Blue (NCS)

Where audiology services are provided in an inpatient setting, a nurse call system shall be provided in accordance with *Telecommunications and Special Telecommunications Systems Design Manual (PG-18-10)* and *Facility Guidelines Institute: Guidelines for Design and Construction of Hospitals and Outpatient Facilities*.

Where audiology services are provided in an outpatient setting, provisions shall be made to notify outside emergency medical professionals.

Public Address System

A public-address system shall be provided to function as an emergency communication system and code blue team notification where an NCS is used.

Electronic Security System (ESS)

Provide systems in accordance with the VA *Physical Security Design Manual (PG-18-10)* for VA Life-Safety Protected Facilities.

Duress/Panic Alarms shall be provided for staff use within audio booths and other patient treatment/exam spaces where patients are intentionally isolated or subjected to extreme quiet or loud sounds.

Assistive Listening Systems

Assistive listening systems shall be provided in accordance with *ADA General Guidelines 219*. Additionally, consideration shall be made to provide assistive listening systems in the Reception Area (Waiting Room), Assistive Technology Room, Group Rooms, and Conference Room.

Considerations shall be made for inductive loop systems compatible with hearing aids.

Telemedicine/Telehealth Systems

Telemedicine, as defined by the American Telemedicine Association (ATA), is "the use of medical information exchanged from one site to another via electronic communications to improve a patient's clinical health status" (American Telemedicine Association, May 2014). Telemedicine commonly involves two-way video teleconferencing between a patient and provider but could more broadly include many other interactions, devices, and forms of communication.

Telemedicine endpoints include video teleconferencing system (VTS) carts, fixed VTS integrated with audio visual systems, standard computers with microphone and audio, and smartphones. See VA *Telecommunications and Special Telecommunications Systems Manual (PG-18-10)* for VTS requirements.

Camera placement is crucial for conference rooms and offices. The camera should be at eye level and a few feet from the subject to mimic face-to-face encounters. Microphone selection and placement is equally important to ensure clear speech communication. For offices, a headset microphone ensures consistent sound levels and minimal echo and noise. For Conference Rooms, table-mounted microphones evenly pick up voices around the table; however, they may require grommets, wiring, and a floor box with conduit pathway. Ceiling-mounted microphones may be a better option to reduce infrastructure impact or if the conference table is moveable.

The VTS equipment itself will also impact infrastructure. A fixed VTS system is typically installed with conduit pathways for cabling from the microphones, cameras, and monitors back to the coder-decoder hardware device called a codec. The codec may be installed on a shelf, in a rack, a credenza, or a podium. The codec requires power and network connections. Audio-visual (A/V) equipment enabling routing of sources to displays is usually provided in conference rooms and/or Group Rooms in addition to the VTS equipment since these rooms serve multiple functions beside VTS use. Telemedicine carts eliminate the need for most in-wall A/V cabling but power outlets and network connections must be provided where the cart will be in use. A telephone should be provided in telemedicine spaces as a backup means of communication as well as for troubleshooting the VTS.

3. Software

Audiology and Speech Pathology services utilize a wide range of software-based technology that is subject to continuous development. Non-network connected computers and devices are used to run applications for diagnostics and treatment including:

- Diagnostic audiometry
- Posturography

- Videonystagmography
- Rotary Chair
- Auditory Evoked Potentials (ABR)
- Computerized Speech Lab
- Assistive Technologies (previously described)

2.3.10 Fire Protection and Life Safety

1. Fire Sprinkler System

Sprinkler protection shall be designed to meet the needs of the Audiology and Speech Pathology spaces. Sprinklers shall be recessed and located in the center of acoustical ceiling tiles. Sprinkler finish shall complement the architectural finishes of the space. Design shall follow the criteria in the VA *Fire Protection Design Manual (PG-18-10)* and VA *Master Construction Specifications (PG-18-1)*.

2. Fire Alarm and Detection Systems

Fire alarm requirements for Audiology and Speech Pathology spaces pertain primarily to notification appliances. Installation of new devices shall be in accordance with the VA *Fire Protection Design Manual (PG-18-10)* and VA *Master Construction Specifications (PG-18-1)*.

The need for audible notification will depend, in part, on the type of fire alarm notification present in the building. Voice notification typically requires more devices tapped at a lower wattage in order to achieve voice intelligibility. Conversely, horns located outside of individual rooms may be sufficient to meet the need for audibility levels, without the need for an additional device within the room. Therefore, the type of occupant notification throughout the building needs to be identified.

Audiometric Examination Suites/Booths will require a combination audible/visual notification device, such as a horn/strobe or speaker/strobe in order to alert occupant(s) of an alarm condition.

Spaces which are not acoustically separated will require a visual notification device (strobe). The need for audible notification within the space will be site specific, and depend upon the type of audible alarm, the size of the space, and the sound transmission characteristics of the enclosing walls.

Smoke detection within these areas is not typically required; however, the above referenced standards should be consulted.

2.3.11 Safety Considerations

Audiology and Speech Pathology projects shall comply with all applicable VA Design Manuals and Directives associated with Life Safety and Physical Security. Patient and staff safety considerations specific to Audiology and Speech Pathology are addressed in this section.

1. Clinical Safety Considerations

Infection Control

Handwashing sinks shall be provided in all patient care spaces. Gel/foam dispensers shall be provided in the prefabricated Audiometric Examination Suites/Booths since a sink cannot be

installed in these locations. Proximity to a hand wash sink (such as in an adjacent room) is an important consideration for the sound suites.

Scope handling protocols, previously discussed in Section Speech-Language Pathology Functional Considerations must be addressed relative to the Special Procedure Room.

Medication Safety

Medication storage, handling, and distribution is not a significant consideration for ASPS; however, a limited quantity of anesthetics are used for swallow tests. A single double-locked cabinet in the Special Procedure Room is sufficient for the medication used. Task lighting at the countertop will minimize risk of errors.

2. Physical Safety

Staff Safety/Security Considerations

Room layouts of Patient Care spaces have been developed with consideration for staff safety. Key considerations include provisions for:

- Sufficient working space in the patient treatment zone/around the patient
- Provider workspace is typically located close to the door to avoid entrapment if a patient becomes agitated

Duress alarms (panic buttons) are called for in all patient care spaces as an additional security measure. These are particularly important in the Audiometric Examination Suites, Balance Testing, Special Procedure, and Voice Treatment Rooms.

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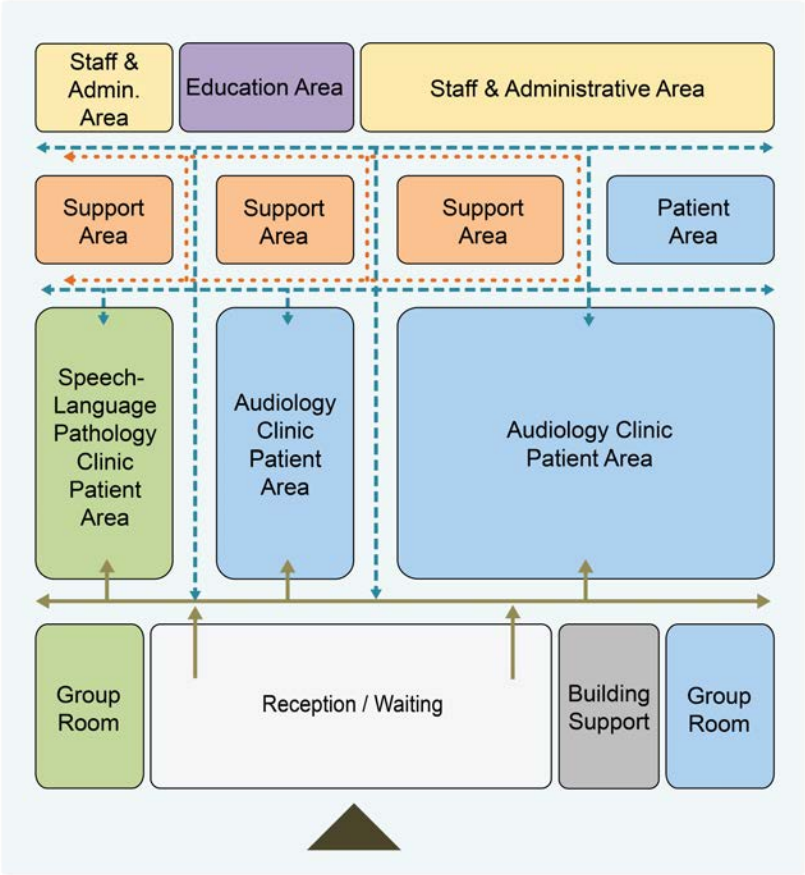
3.0 FUNCTIONAL DIAGRAMS

3.1 General

An Audiology and Speech Pathology department/suite may be organized in a variety of ways depending on services to be provided, local requirements, and the type and quantity of clinical spaces. Key considerations, recommendations, and scenarios for the organization of ASPS at VA Medical Centers and outpatient clinics are described in this section. Audiology and Speech Pathology functional areas should be collocated or adjacent in a single clinic with a common waiting/reception area. Support Area functions should be grouped adjacent to Patient Areas for shared "off-stage" access by staff and service personnel. A shared Group Room is best located near the clinic entry for convenient access by patients, while Staff and Administration and Education Areas may be located at the perimeter, furthest from the clinic entry. Figure 55 illustrates this general organization with segregation of patient, staff, and service workflows.



Functional Area

- FA 1: Reception Area
- FA 2: Audiology Clinic Patient Area
- FA 3: Speech-Language Pathology Clinic Patient Area
- FA 4: Support Area
- FA 5: Staff and Administrative Area
- FA 6: Education Area
- Building Support

Circulation

- Patient
- Staff
- Service

***Figure 55**: Audiology and Speech Pathology Service – General Functional Diagram*

NOTE: Diagram for functional organization; does not represent a specific space program

3.2 Inpatient

At a VAMC, a collocated Audiology and Speech Pathology Clinic is likely to include the comprehensive range of services described in previous sections of this document. The layout at a VAMC must also consider access by stretcher/gurney traffic. The recommended functional organization of the department is based on groupings of related/common activities as follows:

- Hearing Assessment/Programming/Fitting Zone: this area encompasses all activities related to hearing evaluations and screenings, including Comp & Pen exams, and consultations, as well as the follow-up activities that include the programming and fitting of hearing aids. This area incorporates the Audiometric Sound Suites, including one that accommodates a gurney/stretcher. Rooms in this area have significant sound attenuation/noise mitigation requirements. Patients may spend up to two hours in this area of the clinic.
- Audiology Treatment Zone: this area accommodates routine evaluations, treatments, and hearing aid repairs. Some activities in this area may generate noise and vibrations. There are unique clinical support functions associated with this area.
- Balance Testing Zone: this area accommodates the unique rooms associated with vestibular testing. Collocation of spaces in one area is important since patients may undergo a series of different tests in a single appointment and a quiet area is preferred.
- Speech Evaluation/Therapy Zone: the “front” of the Speech Pathology functional area accommodates routine speech evaluation/therapy appointments, as well as the Assistive Technology Lab, which benefits from access to the more “public” side of the clinic for patient convenience and potential access to other service areas, such as PM&R.
- Speech Procedure Zone: Speech Procedure Rooms are grouped together in the “back” of the clinic for access to clinical support functions and for segregation from higher activity-level spaces. Activities in these rooms generate noise.

The number and types of spaces in the ASPS clinic is based on workload, provider competencies, and equipment. While a variety of layouts is possible, and will be dependent upon the individual project Program for Design and available space, a modular organization is beneficial for this department and allows for continuous flow of patients and staff while also achieving the appropriate segregation of on-stage/off-stage activities. Locating staff/administrative and office/treatment spaces along the facility exterior wall with controlled natural daylight and windows is desirable. The shared Telehealth Room is located close to the Staff and Administrative area per functional definition in this scenario as a “Remote Clinician’s Consultation Room” (it is not a patient care space) (California Telemedicine and eHealth Center, 2011), and for privacy and noise mitigation.

Figure 56 illustrates an example of this organization which provides opportunities for segregation of patient, staff, and service circulation.

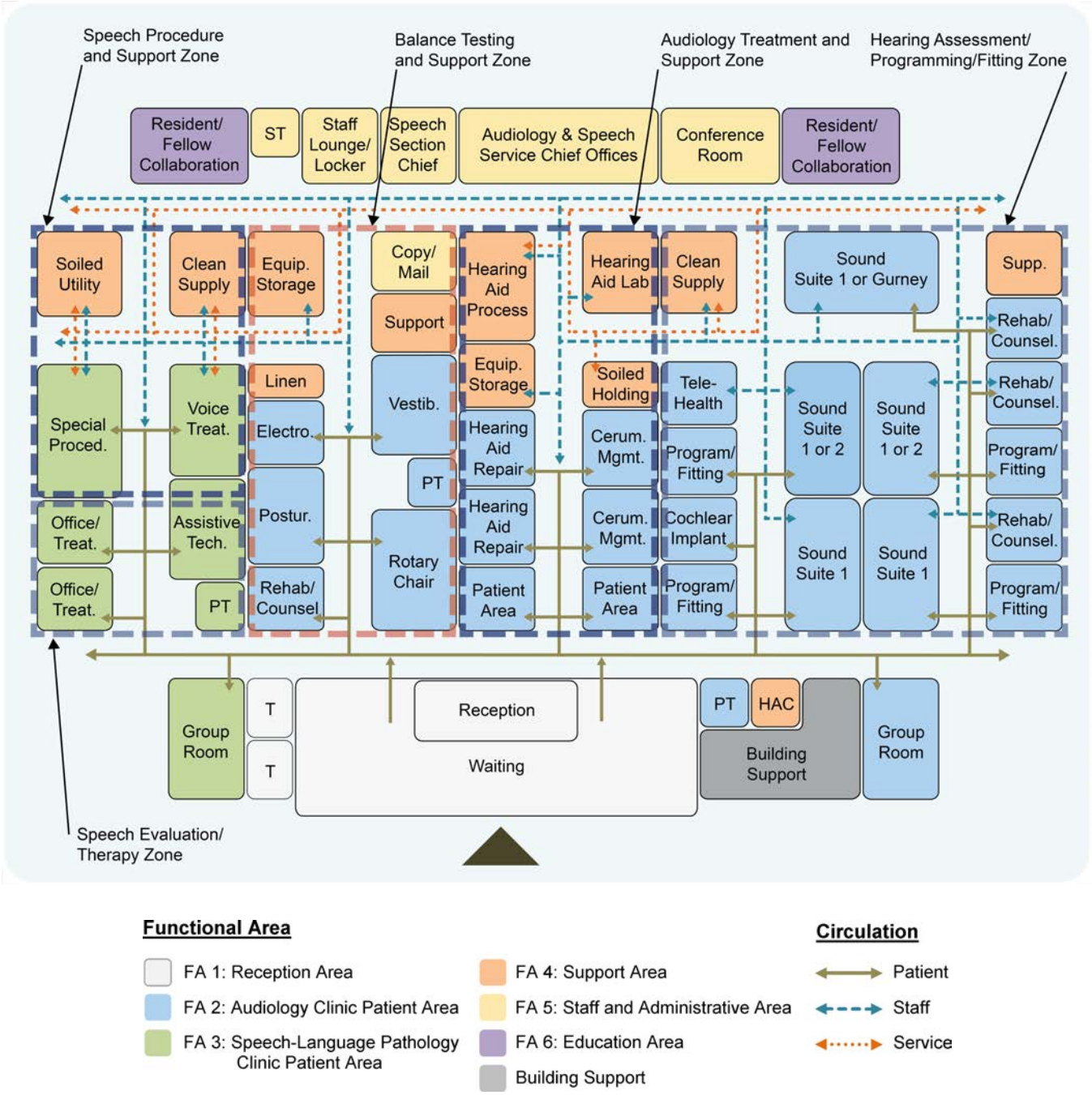


***Figure 56**: Audiology and Speech Pathology – VAMC Functional Diagram*

NOTE: Diagram for functional organization; does not represent a specific space program

3.2.1 Sound Suite Modular Layout

Planning for multiple sound suites in an Audiology Clinic requires consideration for placement within the constraints of structural bays and walking distances. The following diagram illustrates the layout of multiple adjacent sound suites and suggested minimum planning dimensions. The 75'-0" (22.9 M) minimum dimension needed for three end-to-end sound suites also represents the maximum recommended walking distance in a clinic module.

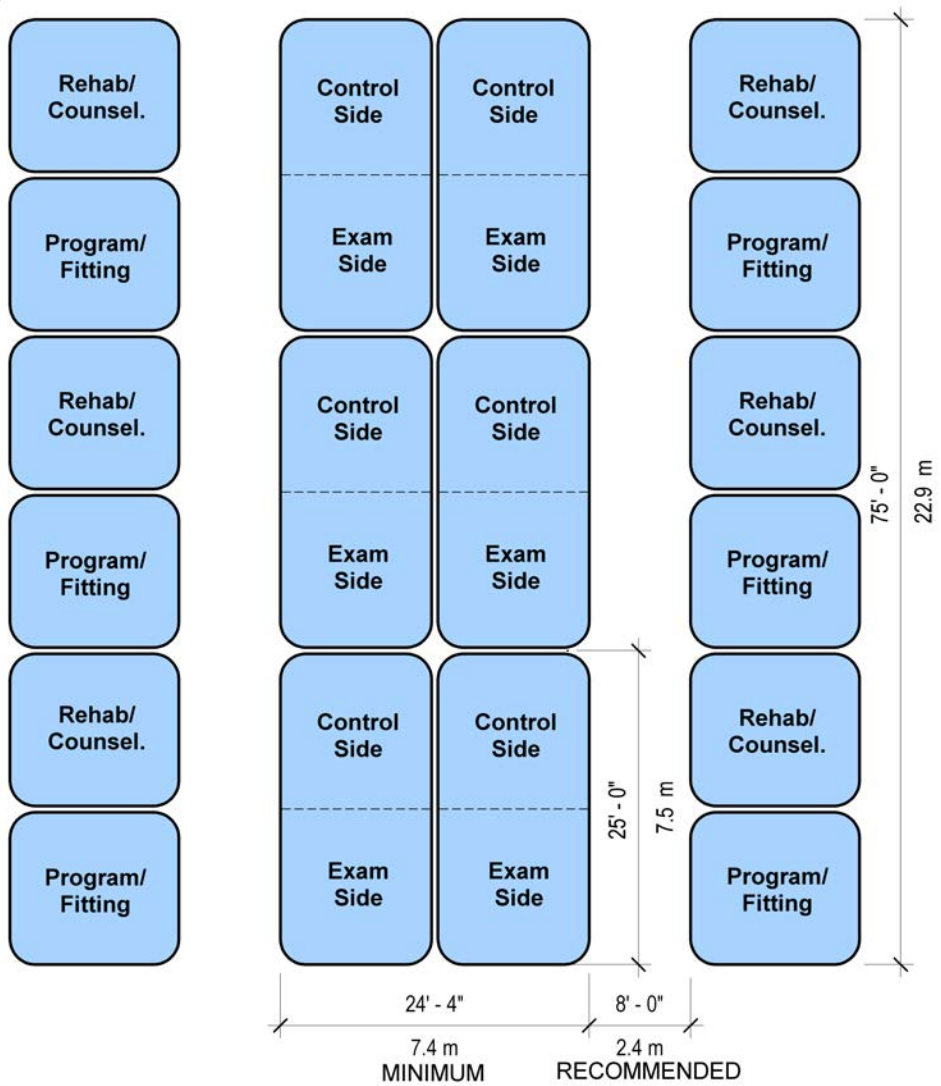


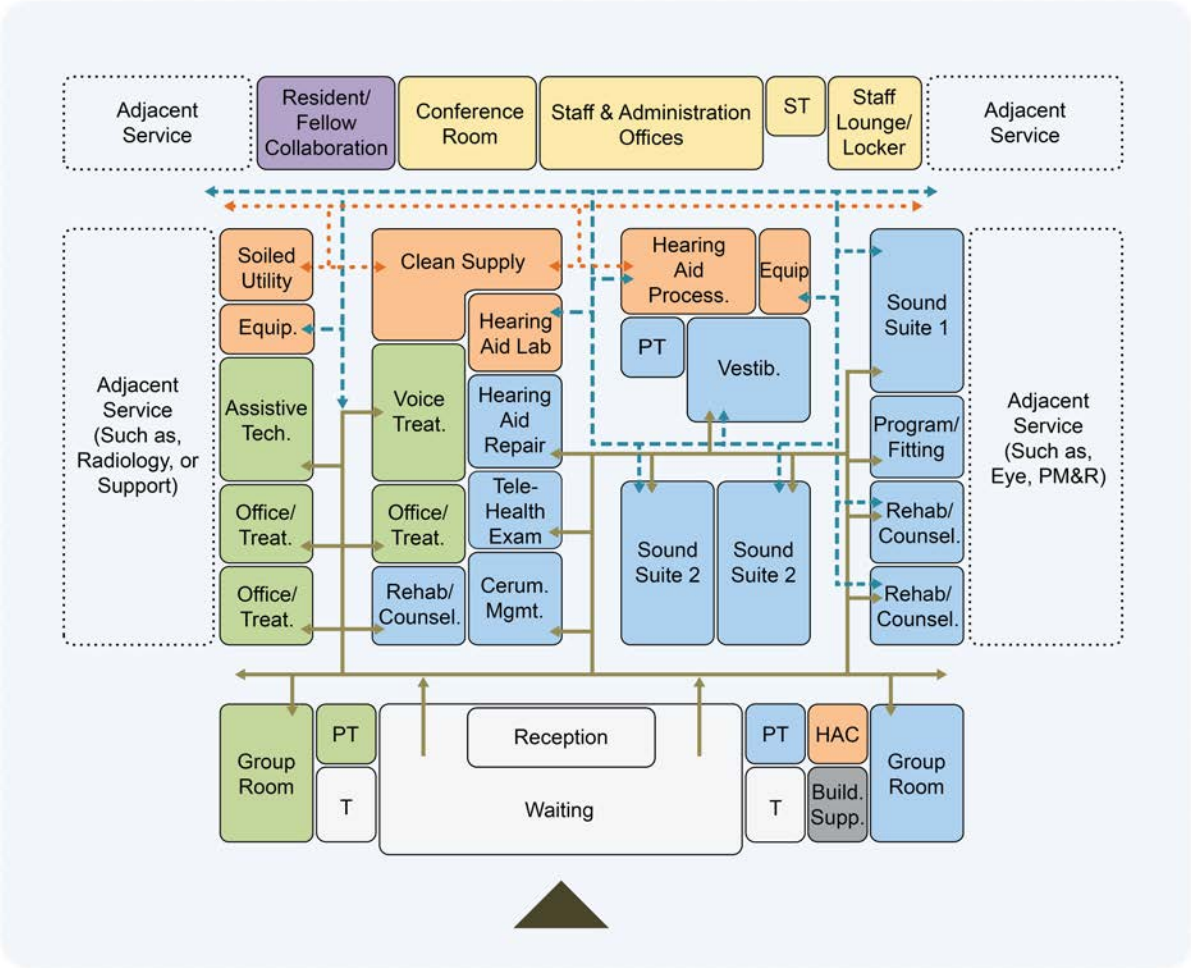
***Figure 57**: Sound Suite Layout*

3.3 Outpatient: ACC/CBOC

At an outpatient clinic, the ASPS Clinic should be located next to other compatible specialty services, such as the Eye Clinic or PM&R. Proximity to Radiology is helpful if Speech Pathology services are provided. Depending on the size of ASPS, the waiting and reception area may be shared with the adjacent clinic(s); however, the special needs of Audiology and Speech Pathology patients, previously addressed, as well as appropriate size of the waiting space must be considered.

The organization of the department at an Outpatient Clinic should have similar considerations to that of a Medical Center, however there will likely be fewer procedure and specialty rooms (i.e. sound suites, balance testing, Special Procedure Rooms). Hospital beds and gurneys do not need to be accommodated, however the corridor width in front of sound suites must be sufficient to maintain egress clearances at out-swinging doors. A layout that corresponds with modular/flexible clinic planning with groupings of related activities (as in the VAMC example) is appropriate. Due to the complexity of activities, equipment, and sound attenuation requirements, two-sided entry to diagnostic/treatment spaces (per the PACT prototype) is not a recommended model for this service.

Figure 58 on the following page illustrates an example layout of an ASPS clinic in an outpatient clinic setting with a smaller than VAMC footprint and in the context of possible adjacent services.



Functional Area

- FA 1: Reception Area
- FA 2: Audiology Clinic Patient Area
- FA 3: Speech-Language Pathology Clinic Patient Area
- FA 4: Support Area
- FA 5: Staff and Administrative Area
- FA 6: Education Area
- Building Support

Circulation

- Patient
- Staff
- Service

***Figure 58**: Audiology and Speech Pathology – ACC/CBOC Functional Diagram*

NOTE: Diagram for functional organization; does not represent a specific space program

4.0 ROOM TEMPLATES

4.1 General

4.1.1 Introduction

The Room Templates are intended as general representations of typical space, furniture and equipment layout, as well as functional and utility supporting needs. The Room Templates were developed as a design tool to assist the Project Team in understanding the choices to be made during design, and to assist designers in understanding VA's space and functional requirements for the Audiology and Speech Pathology Service. The Room Templates are not intended to be project specific and are not meant to limit design opportunities. However, the indicated net square feet (NSF) are the minimum acceptable square feet (the +/- rule does not apply). Dimensions indicated are a close approximation to achieve the required net square feet.

While this information is provided for a majority of spaces required, it is not possible to foresee all possible variations or future requirements. The project-specific space program shall be used as the basis for individual project design.

The Room Templates must be reviewed against project criteria and any special requirements. Users shall follow other VA criteria and standards required by VA. Equipment manufacturers shall be consulted for the most current equipment information such as actual dimensions, weights, and utility requirements.

Each Room Template includes an axonometric view, floor plan, reflected ceiling plan, elevations, room data sheet, and an equipment list. The equipment list provides a comprehensive overview of space planning, utility requirements, and locations for the key room in this service.

Room Templates for the following key rooms are included in this section:

Audiology Rehabilitation/Counseling Room…… (AUD01) 4-11
Hearing Aid Repair Room…….. (AUD02) 4-21
Suite 1, Audiometric Exam (prefab, 2-sided Suite)……. (AUDE1) 4-31
Suite 2, Audiometric Exam (single prefab booth in room)……. (AUDE2) 4-45
Programming/Fitting Room…… (AUD03) 4-59
Cerumen Management Room……... (AUD04) 4-69
Electrophysiology Room …… (AUDP1) 4-79
Posturography Room…….. (AUDP2) 4-89
Vestibulography Room…… (AUDP3) 4-99
Rotary Chair Room…….. (AUDP4) 4-109
Cochlear Implant Mapping/Fitting Room…….. (AUD05) 4-119
Office/Treatment Room, Speech-Language Pathology……..(SPL01) 4-127
Assistive Technology Room 1 (Outpatient Clinic)…….. (SPAT1) 4-135
Voice Treatment Room……(SPP01) 4-145
Special Procedure Room, Speech Pathology…… (SPP02) 4-157
Hearing Aid Lab…… (AUDS1) 4-169
Hearing Aid Processing Room……(AUDS2) 4-177

4.1.2 A/E Discipline Abbreviations and Symbols Legends

Refer to VA Design Manuals and VA Office of Construction and Facilities Management Technical Information Library (TIL) (VA TIL Index) for complete listings of materials, abbreviations, and symbols legends from which the following content has been extracted. These abbreviations and symbols are used in the Room Templates and Room Data Sheets that follow.

4.1.3 A/E Discipline, Material and Finish Codes Abbreviations

A	Amp
ACH	Air Change per Hour
ADO	Automatic Door Opener
AF	Access Flooring
AT	Acoustical Ceiling (Tile)
AT (SP)	Acoustical Ceiling (with Sprayed Plastic Finish)
BIM	Building Information Model
C	Degrees Celsius
CAC	Ceiling Attenuation Class
CBB	Concrete Backer Board
CC	Contractor Furnished Contractor Installed
CCT	Correlated Color Temperature
cd	Candela
CFL	Compact Fluorescent
CMU	Concrete Masonry Units (Unit Masonry)
CP	Carpet (without Cushion Broadloom)
CPT	Carpet Tile
CRI	Color Rendering Index
CT	Ceramic Tile
D	Deep
Dbl	Double
DO	Door
DR	Drawer
DTT	Double Twin Tube
EES	Essential Electrical System
EFTR	Existing Finish to Remain
EPY	Epoxy Flooring
EX	Existing
Exhaust G	Exhaust General
Exhaust S	Exhaust Special
EXP	Exposed
F	Degrees Fahrenheit
FC	Foot Candle
ft	Feet
GL	Glass (Glazing)
GWB	Gypsum Wallboard Systems
h	Height
H	Humidistat/Humidity Sensor
HW	Hardware Set (Finish or Builder's Hardware)
Hz	Hertz
ID	Inside Dimension
IIC	Impact Insulation Class
K	Degrees Kelvin
LED	Light Emitting Diode
LN	Linoleum
LS	Light Switch
LUX	Lumen per Square Meter
LVT	Luxury Vinyl Tile
MAX	Maximum
MIN	Minimum
MM	Millimeter
MTD	Mounted
N	Nurse Call
N/A	Not Applicable
NC	Noise Criteria
NEMA	National Electrical Manufacturers Association
NO	Number
NRC	Noise Reduction Coefficient
NSF	Net Square Feet
NSM	Net Square Meters
OA	Outside Air
P	Paint (Exterior and Interior; Transparent, Semi-Transparent, and Opaque Finishes)

PC	Precast (Architectural Precast Concrete Pavers)
PF	Per-Filters
PRB	Profile Base
PRE-FAB	Prefabricated
PT	Porcelain Tile (Floor and Base)
QT	Quarry Tile
RAF	Resilient Athletic Flooring
RB	Resilient Base (Rubber or vinyl with factory formed inside and outside corners)
Ref	Reference
RES	Resinous Flooring
RES-W	Resinous/Epoxy Wall/Ceiling
RF	Rubber Flooring
RH	Relative Humidity
RRF	Raised Rubber Flooring
RSF	Resilient Sheet Flooring (Chemically Welded Seams)
S	Solid Surface
SC	High Build Glazed Coating (Special Coating)
SD	Static Dissipative
SP	Special Faced
SS	Stainless Steel
ST	Stone (Cast)
STC	Sound Transmission Class
SVT	Solid Vinyl Floor Tile
T	Thermostat / Tempered
T5/T8/T12	Type of fluorescent light fixture
TCO	Telecommunications Outlet
TEMP	Temperature
TER	Terrazzo, Poured
TT	Terrazzo Tile (Plastic Matrix)
TV	Television
TYP	Typical
U/C/B	Under Counter Base
V	Volt
VAV	Variable Air Volume
VOC	Volatile Organic Compound
VT	Vinyl Tile (High Content Vinyl)
VWC	Vinyl Wall Covering
W	Wide
WD	Wood
W/H	Wall Hung
WSF	Welded Seam Sheet Flooring (Heat Welded with Rod)

Table 3: Abbreviation Legend - Room Finishes, Door, and Hardware Schedule (excerpted from PG-18-14; Apr 2017)

PREFIX	MEANING	EXAMPLE USE	EXAMPLE EXPANDED
m:	Material	m: SVT	Material: Solid Vinyl Floor Tile (Luxury Vinyl Tile)
f:	Finish	f: W	Finish: Wall Covering (Vinyl Coated Fabric)
da:	Automatic (Door)	da: ADO	Door Automatic: Automatic Door Operator (Swing or Slide)
dg:	Glazing (Door)	dg: T	Door Glazing: Tempered glass
dl:	Lined (Door)	dl: Yes	Door Lined: Yes
dr:	Rating (Door)	dr: 45	Door Rating: 45 minutes
ds:	Security (Door)	ds: CR	Door Security: Card reader
sw:	Swing (Door)	sw: [12]	Door Swing: See Note 12
t:	Type (Door)	t: 19	Door Type: Upper window, Sound Rated, Wood
s:	Size (Door)	s: V	Size: Width = 3'-8" (1120 mm), Height = 7'-0" (2130 mm)
hw:	Hardware (Door)	hw: 5G	Door Hardware: Defined Variant "G" of General – Interior, Single, Storeroom. May include standard storeroom, storeroom with deadbolt, institutional lock (lockable both sides).

Table 4: Excerpted Notes Legend - Room Finishes, Door, and Hardware Schedule (excerpted from PG-18-14; Apr 2017)

NOTE ID	NOTE TEXT
6	Carpet Tiles preferred especially in high traffic areas. Where budget and design conditions do not allow carpet tile; broadloom carpet may be substituted.
64	See *Design and Construction Procedures PG-18-3*, "Noise Transmission Control".

4.1.4 Legend of Symbols

Table 5: Architectural Legend

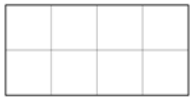
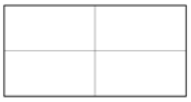
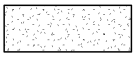
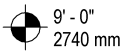
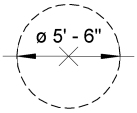
Description of Symbol	Symbol
2'x2' (610x610 mm) Acoustic Tile Ceiling	
2'x4' (610x1220 mm) Acoustic Tile Ceiling	
Sound Absorptive Wall Treatment	
Interior Elevation Reference	
Height of Ceiling Finish Above Finish Floor	
JSN and Equipment Name	
Wheelchair Clearance	
Diameter	Ø
Centerline	℄
Interior Partition	
Prefabricated Sound Insulated Panel System	

Table 6: Mechanical Legend

Description of Symbol	Symbol
Room Thermostat/Temperature Sensor	T
Room Humidistat/Humidity Sensor	H
HVAC Supply	
HVAC Return	
Exhaust Register	

Table 7: Plumbing Legend

Description of Symbol	Symbol
Sprinkler Head	

Table 8: Electrical – Lighting Fixture Legend

Description of Symbol	Symbol
Recessed Downlight Fixture	
Light Fixture, Recessed 2’x4’ (610 x1220 mm)	
Light Fixture, Recessed 1’x4’ (305 x1220 mm)	
Light Fixture, Recessed 2’x2’ (610 x 610 mm)	
Light Fixture, Recessed 1’x1’ (305 x 305 mm)	
Light Fixture, Strip/Undercabinet	

Table 9: Electrical – Wiring Devices Receptacles Legend

Description of Symbol	Symbol
Receptacle, Duplex	
Receptacle, Duplex with Ground Fault Circuit Interrupter	
Receptacle, Duplex on Emergency Power	
Receptacle, Quadraplex	
Receptacle, Single	
Receptacle, Special Purpose A = 120V, 20A, 1 Phase, 2-Pole, 3W, NEMA 5-20R B = 208V, 20A, 1 Phase, 2-Pole, 3W, NEMA 6-20R C = 120V, 30A, 1 Phase, 2-Pole, 3W, NEMA 5-30R D = 208V, 30A, 1 Phase, 2-Pole, 3W, NEMA 6-30R E = 208V, 60A, 1 Phase, 3-Pole, 4W, NEMA 14-60R F = 208V, 30A, 3 Phase, 3-Pole, 4W, NEMA 15-30R G = 208V, 50A, 3 Phase, 3-Pole, 4W, NEMA 15-30R H = 208V, 60A, 3 Phase, 3-Pole, 4W, NEMA 15-60R	
4” (100 mm) Square Junction Box	J
Surface mounted multi-outlet assembly with duplex receptacles on 2’-0” (610 mm) centers or as designated on drawings, MTD 3’-6” (1070 mm) AFF or as indicated	
Flush 2-Gang Floor Box with Recessed Receptacle	
3-Gang Compartment Box in Floor for Telephone, Data, & Receptacle	
Switch (# Subscript as indicated Below): Blank = Single Pole 3 = Three-way 4 = Four-way D = Dimmer LV = Low Voltage Mo = Occupancy Sensor	$\$_{\#}$

Table 10: Electronic Safety and Security Legend

Description of Symbol	Symbol
Alarm, Audible/Light, One Assembly (Subscript Denotes Candela Rating)	#
Alarm, Lamp Light, Signal Light, Strobe (Subscript Denotes Candela Rating)	#

Table 11: Communication Legend

Description of Symbol	Symbol
Outlet, Telecommunications TCO with MATV = 4 11/16” (120 mm) Master Antenna Outlet Box w/Blank Cover Mounted 18” (460 mm) AFF Unless Otherwise Noted TCO with C = Camera TCO with M = Monitor TCO KVM = Keyboard/Video/Mouse	M
Outlet, TCO Combination Telephone/Data Communication (See *Telecommunications and Special Telecommunications Systems Design Manual Table 2.3* for minimum locations and heights)	
Outlet Telephone; Letter Indicates as Follows: J = Jack Type W = Wall Type	
Outlet Data Only	
Outlet; Letter Indicates as Follows: A = Audio V = Video I = Intercom	A
Nurse Call Station D = Duty Station Mounted 5’-0” (1520 mm) AFF Unless Noted Otherwise E = Staff Emergency Station Mounted 4’-0” (1220 mm) AFF Unless Noted Otherwise EP = Mounted 6’-0” (1830 mm) AFF for Shower Location, Mounted 4’-6” (1370 mm) AFF for Tub Location, & Mounted 3’-0” (910 mm) AFF for Toilet Location	N D
Nurse Call Dome Light	N
Panic Call	N

Note:

- For wheelchair patient use, mount telephone outlet 36” (910 mm) AFF to bottom of outlet box.
- Desk Phone – mount outlet 1’-6” (460 mm) AFF
- Height of tele-cart outlets shall be as indicated on bedwalls or PBPU details. See VA *Barrier-Free Design Standard PG-18-13*.

4.1.6 Door Information

Refer to *PG-18-14 Room Finishes, Door and Hardware Schedule, Section III* for complete list of door marks and sizes.

Table 12: Door Sizes

Mark	Width	Height
N	2'-0" (610 mm)	7'-0" (2130 mm)
S	3'-0" (910 mm)	7'-0" (2130 mm)
U	3'-6" (1070 mm)	7'-0" (2130 mm)
V	3'-8" (1120 mm)	7'-0" (2130 mm)
X	4'-0" (1220 mm)	7'-0" (2130 mm)

Note: Provide 3'-8" (1120 mm) wide doors where 4'-0" (1220 mm) doors are impractical.

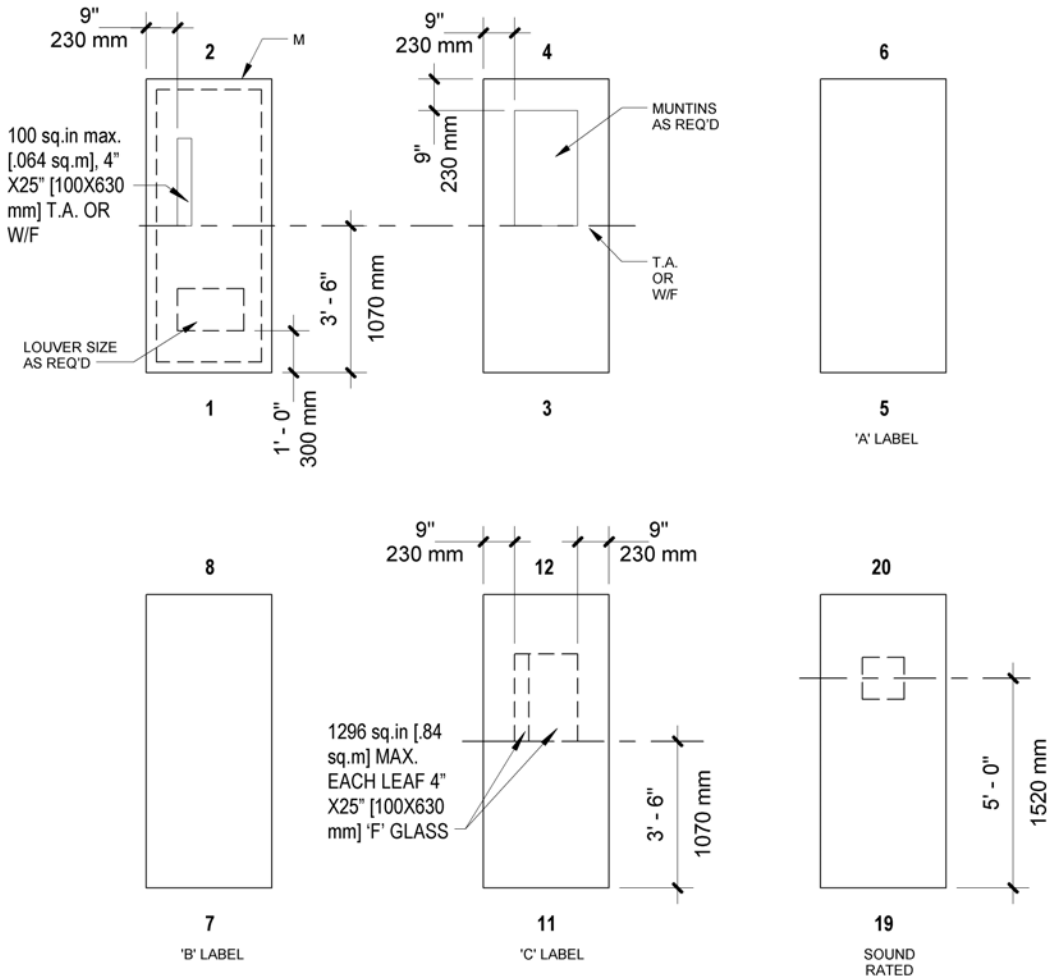


Figure 59: *Door Types*

4.1.7 Hardware Set Numbering

Table 13: Hardware Set Numbering for Category: General Interior Doors

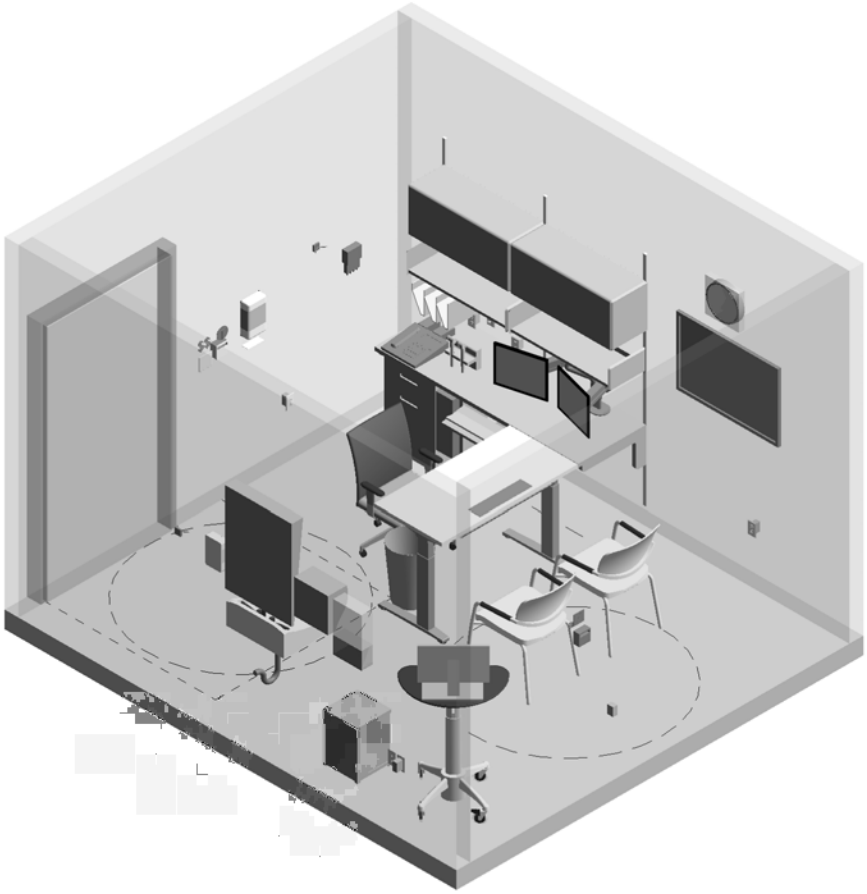
HW#	Single or Pair	Function
1	Single	Non-locking. May be push/pull, hospital latch, or latchset.
2	Single	Privacy. May be standard privacy, hospital privacy (double thumb turn), keyed indicator privacy, or staff key-only entry indicator privacy.
3	Single	Office. May include standard office with thumb turn or entry lock with thumb turn and deadlock.
4	Single	Classroom. May include standard classroom, double-cylinder utility function (free egress always available), or classroom hospital latch.
5	Single	Storeroom. May include standard storeroom, storeroom with deadbolt, or institutional lock (lockable both sides).
6	Single	Panic. May include exit only, passage lever, lockable lever, storeroom lever, or pull.
7	Single	Special. Could include roll-up doors, Won doors, operable partitions, sliding doors, ICU/CCU doors, folding doors, etc.
8	Pair	Non-locking. May be push/pull, hospital latch, or latchset.
9	Pair	Entry. May include entry lock with thumb turn and deadlock.
10	Pair	Classroom. May include standard classroom, double-cylinder utility function (free egress always available), classroom hospital latch.
11	Pair	Storeroom. May include standard storeroom, storeroom with deadbolt, institutional lock (lockable both sides).
12	Pair	Panic. May include exit only, passage lever, lockable lever, storeroom lever, pulls.
13	Pair	Special. Could include sliding doors, folding doors, etc.

Table 14: Hardware Set Numbering for Category: Electronic Security Doors

HW#	Single or Pair	Function
SH3	Single	Card reader door. Electric lockset.
SH9	Pair	Card reader door. Electric lockset.

4.2 Audiology Rehabilitation/Counseling Room (AUD01)

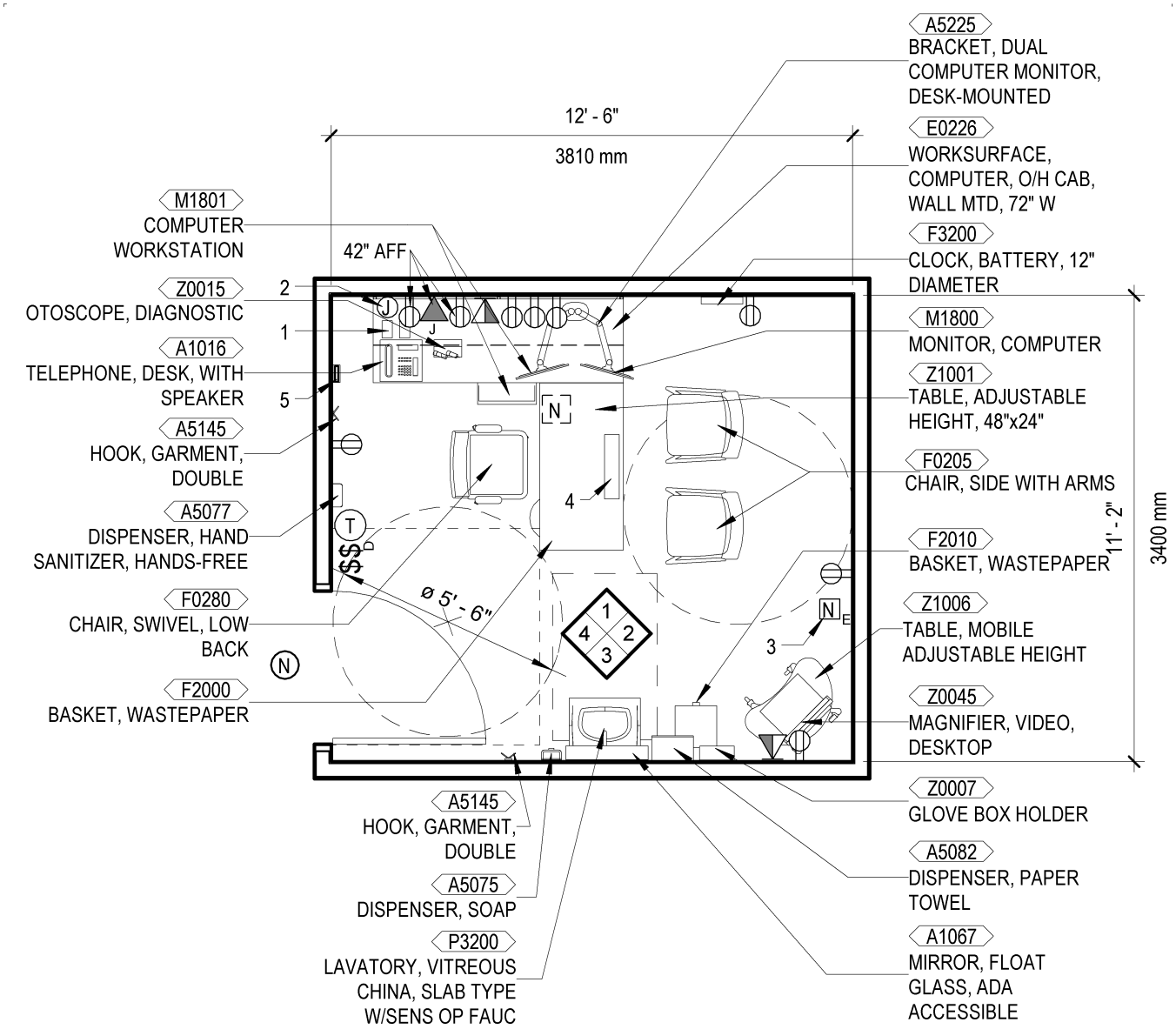
4.2.1 Axonometric View



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

4.2.2 Floor Plan

Audiology Rehabilitation/Counseling Room (AUD01)



KEY NOTES:

1. MULTIPLE CHARGING STATIONS FOR PROGRAMMERS. NO JSN ASSIGNED - DEPENDS UPON LOCAL HEARING AID CONTRACT.
2. CONNECT TO SYSTEMS FURNITURE.
3. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
4. INTEGRAL PLUG STRIP; TABLE ACCESSORY.
5. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

0' 1' 2' 3' 4' 8'

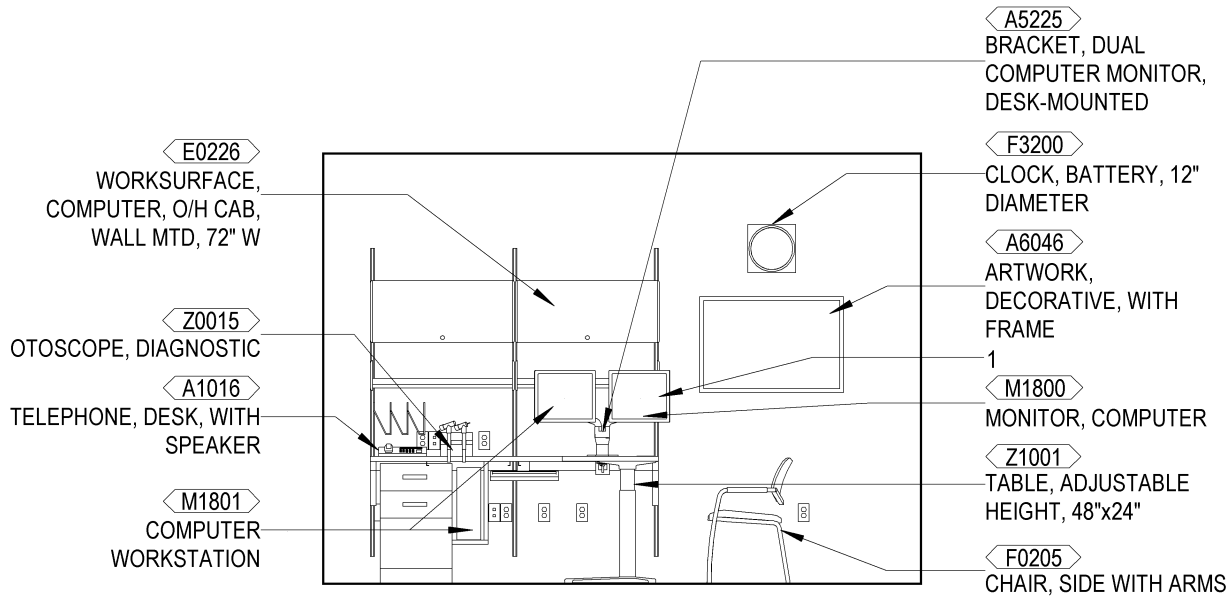
1/4" = 1'-0"

140 NSF	13.0 NSM

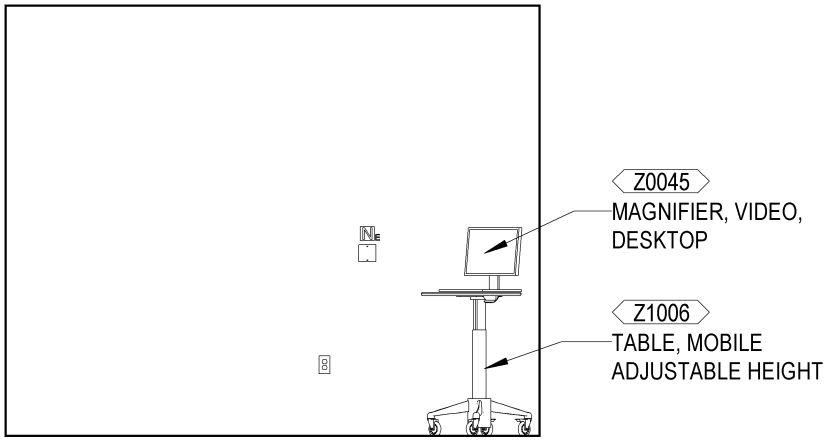
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.2.3 Interior Elevations

Audiology Rehabilitation/Counseling Room (AUD01)



ELEVATION - 1



ELEVATION - 2

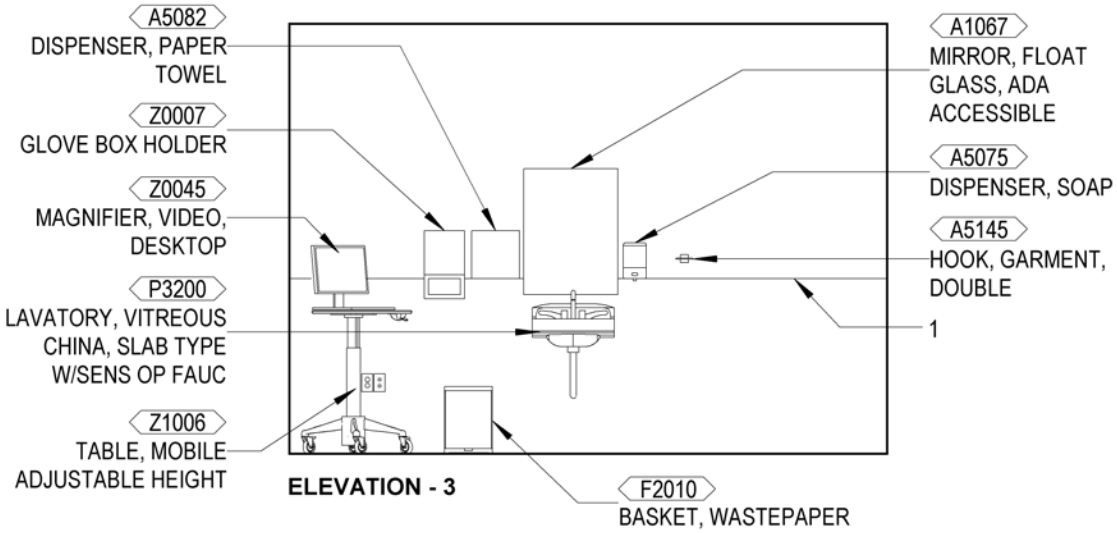
KEY NOTES:
1. MONITOR WITH WEBCAM CAPABILITY.

0' 1' 2' 3' 4' 8'

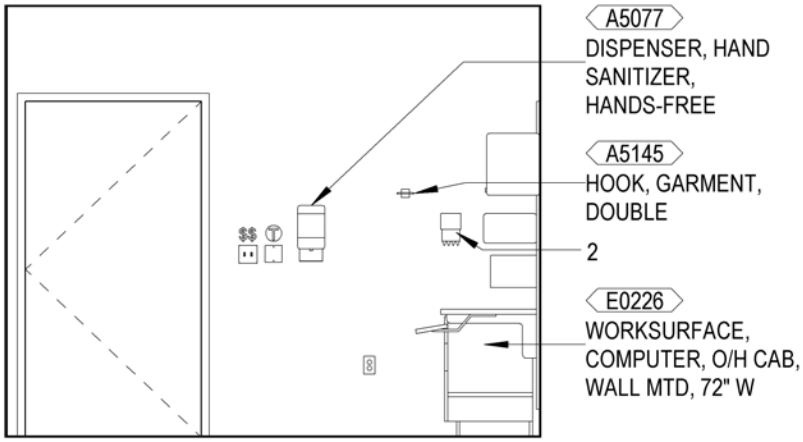
1/4" = 1'-0"

Interior Elevations

Audiology Rehabilitation/Counseling Room (AUD01)

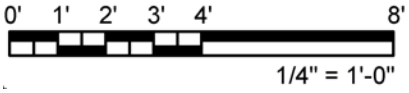


ELEVATION - 3



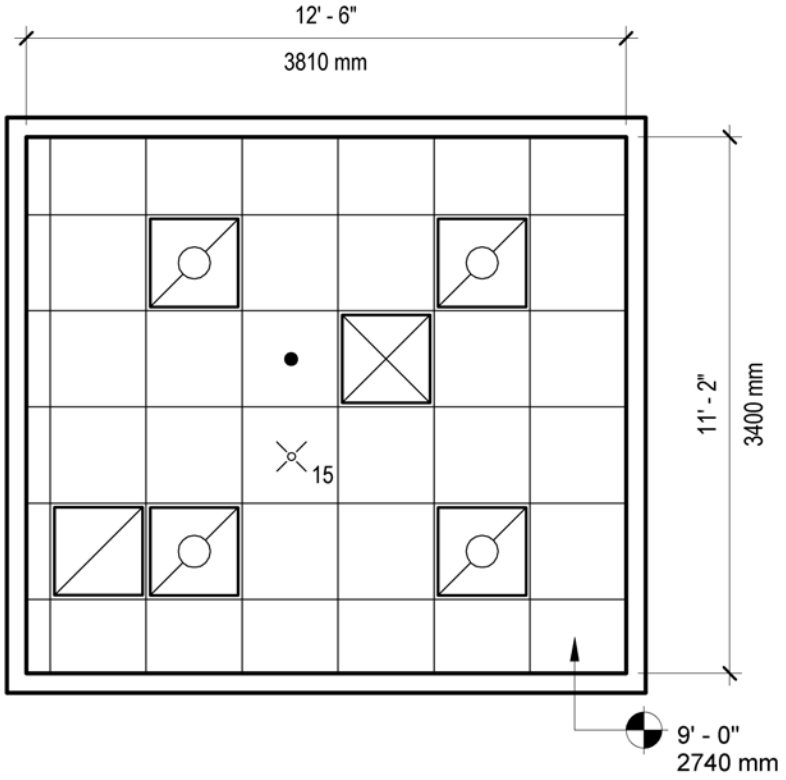
ELEVATION - 4

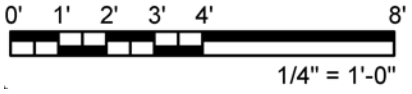
KEY NOTES:
1. WALL PROTECTION
2. SPECULA DISPENSER (OTOSCOPE ACCESSORY).



4.2.4 Reflected Ceiling Plan

Audiology Rehabilitation/Counseling Room (AUD01)





140 NSF	13.0 NSM

4.2.5 Room Data Sheet

Audiology Rehabilitation/Counseling Room (AUD01)

ARCHITECTURAL	
Number of People:	3
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions/Wall Finish:	m:GWB f:P (Note 4)
Base:	m:RB h:4" (100 mm)
Floor Finish:	CPT (Note 1) or LVT
Door:	m:Wood t:19 (Note 2, 3) s:V
Hardware:	3
Slab Depression:	N/A
Acoustical Criteria:	Notes 4, 5
Ceiling	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	50 STC, 50 IIC
Walls at Adjacent Room:	50 STC
Walls at Corridor:	45 STC
Special Construction:	N/A

Notes:

1) Ref. Note 6, PG-18-14
2) 40 STC rated acoustical door
3) Narrow lite optional. If provided, use insulated or laminated glass unit to meet acoustical criteria in Note 2.
4) Increase the minimum STC rating of walls 5 STC for every 5 dBA increase in sound level above normal speech level (65 dBA 3'-0" (910 mm) from the speaker) in the adjacent room.

Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).

LIGHTING	
Workplane Height:	At Floor
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC)
Maintained Avg. Illumination-Task Focus:	N/A
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type
CCT:	3500K
CRI:	80, minimum
Lamps:	LED, T5, or T8 Fluorescent
Controls:	Multi-Level Control via Linear Dimming, Step Dimming, or Dual-Ballast Switching
Special Requirements:	N/A

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:

1) Multiple Receptacles above and below desk for device charging

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (See Note 1)

Notes:

1) Where telehealth services will be provided, computer workstation shall include dual monitors, speakers, video camera, and microphone.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Electronic Sensor
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Visual (15 cd), center of tile
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.2.6 Equipment List

Table 15: Audiology Rehabilitation/Counseling Room (AUD01) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	3	VV	Telecommunication outlet location.
A1016	Telephone, Desk, With Speaker	1	VV	Telephone, Desk, with speaker
A1067	Mirror, Float Glass, ADA Accessible	1	CC	A high quality 1/4" polished float glass mirror with a stainless steel frame. Frame holds mirror in a tilted position for accessibility and compliance with ADA requirements. Mirror has a galvanized steel back secured to frame with concealed screws with integral horizontal hanging brackets. Mirror shall be approximately 18" wide and 36" high. Other sizes are available.
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5145	Hook, Garment, Double, SS, Surface Mounted	2	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A5225	Bracket, Dual Computer Monitor, Desk-Mounted	1	VV	Desk-mounted bracket that supports two LCD computer monitors, or laptop and monitor configuration. Extends LCD's or labtop up to 25" with an adjustment range of 18". Desk clamp attaches to edge up to 2.6" thick. Maximum combined weight supported not to exceed 50 lbs.
A6046	Artwork, Decorative, With Frame	1	VV	This JSN is to be used for determining and defining location of decorative artwork.
E0226	Worksurface, Computer, O/H Cab, Wall Mtd, 72" W	1	VV	THIS TYPICAL INCLUDES: 3 Vertical Hanging Strips 2 Lockable Flipper Units 2 Shelves, Storage/Display 2 Lights 1 Tack board 2 Tool Rails 2 Paper Trays 1 Diagonal Tray 1 Cantilevered Work Surface 1 Adjustable Keyboard Tray 1 Stationary Pedestal, Box/Box/File 1 Pencil Drawer 1 CPU Holder
F0205	Chair, Side With Arms	2	VV	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F0280	Chair, Swivel, Low Back	1	VV	Low back contemporary swivel chair, 37" high X 25" wide X 31" deep with a five (5) caster swivel base, arms and foam padded seat and back upholstered with either woven textile fabric or vinyl.
F2000	Basket, Wastepaper, Fire Resistant	1	VV	Wastepaper basket, fire resistant, approximately 40 quart capacity. This unit is used to collect and temporarily store small quantities of paper refuse in patient rooms, administrative areas, and nursing stations. Size and shape varies depending on the application and manufacturer selected.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
P3200	Lavatory, Vitreous China, Slab Type	1	CC	Wall mounted, slab type, vitreous china, lavatory (approximately 7 x 15 x 10 inches) with faucet holes on 4 inch centers; electronic sensor operated, goose neck spout and grid strainer. It shall be suitable for use in clinics, offices, and patient care areas.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.
Z0015	Otoscope, Diagnostic, Desk or Wall Mounted	1	VV	Wall Mounted Otoscope: Integrated system with wall transformer, standard diagnostic otoscope, wall aneroid, and specula dispenser; includes 6 foot line cord with plug, and accepts two handles. Designed for use in patient rooms. Desk Set Otoscope: System contains universal charger, lithium ion handle and lithium ion battery, 3.5v otoscope and separate wall mounted specula dispenser; includes 6 foot line cord with plug and accepts two handles. Designed for use in patient rooms.
Z0045	Magnifier, Video, Desktop	1	VV	Magnifier for reading of documents by low vision patients. Includes integral camera, video monitor, illumination, and controls. Minimum screen size of 17" and magnification of 45x.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z1001	Adjustable Height Table, 48" W	1	VV	48"W x 24" D adjustable height electric pedestal table with C-foot configuration and integral wire management trough or tray. Height range varies by manufacturer, and model, approximately 22" to 48". Steel tube construction with powder coat finish, and 1 ¼" thick top with high pressure laminate, gator-ply paper backer bottom face, and side edges of rigid Thermoplastic or color matched wood veneer. Die cast aluminum feet and top support; galvanized steel horizontal rails, zinc plated steel fasteners. System includes integral electrical components (including control box, cable trough, electric motor, power cord for table; U.L. listed pop-up power strip with minimum of two simplex receptacles, data and/or USB ports as needed per facility preference, and minimum 6' long power cord with plug), 2 grommets and adjustable glides for complete system.
Z1006	Table, Mobile Adjustable Height	1	VV	Care Exchange Workstation-Non-powered, height adjustable workstation with two locking casters front, and two non-locking casters, rear. Polished aluminum column and base. Table includes adjustment lever and accessories as needed to meet local requirements. Work surface approximately 32"W x 22"D, kidney shape.

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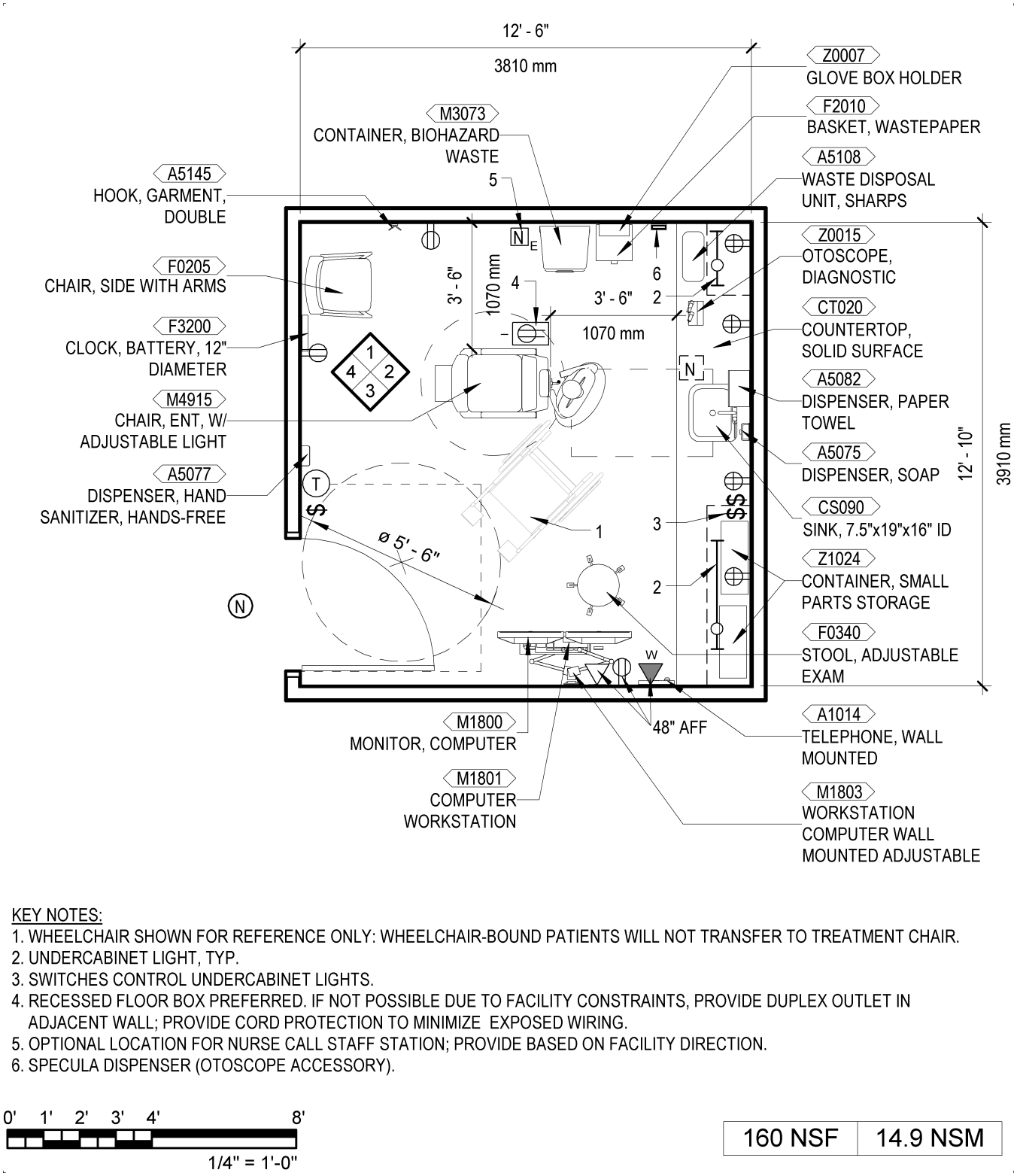
4.3 Hearing Aid Repair Room (AUD02)

4.3.1 Axonometric View

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

4.3.2 Floor Plan

Hearing Aid Repair Room (AUD02)



KEY NOTES:

1. WHEELCHAIR SHOWN FOR REFERENCE ONLY: WHEELCHAIR-BOUND PATIENTS WILL NOT TRANSFER TO TREATMENT CHAIR.
2. UNDERCABINET LIGHT, TYP.
3. SWITCHES CONTROL UNDERCABINET LIGHTS.
4. RECESSED FLOOR BOX PREFERRED. IF NOT POSSIBLE DUE TO FACILITY CONSTRAINTS, PROVIDE DUPLEX OUTLET IN ADJACENT WALL; PROVIDE CORD PROTECTION TO MINIMIZE EXPOSED WIRING.
5. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
6. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

0' 1' 2' 3' 4' 8'

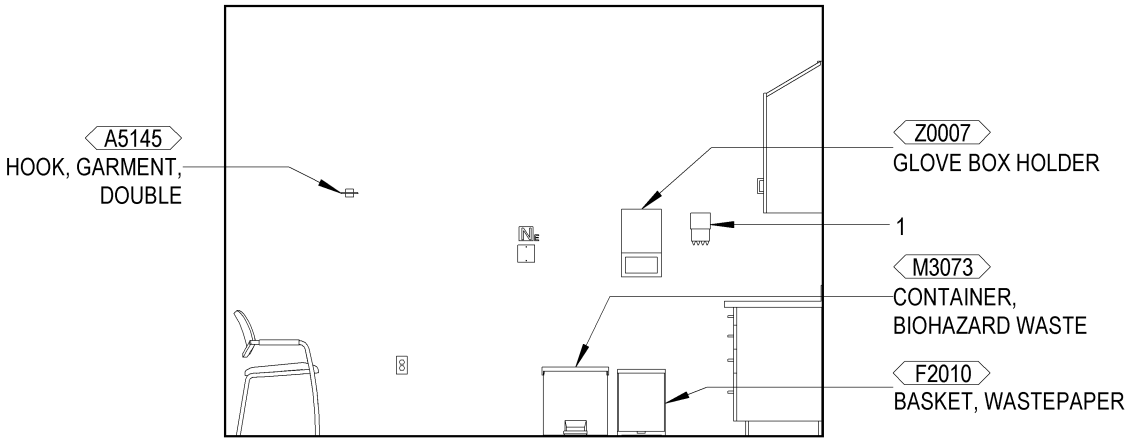
1/4" = 1'-0"

160 NSF	14.9 NSM

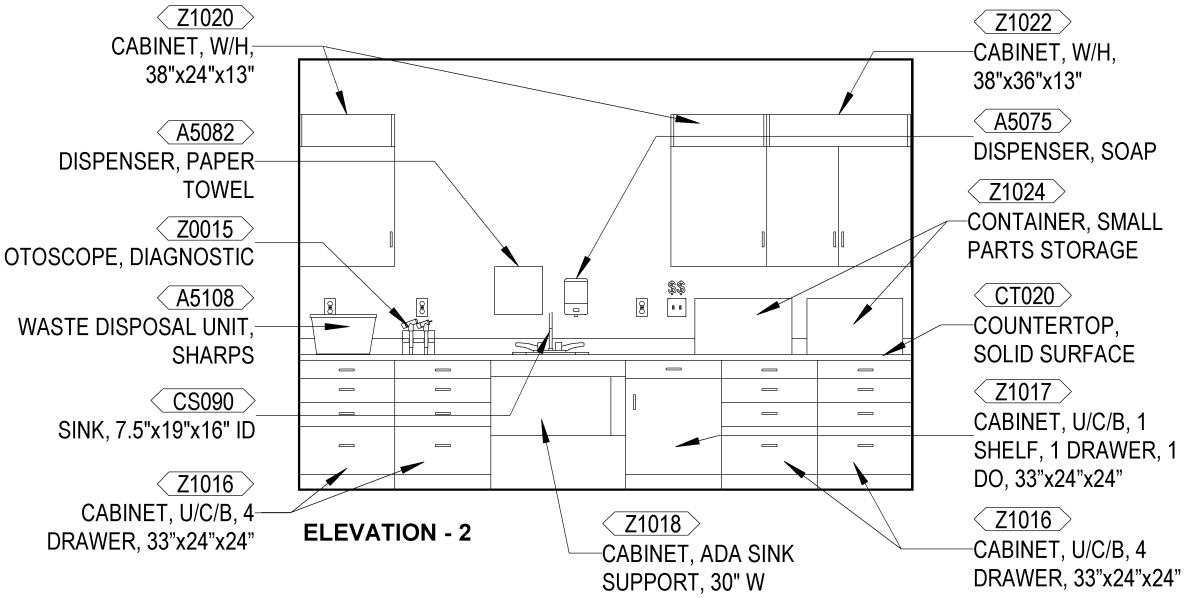
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.3.3 Interior Elevations

Hearing Aid Repair Room (AUD02)

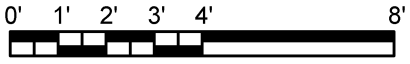


ELEVATION - 1



ELEVATION - 2

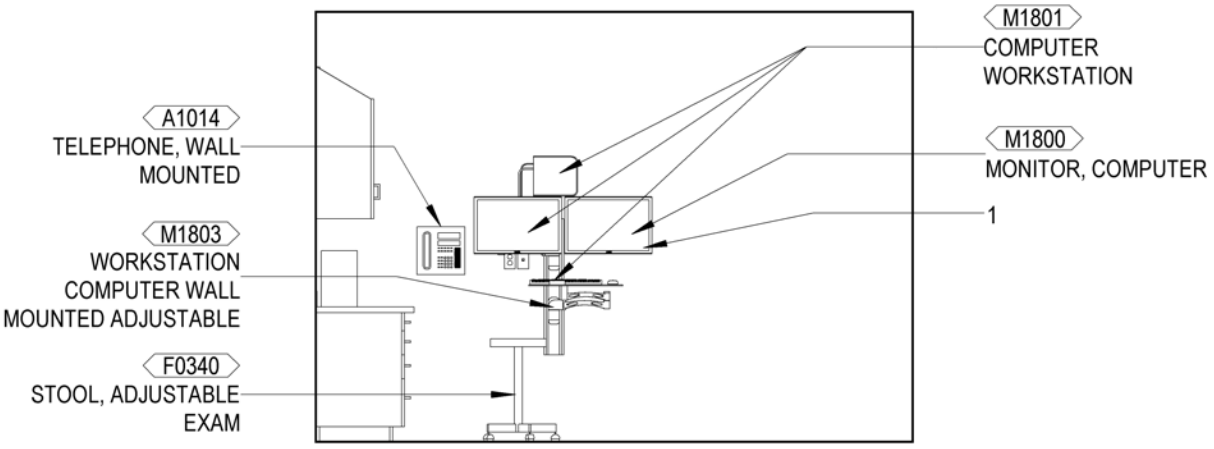
KEY NOTES:
1. SPECULA DISPENSER (OTOSCOPE ACCESSORY).



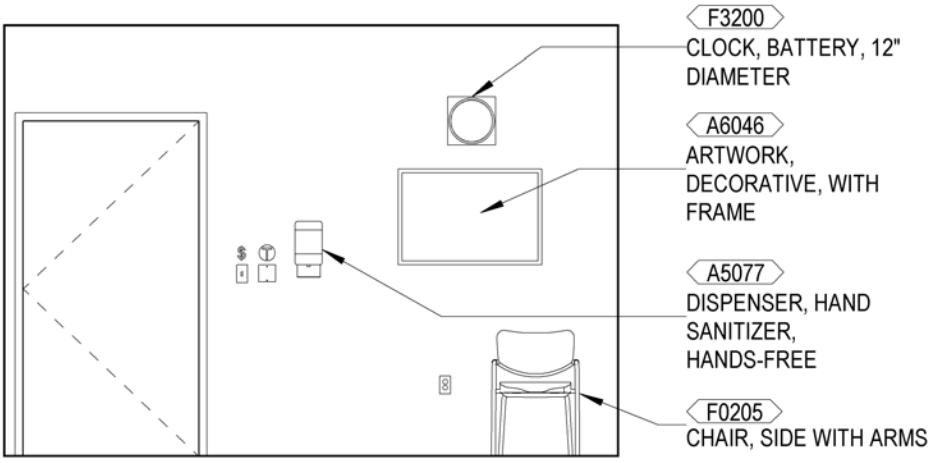
1/4" = 1'-0"

Interior Elevations

Hearing Aid Repair Room (AUD02)

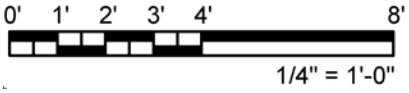


ELEVATION - 3



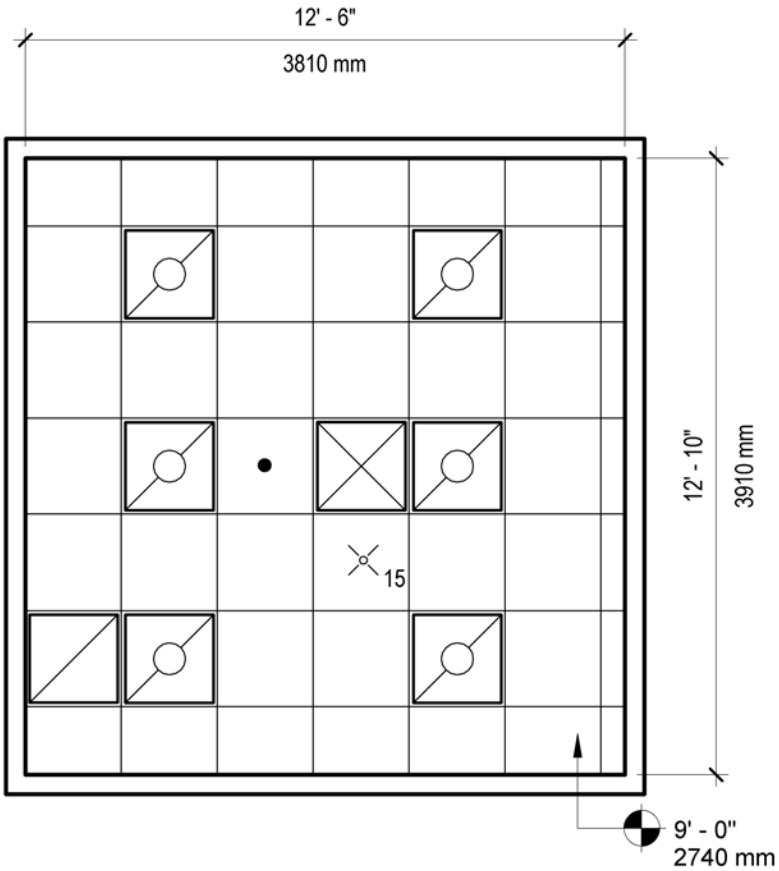
ELEVATION - 4

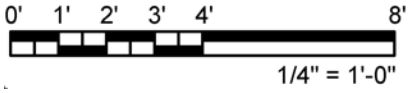
KEY NOTES:
1. MONITOR WITH WEBCAM CAPABILITY.



4.3.4 Reflected Ceiling Plan

Hearing Aid Repair Room (AUD02)





160 NSF	14.9 NSM

4.3.5 Room Data Sheet

Hearing Aid Repair Room (AUD02)

ARCHITECTURAL	
Number of People:	3
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions /Wall Finish:	GWB/P (Note 2)
Base:	m:RB h:4" (100 mm)
Floor Finish:	LVT
Door:	m:Wood t:11 s:V
Hardware:	4 (Note 1)
Slab Depression:	N/A
Acoustical Criteria:	Notes 2, 3
Ceiling	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	50 STC, 50 IIC
Walls at Adjacent Room:	50 STC
Walls at Corridor:	35 STC
Special Construction:	N/A

Notes:

1) Mechanical Seal (sound gasketing)
2) Increase the minimum STC rating of walls 5 STC for every 5 dBA increase in sound level above normal speech level (65 dBA 3'-0" (910 mm) from the speaker) in the adjacent room.
3) Refer to *PG-18-10 Chapter 6, Table 5 Mechanical Room Data Sheets* for Noise Criteria (ref. copy in Section 4.19).

LIGHTING	
Workplane Height:	At Floor
Maintained Avg. Illumination-Ambient:	300 Lux (30 FC)
Maintained Avg. Illumination-Task Focus:	1000 Lux (100 FC) at Work Counter Surface and Exam/Treatment Chair
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type
Lamps:	LED, T5, or T8 Fluorescent
CCT:	3500K
CRI:	80, minimum
Controls:	Toggle Switch, Separate Toggle Switch at Work Counter for Control of Undercabinet Lighting
Special Requirements:	N/A

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:

1) Multiple Receptacles at work counter surface for device charging and tool connection

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (Note 1)

Notes:

1) Where telehealth services will be provided, computer workstation shall include dual monitors, speakers, video camera, and microphone.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Electronic Sensor
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Visual (15 cd), center of tile
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.3.6 Equipment List

Table 16: Hearing Aid Repair Room (AUD02) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	2	VV	Telecommunication outlet location.
A1014	Telephone, Wall Mounted, 1 Line, With Speaker	1	VV	Telephone, Wall Mounted, 1 Line, with Speaker
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5108	Waste Disposal Unit, Sharps	1	VV	A container for collecting and transporting syringes and other sharps for decontamination and disposal. Available in 2 gallon and 8 gallon with locking rotor. Complies with OSHA regulations for handling sharps.
A5145	Hook, Garment, Double, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A6046	Artwork, Decorative, With Frame	1	VV	This JSN is to be used for determining and defining location of decorative artwork.
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.
CT020	Countertop, Solid Surface	1	CC	A solid, nonporous countertop with a smooth seamless appearance. Easy to clean and maintain and with proper cleaning does not support the growth of mold. An acrylic-based solid surface product. Standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a choice of colors and depths. Used in lab and other hospital areas requiring optimum physical and chemical resisting properties.
F0205	Chair, Side With Arms	1	VV	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F0340	Stool, Self Adjusting	1	VV	Self adjusting stool. Consists of a foam padded upholstered seat with attached foot rest for added comfort. Mounted on swivel casters. Designed for doctor's use during examinations.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
M1803	Workstation, Computer, Wall Mounted, Adjustable	1	VV	A wall mounted computer workstation with height adjustable monitor and keyboard arms. Keyboard and monitor can be stored within 8" to 10" of wall. Fingertip adjustability for keyboard and monitor enable frequent position changes. Unit contains an integrated cable management system to hide wires. A separate wall-mounted CPU holder is included.
M3073	Container, Biohazard Waste, Step-on, Fire Safe	1	VV	A biohazard waste container with a step-on lid. The container will have a capacity of approximately 12 gallons and be made of a fire safe material.
M4915	Chair, Exam/Treatment, ENT, w/Adjustable Light	1	VV	ENT exam/treatment chair with adjustable light. Chair can be rotated 330 degrees locking at desired position. Unit is electrically powered for precise positioning and has an adjustable headrest and armrest. It may include an adjustable gooseneck light. Unit is designed for use during examinations, treatments, and minor procedures.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.
Z0015	Otoscope, Diagnostic, Desk or Wall Mounted	1	VV	Wall Mounted Otoscope: Integrated system with wall transformer, standard diagnostic otoscope, wall aneroid, and specula dispenser; includes 6 foot line cord with plug, and accepts two handles. Designed for use in patient rooms. Desk Set Otoscope: System contains universal charger, lithium ion handle and lithium ion battery, 3.5v otoscope and separate wall mounted specula dispenser; includes 6 foot line cord with plug and accepts two handles. Designed for use in patient rooms.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z1016	Cabinet, U/C/B, 4 Drawer, 33"x24"x24"	4	CC	Standing height under counter base cabinet with three or four full width drawers; configuration to be determined based on facility needs. Also referred to as a drawer cabinet. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge banding. Hardware includes hinges, full extension drawer slides, pulls, and adjustable glides.
Z1017	Cabinet, U/C/B, 1 Shelf, 1 Drawer, 1 DO, 33"x24"x24"	1	CC	Standing height under counter base cabinet with one drawer and cabinet with one adjustable shelf. Also referred to as a base cabinet with drawer and door. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Hardware includes hinges, full extension drawer slides, pulls, anti-tilt shelf standards, and adjustable glides.
Z1018	Cabinet, ADA Sink Support	1	CC	Wall mounted sink support cabinet for drop-in sink with vertical fascia and angled ADA profile, also referred to as ADA sink cabinet. Removable front panel to permit access to plumbing. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Includes all attaching hardware including support rail.
Z1020	Cabinet, W/H, 2 Shelf, 1 DO, Sloping Top, 38"x24"x13"	2	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left-hinged door, and sloping top. Also referred to as a solid hinged single door case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.
Z1022	Cabinet, W/H, 2 Shelf, 2 DO, Sloping Top, 38"x36"x13"	1	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left hinged doors, and sloping top. Also referred to as a solid hinged double door wall case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.
Z1024	Container, Small Parts Storage	2	VV	Plastic or steel drawer parts storage/organizer cabinet with clear plastic drawers. Container quantity, drawer quantity, and configuration, to be determined by facility/user requirements.

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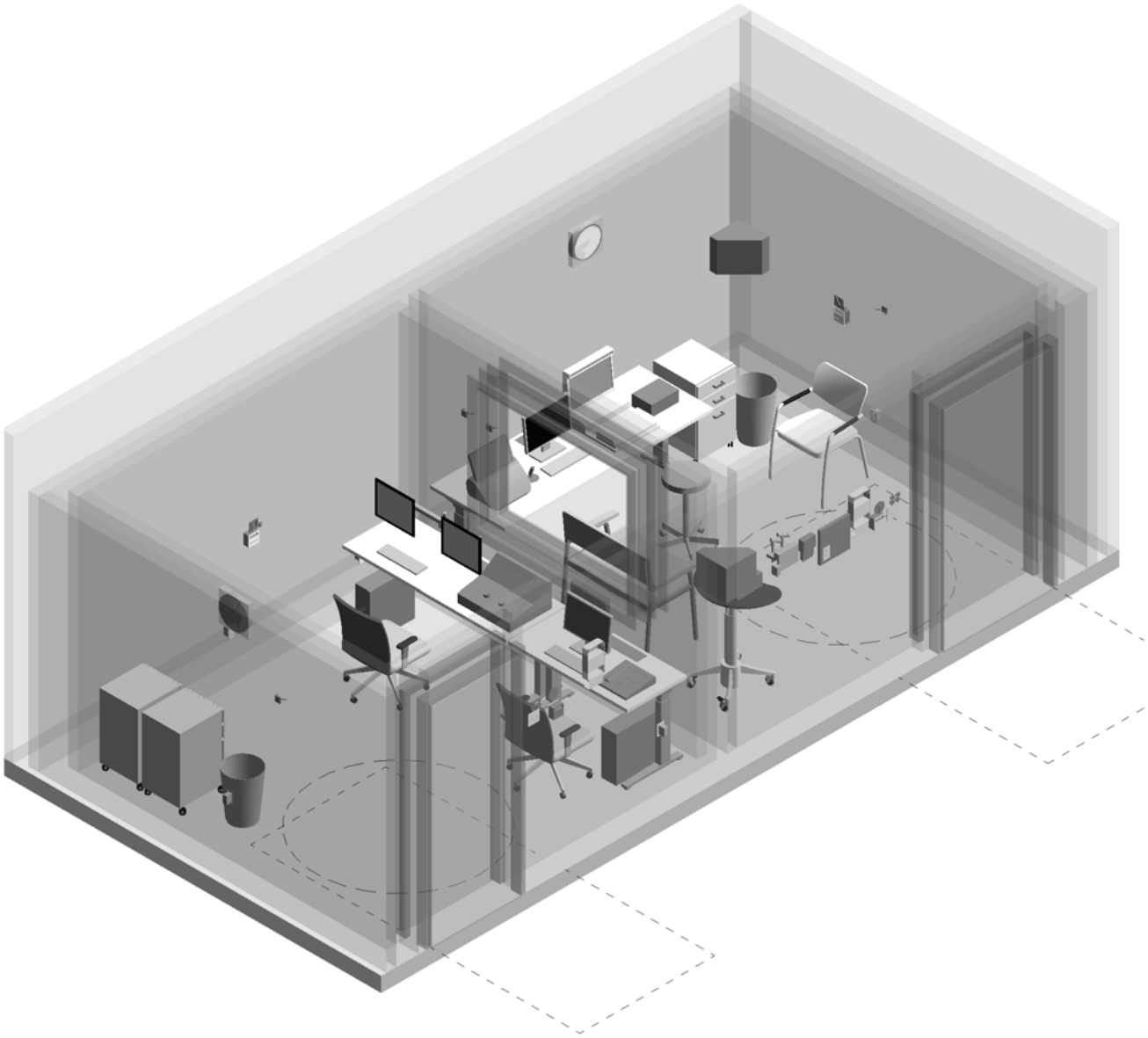
4.4 Suite 1, Audiometric Examination (prefab, 2-sided suite) (AUDE1)

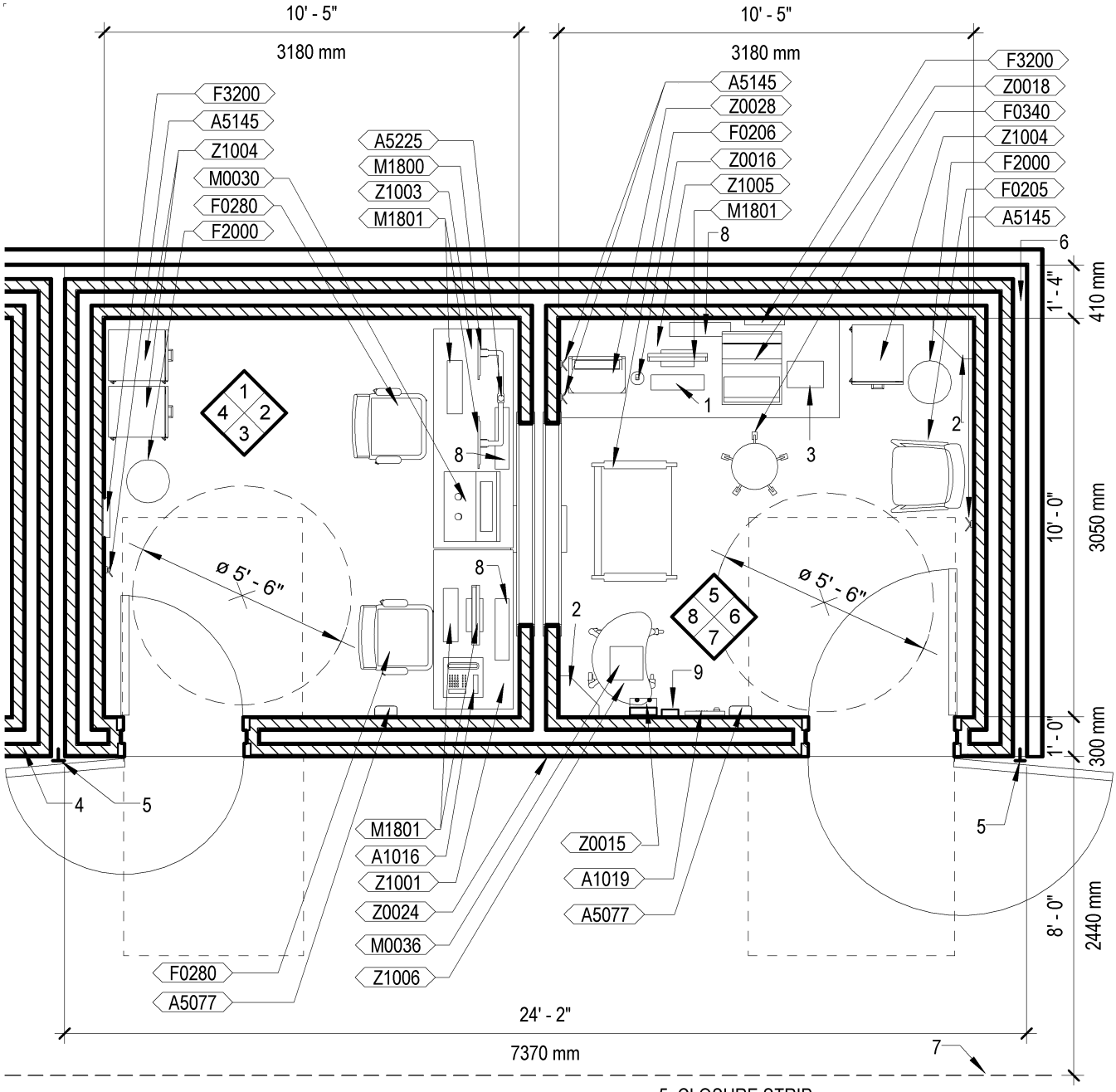
4.4.1 Axonometric View



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

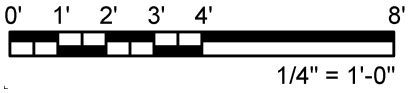
4.4.2 Floor Plan

Suite 1, Audiometric Examination (prefab, 2-sided suite) (AUDE1)



KEY NOTES:

1. MONITOR, KEYBOARD CONNECTED TO AUDIOMETER COMPUTER.
2. WALL MOUNTED SPEAKER, COMPONENT OF DIAGNOSTIC AUDIOMETER.
3. HEARING AID TEST BOX - COMPONENT OF HEARING AID ANALYZER.
4. ADJACENT SUITE IF APPLICABLE.
5. CLOSURE STRIP.
6. 2" (50 MM) MINIMUM AIRSPACE. 4" (100 MM) PREFERRED.
7. MINIMUM CLEARANCE IN FRONT OF DOOR.
8. INTEGRAL PLUG STRIP; TABLE ACCESSORY.
9. SPECULA DISPENSER (OTOSCOPE ACCESSORY).



300 NSF	27.9 NSM

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

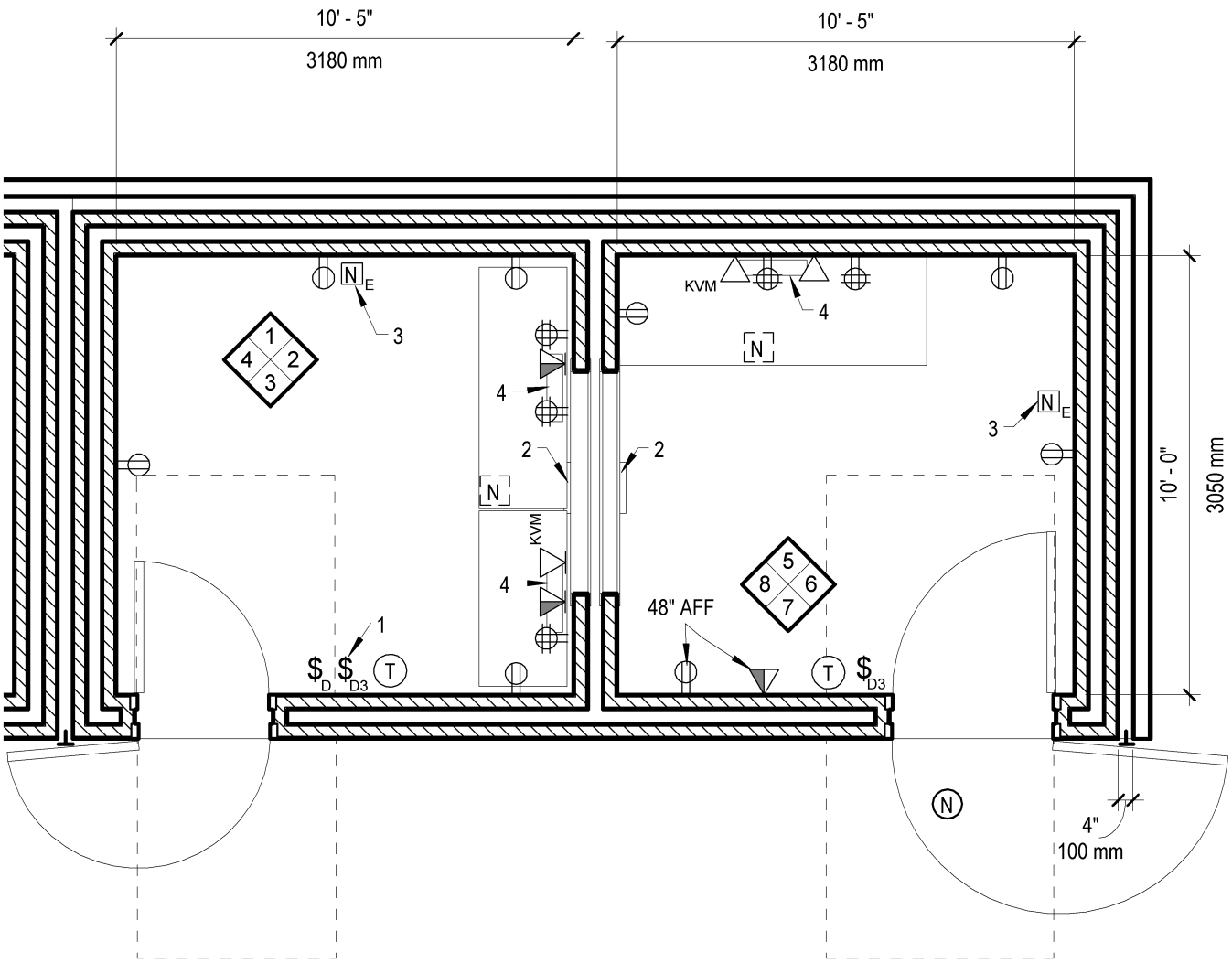
4.4.3 JSN Legend

Table 17: Suite 1, Audiometric Examination (prefab, 2 sided suite) (AUDE1) JSN Legend

JSN	NAME
A1010	Telecommunication Outlet
A1016	Telephone, Desk, With Speaker
A1019	Telephone, Wall Mounted, Multi-Line, Cordless
A5077	Dispenser, Hand Sanitizer, Hands-Free
A5145	Hook, Garment, Double, SS, Surface Mounted
A5225	Bracket, Dual Computer Monitor, Desk-Mounted
F0205	Chair, Side With Arms
F0206	Chair, Side, Bariatric, With Arms
F0280	Chair, Swivel, Low Back
F0340	Stool, Self Adjusting
F2000	Basket, Wastepaper, Fire Resistant
F3200	Clock, Battery, 12" Diameter
M0030	Audiometer, Diagnostic
M0036	Otoacoustic Emissions Analyzer (Screening or Diagnostic)
M1800	Monitor, Computer
M1801	Computer, Microprocessing, w/Flat Panel Monitor
Z0015	Otoscope, Diagnostic, Desk or Wall Mounted
Z0016	Otoscope, Video
Z0018	Hearing Aid Analyzer/Real Ear Measurement System
Z0024	Booth, Audio, Double Wall, 2-Sided Suite
Z0028	Analyzer, Middle Ear (Tympanometer)
Z1001	Adjustable Height Table, 48" W
Z1003	Adjustable Height Table, 66”x 24”
Z1004	Pedestal File, Mobile
Z1005	Adjustable Height Table, 84" W
Z1006	Table, Mobile Adjustable Height

4.4.4 Electrical

Suite 1, Audiometric Examination (prefab, 2-sided suite) (AUDE1)



KEY NOTES:
1. SWITCH CONTROLS PATIENT SIDE LIGHTING.
2. JACK PANEL, COMPONENT PART OF AUDIOMETRIC BOOTH.
3. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
4. INTEGRAL PLUG STRIP; TABLE ACCESSORY.

0' 1' 2' 3' 4' 8'
1/4" = 1'-0"

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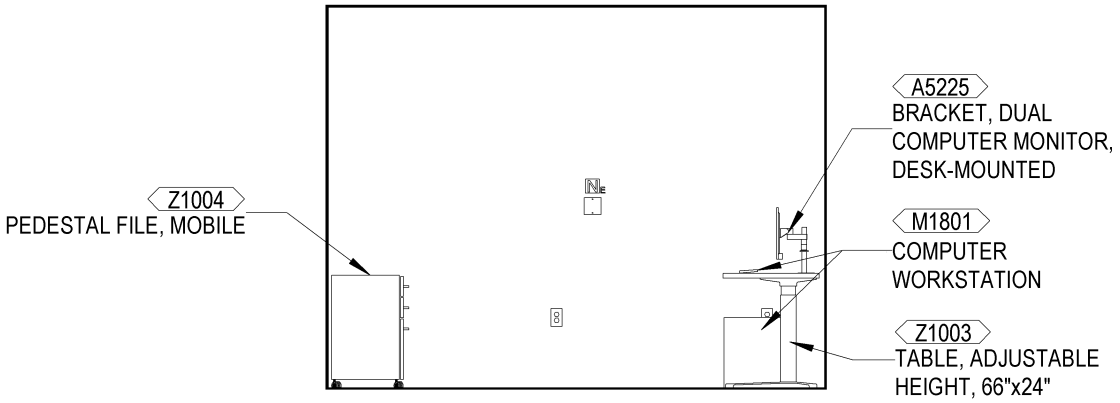
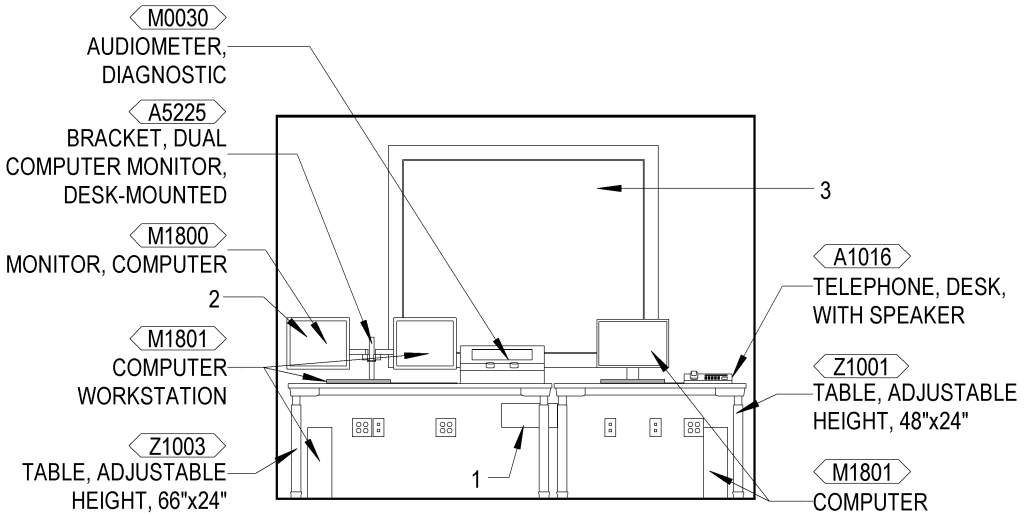
4.4.5 Interior Elevations

Suite 1, Audiometric Examination (prefab, 2-sided suite) (AUDE1)

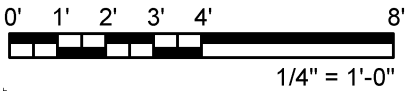


ELEVATION - 1



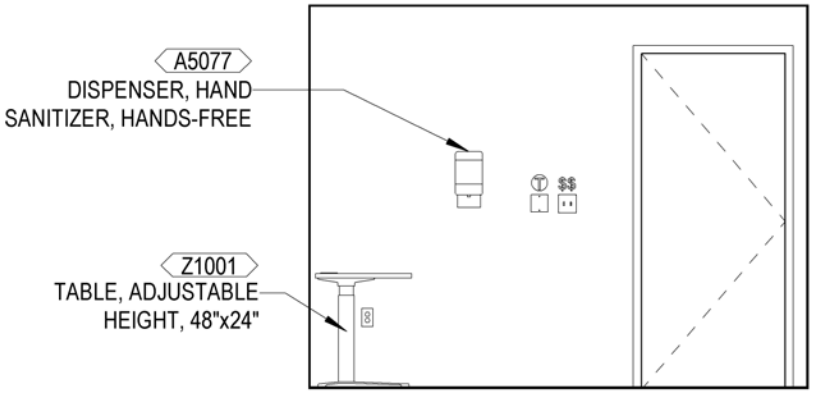
ELEVATION - 2

KEY NOTES:
1. JACK PANEL, COMPONENT PART OF AUDIOMETRIC BOOTH.
2. MONITOR WITH WEBCAM CAPABILITY.
3. 60"x48" (1520 mm x 1220 mm) VIEW WINDOW.

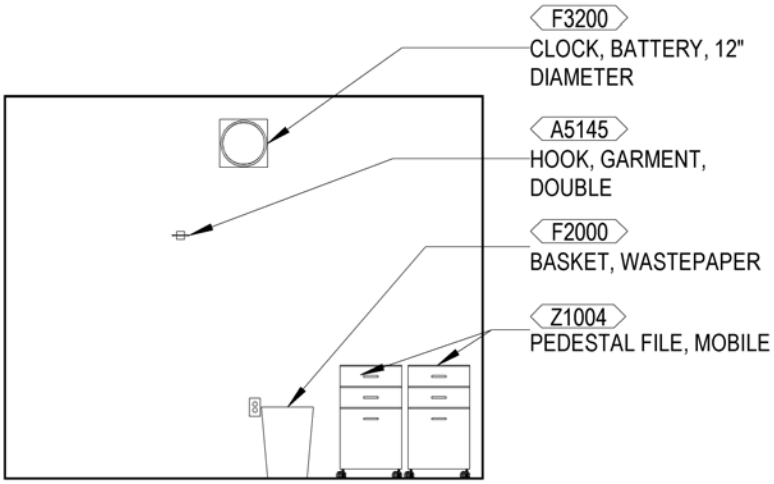


Interior Elevations

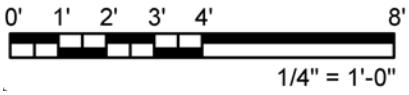
Suite 1, Audiometric Examination (prefab, 2-sided suite) (AUDE1)



ELEVATION - 3

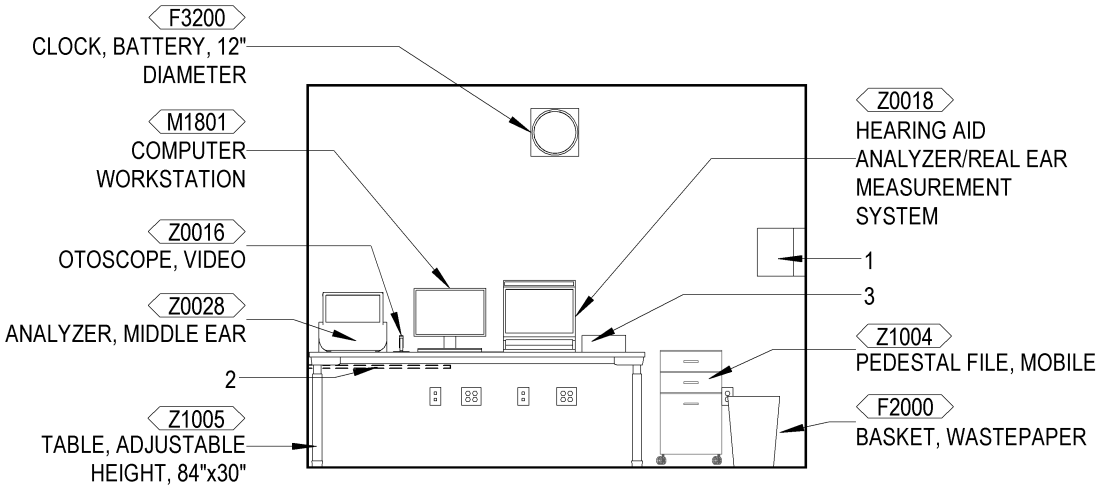


ELEVATION - 4

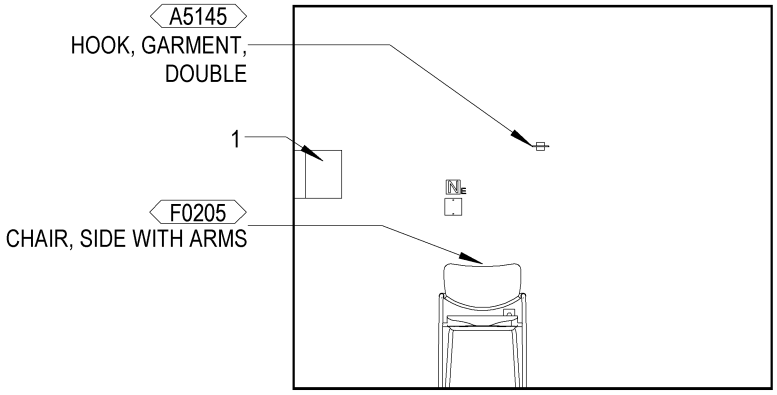


Interior Elevations

Suite 1, Audiometric Examination (prefab, 2-sided suite) (AUDE1)

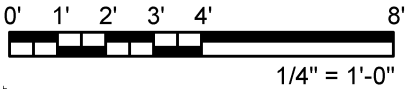


ELEVATION - 5



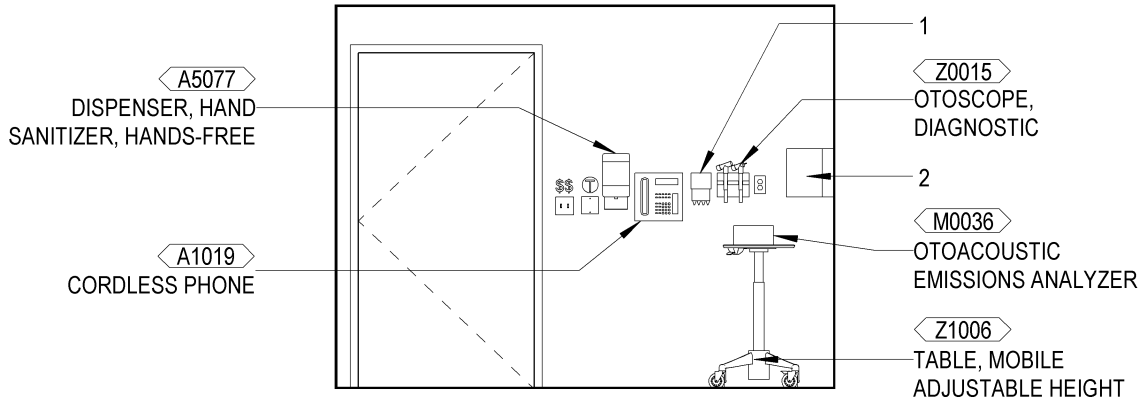
ELEVATION - 6

KEY NOTES:
1. SPEAKER, COMPONENT OF DIAGNOSTIC AUDIOMETER.
2. WIRE MANAGEMENT STRIP (TO JACK PANEL).
3. HEARING AID TEST BOX - COMPONENT OF HEARING AID ANALYZER.

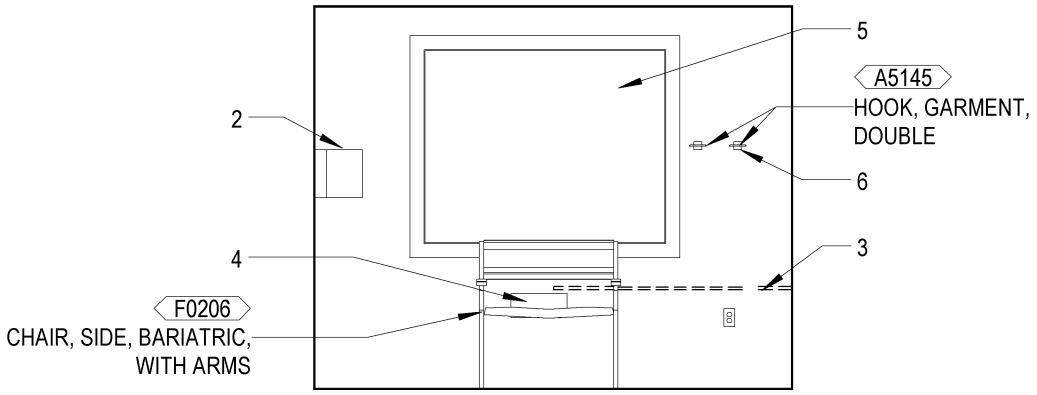


Interior Elevations

Suite 1, Audiometric Examination (prefab, 2-sided suite) (AUDE1)

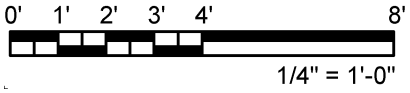


ELEVATION - 7



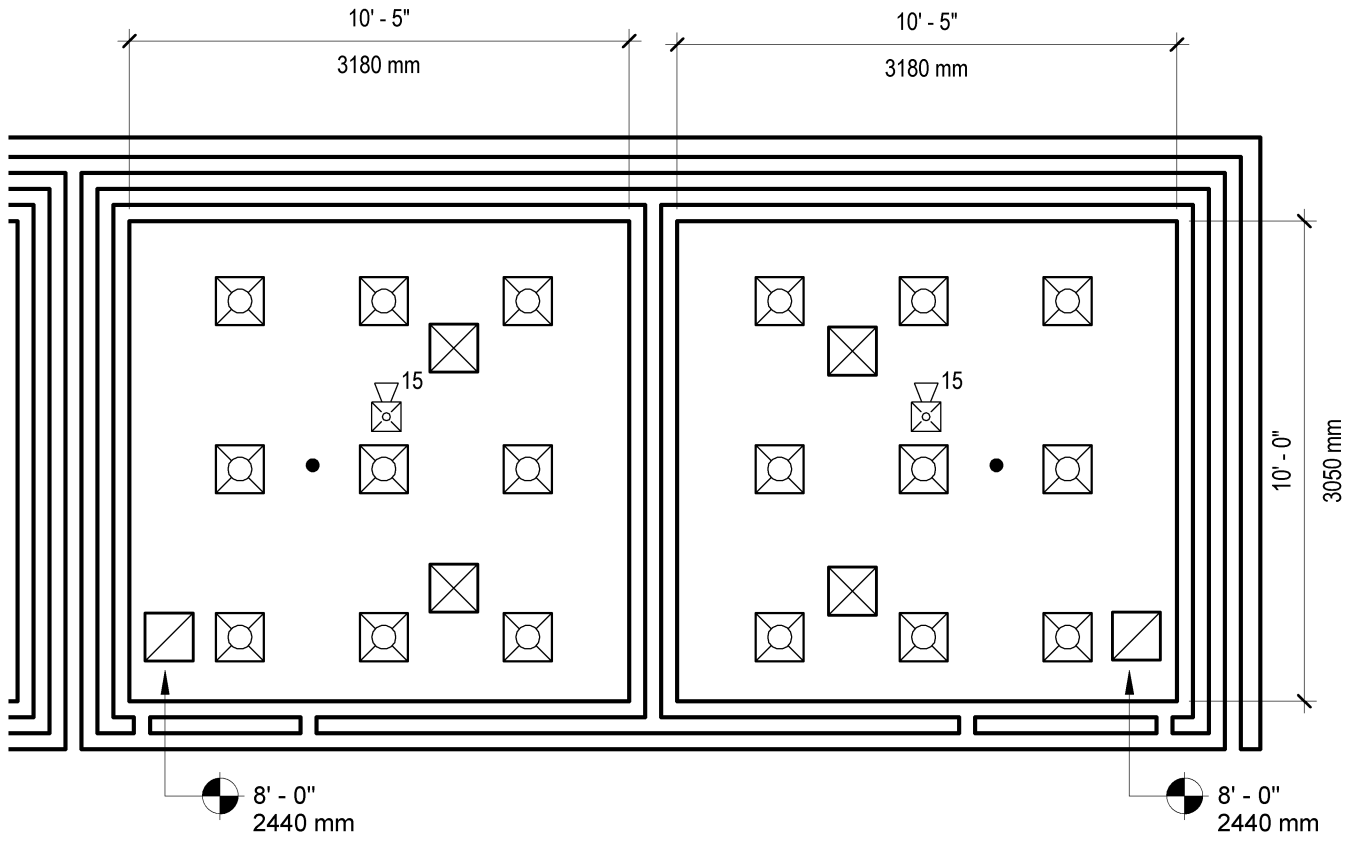
ELEVATION - 8

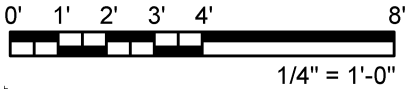
KEY NOTES:
1. SPECULA DISPENSER (OTOSCOPE ACCESSORY).
2. SPEAKER, COMPONENT OF DIAGNOSTIC AUDIOMETER.
3. WIRE MANAGEMENT STRIP (TO JACK PANEL).
4. JACK PANEL, COMPONENT PART OF AUDIOMETRIC BOOTH.
5. 60"x48" (1520 mm x 1220 mm) VIEW WINDOW.
6. HOOKS TO ACCOMMODATE HEADPHONES AND WIRES. QUANTITY TO BE PER FACILITY NEED.



4.4.6 Reflected Ceiling Plan

Suite 1, Audiometric Examination (prefab 2-sided suite) (AUDE1)





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4.4.7 Room Data Sheet

Suite 1, Audiometric Examination (prefab, 2-sided suite) (AUDE1)

ARCHITECTURAL	
Number of People:	
Control Side:	2
Exam Side:	4
Ceiling:	PRE-FAB (Note 1)
Ceiling Height:	8'-0" (2400 mm) (Note 2)
Partitions /Wall Finish:	PRE-FAB (Notes 1, 3, 4)
Base:	PRE-FAB (Note 1)
Floor Finish:	CPT or LVT (Note 5)
Door:	
Control Side:	m: PRE-FAB t PRE-FAB s:U (Notes 1, 6)
Exam Side:	m: PRE-FAB t: PRE-FAB s:V (Notes 1, 6)
Hardware:	PRE-FAB (Note 7)
Slab Depression:	Yes, 6 1/8" (160 mm), verify with vendor (Note 8)
Acoustical Criteria:	(Note 1, 9)

Special Construction: Prefabricated, modular system consisting of all components specified in VHA Handbook 1170.02 Appendix D for double wall assembly. Components include: vibration isolation system; floor assembly; wall and roof panel assembly; acoustical door units; acoustical window units; assembly hardware including connecting panel joints; electrical and lighting wiring, components and fixtures, including audiometric jack panel system; silenced forced air ventilation system or packaged air conditioning silencers for connection to building HVAC systems; paint and other specified finishes; dust seals/shields and closure strips.

Notes:

1) As specified in VHA Handbook 1170.02 Appendix D
2) Preferred interior clear ceiling height. Coordinate with facility floor-to-floor height and plenum space required for MEP systems. Overall prefabricated booth dimension is approximately 19" (480 mm) greater than interior clear height. Refer to vendor drawings/cut sheets.
3) Prefabricated system shall include painted, galvanized steel fascia/closure plate and neoprene seals to close the gap between booth and adjacent facility partition and between top of booth and finished ceiling outside of the booth to create a closed soffit space (height depends on project conditions). Refer to VHA Handbook 1170.02 Appendix D for additional requirements.
4) Wall and ceiling finish selection from manufacturer standard colors powder coat paint; or per facility preference for alternative "enhanced" finishes, such as fabric panels, "wood" look or wood veneer exterior panels.
5) Floor finishes per project requirements; not required to be purchased through booth vendor.
6) Two-door (in-swing and swing-out) acoustical door and frame assemblies, on both control/operator and examination side. Doors shall include narrow light or full height insulated glass view window (configuration based on project/user preference). Raised sills, threshold drop seals, and sweep seals shall not be permitted. Refer to VHA Handbook 1170.02 Appendix D for additional requirements and alternate acceptable configurations.
7) Per VHA Handbook 1170.02 Appendix D and Attachment J.
8) Provide additional depth as required to accommodate floor finish to achieve flush transition between booth and adjacent space/corridor.
9) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).

LIGHTING	
Workplane Height:	2'-6" (760 mm)
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC) (Note 1)
Maintained Avg. Illumination-Task Focus:	N/A
Luminaire Type:	Recessed LED, Lensed, Provided with Pre-Fab System.
Lamps:	LED
CCT:	3500K
CRI:	80, minimum
Controls:	Linear Dimming to Accommodate Low Ambient-Light Configuration
Special Requirements:	Note 2

Notes:

1) Testing side illuminance values given. Required control side illuminance is less than testing side. However, intent is to utilize either side for control or testing, thus both sides should be designed to the higher testing side levels. Provide linear dimming to accomplish lower levels as needed.
2) EMI/RFI emissions are a concern within booths. Provide fixture drivers complying with FCC Title 47, Part 18, Subpart C, Class B, Consumer Equipment.

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:

1) Coordinate electrical connections with booth manufacturer.
2) Receptacles on All sides of Booth, provided with Pre-fab System
3) Multiple Receptacles at Tables for charging devices

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes – Control Side (See Note 1)

Notes:

1) Where telehealth services will be provided, computer workstation shall include dual monitors, speakers, video camera, and microphone.
2) Provide keyboard, video, and mouse connections between audiometer computer workstation and keyboard, video, and mouse in exam side.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	No
Hot Water:	No
Water Control:	No
Compressed Air:	No
Sanitary/Vent:	No
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Audible, Visual (15 cd) – Control and Exam
Sprinkler:	Recessed pendant
Hazard Type:	Light

4.4.8 Equipment List

Table 18: Suite 1, Audiometric Examination (prefab, 2-sided suite) (AUDE1) Equipment List

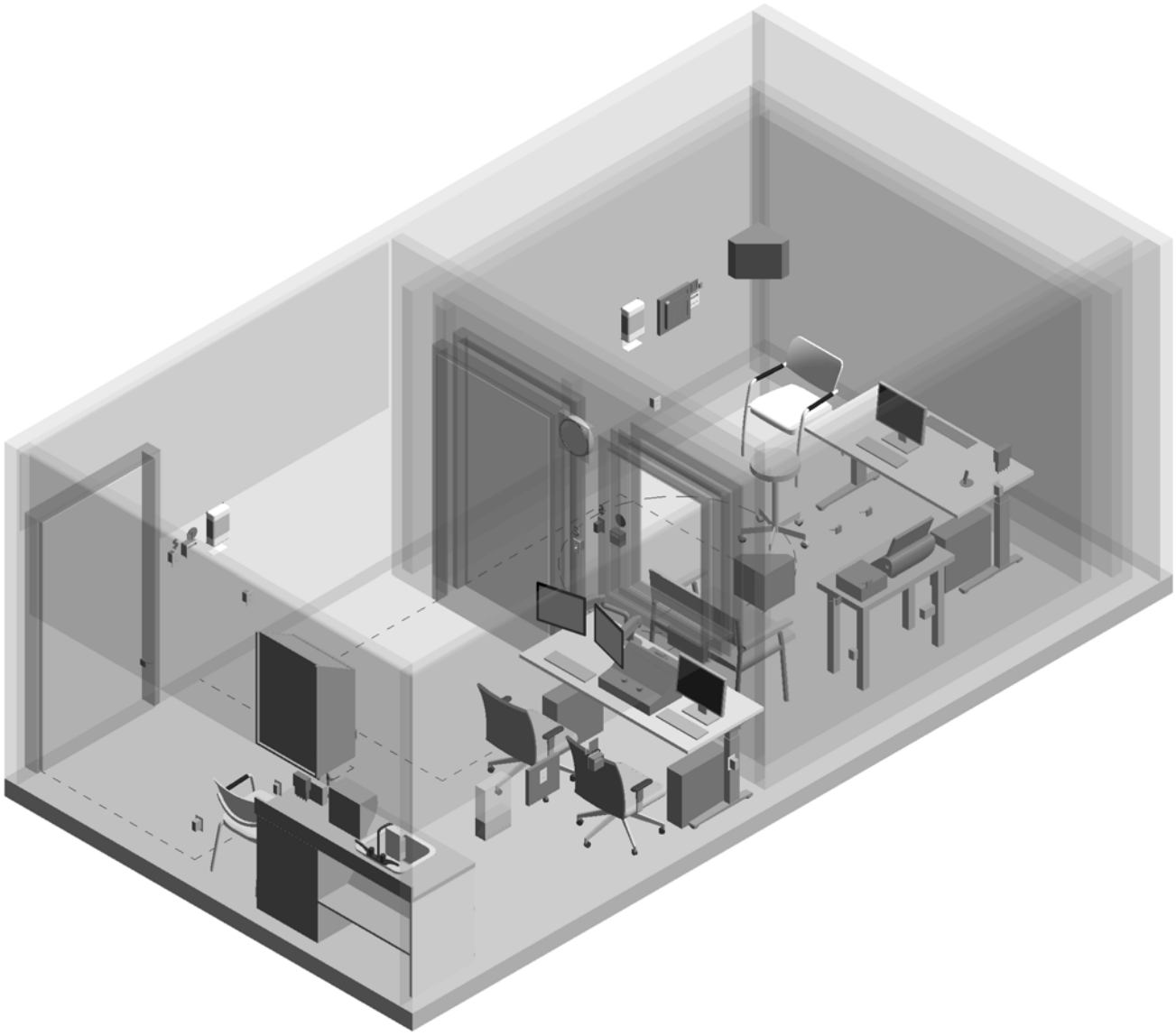
JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	6	VV	Telecommunication outlet location.
A1016	Telephone, Desk, With Speaker	1	VV	Telephone, desk, with speaker.
A1019	Telephone, Wall Mounted, Multi-Line, Cordless	1	VV	Wall mounted, multi-line telephone with speaker including a cordless handset for use in operating room environments. Wall mounted base unit should be waterproof to permit easy decontamination.
A5077	Dispenser, Hand Sanitizer, Hands-Free	2	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5145	Hook, Garment, Double, SS, Surface Mounted	4	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A5225	Bracket, Dual Computer Monitor, Desk-Mounted	1	VV	Desk-mounted bracket that supports two LCD computer monitors, or laptop and monitor configuration. Extends LCD's or labtop up to 25" with an adjustment range of 18". Desk clamp attaches to edge up to 2.6" thick. Maximum combined weight supported not to exceed 50 lbs.
F0205	Chair, Side With Arms	1	VV	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.
F0206	Chair, Side, Bariatric, With Arms	1	VV	A bariatric side chair with arms for use in a waiting room, lobby, or other patient area. Chair will have a padded seat and back and have a capacity of 800 pounds.
F0280	Chair, Swivel, Low Back	2	VV	Low back contemporary swivel chair, 37" high X 25" wide X 31" deep with a five (5) caster swivel base, arms and foam padded seat and back upholstered with either woven textile fabric or vinyl.
F0340	Stool, Self Adjusting	1	VV	Self adjusting stool. Consists of a foam padded upholstered seat with attached foot rest for added comfort. Mounted on swivel casters. Designed for doctor's use during examinations.
F2000	Basket, Wastepaper, Fire Resistant	2	VV	Wastepaper basket, fire resistant, approximately 40 quart capacity. This unit is used to collect and temporarily store small quantities of paper refuse in patient rooms, administrative areas, and nursing stations. Size and shape varies depending on the application and manufacturer selected.
F3200	Clock, Battery, 12" Diameter	2	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M0030	Audiometer, Diagnostic	1	VV	Stand alone or PC based unit includes talk over communication between operator and patient, automatic calibration, automated tests, with digital speech materials, and automatically or manually operated frequency and hearing level controls. Used with a variety of transducers including bone-conduction receiver, insert or headset earphones, and speakers. Unit may require an external printer. Used for clinical audiological testing.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
M0036	Otoacoustic Emissions Analyzer (Screening or Diagnostic)	1	VV	Screening or diagnostic analyzer for inner ear function and related hearing loss. System consists of insert probes, a digital computer interface, an analog interface, and data acquisition software, and is capable of transient and distortion measurements. This system requires a desktop or notebook computer, with optional printer.
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	3	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
Z0015	Otoscope, Diagnostic, Desk or Wall Mounted	1	VV	Wall Mounted Otoscope: Integrated system with wall transformer, standard diagnostic otoscope, wall aneroid, and specula dispenser; includes 6 foot line cord with plug, and accepts two handles. Designed for use in patient rooms. Desk Set Otoscope: System contains universal charger, lithium ion handle and lithium ion battery, 3.5v otoscope and separate wall mounted specula dispenser; includes 6 foot line cord with plug and accepts two handles. Designed for use in patient rooms.
Z0016	Otoscope, Video	1	VV	Wireless or wired device, which provides video of ear canal and tympanic membrane, and may be used alone or with laptop or PC to store images. Instrument incorporates a rod otoscope with removable otic speculum, fiber optic illumination, and high resolution video camera. Wired units utilize USB connection.
Z0018	Hearing Aid Analyzer/Real Ear Measurement System	1	VV	A hearing instrument analyzer used to verify the electro-acoustic performance of a hearing instrument connected to a standard earphone coupler or while worn in the ear of the end user. The system consists of a real-ear measurement (REM) display unit, a hearing instrument test (HIT), acoustically-treated binaural test box, speakers, numerous attachable components, accessories and digital speech and frequency specific stimuli.
Z0024	Booth, Audio, Double Wall, 2-Sided Suite	1	VV	Custom size, double wall, two-sided audiometric testing enclosure with double walled examination and control sides. Prefabricated system consisting of all components specified in VHA Handbook 1170.02, Appendix D. Components include: vibration isolation system, floor assembly, wall and roof panel assembly; acoustical door units; acoustical window units; assembly hardware including connecting panel joints; electrical and lighting wiring, components and fixtures, including audiometric jack panel system; silenced force air ventilation system or packaged air conditioning silencers for connection to building HVAC systems, paint and other specified finishes; dust seals/shields and closure strip. Custom view window size per Audiometric Exam Suite 1 Room template. Two-door (In-swing and swing-out) acoustical door and frame assemblies, on both control/operator and examinations side. Door shall include narrow light or full height insulated glass view window (configuration based on project/user preference). Raised sills, threshold drop seals, and sweep seals shall not be permitted.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z0028	Analyzer, Middle Ear (Tympanometer)	1	VV	Diagnostic immittance audiometer. Unit includes a clinical ear analyzer and can link to a complete data base computer system that stores patient results. Used for diagnostic audiological testing for middle ear impedance/compliance and acoustic reflex testing.
Z1001	Adjustable Height Table, 48" W	1	VV	48"W x 24" D adjustable height electric pedestal table with C-foot configuration and integral wire management trough or tray. Height range varies by manufacturer, and model, approximately 22" to 48". Steel tube construction with powder coat finish, and 1 ¼" thick top with high pressure laminate, gator-ply paper backer bottom face, and side edges of rigid Thermoplastic or color matched wood veneer. Die cast aluminum feet and top support; galvanized steel horizontal rails, zinc plated steel fasteners. System includes integral electrical components (including control box, cable trough, electric motor, power cord for table; U.L. listed pop-up power strip with minimum of two simplex receptacles, data and/or USB ports as needed per facility preference, and minimum 6' long power cord with plug), 2 grommets and adjustable glides for complete system.
Z1003	Adjustable Height Table, 66"x 24"	1	VV	66"W x 24" D adjustable height electric pedestal table with C-foot configuration and integral wire management trough or tray. Height range varies by manufacturer, and model, approximately 22" to 48". Steel tube construction with powder coat finish, and 1 ¼" thick top with high pressure laminate or wood veneer surface, gator-ply paper backer bottom face, and side edges of rigid Thermoplastic or color matched wood veneer. Die cast aluminum feet and top support; galvanized steel horizontal rails, zinc plated steel fasteners. System includes integral electrical components (including control box, cable trough, electric motor, power cord for table; U.L. listed pop-up power strip with minimum of three simplex receptacles, additional data and/or USB ports as needed per facility preference, and minimum 6' long power cord with plug), 2 grommets and adjustable glides for complete system.
Z1004	Pedestal File, Mobile	3	VV	Mobile pedestal file, three drawer, steel, with casters.
Z1005	Adjustable Height Table, 84" W	1	VV	84"W x 30"D adjustable height electric pedestal table with C-foot configuration and integral wire management trough or tray. Height range varies by manufacturer, and model, approximately 22" to 48". Steel tube construction with powder coat finish, and 1 ¼" thick top with high pressure laminate or wood veneer surface, gator-ply paper backer bottom face, and side edges of rigid Thermoplastic or color matched wood veneer. Die cast aluminum feet and top support; galvanized steel horizontal rails, zinc plated steel fasteners. System includes integral electrical components (including control box, cable trough, electric motor, power cord for table; U.L. listed pop-up power strip with minimum of three simplex receptacles, additional data and/or USB ports as needed per facility preference, and minimum 6' long power cord with plug), 2 grommets and adjustable glides for complete system.
Z1006	Table, Mobile Adjustable Height	1	VV	Care Exchange Workstation-Non-powered, height adjustable workstation with two locking casters front, and two non-locking casters, rear. Polished aluminum column and base. Table includes adjustment lever and accessories as needed to meet local requirements. Work surface approximately 32"W x 22"D, kidney shape.

4.5 Suite 2, Audiometric Examination (single prefab booth in room) (AUDE2)

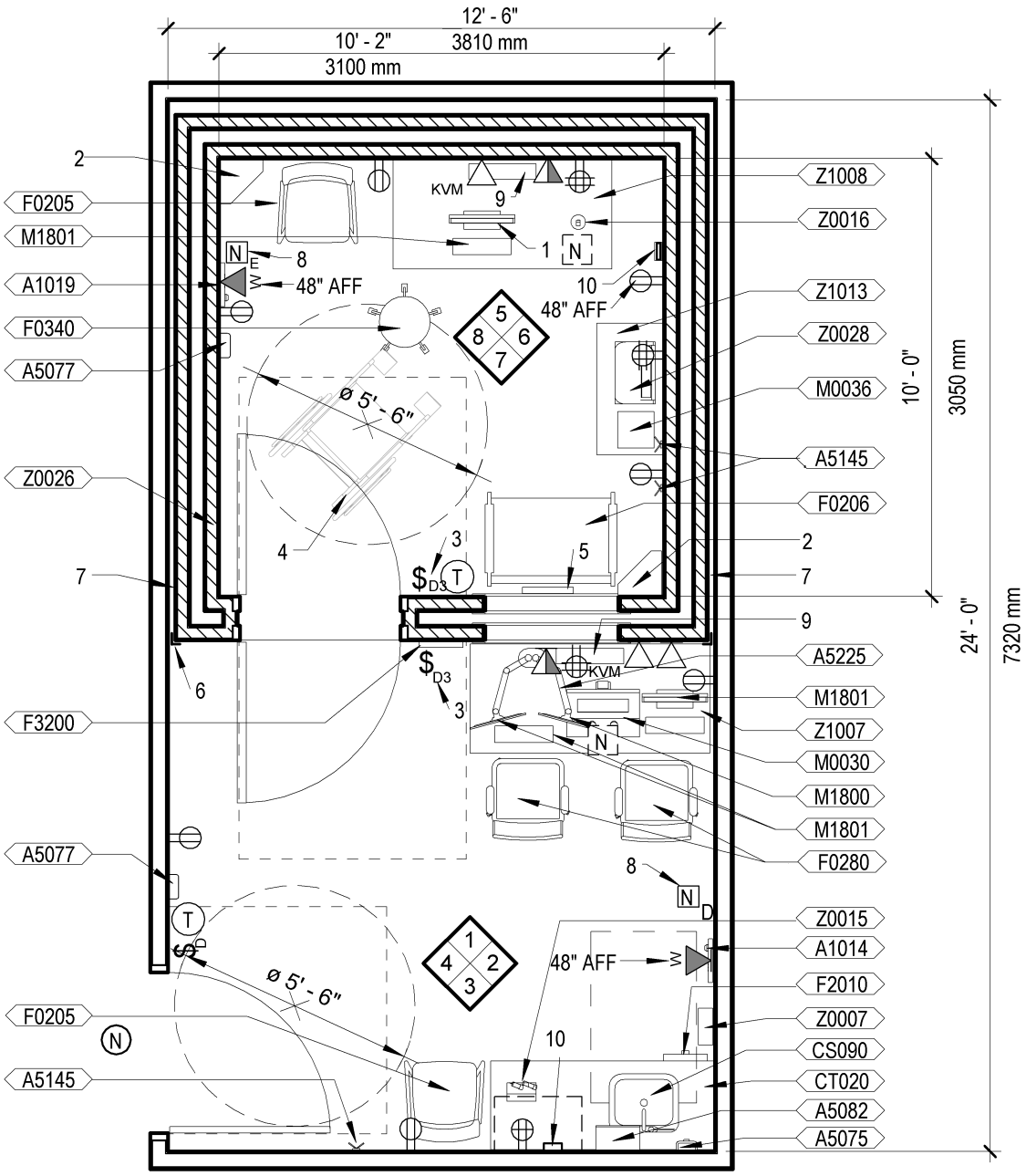
4.5.1 Axonometric View



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

4.5.2 Floor Plan

Suite 2, Audiometric Examination (single prefab booth in room) (AUDE2)



KEY NOTES:

1. MONITOR, KEYBOARD CONNECTED TO AUDIOMETER COMPUTER.
2. SPEAKER, COMPONENT OF DIAGNOSTIC AUDIOMETER.
3. SWITCH ON BOTH SIDES. CONTROLS BOOTH LIGHTING.
4. WHEELCHAIR SHOWN FOR REFERENCE ONLY.
5. JACK PANEL, COMPONENT PART OF AUDIOMETRIC BOOTH.
6. CLOSURE STRIP.
7. 2" (50 MM) MINIMUM AIRSPACE. 4" (100 MM) PREFERRED.
8. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
9. INTEGRAL PLUG STRIP; TABLE ACCESSORY.
10. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

0' 1' 2' 3' 4' 8'

1/4" = 1'-0"

300 NSF	27.9 NSM

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

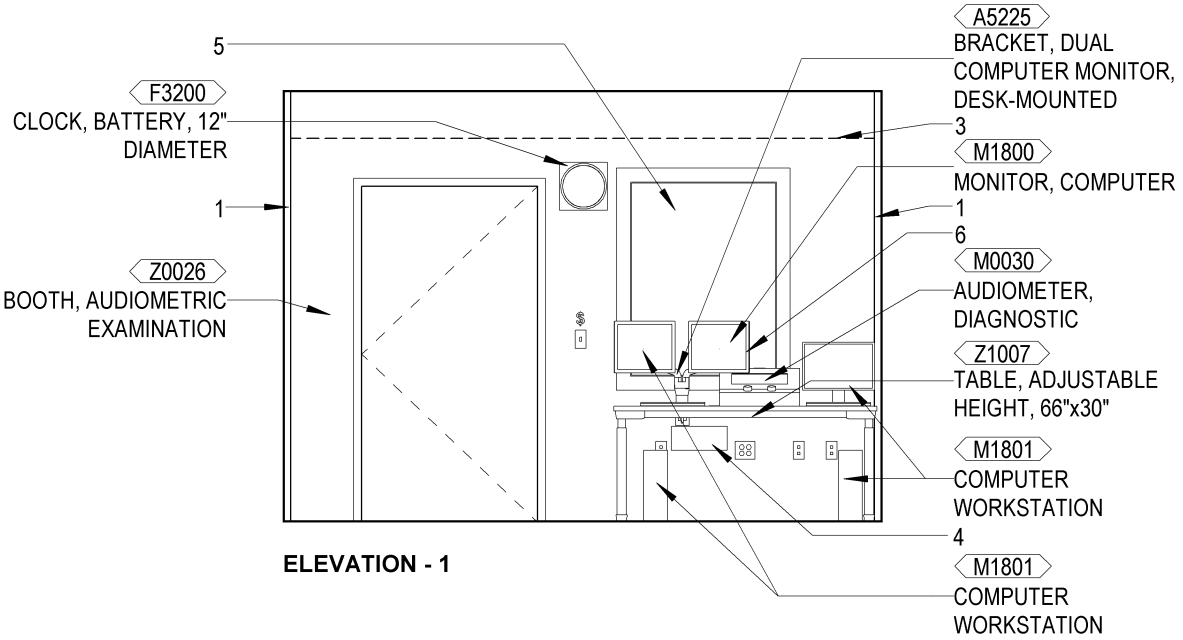
4.5.3 JSN Legend

Table 19: Suite 2, Audiometric Examination (single prefab booth in room) (AUDE2) JSN Legend

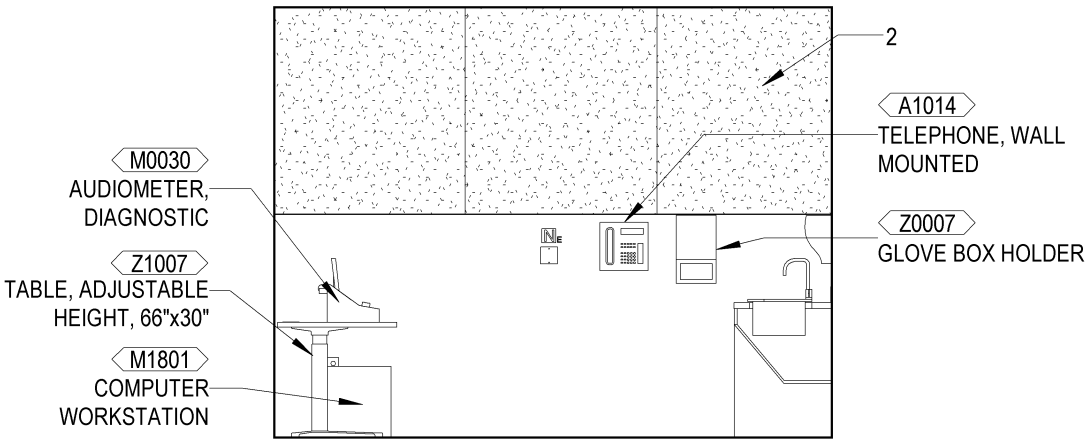
JSN	NAME
A1010	Telecommunication Outlet
A1014	Telephone, Wall Mounted, 1 Line, With Speaker
A1019	Telephone, Wall Mounted, Multi-Line, Cordless
A5075	Dispenser, Soap, Disposable
A5077	Dispenser, Hand Sanitizer, Hands-Free
A5082	Dispenser, Paper Towel, Sensor, Hands Free
A5145	Hook, Garment, Double, SS, Surface Mounted
A5225	Bracket, Dual Computer Monitor, Desk-Mounted
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID
CT020	Countertop, Solid Surface
F0205	Chair, Side With Arms
F0206	Chair, Side, Bariatric, With Arms
F0280	Chair, Swivel, Low Back
F0340	Stool, Self Adjusting
F2010	Basket, Wastepaper, Step-On
F3200	Clock, Battery, 12" Diameter
M0030	Audiometer, Diagnostic
M0036	Otoacoustic Emissions Analyzer (Screening or Diagnostic)
M1800	Monitor, Computer
M1801	Computer, Microprocessing, w/Flat Panel Monitor
Z0007	Dispenser, Glove, Surgical/Examination, Wall Mounted, Triple, Side Loading
Z0015	Otoscope, Diagnostic, Desk or Wall Mounted
Z0016	Otoscope, Video
Z0026	Booth, Audiometric Examination, Double-Wall, Single Sided
Z0028	Analyzer, Middle Ear (Tympanometer)
Z1007	Table, Adjustable Height, 66"X30"
Z1008	Table, Adjustable Height, 60"X30"
Z1013	Table, Adjustable Height, Mobile, 36" W
Z1016	Cabinet, U/C/B, 4 Drawer, 33"x24"x24"
Z1018	Cabinet, ADA Sink Support, 36" W
Z1020	Cabinet, W/H, 2 Shelf, 1 DO, Sloping Top, 38"x24"x13"

4.5.4 Interior Elevations

Suite 2, Audiometric Examination (single prefab booth in room) (AUDE2)



ELEVATION - 1



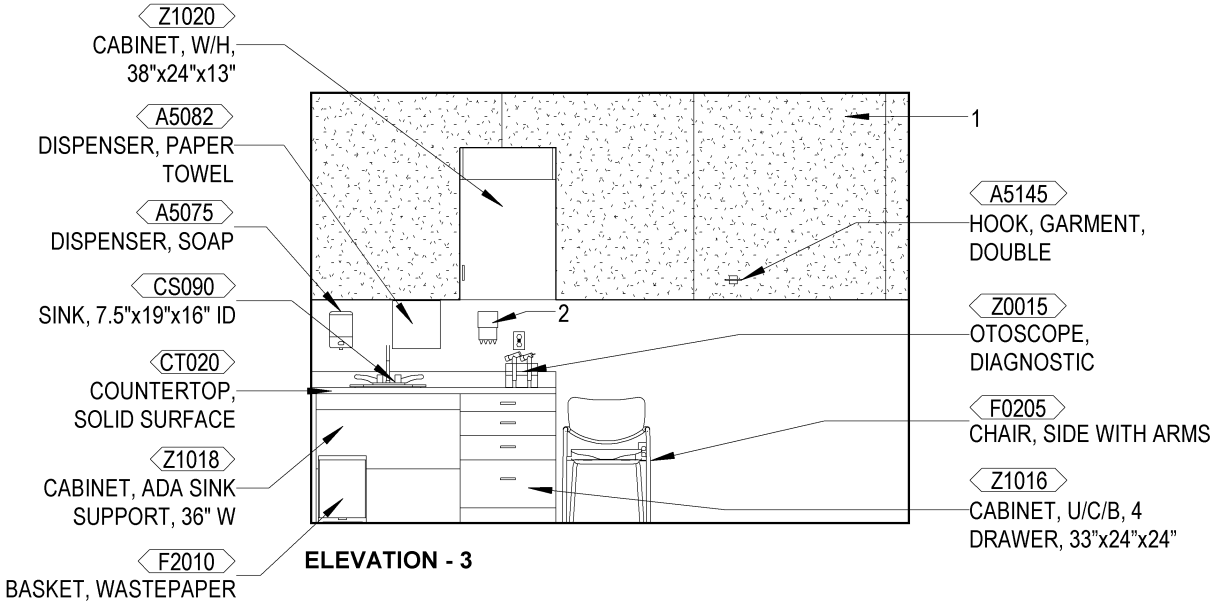
ELEVATION - 2

KEY NOTES:
1. CLOSURE STRIP.
2. SOUND ABSORPTIVE WALL TREATMENT-CONFIGURATION AND LOCATION MAY BE ADJUSTED PER ACTUAL ROOM CONFIGURATION. REFER TO ROOM DATA SHEET FOR MINIMUM CRITERIA.
3. CEILING LINE OF PREFABRICATED SOUND SUITE BEYOND.
4. JACK PANEL, COMPONENT PART OF AUDIOMETRIC BOOTH.
5. 36"x48" (910 mm x 1220 mm) VIEW WINDOW.
6. MONITOR WITH WEBCAM CAPABILITY.

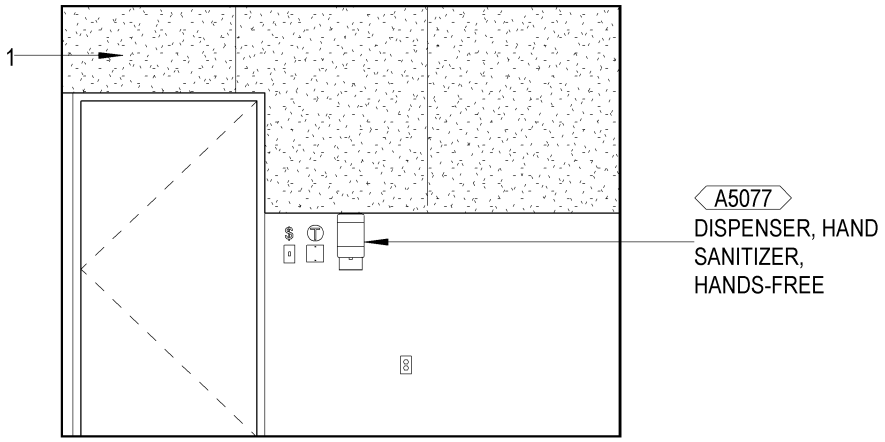
1/4" = 1'-0"

Interior Elevations

Suite 2, Audiometric Examination (single prefab booth in room) (AUDE2)



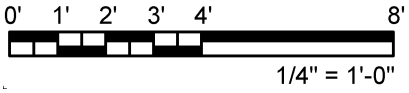
ELEVATION - 3



ELEVATION - 4

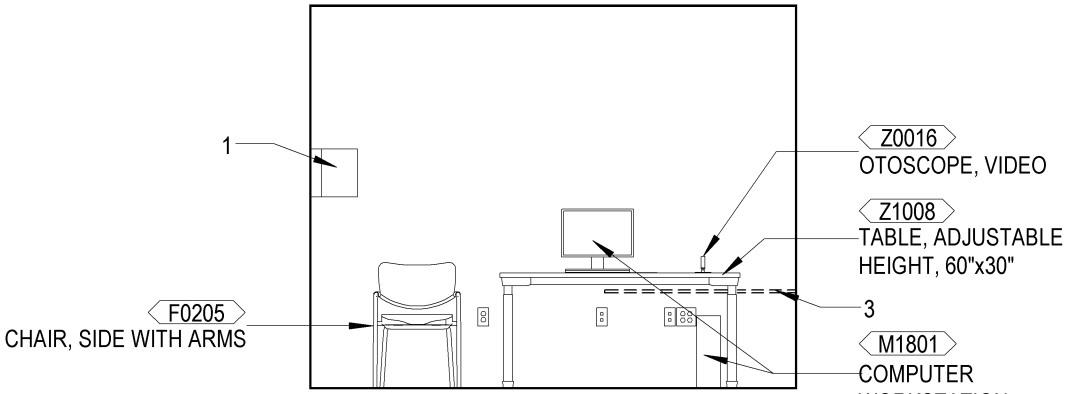
KEY NOTES:

1. SOUND ABSORPTIVE WALL TREATMENT-CONFIGURATION AND LOCATION MAY BE ADJUSTED PER ACTUAL ROOM CONFIGURATION. REFER TO ROOM DATA SHEET FOR MINIMUM CRITERIA.
2. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

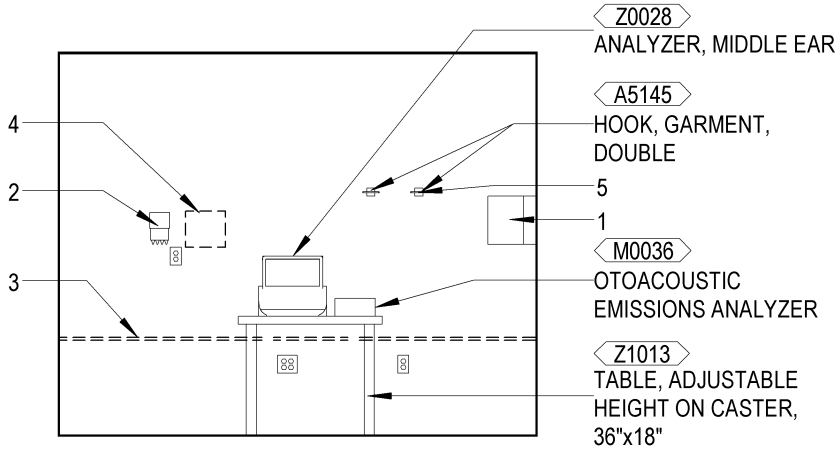


Interior Elevations

Suite 2, Audiometric Examination (single prefab booth in room) (AUDE2)

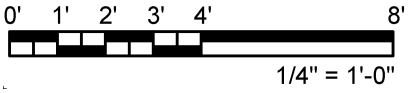


ELEVATION - 5



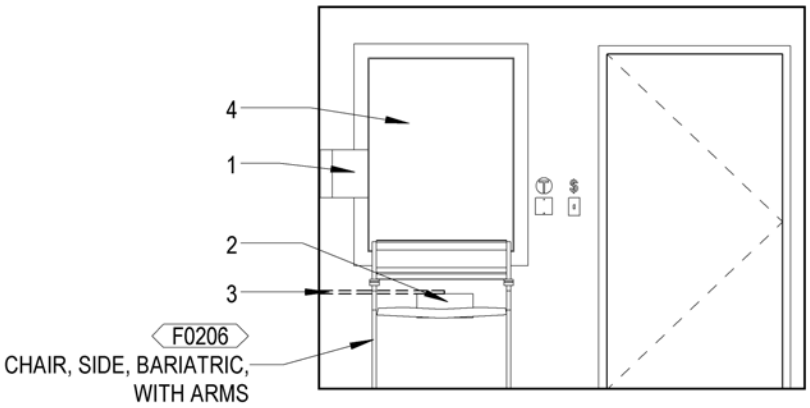
ELEVATION - 6

KEY NOTES:
1. SPEAKER, COMPONENT OF DIAGNOSTIC AUDIOMETER.
2. SPECULA DISPENSER (OTOSCOPE ACCESSORY).
3. WIRE MANAGEMENT STRIP (TO JACK PANEL).
4. OPTIONAL LOCATION FOR Z0015, OTOSCOPE, DIAGNOSTIC.
5. HOOKS TO ACCOMMODATE HEADPHONES AND WIRES. QUANTITY TO BE PER FACILITY NEED.

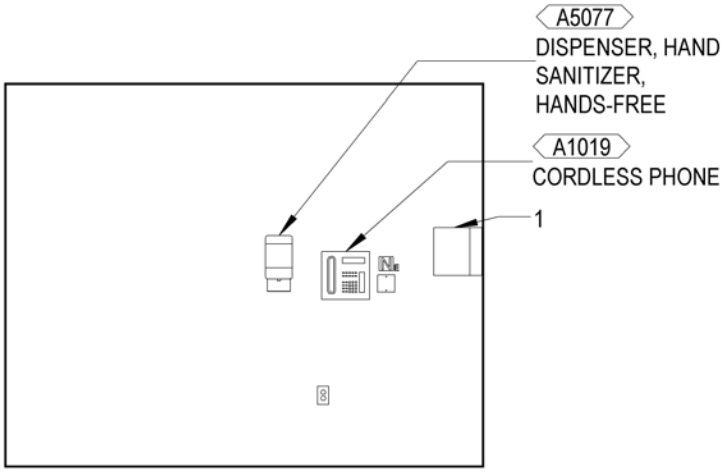


Interior Elevations

Suite 2, Audiometric Examination (single prefab booth in room) (AUDE2)

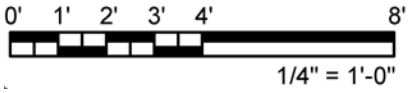


ELEVATION - 7



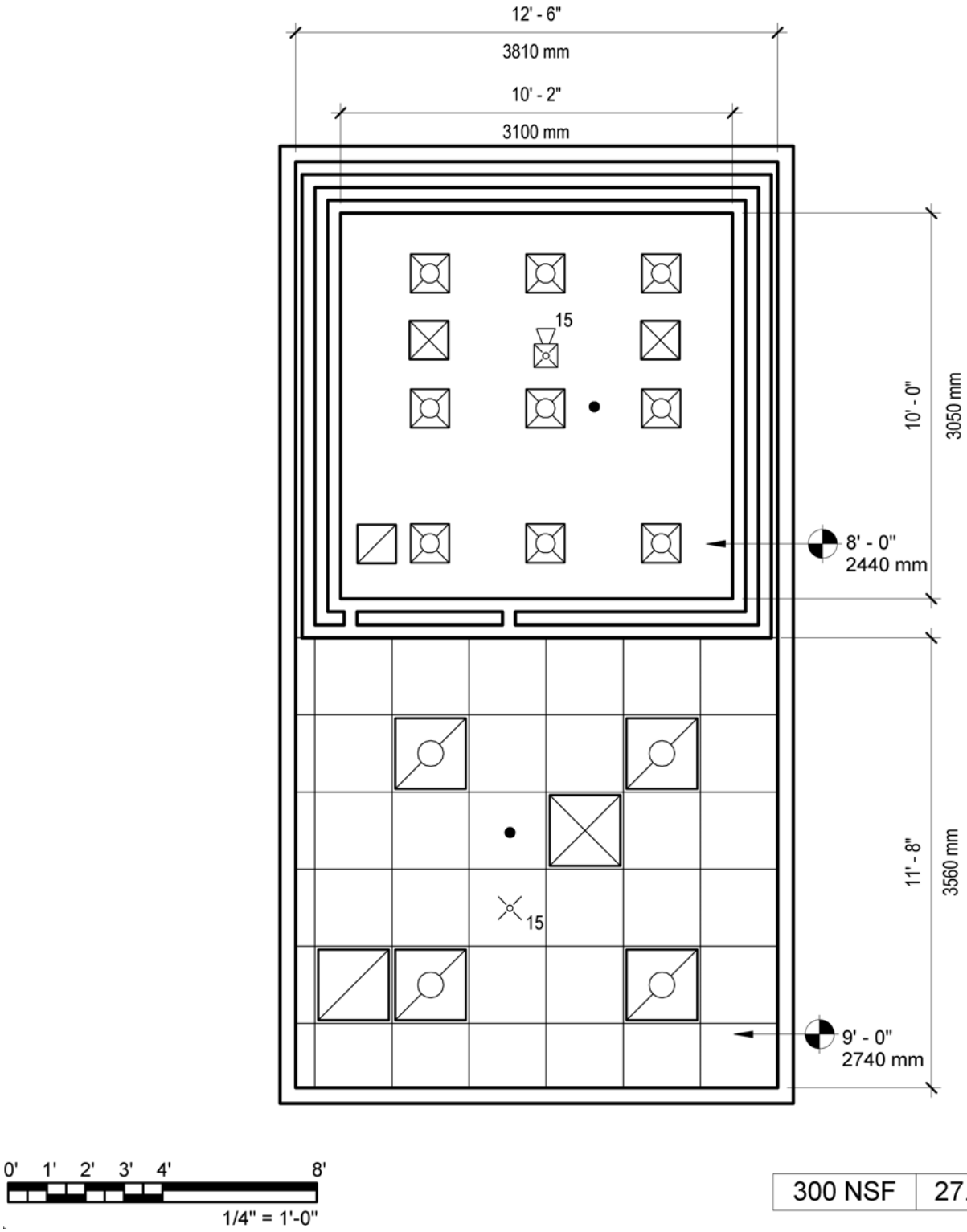
ELEVATION - 8

KEY NOTES:
1. SPEAKER, COMPONENT OF DIAGNOSTIC AUDIOMETER.
2. JACK PANEL, COMPONENT PART OF AUDIOMETRIC BOOTH.
3. WIRE MANAGEMENT STRIP (TO JACK PANEL)
4. 36"x48" (910 mm x 1220 mm) VIEW WINDOW.



4.5.5 Reflected Ceiling Plan

Suite 2, Audiometric Examination (single prefab booth in room) (AUDE2)



300 NSF	27.9 NSM

4.5.6 Room Data Sheet

Suite 2, Audiometric Examination (single-sided prefabricated booth in room) (AUDE2)

ARCHITECTURAL	
Number of People:	
Booth Side:	3
Control Side:	3
Ceiling:	
Booth:	PRE-FAB (Note 1)
Control Side:	AT
Ceiling Height:	
Booth:	8'-0" (2400 mm) (Note 2)
Control Side:	9'-0" (2700 mm)
Partitions /Wall Finish:	
Booth:	PRE-FAB
Control:	m:GWB f:P (Notes 1, 3, and 4)
Base:	
Booth:	PRE-FAB
Control Side:	m:RB h:4" (100 mm)
Floor Finish:	CPT or LVT (Note 5)
Door:	
Booth:	m: PRE-FAB t: PRE-FAB s: V (Note 6)
Room:	m:Wood t:19 dg:(Note 8) s:V (Note 7)
Hardware:	
Booth:	(Note 9)
Control:	3
Acoustical Criteria (for Room):	Notes 11, 12, and 13
Ceiling:	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	60 STC, 60 IIC
Walls at Adjacent Room:	60 STC
Walls at Corridor:	55 STC
Slab Depression:	Yes, 6 1/8" (160 mm), Verify with vendor (Note 13)

Special Construction:

Room: Minimum total area of 120 sq. ft. (11.2 NSM) of a nominal 2 in. (50 mm) thick sound absorptive wall treatment on at least two perpendicular walls. The sound absorptive wall treatment should have a minimum 0.90 NRC rating and a minimum 0.65 sound absorption coefficient at 250 Hz.

Booth: Prefabricated, modular system consisting of all components specified in VHA Handbook 1170.02 Appendix D for double wall assembly. Components include: vibration isolation system; floor assembly; wall and roof panel assembly; acoustical door units; acoustical window units; assembly hardware including connecting panel joints; electrical and lighting wiring, components and fixtures, including audiometric jack panel system; silenced forced air ventilation system or packaged air conditioning silencers for connection to building HVAC systems, paint and other specified finishes; dust seals/shields; and closure strip.

Notes:

1) Booth: as specified in VHA Handbook 1170.02 Appendix D
2) Preferred interior clear ceiling height for booth. Coordinate with facility floor-to- floor height and plenum space required for MEP systems. Overall prefabricated booth dimension is approximately 19" (480 mm) greater than interior clear height. Refer to vendor drawings/cut sheets.
3) Prefabricated system shall include painted, galvanized steel fascia/closure plate and neoprene seals to close the gap between booth and adjacent drywall partition and between top of booth and finished ceiling outside of the booth to create a closed soffit space (height depends on project conditions). Refer to VHA Handbook 1170.02 Appendix D for additional requirements
4) Booth wall and ceiling finish selection from manufacturer standard colors powder coat paint; or per facility preference for alternative "enhanced" finishes, such as fabric panels, "wood" look or wood veneer exterior panels
5) Floor finish per project requirements; not required to be purchased through booth vendor
6) Booth: two-door (in-swing and swing-out) acoustical door and frame assembly. Doors shall include narrow light or full height insulated glass view window (configuration based on project/user preference). Raised sills, threshold drop seals, and sweep seals shall not be permitted. Refer to VHA Handbook 1170.02 Appendix D for additional requirements and alternate acceptable configurations
7) 50 STC rated acoustical door
8) Narrow lite optional. If provided, use insulated or laminated glass unit to meet acoustical criteria in Note 7.
9) Per VHA Handbook 1170.02 Appendix D and Attachment J.
10) As specified in VHA Handbook 1170.02 Appendix D
11) Increase the minimum STC rating of walls 5 STC for every 5 dBA increase in sound level above normal speech level (65 dBA 3'-0" (910 mm) from the speaker) in the adjacent room
12) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).
13) Provide additional depth as required to accommodate floor finish to achieve flush transition between booth and adjacent space/corridor

LIGHTING

Workplane Height:	2'-6" (760 mm)
Inside Booth:	500 Lux (50 FC)
Outside Booth:	300 Lux (30 FC)
Maintained Avg. Illumination-Ambient:	N/A
Maintained Avg. Illumination-Task Focus:	N/A
Luminaire Type:	
Inside Booth:	Recessed LED, Lensed, Provided with Pre-Fab System.
Outside of Booth:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type.
Lamps:	
Inside Booth:	LED
Outside Booth:	LED, T8, or T5 Fluorescent
CCT:	3500K
CRI:	80, minimum
Controls:	
Inside Booth:	Linear Dimming to Accommodate Low Ambient-Light Configuration;
Outside Booth:	Multi-Level Control via Linear Dimming, Step Dimming, Or Dual-Ballast Switching
Special Requirements:	Note 1

Notes:

1) EMI/RFI emissions are a concern within booths. Provide fixture drivers complying with FCC Title 47, Part 18, Subpart C, Class B, Consumer Equipment.

POWER

Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:

1) Coordinate electrical connections with booth manufacturer
2) Receptacles on All sides of Booth, Provided with Pre-Fab System
3) Multiple Receptacles at Tables inside & outside Booth for Charging Devices

COMMUNICATIONS

Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (See Note 1)

Notes:

1) Where telehealth services will be provided, computer workstation shall include dual monitors, speakers, video camera, and microphone.
2) Provide keyboard, video, and mouse connections between audiometer computer workstation and keyboard, video, and mouse in exam side.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES

Cold Water:	Yes
Hot Water:	Yes
Water Control:	Electronic Sensor
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY

Fire Alarm:	Audible, Visual (15 cd) – Exam; Visual (15cd) - Control
Sprinkler:	Recessed pendant, center of tile – Control and Exam
Hazard Type:	Light

4.5.7 Equipment List

Table 20: Suite 2, Audiometric Examination (single prefab booth in room) (AUDE2) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	6	VV	Telecommunication outlet location.
A1014	Telephone, Wall Mounted, 1 Line, With Speaker	1	VV	Telephone, Wall Mounted, 1 Line, with Speaker
A1019	Telephone, Wall Mounted, Multi-Line, Cordless	1	VV	Wall mounted, multi-line telephone with speaker including a cordless handset for use in operating room environments. Wall mounted base unit should be waterproof to permit easy decontamination.
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	2	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5145	Hook, Garment, Double, SS, Surface Mounted	3	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A5225	Bracket, Dual Computer Monitor, Desk-Mounted	1	VV	Desk-mounted bracket that supports two LCD computer monitors, or laptop and monitor configuration. Extends LCD's or labtop up to 25" with an adjustment range of 18". Desk clamp attaches to edge up to 2.6" thick. Maximum combined weight supported not to exceed 50 lbs.
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.
CT020	Countertop, Solid Surface	1	CC	A solid, nonporous countertop with a smooth seamless appearance. Easy to clean and maintain and with proper cleaning does not support the growth of mold. An acrylic-based solid surface product. Standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a choice of colors and depths. Used in lab and other hospital areas requiring optimum physical and chemical resisting properties.
F0205	Chair, Side With Arms	2	VV	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.

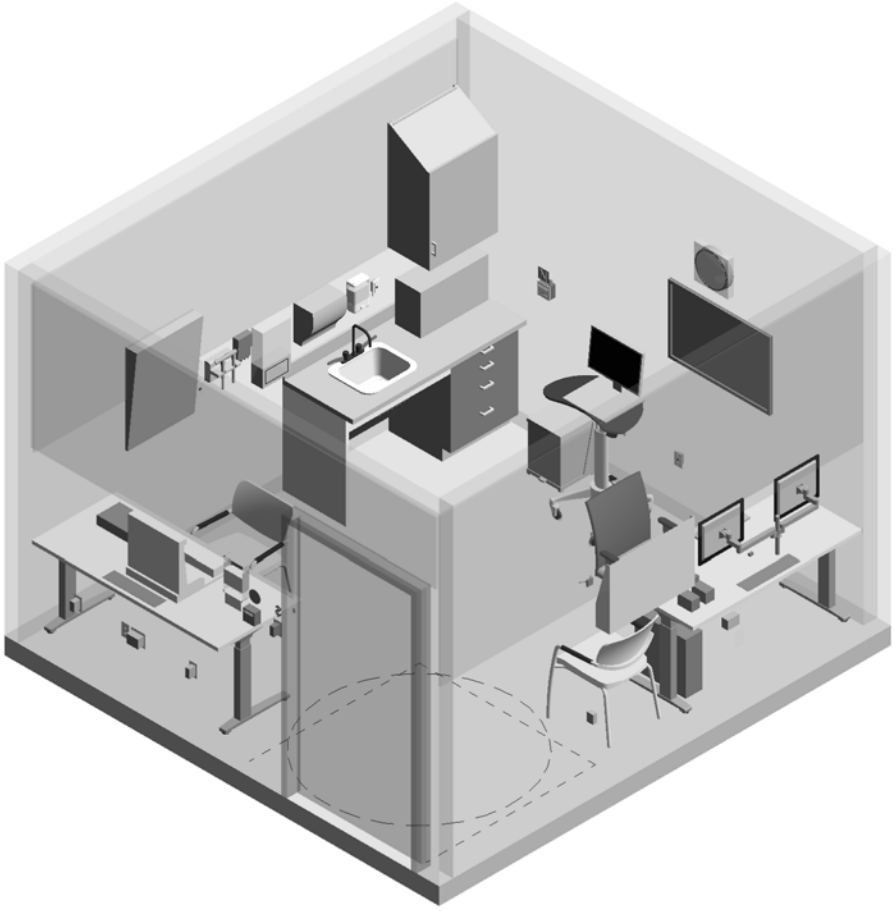
JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F0206	Chair, Side, Bariatric, With Arms	1	VV	A bariatric side chair with arms for use in a waiting room, lobby, or other patient area. Chair will have a padded seat and back and have a capacity of 800 pounds.
F0280	Chair, Swivel, Low Back	2	VV	Low back contemporary swivel chair, 37" high X 25" wide X 31" deep with a five (5) caster swivel base, arms and foam padded seat and back upholstered with either woven textile fabric or vinyl.
F0340	Stool, Self Adjusting	1	VV	Self adjusting stool. Consists of a foam padded upholstered seat with attached foot rest for added comfort. Mounted on swivel casters. Designed for doctor's use during examinations.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M0030	Audiometer, Diagnostic	1	VV	Stand alone or PC based unit includes talk over communication between operator and patient, automatic calibration, automated tests, with digital speech materials, and automatically or manually operated frequency and hearing level controls. Used with a variety of transducers including bone-conduction receiver, insert or headset earphones, and speakers. Unit may require an external printer. Used for clinical audiological testing.
M0036	Otoacoustic Emissions Analyzer (Screening or Diagnostic)	1	VV	Screening or diagnostic analyzer for inner ear function and related hearing loss. System consists of insert probes, a digital computer interface, an analog interface, and data acquisition software, and is capable of transient and distortion measurements. This system requires a desktop or notebook computer, with optional printer.
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	3	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.
Z0015	Otoscope, Diagnostic, Desk or Wall Mounted	1	VV	Wall Mounted Otoscope: Integrated system with wall transformer, standard diagnostic otoscope, wall aneroid, and specula dispenser; includes 6 foot line cord with plug, and accepts two handles. Designed for use in patient rooms. Desk Set Otoscope: System contains universal charger, lithium ion handle and lithium ion battery, 3.5v otoscope and separate wall mounted specula dispenser; includes 6 foot line cord with plug and accepts two handles. Designed for use in patient rooms.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z0016	Otoscope, Video	1	VV	Wireless or wired device, which provides video of ear canal and tympanic membrane, and may be used alone or with laptop or PC to store images. Instrument incorporates a rod otoscope with removable otic speculum, fiber optic illumination, and high resolution video camera. Wired units utilize USB connection.
Z0026	Booth, Audiometric Examination, Double-Wall, Single Sided	1	VV	Custom size double wall, single audiometric testing booth. Prefabricated system consisting of all components specified in VHA Handbook 1170.02, Appendix D. Components include: vibration isolation system, floor assembly, wall and roof panel assembly; acoustical door units; acoustical window units; assembly hardware including connecting panel joints; electrical and lighting wiring, components and fixtures, including audiometric jack panel system; silenced force air ventilation system or packaged air conditioning silencers for connection to building HVAC systems, paint and other specified finishes; dust seals/shields and closure strip. Two-door (In-swing and swing-out) acoustical door and frame assembly. Door shall include narrow light or full height insulated glass view window (configuration based on project/user preference). Raised sills, threshold drop seals, and sweep seals shall not be permitted.
Z0028	Analyzer, Middle Ear (Tympanometer)	1	VV	Diagnostic immittance audiometer. Unit includes a clinical ear analyzer and can link to a complete data base computer system that stores patient results. Used for diagnostic audiological testing for middle ear impedance/compliance and acoustic reflex testing.
Z1007	Table, Adjustable Height, 66"X30"	1	VV	66”W x 30”D adjustable height electric pedestal table with C-foot configuration and integral wire management trough or tray. Height range varies by manufacturer, and model, approximately 22” to 48”. Steel tube construction with powder coat finish, and 1 ¼” thick top with high pressure laminate or wood veneer surface, gator-ply paper backer bottom face, and side edges of rigid Thermoplastic or color matched wood veneer. Die cast aluminum feet and top support; galvanized steel horizontal rails, zinc plated steel fasteners. System includes integral electrical components (including control box, cable trough, electric motor, power cord for table; U.L. listed pop-up power strip with minimum of two simplex receptacles, additional data and/or USB ports as needed per facility preference, and minimum 6' long power cord with plug), 2 grommets and adjustable glides for complete system.
Z1008	Table, Adjustable Height, 60"X30"	1	VV	60”W x 30”D adjustable height electric pedestal table with C-foot configuration and integral wire management trough or tray. Height range varies by manufacturer and model, approximately 22” to 48”. Steel tube construction with powder coat finish, and 1 ¼” thick top with high pressure laminate or wood veneer surface, gator-ply paper backer bottom face, and side edges of rigid Thermoplastic or color matched wood veneer. Die cast aluminum feet and top support; galvanized steel horizontal rails, zinc plated steel fasteners. System includes integral electrical components (including control box, cable trough, electric motor, power cord for table; U.L. listed pop-up power strip with minimum of two simplex receptacles, additional data and/or USB ports as needed per facility preference, and minimum 6' long power cord with plug), 2 grommets and adjustable glides for complete system.
Z1013	Table, Adjustable Height, Mobile, 36" W	1	VV	18”W x 36”D fixed height worksurface with PVC edge trim, on fixed height leg pairs with casters. Steel tube construction legs with powder coat finish, and 1 3/16” thick top with high pressure laminate.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z1016	Cabinet, U/C/B, 4 Drawer, 33"x24"x24"	1	CC	Standing height under counter base cabinet with three or four full width drawers; configuration to be determined based on facility needs. Also referred to as a drawer cabinet. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge banding. Hardware includes hinges, full extension drawer slides, pulls, and adjustable glides.
Z1018	Cabinet, ADA Sink Support, 36" W	1	CC	Wall mounted sink support cabinet for drop-in sink with vertical fascia and angled ADA profile, also referred to as ADA sink cabinet. Removable front panel to permit access to plumbing. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Includes all attaching hardware including support rail.
Z1020	Cabinet, W/H, 2 Shelf, 1 DO, Sloping Top, 38"x24"x13"	1	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left-hinged door, and sloping top. Also referred to as a solid hinged single door case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.

4.6 Programming/Fitting Room (AUD03)

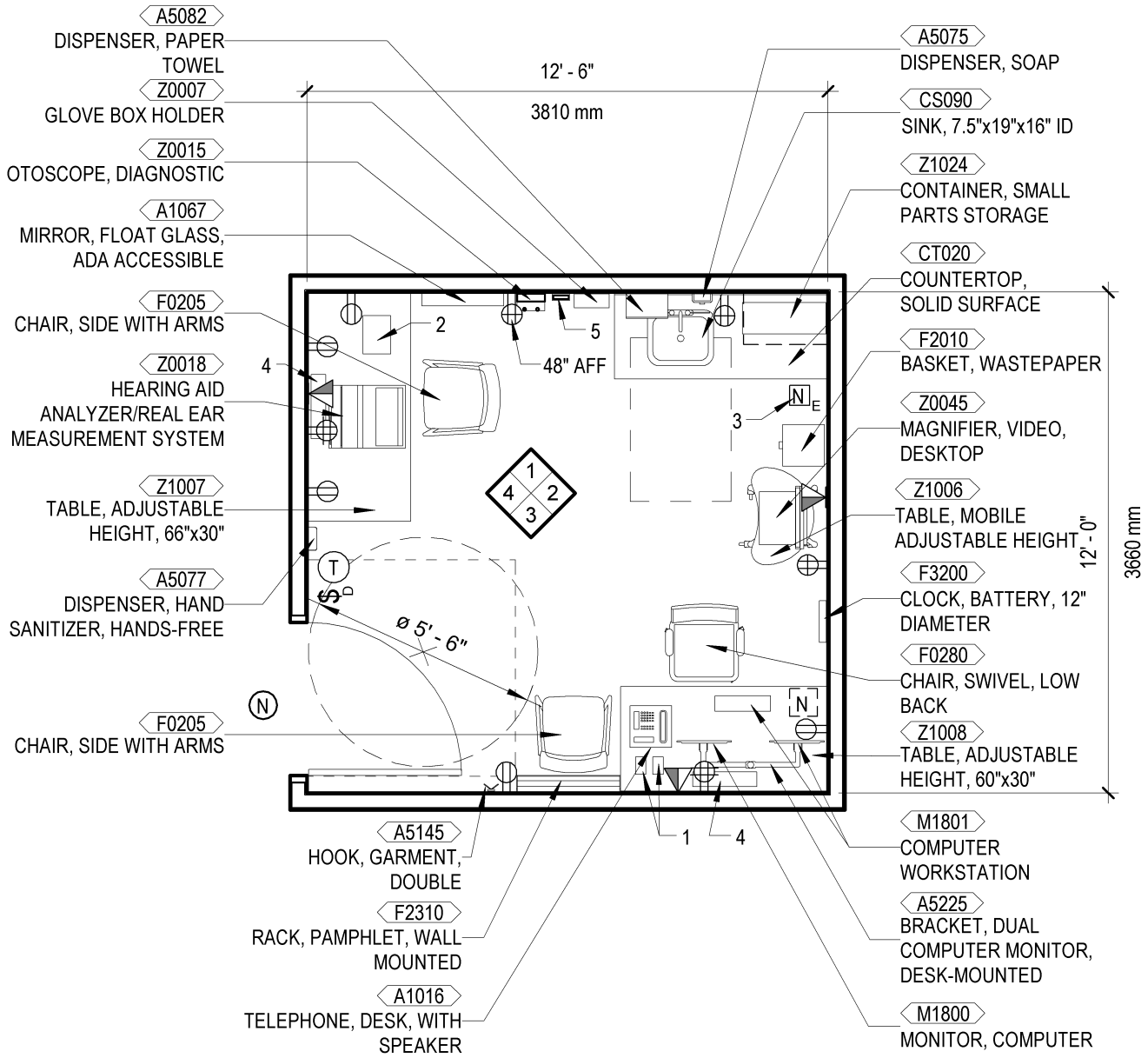
4.6.1 Axonometric View



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

4.6.2 Floor Plan

Programming/Fitting Room (AUD03)



KEY NOTES:

1. MULTIPLE CHARGING STATIONS FOR PROGRAMMERS. NO JSN ASSIGNED - DEPENDS UPON LOCAL HEARING AID CONTRACT.
2. HEARING AID TEST BOX - COMPONENT OF HEARING AID ANALYZER.
3. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
4. INTEGRAL PLUG STRIP; TABLE ACCESSORY.
5. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

0' 1' 2' 3' 4' 8'

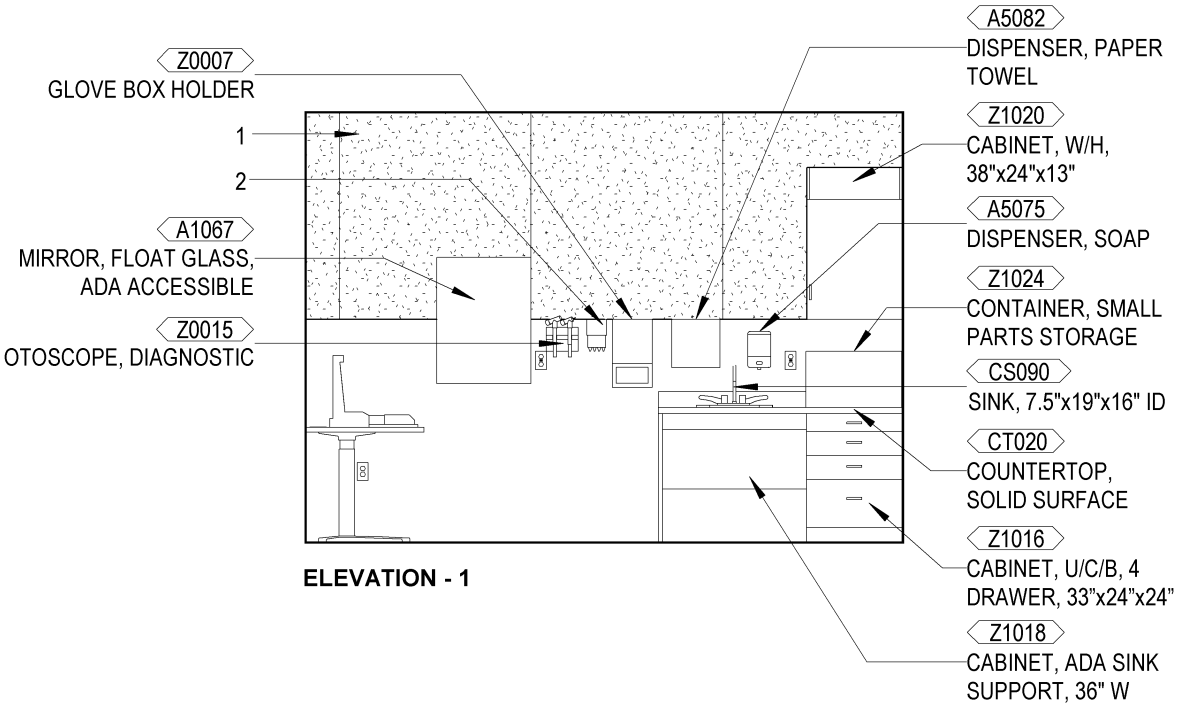
1/4" = 1'-0"

150 NSF	13.9 NSM

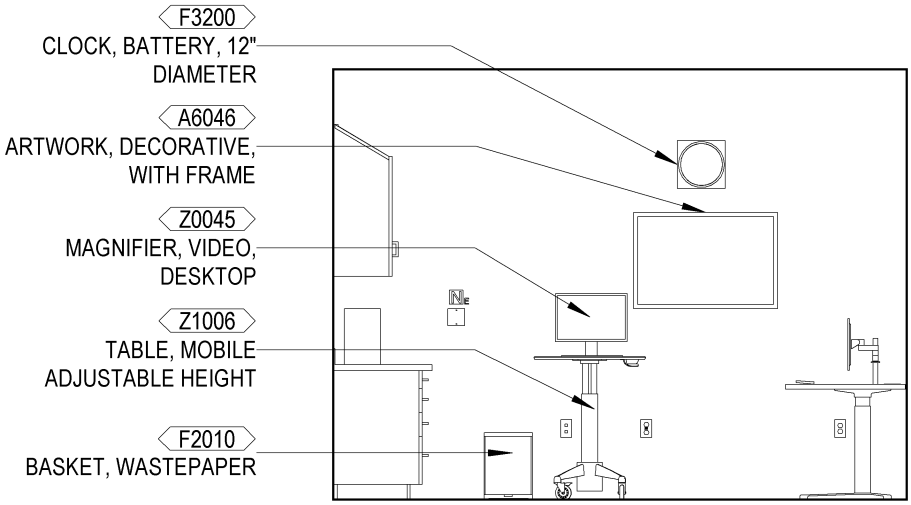
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.6.3 Interior Elevations

Programming/Fitting Room (AUD03)



ELEVATION - 1



ELEVATION - 2

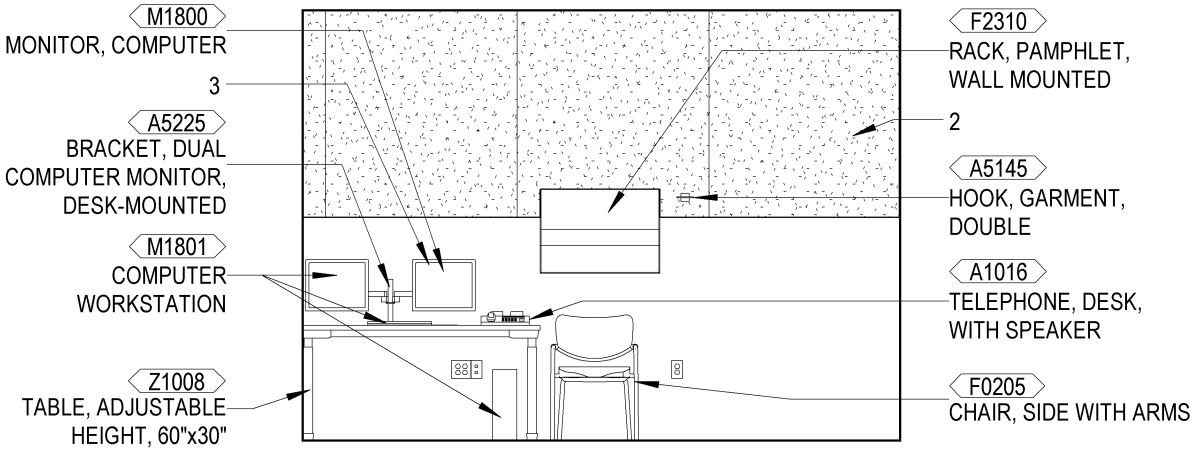
KEY NOTES:

1. SOUND ABSORPTIVE WALL TREATMENT-CONFIGURATION AND LOCATION MAY BE ADJUSTED PER ACTUAL ROOM CONFIGURATION. REFER TO ROOM DATA SHEET FOR MINIMUM CRITERIA.
2. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

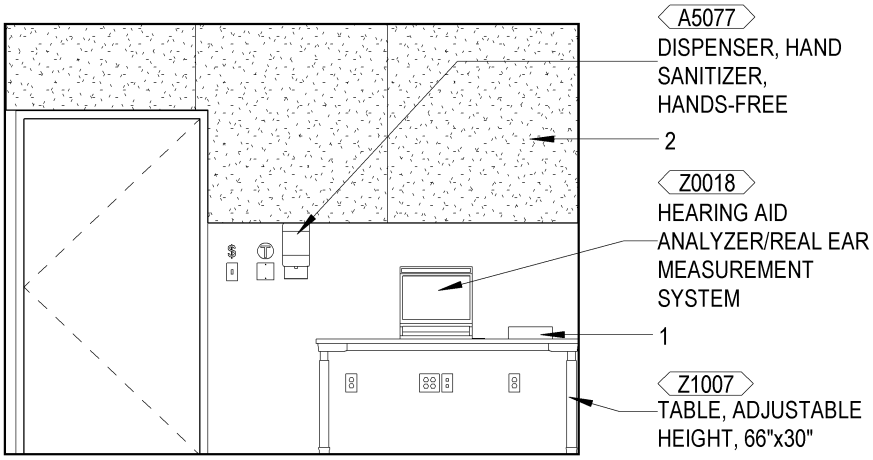
1/4" = 1'-0"

Interior Elevations

Programming/Fitting Room (AUD03)



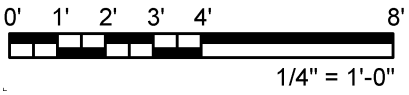
ELEVATION - 3



ELEVATION - 4

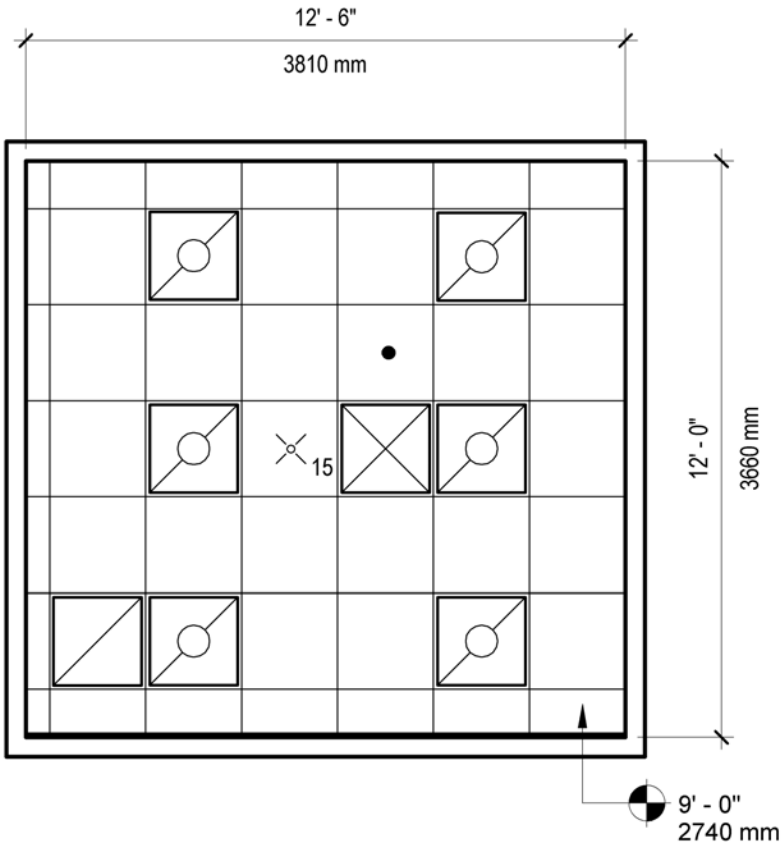
KEY NOTES:

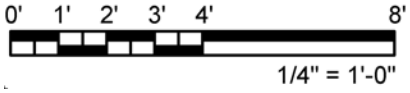
1. HEARING AID TEST BOX - COMPONENT OF HEARING AID ANALYZER.
2. SOUND ABSORPTIVE WALL TREATMENT-CONFIGURATION AND LOCATION MAY BE ADJUSTED PER ACTUAL ROOM CONFIGURATION. REFER TO ROOM DATA SHEET FOR MINIMUM CRITERIA.
3. MONITOR WITH WEBCAM CAPABILITY.



4.6.4 Reflected Ceiling Plan

Programming/Fitting Room (AUD03)





150 NSF	13.9 NSM

4.6.5 Room Data Sheet

Programming/Fitting Room (AUD03)

ARCHITECTURAL	
Number of People:	3
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions/Wall Finish:	GWB/P (Note 1, 4)
Base:	m:RB h:4" (100 mm)
Floor Finish:	CPT (Note 2)
Door:	m:Wood t:19 (Note 3) dg: narrow lite, Note 4 s:V
Hardware:	3
Slab Depression:	N/A
Acoustical Criteria:	Notes 5, 6
Ceiling:	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	60 STC, 60 IIC
Walls at Adjacent Room:	60 STC
Walls at Corridor:	55 STC

Special Construction: Minimum total area of 120 sq. ft. (11.2 NSM) of a nominal 2 in. (50 mm) thick sound absorptive wall treatment on at least two perpendicular walls. The sound absorptive wall treatment should have a minimum 0.90 NRC rating and a minimum 0.65 sound absorption coefficient at 250 Hz.

Notes:

1) Ref. Note 64, PG-18-14
2) Ref. Note 6, PG-18-14
3) 50 STC rated acoustical door
4) Laminated or Insulated Glass Unit to meet acoustical criteria in Note 3.
5) Increase the minimum STC rating of walls 5 STC for every 5 dBA increase in sound level above normal speech level (65 dBA 3'-0" (910 mm) from the speaker) in the adjacent room.
6) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).

LIGHTING	
Workplane Height:	2'-6" (760 mm)
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC)
Maintained Avg. Illumination-Task Focus:	N/A
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type
Lamps:	LED, T5, or T8 Fluorescent
CCT:	3500K
CRI:	80, minimum
Controls:	Multi-Level Control via Linear Dimming, Step Dimming, or Dual-Ballast Switching.
Special Requirements:	N/A

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:

1) Multiple Receptacles Above & Below Desk for Charging Devices

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (See Note 1)

Notes:

1) Where telehealth services will be provided, computer workstation shall include dual monitors, speakers, video camera, and microphone.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Electronic Sensor
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Visual (15 cd)
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.6.6 Equipment List

Table 21: Programming/Fitting Room (AUD03) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	3	VV	Telecommunication outlet location.
A1016	Telephone, Desk, With Speaker	1	VV	Telephone, desk, with speaker.
A1067	Mirror, Float Glass, ADA Accessible	1	CC	A high quality 1/4" polished float glass mirror with a stainless steel frame. Frame holds mirror in a tilted position for accessibility and compliance with ADA requirements. Mirror has a galvanized steel back secured to frame with concealed screws with integral horizontal hanging brackets. Mirror shall be approximately 18" wide and 36" high. Other sizes are available.
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5145	Hook, Garment, Double, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A5225	Bracket, Dual Computer Monitor, Desk-Mounted	1	VV	Desk-mounted bracket that supports two LCD computer monitors, or laptop and monitor configuration. Extends LCD's or labtop up to 25" with an adjustment range of 18". Desk clamp attaches to edge up to 2.6" thick. Maximum combined weight supported not to exceed 50 lbs.
A6046	Artwork, Decorative, With Frame	1	VV	This JSN is to be used for determining and defining location of decorative artwork.
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.
CT020	Countertop, Solid Surface	1	CC	A solid, nonporous countertop with a smooth seamless appearance. Easy to clean and maintain and with proper cleaning does not support the growth of mold. An acrylic-based solid surface product. Standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a choice of colors and depths. Used in lab and other hospital areas requiring optimum physical and chemical resisting properties.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F0205	Chair, Side With Arms	2	VV	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.
F0280	Chair, Swivel, Low Back	1	VV	Low back contemporary swivel chair, 37" high X 25" wide X 31" deep with a five (5) caster swivel base, arms and foam padded seat and back upholstered with either woven textile fabric or vinyl.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.
F2310	Rack, Pamphlet, Wall Mounted	1	VV	Wall mounted pamphlet rack up to 12 (twelve) pamphlet holding pockets. Unit is used to store and display educational pamphlets.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.
Z0015	Otoscope, Diagnostic, Desk or Wall Mounted	1	VV	Wall Mounted Otoscope: Integrated system with wall transformer, standard diagnostic otoscope, wall aneroid, and specula dispenser; includes 6 foot line cord with plug, and accepts two handles. Designed for use in patient rooms. Desk Set Otoscope: System contains universal charger, lithium ion handle and lithium ion battery, 3.5v otoscope and separate wall mounted specula dispenser; includes 6 foot line cord with plug and accepts two handles. Designed for use in patient rooms.
Z0018	Hearing Aid Analyzer/Real Ear Measurement System	1	VV	A hearing instrument analyzer used to verify the electro-acoustic performance of a hearing instrument connected to a standard earphone coupler or while worn in the ear of the end user. The system consists of a real-ear measurement (REM) display unit, a hearing instrument test (HIT), acoustically-treated binaural test box, speakers, numerous attachable components, accessories and digital speech and frequency specific stimuli.
Z0045	Magnifier, Video, Desktop	1	VV	Magnifier for reading of documents by low vision patients. Includes integral camera, video monitor, illumination, and controls. Minimum screen size of 17" and magnification of 45x.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z1006	Table, Mobile Adjustable Height	1	VV	Care Exchange Workstation-Non-powered, height adjustable workstation with two locking casters front, and two non-locking casters, rear. Polished aluminum column and base. Table includes adjustment lever and accessories as needed to meet local requirements. Work surface approximately 32"W x 22"D, kidney shape.
Z1007	Table, Adjustable Height, 66"X30"	1	VV	66"W x 30"D adjustable height electric pedestal table with C-foot configuration and integral wire management trough or tray. Height range varies by manufacturer, and model, approximately 22" to 48". Steel tube construction with powder coat finish, and 1 ¼" thick top with high pressure laminate or wood veneer surface, gator-ply paper backer bottom face, and side edges of rigid Thermoplastic or color matched wood veneer. Die cast aluminum feet and top support; galvanized steel horizontal rails, zinc plated steel fasteners. System includes integral electrical components (including control box, cable trough, electric motor, power cord for table; U.L. listed pop-up power strip with minimum of two simplex receptacles, additional data and/or USB ports as needed per facility preference, and minimum 6' long power cord with plug), 2 grommets and adjustable glides for complete system.
Z1008	Table, Adjustable Height, 60"X30"	1	VV	60"W x 30"D adjustable height electric pedestal table with C-foot configuration and integral wire management trough or tray. Height range varies by manufacturer and model, approximately 22" to 48". Steel tube construction with powder coat finish, and 1 ¼" thick top with high pressure laminate or wood veneer surface, gator-ply paper backer bottom face, and side edges of rigid Thermoplastic or color matched wood veneer. Die cast aluminum feet and top support; galvanized steel horizontal rails, zinc plated steel fasteners. System includes integral electrical components (including control box, cable trough, electric motor, power cord for table; U.L. listed pop-up power strip with minimum of two simplex receptacles, additional data and/or USB ports as needed per facility preference, and minimum 6' long power cord with plug), 2 grommets and adjustable glides for complete system.
Z1016	Cabinet, U/C/B, 4 Drawer, 33"x24"x24"	1	CC	Standing height under counter base cabinet with three or four full width drawers; configuration to be determined based on facility needs. Also referred to as a drawer cabinet. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge banding. Hardware includes hinges, full extension drawer slides, pulls, and adjustable glides.
Z1018	Cabinet, ADA Sink Support, 36" W	1	CC	Wall mounted sink support cabinet for drop-in sink with vertical fascia and angled ADA profile, also referred to as ADA sink cabinet. Removable front panel to permit access to plumbing. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Includes all attaching hardware including support rail.
Z1020	Cabinet, W/H, 2 Shelf, 1 DO, Sloping Top, 38"x24"x13"	1	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left-hinged door, and sloping top. Also referred to as a solid hinged single door case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z1024	Container, Small Parts Storage	1	VV	Plastic or steel drawer parts storage/organizer cabinet with clear plastic drawers. Container quantity, drawer quantity, and configuration, to be determined by facility/user requirements.

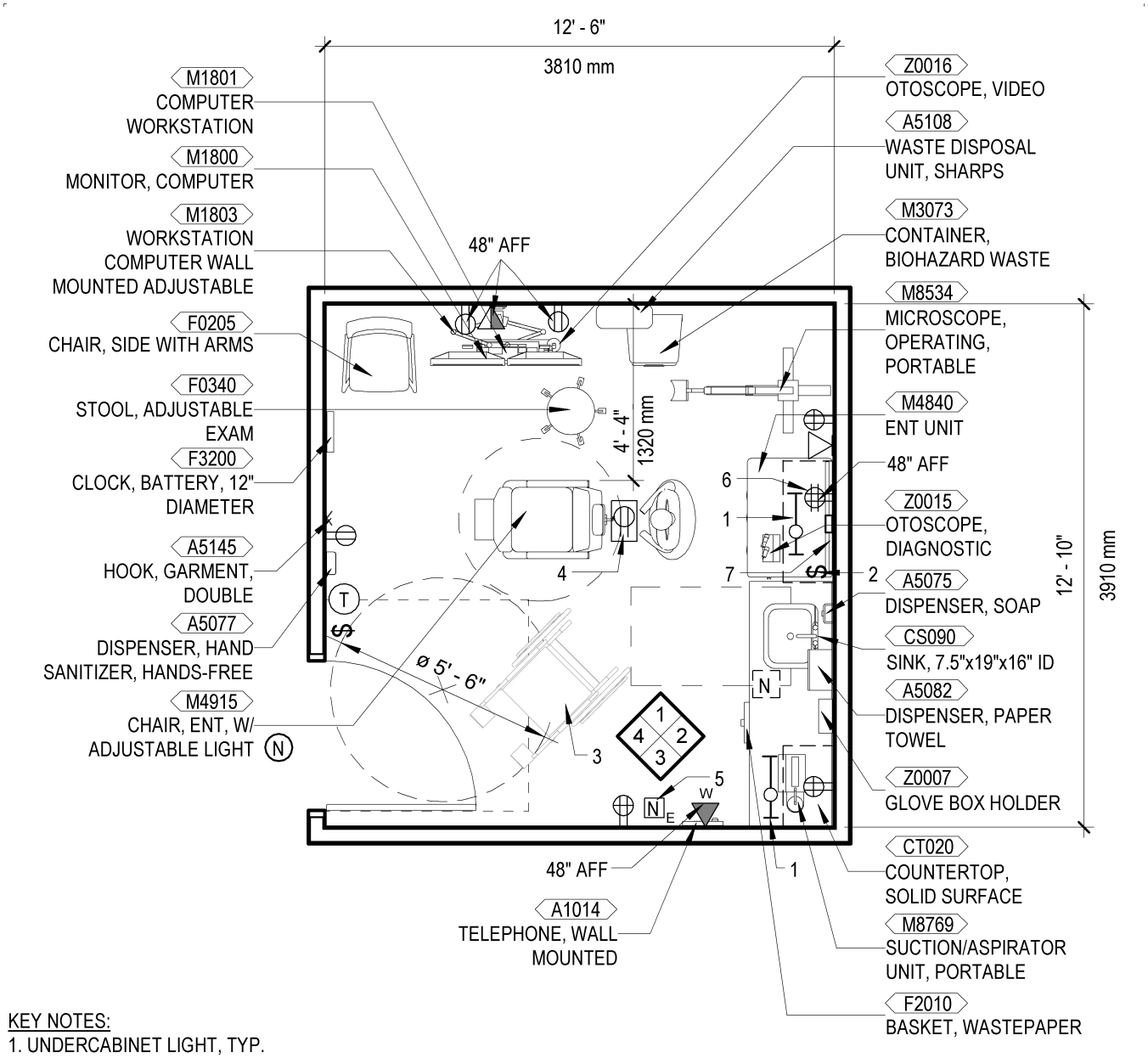
4.7 Cerumen Management Room (AUD04)

4.7.1 Axonometric View

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

4.7.2 Floor Plan

Cerumen Management Room (AUD04)



KEY NOTES:
1. UNDERCABINET LIGHT, TYP.
2. SWITCH CONTROLS UNDERCABINET LIGHTS.
3. WHEELCHAIR SHOWN FOR REFERENCE ONLY.
4. RECESSED FLOOR BOX PREFERRED. IF NOT POSSIBLE DUE TO FACILITY CONSTRAINTS, PROVIDE DUPLEX OUTLET IN ADJACENT WALL; PROVIDE CORD PROTECTION TO MINIMIZE EXPOSED WIRING.
5. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
6. GFI RECEPTACLE.
7. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

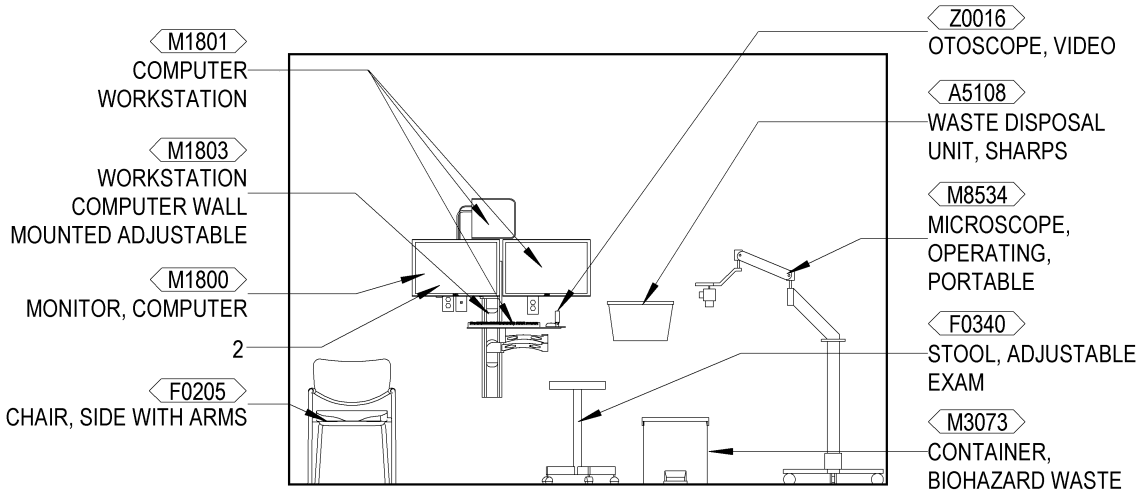
0' 1' 2' 3' 4' 8'
1/4" = 1'-0"

160 NSF	14.9 NSM

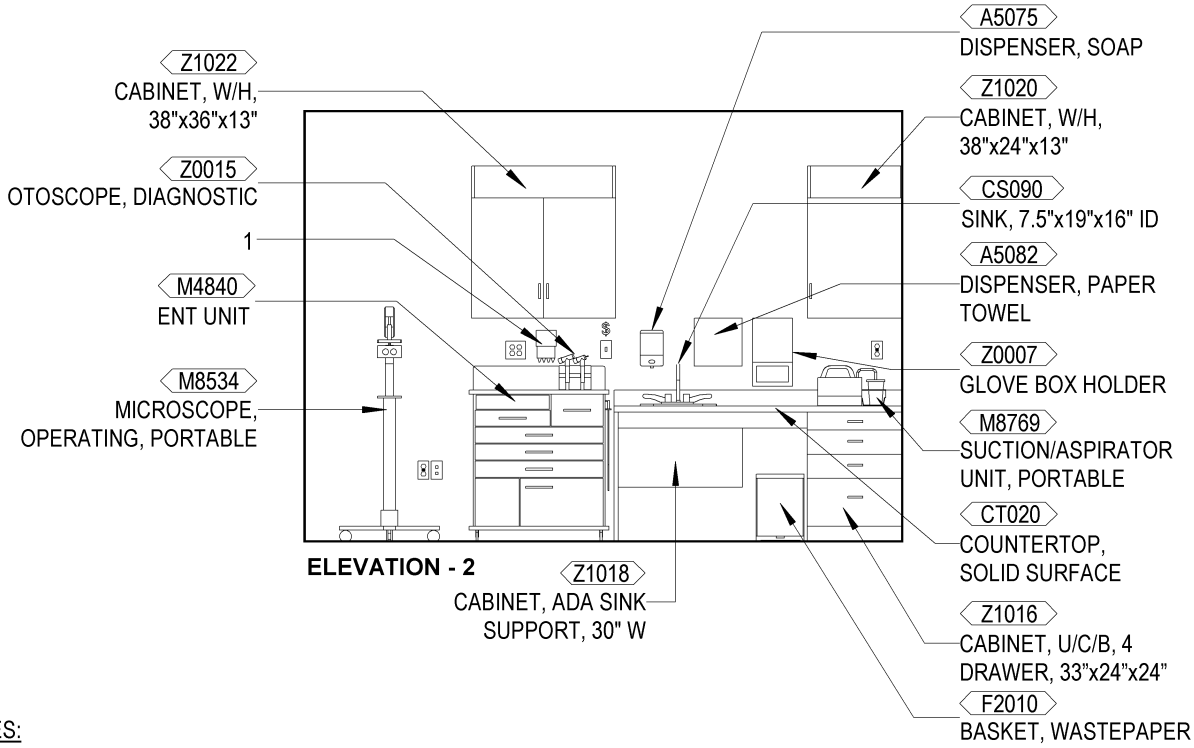
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.7.3 Interior Elevations

Cerumen Management Room (AUD04)

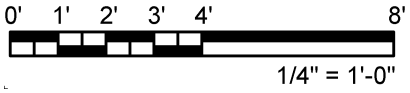


ELEVATION - 1



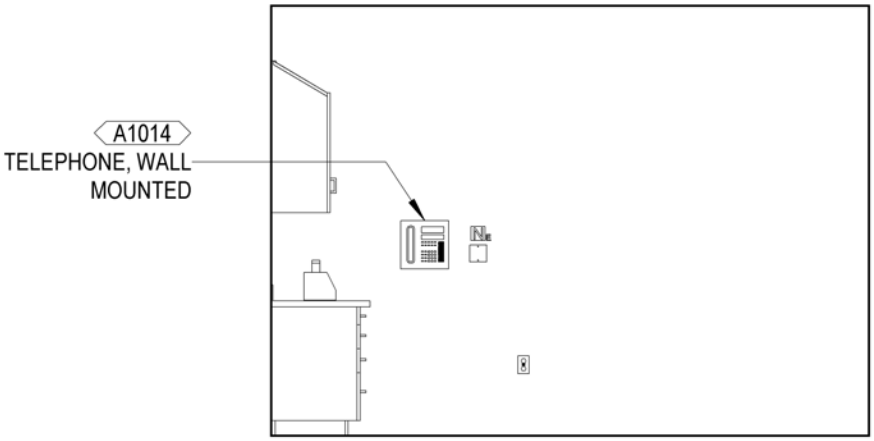
ELEVATION - 2

KEY NOTES:
1. SPECULA DISPENSER (OTOSCOPE ACCESSORY).
2. MONITOR WITH WEBCAM CAPABILITY.

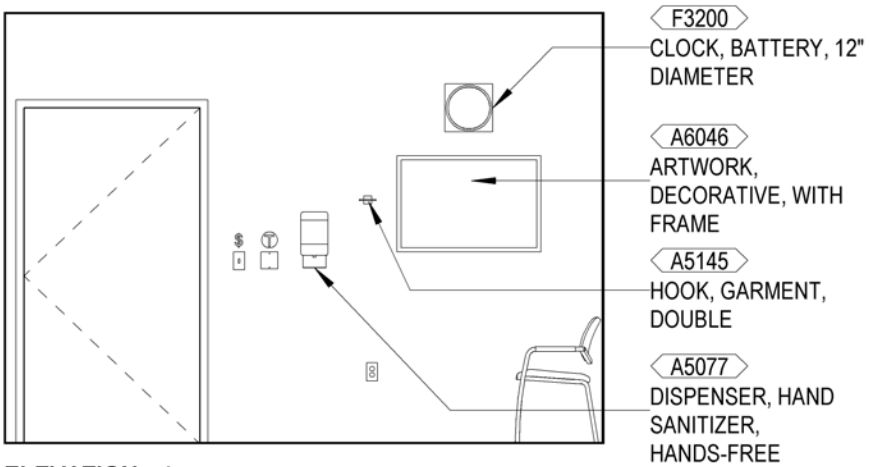


Interior Elevations

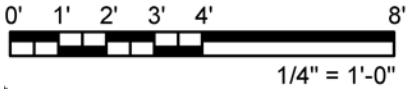
Cerumen Management Room (AUD04)



ELEVATION - 3

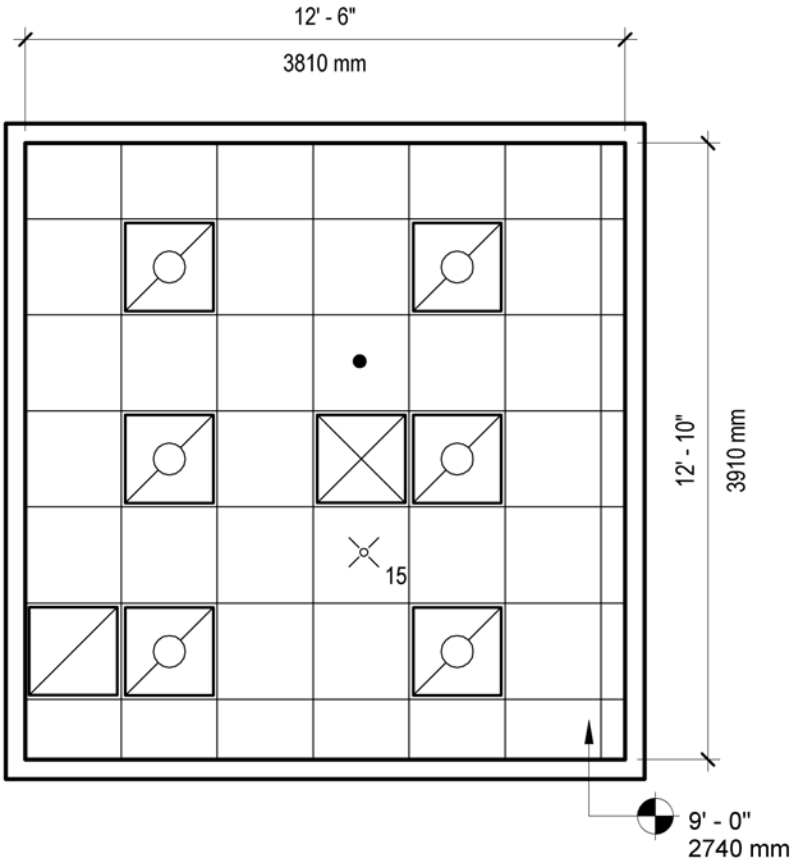


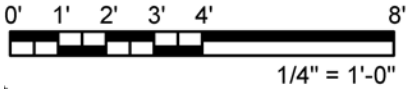
ELEVATION - 4



4.7.4 Reflected Ceiling Plan

Cerumen Management Room (AUD04)





160 NSF	14.9 NSM

4.7.5 Room Data Sheet

Cerumen Management Room (AUD04)

ARCHITECTURAL	
Number of People:	3
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions/Wall Finish:	GWB/P (Note 1, 3)
Base:	m:RB h:4" (100 mm)
Floor Finish:	LVT
Door:	m:Wood t:11 s:V
Hardware:	4 (Note 2)
Slab Depression:	N/A
Acoustical Criteria:	Notes 3, 4
Ceiling:	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	50 STC, 50 IIC
Walls at Adjacent Room:	50 STC
Walls at Corridor:	35 STC
Special Construction:	N/A

Notes:
1) Ref. Note 64, PG-18-14
2) Mechanical Seal (sound gasketing)
3) Increase the min. STC rating of walls 5 STC for every 5 dBA increase in sound level above normal speech level (65 dBA 3'-0" (910 mm) from the speaker) in the adjacent room
4) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).

LIGHTING	
Workplane Height:	2'-6" (760 mm)
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC)
Maintained Avg. Illumination-Task Focus:	1000 Lux (100 FC) at Work Counter Surface and Exam Chair
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type.
Lamps:	LED, T5, or T8 Fluorescent
CCT:	3500K
CRI:	80, minimum
Controls:	Multi-Level Control via Linear Dimming, Step Dimming, or Dual-Ballast Switching. Separate Toggle Switch for Control of Undercabinet Lighting.
Special Requirements:	N/A

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:
1) Multiple Receptacles Above Standing-Height Counter

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (See Note 1)

Notes:
1) Where telehealth services will be provided, computer workstation shall include dual monitors, speakers, video camera, and microphone.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Electronic Sensor
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	Yes (1)
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Visual (15 cd)
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.7.6 Equipment List

Table 22: Cerumen Management Room (AUD04) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	3	VV	Telecommunication outlet location.
A1014	Telephone, Wall Mounted, 1 Line, With Speaker	1	VV	Telephone, Wall Mounted, 1 Line, with Speaker
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5108	Waste Disposal Unit, Sharps	1	VV	A container for collecting and transporting syringes and other sharps for decontamination and disposal. Available in 2 gallon and 8 gallon with locking rotor. Complies with OSHA regulations for handling sharps.
A5145	Hook, Garment, Double, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A6046	Artwork, Decorative, With Frame	1	VV	This JSN is to be used for determining and defining location of decorative artwork.
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.
CT020	Countertop, Solid Surface	1	CC	A solid, nonporous countertop with a smooth seamless appearance. Easy to clean and maintain and with proper cleaning does not support the growth of mold. An acrylic-based solid surface product. Standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a choice of colors and depths. Used in lab and other hospital areas requiring optimum physical and chemical resisting properties.
F0205	Chair, Side With Arms	1	VV	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F0340	Stool, Self Adjusting	1	VV	Self adjusting stool. Consists of a foam padded upholstered seat with attached foot rest for added comfort. Mounted on swivel casters. Designed for doctor's use during examinations.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
M1803	Workstation, Computer, Wall Mounted, Adjustable	1	VV	A wall mounted computer workstation with height adjustable monitor and keyboard arms. Keyboard and monitor can be stored within 8" to 10" of wall. Fingertip adjustability for keyboard and monitor enable frequent position changes. Unit contains an integrated cable management system to hide wires. A separate wall-mounted CPU holder is included.
M3073	Container, Biohazard Waste, Step-on, Fire Safe	1	VV	A biohazard waste container with a step-on lid. The container will have a capacity of approximately 12 gallons and be made of a fire safe material.
M4840	ENT Unit, w/Air, Electric Power, Suction, Pressure	1	VV	Mobile ENT unit. Unit has air and electrical panels and integral suction and pressure system. Unit houses a control panel with functions selector, pressure regulator, pressure gauge, and electrical outlets. It is equipped with foot-controlled vacuum and pressure plus a storage area.
M4915	Chair, Exam/Treatment, ENT, w/Adjustable Light	1	VV	ENT exam/treatment chair with adjustable light. Chair can be rotated 330 degrees locking at desired position. Unit is electrically powered for precise positioning and has an adjustable headrest and armrest. It may include an adjustable gooseneck light. Unit is designed for use during examinations, treatments, and minor procedures.
M8534	Microscope, Operating, Portable, General Use	1	VV	Portable operating microscope complete with objectives and stand. Unit consists of a binocular microscope body equipped with a range of accessories for co-observation, documentation, and illumination. Control knobs equipped with sterilizable handles. Mounted on a large swinging arm stand. For examinations and diagnosis in medical consultancies and as a laboratory training instrument.
M8769	Suction/Aspirator Unit, Portable	1	VV	General purpose suction apparatus with rechargeable battery and 1500 ml disposable collection canister.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z0015	Otoscope, Diagnostic, Desk or Wall Mounted	1	VV	Wall Mounted Otoscope: Integrated system with wall transformer, standard diagnostic otoscope, wall aneroid, and specula dispenser; includes 6 foot line cord with plug, and accepts two handles. Designed for use in patient rooms. Desk Set Otoscope: System contains universal charger, lithium ion handle and lithium ion battery, 3.5v otoscope and separate wall mounted specula dispenser; includes 6 foot line cord with plug and accepts two handles. Designed for use in patient rooms.
Z0016	Otoscope, Video	1	VV	Wireless or wired device, which provides video of ear canal and tympanic membrane, and may be used alone or with laptop or PC to store images. Instrument incorporates a rod otoscope with removable otic speculum, fiber optic illumination, and high resolution video camera. Wired units utilize USB connection.
Z1016	Cabinet, U/C/B, 4 Drawer, 33"x24"x24"	1	CC	Standing height under counter base cabinet with three or four full width drawers; configuration to be determined based on facility needs. Also referred to as a drawer cabinet. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge banding. Hardware includes hinges, full extension drawer slides, pulls, and adjustable glides.
Z1018	Cabinet, ADA Sink Support, 30" W	1	CC	Wall mounted sink support cabinet for drop-in sink with vertical fascia and angled ADA profile, also referred to as ADA sink cabinet. Removable front panel to permit access to plumbing. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Includes all attaching hardware including support rail.
Z1020	Cabinet, W/H, 2 Shelf, 1 DO, Sloping Top, 38"x24"x13"	1	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left-hinged door, and sloping top. Also referred to as a solid hinged single door case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.
Z1022	Cabinet, W/H, 2 Shelf, 2 DO, Sloping Top, 38"x36"x13"	1	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left hinged doors, and sloping top. Also referred to as a solid hinged double door wall case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.

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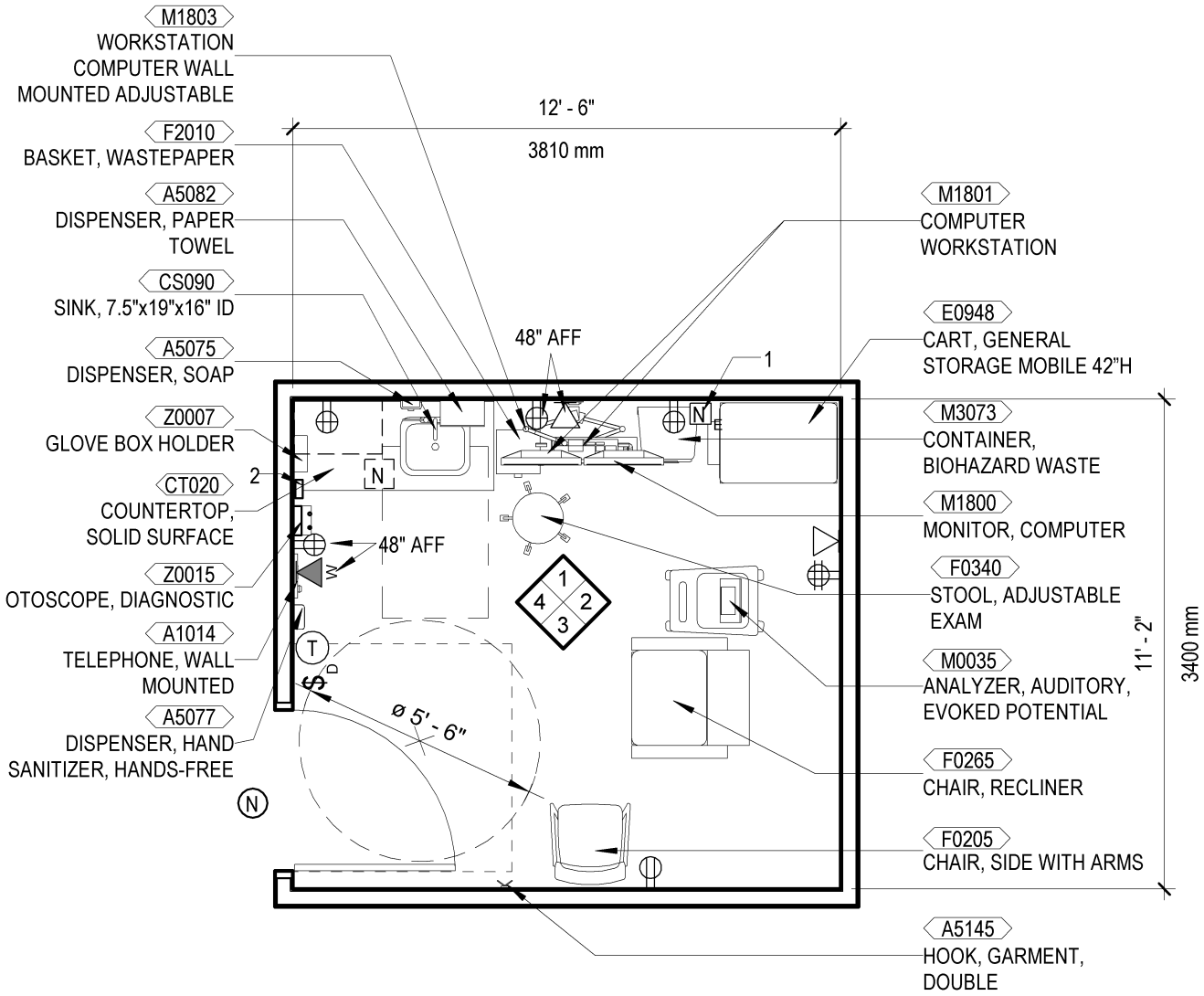
4.8 Electrophysiology Room (AUDP1)

4.8.1 Axonometric View

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

4.8.2 Floor Plan

Electrophysiology Room (AUDP1)



KEY NOTES:
1. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
2. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

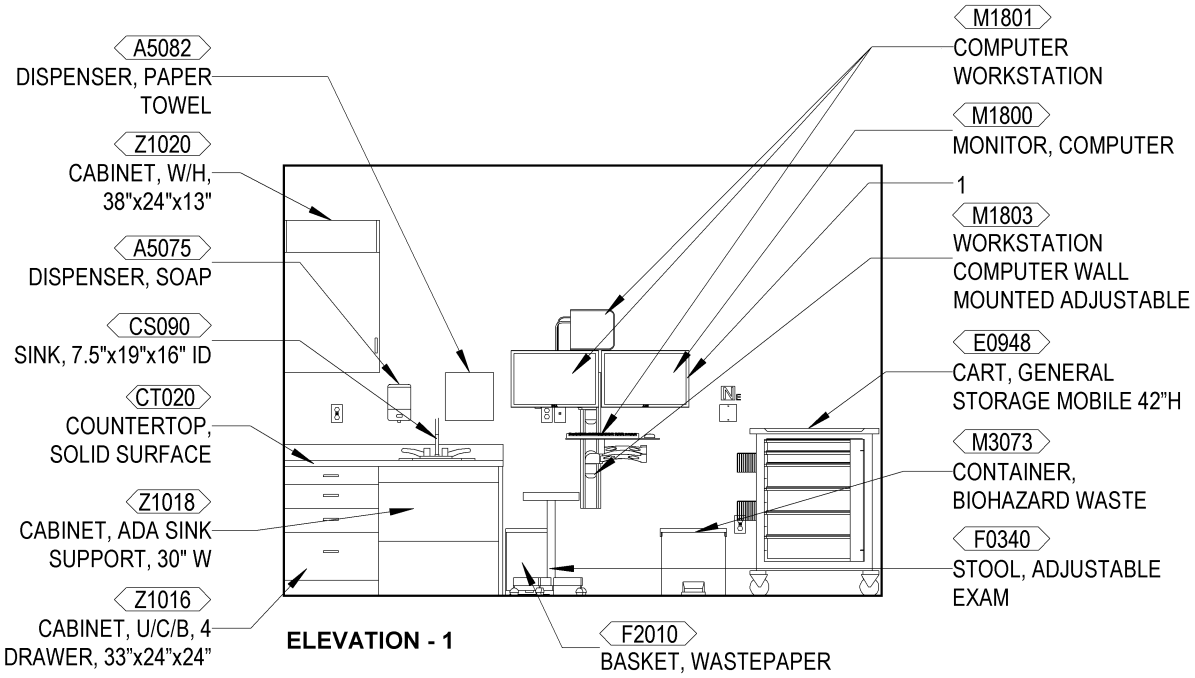
0' 1' 2' 3' 4' 8'
1/4" = 1'-0"

140 NSF	13.0 NSM

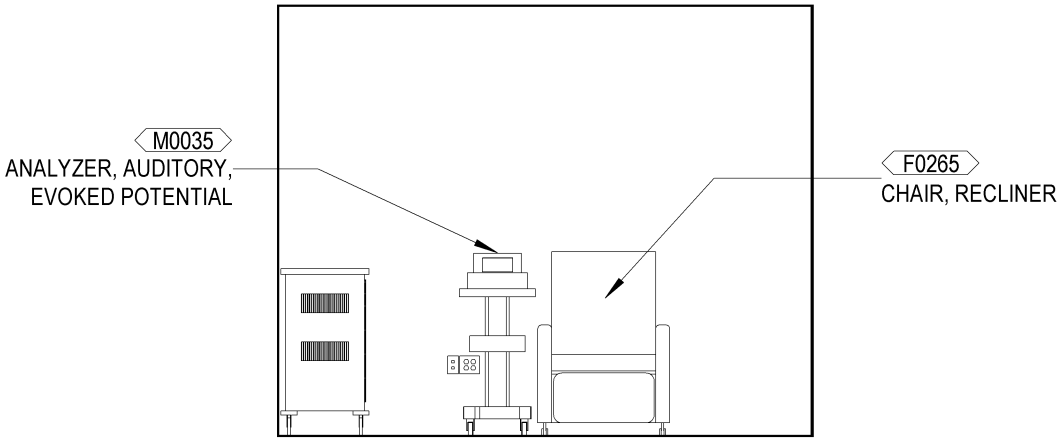
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.8.3 Interior Elevations

Electrophysiology Room (AUDP1)



ELEVATION - 1



ELEVATION - 2

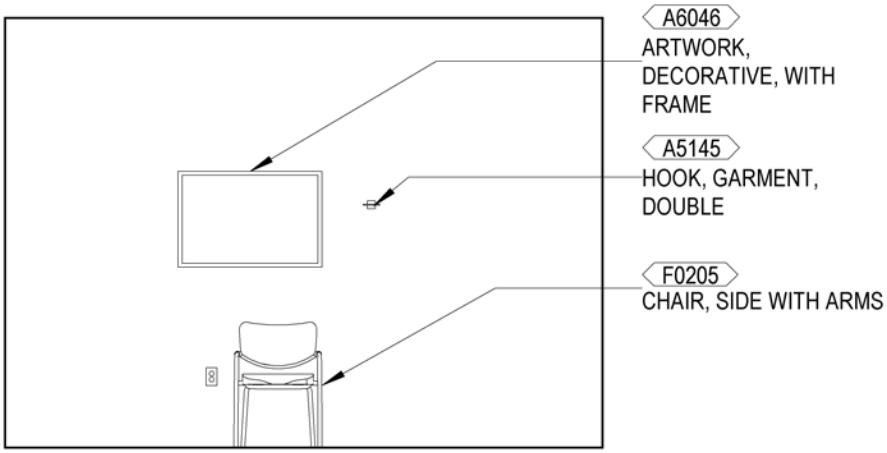
KEY NOTES:
1. MONITOR WITH WEBCAM CAPABILITY.

0' 1' 2' 3' 4' 8'

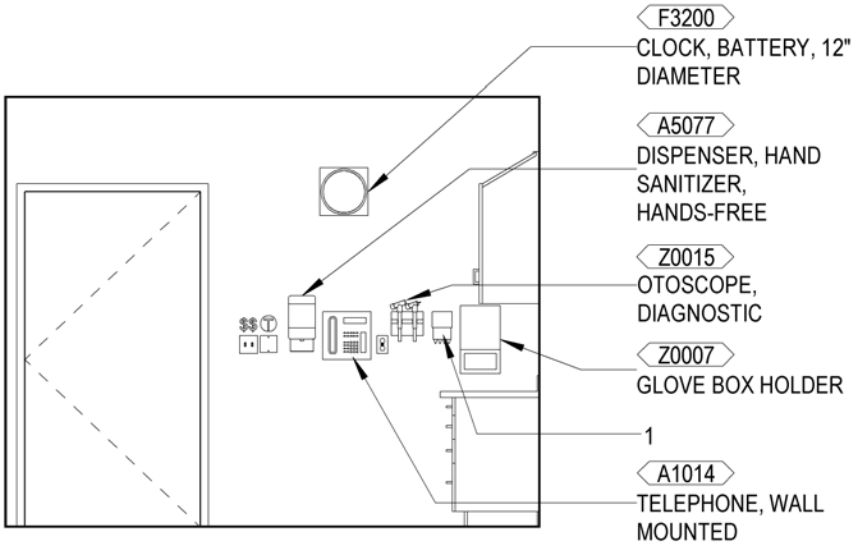
1/4" = 1'-0"

Interior Elevations

Electrophysiology Room (AUDP1)



ELEVATION - 3



ELEVATION - 4

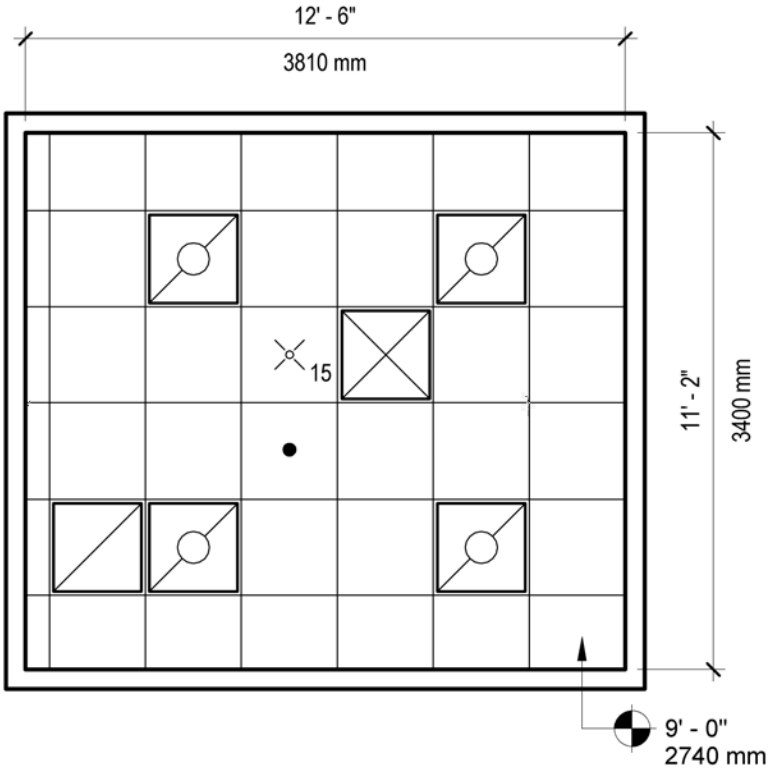
KEY NOTES:
1. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

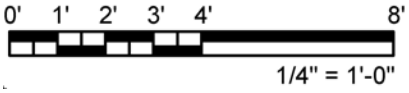
0' 1' 2' 3' 4' 8'

1/4" = 1'-0"

4.8.4 Reflected Ceiling Plan

Electrophysiology Room (AUDP1)





140 NSF	13.0 NSM

4.8.5 Room Data Sheet

Electrophysiology Room (AUDP1)

ARCHITECTURAL	
Number of People:	3
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions/Wall Finish:	GWB/P (Note 1, 4)
Base:	m:RB h:4" (100 mm)
Floor Finish:	LVT
Door:	m:Wood t:19 s:V (Note 2)
Hardware:	3
Slab Depression:	N/A
Acoustical Criteria:	(Notes 3, 4)
Ceiling:	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	55 STC, 55 IIC
Walls at Adjacent Room:	55 STC
Walls at Corridor:	45 STC
Special Construction:	N/A

Notes:

1) Ref. Note 64, PG-18-14
2) 40 STC rated acoustical door
3) Increase the minimum STC rating of walls 5 STC for every 5 dBA increase in sound level above normal speech level (65 dBA 3'-0" (910 mm) from the speaker) in the adjacent room
4) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).

LIGHTING	
Workplane Height:	2'-6" (760 mm)
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC)
Maintained Avg. Illumination-Task Focus:	1000 Lux (100 FC) at Exam/Treatment Chair
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type. 6" (150 mm) LED or CFL Downlights
Lamps:	LED, T5, or T8 Fluorescent, 26W DTT CFL
CCT:	3500K
CRI:	80, minimum
Controls:	Separate Downlighting Zone with Linear Dimming to Accommodate Dark Room during Test. Separate Toggle Switch for Control of Undercabinet Lighting.
Special Requirements:	N/A

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:

1) Receptacles on all walls

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (See Note 1)

Notes:

1) Where telehealth services will be provided, computer workstation shall include dual monitors, speakers, video camera, and microphone.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Electronic Sensor
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Visual (15 cd)
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.8.6 Equipment List

Table 23: Electrophysiology Room (AUDP1) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	3	VV	Telecommunication outlet location.
A1014	Telephone, Wall Mounted, 1 Line, With Speaker	1	VV	Telephone, Wall Mounted, 1 Line, with Speaker
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5145	Hook, Garment, Double, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A6046	Artwork, Decorative, With Frame	1	VV	This JSN is to be used for determining and defining location of decorative artwork.
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.
CT020	Countertop, Solid Surface	1	CC	A solid, nonporous countertop with a smooth seamless appearance. Easy to clean and maintain and with proper cleaning does not support the growth of mold. An acrylic-based solid surface product. Standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a choice of colors and depths. Used in lab and other hospital areas requiring optimum physical and chemical resisting properties.
E0948	Cart, General Storage, Mobile, 42"H x 32"W x 22"D	1	VV	THIS TYPICAL INCLUDES: 1 Cart Body, Style-A Narrow, w/Raised Edge Top 2 Drawers, 3" H 4 Drawers, 6" H 1 Accessory Rail, Side Drawer Organizer Bins
F0205	Chair, Side With Arms	1	VV	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F0265	Chair, Recliner	1	VV	Reclining chair, 46" high X 33" wide X 40"deep with arms, straight leg base and floor glides or lockable two (2) inch casters. Seat, back and foot rest are foam padded and upholstered with woven textile fabric or vinyl.
F0340	Stool, Self Adjusting	1	VV	Self adjusting stool. Consists of a foam padded upholstered seat with attached foot rest for added comfort. Mounted on swivel casters. Designed for doctor's use during examinations.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M0035	Analyzer, Auditory, Evoked Potential	1	VV	The unit features a large color monitor, a minimum of 4 channel analysis, a computer, built-in electrode impedance testing, a physiological signal amplifier, a digital auditory stimulator, and a register recorder. The analyzer is used for evaluating the response of the auditory nerve and auditory central nervous system to a variety of external stimuli.
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
M1803	Workstation, Computer, Wall Mounted, Adjustable	1	VV	A wall mounted computer workstation with height adjustable monitor and keyboard arms. Keyboard and monitor can be stored within 8" to 10" of wall. Fingertip adjustability for keyboard and monitor enable frequent position changes. Unit contains an integrated cable management system to hide wires. A separate wall-mounted CPU holder is included.
M3073	Container, Biohazard Waste, Step-on, Fire Safe	1	VV	A biohazard waste container with a step-on lid. The container will have a capacity of approximately 12 gallons and be made of a fire safe material.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.
Z0015	Otoscope, Diagnostic, Desk or Wall Mounted	1	VV	Wall Mounted Otoscope: Integrated system with wall transformer, standard diagnostic otoscope, wall aneroid, and specula dispenser; includes 6 foot line cord with plug, and accepts two handles. Designed for use in patient rooms. Desk Set Otoscope: System contains universal charger, lithium ion handle and lithium ion battery, 3.5v otoscope and separate wall mounted specula dispenser; includes 6 foot line cord with plug and accepts two handles. Designed for use in patient rooms.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z1016	Cabinet, U/C/B, 4 Drawer, 33"x24"x24"	1	CC	Standing height under counter base cabinet with three or four full width drawers; configuration to be determined based on facility needs. Also referred to as a drawer cabinet. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge banding. Hardware includes hinges, full extension drawer slides, pulls, and adjustable glides.
Z1018	Cabinet, ADA Sink Support, 30" W	1	CC	Wall mounted sink support cabinet for drop-in sink with vertical fascia and angled ADA profile, also referred to as ADA sink cabinet. Removable front panel to permit access to plumbing. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Includes all attaching hardware including support rail.
Z1020	Cabinet, W/H, 2 Shelf, 1 DO, Sloping Top, 38"x24"x13"	1	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left-hinged door, and sloping top. Also referred to as a solid hinged single door case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.

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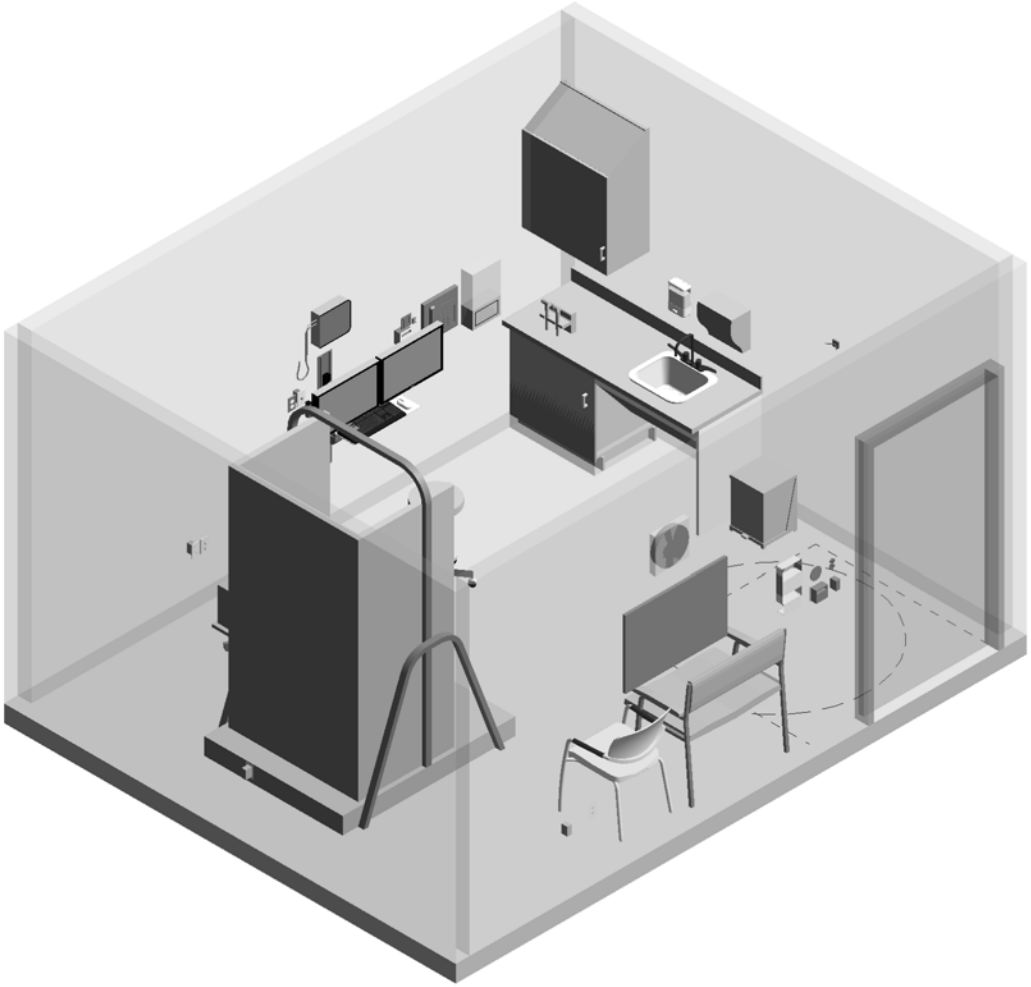
4.9 Posturography Room (AUDP2)

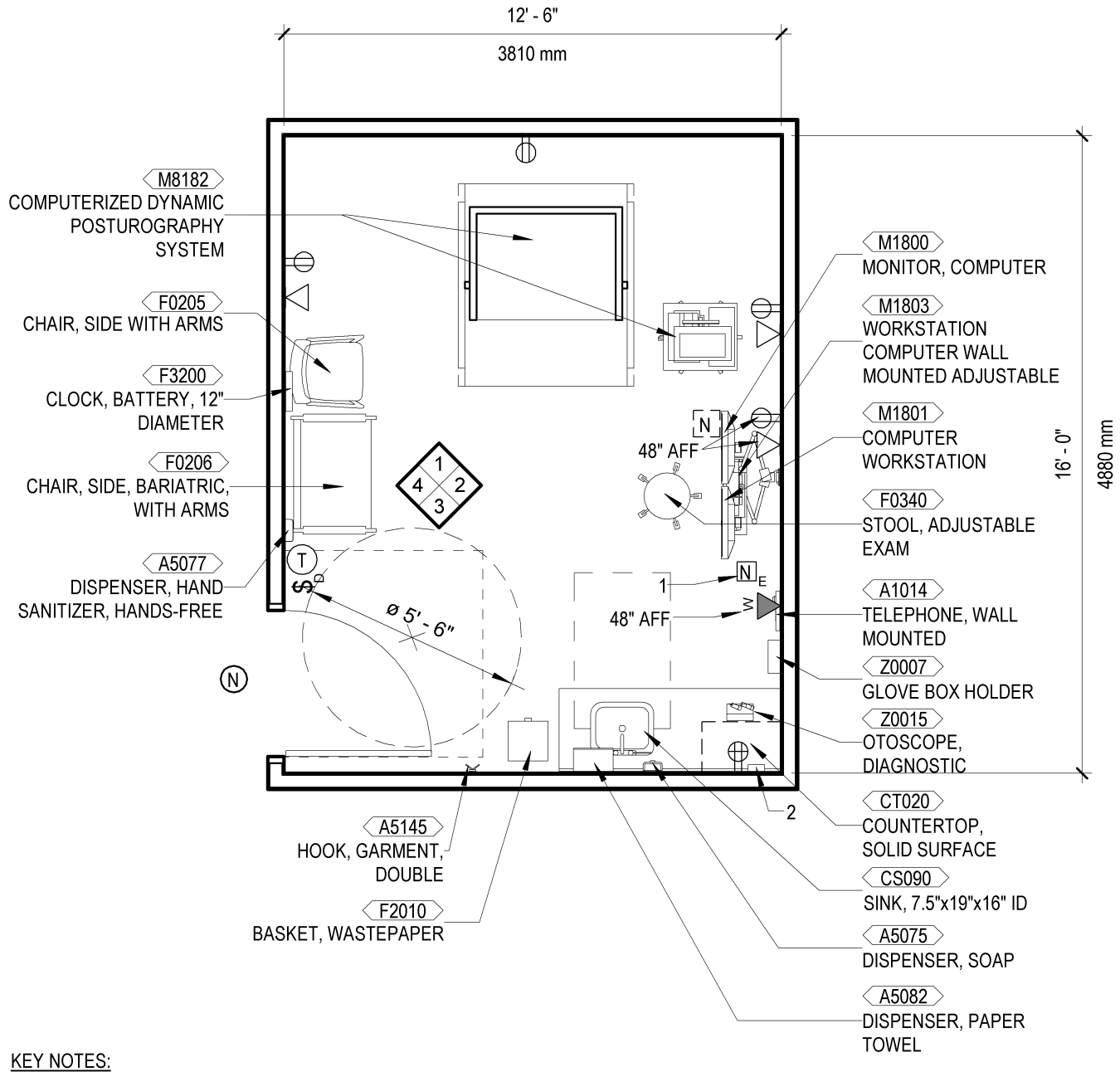
4.9.1 Axonometric View



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

4.9.2 Floor Plan

Posturography Room (AUDP2)



KEY NOTES:
1. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
2. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

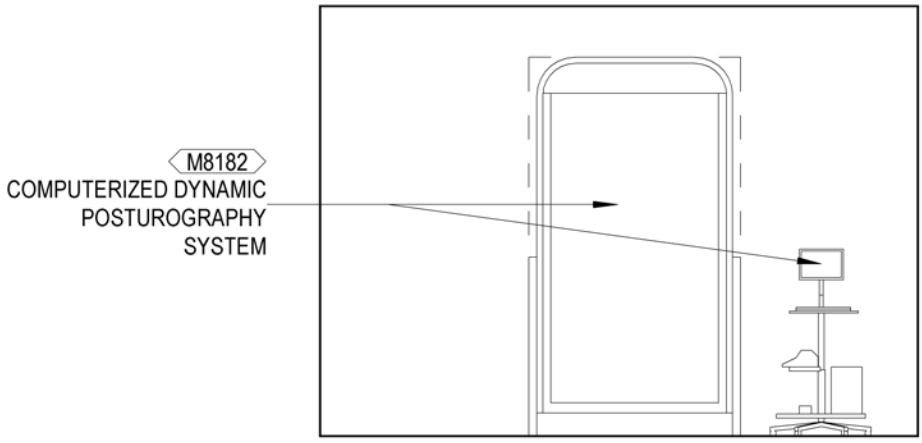
0' 1' 2' 3' 4' 8'
1/4" = 1'-0"

200 NSF	18.6 NSM

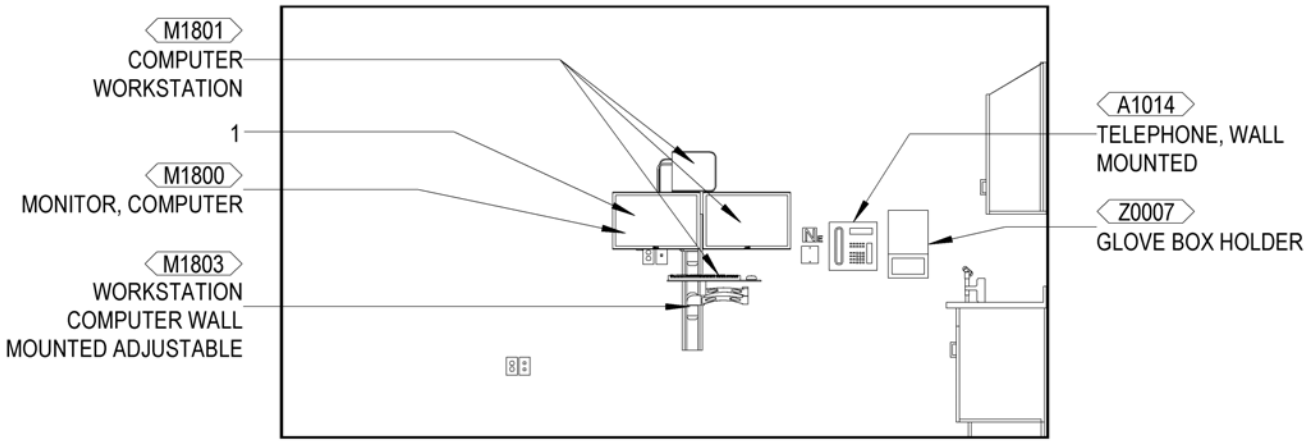
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.9.3 Interior Elevations

Posturography Room (AUDP2)

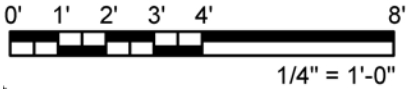


ELEVATION - 1



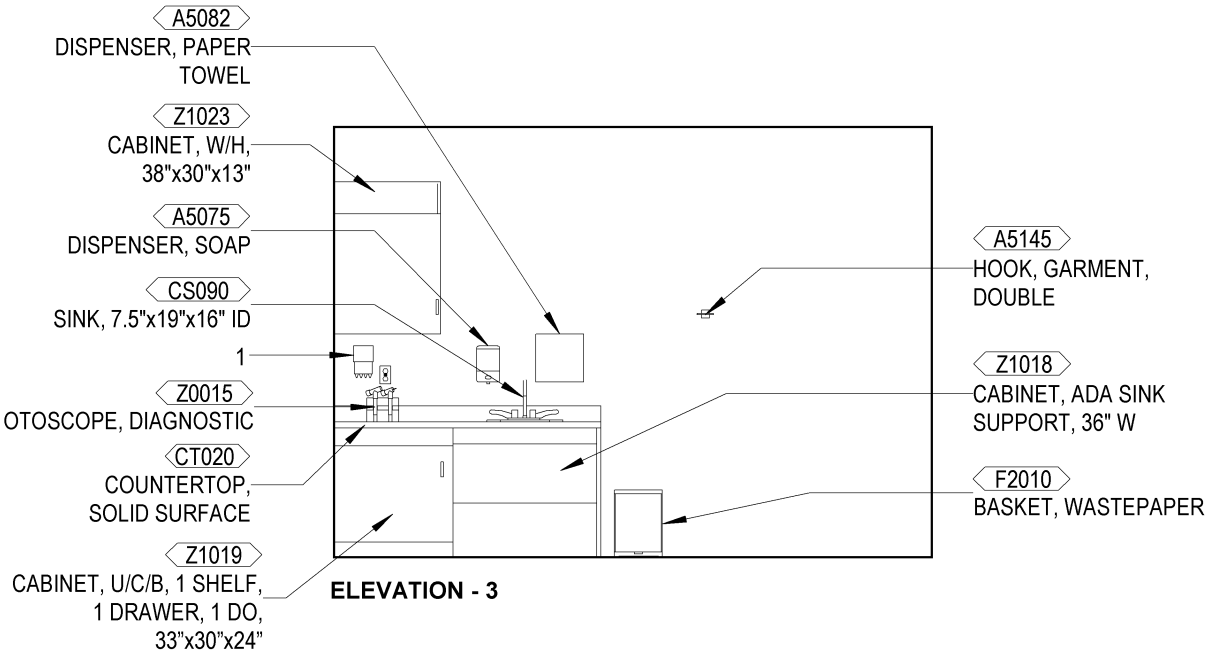
ELEVATION - 2

KEY NOTES:
1. MONITOR WITH WEBCAM CAPABILITY.

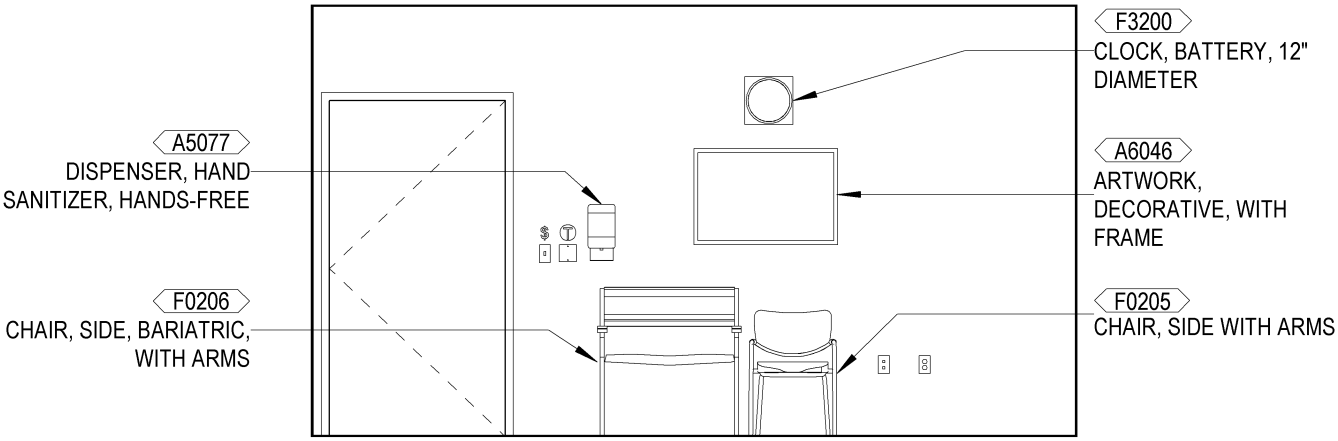


Interior Elevations

Posturography Room (AUDP2)

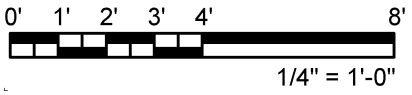


ELEVATION - 3



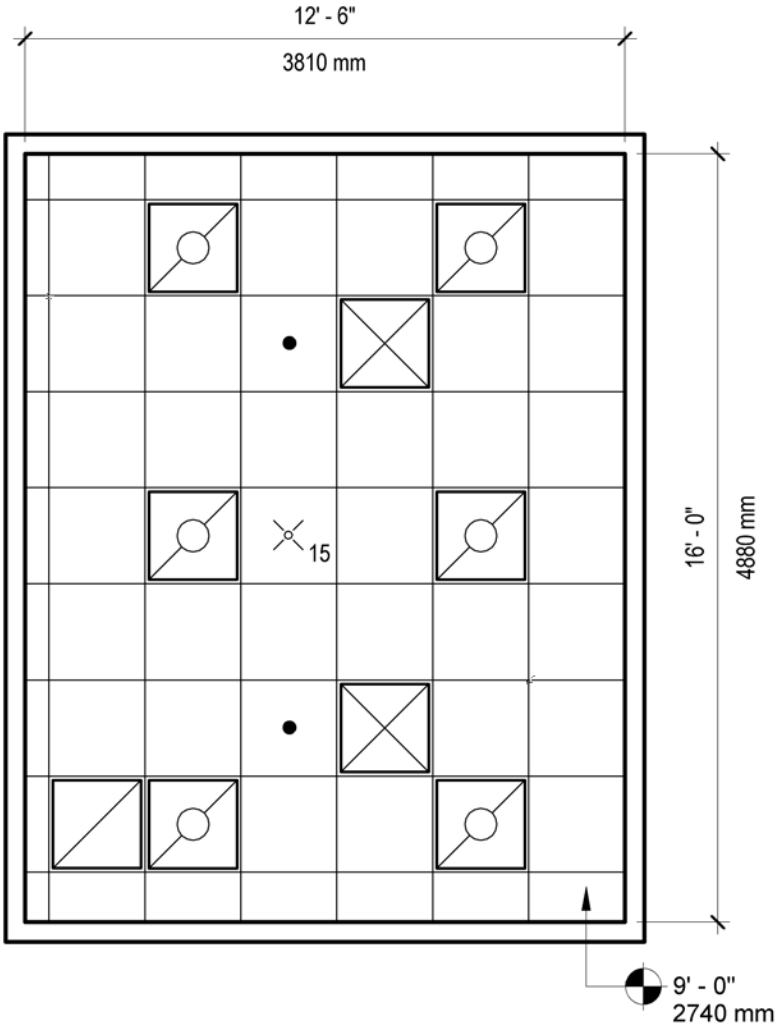
ELEVATION - 4

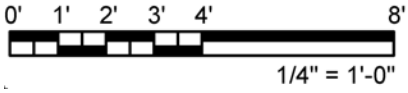
KEY NOTES:
1. SPECULA DISPENSER (OTOSCOPE ACCESSORY).



4.9.4 Reflected Ceiling Plan

Posturography Room (AUDP2)





200 NSF	18.6 NSM

4.9.5 Room Data Sheet

Posturography Room (AUDP2)

ARCHITECTURAL	
Number of People:	3
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions/Wall Finish:	GWB/P (Note 1, 3)
Base:	m:RB h:4" (100 mm)
Floor Finish:	LVT
Door:	m:Wood t:19 (Note 2) s:V
Hardware:	4
Slab Depression:	N/A
Acoustical Criteria:	Notes 3, 4
Ceiling:	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	50 STC, 50 IIC
Walls at Adjacent Room:	50 STC
Walls at Corridor:	45 STC
Special Construction:	N/A

Notes:
1) Ref. Note 64, PG-18-14
2) STC 40 rated acoustical door
3) Increase the minimum STC rating of walls 5 STC for every 5 dBA increase in sound level above normal speech level (65 dBA 3'-0" (910 mm) from the speaker) in the adjacent room
4) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).

LIGHTING	
Workplane Height:	2'-6" (760 mm)
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC)
Maintained Avg. Illumination-Task Focus:	N/A
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type
Lamps:	LED, T5, or T8 Fluorescent
CCT:	3500K
CRI:	80, minimum
Controls:	Multi-Level Control via Linear Dimming, Step Dimming, or Dual-Ballast Switching.
Special Requirements:	N/A

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:
1) Coordinate electrical connections with equipment to be installed
2) Receptacles on all walls

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (See Note 1)

Notes:
1) Where telehealth services will be provided, computer workstation shall include dual monitors, speakers, video camera, and microphone.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Electronic Sensor
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Visual (15 cd)
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.9.6 Equipment List

Table 24: Posturography Room (AUDP2) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	4	VV	Telecommunication outlet location.
A1014	Telephone, Wall Mounted, 1 Line, With Speaker	1	VV	Telephone, Wall Mounted, 1 Line, with Speaker
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5145	Hook, Garment, Double, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A6046	Artwork, Decorative, With Frame	1	VV	This JSN is to be used for determining and defining location of decorative artwork.
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.
CT020	Countertop, Solid Surface	1	CC	A solid, nonporous countertop with a smooth seamless appearance. Easy to clean and maintain and with proper cleaning does not support the growth of mold. An acrylic-based solid surface product. Standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a choice of colors and depths. Used in lab and other hospital areas requiring optimum physical and chemical resisting properties.
F0205	Chair, Side With Arms	1	VV	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.
F0206	Chair, Side, Bariatric, With Arms	1	VV	A bariatric side chair with arms for use in a waiting room, lobby, or other patient area. Chair will have a padded seat and back and have a capacity of 800 pounds.
F0340	Stool, Self Adjusting	1	VV	Self adjusting stool. Consists of a foam padded upholstered seat with attached foot rest for added comfort. Mounted on swivel casters. Designed for doctor's use during examinations.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
M1803	Workstation, Computer, Wall Mounted, Adjustable	1	VV	A wall mounted computer workstation with height adjustable monitor and keyboard arms. Keyboard and monitor can be stored within 8" to 10" of wall. Fingertip adjustability for keyboard and monitor enable frequent position changes. Unit contains an integrated cable management system to hide wires. A separate wall-mounted CPU holder is included.
M8182	Computerized Dynamic Posturography System	1	VV	Computerized equipment which uses a movable, dual forceplate support surface within a moveable surround (enclosure) to record patient's postural stability and motor reactions under different alterations of the platform and visual surround. Computerized analyses of responses isolate the functional contributions of vestibular inputs, visual inputs, somatosensory inputs, central integrating mechanisms, and neuromuscular system outputs for postural and balance control.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.
Z0015	Otoscope, Diagnostic, Desk or Wall Mounted	1	VV	Wall Mounted Otoscope: Integrated system with wall transformer, standard diagnostic otoscope, wall aneroid, and specula dispenser; includes 6 foot line cord with plug, and accepts two handles. Designed for use in patient rooms. Desk Set Otoscope: System contains universal charger, lithium ion handle and lithium ion battery, 3.5v otoscope and separate wall mounted specula dispenser; includes 6 foot line cord with plug and accepts two handles. Designed for use in patient rooms.
Z1019	Cabinet, U/C/B, 1 Shelf, 1 Drawer, 1 DO, 33"x30"x24"	1	CC	Standing height under counter base cabinet with one drawer and cabinet with one adjustable shelf. Also referred to as a base cabinet with drawer and door. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Hardware includes hinges, full extension drawer slides, pulls, anti-tilt shelf standards, and adjustable glides.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z1018	Cabinet, ADA Sink Support, 36" W	1	CC	Wall mounted sink support cabinet for drop-in sink with vertical fascia and angled ADA profile, also referred to as ADA sink cabinet. Removable front panel to permit access to plumbing. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Includes all attaching hardware including support rail.
Z1023	Cabinet, W/H, 2 Shelf, 1 DO, Sloping Top, 38"x30"x13"	1	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left-hinged door, and sloping top. Also referred to as a solid hinged single door case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.

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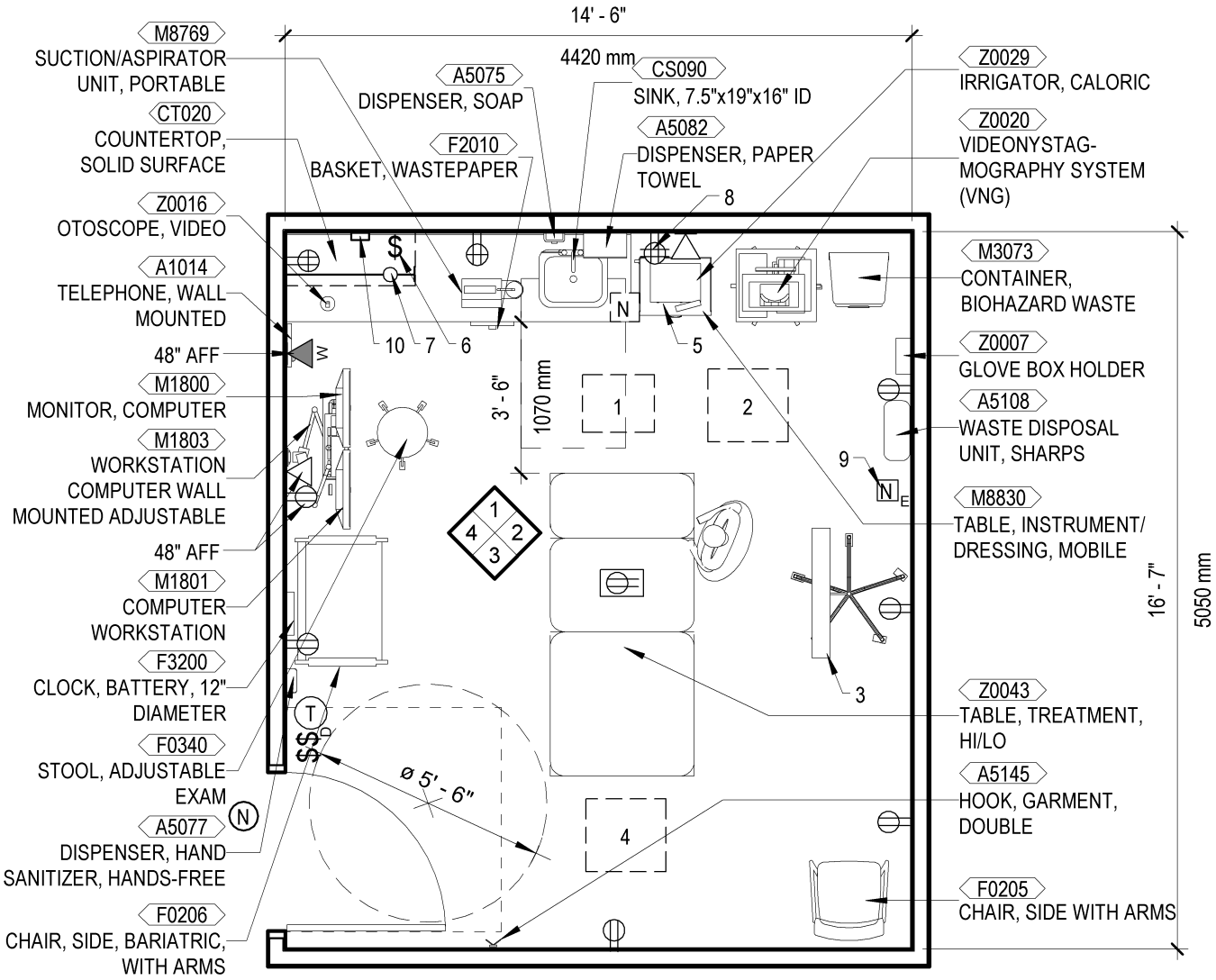
4.10 Vestibulography Room (AUDP3)

4.10.1 Axonometric View

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

4.10.2 Floor Plan

Vestibulography Room (AUDP3)



KEY NOTES:
1. IRRIGATOR POSITION DURING TESTING.
2. VNG SYSTEM CART POSITION DURING TESTING.
3. VNG SYSTEM COMPONENT, LIGHT BAR ON MOBILE STAND.
4. LIGHT BAR POSITION DURING TESTING.
5. IF WATER IRRIGATOR IS USED, PROXIMITY TO SINK IS REQUIRED.
6. SWITCH CONTROLS UNDERCABINET LIGHT.
7. UNDERCABINET LIGHT, TYP.
8. GFI RECEPTACLE.
9. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
10. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

0' 1' 2' 3' 4' 8'

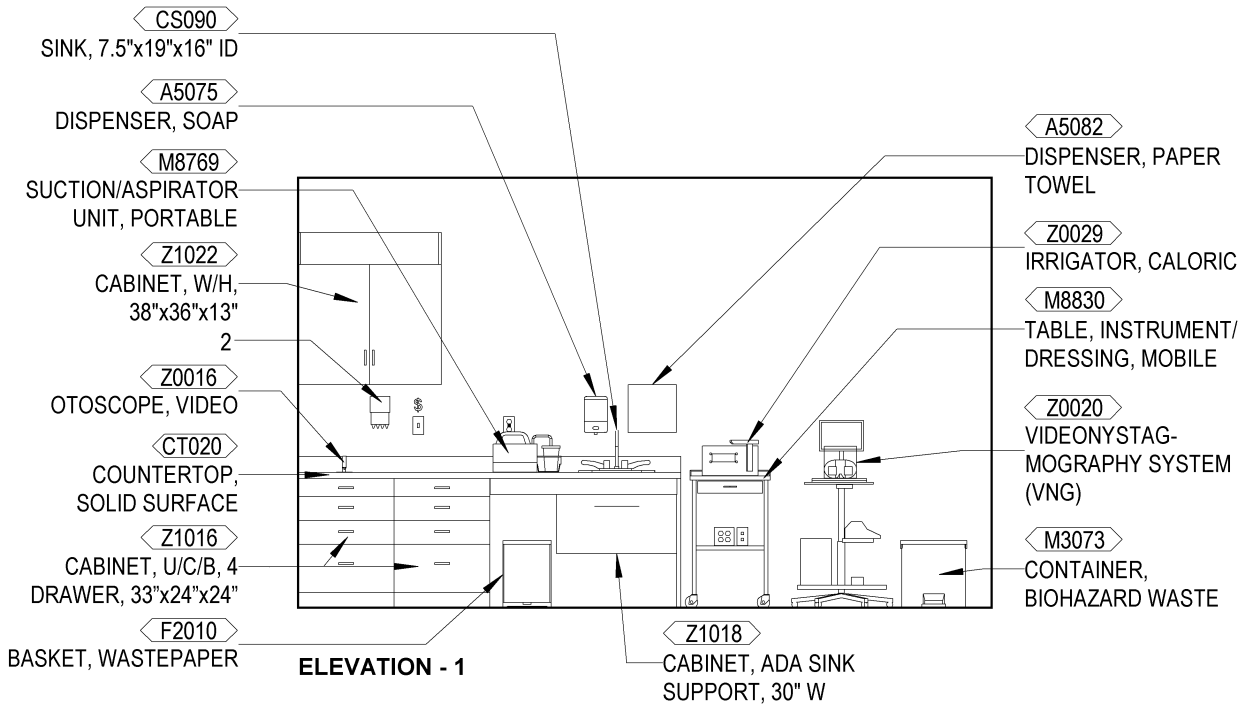
1/4" = 1'-0"

240 NSF	22.3 NSM

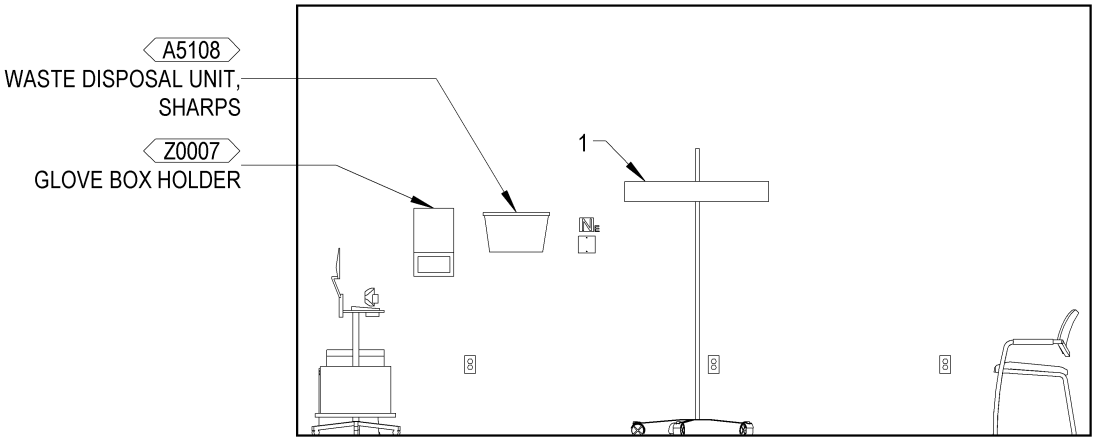
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.10.3 Interior Elevations

Vestibulography Room (AUDP3)

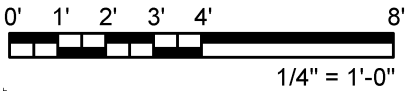


ELEVATION - 1



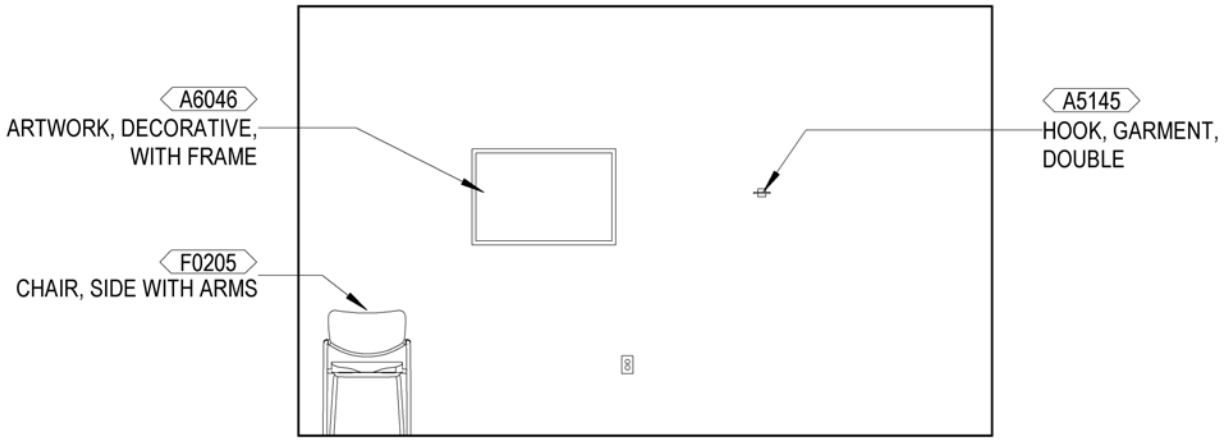
ELEVATION - 2

KEY NOTES:
1. VNG SYSTEM COMPONENT, LIGHT BAR ON MOBILE STAND.
2. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

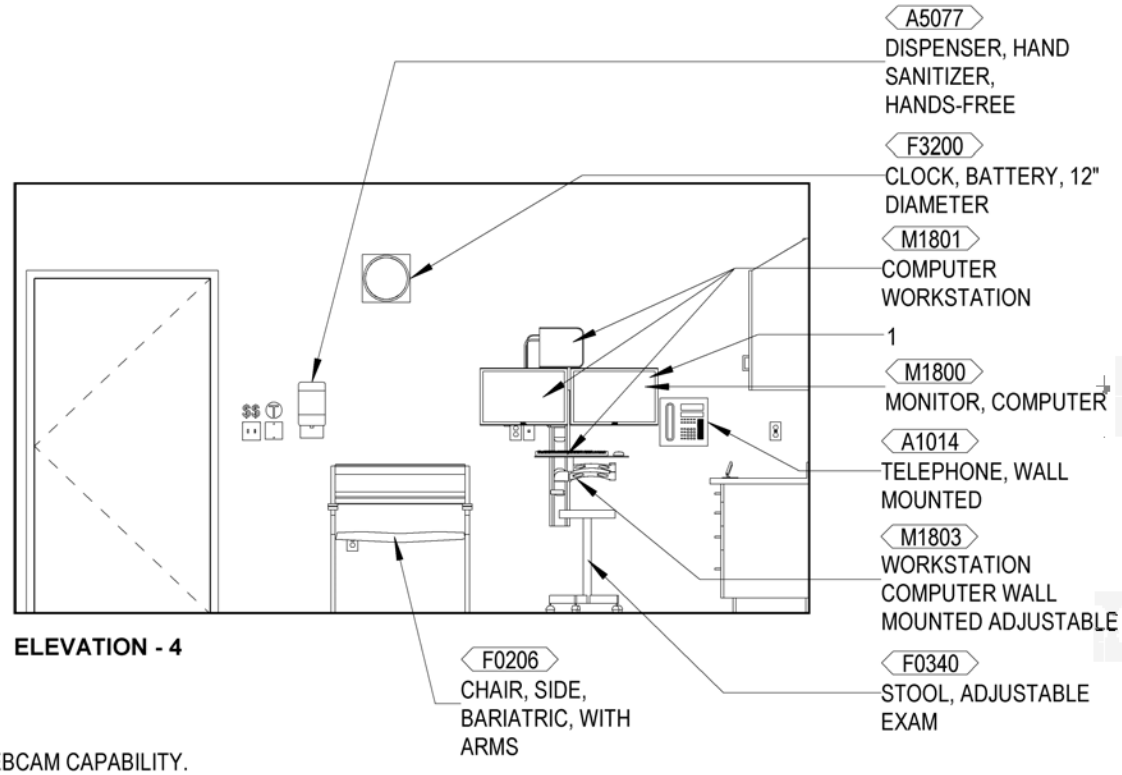


Interior Elevations

Vestibulography Room (AUDP3)

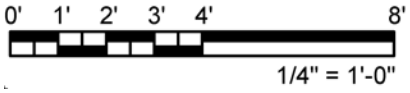


ELEVATION - 3



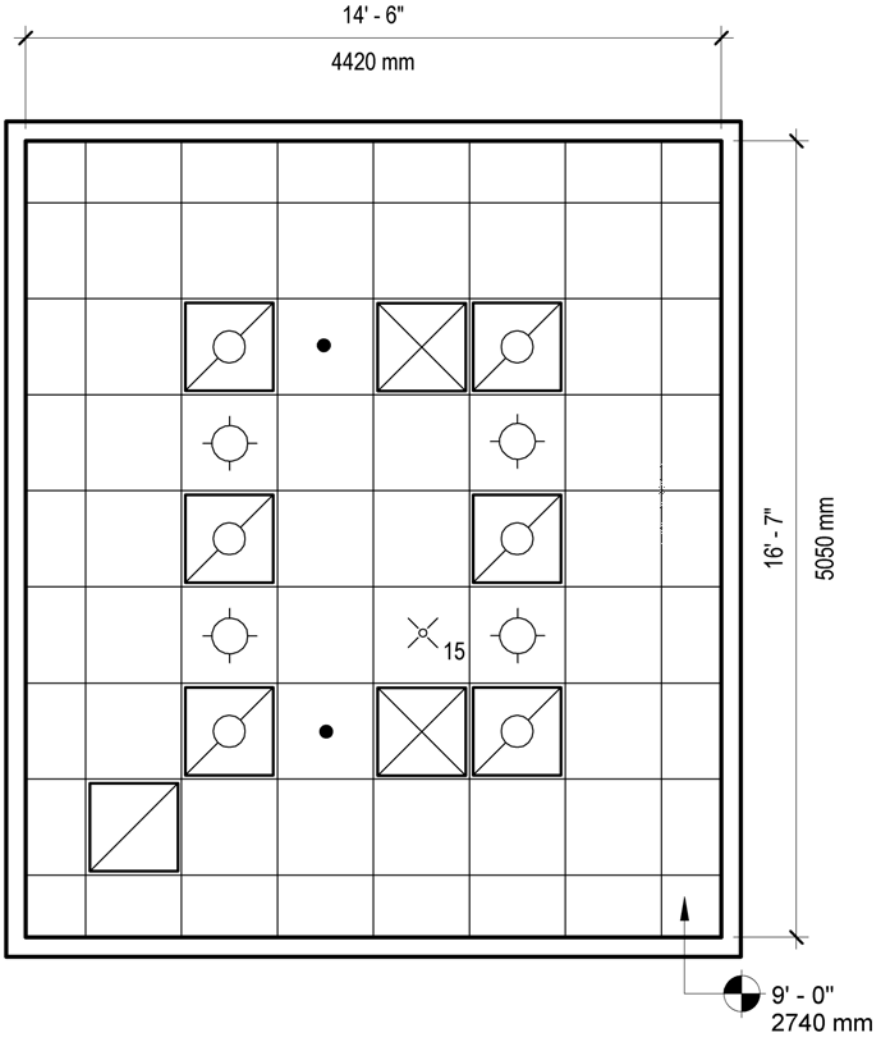
ELEVATION - 4

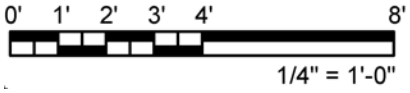
KEY NOTES:
1. MONITOR WITH WEBCAM CAPABILITY.



4.10.4 Reflected Ceiling Plan

Vestibulography Room (AUDP3)





240 NSF	22.3 NSM

4.10.5 Room Data Sheet

Vestibulography Room (AUDP3)

ARCHITECTURAL	
Number of People:	4
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions /Wall Finish:	GWB/P (Note 1, 3)
Base:	m:RB h:4" (100 mm)
Floor Finish:	LVT
Door:	m:Wood t:19 (Note 2) s:V
Hardware:	4
Slab Depression:	N/A
Acoustical Criteria:	Notes 3, 4
Ceiling	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	50 STC, 50 IIC
Walls at Adjacent Room:	50 STC
Walls at Corridor:	45 STC
Special Construction:	N/A

Notes:
1) Ref. Note 64, PG-18-14
2) STC 40 rated acoustical door
3) Increase the min. STC rating of walls 5 STC for every 5 dBA increase in sound level above normal speech level (65 dBA 3'-0" (910 mm) from the speaker) in the adjacent room.
4) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).

LIGHTING	
Workplane Height:	2'-6" (760 mm)
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC)
Maintained Avg. Illumination-Task Focus:	1000 Lux (100 FC) at Exam Table
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type. 6" (150 mm) LED or CFL Downlights
Lamps:	LED, T5 or T8 Fluorescent, 26W DTT CFL
CCT:	3500K
CRI:	80, minimum
Controls:	Separate Downlighting Zone with Linear Dimming to Accommodate Dark Room during Test. Separate Toggle Switch for Control of Undercabinet Lighting.
Special Requirements:	N/A

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:
1) Coordinate electrical connections with equipment to be installed
2) Receptacles on all walls

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (See Note 1)

Notes:
1) Where telehealth services will be provided, computer workstation shall include dual monitors, speakers, video camera, and microphone.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Manual
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	Note 1
Oxygen:	No

Notes:
1) Provide (1) at VAMC

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Visual (15 cd)
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.10.6 Equipment List

Table 25: Vestibulography Room (AUDP3) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	3	VV	Telecommunication outlet location.
A1014	Telephone, Wall Mounted, 1 Line, With Speaker	1	VV	Telephone, Wall Mounted, 1 Line, with Speaker
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5108	Waste Disposal Unit, Sharps	1	VV	A container for collecting and transporting syringes and other sharps for decontamination and disposal. Available in 2 gallon and 8 gallon with locking rotor. Complies with OSHA regulations for handling sharps.
A5145	Hook, Garment, Double, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A6046	Artwork, Decorative, With Frame	1	VV	This JSN is to be used for determining and defining location of decorative artwork.
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.
CT020	Countertop, Solid Surface	1	CC	A solid, nonporous countertop with a smooth seamless appearance. Easy to clean and maintain and with proper cleaning does not support the growth of mold. An acrylic-based solid surface product. Standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a choice of colors and depths. Used in lab and other hospital areas requiring optimum physical and chemical resisting properties.
F0205	Chair, Side With Arms	1	VV	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.
F0206	Chair, Side, Bariatric, With Arms	1	VV	A bariatric side chair with arms for use in a waiting room, lobby, or other patient area. Chair will have a padded seat and back and have a capacity of 800 pounds.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F0340	Stool, Self Adjusting	1	VV	Self adjusting stool. Consists of a foam padded upholstered seat with attached foot rest for added comfort. Mounted on swivel casters. Designed for doctor's use during examinations.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
M1803	Workstation, Computer, Wall Mounted, Adjustable	1	VV	A wall mounted computer workstation with height adjustable monitor and keyboard arms. Keyboard and monitor can be stored within 8" to 10" of wall. Fingertip adjustability for keyboard and monitor enable frequent position changes. Unit contains an integrated cable management system to hide wires. A separate wall-mounted CPU holder is included.
M3073	Container, Biohazard Waste, Step-on, Fire Safe	1	VV	A biohazard waste container with a step-on lid. The container will have a capacity of approximately 12 gallons and be made of a fire safe material.
M8769	Suction/Aspirator Unit, Portable	1	VV	General purpose suction apparatus with rechargeable battery and 1500 ml disposable collection canister.
M8830	Table, Instrument/Dressing, Mobile	1	VV	Mobile instrument/dressing table, approximately 34" H x 20" W x 16" D Corrosion resistant stainless steel mobile table with sound-deadening shelf and drawer. Unit is mounted on 2" casters. Designed for all purpose use in the hospital or clinic.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.
Z0016	Otoscope, Video	1	VV	Wireless or wired device, which provides video of ear canal and tympanic membrane, and may be used alone or with laptop or PC to store images. Instrument incorporates a rod otoscope with removable otic speculum, fiber optic illumination, and high resolution video camera. Wired units utilize USB connection.
Z0020	Videonystagmography (VNG) System	1	VV	A technology for testing inner ear/peripheral and central vestibular functions, a process known as vestibular assessment. It involves the use of infrared goggles to trace eye movements during visual stimulation, positional changes, and caloric stimulation. System components include laptop computer, infrared goggles, digital light bar [with optional stand], and mobile cart [optional]. Used in conjunction with air or water caloric irrigator.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z0029	Irrigator, Caloric	1	VV	Air or water caloric irrigator: Used for stimulating the motion sensors in the ear of patients with dizziness or balance problems. Water caloric irrigator: Used in conjunction with the VNG system, the caloric water irrigator stimulates the motion sensors in the ear using warm or cool water pumped into the external canal. The irrigator includes a handle with ear illuminator and pushbutton water flow start/stop switch, a smooth-flow water pump, exterior water refill reservoir, electric water heater, LCD display of status, time, and temperature, front panel pushbutton controls, and a USB interface for a VNG PC. Air Caloric Irrigator: Used in conjunction with the VNG system, the air caloric irrigator device is used for stimulating the horizontal semi-canal by pumping warmed or cooled room air into the external ear canal in patients with a suspected vestibular problem. The device includes an otoscope, air pump, Peltier heater/cooler, water pump, LCD display, and push button temperature controls.
Z0043	Table, Treatment, Hi/Lo	1	VV	Three-section high/low metal treatment table with upholstered foam pad top and adjustable to full chair position; head section shall adjust to a minimum of 30 degrees. Unit consists of a hydraulic electromechanical power system operated with a hand or foot control. 40" wide.
Z1016	Cabinet, U/C/B, 4 Drawer, 33"x24"x24"	2	CC	Standing height under counter base cabinet with three or four full width drawers; configuration to be determined based on facility needs. Also referred to as a drawer cabinet. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge banding. Hardware includes hinges, full extension drawer slides, pulls, and adjustable glides.
Z1018	Cabinet, ADA Sink Support, 30" W	1	CC	Wall mounted sink support cabinet for drop-in sink with vertical fascia and angled ADA profile, also referred to as ADA sink cabinet. Removable front panel to permit access to plumbing. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Includes all attaching hardware including support rail.
Z1022	Cabinet, W/H, 2 Shelf, 2 DO, Sloping Top, 38"x36"x13"	2	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left hinged doors, and sloping top. Also referred to as a solid hinged double door wall case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.

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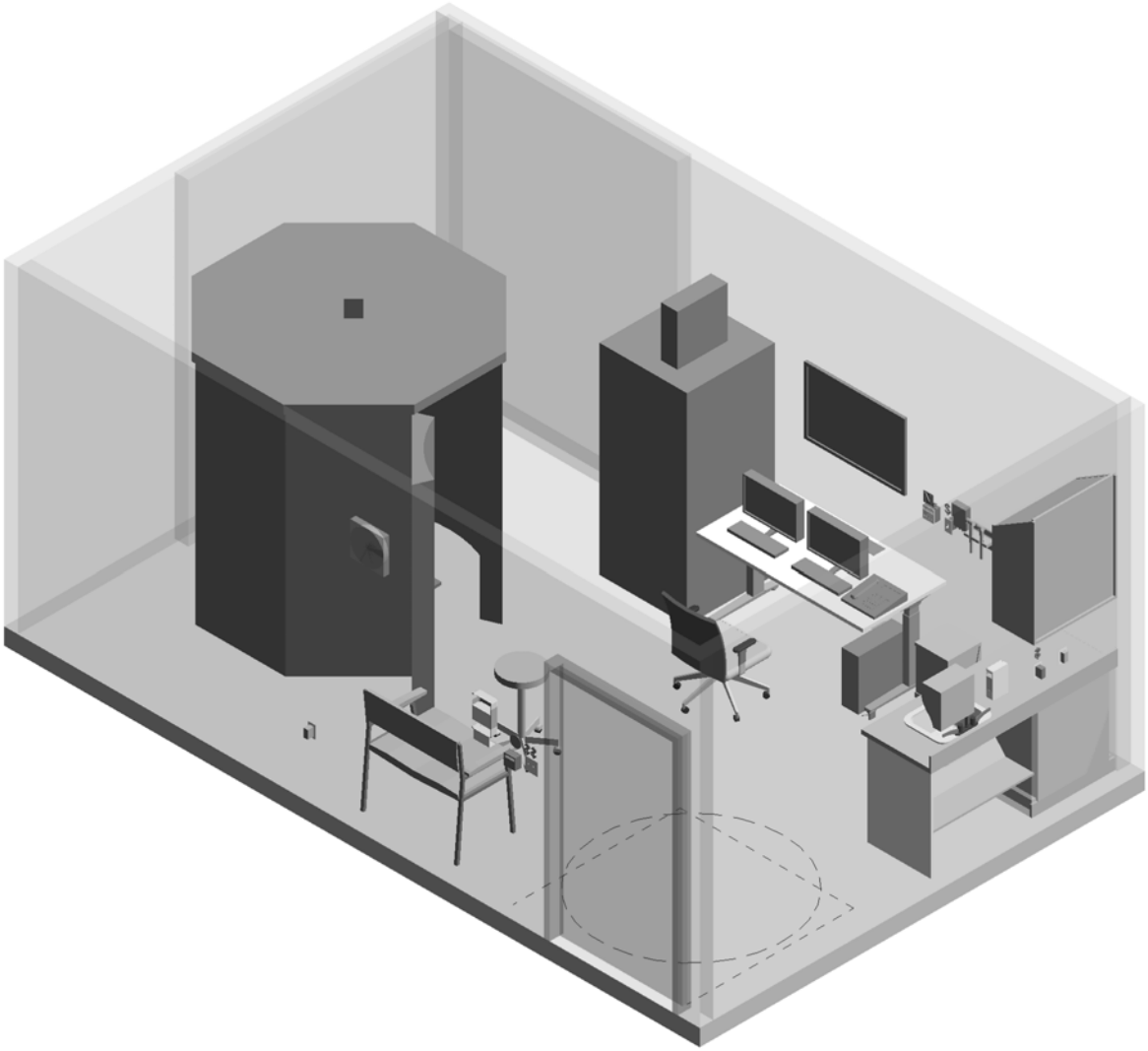
4.11 Rotary Chair Room (AUDP4)

4.11.1 Axonometric View

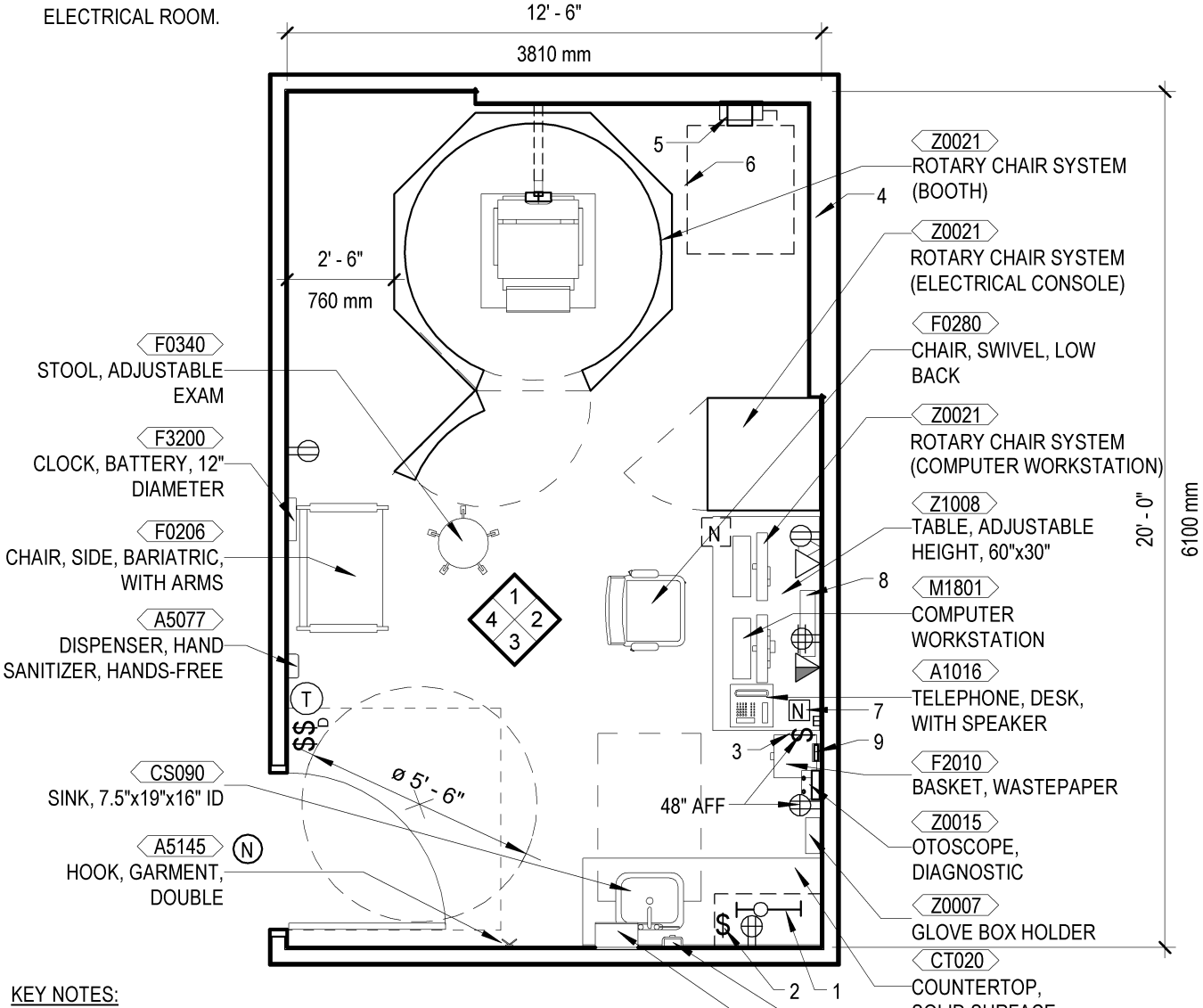


NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.11.2 Floor Plan

Rotary Chair Room (AUDP4)

GENERAL NOTES:
1. PROVIDE SPACE FOR ROTARY CHAIR SYSTEM ISOLATION TRANSFORMER AND DISCONNECTS IN SEPARATE FACILITY ELECTRICAL ROOM.



KEY NOTES:
1. UNDERCABINET LIGHT, TYP.
2. SWITCH CONTROLS UNDERCABINET LIGHT.
3. EMERGENCY POWER-OFF SWITCH. CONNECT TO ROTARY CHAIR SHUTDOWN CIRCUIT.
4. RECESSED ELECTRICAL DIVIDED WIREWAY IN FURRED PARTITION.
5. LOCAL POWER FUSED DISCONNECT SWITCH.
6. CLEARANCE AT DISCONNECT SWITCH, PER NEC.
7. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
8. INTEGRAL PLUG STRIP; TABLE ACCESSORY.
9. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

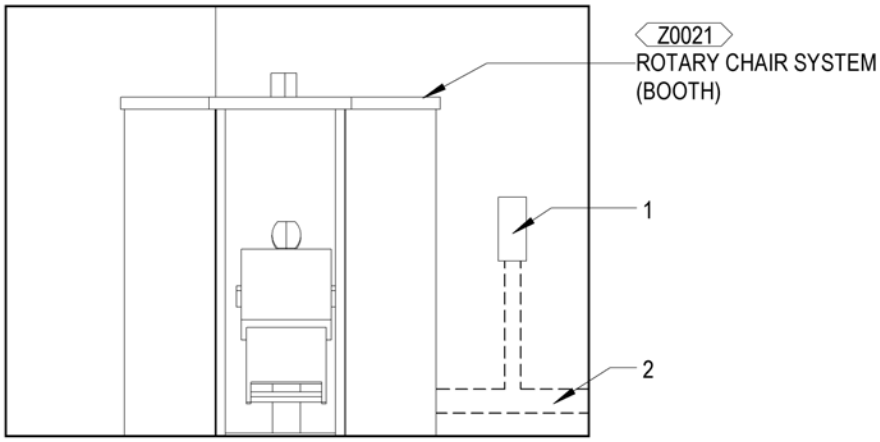
0' 1' 2' 3' 4' 8'
1/4" = 1'-0"

250 NSF	23.2 NSM

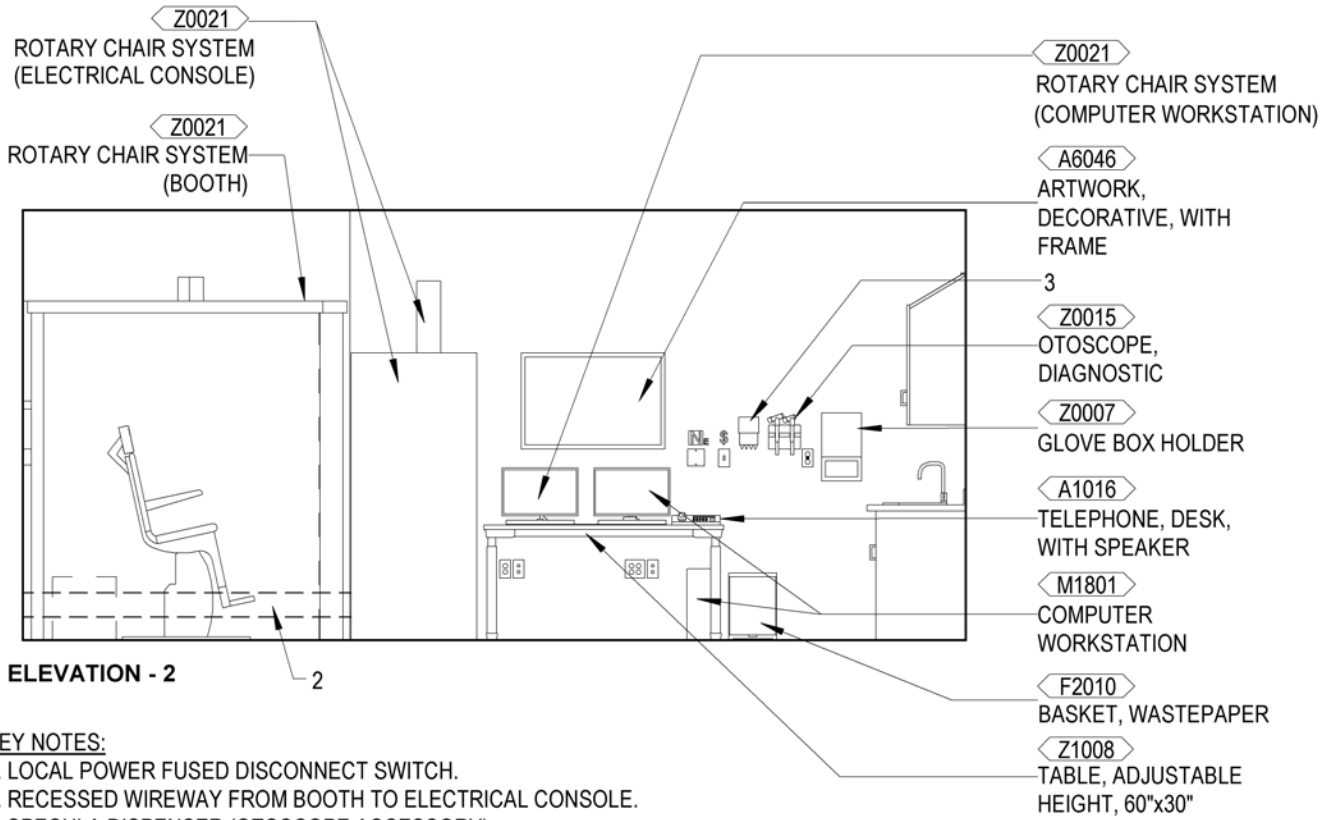
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.11.3 Interior Elevations

Rotary Chair Room (AUDP4)



ELEVATION - 1



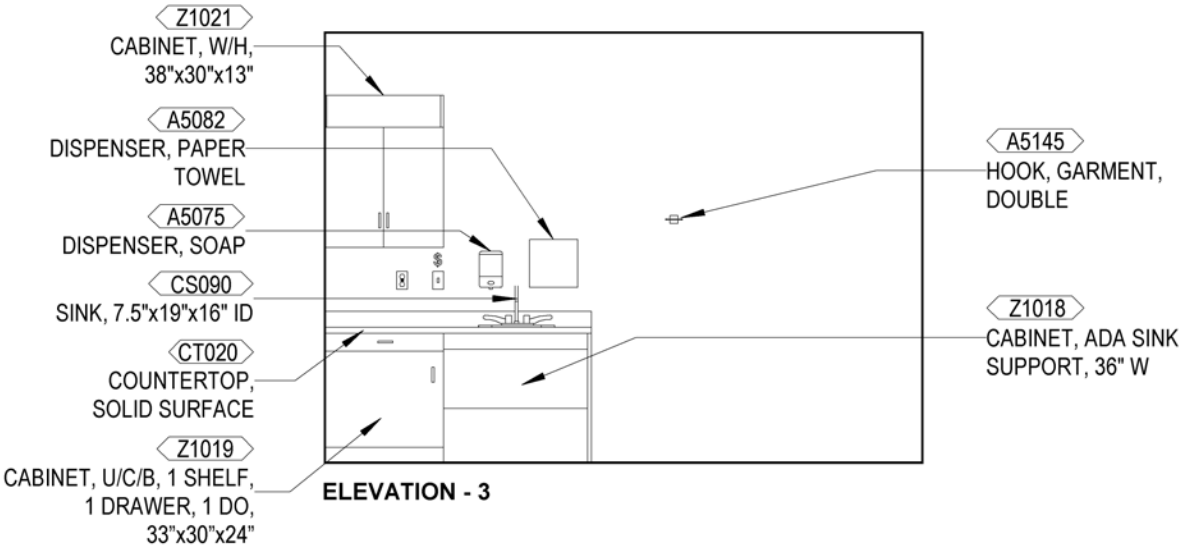
ELEVATION - 2

KEY NOTES:
1. LOCAL POWER FUSED DISCONNECT SWITCH.
2. RECESSED WIREWAY FROM BOOTH TO ELECTRICAL CONSOLE.
3. SPECULA DISPENSER (OTOSCOPE ACCESSORY).

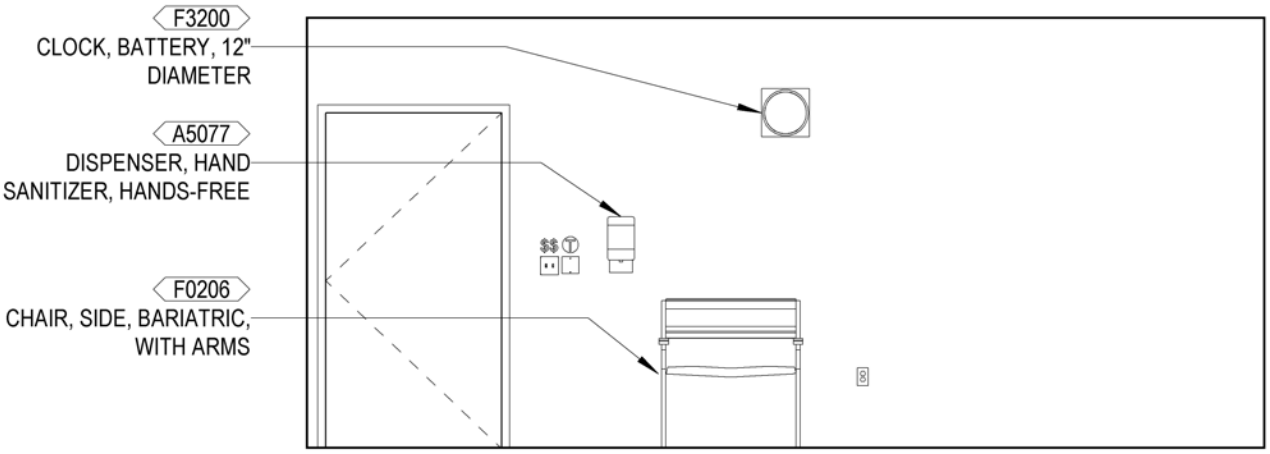
1/4" = 1'-0"

Interior Elevations

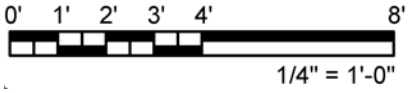
Rotary Chair Room (AUDP4)



ELEVATION - 3

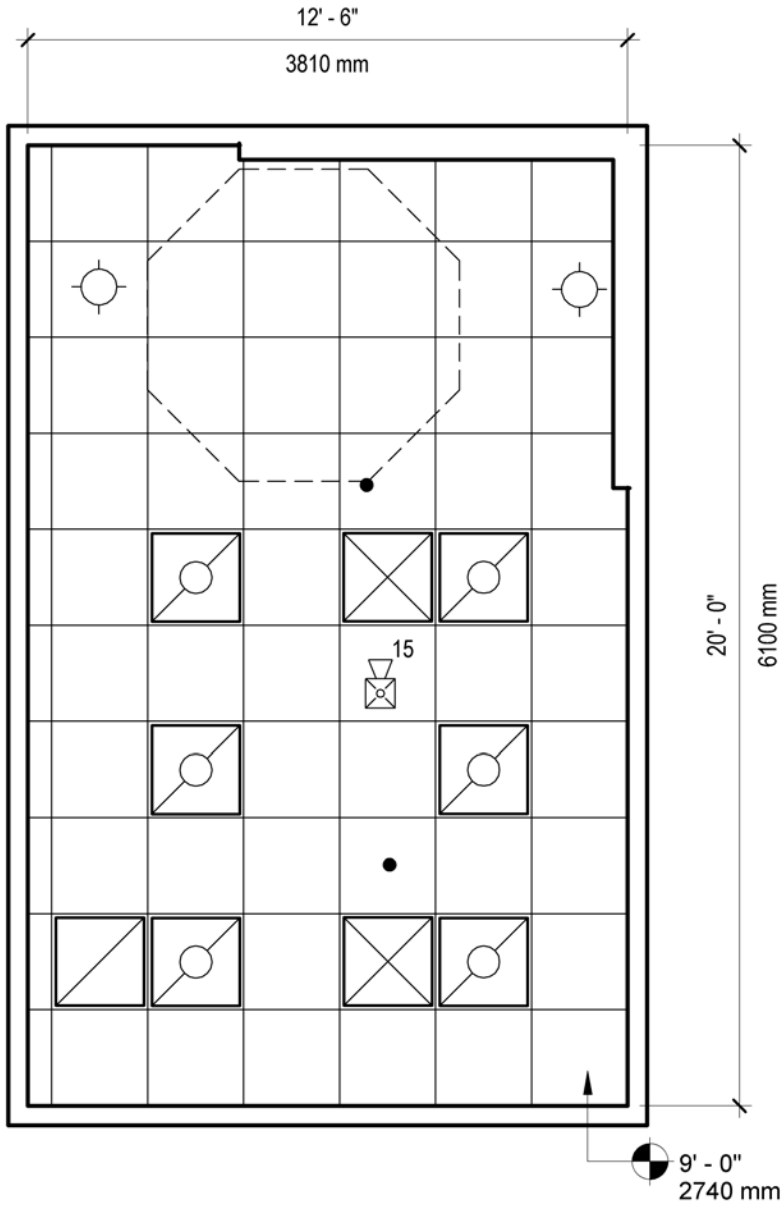


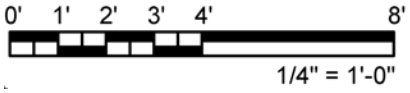
ELEVATION - 4



4.11.4 Reflected Ceiling Plan

Rotary Chair Room (AUDP4)





250 NSF	23.2 NSM

4.11.5 Room Data Sheet

Rotary Chair Room (AUDP4)

ARCHITECTURAL	
Number of People:	3
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions/Wall Finish:	GWB/P (Note 1, 3)
Base:	m:RB h:4" (100 mm)
Floor Finish:	LVT
Door:	m:Wood t:19 (Note 2) s:V
Hardware:	4
Slab Depression:	N/A
Acoustical Criteria:	Notes 3, 4
Ceiling:	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	50 STC, 50 IIC
Walls at Adjacent Room:	50 STC
Walls at Corridor:	45 STC
Special Construction:	N/A

Notes:
1) Ref. Note 64, PG-18-14
2) STC 40 rated acoustical door
3) Increase the minimum STC rating of walls 5 STC for every 5 dBA increase in sound level above normal speech level (65 dBA 3'-0" (910 mm) from the speaker) in the adjacent room
4) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).

LIGHTING	
Workplane Height:	2'-6" (760 mm)
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC)
Maintained Avg. Illumination-Task Focus:	N/A
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type
Lamps:	LED, T5, or T8 Fluorescent
CCT:	3500K
CRI:	80, minimum
Controls:	Multi-Level Control via Linear Dimming, Step Dimming, or Dual-Ballast Switching. Separate Toggle Switch to Control Undercabinet Lighting.
Special Requirements:	N/A

Notes:
1) Avoid locating light fixtures above rotary chair equipment.

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:
1) Coordinate power requirements with equipment vendor
2) Provide local disconnect for rotary chair equipment within same room and within sight of equipment
3) Isolation transformer located in facility electrical closet. Consider voltage drop, etc. for length of feeder circuit from isolation transformer to rotary chair equipment.
4) Receptacles on All Walls

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (See Note 1)

Notes:
1) Where telehealth services will be provided, computer workstation shall include dual monitors, speakers, video camera, and microphone.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Electronic Sensor
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Audible, Visual (15 cd)
Sprinkler:	Recessed pendant, center of tile – Booth Excluded
Hazard Type:	Light

4.11.6 Equipment List

Table 26: Rotary Chair Room (AUDP4) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	2	VV	Telecommunication outlet location.
A1016	Telephone, Desk, With Speaker	1	VV	Telephone, desk, with speaker.
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5145	Hook, Garment, Double, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A6046	Artwork, Decorative, With Frame	1	VV	This JSN is to be used for determining and defining location of decorative artwork.
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.
CT020	Countertop, Solid Surface	1	CC	A solid, nonporous countertop with a smooth seamless appearance. Easy to clean and maintain and with proper cleaning does not support the growth of mold. An acrylic-based solid surface product. Standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a choice of colors and depths. Used in lab and other hospital areas requiring optimum physical and chemical resisting properties.
F0206	Chair, Side, Bariatric, With Arms	1	VV	A bariatric side chair with arms for use in a waiting room, lobby, or other patient area. Chair will have a padded seat and back and have a capacity of 800 pounds.
F0280	Chair, Swivel, Low Back	1	VV	Low back contemporary swivel chair, 37" high X 25" wide X 31" deep with a five (5) caster swivel base, arms and foam padded seat and back upholstered with either woven textile fabric or vinyl.
F0340	Stool, Self Adjusting	1	VV	Self adjusting stool. Consists of a foam padded upholstered seat with attached foot rest for added comfort. Mounted on swivel casters. Designed for doctor's use during examinations.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.
Z0015	Otoscope, Diagnostic, Desk or Wall Mounted	1	VV	Wall Mounted Otoscope: Integrated system with wall transformer, standard diagnostic otoscope, wall aneroid, and specula dispenser; includes 6 foot line cord with plug, and accepts two handles. Designed for use in patient rooms. Desk Set Otoscope: System contains universal charger, lithium ion handle and lithium ion battery, 3.5v otoscope and separate wall mounted specula dispenser; includes 6 foot line cord with plug and accepts two handles. Designed for use in patient rooms.
Z0021	Rotary Chair System	1	VV	The Rotary Chair system is a Neuro Otologic Test Center (NOTC) used to evaluate dizziness/balance problems. The information obtained from the Rotary Chair test supplements the videonystagmography (VNG) results and helps determine how the inner ear balance system is working. System components include a prefabricated enclosure with entry door and two-way communication system, rotary chair, electrical console ("generator cabinet"), computer/software system, and isolation transformer (to be located in facility electrical closet). The system requires site preparation for room configuration, review of structural capacity, and special electrical accommodations. Prefabricated enclosure size/configuration is vendor specific (circular or hexagonal are alternative configurations).
Z1008	Table, Adjustable Height, 60"X30"	1	VV	60"W x 30"D adjustable height electric pedestal table with C-foot configuration and integral wire management trough or tray. Height range varies by manufacturer and model, approximately 22" to 48". Steel tube construction with powder coat finish, and 1 ¼" thick top with high pressure laminate or wood veneer surface, gator-ply paper backer bottom face, and side edges of rigid Thermoplastic or color matched wood veneer. Die cast aluminum feet and top support; galvanized steel horizontal rails, zinc plated steel fasteners. System includes integral electrical components (including control box, cable trough, electric motor, power cord for table; U.L. listed pop-up power strip with minimum of two simplex receptacles, additional data and/or USB ports as needed per facility preference, and minimum 6' long power cord with plug), 2 grommets and adjustable glides for complete system.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z1018	Cabinet, ADA Sink Support, 36" W	1	CC	Wall mounted sink support cabinet for drop-in sink with vertical fascia and angled ADA profile, also referred to as ADA sink cabinet. Removable front panel to permit access to plumbing. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Includes all attaching hardware including support rail.
Z1019	Cabinet, U/C/B, 1 Shelf, 1 Drawer, 1 DO, 33"x30"x24"	1	CC	Standing height under counter base cabinet with one drawer and cabinet with one adjustable shelf. Also referred to as a base cabinet with drawer and door. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Hardware includes hinges, full extension drawer slides, pulls, anti-tilt shelf standards, and adjustable glides.
Z1021	Cabinet, W/H, 2 Shelf, 2 DO, Sloping Top, 38"x30"x13"	1	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left hinged doors, and sloping top. Also referred to as a solid hinged double door wall case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.

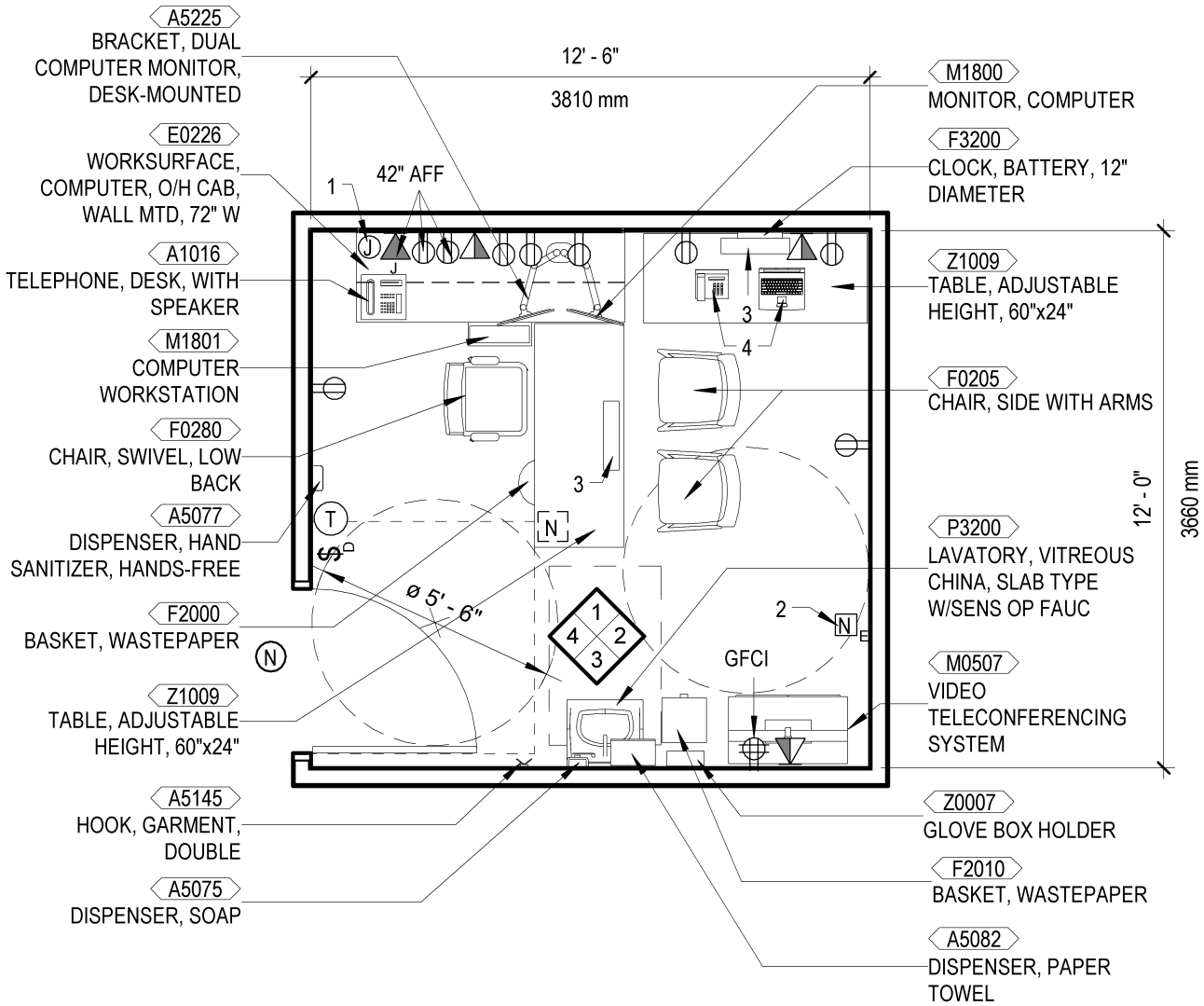
4.12 Cochlear Implant Mapping/Fitting Room (AUD05)

4.12.1 Axonometric View

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

4.12.2 Floor Plan

Cochlear Implant Mapping/Fitting Room (AUD05)



KEY NOTES:
1. CONNECT TO SYSTEMS FURNITURE.
2. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
3. INTEGRAL PLUG STRIP; TABLE ACCESSORY.
4. PLACEHOLDERS FOR A VARIETY OF ASSISTIVE LISTENING DEVICES TO BE USED FOR TRAINING AND DEMONSTRATIONS. EQUIPMENT TO BE DETERMINED BY LOCAL FACILITY.

0' 1' 2' 3' 4' 8'

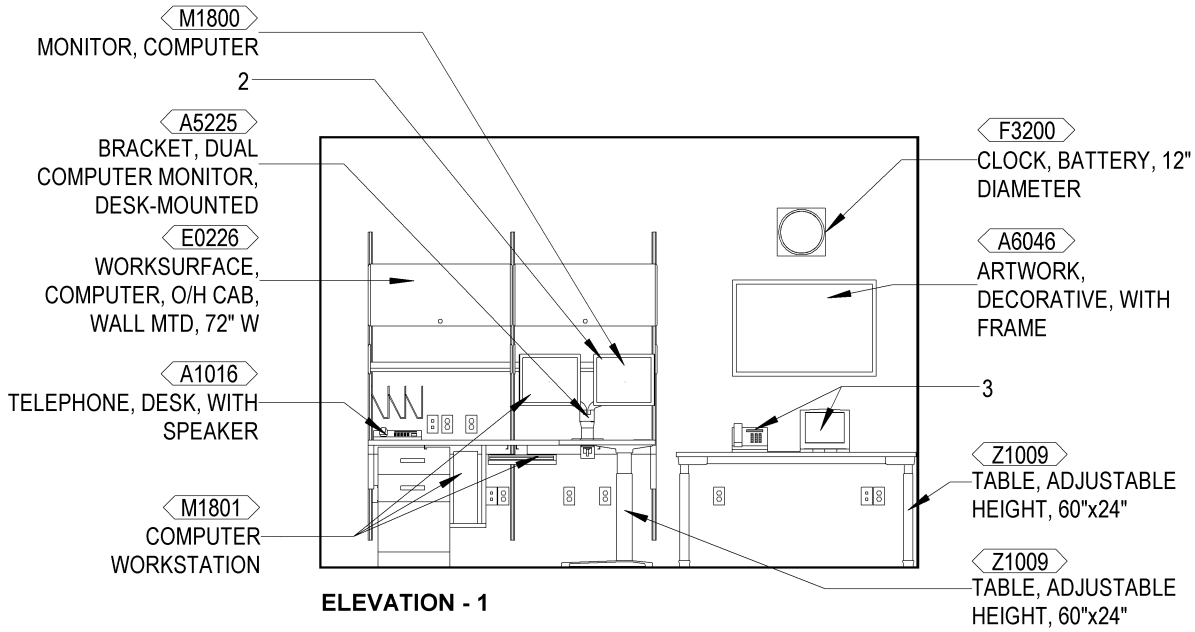
1/4" = 1'-0"

150 NSF	13.9 NSM

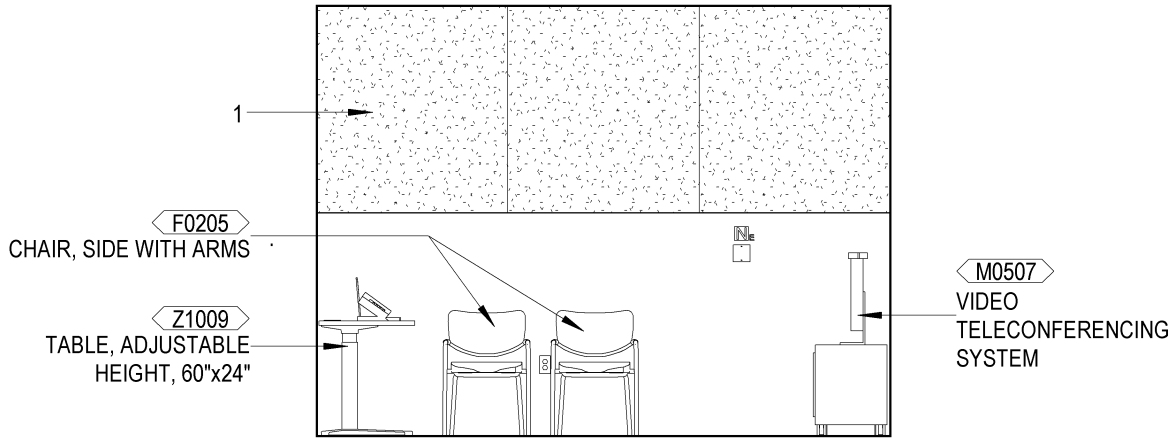
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.12.3 Interior Elevations

Cochlear Implant Mapping/Fitting Room (AUD05)



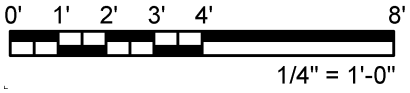
ELEVATION - 1



ELEVATION - 2

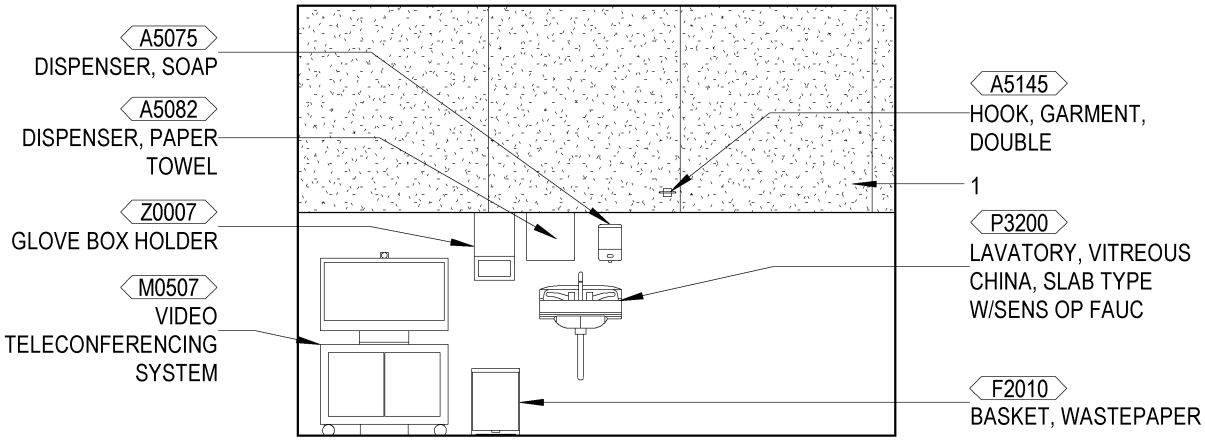
KEY NOTES:

1. SOUND ABSORPTIVE WALL TREATMENT-CONFIGURATION AND LOCATION MAY BE ADJUSTED PER ACTUAL ROOM CONFIGURATION. REFER TO ROOM DATA SHEET FOR MINIMUM CRITERIA.
2. MONITOR WITH WEBCAM CAPABILITY.
3. PLACEHOLDERS FOR A VARIETY OF ASSISTIVE LISTENING DEVICES TO BE USED FOR TRAINING AND DEMONSTRATIONS. EQUIPMENT TO BE DETERMINED BY LOCAL FACILITY.

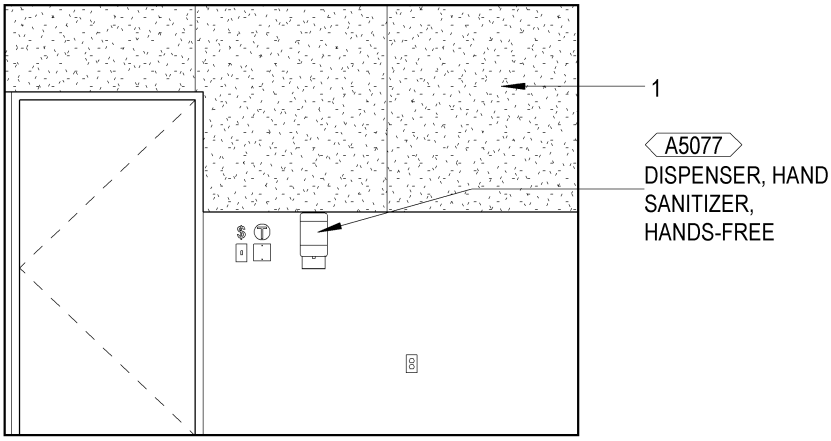


Interior Elevations

Cochlear Implant Mapping/Fitting Room (AUD05)



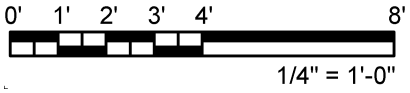
ELEVATION - 3



ELEVATION - 4

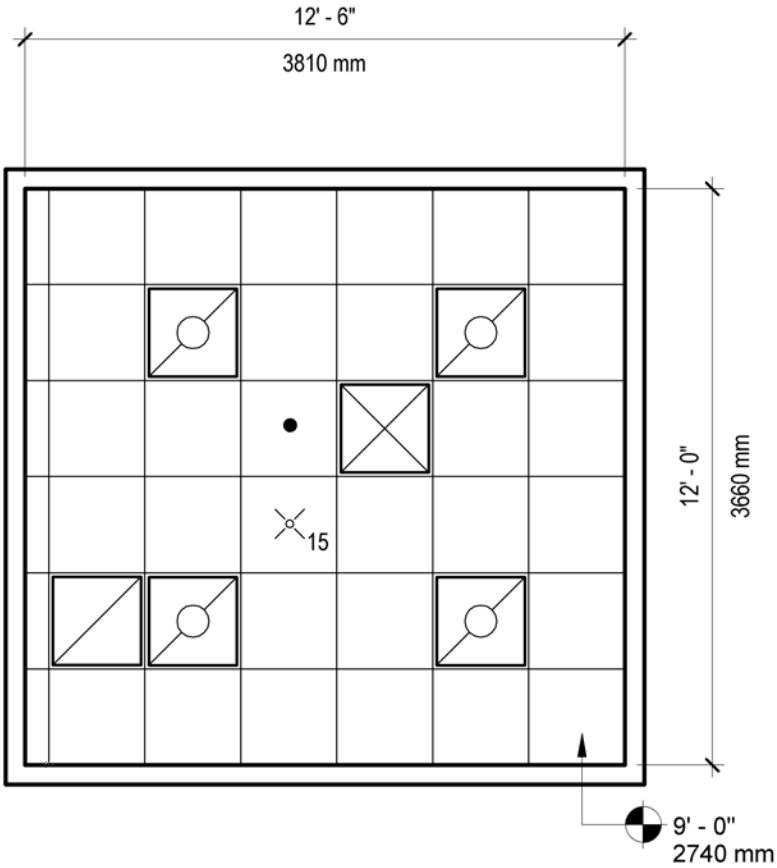
KEY NOTES:

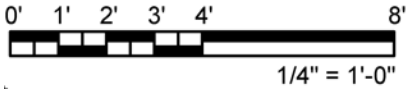
1. SOUND ABSORPTIVE WALL TREATMENT-CONFIGURATION AND LOCATION MAY BE ADJUSTED PER ACTUAL ROOM CONFIGURATION. REFER TO ROOM DATA SHEET FOR MINIMUM CRITERIA.



4.12.4 Reflected Ceiling Plan

Cochlear Implant Mapping/Fitting Room (AUD05)





150 NSF	13.9 NSM

4.12.5 Room Data Sheet

Cochlear Implant Mapping/Fitting Room (AUD05)

ARCHITECTURAL	
Number of People:	3
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions/Wall Finish:	GWB/P (Note 1, 5)
Base:	m:RB h:4" (100 mm)
Floor Finish:	CPT or LVT
Door:	m:Wood t:19 (Note 3 and 4) s:V
Hardware:	3
Slab Depression:	N/A
Acoustical Criteria:	Notes 4, 5, and 6
Ceiling:	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	55 STC, 55 IIC
Walls at Adjacent Room:	55 STC
Walls at Corridor:	45 STC

Special Construction: Minimum total area of 120 sq. ft. (11.2 NSM) of a nominal 2 in. (50 mm) thick sound absorptive wall treatment on at least two perpendicular walls. The sound absorptive wall treatment should have a minimum 0.90 NRC rating and a minimum 0.65 sound absorption coefficient at 250 Hz.

Notes:

1) Ref. Note 64, PG-18-14
2) Ref. Note 6, PG-18-14
3) 40 STC rated acoustical door
4) Narrow lite optional. If provided, use insulated or laminated glass unit to meet acoustical criteria in Note 3.
5) Increase the minimum STC rating of walls 5 STC for every 5 dBA increase in sound level above normal speech level (65 dBA 3'-0" (910 mm) from the speaker) in the adjacent room.
6) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).

LIGHTING	
Workplane Height:	At Floor
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC)
Maintained Avg. Illumination-Task Focus:	
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type
Lamps:	LED, T5, or T8 Fluorescent
CCT:	3500K
CRI:	80, minimum
Controls:	Multi-Level Control via Linear Dimming, Step Dimming, or Dual-Ballast Switching.
Special Requirements:	N/A

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:

1) Multiple Receptacles at Table and Above & Below Desk for Device Charging

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (See Note 1)

Notes:

1) Provide dedicated telemedicine cart. Computer workstation shall include dual monitors, speakers, video camera, and microphone.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Electronic Sensor
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Visual (15 cd)
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.12.6 Equipment List

Table 27: Cochlear Implant Mapping/Fitting Room (AUD05) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	4	VV	Telecommunication outlet location.
A1016	Telephone, Desk, With Speaker	1	VV	Telephone, desk, with speaker.
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5145	Hook, Garment, Double, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A5225	Bracket, Dual Computer Monitor, Desk-Mounted	1	VV	Desk-mounted bracket that supports two LCD computer monitors, or laptop and monitor configuration. Extends LCD's or labtop up to 25" with an adjustment range of 18". Desk clamp attaches to edge up to 2.6" thick. Maximum combined weight supported not to exceed 50 lbs.
A6046	Artwork, Decorative, With Frame	1	VV	This JSN is to be used for determining and defining location of decorative artwork.
E0226	Worksurface, Computer, O/H Cab, Wall Mtd, 72" W	1	VV	THIS TYPICAL INCLUDES: 3 Vertical Hanging Strips 2 Lockable Flipper Units 2 Shelves, Storage/Display 2 Lights 1 Tack board 2 Tool Rails 2 Paper Trays 1 Diagonal Tray 1 Cantilevered Work Surface 1 Adjustable Keyboard Tray 1 Stationary Pedestal, Box/Box/File 1 Pencil Drawer 1 CPU Holder
F0205	Chair, Side With Arms	2	VV	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.
F0280	Chair, Swivel, Low Back	1	VV	Low back contemporary swivel chair, 37" high X 25" wide X 31" deep with a five (5) caster swivel base, arms and foam padded seat and back upholstered with either woven textile fabric or vinyl.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F2000	Basket, Wastepaper, Fire Resistant	1	VV	Wastepaper basket, fire resistant, approximately 40 quart capacity. This unit is used to collect and temporarily store small quantities of paper refuse in patient rooms, administrative areas, and nursing stations. Size and shape varies depending on the application and manufacturer selected.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M0507	Video Teleconferencing System	1	VV	A video conferencing unit consisting of a camera, microphone, video/audio compression components integrated with the room's audio visual system. It shall provide live audio-visual conferencing capabilities to dispersed geographic sites.
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
P3200	Lavatory, Vitreous China, Slab Type	1	CC	Wall mounted, slab type, vitreous china, lavatory (approximately 7 x 15 x 10 inches) with faucet holes on 4 inch centers; electronic sensor operated, goose neck spout and grid strainer. It shall be suitable for use in clinics, offices, and patient care areas.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.
Z1009	Table, Adjustable Height, 60"X24"	2	VV	60"W x 24"D adjustable height electric pedestal table with C-foot configuration and integral wire management trough or tray. Height range varies by manufacturer and model, approximately 22" to 48". Steel tube construction with powder coat finish, and 1 ¼" thick top with high pressure laminate or wood veneer surface, gator-ply paper backer bottom face, and side edges of rigid Thermoplastic or color matched wood veneer. Die cast aluminum feet and top support; galvanized steel horizontal rails, zinc plated steel fasteners. System includes integral electrical components (including control box, cable trough, electric motor, power cord for table; U.L. listed pop-up power strip with minimum of two simplex receptacles, data and/or USB ports as needed per facility preference, and minimum 6' long power cord with plug), 2 grommets and adjustable glides for complete system.

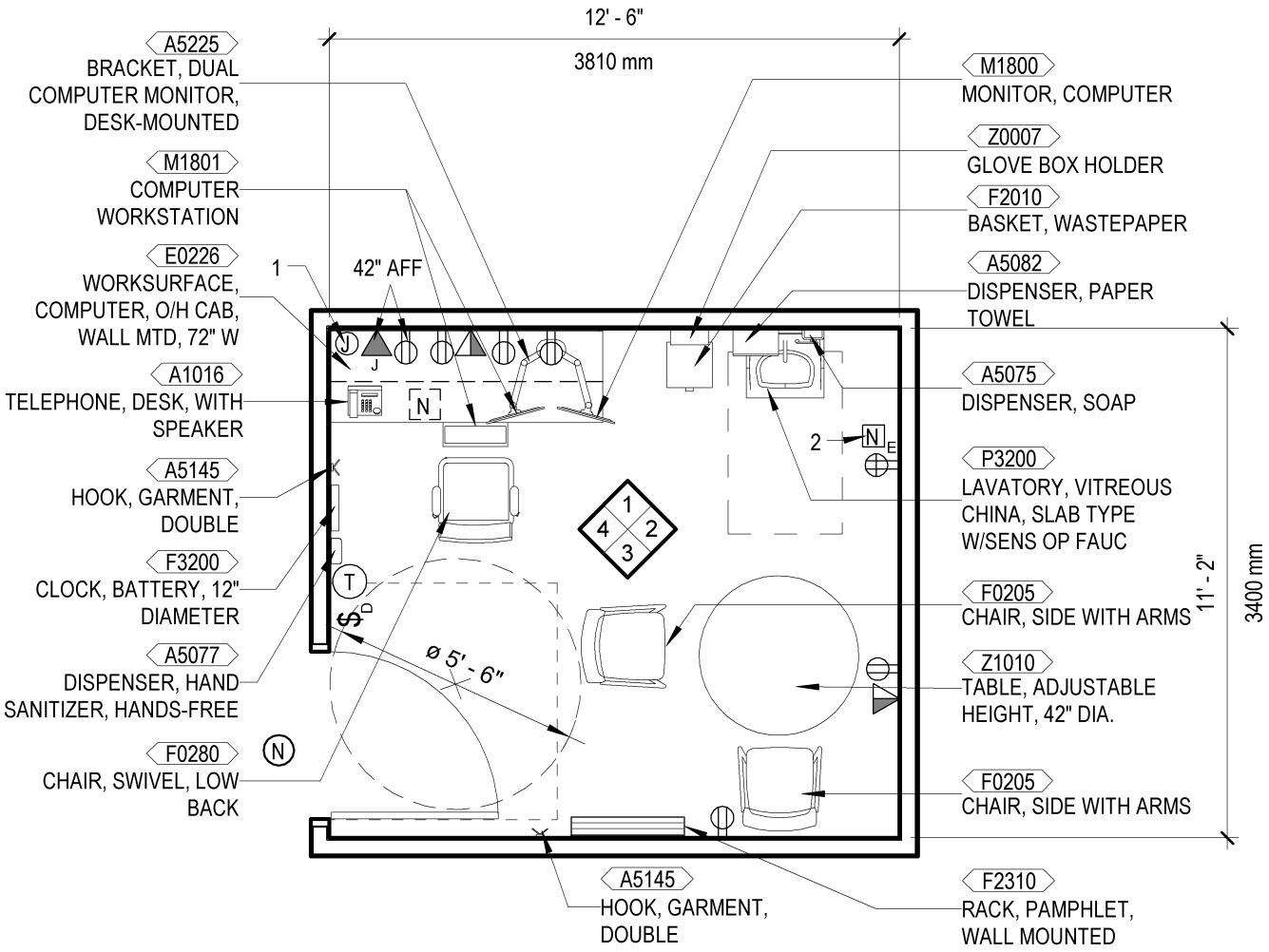
4.13 Office/Treatment Room, Speech-Language Pathology (SPL01)

4.13.1 Axonometric View

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

4.13.2 Floor Plan

Office/Treatment Room, Speech-Language Pathology (SPL01)



KEY NOTES:
1. CONNECT TO SYSTEMS FURNITURE.
2. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.

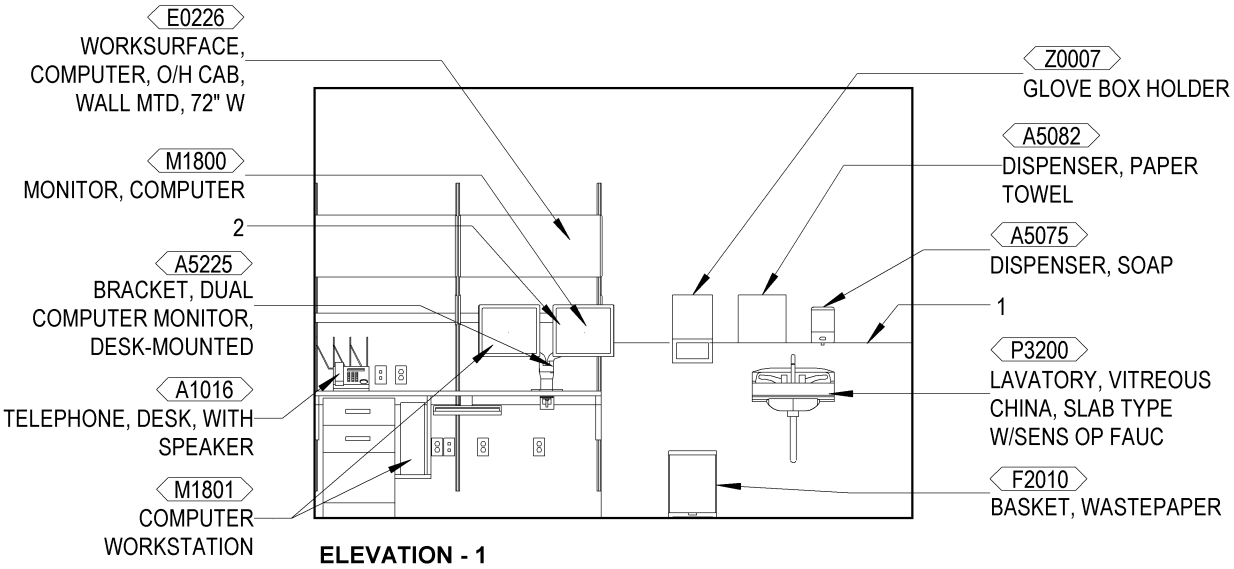
0' 1' 2' 3' 4' 8'
1/4" = 1'-0"

140 NSF	13.0 NSM

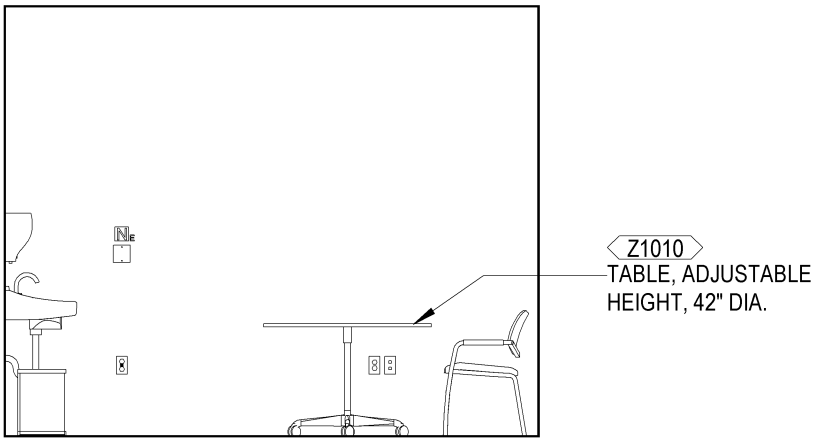
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.13.3 Interior Elevations

Office/Treatment Room, Speech-Language Pathology (SPL01)



ELEVATION - 1



ELEVATION - 2

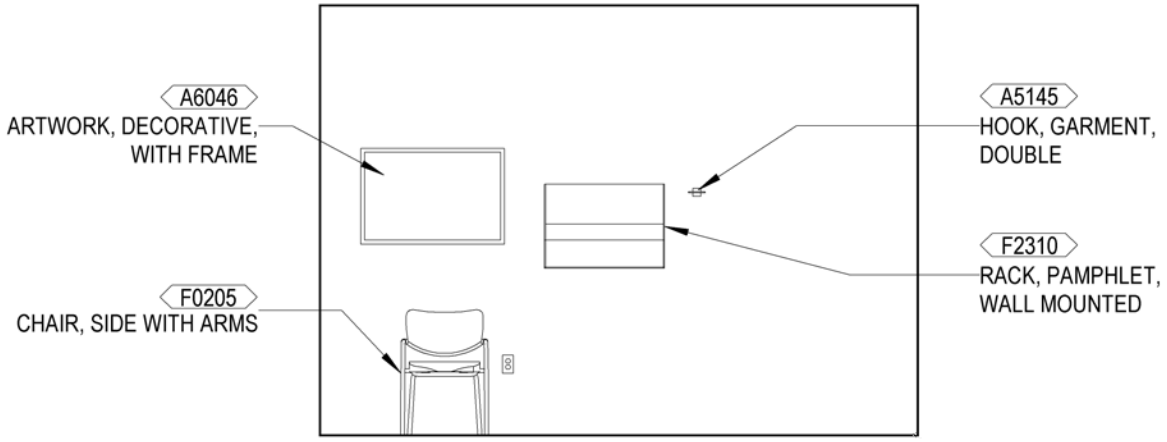
KEY NOTES:
1. WALL PROTECTION
2. MONITOR WITH WEBCAM CAPABILITY.

0' 1' 2' 3' 4' 8'

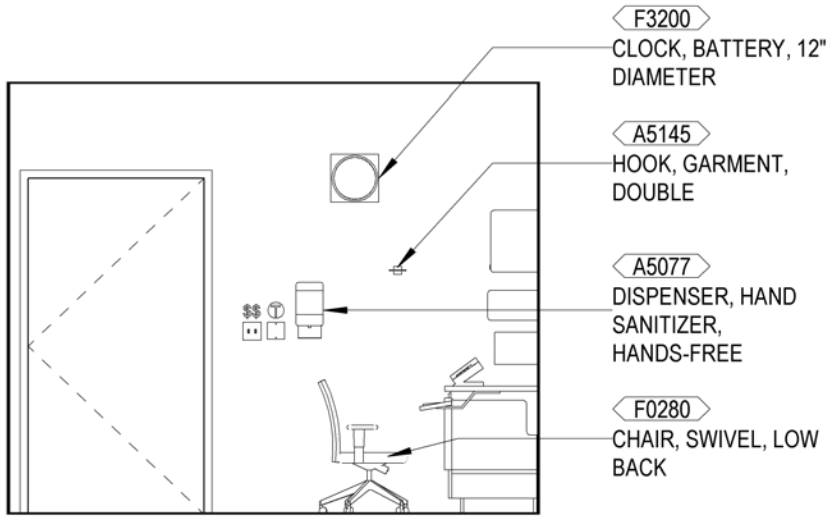
1/4" = 1'-0"

Interior Elevations

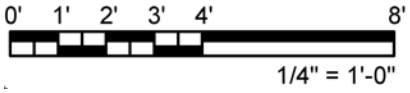
Office/Treatment Room, Speech-Language Pathology (SPL01)



ELEVATION - 3

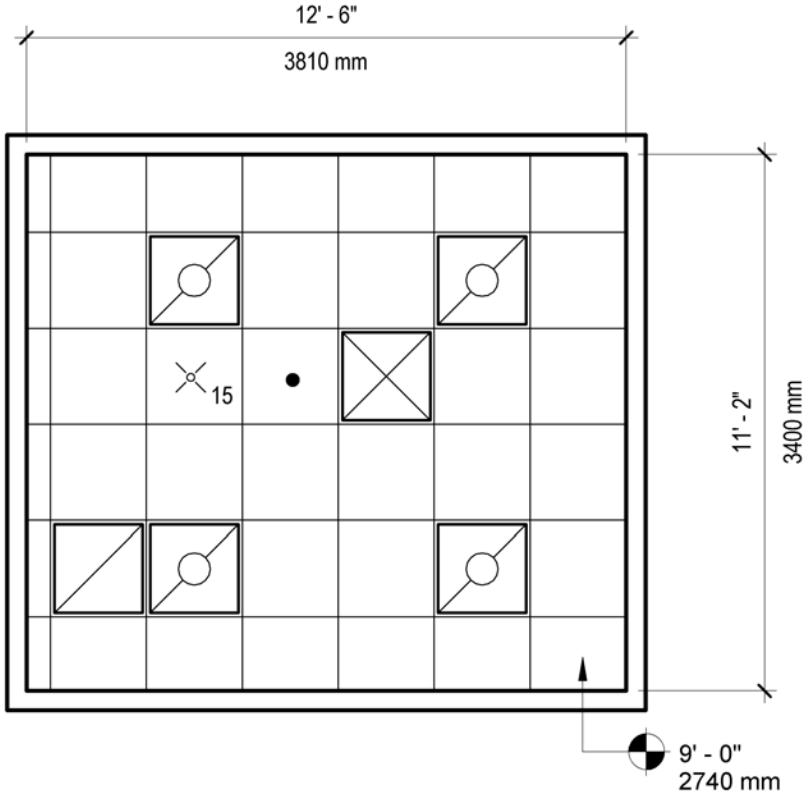


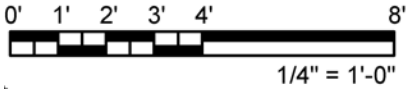
ELEVATION - 4



4.13.4 Reflected Ceiling Plan

Office/Treatment Room, Speech-Language Pathology (SPL01)





140 NSF	13.0 NSM

4.13.5 Room Data Sheet

Office/Treatment Room, Speech-Language Pathology (SPL01)

ARCHITECTURAL	
Number of People:	3
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions /Wall Finish:	GWB/P (Note 1, 4)
Base:	m:RB h:4" (100 mm)
Floor Finish:	LVT or CPT (Note 2)
Door:	m:Wood t:19 (Note 3) dg: (Note 4) s:V
Hardware:	3
Slab Depression:	N/A
Acoustical Criteria:	Notes 5, 6
Ceiling:	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	50 STC, 50 IIC
Walls at Adjacent Room:	50 STC
Walls at Corridor:	45 STC
Special Construction:	N/A

Notes:

1) Ref. Note 64, PG-18-14
2) Ref. Note 6, PG-18-14
3) 40 STC rated acoustical door
4) Narrow lite optional. If provided, use insulated or laminated glass unit to meet acoustical criteria in Note 3.
5) Increase the minimum STC rating of walls 5 STC for every 5 dBA increase in sound level above normal speech level (65 dBA 3'-0" (910 mm) from the speaker) in the adjacent room.
6) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).

LIGHTING	
Workplane Height:	At Floor
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC)
Maintained Avg. Illumination-Task Focus:	N/A
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type
Lamps:	LED, T5, or T8 Fluorescent
CCT:	3500K
CRI:	80, minimum
Controls:	Multi-Level Control via Linear Dimming, Step Dimming, or Dual-Ballast Switching.
Special Requirements:	N/A

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:

1) Multiple receptacles above & below desk for device charging.
2) Receptacles on All Walls.

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (See Note 1)

Notes:

1) Where telehealth services will be provided, computer workstation shall include dual monitors, speakers, video camera, and microphone.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Electronic Sensor
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Visual (15 cd)
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.13.6 Equipment List

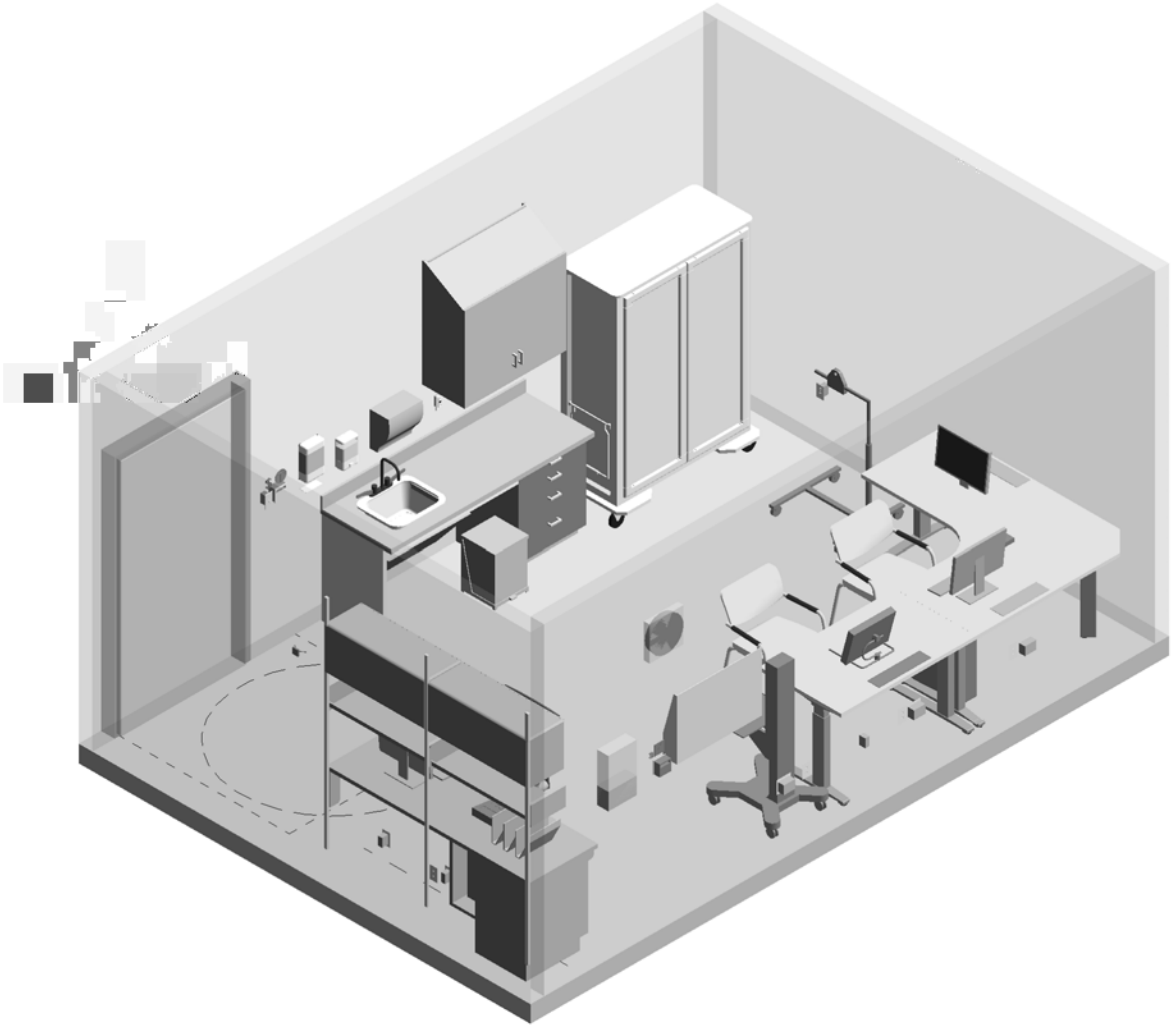
Table 28: Office/Treatment Room, Speech-Language Pathology (SPL01) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	3	VV	Telecommunication outlet location.
A1016	Telephone, Desk, With Speaker	1	VV	Telephone, desk, with speaker.
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5145	Hook, Garment, Double, SS, Surface Mounted	2	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A5225	Bracket, Dual Computer Monitor, Desk-Mounted	1	VV	Desk-mounted bracket that supports two LCD computer monitors, or laptop and monitor configuration. Extends LCD's or labtop up to 25" with an adjustment range of 18". Desk clamp attaches to edge up to 2.6" thick. Maximum combined weight supported not to exceed 50 lbs.
A6046	Artwork, Decorative, With Frame	1	VV	This JSN is to be used for determining and defining location of decorative artwork.
E0226	Worksurface, Computer, O/H Cab, Wall Mtd, 72" W	1	VV	THIS TYPICAL INCLUDES: 3 Vertical Hanging Strips 2 Lockable Flipper Units 2 Shelves, Storage/Display 2 Lights 1 Tack board 2 Tool Rails 2 Paper Trays 1 Diagonal Tray 1 Cantilevered Work Surface 1 Adjustable Keyboard Tray 1 Stationary Pedestal, Box/Box/File 1 Pencil Drawer 1 CPU Holder
F0205	Chair, Side With Arms	2	VV	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.
F0280	Chair, Swivel, Low Back	1	VV	Low back contemporary swivel chair, 37" high X 25" wide X 31" deep with a five (5) caster swivel base, arms and foam padded seat and back upholstered with either woven textile fabric or vinyl.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F2310	Rack, Pamphlet, Wall Mounted	1	VV	Wall mounted pamphlet rack up to 12 (twelve) pamphlet holding pockets. Unit is used to store and display educational pamphlets.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
P3200	Lavatory, Vitreous China, Slab Type	1	CC	Wall mounted, slab type, vitreous china, lavatory (approximately 7 x 15 x 10 inches) with faucet holes on 4 inch centers; electronic sensor operated, goose neck spout and grid strainer. It shall be suitable for use in clinics, offices, and patient care areas.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.
Z1010	Adjustable Height Table, 42" dia.	1	VV	42” diameter, height adjustable table with x-base and glides. High pressure laminate top with phenolic core and tubular steel pedestal; casters optional.

4.14 Assistive Technology Room 1 (Outpatient/Clinic) (SPAT1)

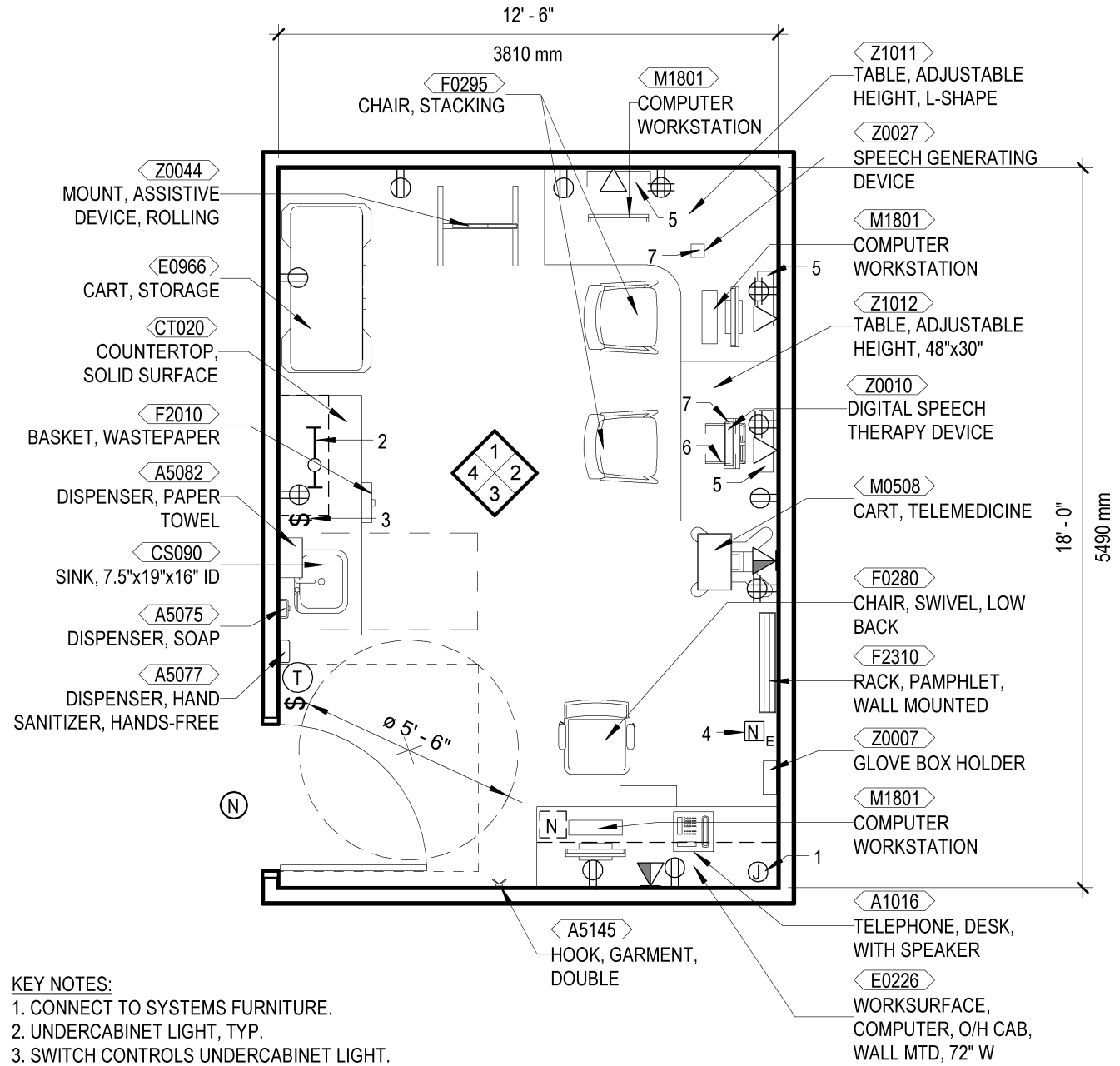
4.14.1 Axonometric View



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

4.14.2 Floor Plan

Assistive Technology Room 1 (Outpatient/Clinic) (SPAT1)



KEY NOTES:
1. CONNECT TO SYSTEMS FURNITURE.
2. UNDERCABINET LIGHT, TYP.
3. SWITCH CONTROLS UNDERCABINET LIGHT.
4. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
5. INTEGRAL PLUG STRIP; TABLE ACCESSORY.
6. MOUNT FOR SPEECH DEVICE, IF NEEDED. NO JSN ASSIGNED.
7. PLACEHOLDER FOR REPRESENTATIVE SPEECH THERAPY DEVICE. QUANTITY AND TYPE BASED ON LOCAL FACILITY REQUIREMENTS; DEVICES ARE STORED IN CABINET AND ROTATED FOR PATIENT USE AS NEEDED.

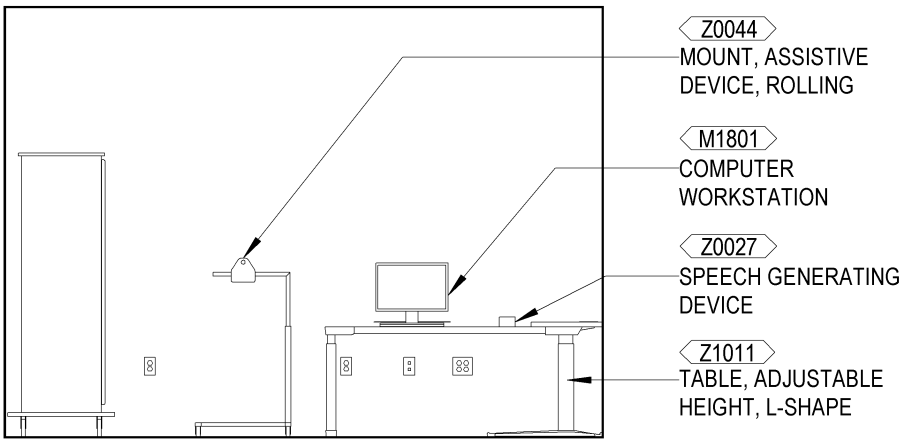
0' 1' 2' 3' 4' 8'
1/4" = 1'-0"

225 NSF	20.9 NSM

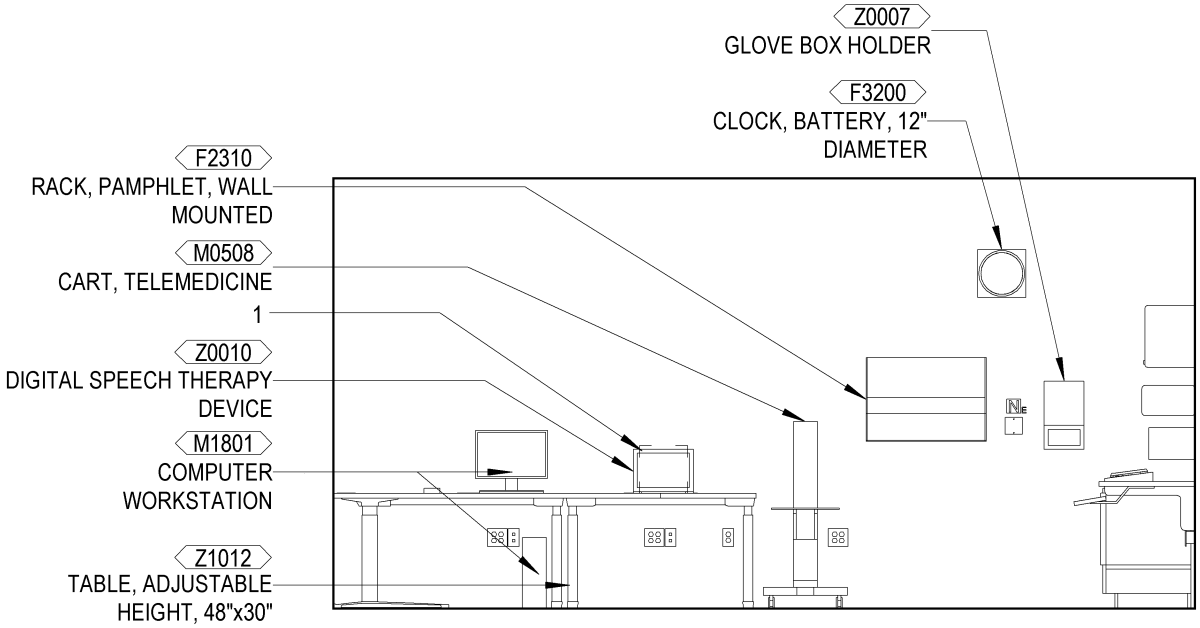
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.14.3 Interior Elevations

Assistive Technology Room 1 (Outpatient/Clinic) (SPAT1)

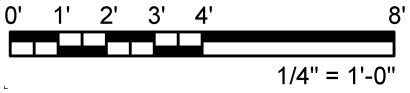


ELEVATION - 1



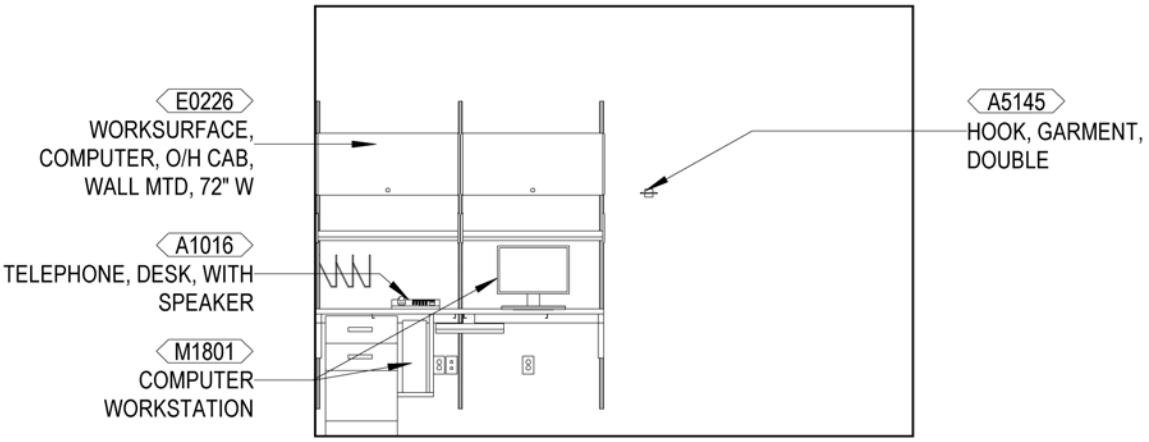
ELEVATION - 2

KEY NOTES:
1. MOUNT FOR SPEECH DEVICE, IF NEEDED. NO JSN ASSIGNED.

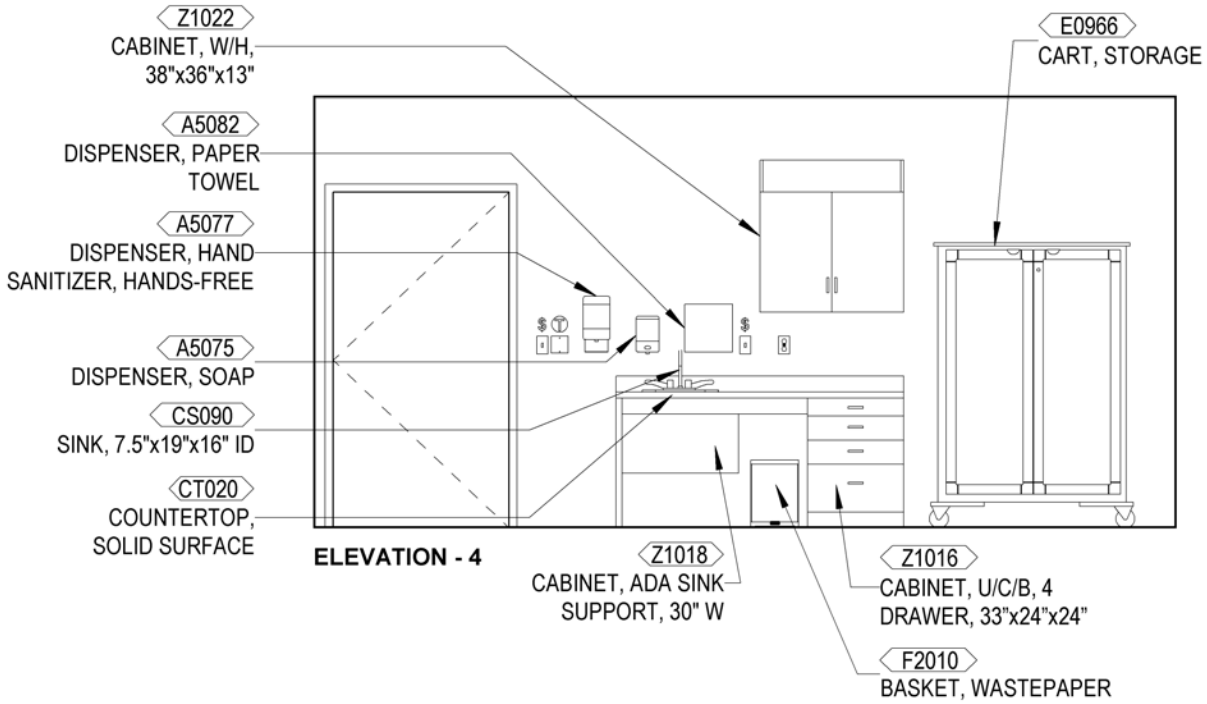


Interior Elevations

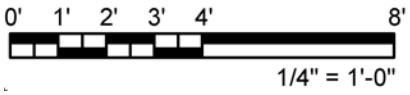
Assistive Technology Room 1 (Outpatient/Clinic) (SPAT1)



ELEVATION - 3

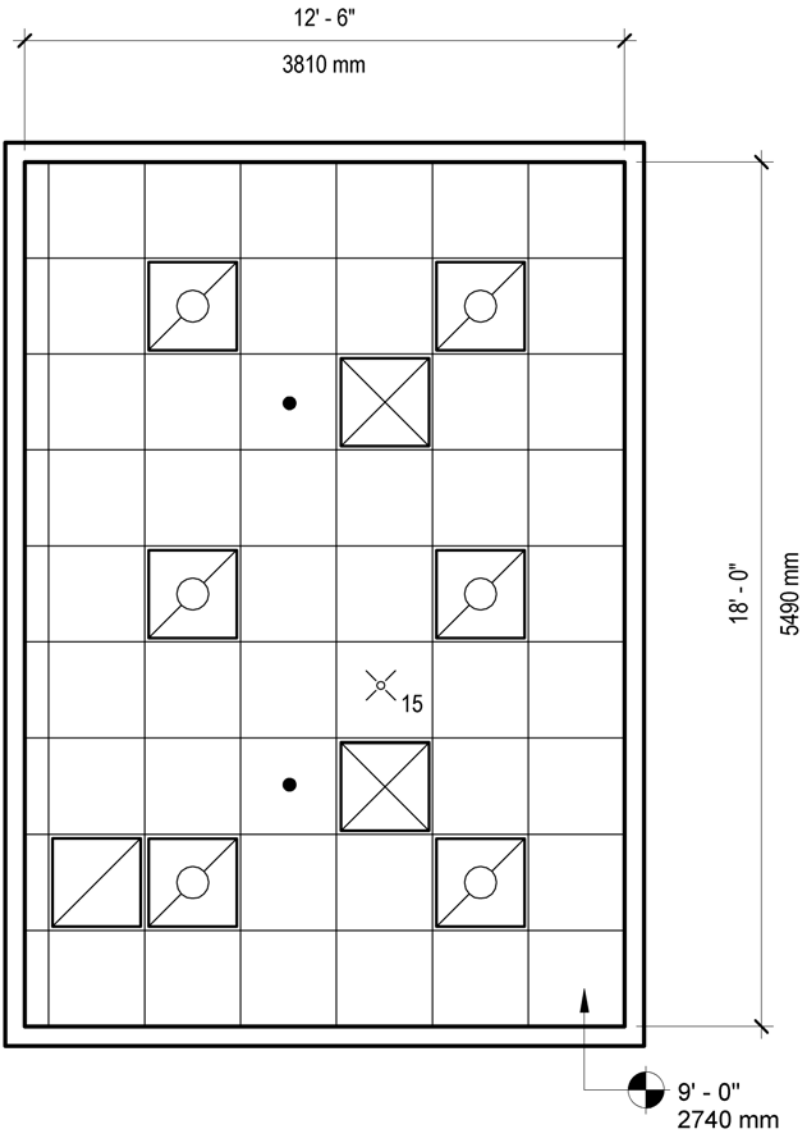


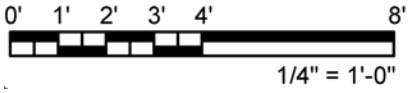
ELEVATION - 4



4.14.4 Reflected Ceiling Plan

Assistive Technology Room 1 (Outpatient/Clinic) (SPAT1)





225 NSF	20.9 NSM

4.14.5 Room Data Sheet

Assistive Technology Room 1 (Outpatient/Clinic) (SPAT1)

ARCHITECTURAL	
Number of People:	3
Ceiling: Acoustical tile	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions /Wall Finish:	GWB/P (Note 1, 3)
Base:	m:RB h:4" (100 mm)
Floor Finish:	LVT
Door:	m:Wood t:19 (Note 2) dg: narrow or half-lite, (Note 3) s:V (Note5)
Hardware:	4
Slab Depression:	N/A
Noise Criteria:	Notes 4, 5
Ceiling:	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	50 STC, 50 IIC
Walls at Adjacent Room:	50 STC
Walls at Corridor:	45 STC
Special Construction:	N/A

Notes:
1) Ref. Note 64, PG-18-14
2) 40 STC rated acoustical door
3) Insulated or Laminated Glass Unit to meet acoustical criteria in Note 2.
4) Increase the minimum STC rating of walls 5 STC for every 5 dBA increase in sound level above normal speech level (65 dBA 3'-0" (910 mm) from the speaker) in the adjacent room.
5) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).
6) Provide X (48") (1220 mm) door for SPAT2

LIGHTING	
Workplane Height:	At Floor
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC)
Maintained Avg. Illumination-Task Focus:	N/A
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type
Lamps:	LED, T5, or T8 Fluorescent
CCT:	3500K
CRI:	80, minimum
Controls:	Multi-Level Control via Linear Dimming, Step Dimming, or Dual-Ballast Switching
Special Requirements:	Avoid Glare from Lighting Fixtures

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:
1) Multiple receptacles below tables
2) Multi-Outlet Assemblies above Tables for Device Charging

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (See Note 1)

Notes:
1) Provide dedicated telemedicine cart.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Electric Sensor
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Visual (15 cd)
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.14.6 Equipment List

Table 29: Assistive Technology Room 1 (Outpatient/Clinic) (SPAT1) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	5	VV	Telecommunication outlet location.
A1016	Telephone, Desk, With Speaker	1	VV	Telephone, desk, with speaker.
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5145	Hook, Garment, Double, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
Z1022	Cabinet, W/H, 2 Shelf, 2 DO, Sloping Top, 38"x36"x13"	1	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left hinged doors, and sloping top. Also referred to as a solid hinged double door wall case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.
CT020	Countertop, Solid Surface	1	CC	A solid, nonporous countertop with a smooth seamless appearance. Easy to clean and maintain and with proper cleaning does not support the growth of mold. An acrylic-based solid surface product. Standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a choice of colors and depths. Used in lab and other hospital areas requiring optimum physical and chemical resisting properties.

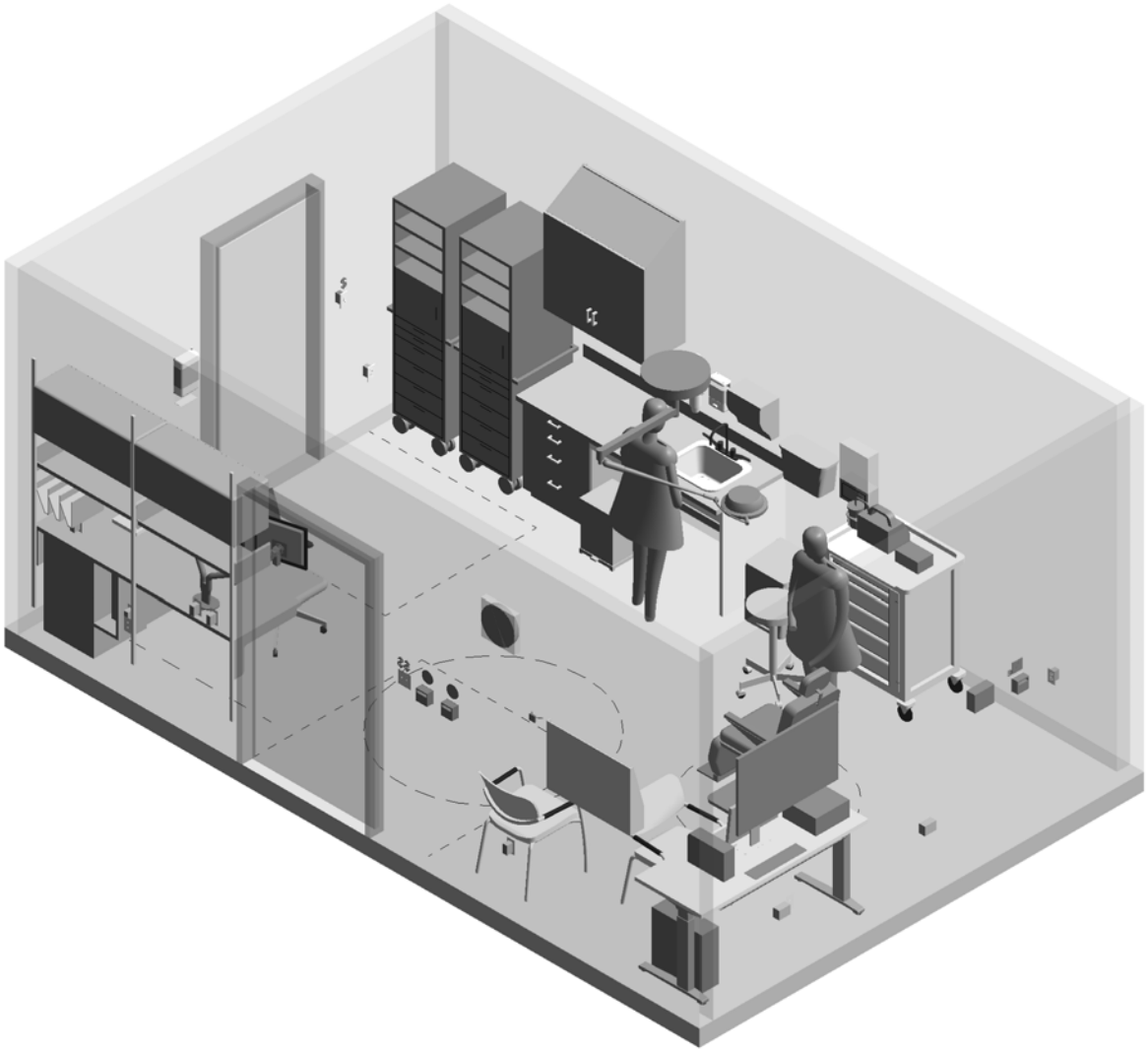
JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
E0226	Worksurface, Computer, O/H Cab, Wall Mtd, 72" W	1	VV	THIS TYPICAL INCLUDES: 3 Vertical Hanging Strips 2 Lockable Flipper Units 2 Shelves, Storage/Display 2 Lights 1 Tack board 2 Tool Rails 2 Paper Trays 1 Diagonal Tray 1 Cantilevered Work Surface 1 Adjustable Keyboard Tray 1 Stationary Pedestal, Box/Box/File 1 Pencil Drawer 1 CPU Holder
E0966	Cart, Storage, Dbl Width, Mbl, 72" H x 50" w x 22" D	1	VV	THIS TYPICAL INCLUDES: 1 Cart Body, Style-A Wide, w/Full Spine 6 Tray/ Shelves 4 Drawers, 3"H 6 Drawers, 6"H 1 Curtain, Double Wide Drawer Organizer Bins
F0280	Chair, Swivel, Low Back	1	VV	Low back contemporary swivel chair, 37" high X 25" wide X 31" deep with a five (5) caster swivel base, arms and foam padded seat and back upholstered with either woven textile fabric or vinyl.
F0295	Chair, Stacking	2	VV	Stacking chair, approximately 34" H X 21" W X 24" D. May be stacked up to 20 high depending upon the model selected. These chairs are intended primarily as overflow capacity for conference rooms.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.
F2310	Rack, Pamphlet, Wall Mounted	1	VV	Wall mounted pamphlet rack up to 12 (twelve) pamphlet holding pockets. Unit is used to store and display educational pamphlets.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M0508	Telemedicine Station, Mobile Cart	1	VV	Mobile telemedicine station configured with one or two monitors, camera, speakers, microphone, and computer. Items are mounted on a five caster cart.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	3	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z0010	Digital Speech Therapy Device	1	VV	Android based digital speech therapy device.
Z0027	Speech Generating Device	1	VV	Speech generating device.
Z0044	Mount, Assistive Device, Rolling	1	VV	Rolling mount that provides an independent floor stand solution for a device or laptop computer.
Z1011	Table, Adjustable Height, L Shape, 60"x72"x30"	1	VV	60"W x 72"L x 30"D L-shape adjustable height electric pedestal table with C-foot configuration and integral wire management trough or tray. Height range varies by manufacturer and model, approximately 22" to 48". Steel tube construction with powder coat finish, and 1 ¼" thick top with high pressure laminate or wood veneer surface, gator-ply paper backer bottom face, and side edges of rigid Thermoplastic or color matched wood veneer. Die cast aluminum feet and top support; galvanized steel horizontal rails, zinc plated steel fasteners. System includes integral electrical components (including control box, cable trough, electric motor, power cord for table; 2-U.L. listed pop-up power strips with minimum of three each simplex receptacles, additional data and/or USB ports as needed per facility preference, and minimum 6' long power cord with plug), 2 grommets and adjustable glides for complete system.
Z1012	Table, Adjustable Height, 48"x30"	1	VV	48"W x 30"D adjustable height electric pedestal table with C-foot configuration and integral wire management trough or tray. Height range varies by manufacturer, and model, approximately 22" to 48". Steel tube construction with powder coat finish, and 1 ¼" thick top with high pressure laminate or wood veneer surface, gator-ply paper backer bottom face, and side edges of rigid Thermoplastic or color matched wood veneer. Die cast aluminum feet and top support; galvanized steel horizontal rails, zinc plated steel fasteners. System includes integral electrical components (including control box, cable trough, electric motor, power cord for table; U.L. listed pop-up power strip with minimum of three each simplex receptacles, additional data and/or USB ports as needed per facility preference, and minimum 6' long power cord with plug), 2 grommets and adjustable glides for complete system.
Z1016	Cabinet, U/C/B, 4 Drawer, 33"x24"x24"	1	CC	Standing height under counter base cabinet with three or four full width drawers; configuration to be determined based on facility needs. Also referred to as a drawer cabinet. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge banding. Hardware includes hinges, full extension drawer slides, pulls, and adjustable glides.
Z1018	Cabinet, ADA Sink Support, 30" W	1	CC	Wall mounted sink support cabinet for drop-in sink with vertical fascia and angled ADA profile, also referred to as ADA sink cabinet. Removable front panel to permit access to plumbing. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Includes all attaching hardware including support rail.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z1022	Cabinet, W/H, 2 Shelf, 2 DO, Sloping Top, 38"x30"x13"	1	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left hinged doors, and sloping top. Also referred to as a solid hinged double door wall case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.

4.15 Voice Treatment Room (SPP01)

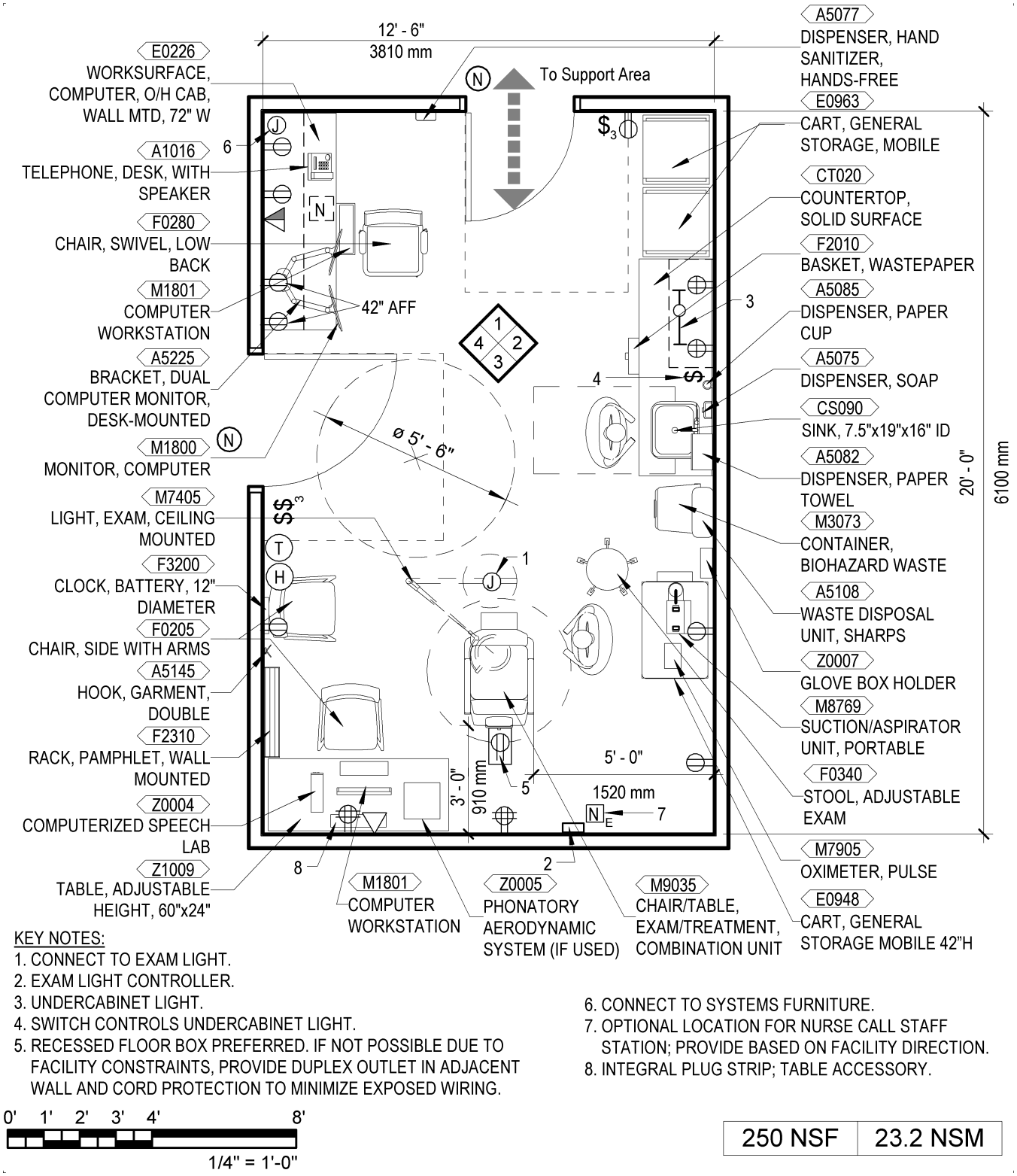
4.15.1 Axonometric View



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

4.15.2 Floor Plan

Voice Treatment Room (SPP01)



KEY NOTES:

1. CONNECT TO EXAM LIGHT.
2. EXAM LIGHT CONTROLLER.
3. UNDERCABINET LIGHT.
4. SWITCH CONTROLS UNDERCABINET LIGHT.
5. RECESSED FLOOR BOX PREFERRED. IF NOT POSSIBLE DUE TO FACILITY CONSTRAINTS, PROVIDE DUPLEX OUTLET IN ADJACENT WALL AND CORD PROTECTION TO MINIMIZE EXPOSED WIRING.
6. CONNECT TO SYSTEMS FURNITURE.
7. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
8. INTEGRAL PLUG STRIP; TABLE ACCESSORY.

0' 1' 2' 3' 4' 8'

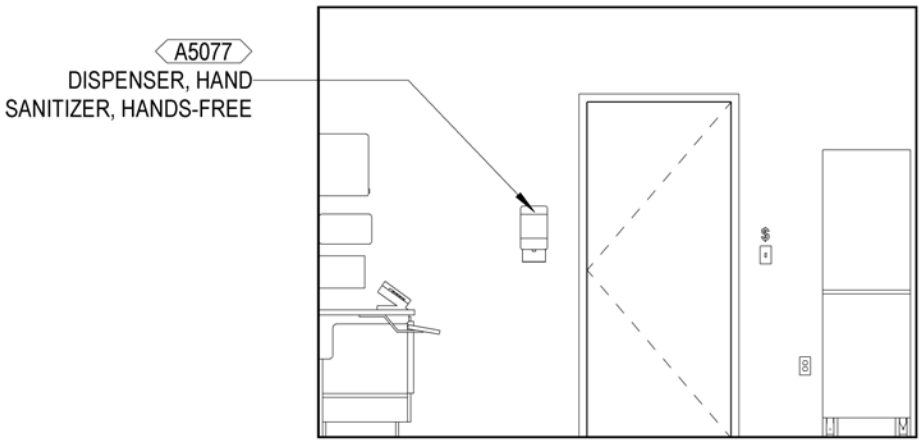
1/4" = 1'-0"

250 NSF	23.2 NSM

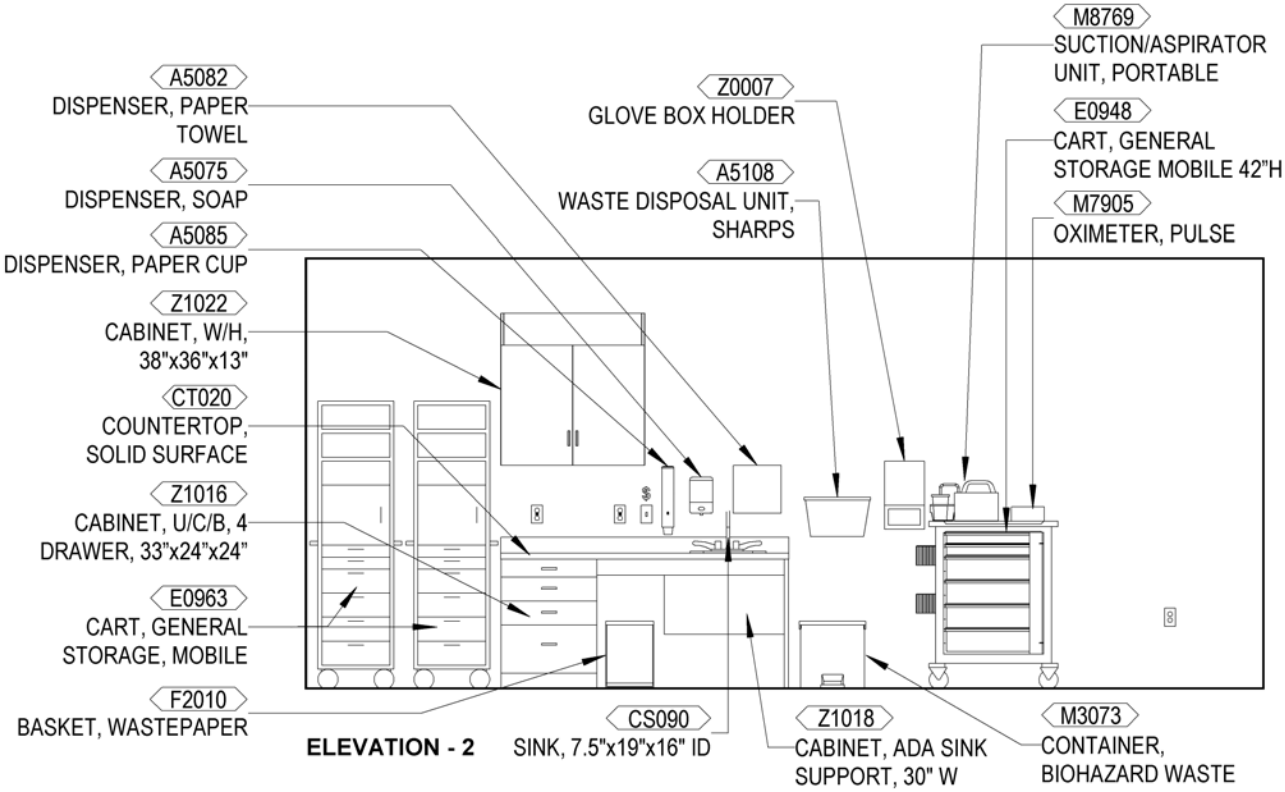
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.15.3 Interior Elevations

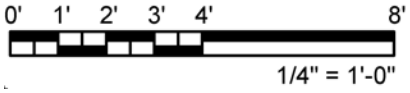
Voice Treatment Room (SPP01)



ELEVATION - 1

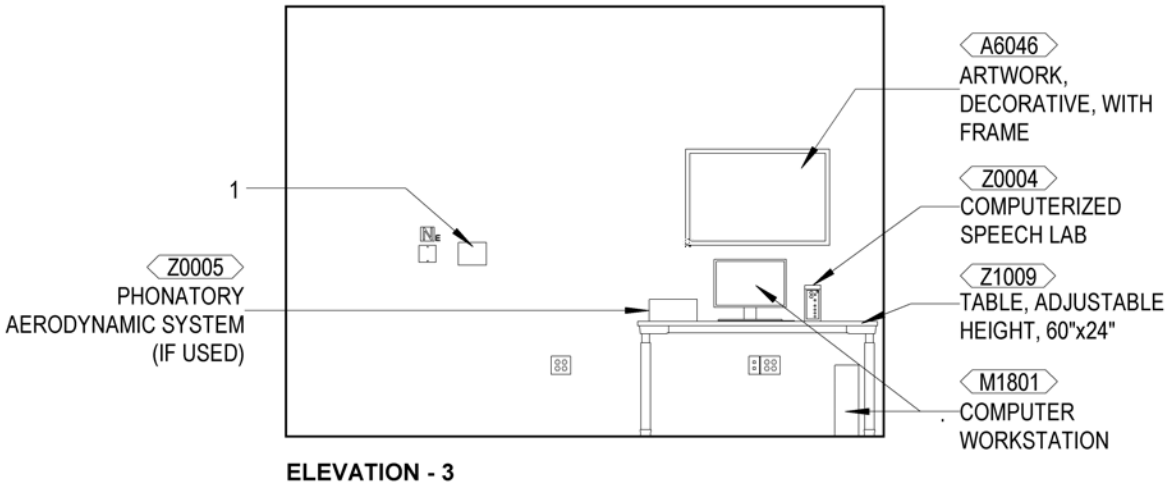


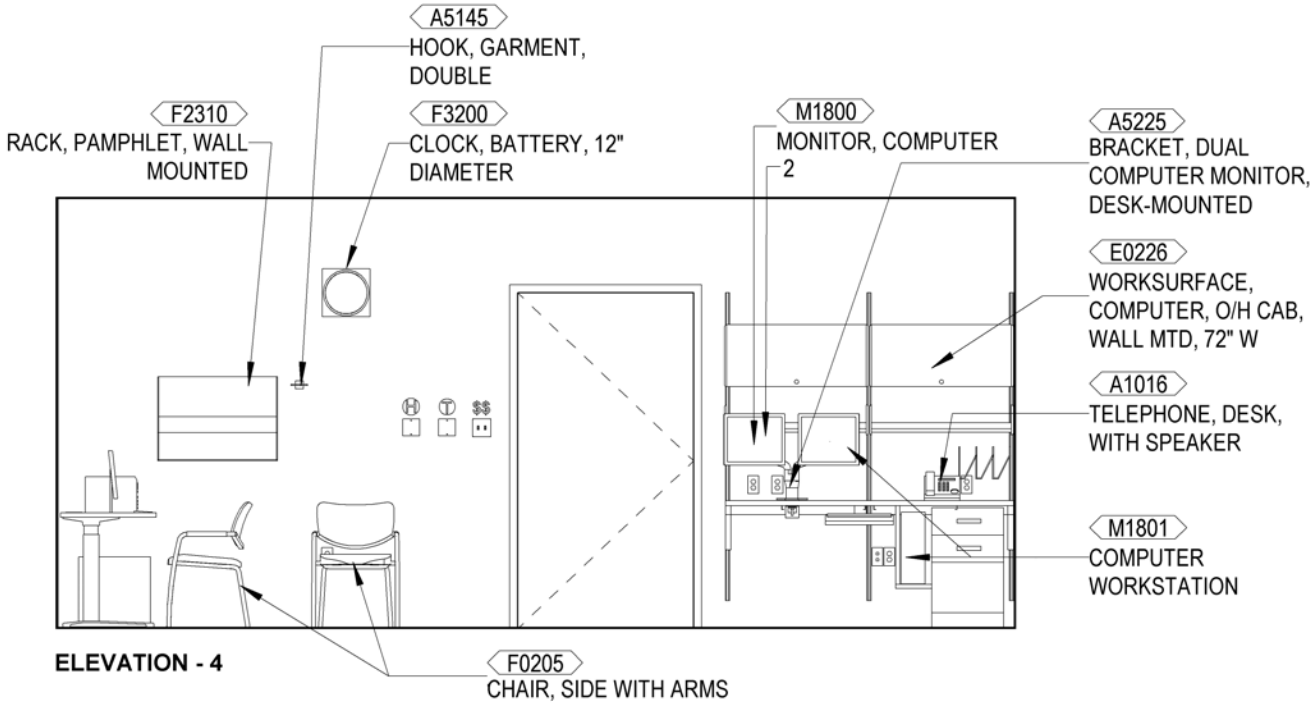
ELEVATION - 2



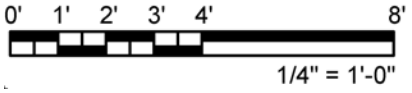
Interior Elevations

Voice Treatment Room (SPP01)



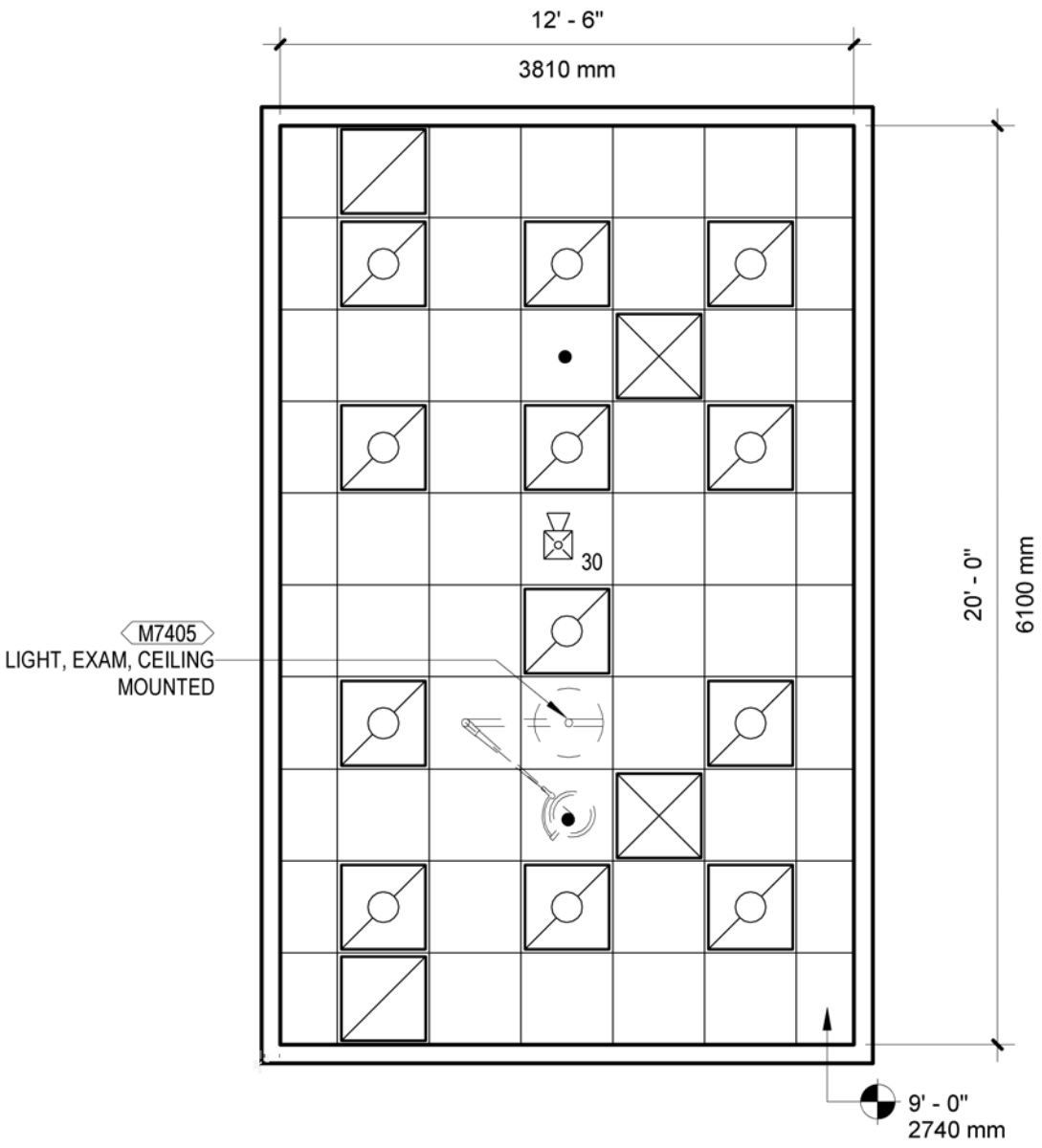


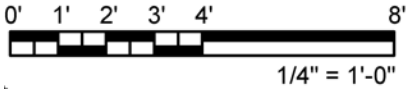
KEY NOTES:
1. EXAM LIGHT CONTROLLER.
2. MONITOR WITH WEBCAM CAPABILITY.



4.15.4 Reflected Ceiling Plan

Voice Treatment Room (SPP01)





250 NSF	23.2 NSM

4.15.5 Room Data Sheet

Voice Treatment Room (SPP01)

ARCHITECTURAL	
Number of People:	4
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions/Wall Finish:	GWB/P (Notes 1, 3)
Base:	m:WSF h:4" (100 mm)
Floor Finish:	WSF
Doors:	
Main:	m:Wood t:19 (Note 2) s:V
Service:	m: Wood t: 19 (Note 2) dg: narrow lite, (Note 3) s:S
Hardware:	4
Slab Depression:	N/A
Acoustical Criteria:	Note 4, 5
Ceiling:	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	55 STC / 55 IIC
Walls to Adjacent Room:	55 STC
Walls to Corridor:	45 STC
Special Construction:	N/A

Notes:
1) Ref. Note 64, PG-18-14
2) 40 STC rated acoustical door s
3) Insulated or laminated glass unit to meet acoustical criteria per Note 2.
4) Increase the minimum STC rating of walls 5 STC for every 5 dBA increase in sound level above a raised speech level (70 dBA 3'-0" (910 mm) from the speaker) in the adjacent room.
5) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).

LIGHTING	
Workplane Height:	2'-6" (760 mm)
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC)
Maintained Avg. Illumination-Task Focus:	1000 Lux (100 FC) at Exam/Treatment Chair
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type
Lamps:	LED, T5, or T8 Fluorescent
CCT:	3500K (Note 3)
CRI:	80, minimum (Note 3)
Controls:	Multi-Level Control via Linear Dimming, Step Dimming, or Dual-Ballast Switching. Separate Toggle Switch for Undercabinet Lighting
Special Requirements:	N/A

Notes:
1) Surgical task lighting at exam/treatment chair
2) Emergency lighting at exam/treatment chair, connected to critical EES branch
3) Ensure that room luminaires match the CCT & CRI of supplemental medical lights.

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Select Receptacles Connected to Critical EES Branch

Notes:
1) Coordinate electrical connections with equipment to be installed.
2) Provide multiple receptacles above counter

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (See Note 1)

Notes:
1) Where telehealth services will be provided, computer workstation shall include dual monitors, speakers, video camera, and microphone.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Electronic Sensor
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Audible, Visual (15 cd)
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.15.6 Equipment List

Table 30: Voice Treatment Room (SPP01) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	2	VV	Telecommunication outlet location.
A1016	Telephone, Desk, With Speaker	1	VV	Telephone, desk, with speaker.
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5085	Dispenser, Paper Cup, SS, Surface Mounted	1	VV	A surface mounted, satin finished stainless steel, 3 to 6-ounce paper, or plastic flat-bottom cup dispenser. Dispenser features: tumbler lock; front hinged at bottom; and refill indicator slot. Minimum capacity 150 3-ounce cups. For general purpose use throughout the facility.
A5108	Waste Disposal Unit, Sharps	1	VV	A container for collecting and transporting syringes and other sharps for decontamination and disposal. Available in 2 gallon and 8 gallon with locking rotor. Complies with OSHA regulations for handling sharps.
A5145	Hook, Garment, Double, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A5225	Bracket, Dual Computer Monitor, Desk-Mounted	1	VV	Desk-mounted bracket that supports two LCD computer monitors, or laptop and monitor configuration. Extends LCD's or labtop up to 25" with an adjustment range of 18". Desk clamp attaches to edge up to 2.6" thick. Maximum combined weight supported not to exceed 50 lbs.
A6046	Artwork, Decorative, With Frame	1	VV	This JSN is to be used for determining and defining location of decorative artwork.
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
CT020	Countertop, Solid Surface	1	CC	A solid, nonporous countertop with a smooth seamless appearance. Easy to clean and maintain and with proper cleaning does not support the growth of mold. An acrylic-based solid surface product. Standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a choice of colors and depths. Used in lab and other hospital areas requiring optimum physical and chemical resisting properties.
E0226	Worksurface, Computer, O/H Cab, Wall Mtd, 72" W	1	VV	THIS TYPICAL INCLUDES: 3 Vertical Hanging Strips 2 Lockable Flipper Units 2 Shelves, Storage/Display 2 Lights 1 Tack board 2 Tool Rails 2 Paper Trays 1 Diagonal Tray 1 Cantilevered Work Surface 1 Adjustable Keyboard Tray 1 Stationary Pedestal, Box/Box/File 1 Pencil Drawer 1 CPU Holder
E0948	Cart, General Storage, Mobile, 42"H x 32"W x 22"D	1	VV	THIS TYPICAL INCLUDES: 1 Cart Body, Style-A Narrow, w/Raised Edge Top 2 Drawers, 3" H 4 Drawers, 6" H 1 Accessory Rail, Side Drawer Organizer Bins
E0963	Cart, General Storage, Mobile	2	VV	Mobile General Storage Cart, approximately 72"H x 23"W x 22"D. THIS TYPICAL INCLUDES: 1 Locker Storage Container on Wheels, w/Solid Door 3 Tray/Shelves 2 Drawers, 3"H 4 Drawers, 6"H 1 Tray/Shelf Divider Drawer Organizer Bins
F0205	Chair, Side With Arms	2	VV	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.
F0280	Chair, Swivel, Low Back	1	VV	Low back contemporary swivel chair, 37" high X 25" wide X 31" deep with a five (5) caster swivel base, arms and foam padded seat and back upholstered with either woven textile fabric or vinyl.
F0340	Stool, Self Adjusting	1	VV	Self adjusting stool. Consists of a foam padded upholstered seat with attached foot rest for added comfort. Mounted on swivel casters. Designed for doctor's use during examinations.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.
F2310	Rack, Pamphlet, Wall Mounted	1	VV	Wall mounted pamphlet rack up to 12 (twelve) pamphlet holding pockets. Unit is used to store and display educational pamphlets.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	2	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
M3073	Container, Biohazard Waste, Step-on, Fire Safe	1	VV	A biohazard waste container with a step-on lid. The container will have a capacity of approximately 12 gallons and be made of a fire safe material.
M7405	Light, Exam, Ceiling Mounted	1	CC	Ceiling exam light. Consists of a lightheaded reflector supported by a ceiling mounted radial arm assembly that provides a wide range of positioning capabilities. Halogen bulbs and an intensity control provide cool, color corrected light. The minimum ceiling height in most cases is 8'-0"; refer to each manufacturer's specific installation requirements. Physical dimensions refer to the retracted light; one length of the dual swing arm around the center mount in width and depth and the combined height of the lamp head and folded arms. Unit may also have a center mount detachable and sterilizable control handle. For use in minor procedure or examination room applications.
M7905	Oximeter, Pulse	1	VV	Pulse oximeter for continuous surveillance of patient pulse and oxygen saturation rates. Instrument features LED display, audio and visual alarms, automatic calibration, and battery operation in case of power failure. Other applications include sleep studies, exercise testing, and monitoring certain patients in the home (e.g. infants or patients requiring respiratory therapy).
M8769	Suction/Aspirator Unit, Portable	1	VV	General purpose suction apparatus with rechargeable battery and 1500 ml disposable collection canister.
M9035	Chair/Table, Exam/Treatment, Combination Unit	1	VV	A dual purpose examination and treatment/procedure chair/table combination unit. Unit consists of an upholstered chair with foot and head sections. Unit can be operated and positioned to a table position by a hydraulic mechanism. Features "memory" power positioning, controlled by pedal switches or finger switches. Unit is designed for use in clinics, doctor's office, or treatment rooms.
Z0004	Computerized Speech Lab	1	VV	A hardware/software system used for voice and speech analysis. The hardware is an input/output recording device for a PC, which complies with the rigorous specifications and features needed for reliable acoustic measurements.
Z0005	Phonatory Aerodynamic System	1	VV	A device which measures airflow, pressure and other parameters related to voice production. System components include PAS hardware module with bilateral handles and face mask, pneumatic, pressure transducer, required tubing, and microphone built into an ergonomic construction. The system also includes software and connects to a computer via USB cable.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.
Z1009	Table, Adjustable Height, 60"x24"	1	VV	60"W x 24"D adjustable height electric pedestal table with C-foot configuration and integral wire management trough or tray. Height range varies by manufacturer and model, approximately 22" to 48". Steel tube construction with powder coat finish, and 1 ¼" thick top with high pressure laminate or wood veneer surface, gator-ply paper backer bottom face, and side edges of rigid Thermoplastic or color matched wood veneer. Die cast aluminum feet and top support; galvanized steel horizontal rails, zinc plated steel fasteners. System includes integral electrical components (including control box, cable trough, electric motor, power cord for table; U.L. listed pop-up power strip with minimum of two simplex receptacles, data and/or USB ports as needed per facility preference, and minimum 6' long power cord with plug), 2 grommets and adjustable glides for complete system.
Z1016	Cabinet, U/C/B, 4 Drawer, 33"x24"x24"	1	CC	Standing height under counter base cabinet with three or four full width drawers; configuration to be determined based on facility needs. Also referred to as a drawer cabinet. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge banding. Hardware includes hinges, full extension drawer slides, pulls, and adjustable glides.
Z1018	Cabinet, ADA Sink Support, 30" W	1	CC	Wall mounted sink support cabinet for drop-in sink with vertical fascia and angled ADA profile, also referred to as ADA sink cabinet. Removable front panel to permit access to plumbing. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Includes all attaching hardware including support rail.
Z1022	Cabinet, W/H, 2 Shelf, 2 DO, Sloping Top, 38"x36"x13"	2	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left hinged doors, and sloping top. Also referred to as a solid hinged double door wall case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.

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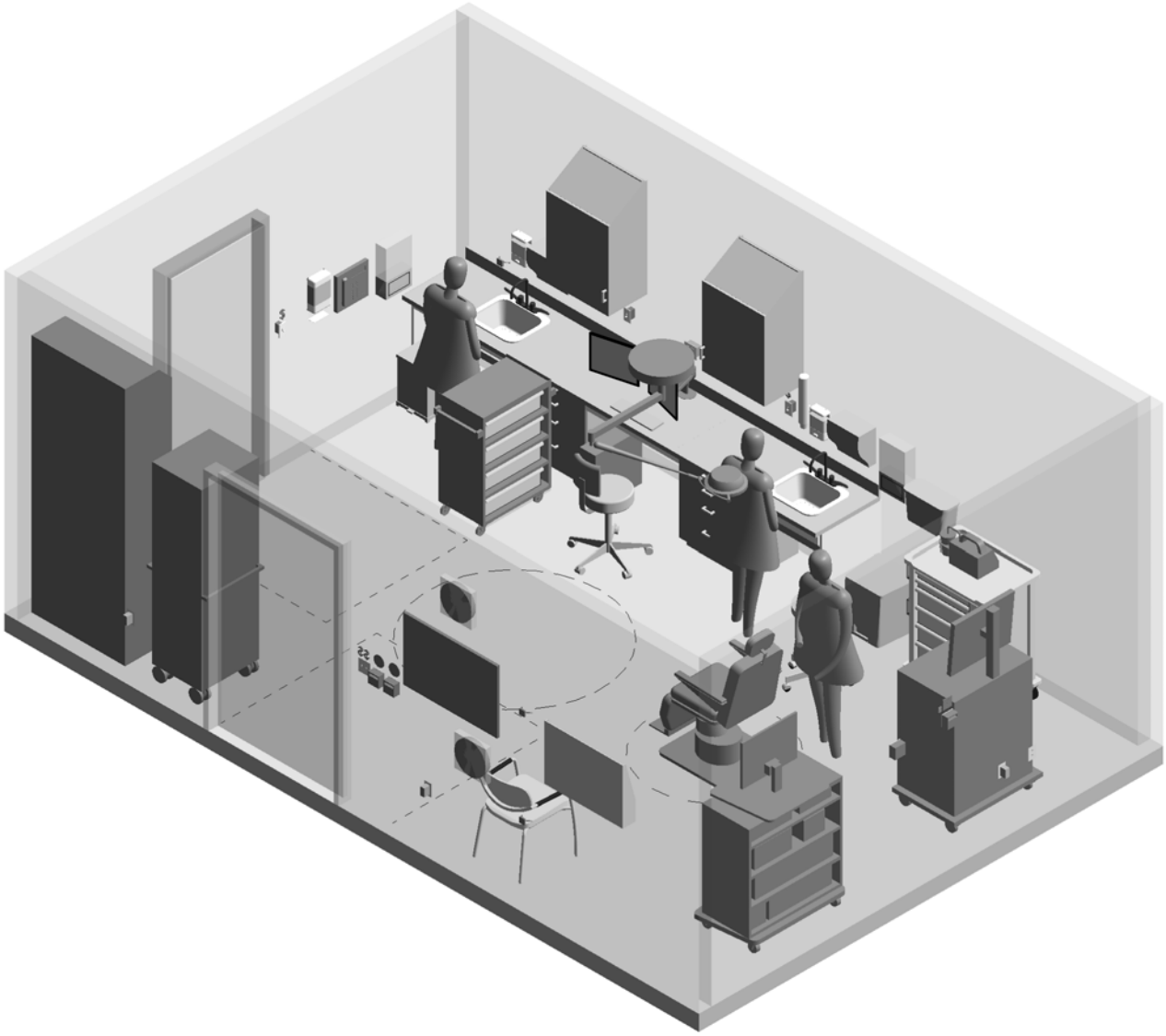
4.16 Special Procedure Room, Speech Pathology (SPP02)

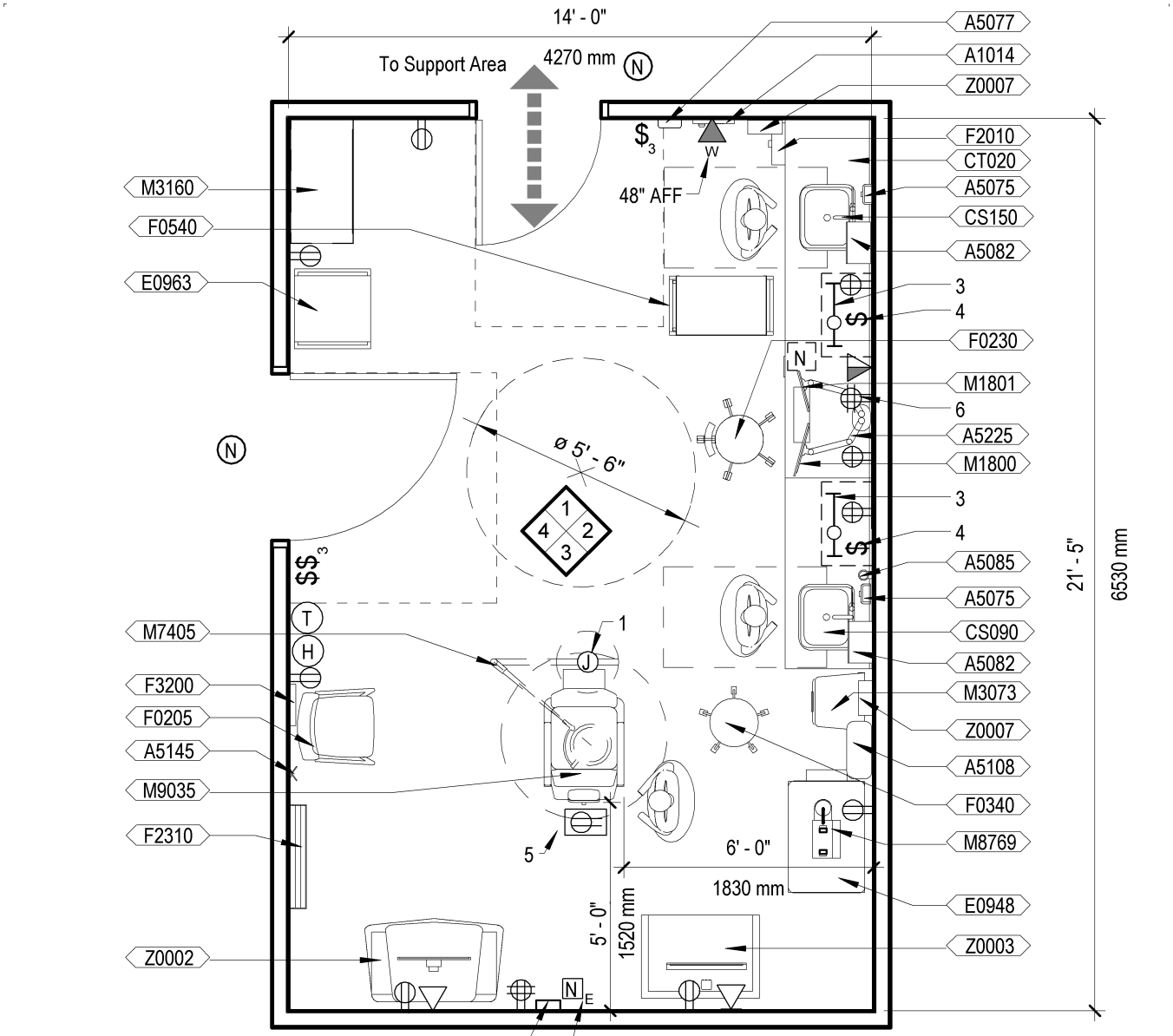
4.16.1 Axonometric View



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

4.16.2 Floor Plan

Special Procedure Room, Speech Pathology (SPP02)



KEY NOTES:
1. CONNECT TO EXAM LIGHT.
2. EXAM LIGHT CONTROLLER.
3. UNDERCABINET LIGHT.
4. SWITCH CONTROLS UNDERCABINET LIGHT.
5. RECESSED FLOOR BOX PREFERRED. IF NOT POSSIBLE DUE TO FACILITY CONSTRAINTS, PROVIDE DUPLEX OUTLET IN ADJACENT WALL AND CORD PROTECTION TO MINIMIZE EXPOSED WIRING.
6. GFCI RECEPTACLE.
7. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.

The following small, hand-held instruments are not shown on the room template, but are indicated on the equipment list:
1. Nasopharyngoscope, Fiberoptic, Examination Only (M8500)
2. Tongue Pressure Instrument (Z0036)
3. Surface Electromyograph (SEMG) (Z0042)
4. Tongue Function Instrument (Z0048)
5. Rigid Laryngoscope (Z2001)

0' 1' 2' 3' 4' 8'
1/4" = 1'-0"

300 NSF	27.9 NSM

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

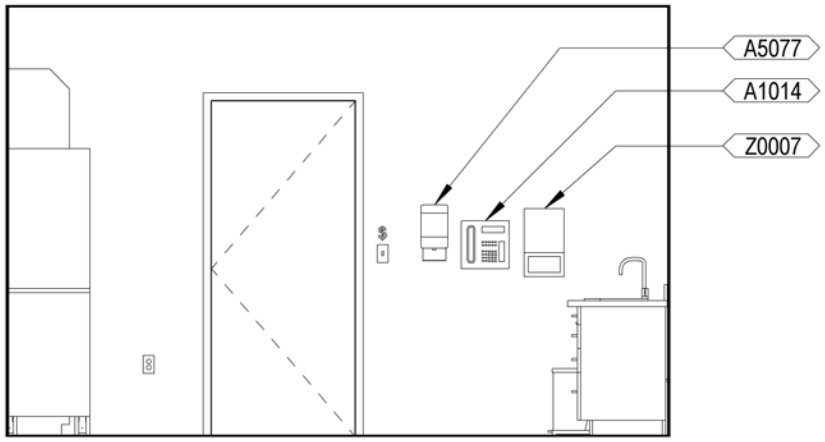
4.16.3 JSN Legend

Table 31: Special Procedure Room, Speech Pathology (SPP02) JSN Legend

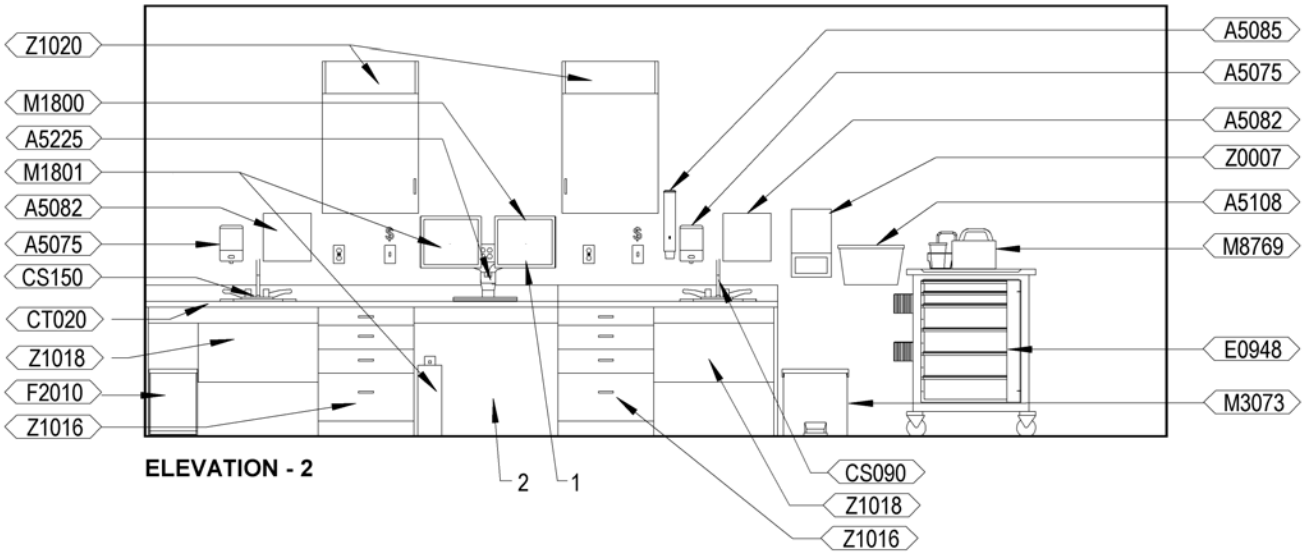
JSN	NAME
A1010	Telecommunication Outlet
A1014	Telephone, Wall Mounted, 1 Line, With Speaker
A5075	Dispenser, Soap, Disposable
A5077	Dispenser, Hand Sanitizer, Hands-Free
A5082	Dispenser, Paper Towel, Sensor, Hands Free
A5085	Dispenser, Paper Cup, SS, Surface Mounted
A5108	Waste Disposal Unit, Sharps
A5145	Hook, Garment, Double, SS, Surface Mounted
A5225	Bracket, Dual Computer Monitor, Desk-Mounted
A6046	Artwork, Decorative, With Frame
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID
CS150	Sink, SS, Single Compartment, 10"x19x16" ID
CT020	Countertop, Solid Surface
E0948	Cart, General Storage, Mobile, 42"H x 32"W x 22"D
E0963	Cart, General Storage, Mobile
F0205	Chair, Side With Arms
F0230	Chair, Drafting, Rotary
F0340	Stool, Self Adjusting
F0540	Cart, Scope, Transport
F2010	Basket, Wastepaper, Step-On
F2310	Rack, Pamphlet, Wall Mounted
F3200	Clock, Battery, 12" Diameter
M1800	Monitor, Computer
M1801	Computer, Microprocessing, w/Flat Panel Monitor
M3073	Container, Biohazard Waste, Step-on, Fire Safe
M3160	Cabinet, Storage, Hanging Scopes
M7405	Light, Exam, Ceiling Mounted
M8500	Nasopharyngoscope, Fiberoptic, Examination Only
M8769	Suction/Aspirator Unit, Portable
M9035	Chair/Table, Exam/Treatment Combination Unit
Z0002	Digital Swallowing Workstation (FEES)
Z0003	Stroboscopy System, Digital Video
Z0007	Dispenser, Glove, Surgical/Examination, Wall Mounted, Triple, Side Loading
Z0036	Tongue Pressure Instrument
Z0042	Surface Electromyograph (sEMG)
Z0048	Tongue Function Instrument
Z1016	Cabinet, U/C/B, 4 Drawer, 33"x24"x24"
Z1018	Cabinet, ADA Sink Support, 30 " W
Z1020	Cabinet, W/H, 2 Shelf, 1 DO, Sloping Top, 38"x24"x13"
Z1021	Cabinet, W/H, 2 Shelf, 2 DO, Sloping Top, 38"x30"x13"
Z2001	Rigid Laryngoscope

4.16.4 Interior Elevations

Special Procedure Room, Speech Pathology (SPP02)



ELEVATION - 1



ELEVATION - 2

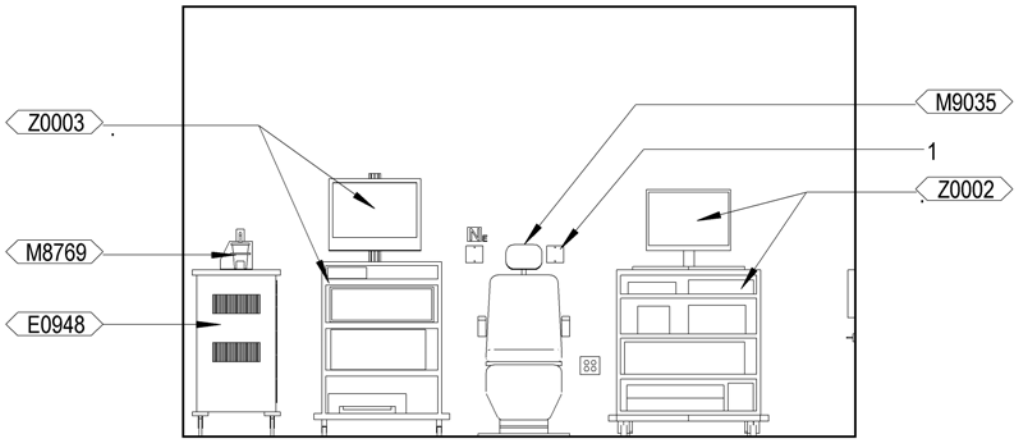
KEY NOTES:
1. MONITOR WITH WEBCAM CAPABILITY.
2. KNEE SPACE

0' 1' 2' 3' 4' 8'

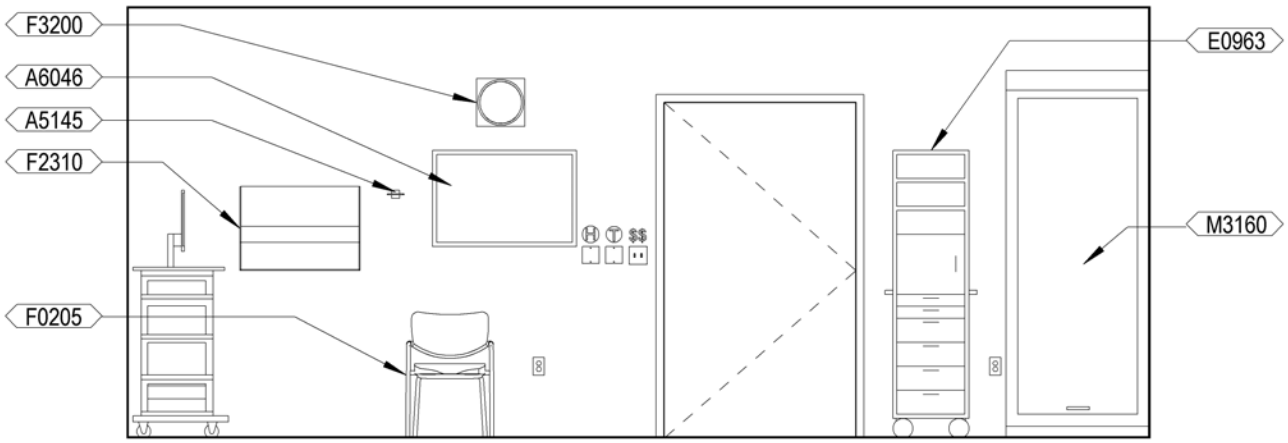
1/4" = 1'-0"

Interior Elevations

Special Procedure Room, Speech Pathology (SPP02)



ELEVATION - 3



ELEVATION - 4

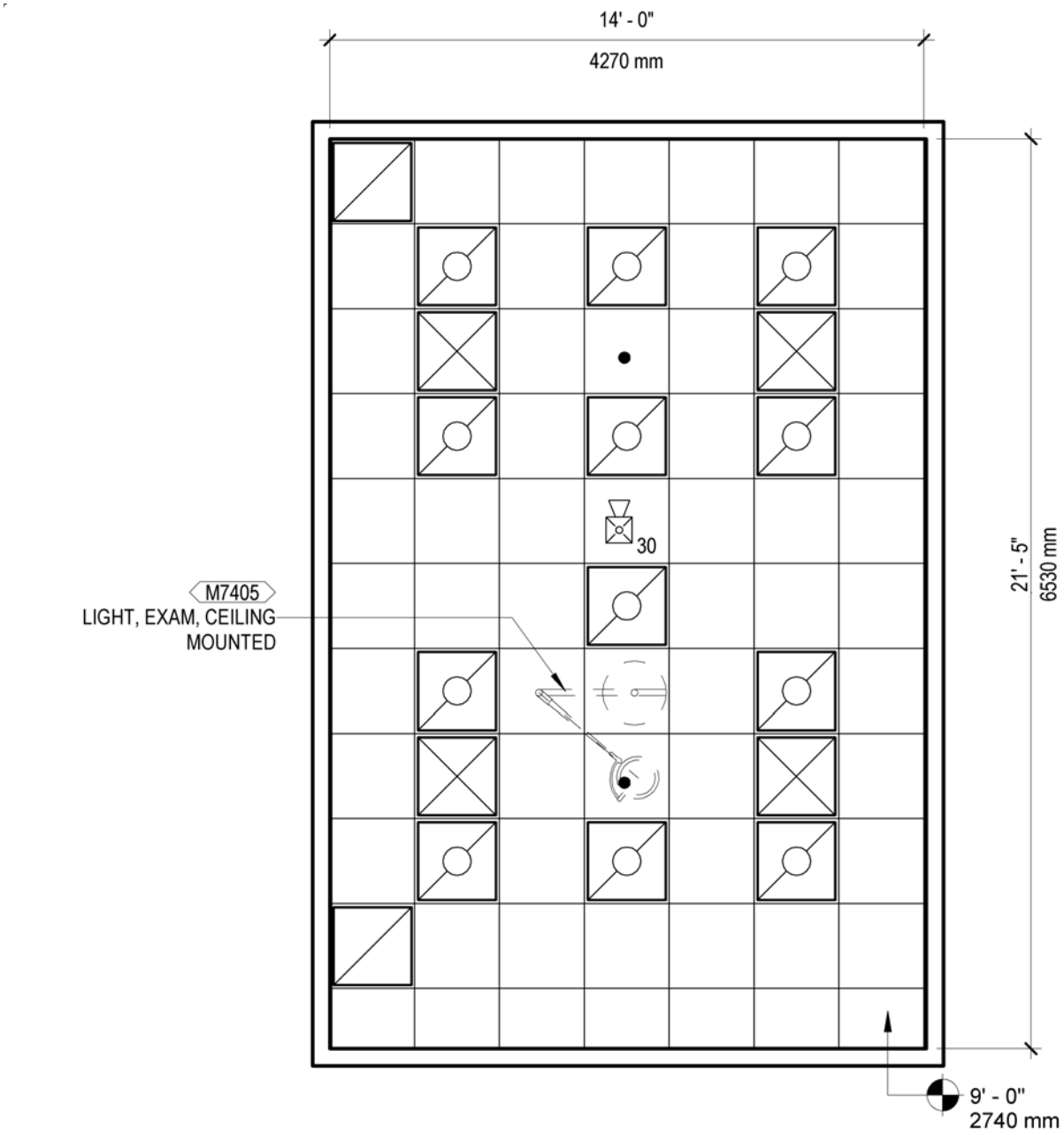
KEY NOTES:
1. EXAM LIGHT CONTROLLER.

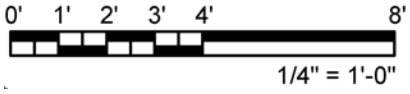
0' 1' 2' 3' 4' 8'

1/4" = 1'-0"

4.16.5 Reflected Ceiling Plan

Special Procedure Room, Speech Pathology (SPP02)





300 NSF	27.9 NSM

4.16.6 Room Data Sheet

Special Procedure Room, Speech Pathology (SPP02)

ARCHITECTURAL	
Number of People:	3
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions/Wall Finish:	GWB/P (Note 1)
Base:	m:WSF h:4" (100 mm)
Floor Finish:	WSF
Doors:	
Main:	m:Wood t:19 (Note 2) s: X
Service:	m:Wood t:19 (Note 2) dg: narrow lite (Note 3) s: S
Hardware:	4 (Note 2)
Slab Depression:	N/A
Acoustical Criteria:	Notes 4, 5
Ceiling:	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	50 STC, 50 IIC
Walls at Adjacent Room:	50 STC
Walls at Corridor:	45 STC
Special Construction:	N/A

Notes:
1) Ref. Note 64, PG-18-14
2) 40 STC rated acoustical door
3) Insulated or laminated glass unit, as required to meet acoustical criteria per Note 2.
4) Increase the minimum STC rating of walls 5 STC for every 5 dBA increase in sound level above normal speech level (65 dBA 3'-0" (910 mm) from the speaker) in the adjacent room.
5) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).

LIGHTING	
Workplane Height:	2'-6" (760 mm)
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC)
Maintained Avg. Illumination-Task Focus:	1000 Lux (100 FC) at Exam/Treatment Chair
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type
Lamps:	LED, T5, or T8 Fluorescent
CCT:	3500K (Note 2)
CRI:	80, minimum (Note 2)
Controls:	Multi-Level Control via Linear Dimming, Step Dimming, or Dual-Ballast Switching. Separate Toggle Switch for Undercabinet Lighting
Special Requirements:	N/A

Notes:
1) Surgical task lighting at exam/treatment chair
2) Ensure that room luminaires match the CCT & CRI of supplemental medical lights

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Select Receptacles Connected to Critical EES Branch

Notes:
1) Coordinate electrical connections with equipment to be installed.
2) Provide multiple receptacles above counter

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	Yes
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Staff emergency station where required
Code Blue:	No
Public Address:	No
Video Teleconferencing:	Yes (See Note 1)

Notes:
1) Where telehealth services will be provided, computer workstation shall include dual monitors, speakers, video camera, and microphone.

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Electronic Sensor
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	Yes (1)
Oxygen:	Yes (1)

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Visual (15 cd)
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.16.7 Equipment List

Table 32: Special Procedure Room, Speech Pathology (SPP02) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	4	VV	Telecommunication outlet location.
A1014	Telephone, Wall Mounted, 1 Line, With Speaker	1	VV	Telephone, Wall Mounted, 1 Line, with Speaker
A5075	Dispenser, Soap, Disposable	2	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	2	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5085	Dispenser, Paper Cup, SS, Surface Mounted	1	VV	A surface mounted, satin finished stainless steel, 3 to 6-ounce paper, or plastic flat-bottom cup dispenser. Dispenser features: tumbler lock; front hinged at bottom; and refill indicator slot. Minimum capacity 150 3-ounce cups. For general purpose use throughout the facility.
A5108	Waste Disposal Unit, Sharps	1	VV	A container for collecting and transporting syringes and other sharps for decontamination and disposal. Available in 2 gallon and 8 gallon with locking rotor. Complies with OSHA regulations for handling sharps.
A5145	Hook, Garment, Double, SS, Surface Mounted	1	CC	A surface mounted, satin finish stainless steel, double garment hook. Equipped with a concealed mounting bracket that is secured to a concealed wall plate. For general purpose use throughout the facility to hang various items of apparel.
A5225	Bracket, Dual Computer Monitor, Desk-Mounted	1	VV	Desk-mounted bracket that supports two LCD computer monitors, or laptop and monitor configuration. Extends LCD's or labtop up to 25" with an adjustment range of 18". Desk clamp attaches to edge up to 2.6" thick. Maximum combined weight supported not to exceed 50 lbs.
A6046	Artwork, Decorative, With Frame	1	VV	This JSN is to be used for determining and defining location of decorative artwork.
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.

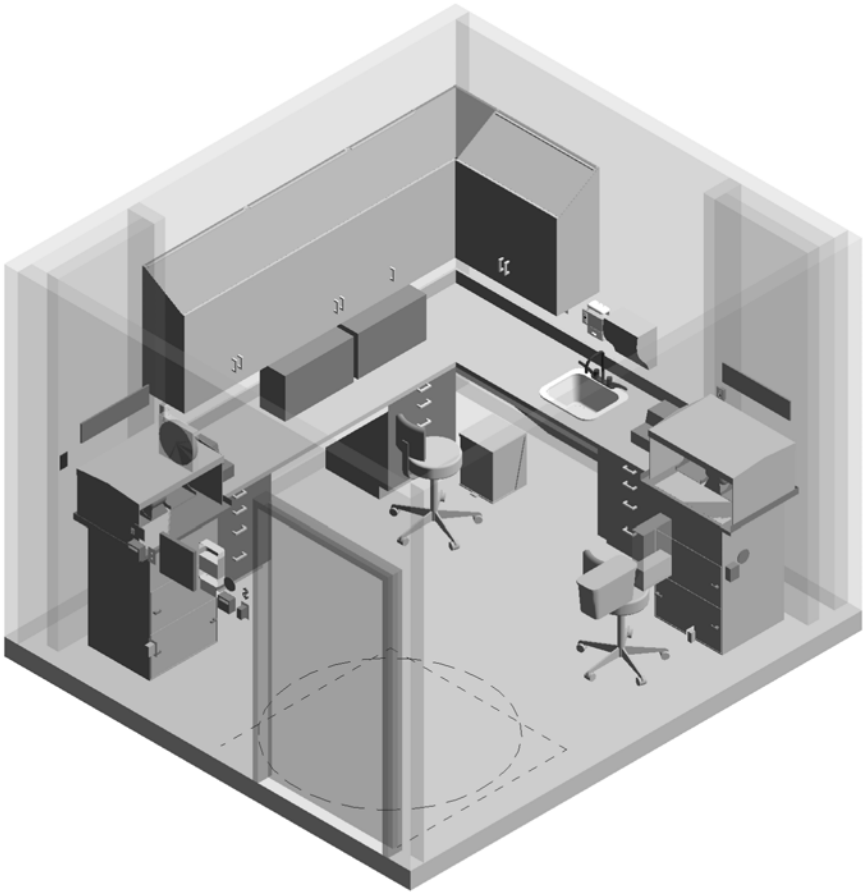
JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
CS150	Sink, SS, Single Compartment, 10"x19x16" ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.
CT020	Countertop, Solid Surface	1	CC	A solid, nonporous countertop with a smooth seamless appearance. Easy to clean and maintain and with proper cleaning does not support the growth of mold. An acrylic-based solid surface product. Standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a choice of colors and depths. Used in lab and other hospital areas requiring optimum physical and chemical resisting properties.
E0948	Cart, General Storage, Mobile, 42"H x 32"W x 22"D	1	VV	THIS TYPICAL INCLUDES: 1 Cart Body, Style-A Narrow, w/Raised Edge Top 2 Drawers, 3" H 4 Drawers, 6" H 1 Accessory Rail, Side Drawer Organizer Bins
E0963	Cart, General Storage, Mobile	1	VV	Mobile General Storage Cart, approximately 72"H x 23"W x 22"D. THIS TYPICAL INCLUDES: 1 Locker Storage Container on Wheels, w/ Solid Door 3 Tray/Shelves 4 Drawers, 3" H 4 Drawers, 6"H 1 Tray/Shelf Divider Drawer Organizer Bins
F0205	Chair, Side With Arms	1	VV	Upholstered side chair, 32" high X 21" wide X 23" deep with arms, padded seats and padded backs. Seat height is a minimum of 17". Available with or without sled base.
F0230	Chair, Drafting, Rotary	1	VV	Drafting chair approximately 47" high X 20" wide X 20" deep with rotary stool and a 5 (five) star base with casters. Padded seat and back. Foot ring adjusts with chair.
F0340	Stool, Self Adjusting	1	VV	Self adjusting stool. Consists of a foam padded upholstered seat with attached foot rest for added comfort. Mounted on swivel casters. Designed for doctor's use during examinations.
F0540	Cart, Scope, Transport	1	VV	A cart designed specifically for the safe transport of endoscopy scopes. The cart will have a lightweight frame of a tubular welded construction. The sides and back panels will be of a foamed resin with a work top of seamless, raised edge plastic. The cart will have rectangle or round trays with lids and will have 4 casters with 2 locking. Cart may have a roll-top door with a key lock.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.
F2310	Rack, Pamphlet, Wall Mounted	1	VV	Wall mounted pamphlet rack up to 12 (twelve) pamphlet holding pockets. Unit is used to store and display educational pamphlets.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
M3073	Container, Biohazard Waste, Step-on, Fire Safe	1	VV	A biohazard waste container with a step-on lid. The container will have a capacity of approximately 12 gallons and be made of a fire safe material.
M3160	Cabinet, Storage, Hanging Scopes	1	VV	Scope hanging cabinet. Cabinet has the capacity to hold up to nine scopes. Some cabinets may have a roll top closure and optional storage drawer.
M7405	Light, Exam, Ceiling Mounted	1	CC	Ceiling exam light. Consists of a lightheaded reflector supported by a ceiling mounted radial arm assembly that provides a wide range of positioning capabilities. Halogen bulbs and an intensity control provide cool, color corrected light. The minimum ceiling height in most cases is 8'-0"; refer to each manufacturer's specific installation requirements. Physical dimensions refer to the retracted light; one length of the dual swing arm around the center mount in width and depth and the combined height of the lamp head and folded arms. Unit may also have a center mount detachable and sterilizable control handle. For use in minor procedure or examination room applications.
M8500	Nasopharyngoscope, Fiberoptic, Examination Only	3	VV	Flexible Nasopharyngoscope for examination of the upper nose and pharynx. Unit consists of a thin flexible casing with light guides, an objective lens with an optical image fiber cluster, an eyepiece and a cable for connection to a light source. Unit is used for imaging only and does not include an instrument channel. Refer to JSNs M8516, M8550, M8555-M8557, M8600, and M8605-M8607 for supporting equipment.
M8769	Suction/Aspirator Unit, Portable	1	VV	General purpose suction apparatus with rechargeable battery and 1500 ml disposable collection canister.
M9035	Chair/Table, Exam/Treatment Combination Unit	1	VV	A dual purpose examination and treatment/procedure chair/table combination unit. Unit consists of an upholstered chair with foot and head sections. Unit can be operated and positioned to a table position by a hydraulic mechanism. Features "memory" power positioning, controlled by pedal switches or finger switches. Unit is designed for use in clinics, doctor's office, or treatment rooms.
Z0002	Digital Swallowing Workstation (FEES)	1	VV	Mobile digital swallowing workstation system for swallowing evaluations in speech therapy rooms and procedural rooms with Fiberoptic Endoscopy. Typical configuration includes cart, computer, swallowing signal lab, halogen light source, and camera.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
Z0003	Stroboscopy System, Digital Video	1	VV	A Complete Endoscopy/Stroboscopy System. The Digital Strobe is an advanced laryngeal imaging system that digitally records stroboscopic, and other endoscopic, exams to a fully-integrated video capture and playback workstation. Digital video stroboscopy system to include rhinolaryngeal stroboscope, computer video capture module, three chip CCD camera, electroglottograph, and cart.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	2	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.
Z0036	Tongue Pressure Instrument	1	VV	Equipment that provides an assessment of non-speech tongue function via measurement of the peak pressure a patient can produce by pressing a tongue bulb against the roof of the mouth with the tongue. System components include a device which measures and displays pressure from an air-filled bulb, a box of tongue bulbs, connecting tube, carrying case, and accuracy check syringe.
Z0042	Surface Electromyograph (sEMG)	1	VV	Surface Electromyograph is a device/sensor that measures the amount of electrical activity your muscles release when they are contracting, more commonly known as muscle tension.
Z0048	Tongue Function Instrument	1	VV	System includes a custom-molded mouthpiece, a tablet, and software which is used for oropharyngeal therapy to improve lingual strength and swallow function.
Z1016	Cabinet, U/C/B, 4 Drawer, 33"x24"x24"	2	CC	Standing height under counter base cabinet with three or four full width drawers; configuration to be determined based on facility needs. Also referred to as a drawer cabinet. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge banding. Hardware includes hinges, full extension drawer slides, pulls, and adjustable glides.
Z1018	Cabinet, ADA Sink Support, 30 " W	2	CC	Wall mounted sink support cabinet for drop-in sink with vertical fascia and angled ADA profile, also referred to as ADA sink cabinet. Removable front panel to permit access to plumbing. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Includes all attaching hardware including support rail.
Z1020	Cabinet, W/H, 2 Shelf, 1 DO, Sloping Top, 38"x24"x13"	2	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left-hinged door, and sloping top. Also referred to as a solid hinged single door case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.
Z2001	Rigid Laryngoscope	3	VV	A rigid endoscope passed through the mouth and equipped with a source of light and magnification, for examining and performing local diagnostic and surgical procedures on the larynx and pharynx.

4.17 Hearing Aid Lab (AUDS1)

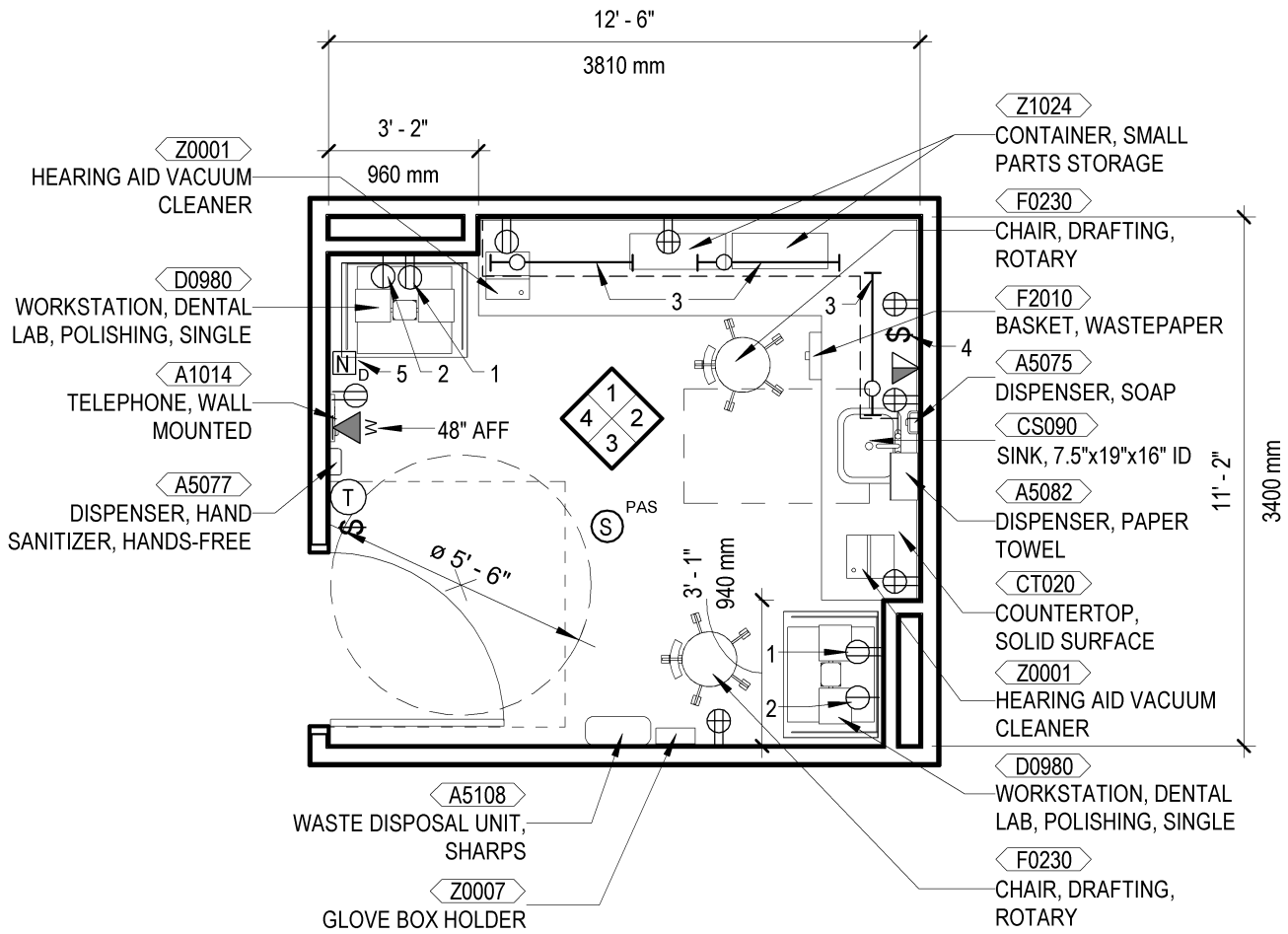
4.17.1 Axonometric View



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

4.17.2 Floor Plan

Hearing Aid Lab (AUDS1)



KEY NOTES:

1. DUPLEX RECEPTACLE FOR LATHE MOTOR CONNECTIONS, COORDINATE ELECTRICAL WITH ACTUAL EQUIPMENT SELECTION,TYPICAL.
2. SIMPLEX RECEPTACLE FOR BLOWER/SUCTION MOTOR CONNECTION, TYPICAL.
3. UNDERCABINET LIGHT, TYP.
4. SWITCH CONTROLS UNDERCABINET LIGHTS.
5. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.

0' 1' 2' 3' 4' 8'

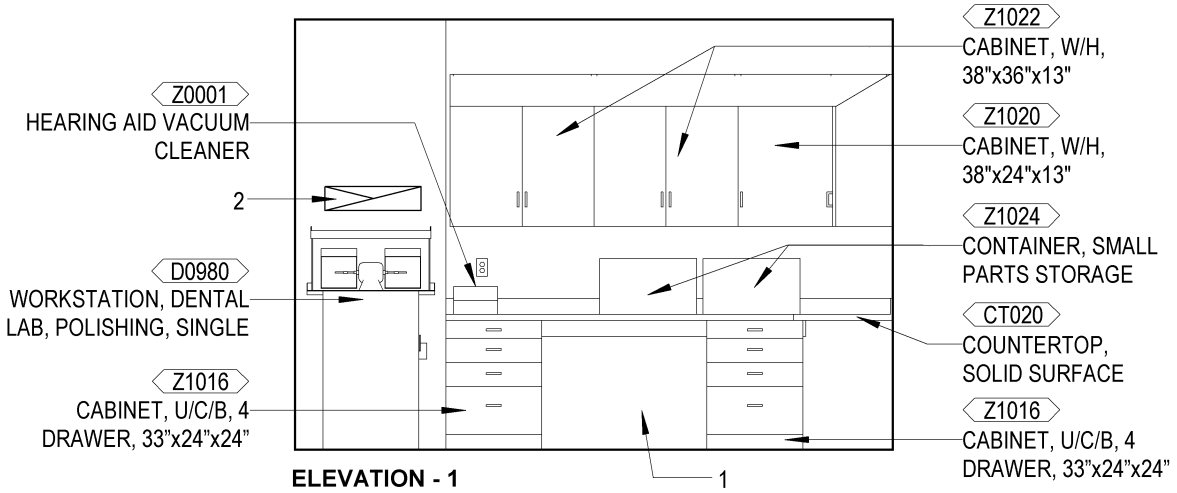
1/4" = 1'-0"

140 NSF	13.0 NSM

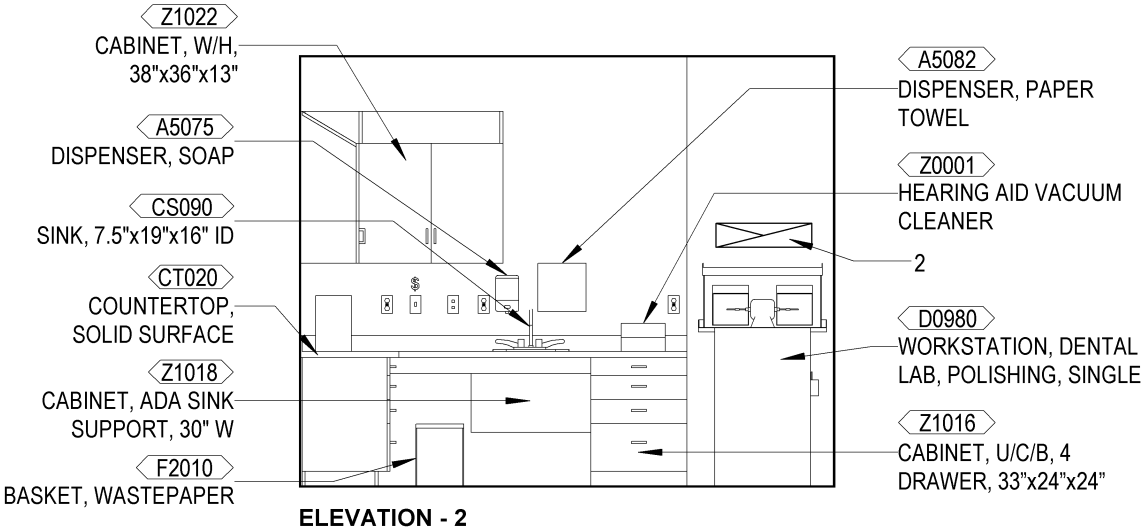
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.17.3 Interior Elevations

Hearing Aid Lab (AUDS1)

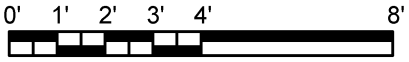


ELEVATION - 1



ELEVATION - 2

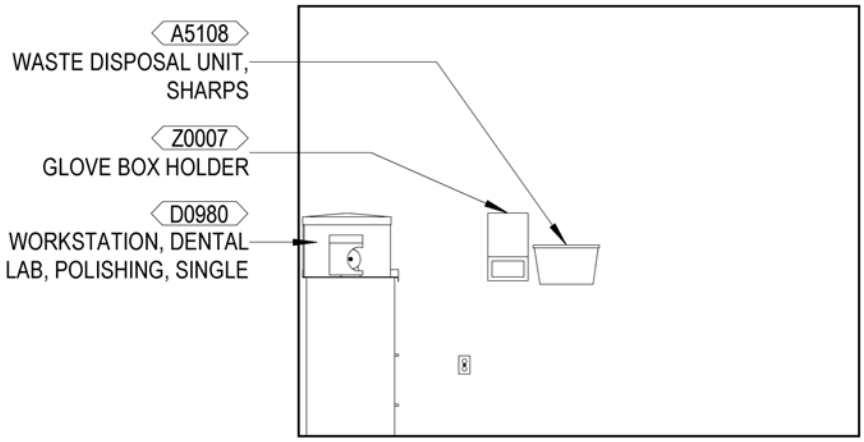
KEY NOTES:
1. KNEE SPACE
2. MINIMUM 24"x6" (610 mm x 150 mm) EXHAUST REGISTER FOR POLISHING STATION DUST REMOVAL.



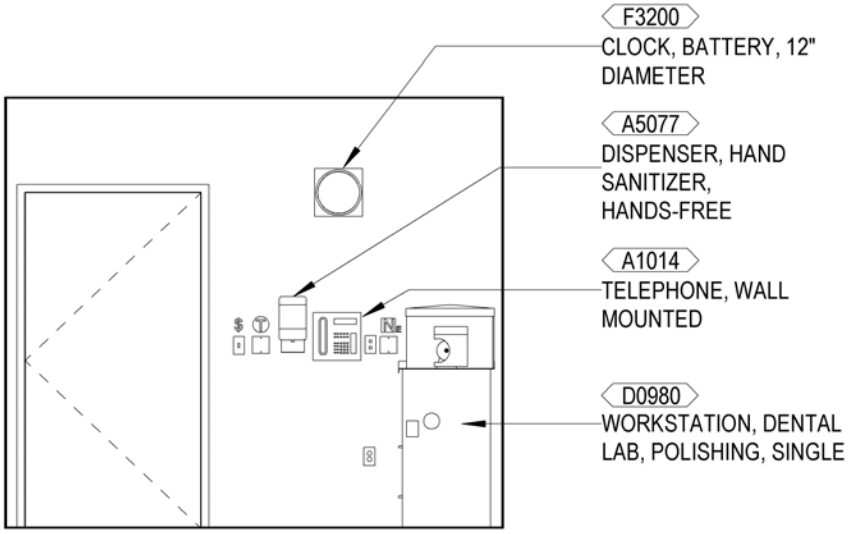
1/4" = 1'-0"

Interior Elevations

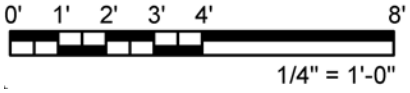
Hearing Aid Lab (AUDS1)



ELEVATION - 3

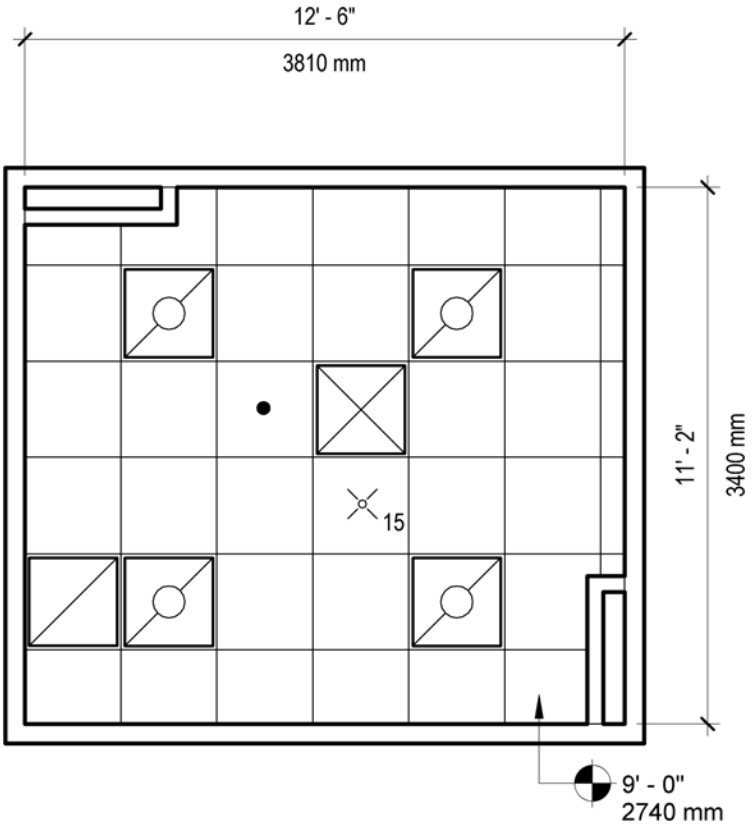


ELEVATION - 4

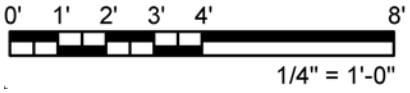


4.17.4 Reflected Ceiling Plan

Hearing Aid Lab (AUDS1)



NOTE: SEE ELEVATIONS FOR WALL MOUNTED EXHAUST REGISTERS.



140 NSF	13.0 NSM

4.17.5 Room Data Sheet

Hearing Aid Lab (AUDS1)

ARCHITECTURAL	
Number of People:	3
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions/Wall Finish:	GWB/P (Note 1)
Base:	m:RB h:4" (100 mm)
Floor Finish:	LVT (Note 5)
Door:	m:Wood t:19 (Note 2) s:V
Hardware:	4
Slab Depression:	N/A
Acoustical Criteria:	Notes 3, 4
Ceiling:	0.70 NRC rating and 35 CAC rating
Floor/Ceiling:	55 STC
Walls at Adjacent Room:	60 STC
Walls at Corridor:	45 STC
Special Construction:	N/A

Notes:
1) Ref. Note 64, PG-18-14
2) STC 40 rated acoustical door
3) Do not locate this space adjacent to (including above or below) spaces with HVAC noise criteria less than NC-35.
4) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).
5) Slip Resistance: pass ASTMD 2047, COF greater than or equal to 0.5.

LIGHTING	
Workplane Height:	3'-0" (915 mm)
Maintained Avg. Illumination-Ambient:	500 Lux (50 FC)
Maintained Avg. Illumination-Task Focus:	500 Lux (50 FC) at Work Counter Surface
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type
Lamps:	LED, T5, or T8 Fluorescent
CCT:	3500K
CRI:	80, minimum
Controls:	Multi-Level Control via Linear Dimming, Step Dimming, or Dual-Ballast Switching. Separate Toggle Switch for Undercabinet Lighting.
Special Requirements:	N/A

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:
1) Coordinate electrical connection with equipment to be installed
2) Multiple receptacles above counter for equipment connections and device charging

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	No
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Duty station where required
Code Blue:	No
Public Address:	Yes
Video Teleconferencing:	No

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	Yes
Hot Water:	Yes
Water Control:	Manual
Compressed Air:	No
Sanitary/Vent:	Yes
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	Visual (15 cd)
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.17.6 Equipment List

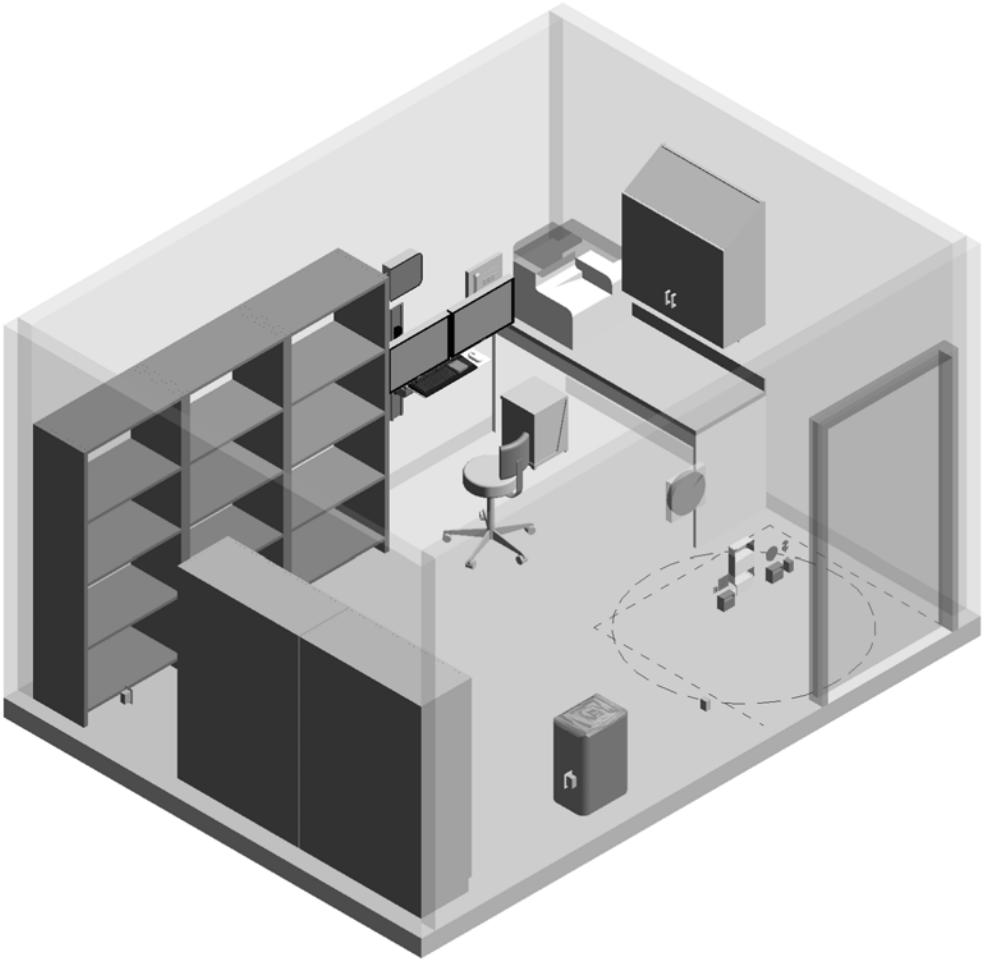
Table 33: Hearing Aid Lab (AUDS1) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	2	VV	Telecommunication outlet location.
A1014	Telephone, Wall Mounted, 1 Line, With Speaker	1	VV	Telephone, Wall Mounted, 1 Line, with Speaker
A5075	Dispenser, Soap, Disposable	1	VV	Disposable soap dispenser. One-handed dispensing operation. Designed to accommodate disposable soap cartridge and valve.
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
A5082	Dispenser, Paper Towel, Sensor, Hands Free	1	CC	A surface mounted, sensor activated, automatic, roll paper towel dispenser. The unit dispenses a paper towel automatically only when hands are place in position below the dispenser for maximum sanitation and hygiene. May include adjustable settings for sheet length, time delay, and sensor range. Unit is battery operated or with optional AC power adapter.
A5108	Waste Disposal Unit, Sharps	1	VV	A container for collecting and transporting syringes and other sharps for decontamination and disposal. Available in 2 gallon and 8 gallon with locking rotor. Complies with OSHA regulations for handling sharps.
CS090	Sink, SS, Single Compartment, 7.5"x19"x16" ID	1	CC	Single compartment stainless steel sink, drop-in, self-rimming, ledge-type, connected with a drain and provided with a mixing faucet. It shall also be provided with pre-punched fixture holes on 4" center, integral back ledge to accommodate deck-mounted fixtures, brushed/polished interior and top surfaces, and sound deadened. Recommended for use in suspended or U/C/B sink cabinets having a high plastic laminate or Chemsurf laminate countertop/work surface. Coordinate actual outside sink dimensions with the actual clear dimension of cabinet specified to ensure that they are compatible. For general purpose use throughout the facility.
CT020	Countertop, Solid Surface	1	CC	A solid, nonporous countertop with a smooth seamless appearance. Easy to clean and maintain and with proper cleaning does not support the growth of mold. An acrylic-based solid surface product. Standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a choice of colors and depths. Used in lab and other hospital areas requiring optimum physical and chemical resisting properties.
D0980	Workstation, Dental Lab, Polishing, Single	2	VV	Modular polishing workstation with a full-length load-bearing table frame or cabinet on adjustable legs including end panels and supports, a stainless steel countertop with rolled edges, a build-in polishing unit with an integrated 2 speed motor, lighting, a dust extraction unit for wet and dry polishing and a removable waste tray.
F0230	Chair, Drafting, Rotary	2	VV	Drafting chair approximately 47" high X 20" wide X 20" deep with rotary stool and a 5 (five) star base with casters. Padded seat and back. Foot ring adjusts with chair.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
Z0001	Hearing Aid Vacuum Cleaner	2	VV	A tool used for repairing, restoring, and maintaining hearing aids. The device consists of three functions/applications: 1) a vacuum wand to extract ear wax and debris from receiver tubes, microphone tubes, vents, and battery compartments. 2) pressure function used to blow air through the pressure wand and to clear clogged cleaning tips. 3) Drying Chamber to displace moisture trapped within a hearing aid. The system is powered by a switch on the back of the unit. Included accessories are vacuum wand tips, drying chamber filter, and cleaning tool kit.
Z0007	Dispenser, Glove, Surgical/ Examination, Wall Mounted, Triple, Side Loading	1	VV	The unit is designed for the storage of 3 different sizes of glove boxes and is capable of being mounted on the wall.
Z1016	Cabinet, U/C/B, 4 Drawer, 33"x24"x24"	3	CC	Standing height under counter base cabinet with three or four full width drawers; configuration to be determined based on facility needs. Also referred to as a drawer cabinet. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge banding. Hardware includes hinges, full extension drawer slides, pulls, and adjustable glides.
Z1018	Cabinet, ADA Sink Support, 30" W	1	CC	Wall mounted sink support cabinet for drop-in sink with vertical fascia and angled ADA profile, also referred to as ADA sink cabinet. Removable front panel to permit access to plumbing. Medium density M-3 particle board core construction faced with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on semi-exposed and concealed surfaces; plastic laminate edge banding. Includes all attaching hardware including support rail.
Z1020	Cabinet, W/H, 2 Shelf, 1 DO, Sloping Top, 38"x24"x13"	1	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left-hinged door, and sloping top. Also referred to as a solid hinged single door case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.
Z1022	Cabinet, W/H, 2 Shelf, 2 DO, Sloping Top, 38"x36"x13"	3	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left hinged doors, and sloping top. Also referred to as a solid hinged double door wall case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.
Z1024	Container, Small Parts Storage	2	VV	Plastic or steel drawer parts storage/organizer cabinet with clear plastic drawers. Container quantity, drawer quantity, and configuration, to be determined by facility /user requirements.

4.18 Hearing Aid Processing Room (AUDS2)

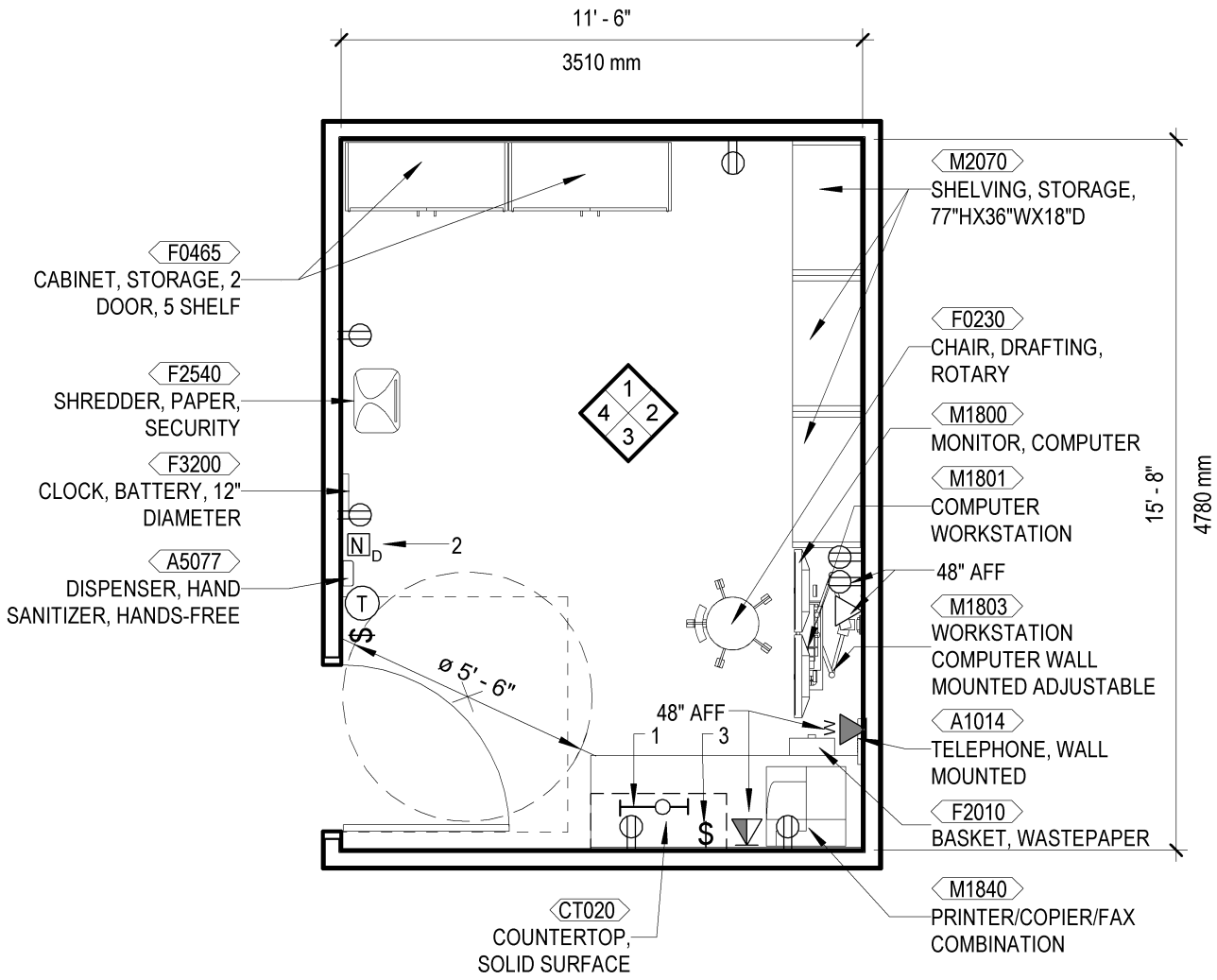
4.18.1 Axonometric View



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

4.18.2 Floor Plan

Hearing Aid Processing Room (AUDS2)



KEY NOTES:
1. UNDERCABINET LIGHT, TYP.
2. OPTIONAL LOCATION FOR NURSE CALL STAFF STATION; PROVIDE BASED ON FACILITY DIRECTION.
3. SWITCH CONTROLS UNDERCABINET LIGHTS.

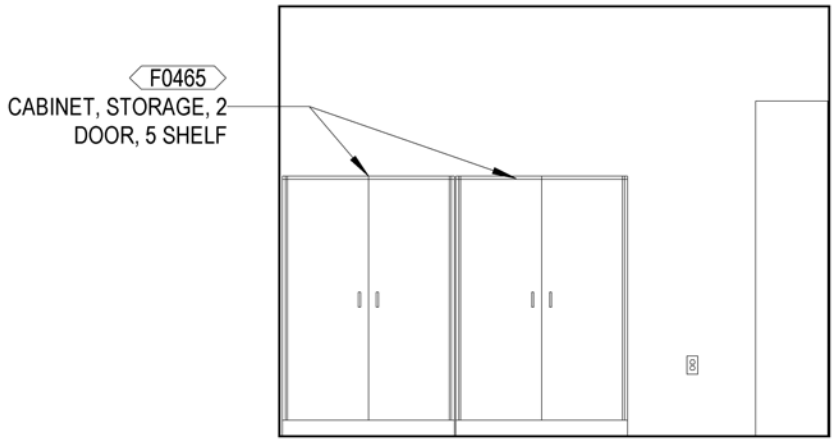
0' 1' 2' 3' 4' 8'
1/4" = 1'-0"

180 NSF	16.7 NSM

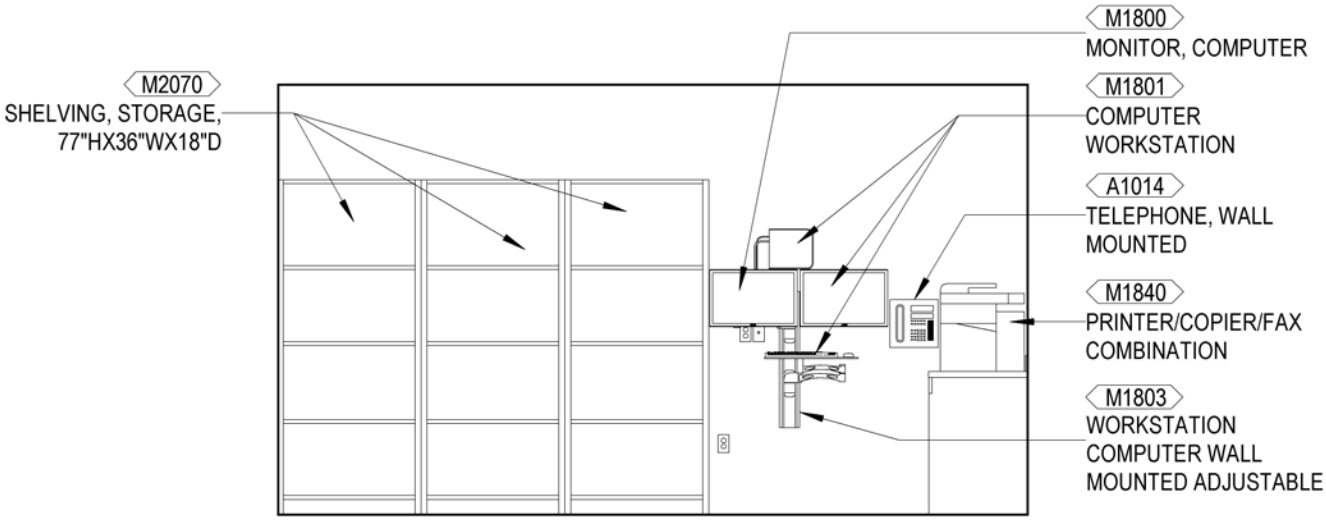
NOTE: Guide plates are graphical representations of selected room types, illustrating the integration of space, components, systems, and equipment. They provide typical configurations and general technical guidance, and are not intended to be project specific. Specific infrastructure design requirements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

4.18.3 Interior Elevations

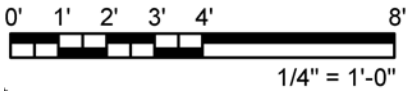
Hearing Aid Processing Room (AUDS2)



ELEVATION - 1

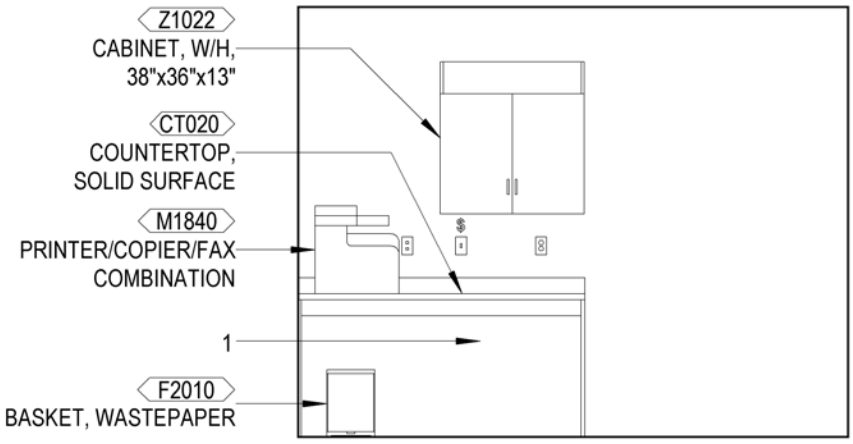


ELEVATION - 2

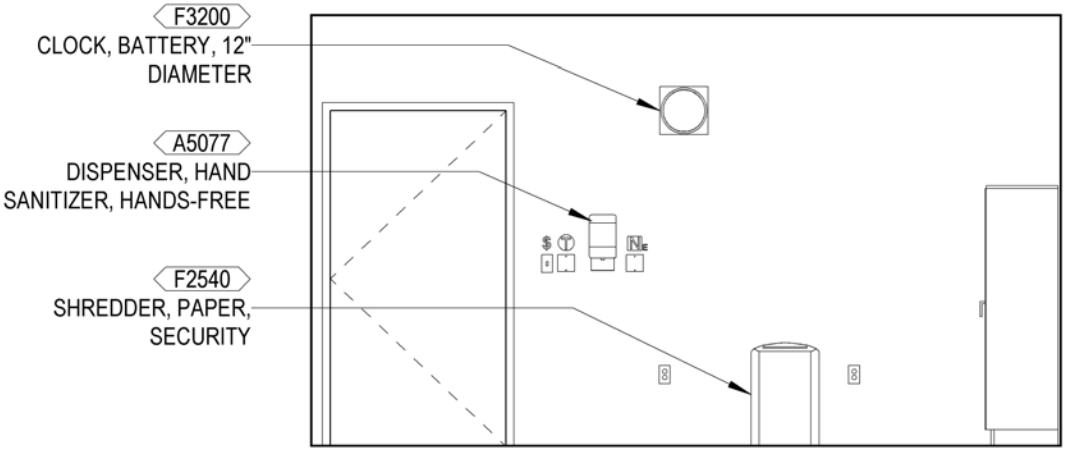


Interior Elevations

Hearing Aid Processing Room (AUDS2)

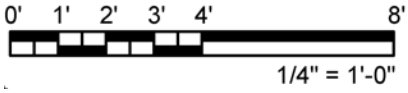


ELEVATION - 3



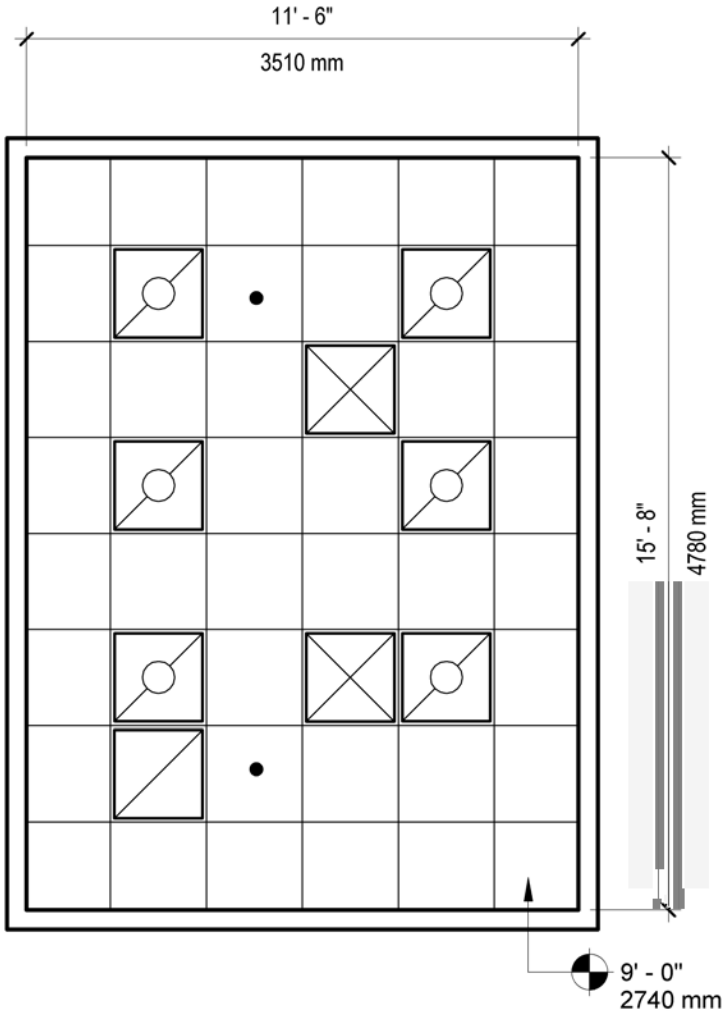
ELEVATION - 4

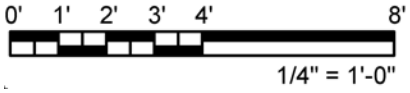
KEY NOTES:
1. KNEE SPACE



4.18.4 Reflected Ceiling Plan

Hearing Aid Processing Room (AUDS2)





180 NSF	16.7 NSM

4.18.5 Room Data Sheet

Hearing Aid Processing Room (AUDS2)

ARCHITECTURAL	
Number of People:	1
Ceiling:	AT
Ceiling Height:	9'-0" (2700 mm)
Partitions/Wall Finish:	GWB/P (Note 1)
Base:	m:RB h:4" (100 mm)
Floor Finish:	VT
Door:	m:Wood t:7 s:S
Hardware:	5
Slab Depression:	N/A
Acoustical Criteria:	Note 2
Ceiling:	0.70 NRC rating and 35 CAC rating
Walls at Adjacent Room:	50 STC
Walls at Corridor:	35 STC
Special Construction:	N/A

Notes:
1) Ref. Note 64, PG-18-14
2) Refer to *PG-18-10 Chapter 6; Table 5 Mechanical Room Data Sheets* for Noise Criteria (refer to Section 4.19).

LIGHTING	
Workplane Height:	At Floor
Maintained Avg. Illumination-Ambient:	300 Lux (30 FC)
Maintained Avg. Illumination-Task Focus:	N/A
Luminaire Type:	2'x4' (610x1220 mm) or 2'x2' (610x610 mm) Fluorescent or LED, Lensed, Volumetric or Direct/Indirect Distribution Type.
Lamps:	LED, T5, or T8 Fluorescent
CCT:	3500K
CRI:	80, minimum
Controls:	Manual On/Automatic Off, Control via Wall-Mount Occupancy Sensor(s)
Special Requirements:	N/A

POWER	
Normal Power:	Connect to receptacles and equipment
Emergency Power:	Not Required

Notes:
1) Receptacles on all walls

COMMUNICATIONS	
Data:	Yes
Telephone:	Yes
Cable Television:	No
Duress Alarm:	No
Electronic Access & Door Control:	No
Motion Intrusion Detection:	No
Intercom:	No
Nurse Call:	Duty station where required
Code Blue:	No
Public Address:	Yes
Video Teleconferencing:	No

HEATING, VENTILATING, AND AIR CONDITIONING

General Requirement: Refer to the current version of PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets (copy is provided in Section 4.19) for room temperatures, humidity range, room air change requirements, and pressurization.

PLUMBING AND MEDICAL GASES	
Cold Water:	No
Hot Water:	No
Water Control:	No
Compressed Air:	No
Sanitary/Vent:	No
Medical Air:	No
Medical Vacuum:	No
Oxygen:	No

FIRE PROTECTION AND LIFE SAFETY	
Fire Alarm:	None Required
Sprinkler:	Recessed pendant, center of tile
Hazard Type:	Light

4.18.6 Equipment List

Table 34: Hearing Aid Processing Room (AUDS2) Equipment List

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
A1010	Telecommunication Outlet	3	VV	Telecommunication outlet location.
A1014	Telephone, Wall Mounted, 1 Line, With Speaker	1	VV	Telephone, Wall Mounted, 1 Line, with Speaker
A5077	Dispenser, Hand Sanitizer, Hands-Free	1	VV	A touch free wall-mounted hand sanitizer dispenser. For use throughout a healthcare facility. Unit does not include the sanitizing liquid. Units are battery operated.
CT020	Countertop, Solid Surface	1	CC	A solid, nonporous countertop with a smooth seamless appearance. Easy to clean and maintain and with proper cleaning does not support the growth of mold. An acrylic-based solid surface product. Standard thickness of 1", and a 4" butt backsplash/curb. Also referred to as a work surface or work top. Available in a choice of colors and depths. Used in lab and other hospital areas requiring optimum physical and chemical resisting properties.
F0230	Chair, Drafting, Rotary	1	VV	Drafting chair approximately 47" high X 20" wide X 20" deep with rotary stool and a 5 (five) star base with casters. Padded seat and back. Foot ring adjusts with chair.
F0465	Cabinet, Storage, 2 Door, 5 Shelf	2	VV	Storage cabinet, 78" high X 48" wide X 24" deep with two (2) doors and five (5) adjustable shelves.
F2010	Basket, Wastepaper, Step-On	1	VV	"Step-on" wastepaper basket with inner liner and foot petal activated flip top.
F2540	Shredder, Paper, Security	1	VV	Paper shredder, approximately 21" high X 15" wide X 12" deep with shredding unit and waste receptacle. Security features will include cross-cut shredding.
F3200	Clock, Battery, 12" Diameter	1	VV	Clock, 12" diameter. Round surface, easy to read numbers with sweep second hand. Wall mounted unit for use when impractical to install a fully synchronized clock system. Battery operated, (batteries not included).
M1800	Monitor, Computer	1	VV	A high definition LED computer monitor with minimum 1920 x 1080 resolution, 4ms response time, 25 inch class display size, compatible with desk or arm mounted. Monitor is VESA compatible and Energy Star compliant.
M1801	Computer, Microprocessing, w/Flat Panel Monitor	1	VV	Desk top microprocessing computer. The unit shall consist of a central processing mini tower, flat panel monitor, keyboard, mouse, and speakers. The system shall have the following minimum characteristics: a 2.8 GHz Pentium processor; 512 MB memory; 80GB hard drive; 32/48x CD-ROMDVD combo; 1.44MB network interface card; video 32 MB NVIDIA; a 18 inch flat panel monitor. The computer is used throughout the facility to input, manipulate, and retrieve information.
M1803	Workstation, Computer, Wall Mounted, Adjustable	1	VV	A wall mounted computer workstation with height adjustable monitor and keyboard arms. Keyboard and monitor can be stored within 8" to 10" of wall. Fingertip adjustability for keyboard and monitor enable frequent position changes. Unit contains an integrated cable management system to hide wires. A separate wall-mounted CPU holder is included.

JSN	NAME	QTY	ACQ/ INS	DESCRIPTION
M1840	Printer/Copier/ Fax Combination	1	VV	Multifunctional printer, fax, scanner, and copier (PFC) all-in-one machine.
M2070	Shelving, Storage, 77"H x 36"W x 18"D	3	VV	Storage shelving unit approximately 77Hx36Wx18D. Corrosion resistant baked enamel, galvanized or stainless steel open unit with adjustable shelves. For use in storage room.
Z1022	Cabinet, W/H, 2 Shelf, 2 DO, Sloping Top, 38"x36"x13"	1	CC	Wall hung high pressure plastic laminate-faced cabinet with two adjustable shelves, solid right or left hinged doors, and sloping top. Also referred to as a solid hinged double door wall case. Medium density M-3 particle board core construction with high pressure vertical grade decorative plastic laminate on exposed surfaces and melamine on concealed/semi-concealed surfaces; plastic edge-banding. Hardware includes hinges, pulls, and adjustable shelf standards.

4.19 PG-18-10 Chapter 6 Table 5 – Mechanical Room Data Sheets

(Excerpt from PG-18-10 VA HVAC Design Manual 2017, refer to manual for most current data)

MINIMUM AHU REQUIREMENTS TO SERVE AUDIOLOGY AND SPEECH-LANGUAGE PATHOLOGY CLINIC SPACES	
AHU System Data Sheet	
Air-Handling Type	Non-dedicated (Par 6.3) Variable Air Volume
Indoor Design Temperature	Room Data Sheets
Indoor Design Relative Humidity	Room Data Sheets
Minimum Total Air Changes per Hour	Room Data Sheets
Minimum Outdoor Air Changes per Hour	Chapter 2 and Room Data Sheets
Return Air Permitted	Yes
Exhaust Air Required	See Room Data Sheets
Air Economizer Cycle Required	ASHRAE Standard 90.1 - 2013, or latest approved edition
Heat Recovery System Required	ASHRAE Standard 90.1 - 2013, or latest approved edition
Filtration - Per-Filters (PF-1 and PF-2)	PF-1 = MERV 7 and PF-2 = MERV 11
Filtration - After-Filter (AF)	AF = MERV 14
Cooling Source	Chilled Water
Heating Source	Steam and/or Hot Water
Humidification Source	Plant Steam or "Clean Steam"
General Exhaust System Required	Room Data Sheets
Special Exhaust System Required	Room Data Sheets
Emergency Power Required	No
Individual Room Temperature Control Required	Room Data Sheets
Room Air Balance	Room Data Sheets
Note 1 - General A separate air handling unit is not typically provided for Audiology/Speech Pathology.	
Note 2 - Listed Rooms and Their Names Listed rooms, their names, codes, and design conditions found in the RDS sheets that follow this air handling unit are based on the VA Audiology and Speech Pathology Design Guide dated Nov 2017. See other RDS sheets for general purpose support and clinical spaces found in multiple areas of medical facilities.	
Note 3 - Makeup Air Requirements Any air handling unit serving the audiology/speech pathology spaces need not be a 100% outside air system, however, the system must have adequate outside air flow to match the exhaust requirement of all spaces served plus 15% or the minimum required outside air of all the spaces served whichever is greater.	

AUDIOLOGY CLINIC - ROOM DATA SHEET

ROOM NAME	INDOOR TEMPERATURE COOLING F	INDOOR TEMPERATURE COOLING C	INDOOR TEMPERATURE HEATING F	INDOOR TEMPERATURE HEATING C	INDOOR RELATIVE HUMIDITY % RH MAX	INDOOR RELATIVE HUMIDITY % RH MIN	MIN TOTAL ACH	MIN OA ACH	ROOM AIR RETURN EXHAUST G EXHAUST S	MAX NOISE LEVEL NC	ROOM AIR BALANCE	INDIVIDUAL ROOM CONTROL TEMP	INDIVIDUAL ROOM CONTROL FLOW
Audiology Clinic Patient Area													
AUD01: Audiology Rehabilitation/Counseling Room	75	24	70	21	60	20	6	2	Return	35	(+)	Yes	VAV
AUD02: Hearing Aid Repair Room	75	24	70	21	60	20	6	2	Return	35	(+)	Yes	VAV
AUDE1: Suite 1, Audiometric Examination (Prefab 2-Sided Suite)	75	24	70	21	60	20	6	2	Return	Note 3	(+)	Yes	VAV
Note 1 - HVAC connection(s) Provide direct coupled HVAC connection(s) to prefabricated roof assembly of each side of the suite.													
Note 2 - Temperature control zones Provide separate temperature control zone for each side of the suite. Room criteria shall be similar for each side of the suite.													
Note 3 - HVAC Noise ANSI S3.1-1999 [R2008] Maximum Permissible Ambient Noise Levels for Audiometric Test Rooms. Provide silencer system that provides pressure drops that do not exceed 0.25 inches H_2O at an airflow rate corresponding to one complete air change every 10 minutes. All airflow and pressure drop measurements shall be in accordance with ASHRAE guidelines.													
AUDE2: Suite 2, Audiometric Examination (single pre-fab booth in room)	75	24	70	21	60	20	6	2	Return	Note 3	(+)	Yes	VAV
Note 1 - HVAC connection(s) Provide direct coupled HVAC connection(s) to prefabricated roof assembly of the booth.													
Note 2 - Temperature control zones Provide separate temperature control zone for each side of the suite. Room criteria shall be similar for each side of the suite. **Note 3 - HVAC Noise** Room: NC-25 Booth: ANSI S3.1-1999 [R2008] Maximum Permissible Ambient Noise Levels for Audiometric Test Rooms Provide silencer system that provides pressure drops that do not exceed 0.25 inches H2O at an airflow rate corresponding to one complete air change every 10 minutes. All airflow and pressure drop measurements shall be in accordance with ASHRAE guidelines. The fan assembly used in the ventilation system shall not produce noise levels which would preclude live-voice testing or other activities in the room housing the booth.													
AUD03: Programming/Fitting Room	75	24	70	21	60	20	6	2	Return	25	(+)	Yes	VAV
AUD04: Cerumen Management Room	75	24	70	21	60	20	6	2	Return	35	(+)	Yes	VAV
AUDP1: Electrophysiology Room	75	24	70	21	60	20	6	2	Return	30	(+)	Yes	VAV
AUDP2: Posturography Room	75	24	70	21	60	20	6	2	Return	35	(+)	Yes	VAV
AUDP3: Vestibulography Room	75	24	70	21	60	20	6	2	Return	35	(+)	Yes	VAV
AUDP4: Rotary Chair Room	75	24	70	21	60	20	6	2	Return	35	(+)	Yes	VAV
AUD05: Cochlear Implant Mapping/Fitting Room	75	24	70	21	60	20	6	2	Return	30	(+)	Yes	VAV
Audiology Support Areas													
AUDS1: Hearing Aid Lab	75	24	70	21	60	20	6	2	Exhaust (S)	40	(+)	Yes	CV
Note 1 - Localized exhaust Provide localized exhaust for equipment generated dust.													
AUDS2: Hearing Aid Processing Room	75	24	70	21	60	20	6	2	Return	40	(+)	Yes	VAV

SPEECH CLINIC - ROOM DATA SHEET

ROOM NAME	INDOOR TEMPERATURE COOLING F	INDOOR TEMPERATURE COOLING C	INDOOR TEMPERATURE HEATING F	INDOOR TEMPERATURE HEATING C	INDOOR RELATIVE HUMIDITY % RH MAX	INDOOR RELATIVE HUMIDITY % RH MIN	MIN TOTAL ACH	MIN OA ACH	ROOM AIR RETURN EXHAUST G EXHAUST S	MAX NOISE LEVEL NC	ROOM AIR BALANCE	INDIVIDUAL ROOM CONTROL TEMP	INDIVIDUAL ROOM CONTROL FLOW
Speech-Language Pathology Clinic Patient Area													
SPL01: Office/Treatment Room, Speech-Language Pathology	75	24	70	21	60	20	6	2	Return	35	(+)	Yes	VAV
SPAT1: Assistive Technology Room 1 (Outpatient/Clinic)	75	24	70	21	60	20	6	2	Return	35	(+)	Yes	VAV
SPP01: Voice Treatment Room	66-75	24	70	21	55	30	10	2	Return	30	(+)	Yes	VAV
Note 1 - Humidity Sensor Provided dedicated room humidity sensor tied into the BAS.													
SPP02: Special Procedure Room, Speech Pathology	66-75	24	70	21	55	30	10	2	Return	35	(+)	Yes	VAV
Note 1 - Humidity Control Provide humidity sensor an associated equipment to achieve RH indicated, as required.													

***Figure 60**: VA HVAC Design Manual (PG-18-10) Chapter 6 Table 5 – Mechanical Room Data Sheets (8/2017)*

5.0 APPENDIX

5.1 Room Lists

The list of rooms associated with Audiology and Speech-Language Pathology Functional Areas (FA) has been updated in *PG-18-9 Chapter 204: Audiology and Speech-Language Pathology Services Space Planning Criteria* and as described in this document. The summary room lists are provided below for convenience.

Table 35: Reception Area Room List (FA-1)

#	Room Name	Room Code	NSF	Template in Ch. 4
1	Waiting, General	WTG12	260	N
2	Reception	RCP02	260	N
3	Toilet, Universal	TPG01	60	N
4	Kiosk, Patient Check-In	RECP4	40	N
5	Cubicle, Patient Education (My Health E Vet)	CLSC2	30	N
6	Wheelchair Alcove	CSWH1	30	N

Table 36: Audiology Clinic Patient Area Room List (FA-2)

#	Room Name	Room Code	NSF	Template in Ch. 4
1	Audiology Rehabilitation/Counseling Room	AUD01	140	Y
2	Hearing Aid Repair Room	AUD02	160	Y
3	Suite 1, Audiometric Examination (prefab, 2-sided suite)	AUDE1	300	Y
4	Suite 2, Audiometric Examination (single prefab booth in room)	AUDE2	300	Y
5	Programming/Fitting Room	AUD03	150	Y
6	Cerumen Management Room	AUD04	160	Y
7	Electrophysiology Room	AUDP1	140	Y
8	Posturography Room	AUDP2	200	Y
9	Vestibulography Room	AUDP3	240	Y
10	Rotary Chair Room	AUDP4	250	Y
11	Cochlear Implant Mapping/Fitting Room	AUD05	150	Y
12	Telehealth Room, (Remote Clinician's Consultation Room)	WKMT2	125	N
13	Exam, Telehealth	EXTH1	125	N
14	Group Room, Audiology, Small	AUDG1	240	N
15	Toilet, Patient	TLTU1	60	N
16	Toilet, Patient – Vestibulography	TLTU1	60	N

Table 37: Speech-Language Pathology Clinic Patient Area Room List (FA-3)

#	Room Name	Room Code	NSF	Template in Ch. 4
1	Office/Treatment Speech-Language Pathology	SPL01	140	Y
2	Assistive Technology Room 1 (Outpatient/Clinic)	SPAT1	225	Y
3	Assistive Technology Room 2 (VAMC)	SPAT2	300	N
4	Voice Treatment Room	SPP01	250	Y
5	Special Procedure Room, Speech Pathology	SPP02	300	Y
6	Group Room, Speech-Language Pathology, Small	AUDG2	240	N
7	Toilet, Patient	TLTU1	60	N

Table 38: Support Area Room List (FA-4)

#	Room Name	Room Code	NSF	Template in Ch. 4
1	Supply Room, Clean, Audiology	AUDS3	80	N
2	Supply Room, Clean, Speech Pathology	CSSP1	120	N
3	Holding Room, Soiled, Audiology	CSHS1	80	N
4	Utility Room, Soiled, Speech Pathology	CSUS4	120	N
5	Storage, Equipment	SRE01	120	N
6	Hearing Aid Lab	AUDS1	140	Y
7	Hearing Aid Processing Room	AUDS2	180	Y
8	Alcove, Linen Clean	LCCL3	40	N
9	Housekeeping Aides Closet (HAC)	JANC1	60	N

Table 39: Staff and Administrative Area Room List (FA-5)

#	Room Name	Room Code	NSF	Template in Ch. 4
1	Office, Audiology and Speech Pathology Service Chief	OFA09	100	N
2	Office, Section Chief	OFA09	100	N
3	Office, Assistant Service Chief	OFA09	100	N
4	Office, Administrative Officer	OFA09	100	N
5	Workstation, Administrative Assistant	OFA07	56	N
6	Secretary w/Visitor Waiting	SEC01	120	N
7	Copy/Mail Distribution Room	ASP01	120	N
8	Lounge, Staff	SSGL1	140	N
9	Conference Room, Small	CRA01	240	N
10	Toilet, Staff	TLTU1	60	N
11	Lockers, Personal Property	LR001	30	N

Table 40: Education Area Room List (FA-6)

#	Room Name	Room Code	NSF	Template in Ch. 4
1	Resident/Fellow-Collaboration Room	SSCR2	260	N

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5.2 Site Visit Summaries

An initial step for the update and development of space criteria for Audiology and Speech-Language Pathology (ASPS), involved site visits to several Audiology and Speech Pathology clinics at VA Medical Centers and Outpatient Clinics/CBOC's in Florida and Washington, D.C. in October, 2016. The team conducted comprehensive walk-through surveys of the facilities and interviewed clinical staff in order to develop an understanding of ASPS operations and associated space/facility requirements. Survey questionnaires completed by key personnel supplemented information obtained on the tours. The following facilities were toured:

- Bradenton CBOC (Audiology), Bradenton, FL
- C.W. Bill Young VA Medical Center (Audiology, Speech Pathology), Bay Pines, FL
- James A. Haley Veterans' Hospital (Speech Pathology), Tampa, FL
- James A. Haley Veterans' Hospital-Polytrauma Rehabilitation Center (Speech Pathology), Tampa, FL
- James A. Haley Veterans' Hospital-North 46th St. (Offsite Audiology Clinic), Tampa, FL
- Orlando VA Medical Center (Audiology and Speech Pathology), Orlando, FL
- Washington DC VA Medical Center (Audiology and Speech Pathology), Washington, DC

The team would like to thank the many facility staff members who took time out of their workday to tour these locations and candidly discuss their space and operations.

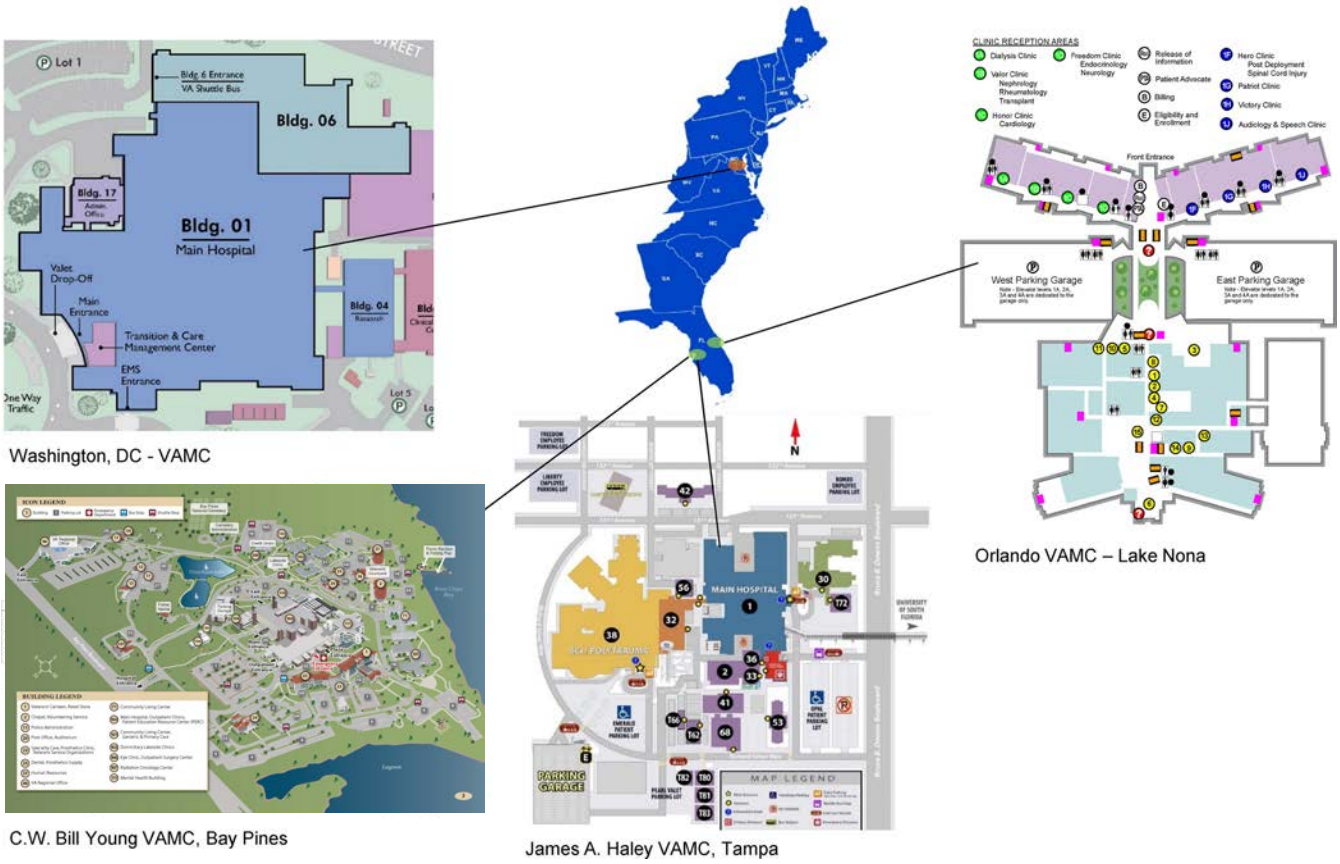

***Figure 61**: Site Visit Locations*

5.2.1 Bradenton CBOC

***Figure 62**: Bradenton CBOC*

Location:	Bradenton, FL
Total Area:	17,705 SF
Department Area:	Approximately 1,139 SF
Floors:	1
Opening Date:	2010

1. Overview

Bradenton is a Community Based Outpatient Clinic in the Bay Pines Service area which offers Primary Care and several specialty services including: Dental, Eye, and Audiology. Audiology and Optometry share a common entrance, separate from the main entrance and shared reception/waiting area. Patient care and clinical support functions for the small Audiology Clinic are organized along a single corridor.

Facility Analysis

This facility is an example of a small Audiology Clinic located in a CBOC. The diagram illustrates the clinic's relationship/proximity to other outpatient services, location of entrances, and patient and staff circulation paths relative to the service.

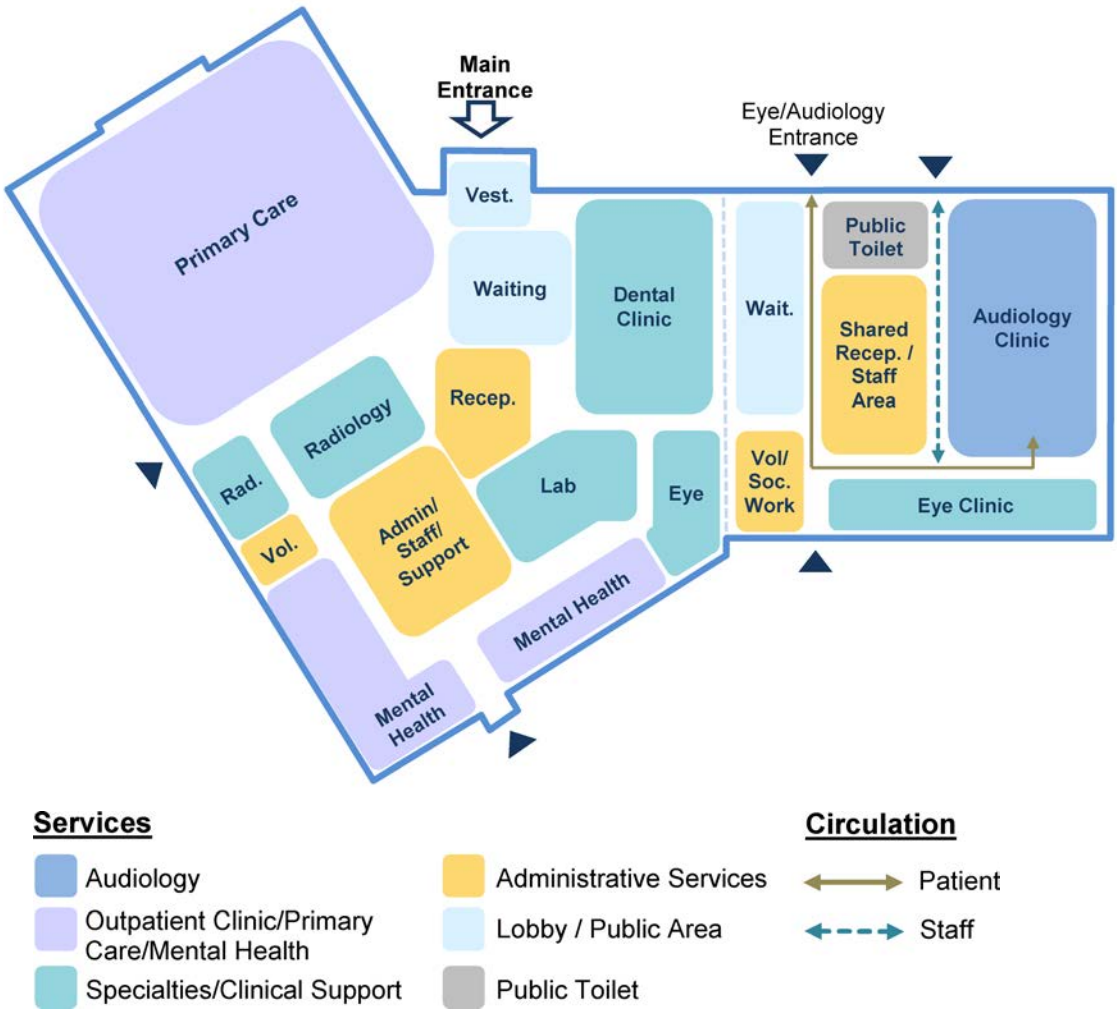

Figure 63: *Bradenton CBOC, Departmental Relationships Diagram*

2. Audiology

Audiology has four patient care spaces, including two Office/Treatment spaces and two Audiology Technician rooms. The clinic has two prefabricated sound booths located inside the Office/Treatment spaces; one of the booths is double-wall and accommodates Compensation & Pension exams. The Audiologist/Provider space located outside of the booths is used for basic screening, patient counseling and demonstrations, as well as hearing aid programming and fitting. The two Audiology Tech rooms have multiple functions, including hearing aid repairs and cerumen management. An alcove located along the corridor accommodates clinical support functions, including clean supplies, a buffer/grinder workstation, and hearing aid processing workstation. Challenges include:

- Booth size and lack of accessibility for patients in wheelchairs and scooters
- Lack of sound attenuation between provider work/testing/hearing aid programming space and corridor
- Wire management - insufficient electrical outlets

- Support functions in corridor generate noise and dust
- Processing workstation in common area - lack of privacy for shipping and receiving of expensive hearing aid parts. Package labels and information stored on the computer contain private patient information.
- Expanding open access will increase the number of unscheduled/walk-in patients.
- Shared waiting space becomes crowded at peak times of day.

LEGEND

- FA 1 : Reception Area
- FA 2 : Audiology Clinic Patient Area
- FA 3 : Speech-Language Pathology Clinic Patient Area
- FA 4 : Support Area
- FA 5 : Staff and Administrative Area
- FA 6 : Education Area
- Building Support
- Circulation

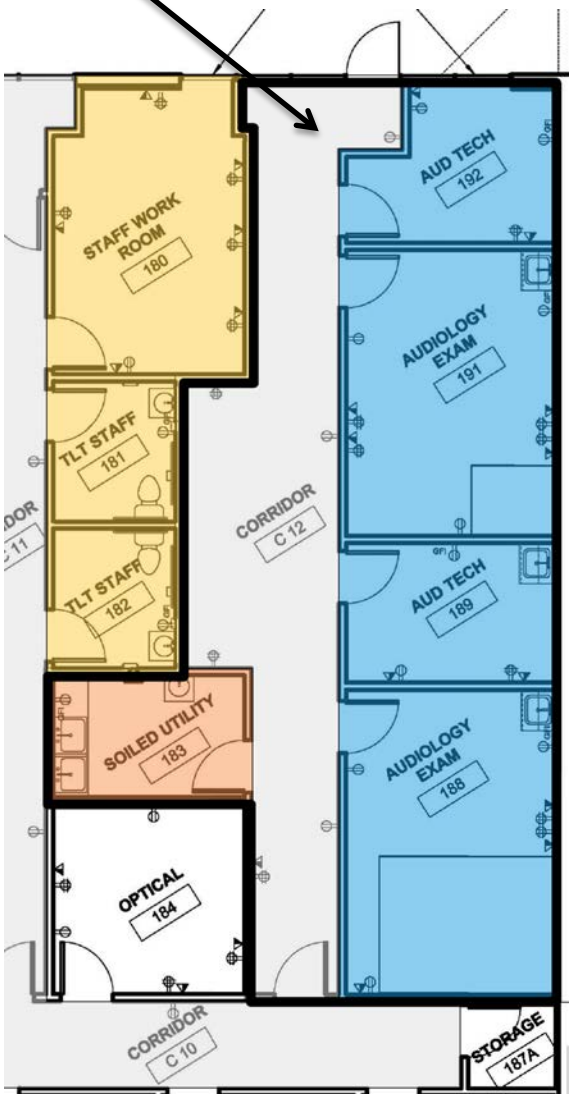

***Figure 64**: Bradenton Audiology Suite, 1,139 Sq. Ft.*

3. Representative Photographs

Figure 65: *Programming/Fitting Workstation; Bradenton CBOC*

Figure 66: *Clean Supply and Buffer/Grinder Workstation Alcove*

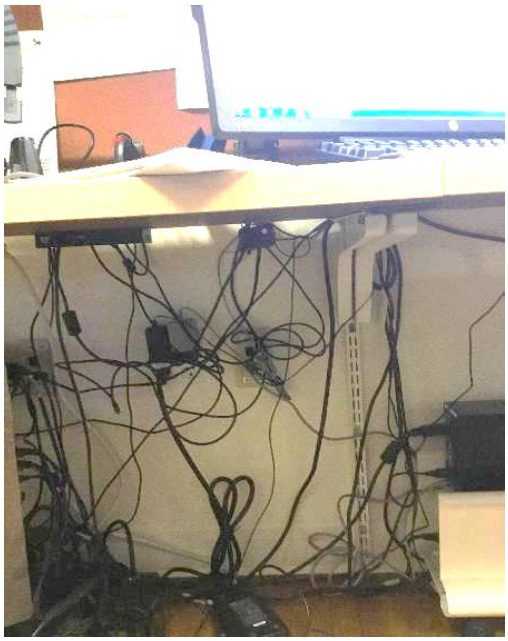

Figure 67: *Wire Management Issues*

Figure 68: *Audiology Exam/Booth; Bradenton CBOC*

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5.2.2 C.W. Bill Young VA Medical Center (Bay Pines)

***Figure 69**: C.W. Bill Young VAMC Campus Map*

The Bay Pines VA Healthcare System is a level 1a, tertiary care facility headquartered in Bay Pines, FL. Originally opened in 1933, the main medical center is located on 337 acres situated on the Gulf of Mexico approximately eight miles northwest of downtown Saint Petersburg, FL. Co-located on the medical center campus are a VA Regional Office and a National Cemetery.

In 2013, the medical center was renamed in honor of the late U.S. Congressman C.W. "Bill" Young of Florida's 13th District, a staunch supporter of Veterans and a frequent visitor to the facility. Services include: inpatient acute care (general medicine/surgery, psychiatry, and rehabilitation); residential programs (community living center, hospice, palliative care, stress treatment, homeless Veterans and substance abuse treatment); primary care; extensive specialty care; outpatient surgical services; OEF/OIF/OND program (Polytrauma level III); home and community care; homeless Veterans care; women Veterans care; and various ancillary and support services. Mental health services are available at all points of care. The facility also offers education and research. (Source: VA Bay Pines Factsheet)

Location:	Bay Pines, Florida
Department Area:	Approximately 6,800 SF (Combined Audiology and Speech Pathology Clinics)
Floors:	5
Opening Date:	1933

1. Overview

The Audiology and Speech Pathology Clinics are located adjacent to each other on the first floor of the Medical Center with relatively easy access from the main entrance of the hospital, and from several secondary entrances. The services share a common reception/waiting area; however, Speech Pathology does not have direct access to the waiting room. ENT is adjacent to both clinics, which is beneficial due to service synergies.

Facility Analysis

This is an example of adjacent Audiology and Speech Pathology clinics located in a VAMC. Figure 70 illustrates the department's relationship/proximity to other hospital services, patient and service circulation paths relative to ASPS, and location relative to service elevators.

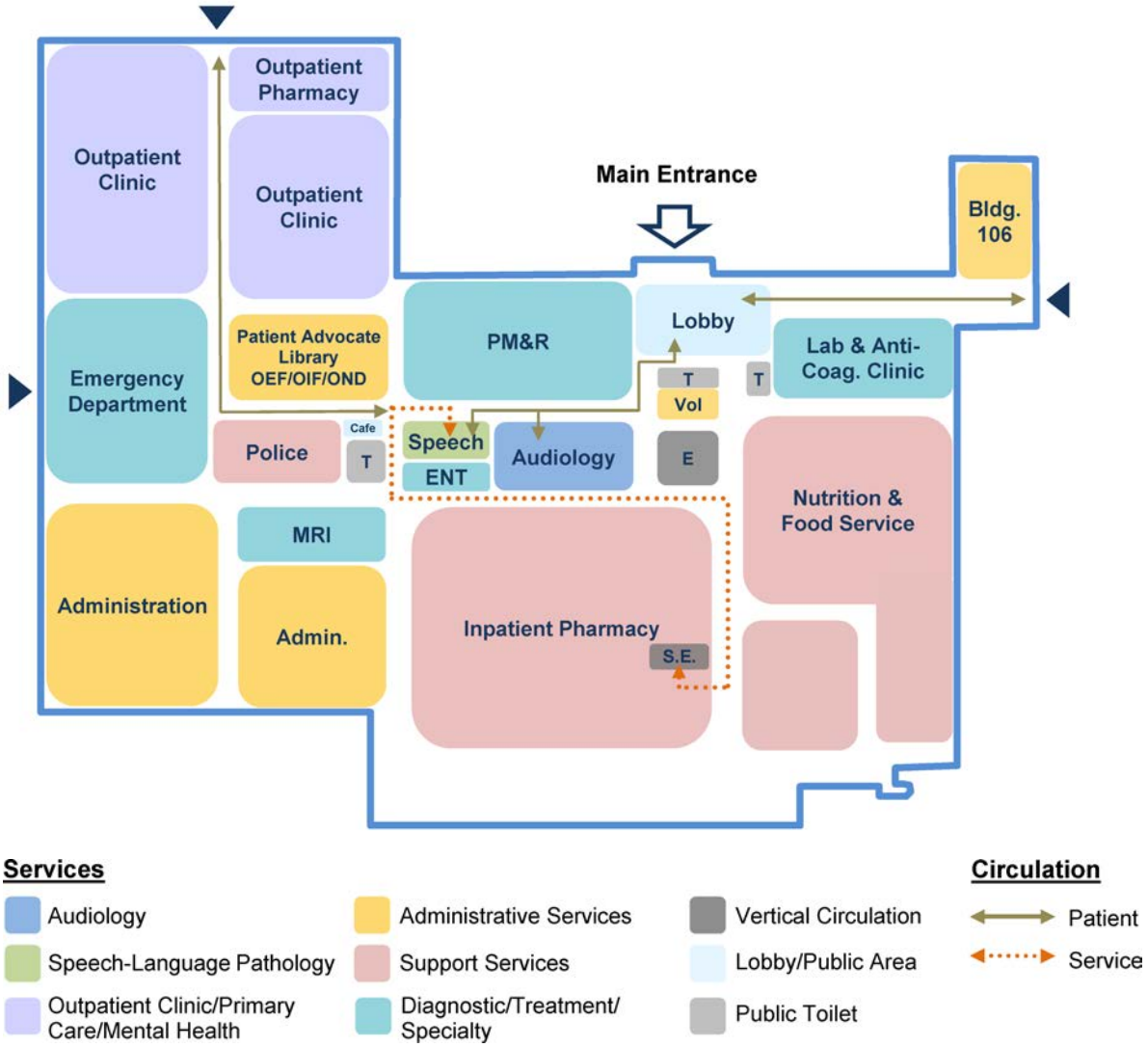

Figure 70: *C.W. Bill Young VAMC, First Floor, Departmental Relationships Diagram*

2. Audiology

The Audiology Clinic at this facility primarily serves outpatients; however, with an active TBI program and Emergency Room at the Medical Center, patients may be wheeled into the department on beds/gurneys, and providers regularly treat inpatients at the bedside in the CLC and ICU (VHA ASPS, Questionnaires, User Meetings, and Field Surveys, 2016-17). The clinic performs full-service audiology assessments and treatments, including Comp & Pen exams, and balance testing. The facility has four prefabricated Audiometric Examination Suites as well as two Office/Treatment spaces with single prefabricated booths inside. Balance testing rooms include Vestibulography, Posturography, Rotary Chair, and ENG. Group therapies and telemedicine are also offered at this location.

Challenges include:

- Booth Accessibility (threshold, door size)
- Waiting area configuration (particularly for hearing impaired patients)
- Lack of barrier (door) between waiting and clinical area
- Lack of direct connection to Speech Pathology

3. Speech Pathology

The Speech Pathology suite is located in repurposed Urology space, and is not ideally configured for services performed. About half of the patients are inpatients. Providers perform diagnostics and treat patients with a wide range of conditions including neurological, cognitive, trachea/esophagus puncture, head/neck injuries, and stroke. This clinic has a single Speech "Lab" where comprehensive speech and swallow diagnostics and treatments are performed.

Challenges include:

- Size and configuration of treatment spaces is insufficient/inadequate for functions
- Lack of speech privacy
- Lack of direct connection to Waiting/Reception
- Storage for packaged instruments and supplies: insufficient space, in public hallway without appropriate temperature/humidity control
- Inadequate space for handling scopes per required protocols

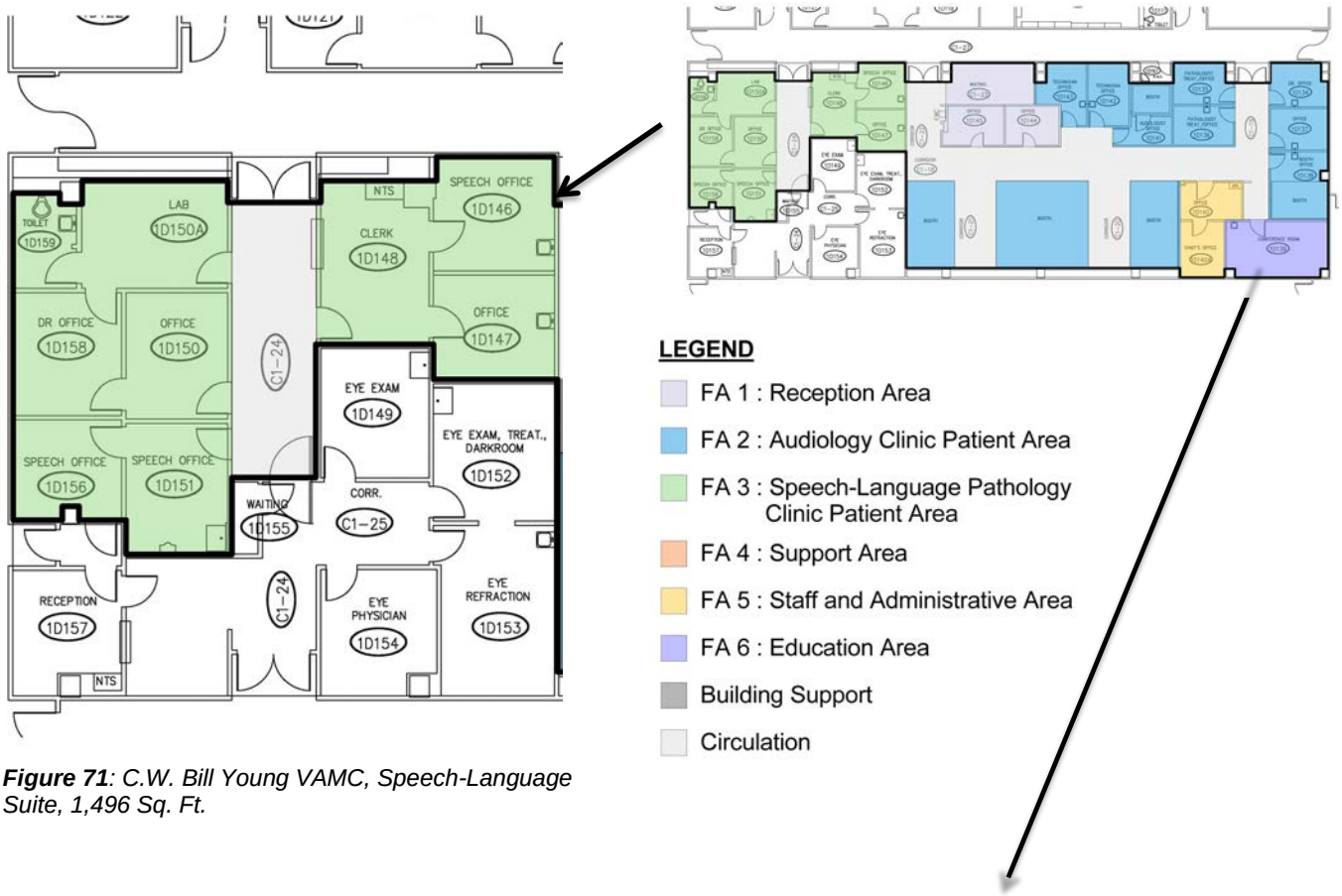

***Figure 71**: C.W. Bill Young VAMC, Speech-Language Suite, 1,496 Sq. Ft.*

***Figure 72**: C.W. Bill Young VAMC Audiology Suite, 5,054 Sq. Ft.*

4. Representative Photographs

Figure 73: *Vestibulography*

Figure 74: *Posturography*

Figure 75: *Sound Suite*

Figure 76: *Rotary Chair*

Figure 77: *Speech Lab*

Figure 78: *Speech Lab Special Storage Needs*

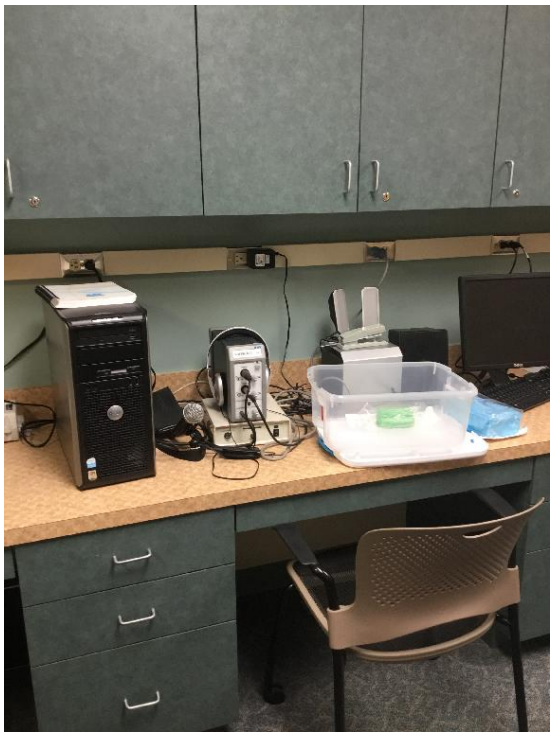

Figure 79: *Speech Lab*

5.2.3 James A. Haley Veterans' Hospital

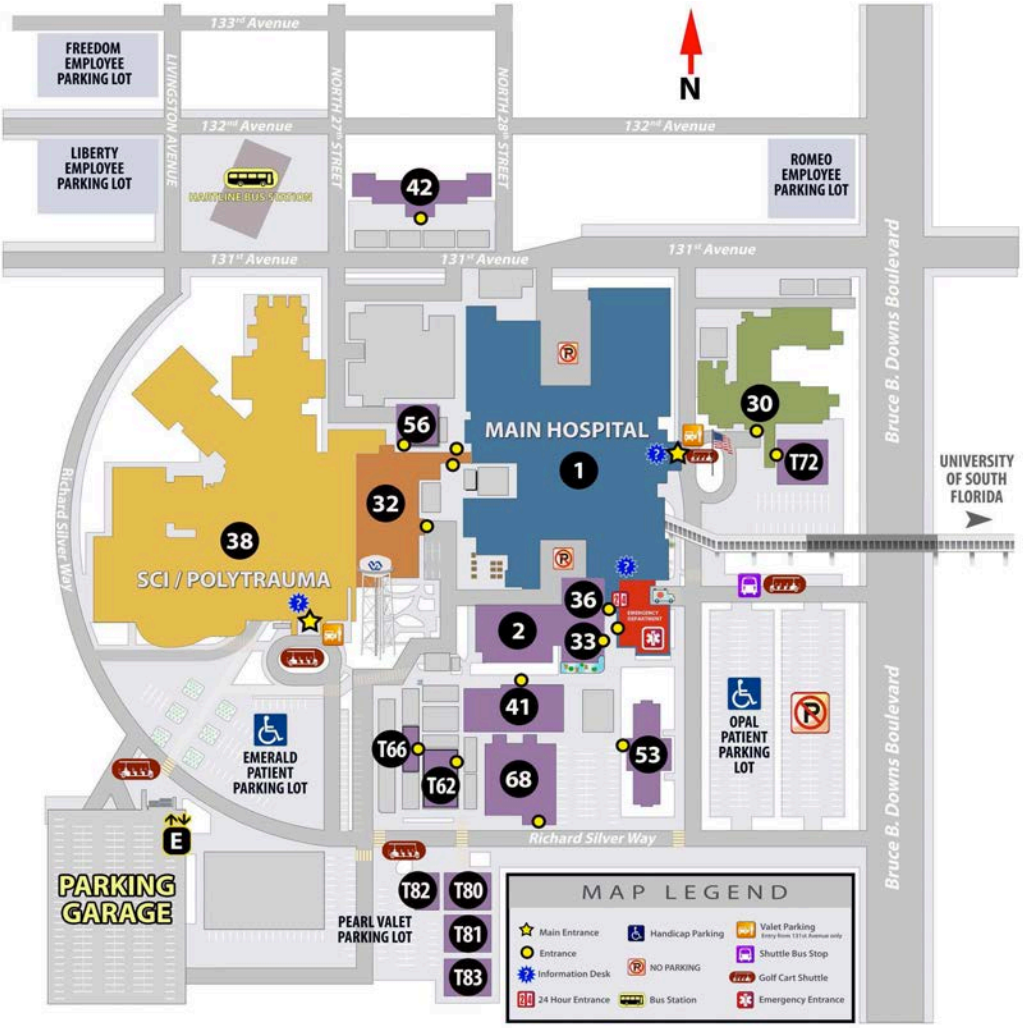

***Figure 80**: James A. Haley Veterans' Hospital Campus Map*

Activated in 1972, the James A. Haley Veterans' Hospital (JAHVH) is a tertiary care facility classified as a Clinical Referral Level 1 Facility. JAHVH is a teaching hospital, providing a full range of patient care services with state-of-the-art technology as well as education and research.

Comprehensive health care is provided through primary care, tertiary care, and long-term care in areas of medicine, surgery, psychiatry, physical medicine and rehabilitation, spinal cord injury, neurology, oncology, dentistry, geriatrics, and extended care (*Source:* About VA Tampa). A Polytrauma Rehabilitation Center and Spinal Cord Injury Unit are also located on this campus.

Location:	Tampa, Florida
Opening Date:	1972; SCI/PRC opened in 2000

1. Overview

Both Audiology and Speech Pathology services are offered at the J.A. Haley VAMC; however, services are dispersed in several locations as follows:

- Audiology and Speech Pathology clinic: 2nd Floor of the medical center
- Audiology and Speech Pathology administrative space: several locations in the medical center
- Speech Pathology Special Procedure Room: 1st Floor of the medical center
- Dedicated Speech Therapy Offices, Group Therapy, Assistive Technology, and balance testing: second floor of the Polytrauma Center (refer to discussion in paragraph 5.2.3)
- Offsite Audiology Clinic (N. 46th St.): approximately 2 miles from the medical Center (refer to discussion in paragraph 5.2.3)

2. Audiology and Speech Pathology Clinic (Main Hospital)

The 3,300 SF Audiology and Speech Pathology Clinic, located on the second floor, Wing 2A of the Medical Center has three sounds suites, a Speech Lab, an Audiology Tech space, and two Provider Office/Treatment spaces, including one for Speech Pathology. One of the sound suites has been converted into an office. The clinic is somewhat remote from vertical transportation and is located adjacent to the Chapel and Chaplain Offices, which is not an appropriate adjacency. Challenges include:

- Sound transmission between the Speech Lab and Chapel
  - Speech/voice analysis activities interfere with the quiet/meditative environment needed for Chaplain functions
  - Singing in the chapel creates background noise that interferes with voice analysis.
- Waiting area is remote from the clinic entrance and there is a lack of direct visual connection between the waiting and reception areas.
- Insufficient space for treatment functions.
- Insufficient clinical support space, including clean supply storage, which requires temperature and humidity control.
- Buffer/grinder workstation is located in a treatment space rather than a separate room where noise and dust might be better mitigated.
- Audiology and Speech Pathology offices not collocated in this clinic creates administrative challenges.

While this clinic has collocated Audiology and Speech space, this is an example of a facility where Audiology and Speech Pathology services are dispersed.

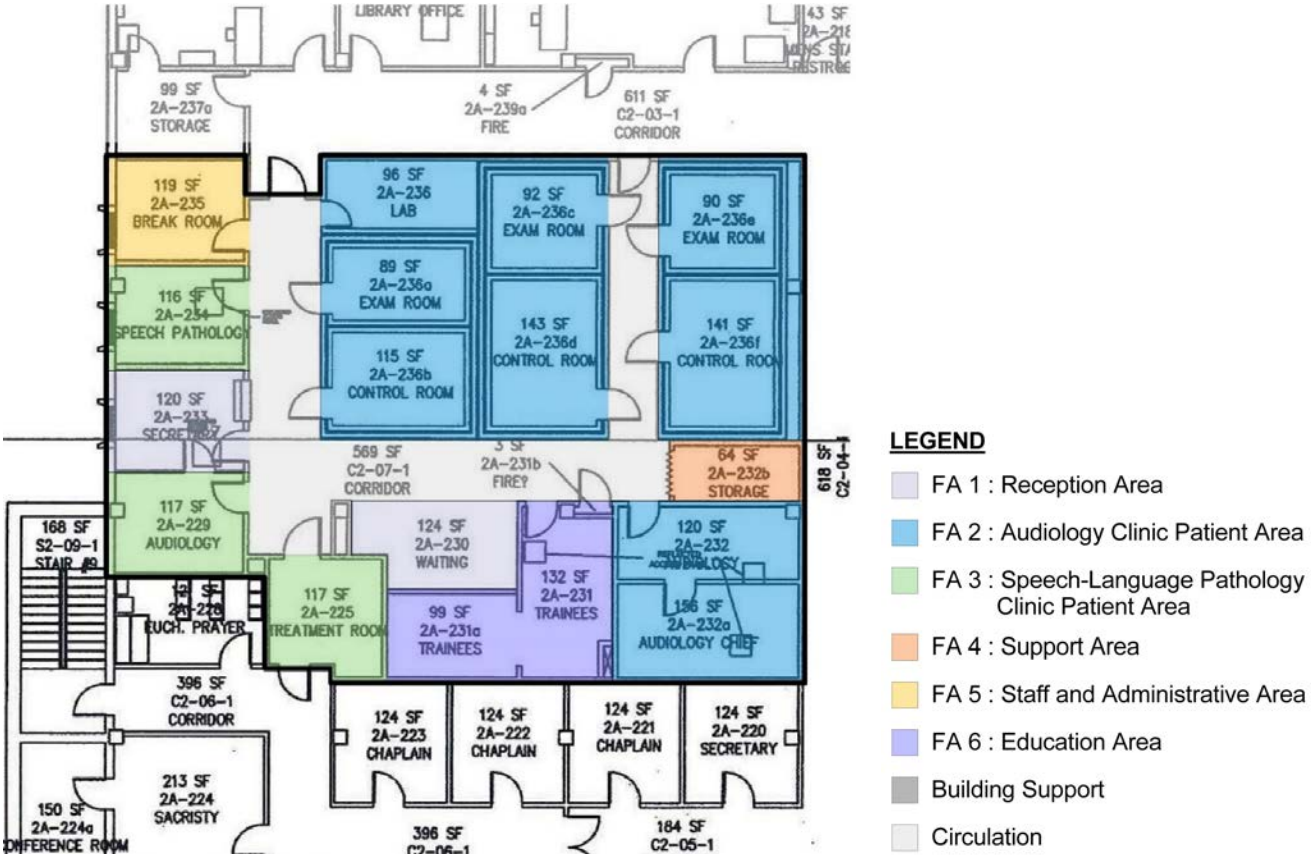

***Figure 81**: James A. Haley Veterans' Hospital, Audiology and Speech Pathology Clinic, 3,300 sq. ft.*

3. Speech Pathology Services (Main Hospital)

A single Endoscopic Procedure Room is located directly adjacent to Sterile Processing on the first floor of the Main Hospital. This room is used for speech and swallow tests (including videostroboscopy, digital swallow tests, fiberoptic endoscopic examination, laryngectomy, etc.). The room has a direct pass-through to Sterile Processing, which is helpful for scope processing. The key challenge noted is lack of adjacency relative to other ASPS Clinic and office/administrative spaces.

4. Representative Photographs

Figure 82: *Cerumen Management*

Figure 83: *Buffer/Grinder Workstation*

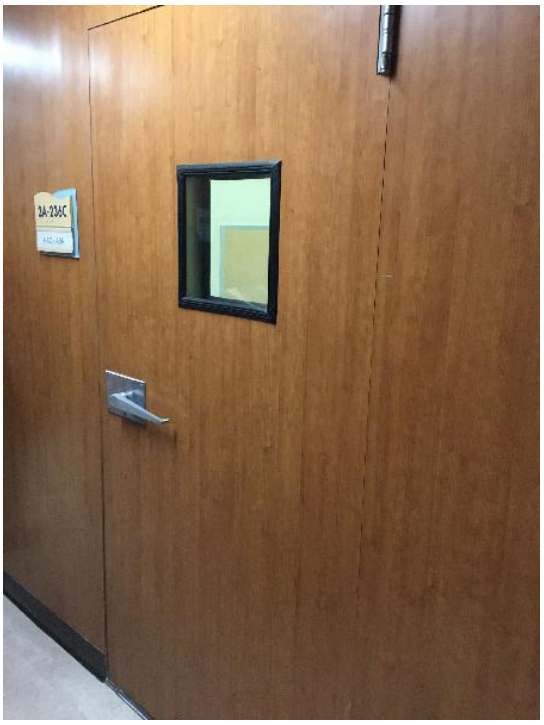

Figure 84: *Audiometric Sound Suite: "Wood Look" Finish*

Figure 85: *Speech Lab*

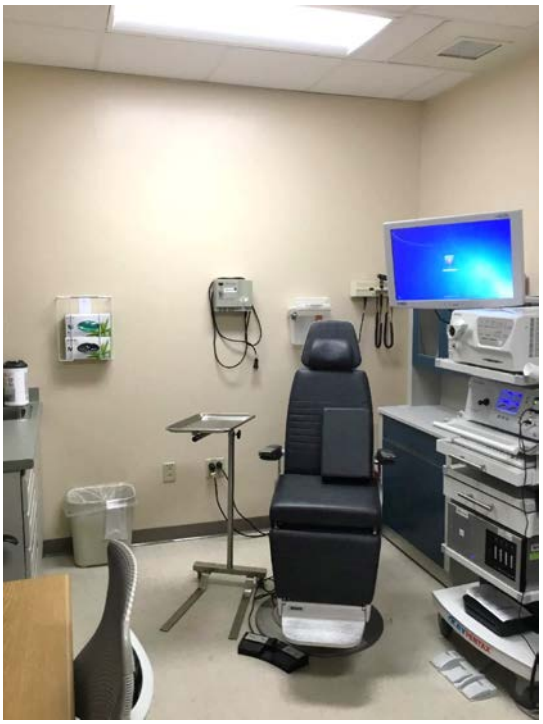

Figure 86: *Endoscopic Procedure*

Figure 87: *Speech Office/Treatment*

Figure 88: *Endoscopic Procedure: Pass through cabinet*

Figure 89: *Endoscopic Procedure: Scope Cabinet*

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5.2.4 James A. Haley Veterans' Hospital-Polytrauma Rehabilitation Center

***Figure 90**: First Floor SCI/Polytrauma Wing*

The Polytrauma Rehabilitation Center (PRC), located at the J.A. Haley Medical Center is one of 5 facilities in the country designed to provide intensive rehabilitative care to Veterans and Active Duty Service members who have experienced severe injuries (including brain injuries) to more than one organ system (U.S. Department of Veterans Affairs (5)). The PRC is located on the second floor of the Polytrauma/SCI Building, a state-of-the-art facility linked to the Main Hospital.

Location:	Tampa, Florida
Total Area:	Approximately 72,000 sf (2nd Floor)
Floors:	3
Opening Date:	2000

1. Overview and ASPS Related Services

Comprehensive, multi-disciplinary services associated with the PRC include Speech Therapy, Audiology (including treatment for balance disorders), and an Assistive Technology Program. The J.A. Haley Veterans' Hospital PRC has the following spaces associated with these services:

- Speech Therapy Office/Counseling Rooms
- Five Assistive Technology Rooms, including space for the "Return to School" program, and STAR (Emerging Consciousness Room),
- Assistive Technologist Office/Exam Room
- Equipment Storage Room
- Group Room
- Vestibulography

2. Facility Observations

The J.A. Haley PRC is a modern, state-of-the art facility; however, there were a few challenges noted during the site visits:

- Lack of wayfinding to Speech Pathology
- Lack of waiting area
- Insufficient sound attenuation in Speech Therapy Office/Counseling Rooms (for both speech privacy and noise from corridor)
- Door width too narrow at Assistive Technology spaces

Assistive Technology spaces are unique rooms which require plenty of space for the movement of wheelchairs and stretchers, the flexible arrangement of training tables, staff work functions, and storage of equipment.

3. Representative Photographs

Figure 91: *Speech Pathology Office*

Figure 92: *Assistive Technology*

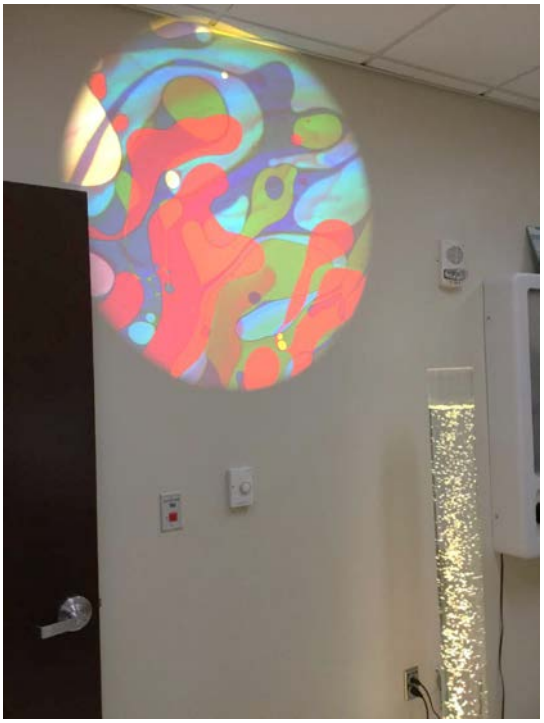

Figure 93: *STAR Room*

Figure 94: *VNG Room*

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5.2.5 James A. Haley Veterans' Hospital - Offsite Audiology Clinic

***Figure 95**: Satellite view, 14020 N. 46th St., Tampa, FL*

The North 46th Street facility is a two-story outpatient clinic building located in a commercial area with strip shopping centers and other business establishments approximately 2 miles from the J.A. Haley Hospital; there is shuttle service between the hospital and clinic. Facility access is via a fairly busy 4-lane road through an adjacent parking lot. According to staff, the dedicated clinic parking lot becomes full during peak hours.

Location:	14020 N. 46th St., Tampa, Florida
Department Area:	Approximately 4,600 sf
Floors:	2
Opening Date:	2009

1. Overview

The clinic houses Audiology on the first floor and Compensation and Pension on the 2nd Floor. The reception/waiting area for Audiology is immediately adjacent to the building entrance/vestibule. The elevator to the second floor is opposite the building entry. According to staff, the waiting area often becomes crowded due to lack of signage and wayfinding to services on the second floor.

Facility Analysis

As an offsite Audiology clinic without Speech Pathology, this facility is an example of segregated services. There are numerous challenges associated with this model for both patients and caregivers.

2. Audiology Services

The Audiology Clinic at this location accommodates a variety of functions/services in the following rooms:

- Eight Audiometric Examination Suites (sound suites)
- Seven Audiologist Office/Treatment Rooms
- Three Audiology Technician Office/Treatment Rooms
- One Resident Collaboration Room
- Vestibulography/Electrophysiology Room
- Rotary Chair Room
- Cochlear Implant Mapping
- Conference Room/Classroom-doubles as a Group Room

The sound suites accommodate a variety of hearing assessments, including Comp & Pen exams. Proximity to the Comp & Pen Clinic is beneficial at this location. Cochlear implant mapping is a unique function offered at only a few facilities in the country; it is used to train patients who have recently received cochlear implants and are learning to hear for the first time. The proximity of Audiology Office/Treatment Rooms to the sound suites (across the hall) is beneficial for handwashing and staff convenience. Challenges at this facility include:

- Open access policy exacerbates crowding in the waiting room
- Offsite facility without medical personnel and security necessitates dialing 911 in case of emergencies
- Offsite facility without food/vending
- Storage in corridor lacks security
- Dim lighting in prefabricated sound booths

3. Representative Photographs

Figure 96: *Sound Booth: Control Side*

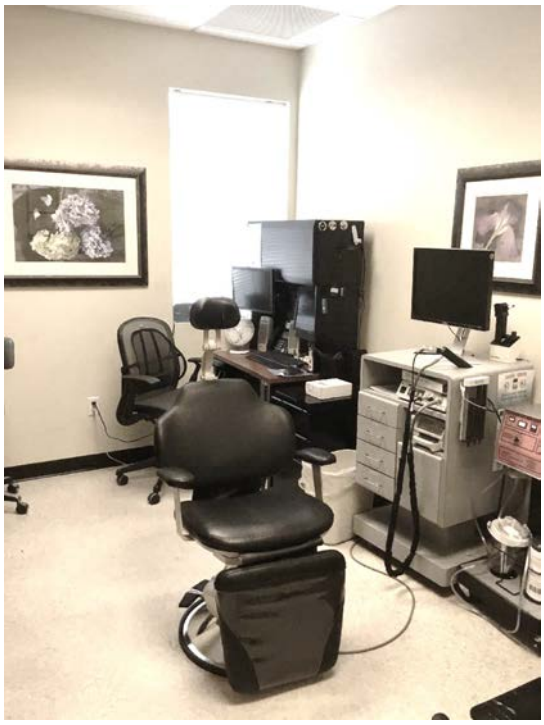

Figure 97: *Cerumen Management*

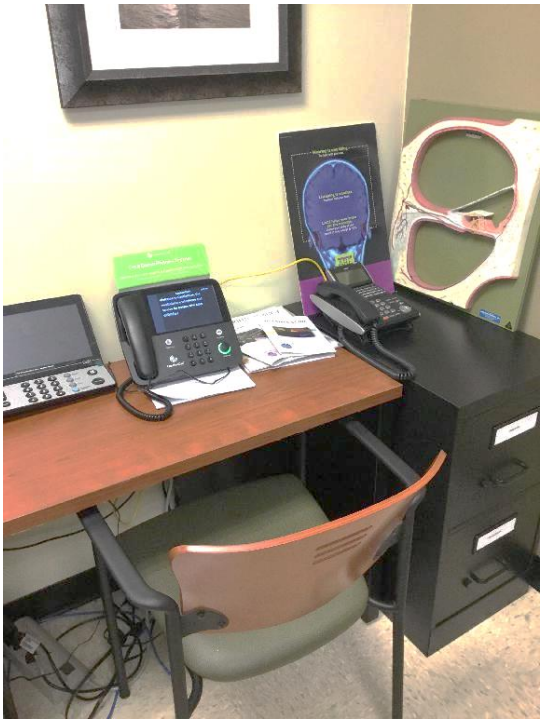

Figure 98: *Cochlear Implant Mapping*

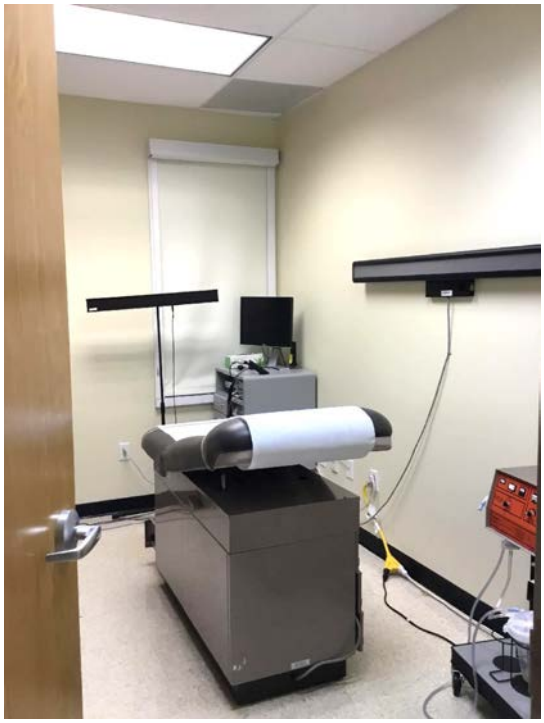

Figure 99: *VNG Room*

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5.2.6 Orlando VAMC

***Figure 100**: Orlando VAMC Main Entrance*

Established as a medical center in October 2006, the Orlando VA Medical Center is recognized as one of the Top 100 Companies in Central Florida for working families. The Orlando VA Medical Center includes a 120-bed Community Living Center in Lake Nona, a 60-bed Residential Rehabilitation Program (Domiciliary) in Lake Nona and a 56-bed Residential Rehabilitation Program (Domiciliary) located at Lake Baldwin, Outpatient Clinics in Lake Baldwin, Viera, and Daytona Beach and four Community Based Outpatient Clinics located in Clermont, Kissimmee, Tavares, and Orange City. The new Orlando VA Medical Center is part of a 650-acre health and life sciences park known as the Lake Nona Medical City. The 65-acre medical campus has 134-inpatient beds and provides acute care, complex specialty care, advanced diagnostic services, a large multispecialty outpatient clinic, and administrative and support services *(Source:* About VA Orlando (U.S. Department of Veterans Affairs (6)).

Location:	Orlando, Florida (Lake Nona)
Total Area:	1.2 Million sf
Department Area:	Approximately 12,000 sf
Opening Date:	February 2015 (first clinical patients)
Floors:	9

1. Overview

The Orlando VAMC consists of two towers located on the opposite sides of two parking garages, connected by a central atrium/healing garden. Hospital areas (inpatient, diagnostic, and treatment services) are located in the south tower; clinics and outpatient services are in the north tower. In the north tower, various clinics, including the Audiology and Speech Clinic are located on the first floor along a front-loading concourse, which connects reception/waiting areas for each clinic. The Audiology and Speech Clinic is located at the far end of the northeast wing on the first floor.

Orlando outpatient clinics have an open access policy, which allows patients to come in without scheduling an appointment.

Facility Analysis

This facility is an example of collocated Audiology and Speech Pathology clinics at a Medical Center. The diagram illustrates the department's relationship/proximity to other hospital and outpatient services, patient and service circulation paths relative to ASPS, and location relative to vertical transportation, including service elevators. Although not illustrated in the diagram, ENT is located in the south tower on the second floor near Surgery. This was noted by clinicians to be an inconvenience for ASPS staff and patients.

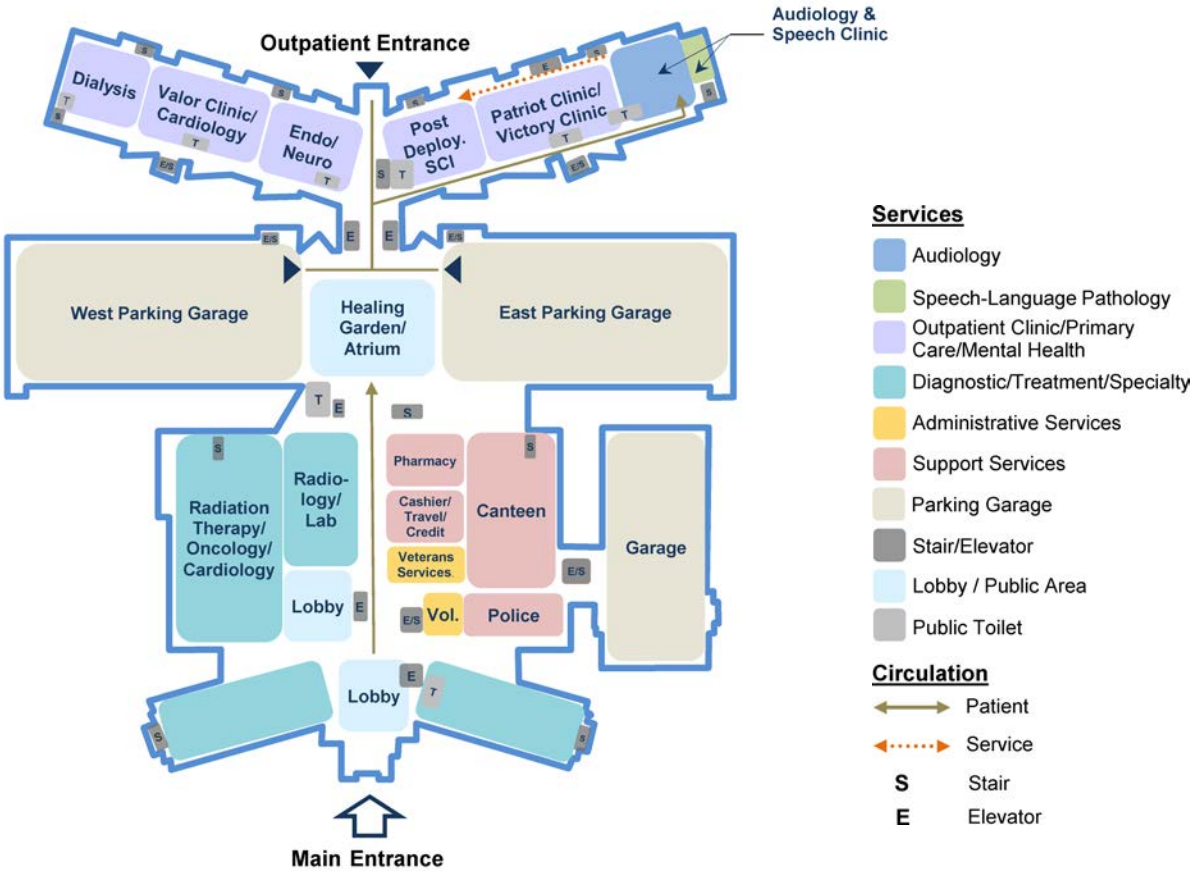

***Figure 101**: Orlando VAMC, Departmental Relationships Diagram*

2. Audiology & Speech Pathology

The Orlando VAMC Audiology and Speech Pathology Clinic is approximately 12,000 SF, with approximately 800 SF of dedicated Speech Pathology space. Audiology and Speech patient care areas are collocated along with shared clinical and administrative support space. Although each service is unique, it was acknowledged during interviews and surveys that collocation is the optimum and preferred functional relationship for Audiology and Speech Pathology.

The functional layout of the Audiology and Speech Clinic incorporates a racetrack organization/circulation loop with Reception/Waiting at the front, key office/treatment rooms at the sides/perimeter, and staff/administrative spaces along the back. Key diagnostic and treatment functions, including 10 sound suites, and balance testing rooms form a block of space in the center; several Audiology Tech rooms, and a Triage Room are located in the front of the clinic to facilitate turnaround for routine activities and walk-in patients. Speech Pathology functions are grouped on the east side. Figure 111 illustrates the functional organization of the Orlando VAMC Audiology and Speech Clinic.

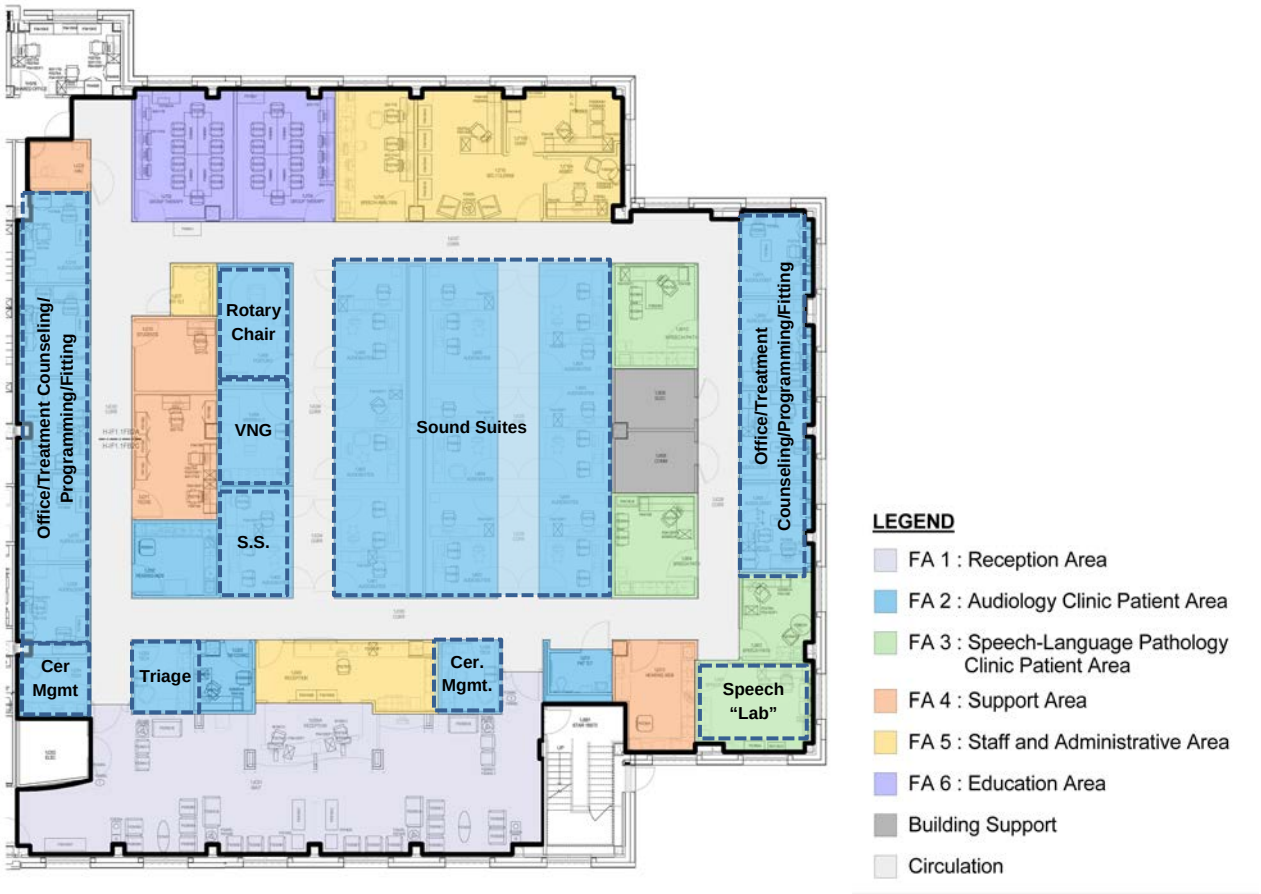

***Figure 102**: Orlando VAMC, Audiology and Speech Clinic, 12,000 Sq. Ft.*

The Orlando VAMC Audiology and Speech Clinic is a modern, state-of-the art facility however, there were challenges noted during the site visit, interviews, and survey:

- Insufficient seating in the concourse waiting area causes patients to wander to adjacent waiting areas where there is no direct visualization
- Inadequate signage/wayfinding to service
- Lack of soiled holding-scope transport carts are stored in the Hearing Aid Lab
- Lack of dedicated resident work/collaboration space
- Arrangement of doors on the prefabricated sound suites may block the egress corridor when open at the same time
- Vestibular and Rotary Chair rooms are too narrow
- Functional relationship between sound suites and office/treatment spaces at the perimeter
- Administrative work area behind the reception desk is underutilized
- Full height windows along the perimeter present functional issues relative to equipment placement, privacy, and daylight control (glare)

3. Representative Photographs

Figure 103: *Reception/Waiting*

Figure 104: *Temporary Signage*

Figure 105: *Cerumen Management Room*

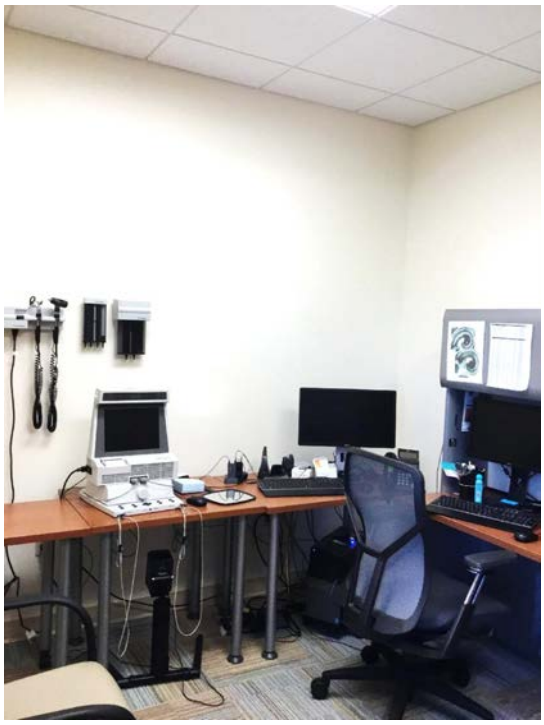

Figure 106: *Programming/Fitting Workstation*

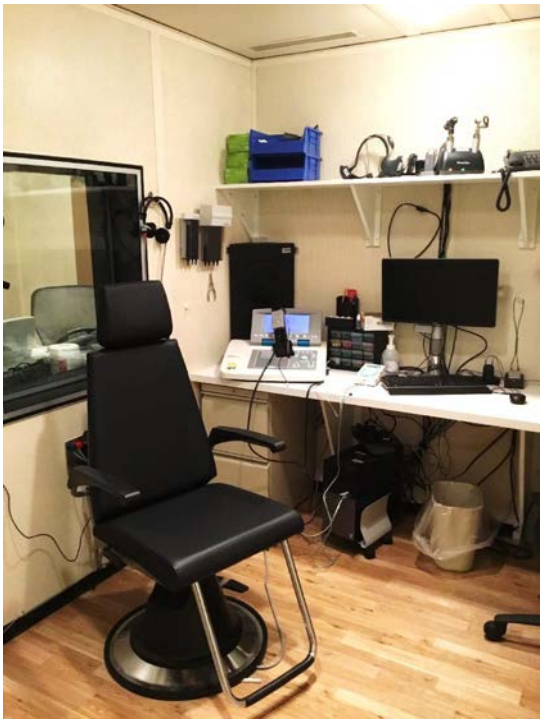

Figure 107*: Audiometric Examination Suite: Exam Side*

Figure 108: *Hearing Aid Repair Room*

Figure 109: *Rotary Chair Room: Booth*

Figure 110*: Rotary Chair Room: Electrical Console*

Figure 111: *Digital Swallowing Workstation and Stroboscopy System*

Figure 112: *Speech Therapy Room*

5.2.7 Washington, DC VA Medical Center

Figure 113: *Washington, DC VAMC Main Entrance*

The Washington DC VA Medical Center, located within sight of the Nation's Capital, is the only health care system that specifically provides care to Veterans. Offering tertiary care in a Complexity Level 1A hospital allows staff to provide comprehensive primary and specialty care in medicine, surgery, neurology, and psychiatry. The Medical Center has 175 acute care beds, 30 Psychosocial Residential Rehabilitation Treatment beds, and a 20-suite Fisher House. The Medical Center is also home to an adjacent 120-bed Community Living Center which provides Veterans with geriatric long-term care, hospice, and palliative care (*Source:* About Washington, DC VAMC*)*.

Location: Washington, DC

Department Area: 10,275 sf

1. Overview

The Audiology and Speech Clinic is located on the first floor of Building 6 on the east side of the multi-story DC VAMC. It is adjacent to other outpatient services, including the Dental Clinic and Renal Care Center. Patients may access the clinic either via the main entrance or the Building 6 entrance, adjacent to Parking Lot 1. Clinicians consider the clinic to be well placed on the VAMC campus, although wayfinding from the main entrance lobby is indirect and challenging due to distance.

The facility has always had an open access policy (accepts unscheduled/walk-in patients), and is open on some Saturdays.

Facility Analysis

This facility is an example of collocated Audiology and Speech Pathology services at a Medical Center; however, there is also dedicated Audiology and Speech Pathology space located on several specialty units of the Medical Center. Audiology has dedicated space for cerumen management in the Community Living Center, and Speech Pathology has dedicated Speech Therapy Office/Treatment Rooms in the Comprehensive Nursing and Rehabilitation Center on the 2nd Floor. Audiologists and Speech Pathologists serve as part of the interdisciplinary care teams for those services. The proximity of the clinic to vertical transportation facilitates clinician access to other related services and inpatient units, including ENT on the 2nd Floor. Inpatients on beds/stretchers are also occasionally brought into the clinic.

Figure 114*: DC VAMC, Campus Map*

2. Audiology & Speech Pathology

The D.C VAMC Audiology and Speech Pathology Clinic is approximately 10,275 SF, Audiology functions occupy most of the real estate, with approximately 9,857 SF, including shared Conference/Break Room and Resident/Trainee space; Speech Pathology has approximately 411 SF, including the Service Chief Office/Consult Room.

The functional layout of the Audiology and Speech Clinic is in an L-shape configuration due to existing space constraints; however, the main “wing” has sufficient width to accommodate a circulation loop. The entry/reception area is accessible via a sliding glass doorway at the “elbow”. Provider office/treatment spaces and the conference/break room are located along the perimeter/exterior wall, while sound suites and key treatment spaces are located in interior blocks of space. Key diagnostic treatment functions include:

- 7 prefabricated sound suites
- 3 Office/Treatment Rooms with prefabricated sound booths in the room
- Aural Care Center (cerumen management)
- Ear Mold Lab (hearing aid adjustments, repairs and ear impressions)
- Balance Testing Rooms: ENG Lab and VNG/Rotary Chair Room (combined function)
- Audiologist Office/Treatment Room which is used for ABR testing
- 2 Speech Pathologist Office/Treatment rooms
- Group Room (houses the mobile computerized speech lab, which "travels" to other locations in the Medical Center)

Figure 115 illustrates the functional organization of the D.C. VAMC Audiology and Speech Clinic.

***Figure 115**: Washington, DC VAMC, Audiology and Speech Clinic, 10,275 Sq. Ft.*

The D.C. VAMC Audiology and Speech Clinic is a modern, state-of-the art facility. Treatment spaces, including Office/Treatment Rooms are, in general, sufficiently sized for their function. The corridors have sufficient width. Offset doors on the prefabricated sound suites, which open into the corridor, do not pose the problem these doors cause in Orlando. Additional features not observed in other facilities visited include:

- Carpet tile in the corridor helps with sound attenuation for this service and creates a quiet atmosphere

- Handrails in the corridor benefit the patient population served
- Combined Rotary Chair/VNG Room minimizes transfer of patients between various balance testing activities
- Sinks in all provider office/treatment spaces
- Adjustable height desks/tables at all provider workstations (including in sound suites)

The prefabricated sound suites were typically spacious and barrier-free (no thresholds). All Office/Treatment spaces, the VNG/Rotary Chair room, and sound suites are carpeted.

There were a few challenges noted during the site visit, interviews, and survey:

- No patient or staff toilets in the clinic, or in the vicinity of the clinic. This is a significant deficiency
- Inadequate signage/wayfinding to service
- Insufficient storage space
- Insufficient space for equipment/room contents in some locations. There were a few conflicts between the location of fixtures and equipment
- Lack of daylight control (blinds) on clerestory windows causes glare and heat gain
- Mechanical background noise from equipment directly above the space was a problem upon move-in (has been resolved)
- Artwork in the sound booth/suites was removed after move-in

While carpet in the corridor and other clinical spaces was noted to be a benefit, there was discussion relative to the need to balance sound attenuation considerations with others, such as wheeled traffic and infection control issues.

One unique consideration noted by clinicians at this location includes the need to accommodate service dogs, including inside the sound suite.

3. Representative Photographs

Figure 116: *Speech Pathology Office/Treatment*

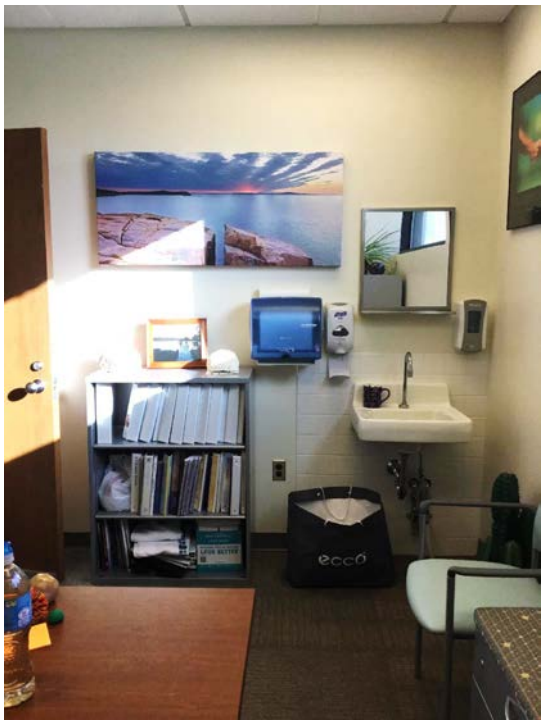

Figure 117: *Speech Pathology Office/Treatment*

Figure 118: *Cerumen Management Room*

Figure 119*: Audiometric Sound Booth – Exam side with Hearing Aid Analyzer/Real Ear Measurement System*

***Figure 120**: Booth Entrance – Flush Threshold*

***Figure 121:** Ear Mold Lab*

***Figure 122**: Rotary Chair/Vestibulography Room*

***Figure 123:** Hearing Aid Processing*

***Figure 124**: Speech Lab-Mobile Cart stored in Group Room*

***Figure 125:** Corridor/Reception*

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