AIR MOBILITY COMMAND

PASSENGER TERMINAL FACILITY DESIGN GUIDE

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Chapter 1 – Introduction

A. Purpose

This Design Guide provides the basic criteria to organize, evaluate, plan, program and design Air Mobility Command (AMC) Passenger Terminals. It applies to the design of all new construction and renovation projects. The information is intended to make commanders and their staff aware of important considerations and aid them in project development. This design guide is not a substitute for programming research. Base Civil Engineers, terminal operators, AMC review personnel, design architects and engineers, and other personnel will use this document. It will help all participants better understand AMC Passenger Terminal requirements and design criteria so they can effectively participate in the project development process.

B. Scope and Use

This Design Guide is applicable to all design projects for AMC Passenger Terminals at Air Force bases in the Continental United States (CONUS) and Outside the Continental United States (OCONUS). It provides criteria for determining program requirements, site development, and overall terminal design, but is not intended to provide all of the information needed to identify project requirements or to successfully prepare project designs. Use this Design Guide in conjunction with other Department of Defense (DoD) and Air Force documents. Obtain additional information on unique program and design requirements of the terminal project at the installation level.

Our goal must be to plan, program, design, and execute Passenger Terminals for which overall quality is higher, lifecycle costs are lower, sustainable design & development concepts and principles are incorporated to the greatest extent possible, and first costs are held to the original budget amount.

1. Project Initiation

Information required for DD Form 1391, Military Construction Project Data, which initiates project development, includes a description of the functions required, space criteria, overall building size, site evaluation, and special factors to be included in the cost estimates. Terminal spatial requirements will be determined in accordance with AFH 32-1084 Par. 5.22.2. For assistance in determining passenger load contact HQ AMC / A4TP.

2. Programming

Programming includes determining user requirements, developing solutions, identifying funding sources, and forwarding programming documents to the appropriate review and approval authorities. Each program should be consistent with the base comprehensive plan for new and existing facilities.

The Requirements Documents (RD) defines the program for design of an individual project, including functional requirements, design criteria, and cost information. Any unique, local requirements concerning building program, design criteria, and technical systems are normally included in the RD.

3. Site Planning
Effective planning will support the overall objectives for Passenger Terminals, lead to a timetable for project completion, and be long term.

The siting of the Passenger Terminal is important. Terminals require access to the flight line, but do not need to be located on the flight line. Where local conditions permit, locate Passenger Terminals on the flight line, preferably near the center of the apron where the aircraft are parked. This will minimize travel time to and from aircraft.

The site must be large enough to accommodate the terminal's functions and allow reasonable access to all functional areas. Whenever possible, allocate space for possible expansion of the terminal and adaptation to future base mission reassignment or additional aircraft capacity. Other variables to consider in site selection are physical security requirements, local weather conditions, results of soil analysis, and utility availability.

When planning a new facility, propose a site prior to completing DD Form 1391. Requirements identified during the DD Form 1391 phase may influence final site selection.

4. Design
The design process includes concept development, design reviews, and the development of construction documents. For a successful project, it is important that civil engineering and user groups actively communicate throughout the design process. A high-quality design will maximize effective use of available space and efficiently provide for Passenger Terminal functions.

Throughout the entire design process, give preference to the use of environmentally friendly materials as described in Air Force Environmentally Responsible Facilities Guide.

Compliance with all applicable building codes is mandatory. Life safety codes and force protection requirements take priority over other requirements. All areas should be barrier free and accessible in accordance with the Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG) and Uniform Federal Accessibility Standards (UFAS). When there is a conflict, use the more stringent policy.

Prepare a Comprehensive Interior Design (CID) package for the terminal in conjunction with any major design project. The CID package addresses interior finishes, artwork, signs, furnishings, and accessories. It ensures that even minor upgrade projects meet the design objectives for the entire terminal. Refer to the AMC Interior Design Guide for an expanded general discussion of interior design.

A well-coordinated design will integrate architecture, engineering, interior design and infrastructure throughout the design process. Analyze an existing terminal's structural, mechanical, electrical, and communications systems prior to planning the renovation project. Refer to Department of Defense and Air Force standards and technical orders, industrial standards, and aircraft manufacturers' recommendations for maintenance requirements. Include interior finish work concurrently with infrastructure improvements.

5. CONSTRUCTION
To ensure that design goals are achieved, project engineers will review the quality of contractor's submittal, and contracting or civil engineering construction managers will conduct daily on-site inspections.

C. AMC PASSENGER TERMINAL SUMMARY OVERVIEW

The mission of the AMC Passenger Terminals is to provide the interface between ground and air transportation. These terminals provide a safe, efficient, and comfortable transfer of passengers and their baggage to and from aircraft and various modes of ground transportation. To accomplish this, basic functions are required, as well as additional services. Space requirements vary by terminal category based on passenger load. This guide presents three general configurations for terminals. Funding and programming submittal must still satisfy AFH 32-1084, Facility Requirements. All new terminals and terminal additions operated by AMC shall have a conceptual planning study and the approval of Logistics and Civil Engineering (HQ AMC/A4/A7) before being sized.

Specific functional requirements and design criteria are determined by a variety of governmental and Air Force entities. These may include, but are not limited to:
•U.S. Building Code Officials
•U.S. Customs / Immigration
•Host Country Building Code Officials
•Host Country Customs/Immigration
•HQ AMC/A4/A7/SF
•Wing Commander
•Base Civil Engineer
•Wing Security Forces
•Army & Air Force Exchange Services (AAFES)

Hours of operation are determined locally. Design terminals to accommodate flexible flight times and overlapping functional uses.

AMC commercial flights typically operate from CONUS commercial international terminals with full Customs/Immigration and other passenger services. At these gateways AMC leases space as required for passenger processing and flight check-in counters, queue spaces, administrative offices, gates areas, and baggage build-up. The airlines providing AMC charter flights make all arrangements for baggage handling.

1. Spatial Requirements
To calculate allowable terminal space, choose the four months when the greatest number of passengers (inbound plus outbound) passed through the terminal (do not count exercise troops not processed through the terminal).

Identify 35 peak, 3-hour passenger loads for arrivals and 35 peak, 3-hour passenger loads for departures during the four months. Rank the order of the 3 hour loads. Using the 35^{th} peak-period number from both lists, add the arrivals and departures to get the design peak 3-hour load. Refer to space requirements in Table 1.1. All new terminals and terminal additions operated by AMC and Navy operated passenger terminals must have a conceptual planning study and HQ AMC/A4/A7 approval before being sized.

Category	Design Peak 3-Hour Passenger Load	Minimum Gross Area		Minimum Gross Area	
		m^2	sf	m^2	sf
IA	Under 100	372	4,000	650	7,000
IB	101 to 250	651	7,001	1,860	20,000
II	251 to 500	1,861	20,001	4,370	47,000
III	501 to 1000	4,371	47,001	7,430	80,000
IV	1001 to 2000	7,431	80,001	14,001	152,000

Table 1.1 Air Passenger Terminal Space Requirements

Chapter 2 – Planning

A. Project Coordination

The success of any building project depends on the proper coordination of all the organizations and people involved in design and operation of the facility. This coordination becomes extremely important in the design of an AMC Passenger Terminal because of the large number of organizations which are involved. Each organization must understand its role and the roles of other organizations to avoid delays or compromises to the design. The following organizations and functions could be involved in an AMC Passenger Terminal. The names and organizational roles may change, but very similar functional requirements will remain and must be understood early in the programming and design process.

Administrative Areas - Passenger Terminals include various offices, conference and training rooms, and break rooms, in support of the occupants.

AES - Aeromedical Evacuation System, an AMC organization, has scheduled flights for transfer of patients to and between medical facilities in the U.S. It also has as-needed flights of AMC aircraft. Non-medical passengers are sometimes accommodated on these flights.

AMS - Air Mobility Squadron manages cargo processing, passenger requirements, and aircraft maintenance.

AFMC - Air Force Material Command's Mechanized Materials Handling System (MMHS) Program Office is responsible for the design of the baggage conveyors and passenger boarding bridges. AFMC may fund these items if contacted several years prior to the need date. See AFMAN 23-110, USAF Supply Manual, Vol. VII, Part One for guidance on programming and funding of MMHS. Coordination with HQ AFMC-LSO / LOE should begin at the onset of any terminal improvement project and continue through the design process to ensure an optimum layout and efficient passenger and baggage flow.

AMC - Air Mobility Command has the primary role in passenger movement as an adjunct to its primary military mission. AMC personnel are responsible for all operations within the terminal as well as all passenger and baggage processing.

AMOG - Air Mobility Operations Group oversees operations at AMSs and CATOs in each theater.

AAFES - The Army & Air Force Exchange Service provides conveniences such as (but not limited to):

- Food Service - dining, snack bar, vending, etc.
- Amusement Arcade - video, pinball, etc.
- Baggage lockers
- Rental cars

Baggage Handling - AMC personnel operate baggage handling at most terminals. Some terminals may use contract services for baggage handling, including baggage transport vehicles.

Bank - Commercial banks may provide Automated Teller Machines (ATM) at some Passenger Terminals and currency exchange in foreign locations.

BCE - The Base Civil Engineer has primary responsibility for coordination of any base improvement project. The BCE is responsible for the project schedule as well as information regarding master planning, utility systems, topography, design standards, Air Force regulations and manuals to be followed, codes, etc.

CS / CG - The Wing Communications Group or Communications Squadron is responsible for the operation of all communication systems and equipment serving the terminal, including domestic commercial telephone, international commercial telephone, class A and class C telephone, secure classified hot lines if needed, defense network line, computer, and alarm systems.

CTO - The Commercial Travel Office contracts with USAF to provide scheduling, ticketing information, and services for passengers on military travel orders. CTO works closely with TMO to coordinate travel orders and the schedules of commercial airlines. CTO and TMO are sometimes remote from the Passenger Terminal, close to the population they serve. In addition to their services for the Air Force, they may also provide separate services to military personnel or civilians for travel unrelated to military travel orders.

CATO - Contract Air Terminal Operation is a location where all air terminal operation functions are performed by contracted personnel.

Custodial Services - Housekeeping and janitorial services will have space requirements.

Family Services - Family Services assists families changing bases and provides them with information on setting up new households. When household goods are delayed in shipment, it provides essential household goods on a temporary basis.

Host Country - The host country, the country in which the base is located, may establish criteria on Passenger Terminal design and operations, including:
•Local Building and Fire Codes
•Customs/Immigration
•Agricultural Inspection
•Security Forces, Host Country Police, and / or Contracted Security Forces

Postal Service - The U.S. Postal Service may have a window and office pick-up and / or pick-up / drop location.

Public Areas - Passenger Terminals include building entries and exits, Passenger Service Centers, lobbies and lounges, Food Services, departure and Arrival Gate Areas, Baggage Claim areas, and Restrooms.

Red Cross - The Red Cross aids service members and their immediate families during emergencies and verifies emergency needs to service units so units can issue emergency leave orders. It also aids service members with personal problems.

Rental Car - Some Passenger Terminals may provide space for rental car services.

SABER - Simplified Acquisition of Base Engineering Requirements provides an Indefinite Quantity / Indefinite Delivery Contract for general construction. The contract is with the Base Contracting Office; the work is coordinated by Base Civil Engineering.

SF - Security Forces refers to the Air Force security organization at the base, wing, major command, or Air Force level.

Space A Passenger - Space available passengers are traveling on stand-by status. They are DoD authorized passengers who are allowed to occupy DoD aircraft seats after all space-required passengers have been accommodated.

TMO - The Traffic Management Office works closely with the Commercial Travel Office (CTO). TMO arranges travel for duty and space-available passengers. It also coordinates with military and government agencies and their accounting offices to verify and approve travel orders and payment. This office is sometimes remote from the terminal.

USO - Some Passenger Terminals provide space for United Services Organization activities.

U.S. Government - The United States Customs Service, Immigration and Naturalization Service, Public Health Service, and the Department of Agriculture will establish criteria on Passenger Terminal space requirements.

Utilitarian Areas - Passenger Terminals include Baggage Build-Up and Break-Down rooms, storerooms, mechanical and electrical rooms, and food service preparation areas.

Wing Commander - The Wing Commander is responsible for all base organizations, approves criteria for any new Passenger Terminal, and has final approval of all base improvements. This office may have information, which could greatly impact any base facility.

B. General Considerations

Space planning criteria define the size, type, number, and functional relationship of facilities needed for all Passenger Terminals and their security requirements. Develop a project description that takes into consideration the existing Passenger Terminal, its adequacies and inadequacies relative to current and future needs, the potential for retention and renovation of the existing terminal, or the need for additions or new construction. Consider the current and projected passenger counts.

1. Standard Facility Requirements

See AFH 32-1084 for space allowances for Passenger Terminals, Category Code 141-784. The three diagrams in this guide are suggested spatial arrangements. These are examples found in Air Passenger Terminal Space Requirement Categories (Table 5.9) of AFH 32-1084.

2. Space Criteria Summary

The space planning criteria are summarized in Table 2.1. These are not definitive space planning criteria, but approximate space requirements. See Chapter 4-Facility Criteria, for further planning criteria.

Modify these space requirements within the established criteria to fit specific project needs. Include space for local options, if desired, but keep the total square footage within the Passenger Terminal allowance in AFH 32-1084. If the optional function has a separate allowance in AFH 32-1084, add this square footage to the total space criteria for the Passenger Terminal.

3. Design Issues and Relationships

Space planning criteria for an individual facility must consider the issues of overall building design and planning issues specific to the site. Each base may also determine that different or additional requirements are relevant to its local program. These considerations affect the functional areas and spaces included in the proposed facility.

Approximate Space Requirements – Large Terminal (Type IV)		
Function	**Area**	**Percentage**
Departing Passenger Area – Lower Level	23,630 s.f.	.26
Departing Passenger Area – Upper Level	24,400 s.f.	.27
Arriving Passenger Area – Lower Level	21,525 s.f.	.24
Passenger Service Area	4,525 s.f.	.05
Utilitarian Area	16,700 s.f.	.18
Total Area	**90,780 s.f.**	**100.00**

Approximate Space Requirements – Medium Terminal (Type II)		
Function	**Area**	**Percentage**
Departing Passenger Area	19,225 s.f.	.53
Arriving Passenger Area	7,450 s.f.	.21
Utilitarian Area	9,300 s.f.	.26
Total Area	**35,975 s.f.**	**100.00**

Approximate Space Requirements – Small Terminal (Type IB)		
Function	**Area**	**Percentage**
Departing Passenger Area	8,425 s.f.	.64
Arriving Passenger Area	1,550 s.f.	.12
Utilitarian Area	3,250 s.f.	.24
Total Area	**13,225 s.f.**	**100.00**

Table 2.1 Approximate Space Requirements – Large, Medium, and Small Terminals

4. Aircraft and Passenger Capacity

Aircraft serving AMC Passenger Terminals are highly diversified in passenger capacity and gate requirements. Verify specific local requirements with terminal operators. These criteria affect many aspects of terminal design.

5. Physical Security / Anti-terrorism Counter Measures

The cornerstone of this guidance is sterile terminals at all times, including air terminals operating under AMC guidelines, via 100 percent screening / anti-hijack inspection of all personnel and their belongings.

All locations must develop plans for an antiterrorism standoff zone around the terminal building consistent with the intent of DoD, Air Force, and AMC force protection policies. Coordinate the plan with the host base and insure its integration into their Installation Security Plan. Work with the host base Civil Engineer to develop and program requirements. Refer to Chapter 7- Physical Security / Anti-terrorism criteria, for Anti-terrorism Counter Measures.

Chapter 3 – Site Criteria

A. Site Evaluation

1. Location

Locate the Passenger Terminal adjacent to the airfield if possible with visibility and access from the base roadway system.

The Passenger Terminal may be located in the vicinity of the Air Freight Terminal in order to share resources and better protect facilities.

2. Site Size

The Passenger Terminal requires area for the following exterior functions in addition to the terminal itself:

- Entry and exit drives
- Services drives and loading zones
- Long-term and short-term parking for privately owned vehicles (POVs) and government owned vehicles (GOVs)
- Ground transport pick-up / drop zone
- Anti-terrorism standoff / no parking zone
- Frontage / access onto the airfield

Airfield frontage must accommodate aircraft expected at the particular terminal. Confirm the frequency of arriving and departing flights and the mix of civilian and military aircraft (see figure 3.1).

3. Access

Provide reasonable access to the Passenger Terminal by POVs and GOVs, commercial service vehicles, and pedestrians during normal operating conditions

Incorporate permanent and removable vehicle barriers into the site and provide for placement of temporary entry control points in conformance to the Installation Security Plan and Chapter 7, Physical Security / Anti-terrorism Criteria of this guide. Post "Restricted Entry" or "Authorized Personnel Only" signs as recommended by local security forces to deter accidental entry of unauthorized personnel into secure areas. Use English text, arrows, and/or international symbols.

4. Utility Availability

Locate the Passenger Terminal near major utilities such as, water, sewage, electricity, communications, and gas line.

B. Site Planning

1. Local Context

Review the local base Architectural Compatibility Plan and Commander's Base General Plan Summary. Design the site to be compatible with the site planning features of existing buildings near the Passenger Terminal.

Develop the site design using existing dominant or attractive ground forms and structures.

Position the building in response to local climactic conditions. Provide protection from undesirable winds and solar gain. Expose activity areas to the sun in cold climates; shade activity areas from excessive sun in warm climates.

Integrate physical security and antiterrorism features into the site plan such that threats are deterred or mitigated without giving the visual impression of a "fortress". Comply with all site planning requirements AMC I 24-101 Vol. 24 and UFC 4-010-02.

The guidance in this document focuses on measures that limit access, minimize injuries and loss of life, and reduce damage to the terminal structure and its contents.

2. Public Side
The public side of the Passenger Terminal includes the entry and exit drives, parking areas, passenger pick-up/drop zone, and landscaped standoff area. This is the "front door" of the terminal and must be designed accordingly. Incorporate accessibility design features and signs as required by the ADAAG. Provide paving, landscape, furniture, and plant material that are compatible with the base's Architectural Compatibility Plan and landscape design requirements and recommendations. Coordinate site planning and landscaping elements with building features to create an integrated design of the site and building.

3. Service Side
The service side of the Passenger Terminal includes an area for receipt of supplies, a utility equipment yard, fuel tanks (if required), trash containers / dumpsters, and other building support activities.

Separate these activities from the public areas by means of landscaping elements and fencing. Screen utilitarian equipment such as condensers, transformers, and dumpsters from view with plants or fixed construction. Materials used for fixed construction must be compatible with the terminal building and surrounding construction.

An area for walking family pets may be provided in a discreet location if warranted.

4. Flight line Side
Locate the Passenger Terminal on the flight line or as close to the flight line as practicable. The flight side of the terminal interfaces directly with aircraft and passenger flight operations.

Provide an information welcome sign on the flight line side of the passenger terminal.

Provide for the installation of boarding bridges directly from the building to the aircraft parking area at large Passenger Terminals. At medium and small Passenger Terminals, provide adequate space for buses or vans to transport passengers to and from the aircraft. In some locations, distances may be close enough to permit passengers to walk to the aircraft. Provide a means of transporting handicapped passengers to and from the aircraft.

Plan specific areas for aircraft parking, passenger transport vehicles, baggage transport vehicles, aircraft service vehicles, fleet service vehicles and pedestrian walkways.

Design and construct the building with adequate service doorways and access for baggage transport vehicles or trucks to facilitate operations.

C. Site Design

1. Access Road

Ensure that the access road to the terminal is adequate to support the traffic volume and large vehicles such as busses and delivery trucks. Dimensions and distances, where specified, are minimums and should be used in conjunction with locally assessed threat conditions.

2. Parking Facilities

The following are typical criteria for parking design. For additional guidance on security measures, reference AFMAN 32-1071 Security Engineering, AMCI 24-101, Volume 24, Passenger Terminal Force Protection and UFC 4-010-02, DoD Anti-terrorism Standards for Buildings.

•Eliminate all public parking inside the antiterrorism standoff zone. Passenger Terminal Force Protection & UFC 4-01-010-02.

•Locate public / unrestricted-parking areas at least 82 feet from the terminal.

•A parking area with controlled access is allowable on the flight line side of the terminal. Limit the number of these spaces for reserved parking such as squadron / wing commander.

•Do not allow parking beneath the terminal.

•Ensure that spaces are provided for the handicapped as required by the ADAAG. Use signs to indicate reserved spaces for the Officer-in-Charge, Distinguished Visitors (DV), handicapped, and employees, and short-term and long-term parking areas.

3. Entry Drive

Provide a distinct entry drive to the Passenger Terminal. Ensure that the intersection with the access road is designed to permit easy turning of large vehicles such as busses and delivery trucks onto the entry drive. Establish a one-way traffic flow, and provide for access to the parking lots, service drives, and ground transportation pick-up / drop zone.

Control access into the antiterrorism stand off / no-parking zone.

Bollards can prevent vehicular access while allowing pedestrians to enter restricted areas.

Design the entry drive to avoid long, straight sections of roadway from the access road to the pick-up / drop zone.

Flank the entry drive with landscaping and plants that will deter attack over lawn areas.

4. Ground Transportation Pick-Up / Drop Zone

Provide a ground transportation pick-up / drop off zone at a minimum of 82 feet from the terminal. Control vehicle access and speed in this zone.

If space allows, provide a secondary ground transportation pick-up / drop zone for busses and similar vehicles. Locate this zone in the parking area, a minimum of 82 feet from the Passenger Terminal.

Closed circuit television (CCTV) surveillance cameras and a public address system for flight and security announcements will be within the 82 feet stand off area. The CCTV monitors will be in a permanently staffed area.

Screen restricted areas from public view.

5. Vehicle Exclusion Barriers
Exclusion barriers may be required to deter terrorists from attacking the Passenger Terminal. Use raised barriers, planters and/or walls, to prevent a vehicle from leaving designated areas (roads, parking lots) and driving too close to the terminal. Bollards effectively allow pedestrian access while precluding vehicle access. Use professional looking, commercially manufactured bollards, do not use expedient bollards such as steel pipes.

6. Service Drive & Loading Zone
Provide service drives connected to the entry and exit drives at the Passenger Terminal. Design the service drives and loading zone to allow large delivery trucks to read the building's loading dock. Construct adequate pavement to allow trucks to turn around. This can also serve as a visual inspection area for large vehicles.

Separate the restricted service area from the public side of the terminal both physically and visually. Use fencing or walls for the physical separation and landscaping or plants for visual separation.

Provide for the installation of removable bollards as an antiterrorism measure.

Post restricted access signs as dictated by Air Force, AMC, and local requirements.

7. Exit Drive
Vehicles leaving the Passenger Terminal will use the exit drive to return to the access road. Use curvilinear design to avoid straight sections of roadway and reduce vehicle speeds. Equip the exit drive with vehicle exclusion barriers including height restriction bars and removable bollards. Post "Exit Only" and directional signs to maintain one-way vehicle flow through the Passenger Terminal complex.

D. Site Utilities

Provide water, sanitary sewer and storm systems, plus a natural gas, steam service, or fuel oil system (whichever is used locally) in accordance with design criteria in MIL-HDBK-1190 Facility Planning and Design Guide.

Provide electric, communications, fire alarm, and sprinkler service in accordance with requirements in MIL-HDBK-1190 and local service procedures.

Utilize tamper-resistant, alarmed access to critical utilities and provisions for

back-up emergency supply and/or redundant loop supply service.

Provide landscaping at terminal entrance. Site utilities should be located underground.

Identify and protect utility culverts and sewers that could allow access to the facility

Design screening for exposed utilities with landscaping and plant materials.

Consider energy monitoring and control systems.

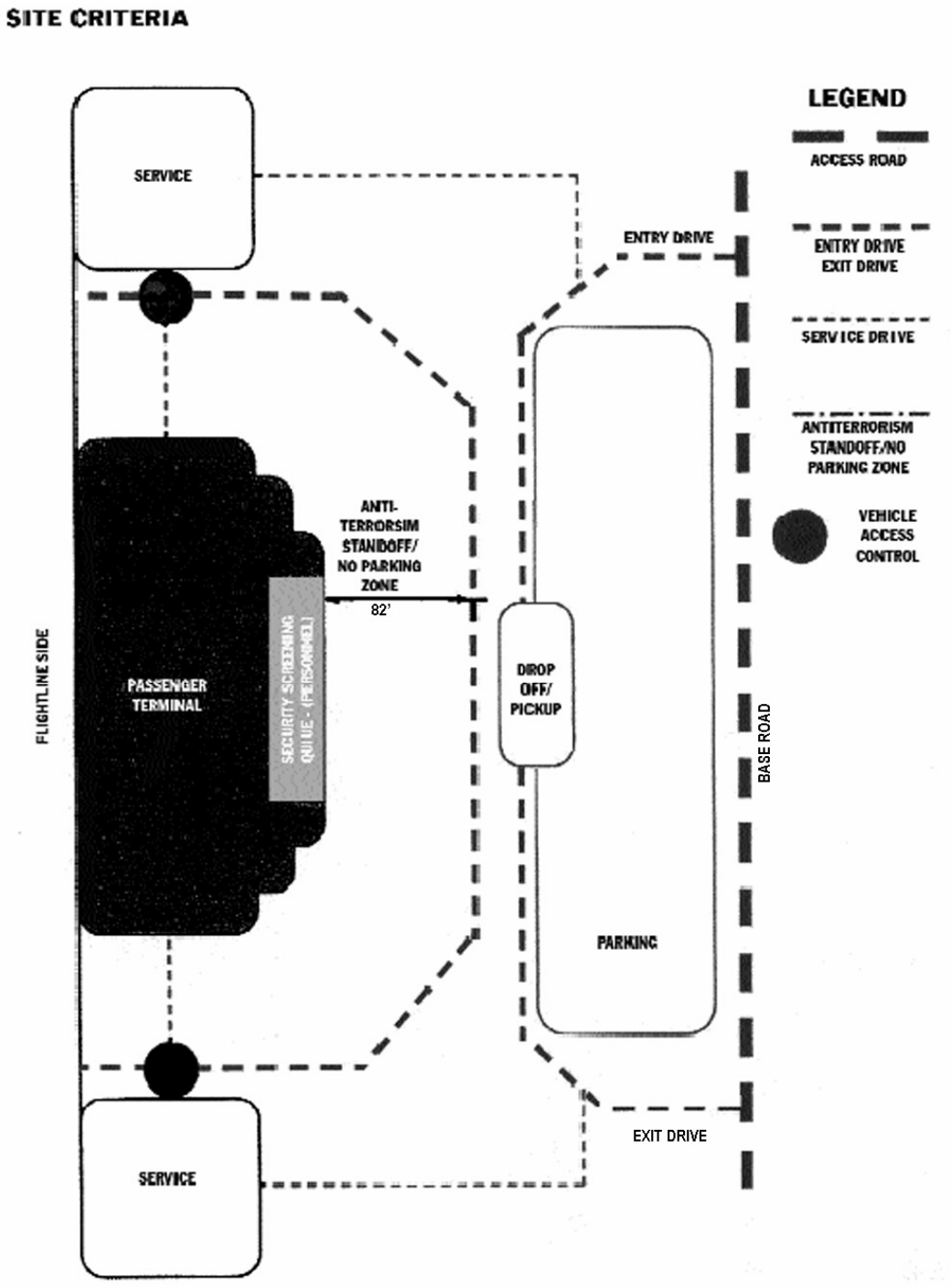


Figure 3.1 Site Concept

Chapter 4 - Facility Criteria

Passenger Terminal programming addresses the general planning of the building, departing areas, arriving areas, passenger service areas, administrative areas and utilitarian (non-public) areas as well as flexibility, expansion, and renovation. The needs of each of these must be weighed against the others to obtain functional balance in the terminal.

This chapter presents function, area, and space criteria for a Passenger Terminal. Primary design considerations include anticipated use and performance, organization and character, and relationship between spaces. For technical requirements, see the general consideration in Chapter 5, Construction and Systems Criteria.

Most of the criteria in this chapter is based on the large Passenger Terminal, but must be considered for terminals of all sizes. Specific guidance on space requirements for three prototypical terminals appears at the end of the chapter. These recommendations may be modified to reflect the local program requirements and needs of individual projects.

A. Building Planning

1. Organization

The Passenger Terminal operates as a sterile facility with all functions inside the security checkpoints.

The terminal is generally organized into three primary areas:

Departure Area - These functions service the requirements of the departing passengers. The functions in this area are the departure lobby, Passenger Service Center, Flight Check-In Counter, Gate Area, Family Lounge, Special Category Lounge, administration, telephones, restrooms and the janitorial area.

Arrival Area - The functions in this area are the Gate Area, Arrival Lobby, Baggage Claim, Immigration / Customs, Ground Transportation Counter / Kiosk, Hotel / Lodging Information Counter / Kiosk, restrooms and the janitorial area. These areas must be secured from the departure area by means of a separation wall.

Public Area - The functions in this area might be the monetary exchange, cafeteria, telephone, vending, restrooms, janitorial and other AAFES type facilities.

2. Circulation

Plan and arrange circulation and flow patterns within the terminal to prevent contact between departing and arriving passengers. Based on anticipated number of passengers, visitors, and staff, provide the following as required by law, code, or regulation:

Corridors and public stairways shall be sized to allow people to easily pass each other.

Escalators and elevators where the volume of passenger traffic and the physical design of a multi-floor building dictate their use. In all cases, ensure that escalators and elevators comply with ADAAG requirements.

Emergency exits, located as required by U.S. or host country building codes.

Comply with the more stringent requirement.

Passenger boarding bridges or portable stairs or both for boarding or exiting the aircraft.

3. Accessibility
Provide access to all areas of the Passenger Terminal as required by the ADAAG or more stringent local regulations. The design may include level changes that meet these requirements by use of ramps, elevators, or lifts. Equip the terminal with audible and visible alarms as required by ADAAG.

B. Departing Passenger Areas

1. Terminal Entrance
The Passenger Terminal entrance area includes the following:

Entry / Exit - This is a paved area immediately adjacent to the ground transportation pick-up/drop zone. The area must accommodate the largest number of passengers or personnel expected to arrive at the terminal simultaneously. Provide appropriate directional and informational signs, public address speakers, CCTV cameras, lighting, and telephones.

Security Screening Area

Information Center - Equip the Information Center with a CCTV monitor displaying flight and other information, cabinetwork, and space-available passenger forms or interactive sign-up capability.

Security Queuing Area at terminals with single points of entry. Provide sufficient space to handle the largest expected inflow of passengers and others based on local experience. Assume a minimum space of 12-sq. ft. per person for each individual with several large pieces of luggage. If the queuing area is not enclosed provide a canopy to protect those awaiting security screening from inclement weather. In cold climates, provide infrared heating and shelter from direct wind; in tropical climates, provide spot cooling and adequate ventilation.

Security Screening Area - Provide space for large x-ray machines, magneto-meters, trays, tables, and security personnel.

In addition, provide space for secondary security checks with hand transfriskers, scanners, or the visual inspection of baggage. Determine the number of x-ray and magnetometer-screening stations based on the number of departing passenger processed on a daily basis.

Circulation - Provide for people to exit this area without going through the Security Screening Area. This exit should be monitored from the Security Screening Area.

2. Central Lobby
The central lobby is the heart of the terminal and provides a limited waiting area for passengers.

The central lobby provides access to the Passenger Service Center, Flight Check-In counter, restrooms, lounges, and other services. Personnel may spend a great deal of time in this area; some may return day after day awaiting space-available seating on flights.

Passenger Service Center

Reduce the apparent width of this large space by varying material and color on the floor, varying ceiling heights, and using multiple light sources.

Use durable floor and wall coverings that will withstand the traffic in this primary circulation hub.

Provide casual seating in small clusters for private, conversation. Use natural or high quality silk plants and planters to subdivide the space without providing hiding places. For denser waiting, place ganged seating in carpeted areas. Furnish chairs with arms to discourage personnel from sleeping in more than on chair.

Provide Space for the Traffic Management Office (TMO) and Commercial Travel Office (CTO)

3. Adjacent to the Central Lobby
The following functions and areas are adjacent to the central lobby.

Information Counter - Locate an Information Counter in or close to the central lobby to minimize traffic in the passenger processing area. If manned, the Information Counter will provide directions and answer questions regarding services and flights. Incorporate this function into the Passenger Service Center in smaller terminals that cannot justify a separate Information Counter.

At the Passenger Service Center (PSC) counter passengers come to sign up for travel, Space-A and duty stand-by calls. Locate the Passenger Service Center so that it is visible from the terminal entrance and central lobby.

Space-available candidates may sign up remotely or at the Information Counter outside the main entrance to the terminal or at the Passenger Service Center

(PSC). These passengers will come to the PSC for "Space A" roll call to be selected for their flight. They then proceed to the check-in counter to turn in their baggage, receive their boarding passes and pay for meals (if applicable).

Flight Check-in counter

Traffic Management Office (TMO) and Commercial Travel Office (CTO) - This area includes the Traffic Management Office (TMO, a base function) and the Commercial Travel Office (CTO, a contract function). TMO and CTO work closely and should be adjacent. At some locations, TMO and CTO may be located away from the terminal.

Army / Navy / Marine Liaison Counter - Some Passenger Terminals have enough traffic from other services to justify Army / Navy / Marine liaison counters. Locate these counters next to the Passenger Service Center.

Flight Check-In Counter - Passengers booked and / or selected for travel receive their boarding passes and check their baggage. They may also be buying "in-flight meals". Include an area for a cash drawer. Queuing lines should be arranged efficiently and should not conflict with Passenger Service Counter queuing or lobby circulation.

Check-in agents process and transfer the baggage to the Baggage Build-Up area. Passengers then proceed to the gate area when time for boarding. Personnel leaving the secured terminal area will be required to re-enter through security.

Pre-Customs Station - A pre-customs function, manned by U.S. security forces, may be required for flights to the U.S. Pre-customs can be a convenience, providing declaration forms to passengers for completion during the flight and processing at a terminal with full Immigration / Custom and / or agriculture services. It can also be the primary Customs function for flights to U.S. locations with minimal or no Immigration / Customs service.

Immigration Station - OCONUS Passengers departing for CONUS locations may be required to obtain an exit stamp in their passports. Normally a portable podium will suffice.

Small Flight / Departure Gate - A ground level departure Gate Area is desirable in large terminals with second floor departure Gate Areas and passenger boarding bridges. This shortens the passenger travel to small aircraft not being served through passenger boarding bridges.

Lounges - Locate smaller lounges such as the Family Lounge adjacent to the central lobby in medium and small terminals.

Elevators - Locate elevators adjacent to the central lobby to facilitate the movement of passengers.

4. Departing Passenger Lobby
In two-story terminals there may be a lobby on the second floor. It provides departing passengers a common circulation space for any functional areas located on that floor. In most one-story terminals, the departure lobby and the central lobby are the same.

5. Family Lounge
These facilities serve the needs of parents or travelers with babies and small children. In addition, family lounges provide the benefit of isolating activities, which could be disruptive in other parts of the terminal.
The large terminal typically includes:

Main Lounge Area - furnish with seating and a TV and finished with sound-absorbent floor, wall, and ceiling materials.

Eating / Kitchen Area - furnish with tables, chairs, and a counter top with a sink, microwave oven, and small refrigerator. Finish this area with easily cleaned, hard-surfaced materials.

Crib Room - furnish with cribs and bedding for infants and finish with sound-absorbent materials.

Crib Room with casual atmosphere and seating.

Dependent Assist Restroom - Refer to Section F Utilitarian Areas for information on restrooms.
Exterior Recreation Feature - From a strictly force protection standpoint, exterior recreation features (i.e. playgrounds, basketball courts, picnic areas, gazebos, etc.) should be located outside the 82 feet anti-terrorism standoff zone.

If the installation's Need Assessment determines an exterior recreation feature is required at or near the passenger terminal, and the desired siting is within the 82 feet standoff zone, the commander should conduct an Operational Risk Management (ORM) survey. The survey identifies vulnerabilities based on the threat, and assesses the risk. The commander should review the survey results and accept the risk prior to site approval, design, and construction. The installation facilities board should also assess the desired site and ensure it complies with noise, safety, and other relevant operational concerns. Any new construction must meet the requirements of the DoD Minimum Antiterrorism Standards for Buildings.

If an exterior recreation facility is authorized within the terminal standoff zone, under no circumstance shall the terminal security, or single point of entry be compromised. If the recreation facility is attached to the terminal, it must be completely enclosed. This will ensure positive control of the terminal is maintained and avoid the possible introduction of any prohibitive or restrictive items through the recreational facility. All play equipment will meet Consumer Product Safety Commission (CPSC) requirements.

Play Room /Area - furnish with games and toys suitable for small children, and finish with sound-absorbent materials.

Interior Play Equipment Room - Local need and available space should determine the size of the play equipment. Locate this room to be visible from the passenger lounge. Enclose the play equipment with clear tempered glass panels to reduce the noise. The interior play equipment room is the preferred option over an exterior playground.

Interior play equipment room

The medium terminal typically includes a Family Lounge with a seating area, restrooms, a separate crib room with change areas, and a kitchenette.

A small terminal might include a Family Lounge consisting of a single room with an adjacent restroom for diaper changing.

6. Special Category Lounge

The Special Category Lounge serves high ranking military and civilian officials, distinguished visitors, or other special passengers. Locate the Special Category Lounge on an outside wall for direct access. Lounges in Type II or Type IV terminals for example, can be divided into two areas, providing the opportunity to separate groups or allow multiple uses of the space. Allow for separate restrooms.

Provide communications lines, cable TV access, and plenty of electrical outlets. Provide for variable light sources.

In Type 1A terminals, the Special Category Lounge requires only one room with a private restroom.

Finish and furnish the Special Category Lounge with higher-grade items than the rest of the terminal.

Provide a desk with a secured telephone and data connection. Where space allows, provide a private office for these amenities. Provide additional data ports in the lounge areas.

Provide small kitchenettes and baggage storage closet areas when space allows. Kitchenettes include microwave, sink, cabinets, countertops, and under-counter refrigerator.

If there is a transition space to the Special Category Lounge, upgrade the finishes to match those in the Special Category Lounge.

7. Gate Areas

Gate areas are used to hold passengers who are awaiting departure. Gate areas are sometimes used to hold arriving passengers for Immigration / Customs briefings before proceeding to Baggage Claim and may also be used as holding areas for passengers on a continuing flight who are taken off the aircraft during refueling. At small and medium terminals with reduced staff, those

manning the security point may be coming from the Passenger Service Center or Flight Check-In Counter. Each gate area must be independently securable to prevent contact between passengers from different flights.

Immigration Station - If no Immigration Station is located at Check-In, passengers may obtain their exit stamps here. Boarding passes are collected at this point at some locations.

Passenger Agent Counter - Provide a passenger agent counter or podium in a visible and accessible location. Make the podium similar to check-in counters in material and profile. Include an information board for flight number, destination and departure.

Passenger Seating Areas – Provide denser seating areas than lobbies or lounges. If terminal is used for troop movement then orient chairs in one direction. Allow adequate spacing between rows for efficient movement of personnel carrying baggage as they proceed through the gate to board the aircraft.

The large terminal concept assumes the handling of two 747's or other wide body aircraft at one time. Provide two seating areas, each sized to hold the capacity of such aircraft. Provide an additional small seating area to hold the entire capacity of a 727 or other civilian narrow body aircraft or the maximum passenger capacity of a military C-17. Use moveable partitions to further divide this area if necessary.

Finish materials should be similar to those in the central lobby. The room design and color should promote a calm, controlled feeling before departure. Lighting levels need not be extremely high, but should be adequate for reading. Seating upholstery can be used as an accent color.

Restrooms - Refer to Section F, Utilitarian Areas for information on restrooms.

Departure /Arrival Gates - Size doorways, passenger boarding bridges, and corridors to permit efficient movement of passengers from the gate to the aircraft. Depending on the specific terminal size and location, passengers may use passenger-boarding bridges, shuttle bus or van, or walk on the apron between the terminal and the aircraft. Ensure that the path of travel complies with provisions of the ADAAG.

C. Arriving Passenger Areas

Arriving passengers generally proceed to the Baggage Claim area, which consists of a lobby, and the area where baggage is actually claimed from conveyors. The area may also include an Immigration Station and Customs Counter.

1. Immigration Station

Immigration clearance may be required. Procedures differ by country and by the origination of specific flights. Normally a portable podium will suffice. Specific requirements need to be identified by location.

2. Arrival Lobby

Arriving passengers proceed to Baggage Claim. If passengers arrive on the second floor, provide stairs and elevator down to the Baggage Claim area. Many passengers have small children and hand-carried baggage. Provide adequate seating in the lobby area to help clear the

access area in front of the baggage conveyors.

Floor material should be durable and appropriate for heavy luggage traffic. Wall covering should include sound-absorbing material due to the increase in noise when the area is occupied.

Arrival Gate Area

3. Baggage Claim
Coordinate the selection and configuration of conveyors with the MMHS office of AFMC. Provide a means of delivering oversized items to the Baggage Claim area.

Depending on local requirements, passengers either proceed to Customs or exit the building after claiming their baggage.

4. Customs Counter
Customs is the final checkpoint prior to entering or returning from a foreign country. After claiming their baggage, passengers queue for Customs. Note: Queuing should not conflict with bag examination or building circulation.

Use lines on the floor or overhead signs to indicate the point beyond which passengers should not proceed until an agent is available.

Furnish the bag examination counter with a stainless steel top. The Customs counter's profile and material must match or be compatible with the Passenger Service Center. Floor, wall, and ceiling materials can be an extension of the Baggage Claim area. (Reference Chapter 6, Architectural Character & Interior Standards).

Terminals with more elaborate Customs may require a search room, vault, and an Agricultural office.

5. Terminal Exit Lobby
The primary exit must be monitored by security to prevent personnel from entering the terminal through the exit. All other exits must be equipped with locks, panic hardware, and audible alarms for emergencies. Passengers arriving at AMC terminals may have come from a location where their baggage was not screened. AMC requires them to pass through the security screening if they need or desire to proceed to ticketing or departing areas

Revolving doors are sometimes suitable for the terminal exit and should be equipped with electronic sensors to prevent the door from allowing people to enter building.

Access to the exit lobby is from Baggage Claim or Customs. Greeters meeting passengers should be kept a sufficient distance from both areas to prevent them from causing delays or compromising Customs processing.

Consider providing a sheltered area at the exit and roadway. Provide accommodations for greeters and those waiting for ground transportation outside.

Departure Gate Area

D. Passenger Conveniences

Local conditions will dictate which of the following services are provided in each terminal.

1. Conveniences Generally Provided for All Passengers

Food Service - Food Service is provided in some form in most terminals by AAFES, which establishes its own program and negotiates for square footage with AMC. A small or medium terminal may have two or three vending machines and one or two tables. Some terminals may have snack bars. A large terminal may have a serving area, dining area, food preparation area, dry food storage area, refrigerator, freezer, staff lockers, restrooms, and offices.

Locate small vending machine area near waiting areas and or common service functions.

Base Exchange Annex - A Base Exchange annex may be incorporated into medium and large Passenger Terminals. Small sundry items and snacks are usually available here.

Amusement Arcade - Finish the space with sound-absorbent material, and equip it with doors. Amusement games are chosen at the local level.

2. Conveniences Generally Provided for Departing Passengers

Baggage Lockers - Provide baggage lockers within the sterile area of the terminal for storage of inspected luggage. Place the lockers convenient to the central lobby.

Automated Teller Machines - ATMs may be provided.

Telephones - Provide telephones that comply with provisions of the ADAAG. Equip several telephones with modems and computer connections.

3. Conveniences Generally Provided for Arriving Passengers

Baggage Carts - Provide rental baggage carts based on locally determined requirements.

A Local Information Counter - Travelers can obtain information about the country and / or locality in which the terminal is located.

A Hotel / Lodging Information Counter / Kiosk - Equip this counter with telephones.

A Ground Transportation Counter / Kiosk - Provide space for rental car information and/or actual car rental using a counter similar to the Passenger Service Center. Also provide information on taxicabs, buses, subway, or rail transportation.

Telephones - Provide telephones that comply with provision of the ADAAG. Equip several telephones with modems and computer connections.

E. Administrative Areas

The Passenger Terminal requires a variety of offices, conference rooms, work spaces, etc., to serve the functions housed in the terminal and their storage needs. The larger the terminal, the greater the number of administrative entities.

For the large terminal, these areas break down into three types of spaces: those which oversee or relate directly to passenger processing, passenger convenience services, and internal offices with little or no contact with passengers.

Specific requirements for administrative space are determined at the local level, using command guidelines. Consult with occupants as to appropriate furnishings. Ensure that all items comply with AMC quality standards. Required administrative offices include:

1. Passenger Service Center / Office
Located immediately adjacent to the Passenger Service Center Counter.

2. Traffic Management Office (TMO) and Commercial Travel Office (CTO)
TMO and CTO should have adjacent offices.

3. Terminal Management Offices
Locate offices for the Officer-In-Charge, Non-Commissioned-Officer-In-Charge, Superintendent, and Shift Supervisors so that personnel have direct access to other functional areas, as well as the central lobby.

4. Dispatch Office
May be remote from other staff areas in medium terminals or combined with other staff areas in small terminals. The Dispatch Office coordinates ground transportation of passengers and baggage with aircraft and gates to assure a smooth flow of processes on the flight side. At larger terminals, this function requires full-time staff; at medium terminals, this function and Flight Check-In often share staff.

5. Fleet Services Office
Locate this office for fleet supplies adjacent to the Dispatch Office

6. Lost and Found Office and Storage Area
Located near the Baggage Claim area.

7. Conference / Training Room
Should be large enough to accommodate local staff requirements. Provide dimmers to control lighting levels.

8. Additional offices may include:
Army / Navy / Marine Liaison offices
Located immediately adjacent to the Army / Navy / Marine Liaison Counter.

Customs / Immigration / Agricultural Inspection Office
Located near the Customs Counter in the arrival area. Customs may also need a separate search room with access to the arriving and departing area.

Family Services
May have an office in the terminal. If so, it should be convenient to arriving passengers.

Red Cross Office
May be in the terminal. If so, it should be convenient to departing passengers.

Break Room
Based on local requirements.

Use systems furniture in staff offices occupied by four or more persons. Integrate systems and free standing furniture during comprehensive interior design development.

Systems furniture includes interchangeable wall panels, panel hung desks, and storage modules which are combined to form office workstations. These stations allow for a reconfiguration of office areas, use systems furniture that easily integrates computer hardware.

Systems furniture should incorporate integrated electrical and communications service to hide unsightly wires and cables. Sound absorbent fabric panels will reduce background noise and provide a quiet work area. Finish work surfaces in plastic laminate or wood.

F. Utilitarian Areas

1. Passenger Processing Support
Passenger Processing Support includes Baggage Build-Up, Baggage Break-Down, and transport activities. In some climates, this function may not need full enclosure for proper working environment or protection of materials; however, it should be well secured.

Allow room for canine inspection of baggage in the Baggage Build-Up and Break-Down rooms.

Inspection of baggage at Baggage Claim area

Baggage Build-Up Room - After baggage is tagged at the check-in counter, it is conveyed to a baggage build-up room where it is sorted by destination. The conveyor originates behind the Flight Check-In counter and extends full length to cover all Flight Check-In stations. The belt should extend into the baggage build-up room at a length sufficient to enable efficient unloading and sorting. A simple hand pass through the Flight Check-In counter to Baggage Build-Up is sufficient for small terminals.

The means of transporting baggage to aircraft can vary greatly. The mix of aircraft and the means of delivery will determine the optimum room size and shape.

Baggage containers are carried to civilian aircraft by transport vehicles. Baggage for military cargo aircraft is packed on pallets (88" x 108" max.) and taken to the aircraft by truck. Provide forklift access for pallet transfer. Small batches of baggage are taken directly to the aircraft by truck.

Baggage Break-Down Room - Similarly, the means of transporting baggage from the aircraft to the baggage break-down room can vary greatly. Baggage containers or cart trains transport baggage from civilian aircraft; baggage from military cargo aircraft is placed on pallets, brought to the baggage break-down room by forklift, and taken off the pallets. Small batches of baggage may be taken directly to the break-down room by truck. Individual pieces of baggage are then unloaded and placed on conveyors for transport to the Baggage Claim area.

2. Restrooms

Place restrooms at appropriate locations throughout the Passenger Terminal. Restrooms are usually located adjacent to the Central Lobby and Food Service areas, near Baggage Claim and Customs, and immediately adjacent to passenger seating areas. Each will comply with local building and plumbing codes and provisions of the ADAAG.

Restrooms may include electronic flushers and water faucets, hand dryers, paper towel dispensers, soap dispensers, infant changing stations, diaper disposal receptacles, and handicapped accessible facilities to help avoid delays in the restroom. Design restrooms with off-set privacy partitions, clear aisles without doors to facilitate access for passengers with carry-on bags, outward opening doors for individual toilet units, benches and clothes hooks for personnel wishing to change clothes or uniforms, and electrical outlets beneath mirrors for electric razors or hair dryers. Back toilet walls to one another; construct plumbing risers to feed in two directions. Finish the area with easily cleaned, bacteria-resistant, hard-surfaced materials.

Number of Stalls Required in Restroom Facilities in Each Distinct Area

PEAK LOADING PER AREA PER GENDER (MALE OR FEMALE PASSENGER)	MALE RESTROOM (STALLS/ URINALS)	FEMALE RESTROOM (STALLS)
1-15	1	1
16-35	2	3
36-55	3	5
56-100	4	6
101-155	5	8
156-205	6	10
206-250	7	11
251-300	8	13
301-350	9	14
351-400	10	16
401-450	12	19
451-500	13	21
501-550	14	22
551-600	15	24

Source: Uniform Building Code Table A-29-A, Minimum Plumbing Fixtures for Group B occupancy; industry standard (based on UBC for male, UBC +60% for female) ref: Lambert International Airport

Figure 4.1 Restroom Requirements

Terminals will provide an adequate number of restroom stalls by gender. Family assist restrooms will be provided in areas where heavy concentrations of families frequent the terminal. These unisex restrooms are designed to accommodate a mother or father and small children with a private facility. Ventilation requirements may be higher in these restrooms.

The standard number of male stalls / urinals is based on the International Building Code (IBC) criteria for

restrooms in public buildings. In applying the standard for each distinct terminal area, restroom facilities may be one over or one under the standard number of stalls, provided there are no considerable delays. The main terminal and departure areas may be one distinct area; the arrival gate and prior to U.S. Customs areas may be another distinct area.

3. Food Service Preparation
Food service preparation will vary based on local conditions and requirements. Close coordination with AAFES is required when planning and designing these elements. AAFES will provide detailed requirements to the designer for each of the following:
•Cooking Area
•Dry Storage
•Trash
•Restrooms (for food service personnel)
•General Work Area
•Refrigerator and Freezer
•Vestibule

4. Custodial Services
Provide janitorial closets in several locations throughout the Passenger Terminal based on local requirements. Typically, janitorial closets include space for cleaning supplies and equipment and a service sink. To economize on plumbing construction costs, locate janitorial closets near restrooms. Provide separate space for housekeeping storage if necessary.

5. Mechanical Room
Provide space for a mechanical room (or rooms) as determined by local conditions. Size the room and doors to permit efficient movement and maintenance of large equipment. Locate this room on an exterior wall of the terminal with access only from the outside.

6. Electrical Room
Provide space for an electrical room (or rooms) as determined by local conditions. Size the room and doors to permit efficient movement and maintenance of large equipment. Locate this room on an exterior wall of the terminal.

7. Communications Room
Provide space for a communications equipment room as determined by local conditions. Size the room and doors to permit efficient movement and maintenance of this equipment. Locate this room in the interior of the terminal.

G. Flexibility, Expansion, and Renovations

1. Flexibility and Expansion
Design the space to accommodate changing patterns of use, alternative operating processes, and varying passenger loads.
Connect adjacent gate lounges by double doors or movable partitions to maximize flexibility.

Design the overall building form and structural system with consideration for potential expansion and addition, without over designing the initial construction. Include force protection requirements in the structural integrity of the building.

Example of Space Requirements	
DEPARTING PASSENGER AREAS-LOWER LEVEL	**23,630**
Information Center	200
Security Queue	2,000
Security Screening	750
Central Lobby	10,000
Passenger Service Center Counter	530
TMC/CTO Counter	
Flight checkin, 6 stations	250
Small Flight Departure Gate	300
Central Lobby Restrooms (includes janitor)	1,000
Administration Offices	6,600
Passenger Service Center Office	
Terminal Management Offices	
Dispatch	
Conference/Training	
Lost and Found Office	
Army, Navy, Marine Liaisons Office/counter	
Red Cross	
Breakroom and Lockers (100)	
Special Category Lounge	2,000
DEPARTING PASSENGER AREAS-UPPER LEVEL	**24,400**
Departing Passenger Lobby	5,000
Family Lounge	2,900
Gate Areas 2 gates	12,000
(Each includes Passenger Agent Counter	
Passenger Seating Area	
Departure Gate)	
Miscellaneous Functions	2,500
USO	
Gift Shop	
Exchange Annex	
Amusement Arcade	
Boarding Corridor	2,000
ARRIVING PASSENGER AREAS-LOWER LEVEL	**21,525**
Arrival Lobby (includes Immigration Station and Customs Counters)	15,025
Baggage Claim	3,000
Administration Offices	1,000
Customs	
Immigration	
Agriculture	
Family Service (if required)	
Greeting	1,000
Exit Lobby	1,500
PASSENGER CONVENIENCES	**4,525**
Food Service	4,000
Car Rental	225
Phones	200
ATM	100
UTILITARIAN AREAS	**16,700**
Baggage Buildup	3,000
Baggage Breakdown	3,000
Restrooms (includes janitor)	3,000
Mechanical Room	4,000
Electrical Room	1,000
Communications	200
Exterior Walls	2,50
TOTAL AREAS	**90,780**

Figure 4.2 Example of detailed Space Requirements for a large scale terminal

2. Special Considerations for Renovations

All criteria in this Design Guide apply to renovation projects.

When retrofitting an existing building as a Passenger Terminal, select a suitable permanent structure. The existing building must be large enough to accommodate the full scope and variety of functions. The structural system should be open or relatively column free to better accommodate visibility and flexibility of functions.

Audit and analyze existing buildings for energy efficiency upgrade in accordance with MIL-HDBK 1190.

Modify the image of the existing structure, inside and outside as needed, to reinforce its identification as a Passenger Terminal. This may require substantial changes to the facade, interior configuration and room finishes.

H. Function Sizes and Adjacencies

This section graphically illustrates generic programming criteria. The diagrams are not definitive building adjacencies. Neither are the space sizes definitive programs. Each base should develop its own program requirements and design solutions appropriate to its local functions, operating patterns, size requirements, site constraints, and desired architectural character.

1. Large-Type IV Passenger Terminal

Consistent traffic composed of aircraft with large passenger capacities would generate passenger load justifying the need for a larger terminal.

Most often large terminals operate more efficiently in two levels. Access from the curb-side of the terminal is at the lower level. Multi-level curb-side access is cost prohibitive.

Divide the lower level into departing and arriving functions. Arrange these departing and arriving functions around separate lobbies.

Locate the departure gate areas on the upper level. Provide access to the departure gate areas and all other functions on the upper level through a central lobby.

Separate arrival functions from departure functions with a full height hard wall to underside of roof structure. Use access control for all doors. All windows in this wall must be inoperable.

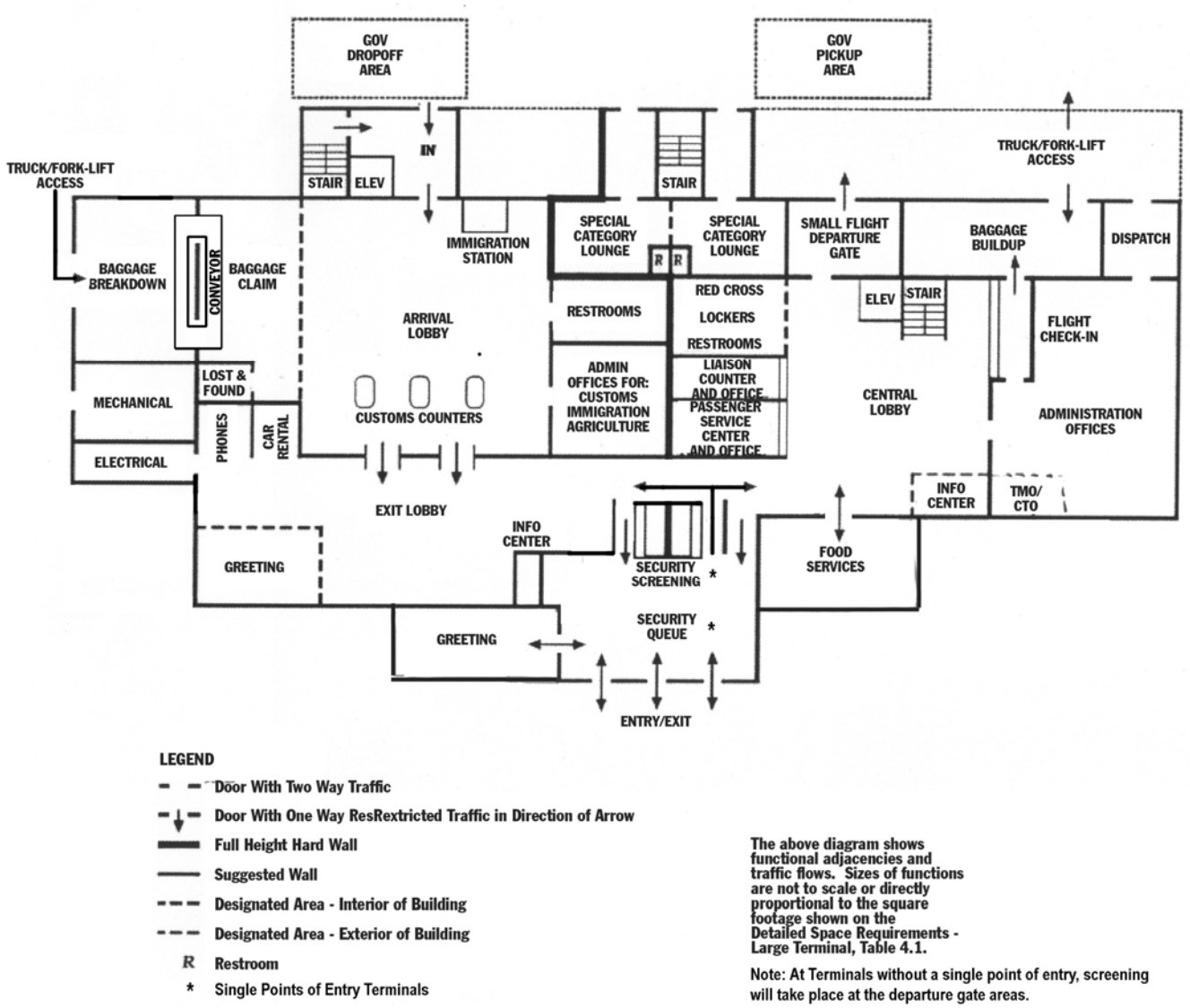


Figure 4.3 Flow and Adjacency Diagram - Large Terminal (lower level)

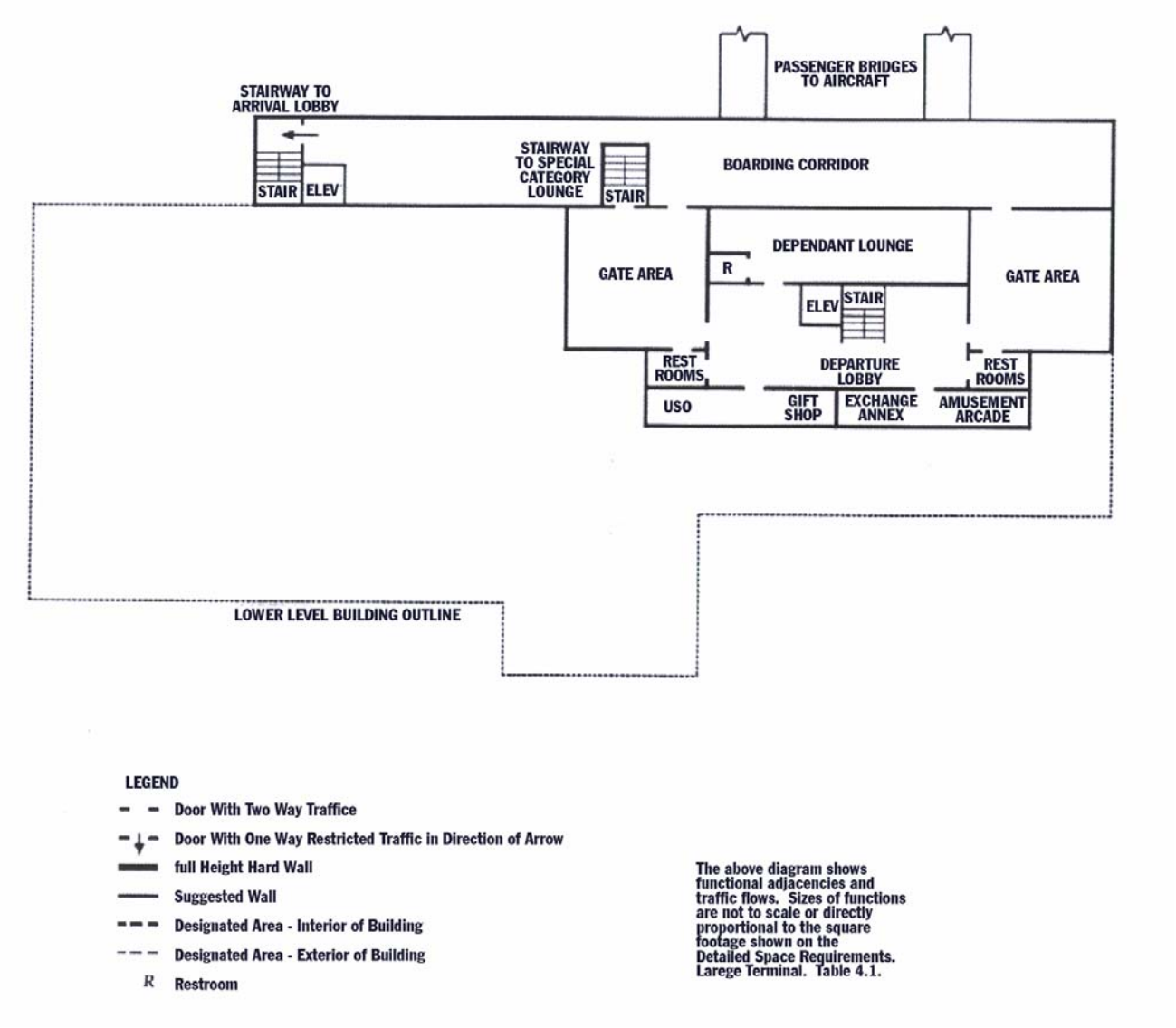


Figure 4.4 Flow and Adjacency Diagram - Large Terminal (upper level)

2. Medium -Type II Passenger Terminal

The Medium Passenger Terminal is typically a facility serving a mix of military aircraft and some commercial aircraft. The terminal is one level to serve passengers who would be shuttled or walk between the aircraft and the terminal.

The basic concept is to separate departing passengers from arriving passengers. Place the arrival Gate Area and Baggage Claim on one side of the terminal and the Passenger Service Center, Flight Check-In counter, and departure Gate Area on the other side.

Separate Baggage Build-Up and Break-Down areas to maintain separation of arriving and departing baggage and to minimize conflict between baggage handling vehicles.

Separate arrival functions from departure functions with a full height hard wall to underside of roof structure. Use access control for all doors. All windows in this wall must be inoperable.

Example of
Space Requirements

DEPARTING PASSENGER AREAS	**19,225**
Information Center	200
Security Queue	1,000
Security Screening	500
Central Lobby	5,000
Passenger Service Center Counter	375
TMC/CTO Counter	
Commercial Travel, 5 stations	
Flight checkin, 6 stations	125
Gate Area	5,000
(Includes Passenger Agent Counter	
Passenger Seating Area	
2 Departure Gates.)	
Administration Offices	5,000
Passenger Service Center Office	
Terminal Management Offices	
Dispatch	
Conference/Training	
Lost and Found Office	
Army, Navy, Marine Liaisons Office/counter	
Red Cross	
Breakroom	
Special Category Lounge	1,000
Dependant Lounge	800
Lockers, 20 capacity	75
Vending	150
ARRIVING PASSENGER AREAS	**7,450**
Arrival Lobby	5,000
Baggage Claim	1,200
Phone/ATM	250
Greeting	500
Exit Lobby	500
UTILITARIAN AREAS	**9,300**
Baggage Buildup	2,000
Baggage Breakdown	2,000
Central Lobby Restroom (Includes Janitor)	800
Restroom (Includes Janitor)	800
Mechanical Room	2,000
Electrical Room	500
Communications	200
Exterior Walls	1,000
TOTAL AREA	**35,975**

Figure 4.5 Example of Space Requirements for a Medium Scale Terminal.

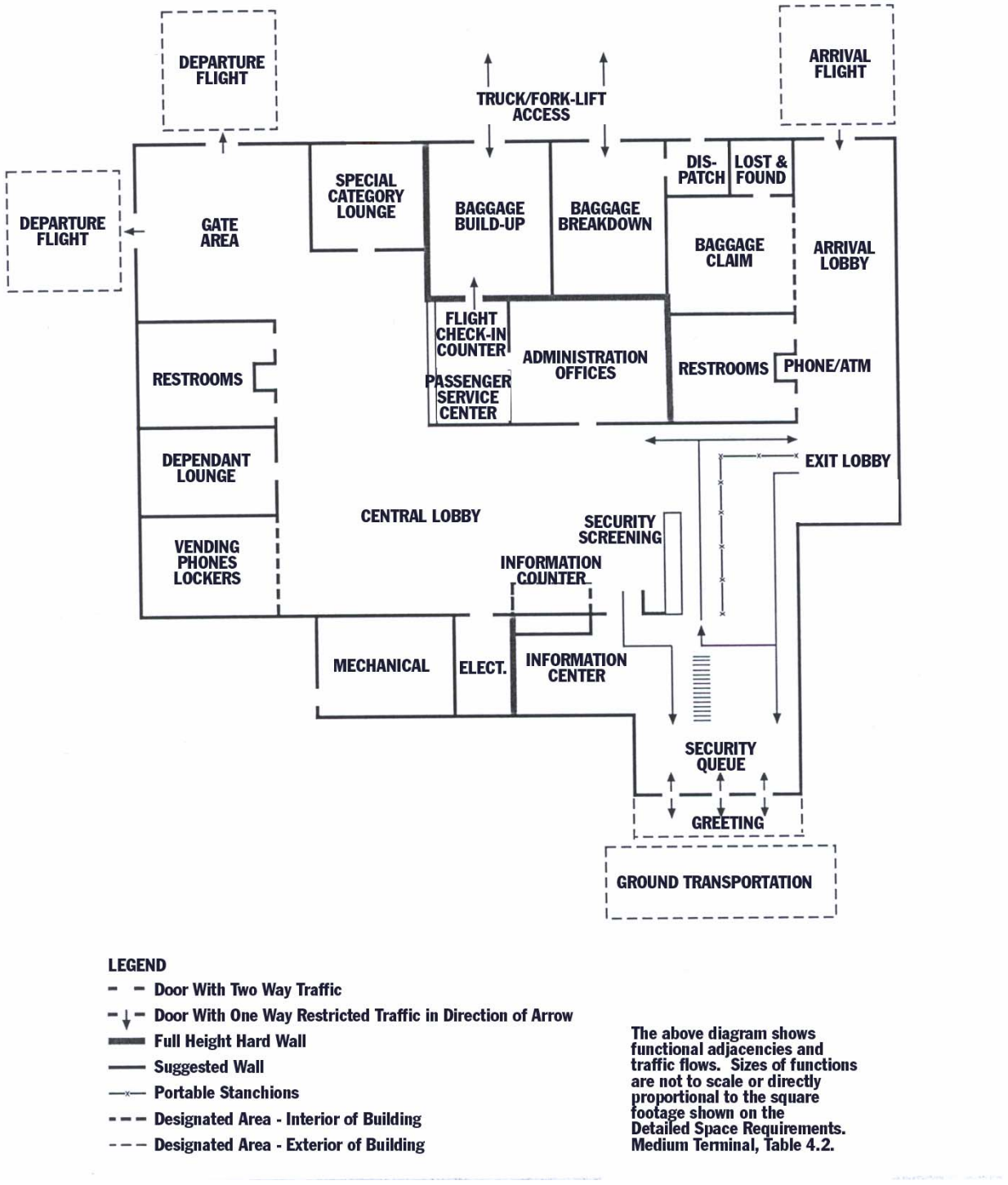


Figure 4.6 Flow and Adjacency Diagram – Medium Terminal

3. Small - Type IB Passenger Terminal

The reduced staff at Small Passenger Terminals makes it imperative to locate passenger processing functions in close proximity to each other. Staff may move from one process to another either as the primary lead or to assist as required. This requires the small terminal concept to concentrate passenger processing, flight check-in, Baggage Build-Up and Break-Down, and administrative offices on one side of the terminal. All other passenger service functions (vending, restrooms, Dependent Lounge, and Special Category Lounge) should be located on the other side of the main lobby to reduce conflict between these spaces and the processing functions.

The small facility size and the variety of aircraft may require "multi-purpose" use of lobby and gates. The arrival and departure gate areas may have to be used in conjunction with one another to accommodate larger passenger loads than either could handle alone. Gate areas in small terminals may have to be used for waiting if sudden surges of passengers into the terminal cannot be processed quickly enough.

Separate arrival functions from departure functions with a full height hard wall to underside of roof structure. Use access control for all doors. All windows in this wall must be inoperable. In facilities that are not large enough to have separate gates, all passengers must proceed through the single entry point if they need to enter the terminal space.

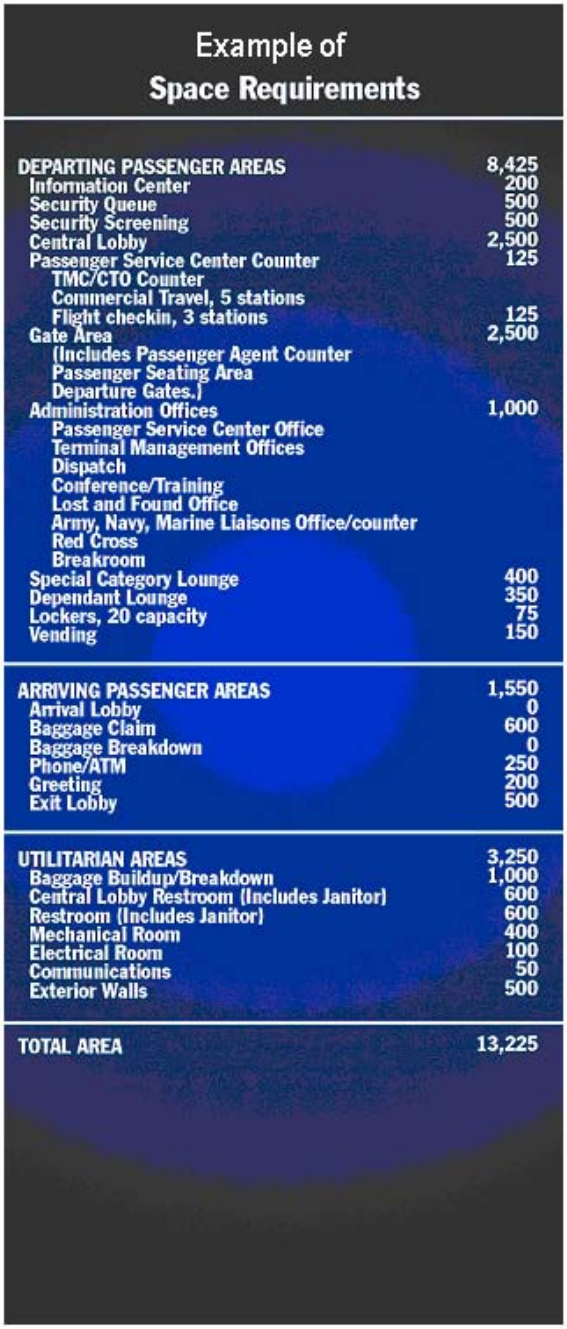


Figure 4.7 Example of Space Requirements for a Small Scale Terminal.

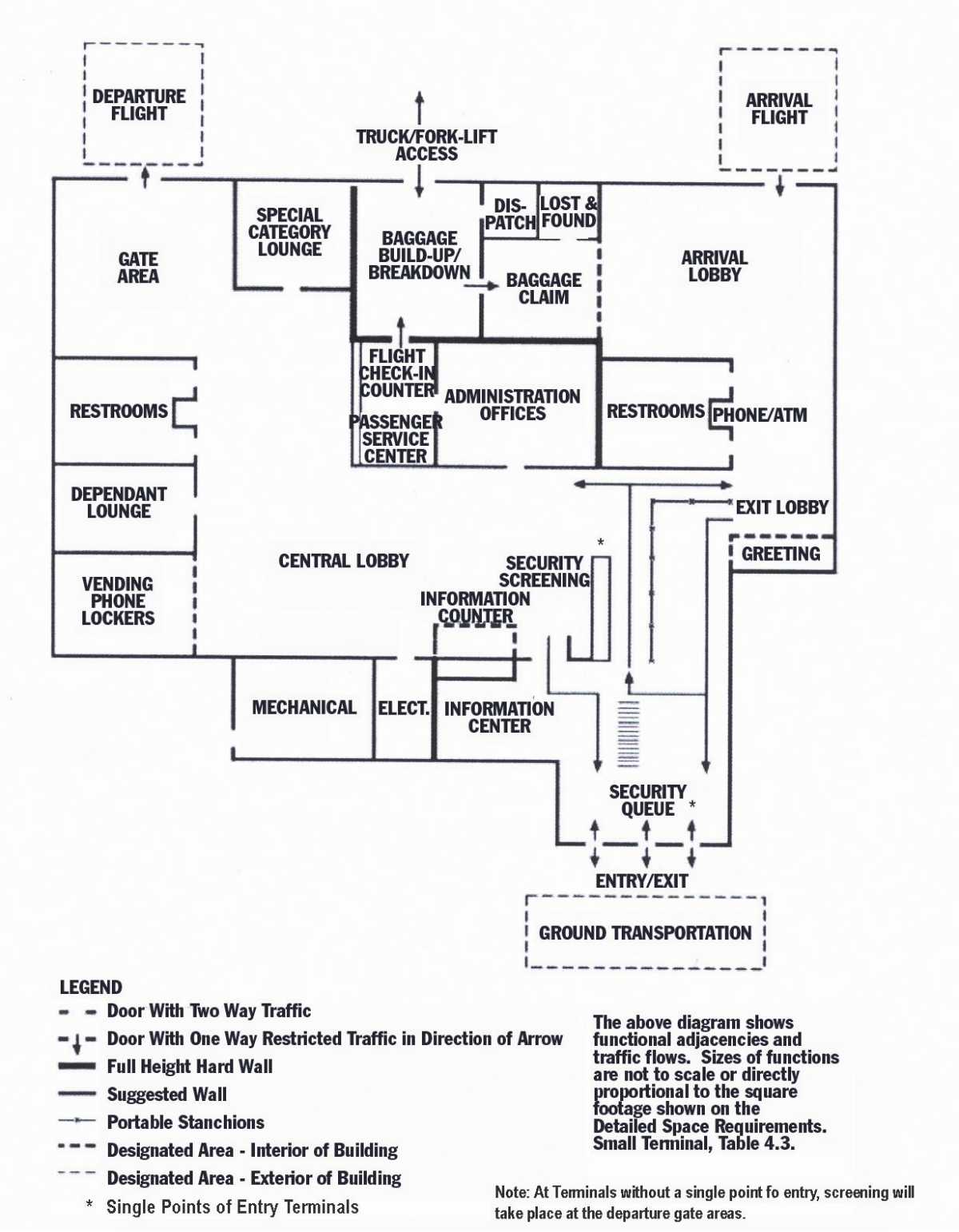


Figure 4.8 Flow and Adjacency Diagram – Small Type IB Terminal

Chapter 5 - Construction & Systems Criteria

This chapter addresses in general terms building construction materials, components, and assemblies as well as mechanical, electrical, and security systems. Determine specific requirements at the local level. Refer to Chapter 7, Physical Security / Anti-terrorism Criteria, for security requirements not addressed in this chapter.

A. Building Construction

In general, select building materials that are locally available, durable in the local environment, and economical. Use construction assemblies and techniques that are customary in the local community, provided they meet all codes and regulations.

Evaluate various project delivery methods such as design/bid/build, and design-build, lease back, etc., to determine the method best suited to the project.

1. Structural Framing Systems
Select and design the structural system based on an analysis of projects future needs. Future expansion requirements should be easily and economically accommodated. Do not over design the construction, but consider the level of protection that the building structure can provide to the occupants against both terrorist threat or attack and the forces of nature.

Design building structural modules to reflect space requirements, economy, and subsystem dimensions (e.g., masonry units, framing members, ceiling grid, etc.).

Consider clear-span versus column-supported structures for passenger processing areas, lounges, and gate spaces.

Incorporate surface articulation and material textures to improve the building's appearance.

2. Roofing Systems
Use sloped roofing construction wherever possible to ensure positive drainage of rainwater and snow melt. Protect and maintain flat roofing until it can be replaced with sloped roofing.

Use durable roofing materials and systems such as standing seam metal roofing, real or simulated clay tile roofing, or on some small terminals, asphalt shingles. Ensure that the roofing system components comply with the base Architectural Compatibility Plan.

3. Wall Systems
Use durable interior wall construction materials or assemblies. Ensure compliance with local insulation requirements to enhance energy savings.

4. Doors
Use one-way, alarmed door assemblies at the primary public exit of the Passenger Terminal. Consider the use of a large, revolving door with monitoring devices to detect and prevent unauthorized entry.

Equip emergency exit doors with panic hardware and alarms to alert the security forces in the event of unauthorized entry or exiting of the building.

Provide oversized doors in the service areas to facilitate movement of baggage transport vehicles or pallets to and from aircraft.

5. Windows
Balance the aesthetic qualities of the building with the need for security and force protection during periods of increased FPCONs. Limit the size of windows both on the public and service sides of the terminal to an area of not more than 15% of the total wall area. See chapter 7, Physical Security / Anti-terrorism Criteria, for additional information on windows.

B. Mechanical Systems

1. Heating, Ventilation, and Air Conditioning
Provide heating, ventilation, humidification, and air conditioning systems to maintain criteria specified below and to conform to design and control requirements established in MIL-HDBK-1190. Provide an outside air rate of 0.25 cfm/sf and a minimum ventilation rate of 1.0 cfm/sf. Provide mechanical exhausts for the restrooms. Design new facilities to ensure that the building's total energy budget figures.

Design and construct the HVAC system for easy maintenance, operation, and energy efficiency. Evaluate both active and passive solar space heating systems. Consider passive solar heating and daylighting only if the passive solar assessment for the particular base results in a savings investment ratio greater than one. Criteria for solar assessment and systems analysis are in MIL-HDBK-1190.

Connect mechanical systems to the base Energy Monitoring and Control System (EMCS), and provide a night setback system for the HVAC system.
Provide temperature sensors with remote adjustment or tamper proof thermostats. Provide zone controls for maintaining different environmental conditions in all function areas and for operating systems in parts of the terminal when other areas are closed.

Incorporate vents into the exterior appearance and elevate to required heights for force protection purposes

Perform a life cycle cost analysis of available energy sources according to the procedure described in National Bureau of Standards Handbook 135, Life Cycle Cost Manual for Federal Energy Management. Use published Department of Energy rates for uniform present worth factors and fuel escalation rates.

2. Plumbing
Provide domestic hot and cold water, sanitary and storm drainage, plus propane or natural gas systems if required, in accordance with requirements established in MIL-HDBK-1190. Provide metering for gas service; consider providing water metering where conservation measures are in effect.

Provide frost-free hose bibs on all exterior walls if local climactic conditions allow.

Provide hot and cold water to all restrooms, sinks, janitorial closets, and vending and food service equipment as required.

Hot water temperature should not exceed 105°F for general use. Provide 140°F hot water to Food Service areas for normal use and 180°F hot water for dish washing.

Provide floor drains in restrooms, janitorial closets, and food preparation areas.

Provide grease traps for food preparation drains.

Provide shut off valves at all fixtures.

3. Fire Protection
Provide fire protection systems that conform to the requirements in MIL-HDBK-1190, MIL-HDBK 1008, and NFPA 101, Life Safety Code. Provide an automatic sprinkler system. If this is impractical, provide an automatic fire detection and alarm system in accordance with MIL-HDBK-1190 and MIL-HDBK 1008.

Occupancy for Passenger Terminals is defined as "Assembly" by the NFPA 101. All fire and life safety precautions must comply with the requirements of this occupancy, Base occupancy loads on local life safety codes or host country code requirements.

Provide Type N facilities, unprotected non-combustible construction, as defined in MIL-HDBK 1190 and MIL-4DBK 1008.

Provide exits which meet the requirements of the life safety code having local jurisdiction; Issues to be addressed will include, but are not limited to, the number of exits, clear path of exit ways, and capacity of exits.

Enclose areas containing hazardous quantities of combustible supplies, service equipment (except air handling equipment) subject to possible explosion, and commercial refrigeration machinery with construction have not less than a 1-hour fire resistance rating. Protect openings in such construction with self-closing or smoke-activated fire doors. In lieu of these requirements, provide storage areas with automatic extinguishing system.

Provide protection in food preparation areas in accordance with NFPA requirements. Protected openings between such areas and adjacent dining areas are not required.

Finish interior ceilings and walls in enclosed stairways and egress corridors with Class A materials; use Class A or B materials elsewhere. Finish interior floors in enclosed stairways and egress corridors with Class I materials; use Class I or Class II materials elsewhere. In carpeted areas use only Class I carpet.

C. Electrical Systems

Provide electrical service and distribution equipment, wiring, receptacles and grounding, interior and exterior lighting, telephone, fire alarm, and intrusion detection systems, in accordance with design requirements in

MIL-HDBK-1190 and MIL-HDBK 1008.

1. Power
Determine the electrical service capacity needed to serve all systems in the terminal. Provide metering for electrical power.

Secondary underground service raceways must be PVC Schedule 40.

Service grounding systems and all wiring methods must meet National Electric Code (NEC) requirements.

General convenience receptacles and special power outlets must be specification grade. General spacing of convenience receptacles must be a minimum of 12 feet on center. Provide dedicated power outlets and circuits for all user furnished equipment as required.

Provide battery-operated (or otherwise emergency powered) emergency lighting, illuminated exit signs, and public address systems.

Consider providing an emergency power hook-up for the snack bar or cafeteria operations and food storage if the terminal is to be used as an essential feeding facility.

Provide an electrical room inside the building, separate from the mechanical room.

2. Lighting
Use high intensity discharge light sources controlled by automatic timers to provide exterior lighting of parking areas and walkways. Locate exterior lighting fixtures to minimize dark areas where perpetrators or explosive devices could be hidden.

Natural and artificial lighting are important factors in creating a quality interior appearance. Lighting affects the perception of a space as well as the color and interior finishes. Design lighting to enhance the design scheme. Provide both natural and accent lighting in waiting areas and administrative areas if possible.

Provide fluorescent lighting with low temperature, energy-efficient ballasts and lamps, as applicable. Include task lighting at office desks.
Where natural light is available, provide lighting control systems, including ambient light dimmers, to automatically reduce intensity levels of artificial lighting.

3. Telephone, Data and Communications
Provide telephone and computer wiring to support voice, data, television, security and fire alarm systems. Equip the facility with the capability for intercom, public address system, cable television, defense systems network (DSN), global information network system (GINS), on-base lines, and local area network (LAN) connections.

Confirm specific communications requirements with the BCE and the Communications Group before planning major building upgrades or modifications. Incorporate these internal and external requirements into the building design and modification specifications. Incorporate the radio antennae cable into the infrastructure.

Provide a system of empty raceways, outlets, and cabinets for future telephone installations. Provide all empty raceways with nylon pulling line.

Prewire facility for communications in accordance with AFI-32-1181, Interior Electrical Design Manual.

Provide a communications room inside the building, separate from the mechanical and electrical rooms.

4. Flight Information / Public Address
Flight information will be provided from color monitor screens. Place monitors in the lobby and at the Information Counter, departure Gate Area, and Food Service area. One channel of the TV in the Special Category Lounge will also carry flight information.
Locate speakers so that the source of the sound is not audibly apparent. Incorporate speakers into the ceiling design.

Provide a hands-free, two way intercom/public address system throughout the facility, with ceiling-mounted speaker units located at all staff stations. Locate the central intercom console in the administrative area. Provide for the isolation of each area served so that the public address system can be turned off in individual lounges and gates when public announcements are inappropriate.

Provide a centrally operated music system to serve all patron use areas. Provide differential controls for each space served.

D. Security Systems and Equipment

Security levels at Passenger Terminals vary. The location of security points may change within a single terminal due to facility or operational requirements. Physical security measures must be included for both the terminal building itself and the surrounding site (e.g., parking lots, roads, and cargo areas) when adjacent to or collocated with the Passenger Terminal. The guidance in this document focuses on measures that limit access, minimize injuries, loss of life, and limit damage to the terminal structure and its contents. Coordinate all security requirements and plans with base security forces personnel.

1. Closed Circuit Television
Incorporate security surveillance cameras into the design of the queuing and security checkpoint areas and throughout the terminal in general as dictated by local needs.

Each interior open waiting area must be monitored either from adjacent service counter or by video camera.

2. Intrusion Detection
Provide an intrusion detection alarm system. Refer to MIL-HDBK-1190 and AFI 31-101, Air Force Installation Security Program.

3. X-Ray and Magnetometer Equipment
Coordinate selection of all equipment with HQ AMC/A4.

Provide X-ray equipment at the Security Screening Area. Determine the number of units needed based on local requirements and anticipated passenger load. Select X-ray equipment based on

Air Force standard requirements, and ensure that large pieces of baggage and parcels can be efficiently examined.

Provide magnetometer equipment for security screening of personnel. Determine the number of units needed based on local requirements and anticipated passenger load.

Provide additional secondary contraband detection equipment as necessary.

Provide X-ray and magnetometer equipment for security screening

Chapter 6 – Architectural Character & Interior Standards

A. Architectural Character

Integrate the architecture and interior design of the terminal. Develop a design that reflects the regional and local base architectural theme or character in accordance with Base Architectural Compatibility Plan. Dramatic statements of style should be avoided.

Create a design scheme that applies continuously to the entire facility, from overall architectural expression to specific interior development. Differentiate various functional spaces by changes in materials, colors, and/or textures. For example, use soft floor materials for seating areas; hard materials for circulation areas.

Use architectural form to enhance function and uses. For example, provide higher ceiling or vertical design features in lobbies and lounges used as holding areas for long periods of time.

Ease the passenger's decision-making effort. Create an open design with clear signs. Provide direct visibility from main lobby into primary function areas such as information, ticket counters, security, etc. Use signs to direct passengers to secondary functions such as restrooms, public telephones, vending, family lounges, etc.

Provide for efficient circulation flow, Ensure that aisle widths are sufficient for passengers with their luggage or carry-on bags to pass one another except at security checkpoints. Consider clear-span versus column-supported structures for lobbies, lounges, and baggage claim areas.

Provide floor space for queuing lines sufficient for peak passenger conditions. General room circulation should not traverse queuing for counters. However, two lines may overlap where existing facilities cannot be modified and the two functions rarely occur simultaneously.

Use local materials to the greatest extent feasible. Consider climate and humidity factors to avoid selecting materials that may be conducive to the growth of fungus or bacteria.

Consider the material's availability for replacement, especially overseas.

Provide a record of architectural materials, interior finishes, furniture, and fixtures to the Terminal Manager and BCE for future repairs.

B. Interior Finish Standards

A quality Passenger Terminal reflects a standard of understated excellence and creates an environment where professionals can provide quality service in a comfortable, functional setting. Select finishes for life cycle cost effectiveness as well as environmental factors. Interior finishes that are durable and easy to maintain are essential to user satisfaction. A quality interior provides an environment that promotes improved job performance and customer satisfaction, conveys professionalism, and maintains security in the workplace and public areas. Refer to Interior Finish Schedule, Figure 6.1, for generic information. See the AMC Interior Design Guide for additional information.

Interior Finishes Schedule	FLOORS								BASE					WALLS					CEILING			TRIMS			NOTES
	Quarry Tile	Terrazzo	Carpet	Vinyl Composition Tile	Ceramic Tile	Ceramic Paver Tile	Sealed Concrete	Slip/Chemical Resistant Coating	Vinyl Resilient	Ceramic Tile	Ceramic Paver Tile	Quarry Tile	Wood	Painted Gypsum Board	Wallcovering	Heavy Duty Wallcovering	Painted Concrete Block	Ceramic Tile	Acoustical Ceiling Tile	Painted Gypsum Board	Painted Exposed Structure	Chair Rail	Heavy Duty Chair Rail	Ceramic Tile	
Departing Passenger Areas:																									
Information Center	◆	◆		◆		◆			◆		◆	◆		◆		◆			◆	◆	◆		◆		
Security Queuing	◆	◆		◆		◆			◆		◆	◆		◆		◆			◆	◆	◆		◆		
Security Screening	◆	◆		◆		◆			◆		◆	◆		◆		◆			◆	◆	◆		◆		
Central Lobby	◆	◆		◆		◆			◆		◆	◆		◆		◆			◆	◆	◆		◆		1
Passenger Service Center	◆	◆		◆		◆			◆		◆	◆		◆		◆			◆	◆	◆		◆		
Special Category Lounge			◆										◆		◆				◆	◆			◆		
Family Lounge			◆	◆					◆						◆	◆			◆	◆			◆		
Flight Check-In Counter	◆	◆		◆		◆			◆		◆	◆		◆		◆			◆		◆		◆		
Gate Area																									1
Passenger Seating Area			◆						◆						◆				◆						
Passenger Departure Gate			◆	◆					◆							◆			◆				◆		
Arriving Passenger Areas:																									
Arrival Lobby	◆	◆		◆		◆			◆		◆	◆		◆		◆			◆	◆	◆		◆		1
Baggage Claim	◆	◆		◆		◆			◆		◆	◆		◆		◆			◆	◆	◆		◆		
Exit Lobby	◆	◆		◆		◆			◆		◆	◆		◆		◆			◆	◆	◆		◆		
Passenger Conveniences:																									
Food Service																									
Kitchen and Serving Line	◆	◆				◆					◆	◆		◆				◆		◆					
Dining	◆		◆			◆			◆		◆	◆				◆			◆	◆			◆		
Exchange Annex	◆		◆	◆		◆			◆		◆	◆				◆			◆	◆					
Amusement Arcade			◆						◆						◆				◆						2
Restrooms					◆	◆				◆	◆				◆	◆		◆		◆					
Administrative Areas:																									
Offices			◆						◆					◆	◆				◆						
Office Storage			◆						◆					◆	◆				◆						
Corridors			◆						◆					◆	◆				◆						
Utilitarian Areas:																									
Baggage Build-up							◆	◆									◆				◆				
Baggage Break-down							◆	◆									◆				◆				
Mechanical							◆										◆				◆				
Electrical							◆										◆				◆				
Communications							◆										◆				◆				
Custodial Services							◆	◆	◆								◆								3

Notes:
1. Areas such as the Information Counter, Passenger Agent Counter, Immigration Station, Customs Counters, ATM's, Phones, Baggage Cart Rental, Local Information Center, Hotel/Lodging Counter, and Ground Transportation Counter should be finished similar to the surrounding space.
2. Provide acoustical wallcovering.
3. Includes all janitor closets and storage areas, and custodial storage area.

Figure 6.1 Interior Finishes Schedule

1. Color Concepts
Provide a timeless color scheme. Trendy colors that date the appearance of a facility are unacceptable. Use accent colors sparingly to complement neutral background colors. Select neutral tones for materials that cover large expenses: wall coverings, hard-surface flooring, and system furniture wall panels. Incorporate accents colors in carpets and/or carpet borders, upholstery, accessories, and artwork. Ensure the interior color scheme is compatible with the AMC Passenger Service Center Logo.

2. Floor Coverings
Use hard surface flooring materials like terrazzo, quarry tile, or porcelain pavers in high traffic and food preparation areas. Provide carpet in seating areas, offices, conference and training areas, and some special use spaces like Special Category Lounges. Consider multi-colored, patterned carpet tile in darker shades in the public areas. Select neutral or lighter color carpets in small rooms to create the appearance of larger, lighter spaces. Avoid stripes and liner floor designs that are hard to line up with walls in corridors, vestibules, or irregular shaped areas. Use sheet vinyl composition tile in storage rooms, vending areas, and in areas where equipment or conditions may warrant. Provide ceramic tile floors in restrooms. Use sealed concrete floors in janitorial closets, mechanical/electrical/communications rooms, and rooms with vehicular traffic such as baggage build-up and break-down rooms. Consider safety issues, use slip resistant floor coverings where warranted.

3. Wall coverings
Use vinyl wall coverings, acoustical wall coverings, ceramic tile, paint, and textured paint finishes. Avoid an "institutional" appearance. Use ceramic wall tile in restrooms for ease of maintenance. Where appropriate, include chair rails and vinyl corner guards to protect walls and wall coverings from furniture, carts, and hand carried luggage.

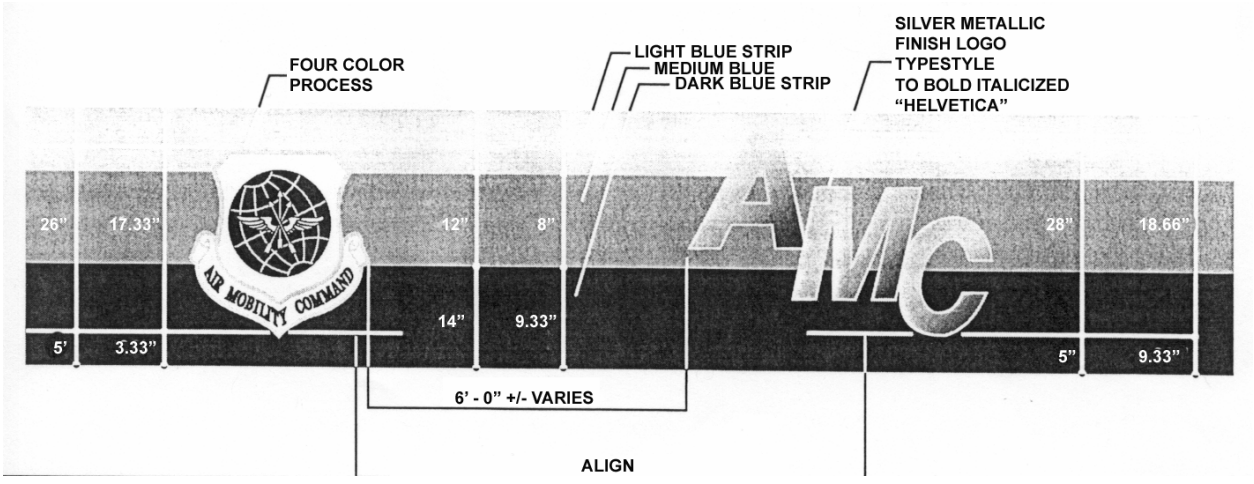


Figure 6.2 Detail of
AMC Passenger Service Center Logo

4. Ceilings
Where the ceilings are suspended, use acoustical ceiling tiles with a concealed grid or revealed edge finish. Use standard 2 ft. x 2 ft. tile as the consistent module throughout the facility. Use a water-resistant gypsum board or plaster with water resistant paint finish in restrooms and other wet areas.

5. Window Coverings
Window coverings are not required on all windows. If desired, use vertical blinds in public spaces and mini-blinds in office areas to filter daylight but still allow outdoor views. Use lined draperies in the Special Category Lounges and draperies with blackout lining in the conference and training rooms to block out light for visual presentations.

6. Accessories
Professionally framed artwork, wall murals, and live or high quality silk plants complement the interior finishes and reinforce the design scheme. Provide trash and recycling receptacles that coordinate with the color scheme. Put temporary notices, memos, employee information, etc., on framed commercial bulletin boards located away from public view. Keep instructional messages to passengers to a minimum, and post only where necessary. Do not use hand lettered or stenciled signs in any room.

7. Signs
Develop an interior sign plan as part of the comprehensive interior design. Use professionally made signs, appropriately sized for the viewing distance, and compatible with the facility design scheme. Provide and AMC logo behind the Passenger Service Center as shown in Exhibit 6.2.

See AFM 91-201, Explosives Safety Standards, to determine if fire symbol signs are required on the inside of the building. See Chapter 7 and AMCI 24-101, Volume 24 for additional information on antiterrorism and access control signage. See AMC Interior Sign Standards Manual.

8. Furnishings
Furnishings are an integral part of the comprehensive building design and image. Coordinate furnishing selections with built-in materials, textures, and colors. Design office areas using either panel-hung or desk-based systems furniture. These products generally take less floor space than free standing furniture and allow for future reconfiguring. Select furniture that has integral conduits, raceways, or channels for electrical and communications service to hide unsightly wires and cables. Use sound absorbent fabric panels and /or privacy screens to reduce background noise. Use plastic laminate work surfaces.

Use upgraded systems furniture or free standing wood furniture in terminal OIC's offices. Use high quality wood and upholstered furniture in the Special Category Lounges.

Use multiple-seat units in public seating areas. Provide a minimum inside seat width of 18 inches. Use high quality, breathable vinyl or heavy-duty upholstery fabric. Provide arms for every seat. Use metal arms and legs (as opposed to wood) for durability and ease of maintenance.

9. Miscellaneous
Paint all exposed fire bells, electrical boxes, and other protrusions to match the adjacent walls. Coordinate light switches, receptacles, and their covers with the walls in which they are located. When providing color contrast to comply with ADAAG requirements for safe way finding, use colors that coordinate with the overall scheme.

C. Service Counter Design

U.S Customs Counter
Exhibits 6.3 and 6.4 provide elevation and detail information on U.S. Customs Counters as shown in U.S. Customs Service Technical Standards for Passenger Processing at Airports. Coordinate the counter design and layout with the local U.S. Customs Representative.

Other Service Counters
Exhibits 6.5 and 6.6 provide elevation and detail information for the Passenger Service Center and Flight Check-In counters. Other counters shall be designed to a similar standard.

US Customs Counter

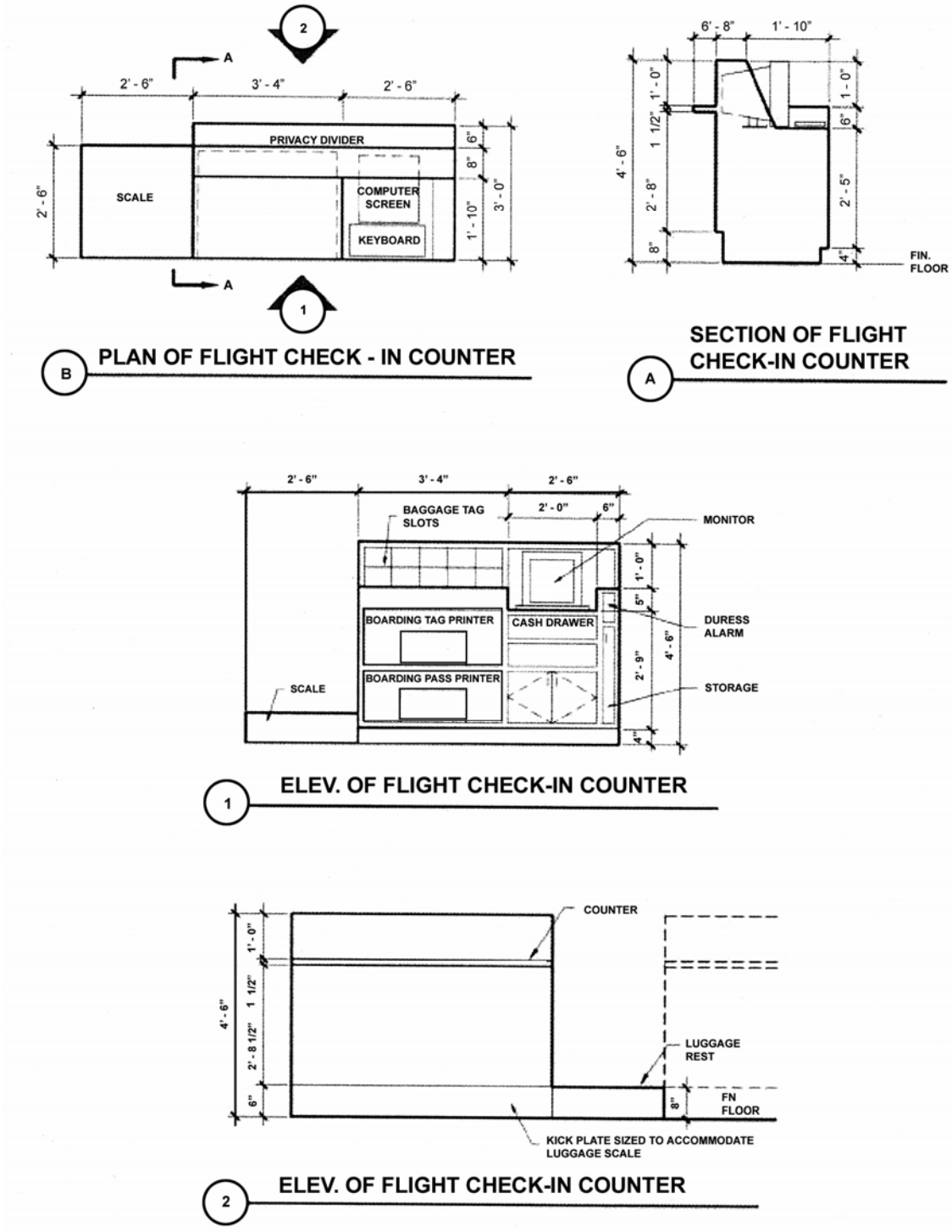


Figure 6.3
Customs Counter Design

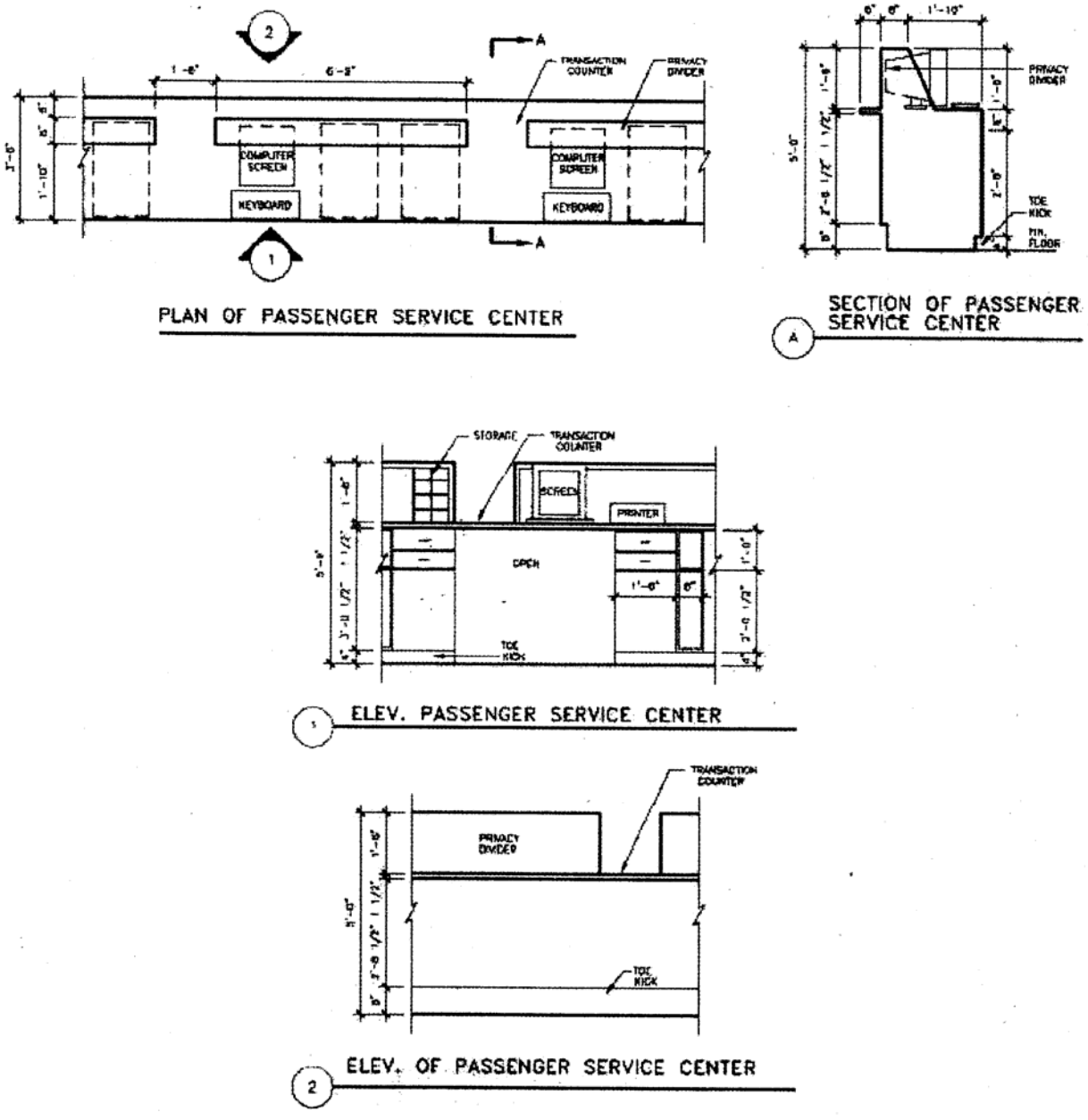
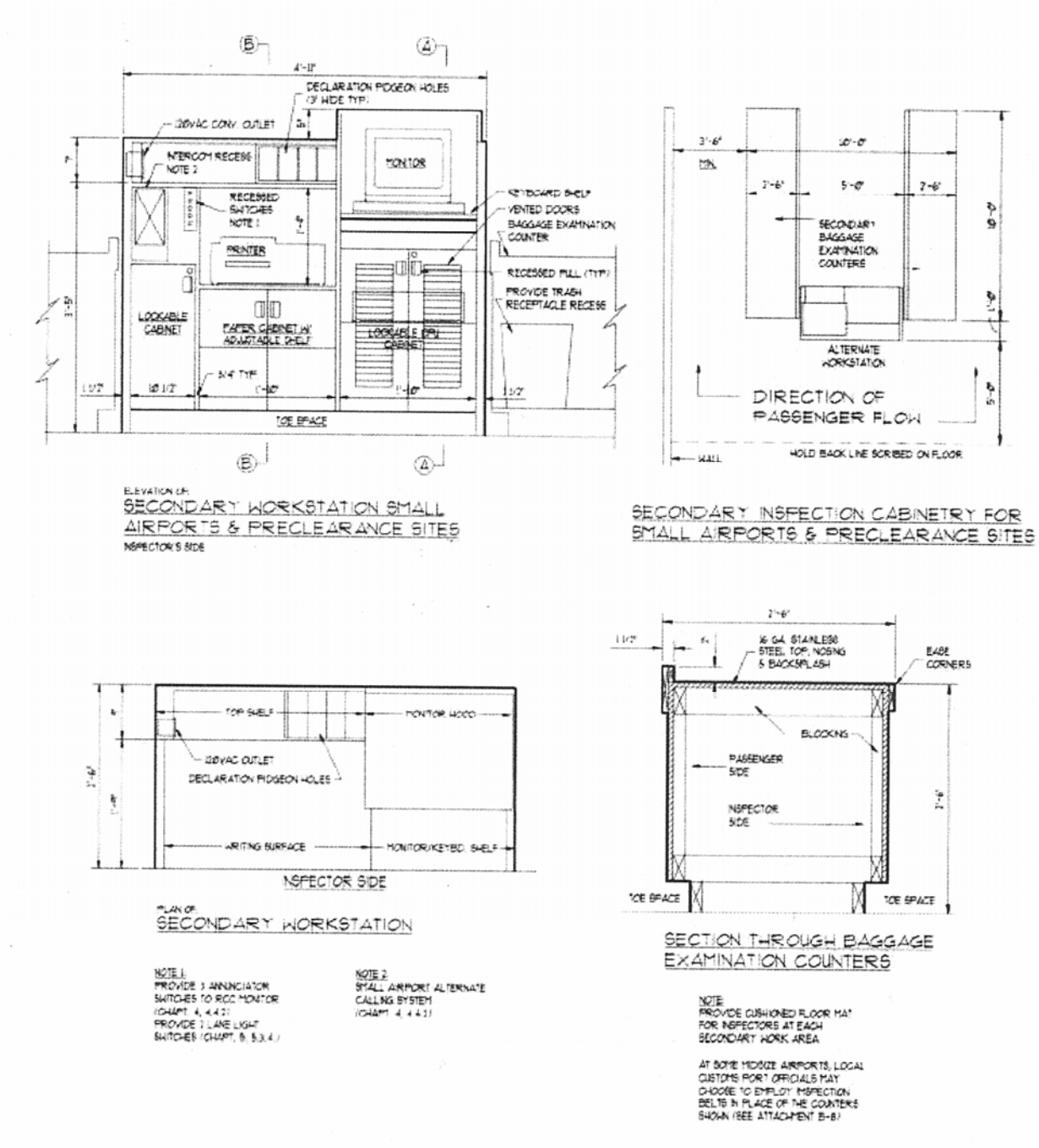


Figure 6.4
Customs Counter Design



ELEVATION OF
SECONDARY WORKSTATION SMALL AIRPORTS & PRECLEARANCE SITES
INSPECTOR'S SIDE

SECONDARY INSPECTION CABINETRY FOR SMALL AIRPORTS & PRECLEARANCE SITES

PLAN OF
SECONDARY WORKSTATION

NOTE 1:
PROVIDE 3 ANNUNCIATOR SWITCHES TO RCC MONITOR (CHAPT. 4, 4.4.2)
PROVIDE 1 LANE LIGHT SWITCHES (CHAPT. 8, 8.3.4.)

NOTE 2:
SMALL AIRPORT ALTERNATE CALLING SYSTEM (CHAPT. 4, 4.4.3)

SECTION THROUGH BAGGAGE EXAMINATION COUNTERS

NOTE
PROVIDE CUSHIONED FLOOR MAT FOR INSPECTORS AT EACH SECONDARY WORK AREA

AT SOME MIDSIZE AIRPORTS, LOCAL CUSTOMS PORT OFFICIALS MAY CHOOSE TO EMPLOY INSPECTION BELTS IN PLACE OF THE COUNTERS SHOWN (SEE ATTACHMENT B-8)

Figure 6.5
Passenger Service Center Design

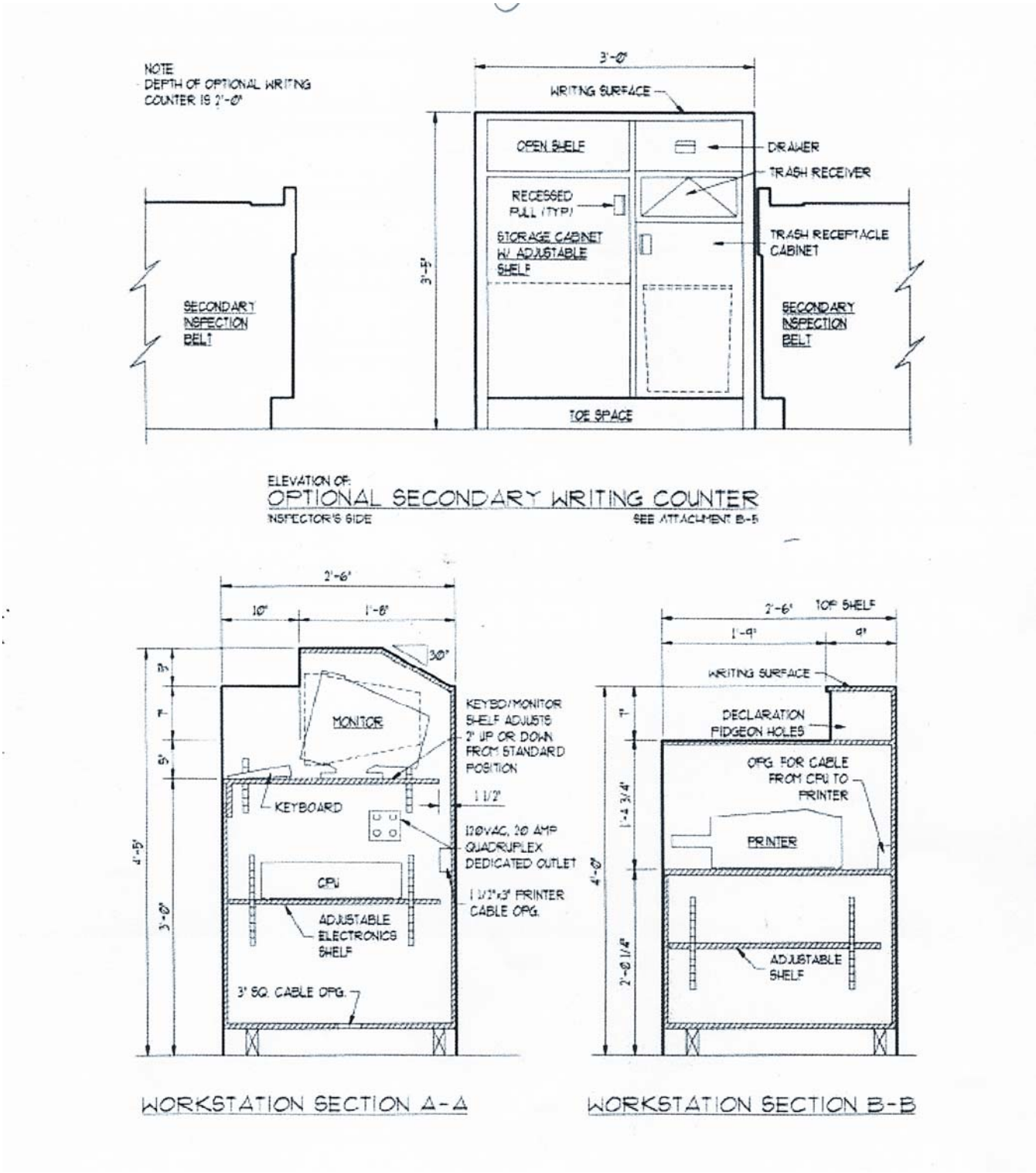


Figure 6.6
Flight Check-In counter design

Chapter 7 – Physical Security / Antiterrorism Criteria

The physical security standards described in this guide, along with sound local planning, risk management, and strong security procedures, will greatly reduce facility vulnerability. The purpose is to make passenger terminals hard targets for potential acts of terrorism and to ensure the protection of facilities, equipment, personnel, aircrew, and aircraft. These guidelines are not meant to replace Department of Defense Antiterrorism Force Protection Standards. This chapter included measures for both the passenger terminal and the areas adjacent to the passenger terminal building. To establish minimum standards of security consult the Department of Defense Minimum Antiterrorism Standards. See Buildings, AMCI 24-101, Volume 24.

A. Passenger Terminals

All passenger terminals will implement single point entry and a sterile terminal at all times. All terminals will also implement an anti-terrorism (AT) standoff zone around the terminal building at all times. The required standoff is 82 feet. Where the physical layout of the building does not allow for a 82 foot standoff, coordinate with the host base and establish the maximum attainable standoff distance that meets the intent of Air Force and AMC force protection guidelines. Use physical barriers to prevent vehicles from entering / parking inside the AT standoff zone. This restriction applies only to access roads and parking areas not controlled by other means such as flight line access roads.

B. Site Measures

Dimensions and distances, where specified, are minimums and should be used in conjunction with locally assessed threat and design curves to arrive at the other design aspects such as wall thickness and height.

Passenger Loading / Unloading Zone - Establish a passenger loading / unloading zone outside of the 82 foot standoff area. Clearly post restrictive sign such as "Do Not Leave Vehicles Unattended," "No Trucks Allowed," and "Passenger Loading and Unloading Only." Signage is locally approved.

Parking Lots - Eliminate all public parking inside of the 82 foot standoff area. If public parking cannot be eliminated because of physical location, alternate force protection measures must be developed locally (based on manpower and equipment availability) to limit access to the standoff zone. This restriction does not apply to controlled parking on the flight line side of the terminal.

Other Paved Access - Control access (maintenance vehicles, delivery trucks, suppliers for AAFES snack bar, etc.) into the AT standoff zone.

Vehicle Denial - Design access to prevent a vehicle from departing designated areas (roads, parking lots) and gaining access to the AT standoff zone. Consider judicious use of barriers such as planters, walls, and bollards compatible with existing architectural elements. Bollards effectively allow pedestrian access while precluding

vehicle access. Use professional looking, commercially manufactured bollards. Do not use expedient bollards such as steel pipes. Do not use portable barriers as permanent solutions. They are suitable for temporary application, when time is of the essence, and at deployed locations.

Monitoring Devices - Use CCTV to monitor areas within the terminal and areas immediately adjacent to the terminal. Give special attention to areas where vehicles are closest to the terminal, including service areas for vendor deliveries and facility maintenance. Consider monitoring parking areas. Coordinate with the terminal manager to install the monitor(s) at location(s) where it can be regularly and easily monitored, ideally a permanently staffed area.

Public Address Systems - Provide a public address system covering the entire terminal, including the exterior of the facility. The system must have selective polling that allows announcements to specific areas inside and outside the terminal. The system should have the ability to broadcast periodic prerecorded warning messages.

Lighting - Ensure areas adjacent to the terminal, including baggage handling areas and cargo areas, if present, are well lit to improve the likelihood of detecting anything out of place by eliminating dark areas. In addition, lighting must be installed and compatible with CCTV operations. Recommend at least 2.0-foot candles of lumen.

Fencing - Use security fencing to restrict personnel access. Include the baggage build-up and holding area.

Backup Electrical Power - Provide backup electrical power to the facility to operate critical equipment during commercial power outages. Size the backup power system to operate security lighting, CCTV, alarms, electronic door locks, and any critical communications and computer systems, but not the entire load of the facility. Include uninterruptible power systems (UPS) and /or generators as options to satisfy this requirement.

C. Facility Measures

Entrance/Exit - All terminals must screen all personnel and their belongings. Use magnetometers, hand-held transfriskers, trace detection system, and X-ray machines at the entrance to the terminal. Moving the security checkpoint to the terminal entrance replaces the security check normally conducted at the final boarding area. Provide a staging area for personnel entering the terminal building. The primary exit must be monitored to prevent personnel from entering through the exit. A practical solution is to locate the primary exit adjacent to the entrance so that the exit can be monitored. Other exits must be controlled and public exits locked with crash bar for the fire safety exit only, with audible alarm if opened (see paragraph below on "Doors").

Inbound Lounge - Maintain separation of inbound passengers/functions from all other terminal functions. Inbound personnel may be arriving from a location where their checked baggage was not screened. Operate the inbound lounge, Baggage Claim, customs and immigration as "sterile functions" and provide interior partitions to prevent mixing of inbound personnel with other personnel in the terminal. Use access

control systems on doors connecting inbound and outbound functions. Windows must be inoperable. Provide separate restrooms for the inbound side of the terminal. At locations where the inbound passenger area is not separate from other terminal functions, passengers must process through a single entry point to insure sterility.

Storage Lockers - Locate baggage storage lockers inside the sterile area where they will not interfere with interior traffic patterns. Terminals have the option of providing baggage lockers inside the sterile area, outside the standoff area, or not providing lockers at all.

Windows - This is one of the most critical passive defense elements in the facility because flying shards of glass are the largest cause of injury and even death in almost every bomb blast. Install laminated safety glass. Follow manufacturers' recommendations with respect to blast resistance, window size, and placement. When repairing windows by replacement, specify laminated glass. For new construction, use laminated glass and reduce the number and size of the windows to limit the total window area to 15 percent of the total wall area. Orienting windows perpendicular to the facade of the building will further reduce exposure of occupants to flying glass. Eliminate exterior windows where possible. Substitute celestial windows oriented away from potential blast site or skylights with light wells to provide natural light. Celestial windows and skylights should also be high-strength, laminated glass or higher and positioned well back from exterior walls.

Signs - Conspicuously post "Restricted Entry" or "Authorized Personnel Only" signs to preclude accidental entry by unauthorized personnel.

Roof Access Ladders and Hatches - Ensure ladders and hatches are retracted, locked, or otherwise secured (inside a locked mechanical room is preferred to deny access to unauthorized personnel.

Doors - In new construction, use entry vestibules with either the inner or outer doors set perpendicular to the facade. Alternately, offset the entry doors so they are not aligned directly into the terminal. Use metal doorframes in place of wood frames. Provide walls to shield glass area at main entries. Install card readers or cipher locks on appropriate interior and exterior doors not used by the general public. Install alarm monitoring devices on secured exits. Install "peepholes" as an enhancement to the access control procedures.

Intrusion Detection System (IDS) - Use local audible alarm and flashing light on secured entries. Install a duress alarm at service counter, gates, etc, which terminates at the installation Security Forces Control Center (SFCC). Consult with the Security Force Resource Protection NCO for specifics.

Appendix General References
A. FAA Publications

AC150/5060-5	Airport Capacity and Delay
AC 150/5360-9	Planning and Design Airport Terminal Facilities at Nonhub Locations
AC 150/5360-11	Energy Conservation for Airport Buildings
AC 150/5360-12	Airport Signing and Graphics
AC 150/5360-13	Planning and Design Guidelines for Airport Terminal Facilities
FAA RD 75-191	The Apron and Terminal Building Planning Report

B. Department of Defense & Air Force Publications

AFH 32-1084	Facility Requirements
AFI 18.1	Air Force Energy Management
AFI 31-101	Air Force Installation Security Program
AFI 31-210	The Air Force Antiterrorism/Force Protection (AT/FP) Program Standards
AFJMAN 32-1008	Installation Design
AFJMAN 32-1071	Security Engineering, Volume 1,2,3
AFM 88-3	Design Standards for Critical Facilities
AFM 91-201	Explosives Safety Standards
AFJMAN 23-110	USAF Supply Manual
AFP 86-10	Landscape Planning and Design
AFPAM 32-1097	Sign Standards Pamphlet
AMCI	24-101, Volume 24 AMC Passenger Terminal Force Protection

MIL-HDBK-1190	Facility Planning and Design Guide Passenger Terminal Force Protection Guide
	Air Force Environmentally Responsible Facilities Guide
	AMC Commanders Guide to Facility Excellence
	AMC Flight line Security Standards
	AMC Interior Design Guide
	AMC Interior Sign Standards Manual
ETL 93-02	AMC Sign Standards
	Department of Defense Antiterrorism/Force Protection Construction Standards
	Local Base Architectural Compatibility Plan
	USAF Installation Force Protection Guide
UFC 1-200-01	Design: General Building Requirements
UFC 4-010-02 DOD	Minimum Anti-terrorism Standards for Buildings
MIL-HDBK 1008	Fire Protection for Facilities Engineering, Design and Construction

C. Other Publications

ADAAG	Americans with Disabilities Act/Accessibility Guidelines for Buildings and Facilities
ANSI A58-1	Building Code Requirements for Minimum Design Loads for Buildings and Other Structures
ANSI A117.1	Buildings and Facilities Accessible to and Usable by the Physically Handicapped
ASTM F1487	Standard Consumer Safety Performance Specification for Playground Equipment for Public Use
NEC	National Electric Code
NFPA	National Fire Protection Association

NFPA 101	Life Safety Code
IBC	International Building Code
UFAS	Uniform Federal Accessibility Standards
USPH PHS	Publication 934, Food Service Sanitation Manual
Reference Manual	International Air Transport Association Airport Terminal
	National Bureau of Standards Handbook 135, Life Cycle Cost Manual for Federal Energy Management
	U.S Customs Service Technical Standards for Passenger Processing at Airports
	Color and Human Response, Birren, Faber
	Color Psychology and Color Therapy, Birren, Faber
	Influence of Color in Architectural Environments, Flynn, John E.
	Handbook for Public Playground Safety, The U.S. Consumer Product Safety Commission (CPSC) www.cpsc.gov