

LIFE-SAFETY PROTECTED



Department of Veterans Affairs
Medical Center



Physical Security Design Manual for VA Facilities



*Department of Veterans Affairs
Washington, DC 20420*

July 2007

FINAL DRAFT

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Introduction

1.0 PURPOSE

This Manual contains the physical security standards for improving the protection of life-safety protected facilities of the U.S. Department of Veterans Affairs (VA). Life-Safety Protected facilities are required to protect the life safety of the VA patients, staff, and visitors in case of an emergency. Although indispensable to the mission of the VA, these facilities are not required to remain operational during a natural or man-made extreme event or a national emergency. Design and construction standards are provided for the physical security of new buildings, additions, and major alterations. In addition, recommendations and strategies are provided to improve the physical security for existing life-safety protected facilities.

The requirements of this manual are to be coordinated with all VA design and construction requirements for the mitigation of other hazards, such as earthquake and hurricane, in order to complete a multi-hazard approach to physical security planning, design, and construction. Throughout this manual where it is mandatory that construction be in an area that is not subject to flooding, refer to the FEMA flood map information available at <http://www.fema.gov/business/nfip/fmapinfo.shtm>.

In order to meet the physical security standards of this manual the design team must include a security specialist as well as a structural blast specialist. These specialists must be experts and have a minimum of five years experience in physical security or blast design. This manual assumes the use of qualified security and blast experts.

1.1 AUTHORITY

It has long been the policy of the United States to assure the continuity and viability of mission critical infrastructure. Executive Order 12656, issued November 18, 1988, states, “The head of each Federal department and agency shall be prepared to respond adequately to all national security emergencies.” Furthermore, the “head of each Federal department and agency shall ensure the continuity of essential functions in any national security emergency by providing for: succession to office and emergency delegation of authority in accordance with applicable law; safekeeping of essential resources, facilities, and records; and establishment of emergency operating capabilities.” The Order also requires that the “head of each Federal department and agency shall: identify facilities and resources, both government and private, essential to the national defense and national welfare, and assess their vulnerabilities and develop strategies, plans, and programs to provide for the security of such facilities and resources, and to avoid or minimize disruptions of essential services during any national security emergency.”

Public Law 107-188, Public Health Security and Bioterrorism Preparedness and Response Act of 2002 enacted June 12, 2002, requires actions to enhance the readiness of Department of Veterans Affairs medical centers to enable them to fulfill their obligations as part of the Federal response to public health emergencies. Under section 154 the law specifically requires that the “Secretary of Veterans Affairs shall take appropriate actions to enhance the readiness of Department of Veterans Affairs medical centers to protect the patients and staff of such centers from chemical or biological attack or otherwise to respond to such an attack and so as to enable such centers to fulfill their obligations as part of the Federal response to public health emergencies.”

Public Law 107-287, Department of Veterans Affairs Emergency Preparedness Act of 2002 enacted November 7, 2002, requires that the “Secretary take appropriate actions to provide for the readiness of Department medical centers to protect the patients and staff of such centers from chemical or biological attack or otherwise to respond to such an attack so as to enable such centers to fulfill their obligations as part of the Federal response to public health emergencies” and that the “Secretary take appropriate actions to provide for the security of Department medical centers and research facilities, including staff and patients at such centers and facilities.” This Act also states that the “Secretary may furnish hospital care and medical services to individuals responding to, involved in, or otherwise affected by that disaster or emergency.”

38 USC Sec. 901 gives the Secretary the authority to prescribe regulations to provide for the maintenance of law and order and the protection of persons and property on VA property.

1.2 VA FACILITIES

The Department of Veterans Affairs (VA) is composed of a Central Office (VACO) and three administrations, the Veterans Health Administration (VHA), the Veterans Benefits Administration (VBA), and the National Cemetery Administration (NCA). VHA manages one of the largest health care systems in the U.S. In addition to providing health care, VHA also has missions to provide training for health care professionals; to conduct medical research; to serve as a contingency backup to DOD medical services; and, during national emergencies, to support the National Disaster Medical System (NDMS). VBA provides benefits and services to veterans including compensation and pension, education, loan guaranty, and insurance. NCA delivers burial benefits to veterans and eligible dependents. In total, VA provides a mission critical medical and economic infrastructure to the government and population of the United States.

Life-safety protected facilities shall include all of the following:

- Accessory Non-Building Structures
- Auditorium
- Biomedical Engineering (equipment and wheelchair repair)
- Canteen – Cafeteria
- Canteen – Retail Store
- Cemetery Building Chapel
- Child Care
- Clinical Services Administration Office
- Community-Based Outpatient Clinic (CBOC)
- Connecting Corridor Concourse and Bridge
- General Administration Office
- Greenhouses
- Laundry
- Library/Museum
- Maintenance Facility (Shops)
- Maintenance Storage (Equipment)
- Materials Management Storage
- Office
- Parking Garage
- Plant Outbuilding
- Post Office
- Quarters (Residential)
- Recreational
- School
- Student Housing
- Temporary Buildings
- Toilets (Outhouses)
- Training/Education
- Veterans Services
- Warehouse
- Waste Management (Incinerator and Recycle)
- Waste Storage

1.3 INTRODUCTION TO PHYSICAL SECURITY CONCEPTS

VA has adopted the low level of protection of the *Interagency Security Committee (ISC) Security Design Criteria* (September 29, 2004) for all new life-safety protected facilities. The *VA Natural Disaster Non-Structural Resistive Design* (September 2002) is subsumed and superseded by this physical security design manual. The physical protection strategies used to develop this manual are documented in the *Physical Security Strategies Report* (January 10, 2006).

1.3.1 Concentric Levels of Control and Protection

The physical security of facilities requires the use of concentric levels of control and protection to provide progressively enhanced levels of security.

1.3.1.1 The first point of control should be at the perimeter of the property consisting of fences and other barriers with one or two points of entry through gates controlled by police or other security personnel. In certain urban sites, the building perimeter may be on the property line. Increased levels of screening of persons and vehicles, as the Department of Homeland Security Threat Levels are changed, must be accommodated at the perimeter without burdening surrounding roads with vehicles waiting to enter the site.

1.3.1.2 The second point of control should be at the building perimeter consisting of doors and other openings protected as appropriate to the level of protection needed with or without the first point of control. This includes access control hardware, intrusion detection, surveillance, and, at selected entrances at various times, personnel for control and screening.

1.3.1.3 The third point of control should be to segregate with barriers and hardware generally accessible public and patient areas from staff-only areas such as pharmacy preparation, food preparation, sterile corridors, research laboratories, and building operations and maintenance areas.

1.3.1.4 The fourth point of control should be to segregate authorized from unauthorized staff areas with barriers and access controls such as card reader-activated hardware. Unauthorized areas may include patient records, laboratories, vivariums, and cash-handling tellers.

1.3.1.5 The fifth point of control should be to restrict access to restricted areas to a minimum with card-reader access controls, CCTV monitors, intrusion detection alarms, and forced-entry-resistant construction. Restricted access areas may include select agent storage, narcotics storage, and laboratories.

The more effective the perimeter barrier and screening are the less protection is needed within the site, such as between buildings, from patient and visitor parking and the building lobby, and from the site entrance to the other buildings on the site. In highly urban areas where the VA building may front on a city street with no stand-off or separation, the building and its occupants can only be protected from hazards of breaking and entering, vandalism, and even explosive or armed attack by hardening the building itself to resist, which may lead to undesirable solutions such as façades with minimum openings and a fortress-like appearance.

1.3.2 Crime Prevention Through Environmental Design (CPTED)

VA follows the principles of Crime Prevention Through Environmental Design (CPTED, see www.cpted.net). CPTED promotes the principles that proper design and effective use of the built environment can lead to a reduction in the fear and incidence of crime and acts of terrorism. CPTED should be used to evaluate VA site and building designs to create and enhance the concentric circles or layers of security protection.

1.3.3 Security Operation Requirements

Design decisions for the physical security of a life-safety protected facility should be based on the concentric levels of control and protection—both physical and operational—as described in section 1.3.1.

1.4 OBJECTIVES OF VA PHYSICAL SECURITY DESIGN

The primary objective of this manual is to provide the design team with the criteria and standards for the full range of strategies available for existing and new buildings to provide unobtrusive protection for VA facilities while safeguarding the veterans, staff, and visitors.

The physical security standards account for VA operations and policies and must be cost effective when implemented. An objective of this manual is to provide cost effective design criteria that will, when constructed and implemented, provide the appropriate level of physical security to VA's life-safety protected facilities. The *Physical Security Cost Manual* should be used by the design team in conjunction with this manual to determine and develop the most cost effective physical security for each life-safety protected facility.

1.5 BUDGETING AND PROGRAMMING FOR PHYSICAL SECURITY

When establishing a design and a budget for a life-safety protected project, the key point is that physical security is fully integrated into the program, rather than an added

requirement. When physical security is seen as an add-on to an otherwise complete project, the costs for implementation will be higher and the results less satisfactory. As such, it is essential to establish the physical security goals within the programming phase of the project, and to ensure that the budget is set to reflect the physical security requirements within the program goals.

1.6 RISK ASSESSMENT OF VA FACILITIES

Risk assessments of existing VA facilities showed that the primary threats faced by the Department continue to be routine criminal activity and violence in the workplace; however, the proximity of some VA facilities to high vulnerability targets, the expanded threat caused by the Iraqi War and treatment of Iraqi War veterans, and the role of VA medical centers as backup to DOD and communities in the public health system, elevate VA's risks from both internal and external man-made threats.

It is not possible to eliminate all risk to a facility and every project will face resource limitations. Cost effective risk management is a requirement of every project. Prior to design development of a new life-safety protected facility or major alterations of an existing life-safety protected facility a risk assessment must be performed. Cost effective strategies must be implemented to make the facility capable of life-safety protected operation.

The first task is to identify the assets and people that need to be protected. Next, a threat assessment is performed to identify and define the threats and hazards that could cause harm to a building and its occupants. After threats and assets are identified, a vulnerability assessment is performed to identify weaknesses. Using the results of the asset, threat, and vulnerability assessment, risk can be determined.

Comprehensive protection against the full range of possible natural and man-made threats to VA facilities would be cost prohibitive, but an appropriate level of protection obtained through the use of these standards can provide for operation of life-safety protected facilities at a reasonable cost.

1.7 DOCUMENT DISTRIBUTION, USE, AND CONTROL

This manual is unclassified.

1.8 ADMINISTRATION AND ENFORCEMENT

The provisions of these standards shall apply to all VA life-safety protected building construction projects for which design is begun on or after the effective date of this design manual.

These standards apply to new construction and all additions, alterations, and modernization. Any facility undergoing a renovation of 50 percent or greater is required to conform to the standards of a new life-safety protected facility. Existing facilities are required to meet physical security standards defined in this design manual as may be determined by VA based on funding considerations, prioritization, and other mission driven requirements.

These standards apply to the space being renovated in an existing building, and do not extend to other spaces in the same building except as may be directed by VA.

Any VA campus on which a new life-safety protected facility is to be constructed shall bring the entire site into conformance with these standards.

1.9 INTERPRETATIONS AND EXCEPTIONS

VA facilities that are not designated life-safety protected may be mission critical facilities, which are required to continue operation during a natural or man-made extreme event or a national emergency. Physical security design requirements for mission critical facilities are covered in a separate manual.

The requirements of these standards are directed at all building types currently owned and operated by VA. VA buildings leased through the General Services Administration (GSA) are exempt from these requirements and are covered in the Interagency Security Committee (ISC) "Security Standards for Leased Spaces" (September 29, 2004).

Buildings of such occupancy type and floor area that would allow Type V construction as defined in the International Building Code shall be exempt from the requirements of Chapter 7, Paragraphs 7.1 through 7.3.

Connecting corridor concourse and bridges shall be exempt from the stand-off distance requirements of Chapter 3 and the requirements of Chapters 6 and 7. Freestanding greenhouses shall be exempt from the requirements of Chapters 3, 6, and 7. Physical security requirements for temporary buildings shall be determined on a case by case basis by the security staff having cognizance.

The Project Manager has the role of approving deviations from the requirements and may waive requirements and give other instructions.

1.10 REVISIONS

Revisions to the Physical Security Design Manual will be issued shortly after the initial publication due to VA office re-organization, numbering and nomenclature changes, and updates of other VA standards.

Glossary

The following terms and definitions are related to the mitigation of man-made and natural hazards and do not include terms related to general facility design, construction, and operation.

Cache: A storage facility requiring a high level of security, often referring to pharmacy.

Charge Weight: The amount of explosives in a device in TNT equivalent.

Clear Zone: An area on either or both sides of a perimeter fence line that has been cleared of any materials that offer concealment to an intruder.

Closed Circuit Television (CCTV): A video system in which an analog or digital signal travels from a camera to video monitoring stations at a designated location.

Continuity of Operations (COOP): VA is required to have COOP capabilities that enable the Department to continue essential functions during a broad spectrum of emergencies. A COOP site is an alternate facility from which to continue essential agency functions should the primary facility be rendered unusable. A COOP site should provide a facility from which VA can continue to perform essential functions and operations during an emergency with reduced or mitigated disruptions to operations and where VA can achieve a timely and orderly recovery from an emergency and resume full service.

Controlled Access Area or Controlled Area: A room, office, building, or facility area which is clearly demarcated, access to which is monitored, limited, and controlled.

Crash-rated: Tested for resistance to a moving load impact at a given velocity and rated in terms of kinetic energy or “K” rating in tests for certification under Department of State programs.

Crime Prevention Through Environmental Design (CPTED): Design philosophy that effective use of the natural environment coupled with proper design of the built environment can lead to a reduction in the fear and incidence of crime.

Critical Assets: People and those physical assets required to sustain or support the facility's ability to operate on an emergency basis.

Critical Infrastructure, Critical Space: Building area(s) required to sustain or support the facility's ability to operate on an emergency basis.

Detection and Screening System (DSS): DSS are used for the pre-screening of persons, packages, and personal items for detection of contraband, such as, weapons, drugs, explosives, and other potential threatening items or materials prior to authorizing entry or delivery into the building. DSS includes X-ray machines, walk-through metal detectors (WTMD), hand-held metal detectors (HHMD), and desktop and hand-held trace/particle detectors (also referred to a "sniffers" and "itemizers").

Duress Security Phone Intercom (DSPI): DSPI systems are used to provide security intercommunications for access control, emergency assistance, and identification of personnel under duress requesting a security response.

Explosives Detector: Any device that detects components of explosive devices or explosive compounds by radiographic analysis, by analyzing chemical emissions, or by other methods.

Extraordinary Incidents: Events or conditions that exceed locally accepted design practice.

Hardening: Reinforcement of the building structure, components, and systems against impact of a blast, a ballistic assault, or ramming.

High Crime Area: Within a defined geographical location, the area with the highest arrest rates for violent crime and for such other crimes as drug sale, drug possession, prostitution, vandalism, and civil disturbances; with the highest reported crime volume of specific property crimes such as business and residential burglary, motor vehicle theft, and vandalism; the highest percentage of reported index crimes that are violent in nature; the highest overall index crime volume for the area; and the highest overall index crime rate for the geographic area.

Hurricane Areas: These requirements apply to VA medical and ambulatory care centers located within 16 kilometers (10 miles) of the Atlantic Ocean and 16 kilometers (10 miles) of the Gulf of Mexico. These requirements also apply to all inland VA medical and ambulatory care centers in Florida and those in Hawaii and Puerto Rico.

ID Check: Examination and verification of personal or vehicle identification visually or by other means.

Intrusion Detection System (IDS): A system combining mechanical or electric components to perform the functions of sensing, controlling, and announcing unauthorized entry into areas covered by the system. The IDS is intended to sound alarms or alert response personnel of an actual or attempted intrusion into an area.

Itemizer: A trace particle detection device capable of identifying both explosives and narcotics.

Life-Safety Protected: VA facilities which are required to protect the life safety of the patients, staff, and visitors in case of an emergency; although indispensable to the mission of VA, are not required to remain operational in a natural or man-made extreme event or a national emergency.

Local Alarm: An alarm that is annunciated in the immediate vicinity of the protected premises.

Magnetometer or Metal Detector: A walk-through portal or hand-held device designed to detect changes in magnetic fields used to identify hidden metal objects.

Mantrap: A double-door booth or chamber that allows a person to enter at one end, undergo an access identification routine inside the booth, and if the routine is satisfied, the lock on the booth door at other end is released.

Mission Critical: VA facility that is required to continue operation during a natural or man-made extreme event or a national emergency.

Mitigation: Actions taken to reduce the exposure to and impact of a hazard.

Pedestrian Barrier: A fence, wall, or other structure designed to delay pedestrians from entering the site without using the gates provided for pedestrians where *personnel screening* may be performed. The Pedestrian Barrier may or may not be coincident with the *vehicle barrier*.

Perimeter Barrier: A physical barrier used on the outside of a protected area to prevent, deter, or delay unauthorized entry.

Personnel Screening: Examining persons and their possessions for contraband such as weapons, explosives, and CBR agents using magnetometer, x-ray, search, or other device.

Physical Access Control System (PACS): A system combining mechanical or electrical components, such as card readers, keypads, biometrics, and electromagnetic locks and strikes, for the purpose of controlling access and monitoring building entrances, sensitive areas, mission critical asset areas, and alarm conditions.

Physical Security: That part of security concerned with physical measures designed to safeguard people, to prevent unauthorized access to equipment, facilities, material, and documents, and to safeguard against damage and loss.

Police Operations Unit: An area designed to facilitate the functions of the police and security services, which include the protection of patients, visitors, and employees; the protection of property; and the maintenance of law and order on property under the charge and control of the Department.

Protected Area: An area continuously protected by physical security safeguards and access controls.

Protection Level: The degree to which resources are used to defeat a threat.

Restricted Area: A controlled room, office, building, or facility area to which access is strictly and tightly controlled. Admittance to this area is limited to personnel assigned to the area and persons who have been specifically authorized access to the area.

Risk: The potential for a loss of or damage to an asset.

Screening Vestibule: Designated space or area located for access control between the public building entrance and the lobby which shall be of sufficient space and be provided with power, telecommunications, and data connections for installation of access control and screening equipment that may be used should the need arise.

Secured Door Opening (SDO): A door opening that requires security hardware such as electric strike, door contact, card reader, forced entry rating, or similar feature.

Security Control Center (SCC): A location for security personnel to monitor CCTV, alarms, and other security systems and devices. This may be in a separate space or, for small facilities, combined with a guard or reception desk at the entrance.

Select Agent: Select agents shall be as defined in Title 42, CFR, Part 73, including pathogens and toxins regulated by both DHHS and USDA and non-overlap select agents of DHHS.

Stand-off: Distance from event to target.

Tactic: Means of delivering a threat, such as a vehicle bomb.

Terrorism: An action that is intended to cause death or serious bodily harm to civilians or noncombatants, when the purpose of such an act, by its nature or context, is to intimidate a population or to compel a government or an international organization to do or to abstain from doing any act.

Threat: An indication of impending danger. The type of harm likely to be directed at a facility.

Urban Area: A geographic area with a population of more than 50,000 or a population density of at least 1,000 people per square mile (386 per square kilometer) and surrounding census blocks that have an overall density of at least 500 people per square mile (193 per square kilometer).

Vehicle Arrest: Means of stopping a vehicle from breaching a perimeter.

Vehicle Barrier: A passive or active physical barrier consisting of natural or man-made features designed to keep a vehicle carrying explosives at the required *stand-off* distance. This may or may not be coincident with a *pedestrian barrier*.

Vehicle Inspection: Examining vehicles for contraband such as explosives using physical search, K-9 searches, trace element sampling, x-ray, or other means.

Vulnerability: Susceptibility to physical injury or *threat*.

X-ray Screening System: A device or system that inspects the contents of a package or container for concealed explosives or contraband.

Site Considerations

3.0 SCOPE

This chapter focuses on security design concepts, elements, and site planning strategies that influence the protection of the built and natural environments.

3.1 STAND-OFF DISTANCE

No vehicle shall be parked or be permitted to travel closer than 25 feet (7.6 m) to any life-safety protected VA facility.

3.1.1 Existing Facility – Stand-off Distance

Existing facilities shall meet the requirement of 3.1.

3.2 PERIMETER FENCES

Perimeter barriers shall consist of fences, walls, a combination of these, and gates as needed for access. The barrier shall be designed to resist forced or surreptitious entry using hand tools, such as by spreading bars of a fence to provide a passable opening. Fences shall have sufficient lateral support to resist overturning by manual force.

3.2.1 Location

The perimeter barrier shall be on or in close proximity to the perimeter of the property.

3.2.2 Height

The perimeter barrier shall have at least 6 feet (1.8 m) between potential horizontal footholds or designed with other anti-climb measures.

3.2.3 Material

Fences shall be metal and of heavy industrial-grade construction with bar spacing at a maximum of 5 inches (127 mm) on center. Chain link fences and gates shall not be used. Walls shall be reinforced masonry or concrete.

3.2.4 Gates

3.2.4.1 Pedestrian gates: Pedestrian and bicycle gates shall swing in the outward direction and shall be fully accessible to persons with disabilities in width and operation.

3.2.4.2 Vehicular gates: Vehicular security gates shall be sliding or cantilevered (no tracks) and only wide enough to accommodate one vehicle lane.

3.2.5 Existing Facility – Perimeter Fences

All sites with life-safety protected facilities shall meet the requirements of section 3.2.

3.3 VEHICLE AND PEDESTRIAN SCREENING

No additional physical security requirements.

3.4 VEHICLE BARRIERS

Passive vehicle barriers shall be selected on the appropriateness of the architecture of the facility and the specifics of the site and natural environment.

3.4.1 Active Barriers

No additional physical security requirements.

3.4.2 Stationary (Passive) Barriers

Natural or man-made stationary barriers may be used.

- Landscaping examples include berms, gullies, boulders, trees, and other terrain.
- Hardscaping examples include benches and planters.
- Structural examples include walls, bollards, and cables.

3.4.2.1 Locations: Adjacent to vulnerable perimeter fences, protection for site utility equipment, at building entrance, and other areas requiring additional protection from vehicles.

3.4.2.2 Structure: See Chapter 7, section 7.4 Anti-Ram Resistance, for structural requirements of passive barriers.

3.4.2.3 Handicapped accessibility: Passive barriers, such as bollards, when placed adjacent to or across a path of pedestrian travel, shall have 4 feet (1.2 m) clear space in between.

3.4.3 Existing Facility – Vehicle Barriers

All sites with life-safety protected facilities shall have stationary barriers as per section 3.4.2.

3.5 PARKING

3.5.1 Location

3.5.1.1 Surface parking: Passenger vehicles shall not be parked or permitted to travel closer than 25 feet (7.6 m) to a life-safety-protected VA facility.

3.5.1.2 Parking structures: No additional physical security requirements.

3.5.2 Access

3.5.2.1 From vehicle entrance: Access roads for all vehicles shall allow for separate driveways to the building entrance, service yard, or parking.

- Separate entrances to the site shall be provided for patients and visitors, employees and staff, emergency, and service and delivery vehicles.
- Access roads from entrances to parking for each vehicle type shall be separated, but may be connected for maintenance and emergency vehicles through gates controlled by access cards.
- Access roads shall be configured to prevent vehicles from attaining speeds in excess of 25 mph (40 kph).
- Avoid any straight-line vehicular approaches to a facility.

3.5.2.2 From parking to facility: See “Entrances” in this chapter and Chapter 4 for further information on building entrances.

3.5.3 User Type

In addition to the requirements above, the following are parking and access requirements for security according to specific users.

3.5.3.1 Patients and visitors: Parking and access for patients, visitors, and the persons transporting them to and from the VA facility shall be as convenient as possible to the main entrance, subject to the requirements above. Where vehicles are unscreened, make site provisions to accommodate a shuttle service for persons needing assistance. Parking and facility access shall comply with handicapped accessibility requirements.

3.5.3.2 Emergency: Emergency entrance shall be provided with a small parking area for emergency patients and space for ambulances. Ambulances shall be permitted to approach the building directly and not be subjected to the distance requirements of this Chapter.

3.5.3.3 Childcare parents and staff: All requirements for maintaining stand-off distance between vehicles and the building shall apply. Child drop-off and pick-up shall be visible from the office of the child care center and shall be monitored by CCTV. All vehicular areas, on site and adjacent off-site, including parking and access roads, shall be separated from playground areas by fences designed to prevent children from entering the vehicular areas and vehicles from entering the playground.

3.5.3.4 Vendors: The stand-off distances and screening requirements above apply. Vendors shall use the delivery vehicle entrance and service yard at the loading dock. Parking shall be provided for vendors in the service yard.

3.5.3.5 Employees: Where employees share access with patients and visitors, the entrance to the employee parking shall be controlled by a card-actuated gate. Employee parking areas shall be monitored by CCTV. Emergency alert systems, such as blue phones, shall be provided at the discretion of the VA Police.

3.5.4 Existing Facility – Parking

When separation of types of traffic is not feasible, card-controlled access gates and other traffic separation measures shall be used.

3.6 SITE LIGHTING

3.6.1 General Requirements

Provide minimum maintained illumination levels for pedestrian pathways, bicycle and vehicle routes, parking structures, parking lots, wayfinding, signage, pedestrian entrances, and building services which will provide safety and security for personnel, buildings, and site.

Lighting shall provide for safety and security without compromising the quality of the site, the environment (including neighboring properties), or the architectural character of the buildings.

3.6.1.1 Aesthetic: The site lighting shall provide desired illumination and enhancement of trees, landscaping, and buildings without providing dark shadowy areas compromising safety and security.

3.6.1.2 CCTV: Site lighting shall provide CCTV and other surveillance support with illumination levels and color that assists in proper identification. Lighting shall be coordinated with CCTV cameras to enhance surveillance and prevent interference. Avoid “blinding” CCTV cameras in the placement and selection of fixtures and their “cutoff” angles.

3.6.1.3 Luminance levels: Illumination levels shall be in compliance with the Illumination Engineering Society of North America (IESNA), VA Design Guides, and local and state governing agencies.

3.6.1.4 Signage and wayfinding: Shall be enhanced by site lighting, including providing improved security by assisting pedestrians and vehicles to locate their destinations expeditiously. Refer to *VA Signage Design Guide* dated 2/2005.

3.6.1.5 Environmental: Avoid light pollution and spill into neighboring properties by selection of fixtures’ cutoff angles to minimize their nuisance visibility from adjacent areas on and off VA property.

3.6.2 Lighting Locations

Comply with all requirements for site lighting as may be set forth in VA publications. In addition, the following areas require additional attention in lighting design to support security and safety needs.

3.6.2.1 Site entrances: Lighting shall be provided at all site entrances at illumination levels that assist in after-dark performance of security duties:

- To assist security personnel with visual personal identification into vehicles to see the driver’s compartment and view ID.
- To provide illumination of wayfinding and other signage.

3.6.2.2 Perimeter fence: Lighting sufficient to support perimeter CCTV surveillance shall be provided without spillage onto neighboring properties or rights-of-way.

- Where a perimeter road has been provided for patrols or other functions, the lighting may be combined with roadway lighting.

3.6.2.3 Building entrances and exits: Lighting at building entrances shall support CCTV surveillance and ID functions while providing illumination of surfaces and features for safety.

3.6.2.4 Parking areas: All parking areas covered and open shall be lighted in support of CCTV and other surveillance without spill into adjacent areas on or off site.

3.6.2.5 Pathways: Pedestrian and bicycle pathways and walks, including bike racks, gates, and other features shall be illuminated in support of CCTV and other surveillance while providing for safety without spill onto adjacent areas on and off site.

3.6.2.6 Signage: All signage shall be adequately illuminated to provide safe wayfinding and identification. Wayfinding maps and texts shall be individually illuminated.

3.6.2.7 Enclosures: Liquid oxygen tanks and other enclosures shall be illuminated in support of CCTV and visual surveillance without spillage into other areas on or off site.

3.6.2.8 Trash: Collection areas shall be illuminated in service yards as a part of the yard illumination. Individual trash bins may not require illumination.

3.6.2.9 Loading docks and associated yards: Loading areas shall be fully illuminated for operations and in support of CCTV and other surveillance and Identification needs.

3.6.3 Existing Facility – Site Lighting

Existing facilities shall meet the requirements of section 3.6.