ARMY ACCESS CONTROL POINTS (ACPs) STANDARD DESIGN

VARIOUS LOCATIONS (CONUS AND OCONUS)

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APPENDICES

ARMY ACCESS CONTROL POINTS STANDARD DESIGN

1. INTRODUCTION

1.1. STANDARD DESIGN

This Standard Design supersedes all previous versions for this facility type. It shall be used for construction of all new Access Control Point (ACP) projects and renovations to existing ACP projects. It is intended for use anywhere in the continental United States (CONUS) or overseas locations (OCONUS). The design procedures and drawings included in this Standard Design provide flexibility to Army ACP designers in meeting the Army's baseline physical security requirements and the full range of Force Protection Conditions on Army Installations. This Standard Design meets the Army Standard (AS) for Access Control Points (ACPs) approved by the Army Facilities Standardization Committee dated 13 April 2012. It also meets Architectural and Engineering design criteria established by the Headquarters U.S. Army Corps of Engineers (HQUSACE). The Omaha Center of Standardization (COS) must approve all changes, deviations, or waivers to the Standard Design. In addition to these requirements, Appendix D contains design guidance and instructions that are considered information only and are meant to further provide information on issues that often arise when designing an ACP.

1.2. ACP DEFINITION

An ACP is a corridor at an Installation cantonment perimeter through which all vehicles and/or pedestrians must pass when entering or exiting the Installation cantonment area. An ACP provides the first physical security boundary layer that restricts access to Department of Army (DA) Installation cantonment areas. ACP guards control the active barriers to deny or permit entry on to the Installation.

1.3. ACP CLASSIFICATIONS

DA ACP classifications are: (a) Primary, (b) Secondary, (c) Limited Use, and (d) Pedestrian. Primary and Secondary ACPs can accommodate privately owned vehicles (POVs), commercial vehicles (trucks), pedestrians, bicycles, or any combination thereof. Primary and Secondary ACPs provide the means to defeat a vehicular and/or pedestrian threat via permanent measures defined in the Army Standard for ACPs. Limited Use ACPs provide means to defeat vehicular and/or pedestrian threats via temporary or permanent measures. Limited Use ACPs do not have routine hours of operation. A Pedestrian ACP may be part of an ACP that accommodates vehicles, or it may stand alone.

For definitions of Installation, Primary ACP, Secondary ACP, Limited Use ACP, Approach Zone, Access Control Zone, Response Zone, and other definitions, see the Army Standard for Access Control Points. Remotely manned egress only ACPs are Primary or Secondary ACPs which allow only vehicular egress. Remotely manned egress only vehicular ACPs will meet the intent of all Army Standard requirements pertaining to Primary and/or Secondary vehicular ACPs. These ACPs will be remotely manned at all times when vehicle transit is allowed. When remote manning position is not occupied the AVB(s) will be locked in the deployed position. The Remotely Manned Egress Only Vehicle ACP related information in this document relates only to ACPs where this is the only mode of operation. ACPs which include Remotely Manned Egress Only Vehicle operations and other modes of operation will meet requirements for all modes of operation.

1.4. ACP FUNCTIONS

1.4.1. Site Functions

ACP site functions include, but are not limited to, Approach Zone, Access Control Zone, Response Zone, Passive Vehicle Barriers, Active Vehicle Barriers, Command and Control, ID Check Area, Overwatch, Canopies, Turn Arounds, Search Areas, Lighting, and CCTV.

1.4.2. Building Functional Areas

Some of the building function components of an ACP are Visitor Control Center (VCC), Guard Booths (ID Check and Pedestrian ID Check), Search Area Building, Command and Control, Mechanical/Electrical, Communications, Gatehouse, Toilet, Storage, and Overwatch. This standard design includes some of the function combinations that are deemed acceptable. Combinations of functional areas not included as Standard Designs may be possible but will require COS review and approval, with Standard Design exception. The only functions that cannot be combined with other functions are the Vehicle ID Check and Vehicle ID Check Guard Booths.

1.5. MANDATORY CRITERIA

See Army Standard for Access Control Points for mandatory criteria for Primary and Secondary ACPs, Limited Use ACPs, and Pedestrian ID Check.

1.6. COORDINATING FACILITY TYPES

Access Control Points may be included as a feature on a larger project site, , but typically ACPs are stand-alone projects.

1.7. STANDARD DESIGN DRAWINGS AND INFORMATION

Copies of the drawings and text information that constitutes a Standard Design are available from the supporting Center of Standardization (Omaha) U. S. Army Corps of Engineers District, and numerous military web sites. The primary web site (the address is subject to change) to consult is:

"http://mrsi.usace.army.mil/sites/cos/SitePages/Home.aspx".

1.8. OUTSIDE CONTINENTAL UNITED STATES (OCONUS)

The requirements for this document have been written around U.S. Standards. For OCONUS applications the following requirements are applicable:

Metric units of measurement are allowed.

Local codes are permitted (except where specifically noted within this document), but) but shall not be less than U.S. requirements.

Where there are no local codes, U.S. requirements shall govern.

Requirements of the Department of Army Standard Design for Access Control Points shall be used.

All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (NNFA), and in some instances, bilateral Infrastructure Agreements (BIA). Therefore, the acquisition team must ensure compliance with the most stringent of any UFC applicable, the SOFA, the HNFA, and the BIA, as applicable.

Exceptions to the above requirements include line-of-sight, ballistic ratings, threat calculations, anti-terrorism standards and standoff distances included in this document.

1.9. RFP WIZARD

The RFP Wizard is an Army Transformation Model for Design-Build Requests for Proposals (RFP). Paragraph 2 in this document includes references to the RFP Wizard, which require informed decisions to be made in order to assemble the RFP correctly. Consult the Omaha District COS for decisions on language if selected options cannot be made confidently.

2. SCOPE OF WORK

2.1. ACCESS CONTROL POINTS

Provide an installation access control point(s) which will allow safe, convenient vehicular and pedestrian access to the installation, while ensuring anti-terrorism/ force protection (AT/FP) measures are implemented.

The project is based on, and shall comply with, the Army Standard for Access Control Points (ACP-AS) and the Department of Army Access Control Points Standard Design (ACP-SD). The Access Control Point (ACP) functions are a corridor through which all vehicles and pedestrians pass when entering or exiting an installation. The ACP personnel perform identification verification procedures and control the active barriers that deny or permit entry on to the installation.

In addition, the ACP(s) shall be provided with a Closed-Circuit Television (CCTV) camera system, security lighting, duress system, Intrusion Detection System (IDS), communications system, LAN, back-up power system, traffic control system, overspeed detection system (if necessary), wrong way detection system, active vehicle barriers and control system and passive vehicle barriers. CCTV system shall include cameras, digital video recorders (DVR), monitors and controls. Cameras shall be provided at the Visitor Control Center (when required), overwatch area, ID check area, vehicle inspection areas, and active vehicle barrier (AVB) areas. Camera monitoring shall occur at the Command and Control and at a central monitoring station when present. Lighting shall be provided at the Approach zone, Access Control Zone, Response zone, vehicle search (inspection) areas, active barrier areas and parking areas. A back-up power system shall be provided with a generator and uninterruptible power supply (UPS).

The ACP(s) in this document may be a mixture of Design Build requirements with partial design drawings or Full Construction Plans and Specifications. [RFP Wizard: See Part 3 and Appendices for additional details for Design Build Request for Proposal (RFP).]

Construct the ACP(s) to include the facilities and features listed below.

2.2. TRAFFIC AND TRANSPORTATION ENGINEERING

2.2.1. Traffic Engineering Study (TES)

A. The ACP shall be planned, designed, and so located as not to create un-safe off-Installation traffic queuing or any other un-safe traffic practices as defined by Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA) and all other applicable roadway standards/criteria.

B. The traffic engineering study shall be either conducted or approved by the Military Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA).

   i. In some instances (e.g. very low volume ACPs) SDDCTEA may accept, at their discretion, abbreviated traffic engineering studies. The contents required for programming/design of key ACP design features may be determined by SDDCTEA on a case-by-case basis.

C. The traffic engineering study shall be based on the largest anticipated design demand value that occurs between the current traffic volume and the projected traffic volume five (5) years in the future.

D. The traffic engineering study shall not project future demand through use of standardized population growth rates for the Installation itself unless supported by Installation specific data.

The traffic engineering study may utilize standardized population growth rates for surrounding communities.

2.2.2. Transportation Engineering

A. The ACP shall be capable of handling the largest expected vehicle that will be processed. However, if the ACP processes trucks, it shall be capable of turning around the largest truck common to state or host nation roadways, and capable of processing the largest truck that is allowed onto the installation.

B. Analyses related to determination of the required number of ID check area lanes may include queuing but shall not include queuing that results in off-Installation traffic impacts.

C. Calculate existing and future lane requirements per Pamphlet 55-15, Traffic and Safety Engineering for Better Entry Control Facilities or similar method with consideration of growth, as well as single or tandem lane processing and Automated Installation Entry (AIE), etc.).

D. The efficient use of guard manpower will be considered when calculating the number of ID check area lanes.

E. In locations where pedestal mounted AIE is anticipated calculations related to ID check area lane, quantities shall not anticipate throughput rates in excess of 375 vehicles/hour/lane. Locations using other forms of automation shall utilize validated processing rates for that specific form of automation.

F. The calculations for the number of ID check lanes shall not be based on the use of more than 2 guards per lane.

G. Utilize the ACP/ ECF SMART Decision Evaluator© (or other methods to accomplish the same results) to evaluate the existing, short-term and long-term impact of security, manpower, automation, and roads and traffic.

H. Identify traffic control requirements per SDDCTEA Pamphlet 55-15, Traffic and Safety Engineering for Better Entry Control Facilities.

2.2.3. Turning Movements

A. Turning movement calculations/modeling shall be performed to confirm that the correct vehicle turning radius is achieved and to demonstrate there is no conflict with other vehicles in the ACP corridor. Turning movement analysis shall address all traffic types to be processed. Turning movements shall address, at a minimum, both POVs and trucks, if applicable. If trucks are prohibited at the ACP, truck modeling may terminate at the post ID Check rejection point. The turning movement calculations/models shall be provided for all turning movements.

B. The turning movement analysis shall be performed for all anticipated vehicle paths.

C. The turning movement analysis shall include, but may not be limited to, : horizontal road alignment, turn-around and rejection, entrance and egress paths for the ACP corridor, search areas and visitor control centers (when present).

2.3. DEFEAT OF VEHICLE THREAT SCENARIOS

2.3.1. Office of Provost Marshal General (OPMG) Vehicle Threat Scenarios

ACPs shall be designed to defeat the following four minimum vehicle threat scenarios. Additional vehicle threat scenarios shall be included if required by a local threat assessment. Appendix C covers the methodology associated with performing the threat path calculations by providing an example. Remotely

manned egress only vehicle ACPs shall include a vehicle resistant corridor of sufficient length to preclude wrong way circumvention of the AVB by a potential inbound threat vehicle. Corridor length shall be based on an engineering threat delay analysis which considers vehicle egress time, inbound threat time, and time required for the AVB to return to the deployed position.

A. Vehicle Threat Scenario #1. Threat vehicle enters the ACP in the inbound or outbound lane(s) at the maximum speed attainable at the ACP entrance and then immediately accelerates at its maximum acceleration rate through the ACP.

    i. Threat vehicle characteristics shall be as defined below (includes, but is not limited to,: top speed, acceleration, etc.)

B. Vehicle Threat Scenario #2. Threat vehicle enters the ACP in the inbound or outbound lane(s) at or under the posted ACP Speed Limit and then, later at some point further in the Approach Zone, accelerates at its maximum acceleration rate through the remainder of the ACP.

    i. Note that 'some point' shall be interpreted as being the worst-case threat delay time from point of detection to Active Vehicle Barrier (AVB) location(s) in the response zone. If multiple zones of overspeed detection are utilized the analysis will include the worst-case situations for each overspeed zone.

C. Vehicle Threat Scenario #3. Threat vehicle feigns compliance and stops in lane. The guard detects threat behavior or criminal status through observation or electronic means and moves to guard booth to initiate denial process. Threat vehicle occupant(s) attempt to force entry (tactics include potential use of direct fire weapons and acceleration through the ACP).

    i. Baseline protection for direct fire weapon shall be UL 752-Level 3. A higher level is required if direct fire weapons are identified in local threat assessment/policy that exceed the capabilities of UL 752-Level 3. The contents of local threat assessment/policy are not sufficient justification for the lowering of the baseline ballistic resistance (UL 752-Level 3). Use of ballistic standards other than UL 752 may be utilized anywhere where the barrier rating can be verified as clearly meeting or exceeding UL requirement designated.

D. Vehicle Threat Scenario #4. Similar to Threat Scenario 3 above, except the driver of the denied vehicle drives toward the Turn-around or Search Area at the ACP Speed Limit as if complying with guard instructions, but then fails to turn and instead accelerates at its maximum acceleration rate through the ACP while attempting to enter the Installation cantonment area.

2.3.2. Threat Vehicle Characteristics

A. Acceleration Rate. Threat calculations shall utilize the acceleration rate of 11.3 feet per second squared (feet/second/second) when determining delay.

    i. Where applicable the lower acceleration rates associated with trucks/commercial vehicles can be utilized for calculating the required stopping capability of passive and active vehicle barrier systems; however, lower acceleration rates are not relevant to delay calculations.

B. Deceleration Rate. Threat calculations shall utilize a deceleration rate of 24.1 feet per second squared (feet/second/second) when calculating delay.

C. Friction Factors. Threat calculations shall utilize a friction factor of 1.0. Calculations performed for threat purposes differ significantly from calculations typically performed for consideration of driver comfort. Lower friction factors associated with highway safety shall not be used for threat calculations.

D. Maximum Velocity. The maximum velocity of the 4,630 pounds baseline threat vehicle utilized for delay calculations shall be 130 mph. This parameter shall be utilized for calculation of delay unless a 'local' threat assessment and/or policy identifies a vehicle that is capable of a greater velocity. The addition of larger vehicles or trucks through mandatory incorporation of threats identified in 'local' threat assessments and/or policies shall not be considered justification for use of a reduced velocity in delay calculations.

   i. The maximum velocity of specific threat vehicles (where local threat analysis and/or policy identifies a specific vehicle) shall be obtained from manufacturer specifications.

   ii. The maximum velocity of other vehicle classes (where a type of vehicle e.g. 'pickup truck' is identified in local threat analysis and/or policy) shall be calculated through acquisition of information on at least 5 vehicles within the type and averaging the top speed of the lot. If significant outliers (atypical vehicles with unusual characteristics) exist, they may be removed from the sample set.

E. Vehicle Mass. The baseline threat vehicle shall be a large passenger car as defined in ASTM F2656. The weight of the baseline threat vehicle is 4,630 pounds and the mass is 143.8 slugs. This mass shall be utilized for kinetic energy calculations unless a vehicle of larger mass is included due to the aforementioned incorporation of local threat analysis and/or policy.

F. Modification of baseline vehicle threat. The baseline threat vehicle must be adjusted in accordance with all applicable 'local' threat analysis and policy. All relevant 'local' threat analyses and policy shall be reviewed and incorporated. Classification of such documentation is not justification for exclusion of baseline threat vehicle for barrier impact energy and/or delay calculations. Both the baseline vehicle and the additional vehicle(s) (identified by 'local' threat assessment and/or policy) shall be analyzed and the more stringent of results shall be applied.

2.4. GENERAL REQUIREMENTS

2.4.1. ID Check Area

A. Design Demand of Vehicle per Hour (vph)
[Less than 290 vph] [Greater than 290 vph]

B. Number of ID Check Lanes
[2] [3] [4] [5] [6] [7] [8] [9] [10] lanes under the ID Check Area Canopy

C. Vehicle ID Check Area Guard Booths: One for each Vehicle ID Check Lane.

2.4.2. Ballistic Resistance

UL 752-Level [3] [4] [5], where required.

2.4.3. Canopies

Canopies are required for the ID Check Area, (Truck) Search Area, Passenger Vehicle Search Area and Combination Truck and Passenger Vehicle Search Areas, where required.

2.4.4. ACP Functional Area Facilities

[See Center of Standardization (COS) drawings required for the ACP project] [RFP Wizard: included in Appendix B – Drawings].

2.4.5. Stand-Off Distance

As identified on site drawings furnished for the ACP Project.

2.4.6. Equipment

A. Truck Inspection Equipment to be Used: [Vehicle Inspection System] - [Mobile] [Permanent] [None]

B. Functional Area Facility/Facilities Equipment: [None] [Package Scanner] [_____]

2.4.7. Visitor Control Center (VCC)

A. VCC must be located such that visitor processing occurs prior to entry into the Installation (prior to ID Check location).

B. Paved road surface used to support movement to/from the VCC location must not provide opportunity for undetected bypass of the ID check area. Configuration shall not anticipate detection of bypass by personnel working at the visitor control center, ID check area, or search areas. These personnel are not capable of monitoring paved bypass paths for the VCC.

C. If the Installation accepts visitors and does not currently possess a VCC one should be included in the first available ACP project.

D. The VCC shall include the following:

   i. Parking.

   ii. Service Counter.

   iii. Waiting Area.

E. The VCC may include the following:

   i. Self-registering kiosks.

   ii. Administration Office.

   iii. Break Room.

   iv. Electric Water cooler.

   v. Toilet.

F. Ballistic protection of guard positions

   i. When guard functions requiring ballistic protection (e.g. command & control, pedestrian ID check, etc.) are combined in a facility with the VCC function the guards must be separated from VCC personnel (both workers and visitors waiting to be processed) by ballistic rated building components (walls, glazing, doors, etc.).

   ii. Where guards are utilized solely to perform VCC function(s) it is not necessary to provide a ballistic rated separation between the guard and the visitor. Non-ballistic rated guard positions cannot be designed to require shared VCC responsibility with guards responsible for command & control, ID check area, overwatch building, active vehicle barrier deployment or similar functions.

   iii. Visitor control center worker positions (non-guard) are not required to include ballistic protection.

G. Occupancy Level. The occupancy level of the VCC shall be the sum of the number of visitors waiting to be processed, the number of visitors being processed, the number of processors, and the number of supervisors and security personnel in the VCC anytime during the peak hour.

Equation: Occupancy = VW+VP+c+S

Where:

VW = Visitors waiting to be processed

VP = Visitors currently being processed

c = number of processors

S = Supervisors/Security personnel in VCC

i. The number of Visitors waiting to be processed can found by taking the 1-hour processing rate time (60 minutes) and dividing it by the processing rate and subtracting one (for the Visitor currently being processed) and then multiplying the resulting number by the total number of processors. If the Visitors waiting to be processed is determined to be a negative number than the VCC is processing all Visitors as they come into the VCC and the number of Visitors waiting is zero.

Equation: VW = V - [(60 min / p)-1] x c

Where:

V = Peak Hourly Visitor Rate

p = Processing rate (minutes/visitor)

ii. The number of Visitors currently being processed will be the lower of either the number of Processors in the VCC or the number of Visitors that come into the VCC for each processing rate cycle. The number of Visitors per processing rate cycle can be determined by dividing the Peak Hourly Visitor Rate by 60 minutes in an hour and multiplying it by the Processing Equation:

Equation: $VP_{RC} = (V/60) \times p$

Where:

VP_{RC} = Visitors being process per processing rate cycle

2.4.8. Guard Facilities

A. Vehicle ID Check Area Guard Booths (Used by guards responsible for validating credentials of vehicle occupants)

i. Provide a minimum of one guard booth for each vehicle ID check area entry lane.

ii. Raised traffic island - The guard booth will be protected by a raised traffic island in one of the following ways:

a. Locate the guard booth on a raised traffic island. Provide a minimum of 3’ setback between doorways of guard booth and face of raised traffic island curb. Must also include, as a minimum, a 1’ horizontal clearance between face of traffic island curb and guard booth roof, gutters or any other objects protruding from the guard booth

b. Recess the guard booth within a raised traffic island. Curb may be interrupted to allow movement of guard between booth and ID check position (adjacent to vehicles) to occur without stepping onto, off or over raised island or curb sections.

iii. Passive Barrier Protection

a. Provide protection against errant impact.

b. The protection provided for the guard booth structure is not required to be an ASTM, Department of State (DOS) or DOD anti-ram capable product.

c. Protection (passive barrier) may be located on the leading edge of the island on which the guard booth is located and shall be prior to the leading canopy column (if present).

d. If breaks in the ID check traffic island curb-line exist, additional protection should be included to mitigate errant impact.

iv. Dimensions

a. Minimum nominal ID check area guard booth width shall be 4 feet.

b. Minimum nominal ID check area guard booth length shall be 10 feet.

v. Prohibition of Combining with Other Functions - The function performed by the ID Check Area Guard Booths used for validating credentials of vehicle occupants shall not be combined with any other function.

vi. Field of View - Shall provide a 360-degree field of view for occupant. Door frame interruptions in lines of sight shall not exceed 11 degrees for a guard sitting or standing at the counter. Door frame interruption of guard line of sight shall be minimized.

vii. Ballistic Rating - Shall, as a minimum, be ballistic rating of UL 752 – Level 3 with a higher level being required if prescribed in 'local' threat analyses or policy.

viii. Blast Resistance - Given the proximity of the guard booth to vehicular traffic it is normally not considered feasible to provide blast protection for ID check guard booth occupants.

ix. HVAC

a. General Requirements – General requirements pertaining to HVAC can be found in paragraph 3.11 Heating, Ventilating, and Air-Conditioning (HVAC) Requirements of this document.

b. Ballistic Rating - All penetrations of guard booth resulting from incorporation of HVAC shall provide the same level of ballistic resistance as the rest of the guard booth. The roof and floor of the guard booth (to include HVAC penetrations) shall not require ballistic protection unless direct fire trajectory is possible through roof/floor and into the occupied portion of the guard booth.

c. Exterior HVAC units should be placed so that they do not provide a convenient sitting or resting position for guard staff. Where this is not possible, provide seating surface above HVAC unit to prevent personnel from sitting directly on the HVAC unit.

x. Energy Policy - Shall adhere to the latest national energy policy unless applicable exemption exists within said policy and can be found in paragraph 2.18. Sustainable Design.

xi. Counter - Must include a counter oriented such that a guard is facing inbound (ingress) traffic while seated or standing at the counter.

xii. Door(s) - Must include door(s) oriented in the direction of each lane for which a guard occupying the booth has vetting responsibility (includes situations where vehicle occupants' identification is validated remotely through use of automated equipment).

xiii. Provide exterior power outlet sufficient to power hand-held searchlights, and bug zappers etc.

xiv. Provide interior power outlet sufficient for radio chargers, and computers, etc.

xv. Provide active vehicle barrier control console with annunciator, computer workstation, and communications equipment including Local Area Network (LAN), telephone, and Internet connections.

xvi. Communications. Provide a minimum of two (2) means of communications from the facility and with the Central Security Monitoring Station.

xvii. Electronic Security.

a. Duress Alarms. Provide duress alarm capability that annunciates at both the Command and Control and the Central Security Monitoring Station.

b. Intrusion Detection. The entry doors to the ID Check Area Guard Booths are to be equipped with Balanced Magnetic Switches (BMS) for intrusion detection.

c. CCTV. Provide the means to control the cameras from Command and Control. It is recommended that CCTV monitors be placed above the counter, if there is wall space.

xviii. Active Vehicle Barrier Controls.

a. Provide emergency-fast-operate (EFO) controls for all active vehicle barriers related to the ACP. One EFO will be located on the counter, and another will be located in close proximity to the guard position while performing vehicle ID Check validation.

b. Panel is to have LED indicator lights showing whether or not the panel is functional and capable of barrier deployment.

xix. Remotely Manned Egress Only Vehicle Access Control Points.

a. Do not require guard facilities at the ACP location.

b. Require a remote guard position which is manned at all times vehicles are allowed to utilize the ACP. Barrier will be locked in the deployed position during times that the ACP is not being actively monitored.

B. Pedestrian ID Check Guard Booth functional area (Used by guards responsible for validating credentials of pedestrians)

i. Raised traffic island - The Pedestrian ID Check will be protected by a raised traffic island in one of the following ways:

a. If located within the roadway clear zone, locate the guard booth on a raised traffic island. Provide a minimum of 3 feet setback between doorways of guard booth and face of raised traffic island curb.

b. If located within the roadway clear zone, the functional area must include, as a minimum, a 1 feet horizontal clearance between the face of traffic island curb and guard booth roof, gutters or any other objects protruding from the guard booth.

ii. Passive Barrier Protection

a. Must be provided with protection against errant impact if located on a traffic island or within the roadway clear zone.

b. Protection (passive barrier) may be located on the leading edge of the island on which the guard booth is located.

iii. Dimensions: Minimum width of 4 feet and minimum length of 10 feet, but in no case shall the building exceed the maximum square footage specified in the Army Standard (AS).

iv. Prohibition of Combining with Other Functions - This function differs from the vehicle ID check guard booth. The pedestrian ID check guard booth function may be combined with other functions.

v. Field of View - Shall provide a 180-degree field of view for guard. Interruptions in lines of sight shall not exceed 11 degrees for a guard sitting or standing at the counter.

vi. Ballistic Rating - As a minimum, shall have a ballistic rating of UL 752 – Level 3 with a higher level being required if prescribed in 'local' threat analyses or policy.

vii. HVAC

a. Required - General Requirements – General requirements pertaining to HVAC can be found in paragraph 3.11 Heating, Ventilating, and Air-Conditioning (HVAC) Requirements of this document.

b. Ballistic Rating

All penetrations of guard booth resulting from incorporation of HVAC shall provide the same level of ballistic resistance as the rest of the guard booth. The roof and floor of the guard booth (to include HVAC penetrations) shall not require ballistic protection unless direct fire trajectory is possible through roof/floor and into the occupied portion of the guard booth.

The guard position shall be separated from pedestrian traffic by ballistic rated materials whether the ballistic rated material is exterior to a facility or interior to a facility.

viii. Material transfer - A 'deal tray' or other device offering a similar level of protection shall be included for transfer of materials (e.g. identification, and/or passes, etc.) between pedestrians and guard personnel. Where pedestrians are outside and materials are transitioning between indoor and outdoor, the deal tray shall be intended for use in the local climate and rated for exterior use.

ix. Energy Policy - Shall adhere to the latest national energy policy unless applicable exemption exists within said policy and can be found in paragraph 2.18. Sustainable Design.

x. Counter - Must include a counter oriented such that a guard is facing pedestrian traffic while seated or standing at the counter.

xi. Provide exterior power outlet sufficient to power hand-held searchlights.

xii. Provide interior power outlet sufficient for radio chargers, and computers, etc.

xiii. Provide active vehicle barrier control console with annunciator, computer workstation, and communications equipment including Local Area Network (LAN), telephone, and Internet connections.

xiv. Communications. Provide a minimum of two (2) means of communications from the facility and with the Central Security Monitoring Station.

xv. Electronic Security.

a. Duress Alarms. Provide duress alarm capability that will annunciate at both the Command and Control and the Central Security Monitoring Station.

b. Intrusion Detection. The entry door(s) is to be equipped with Balanced Magnetic Switches (BMS) for intrusion detection.

xvi. Communication and Security Systems – General Requirements. See paragraph 3.9 Communications and Security Systems.

xvii. Active Vehicle Barrier Controls.

a. Provide emergency-fast-operate (EFO) controls for all active vehicle barriers related to the ACP.

b. Panel is to have LED indicator lights showing whether or not the panel is functional and capable of barrier deployment.

2.4.9. Facility Description

A. The Access Control Point (ACP) must comply with the Department of Army (DA) standards for this facility type. The ACP(s) are required by the DA to provide safe entry to the installation by authorized procedures for vehicles, and/or pedestrian traffic. Both safety and security requirements are primary of the ACP criteria.

B. Facility types may be adapt build (based on approximately 80% level of design), design build (based on specific floor plan) or design/build (based on functional requirements only).

2.4.10. Accommodations

A. Accessibility Requirements

The Visitor Control Center(s), Search Area Building(s) and Pedestrian ID Check (Where those being vetted are inside the facility) are the only ACP facilities that require access by individuals with disabilities. Provide access for individuals with disabilities in accordance with Architectural Barriers Act (ABA) and Americans with Disabilities Act (ADA) Accessibility Guidelines or Host Nation equivalent.

B. Nursing Mother’s Room

Provide Nursing Mothers accommodations in accordance with UFC 1-200-01 DOD Building Code.

Complete ACP renovations or new ACP campus projects shall include nursing accommodations in one of the larger buildings on the ACP campus. A large building will be defined as having equal to or greater than 400 square feet of occupiable space. Renovation projects of existing large buildings shall include nursing accommodations.

New or existing ACP campuses, which include only small buildings, shall provide accommodations for nursing mothers through operational procedures identified and coordinated with the security forces, either on-site, at an adjoining facility, or at a security forces facility. A small building will be defined as having less than 400 square feet of occupiable space, so a Gatehouse, Guard Booth, and Overwatch are all examples of small buildings. When programming renovations or new facilities it will be necessary to account for additional square footage and cost into the programming documents.

2.4.11. Building Areas

GROSS AREA: For each ACP building or structure, provide gross building area as calculated by UFC 3-101-01, "01, "Architecture", Chapter 2 which is the area included within the surrounding exterior walls measured from outside face of wall to inside face of wall.

2.4.12. Hours of Operation

The hours of operation for access control points will depend upon ACP classification. For primary ACPs the hours of operation are typically 24 hours a day, 7 days a week. For secondary ACPs the hours of operation will vary with installation requirements and are generally less than 24 hours a day, 7 days a week. Limited use ACPs are open only for special events, and do not have a fixed schedule.

2.4.13. Ballistic Requirements

Various buildings defined (guard booths, command and control function, and overwatch position, etc.) require design/ construction for ballistic resistance to UL 752-Level 3 or higher. See paragraph 2 SCOPE OF WORK for required ballistic level.

2.4.14. Mandatory Requirements

Floor plans included are considered conceptual, but strongly encouraged to fit mandatory functions into each building. For OCONUS locations dimensions shown shall be considered nominal. Changes are allowed where required for use of metric construction materials.

2.4.15. Facility Goals

A. The objective of the access control facilities is to prevent unauthorized vehicles and where required pedestrians from entering an installation. The access control point needs to be constructed with features that support the effective use of equipment, procedures, and manpower.

B. The technical and functional requirements defined herein are the standard requirements that apply to all (DA) ACP projects and are current with Headquarters U.S. Army Corps of Engineers (HQUSACE) criteria.

C. The ACP is intended to provide a high level of safety while meeting the ACP Standard requirements.

2.4.16. Adapt Build Model

When an Adapt-Build Model is available to use as a basis for design and/or construction, it will be posted on the Center of Standardization (CoS) web site, noted in solicitation documentation, or made available upon request as follows:

CoS Web Site address:

https://mrsi.erdc.dren.mil/cos/nwo/acp/

CoS address:

U. S. Army Corps of Engineers, Omaha District
CENWO-ED-D
1616 Capitol Avenue
Omaha, NE 68102-4901

Attn: CoS Program Manager (Matthew Hebert)

2.4.17. Outside Continental United States (OCONUS)

The requirements for this document have been written primarily around U.S. Standards. For OCONUS applications the following requirements are applicable:

A. Metric units are allowed.

B. Local codes are permitted (except where specifically noted within this document), but) but shall not be less than U.S. requirements.

C. Where there are no local codes, U.S. requirements shall govern.

D. Requirements of the Department of Army Access Control Points Standard Design (ACP-SD).

E. All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (NNFA), and in some instances, bilateral Infrastructure Agreements (BIA). Ensure compliance with the most stringent of any UFC applicable, the SOFA, the HNFA, and the BIA, as applicable.

F. Exceptions to the above requirements include line of sight, ballistic ratings, threat path calculations, anti-terrorism standards and standoff distances included in this document.

2.5. FUNCTIONAL AND OPERATIONAL REQUIREMENTS:

2.5.1. General

A. Functional areas and facilities included in the design of ACP(s) are as listed below.

B. Coordinate the visual appearance and exterior material selections as well with the standards set by the Installation in their respective Installation Design Guide. Address the impact of climate, security and geography appropriately. There may be reasons to control exterior traffic noise from entering the facilities and may require special treatment or Standard Transmission Class (STC) rating on major building components. Provide appropriate and adequate protection from the wind, and wind driven precipitation for doors and entries.

2.5.2. Entry Gate

Entry gate will have the same level of protection as the adjacent perimeter.

A. Signage

i. Type: Entry gate signage shall be as indicated in Section 7.5 of SDDCTEA Pamphlet 55-15 for CONUS locations (to include both Hawaii and Alaska). OCONUS entry gate signage shall conform to host nation criteria for closure/barricading of a normally open roadway lane. In the absence of applicable host nation criteria, the entry gate shall be signed in accordance with the aforementioned criteria.

ii. Retro reflectivity: Entry gate signage shall be red/white retroreflective or illuminated to show the same shape and similar color by both day and night. Retro reflectivity and/or illumination shall be in accordance with the Manual on Uniform Traffic Control Devices

(MUTCD) for CONUS locations (to include both Hawaii and Alaska). OCONUS entry gate signage shall include retro reflectivity and/or illumination in accordance with host nation criteria where such exists. If no host nation criteria exist for retro reflectivity/illumination of barricade signage, then the MUTCD criteria shall be utilized.

B. Impact Resistance

i. Where adjacent perimeter is not vehicle resistant, the fence gate is not required to exceed the kinetic energy mitigation/defeat capabilities of the adjacent perimeter fence.

ii. Where adjacent perimeter is vehicle resistant and vehicle resistant capability of adjacent perimeter is manmade, the fence gate shall match or exceed the kinetic energy rating of the adjacent perimeter fence/wall/barrier. Where the adjacent perimeter anti-ram capabilities are provided by topographic feature, the fence gate shall match or exceed the kinetic energy mitigation/defeat capabilities of the adjacent perimeter. In this case, however, the fence gate is not required to exceed 1,250,000 ft-lbs. of kinetic energy resistance (limit of requirement is K12 equivalent).

C. Remotely Manned Egress Only Vehicle ACPs

i. Shall include an automatic fence gate which is programmed to open when AVB sensors detect egress traffic and will be programmed to close automatically when no vehicles have been detected by the AVB system for a period of 30 seconds. Fencing will connect the fence gate to other fencing or features to preclude circumvention by pedestrians.

2.5.3. Passive Vehicle Barriers

A. Approach Zone

Passive vehicle barriers in the approach zone will begin at the entry gate/perimeter and extend to the access control zone passive vehicle barriers. Transitions between passive vehicle barrier systems shall not represent weak points in the barrier system.

i. Passive Vehicle Barriers will be designed to defeat the kinetic energy associated with the baseline threat and any additional threat identified in ‘local’ threat analyses or policy.

a. Achievable angle and velocity shall be included in such calculations.

b. Kinetic energy calculations must be performed for the baseline threat vehicle as well as any additional vehicles included through mandatory incorporation of ‘local’ threat analyses.

ii. Passive vehicle barriers must be certified or approved in accordance with one of the following:

a. Included on the list of DOD Anti-Ram Vehicle Barriers maintained by the U.S. Army Corps of Engineers (USACE)-Protective Design Mandatory Center of Expertise (PD-MCX),

b. Analysis is not currently an acceptable method of validation.

iii. Capacity (kinetic energy defeat/mitigation capability)

The kinetic energy mitigation capacity of the system shall be capable of defeating the baseline threat vehicle and any additional threat vehicles identified in ‘local’ threat assessment and/or policy.

However, the capacity of the passive vehicle barrier system is not required to exceed 1.25 million ft-lbs of kinetic energy defeat capability unless 'local' threat assessment and/or criteria identifies a threat vehicle in excess of 15,000 pounds and that threat vehicle is capable of approaching the passive vehicle barrier system at a speed and angle resulting in impact energy in excess of the previously mentioned 1.25 million ft-lbs.

The ACP passive vehicle barrier corridor shall be analyzed in segments.

a. Segments will be restricted in length to those locations where the potential impact energy of a threat vehicle on the vehicle barrier system is equal.

b. Segments will break where a change in passive barrier alignment in relation to the ACP roadway differs or the layout of the barriers and roadway differs.

c. Segments will also be broken where any other existing or proposed topography or ACP features in any other way increases or decreases the potential impact energy of a threat vehicles speed or angle of approach prior to impact with the passive vehicle barrier system.

iv. Gaps

The gaps between elements of a passive vehicle barrier system (or between systems) shall not exceed 4 feet where potential angle of impact exceeds 60 degrees and achievable speed (for impact at the 60 degrees or more angles) exceeds 40 miles per hour. The gaps between elements of a passive barrier system (or between systems) where potential velocity and angle of impact do not meet or exceed the threshold identified above shall not exceed 5 feet.

v. Transition

The transition between passive vehicle barrier systems shall not result in weak points. Transitions between barrier systems or types will include measures to ensure that the transition meets or exceeds the kinetic energy mitigation/defeat level of the adjacent barrier systems.

B. Control Zone

Passive vehicle barriers in the access control zone will begin at the termination of the approach zone passive vehicle barriers and extend to the response zone passive vehicle barriers. Transitions between passive vehicle barrier systems shall not represent weak points in the barrier system.

i. Passive Vehicle Barriers will be designed to defeat the kinetic energy associated with the baseline threat and any additional threat identified in 'local' threat analyses or policy.

a. Achievable angle and velocity shall be included in such calculations.

b. Kinetic energy calculations must be performed for the baseline threat vehicle as well as any additional vehicles included through mandatory incorporation of 'local' threat analyses.

ii. Passive vehicle barriers must be certified or approved in accordance with one of the following:

a. Included on the list of DOD Anti-Ram Vehicle Barriers maintained by the U.S. Army Corps of Engineers (USACE)-Protective Design Mandatory Center of Expertise (PD-MCX),

b. Analysis is not currently an acceptable method of validation.

iii. Capacity (kinetic energy defeat/mitigation capability)

The kinetic energy mitigation capacity of the system shall be capable of defeating the baseline threat vehicle and any additional threat vehicles identified in 'local' threat assessment and/or policy.

However, the capacity of the passive vehicle barrier system is not required to exceed 1.25 million ft-lbs of kinetic energy defeat capability unless 'local' threat assessment and/or criteria identifies a threat vehicle in excess of 15,000 pounds and that threat vehicle is capable of approaching the passive vehicle barrier system at a speed and angle resulting in impact energy in excess of the previously mentioned 1.25 million ft-lbs.

The ACP passive vehicle barrier corridor shall be analyzed in segments.

a. Segments will be restricted in length to those locations where the potential impact energy of a threat vehicle on the vehicle barrier system is less than or equal.

b. Segments will break where a change in passive barrier alignment in relation to the ACP roadway differs or the layout of the barriers and roadway differs.

c. Segments will also be broken where any other existing or proposed topography or ACP features in any other way increases or decreases the potential impact energy of a threat vehicles speed or angle of approach prior to impact with the passive vehicle barrier system.

iv. Gaps

The gaps between elements of a passive vehicle barrier system (or between systems) shall not exceed 4 feet where potential angle of impact exceeds 60 degrees and achievable speed (for impact at the 60 degrees or more angles) exceeds 40 miles per hour. The gaps between elements of a passive barrier system (or between systems) where potential velocity and angle of impact do not meet or exceed the threshold identified above shall not exceed 5 feet.

v. Transition

The transition between passive vehicle barrier systems shall not result in weak points. Transitions between barrier systems or types will include measures to ensure that the transition meets or exceeds the kinetic energy mitigation/defeat level of the adjacent barrier systems.

C. Response Zone

Passive vehicle barriers in the Response Zone will begin at the termination of the control zone passive vehicle barriers and extend to the active vehicle barriers. Transitions between passive vehicle barrier systems and active vehicle barriers shall not represent weak points in the barrier system.

i. Passive Vehicle Barriers will be designed to defeat the kinetic energy associated with the baseline threat and any additional threat identified in 'local' threat analyses or policy.

a. Achievable angle and velocity shall be included in such calculations.

b. Kinetic energy calculations must be performed for the baseline threat vehicle as well as any additional vehicles included through mandatory incorporation of 'local' threat analyses.

ii. Passive vehicle barriers must be certified or approved in accordance with one of the following:

a. Included on the list of DOD Anti-Ram Vehicle Barriers maintained by the U.S. Army Corps of Engineers (USACE)-Protective Design Mandatory Center of Expertise (PD-MCX),

b. Analysis is not an accepted method for validation.

iii. Capacity (kinetic energy defeat/mitigation capability)

The kinetic energy mitigation capacity of the system shall be capable of defeating the baseline threat vehicle and any additional threat vehicles identified in 'local' threat assessment and/or policy.

However, the capacity of the passive vehicle barrier system is not required to exceed 1.25 million ft-lbs of kinetic energy defeat capability unless 'local' threat assessment and/or criteria identifies a threat vehicle in excess of 15,000 pounds and that threat vehicle is capable of approaching the passive vehicle barrier system at a speed and angle resulting in impact energy in excess of the previously mentioned 1.25 million ft-lbs.

The ACP passive vehicle barrier corridor shall be analyzed in segments.

a. Segments will be restricted in length to those locations where the potential impact energy of a threat vehicle on the vehicle barrier system is equal.

b. Segments will break where a change in passive barrier alignment in relation to the ACP roadway differs or the layout of the barriers and roadway differs.

c. Segments will also be broken where any other existing or proposed topography or ACP features in any other way increases or decreases the potential impact energy of a threat vehicles speed or angle of approach prior to impact with the passive vehicle barrier system.

iv. Gaps

The gaps between elements of a passive vehicle barrier system (or between systems) shall not exceed 4 feet where potential angle of impact exceeds 60 degrees and achievable speed (for impact at the 60 degrees or more angles) exceeds 40 miles per hour. The gaps between elements of a passive barrier system (or between systems) where potential velocity and angle of impact do not meet or exceed the threshold identified above shall not exceed 5 feet.

v. Transition

The transition between passive vehicle barrier systems shall not result in weak points. Transitions between barrier systems or types will include measures to ensure that the transition meets or exceeds the kinetic energy mitigation/defeat level of the adjacent barrier systems.

2.5.4. Active Vehicle Barriers (AVB)

A. Safety Scheme

The Active Vehicle Barriers and Access Control Point Control System types shall conform to a safety scheme, as identified by Surface Deployment Distribution Command Transportation and Engineering Agency (SDDCTEA). All identified components of the identified SDDCTEA safety scheme will be included.

Major AVB renovation projects will include upgrades to the AVB safety regime which bring the AVB system into conformance with a current SDDCTEA safety scheme.

Remotely Manned Egress Only Vehicle ACPs shall utilize the High Efficiency Presence Detection SDDCTEA safety scheme with the Active Vehicle Barriers being operated in the 'normally deployed' mode. When no egress vehicles are detected by the AVB system the AVB will remain in the deployed position.

B. Security

The active vehicle barrier system selected must be a DOD active vehicle barrier system that has been tested in accordance with State Department STD-02.01 or ASTM F-2656 by an accredited laboratory/test facility and included on the DOD anti-ram vehicle barrier list.

The DOD anti-ram vehicle barrier list can be found on the U.S. Army Corps of Engineers, Protective Design Center website. The list is updated quarterly.

https://www.nwo.usace.army.mil/About/Centers-of-Expertise/Protective-Design-Center/PDC-Library/

Vehicle barrier systems that have demonstrated a vulnerability to a vehicle that falls within the parameter of the baseline threat and/or 'local' identified threat shall not be utilized. The baseline threat includes multiple attempts by the same vehicle (if not captured or rendered inoperable) but does not include a multiple vehicle threat.

C. Active Vehicle Barrier Markings and Delineation

i. The active vehicle barrier type selected will meet the following requirements:

The non-deployed active vehicle barrier shall not result in unsafe roadway or roadside obstructions. Active vehicle barrier shall include retro-reflective material that is visible on both sides of the barrier when the barrier is deployed.

ii. Active vehicle barrier red delineation lighting.

The following does not apply to vehicle barriers behind closed gates (gate marked with retroreflective road closure signage in accordance with MUTCD) and those utilized to close service drives (average traffic of 1 vehicle per day or less). These systems are not required to comply with the 'barrier red delineation lighting' criteria.

Red delineation lighting shall be provided to ensure the active vehicle barrier is clearly visible when the barrier is deployed. All delineation lighting shall be LED and each luminaire shall provide a sustained illumination level of 50 lumina. Active vehicle barrier system shall include the following alternatives:

The active vehicle barrier system shall include red flashing lights facing the direction of the threat vehicle and facing in the direction of vehicles traveling on the roadway. The lighting shall meet the following alternatives.

a. Alternative 1 - Bollard systems must include, as a minimum, one red led light per bollard.

b. Alternative 2a – Plate/wedge barrier systems equal to or greater than 3 feet in width will include, as a minimum, 3 red lights. One will be mounted within 1 foot of each barrier edge, and one will be mounted within 1 foot of barrier centerline.

c. Alternative 2b – Plate/wedge barrier systems less than 3 feet in width will include, as a minimum, 1 red light. One light will be mounted within 1 foot of the barrier centerline.

d. Alternative 3 - Crash beam barrier systems will include, as a minimum, 3 red lights. One will be mounted within 2 feet of the each edge of the driving surface. One light will be mounted within 1 foot of the center of each lane spanned by the barrier.

e. Alternative 4 – Net type barriers are not required to have lighting mounted on the barrier, but mitigation must be provided through use of in-roadway lighting.

f. Alternative 5 - Roadway Lighting (Alternative to barrier mounted red delineation lighting)

Red non-flashing roadway lighting shall be provided in the pavement on both sides of the barrier. A minimum of three shall be provided per lane per side.

D. Site Selection

i. Utility conflicts

Utility conflicts are not justification for modification of DOD active vehicle barrier system.

ii. Drainage

Drainage conflicts are not justification for modification of 'as tested' active vehicle barrier system(s).

iii. Sight distance

Sight distance will conform to the AASHTO Roadside Design Guide. Sight distance is for crest/sag curves and view when lane obstructions are present. OCONUS locations will conform to host nation criteria. If no equivalent host nation criterion exists, the AASHTO Roadside Design Guide shall be utilized.

iv. Roadside Safety/Clear Zones

Many active vehicle barrier systems include components that lie adjacent to the roadway. These components will be evaluated for their impact on driver sight distance.

E. Active Vehicle Barrier and Passive Vehicle Barrier Transitions

i. Foundation Conflicts

The 'as tested' foundation of the active vehicle barrier will not be modified.

ii. Acceptable Gaps

For locations where high-speed impact at significant angle (less than 40 mph and 60 degrees or kinetic energy equivalent) is not achievable, the clear distance between active vehicle barriers and adjacent passive vehicle barriers shall not exceed 5 feet.

For locations where high-speed impact at significant angle (greater than 40 mph and 60 degrees or kinetic energy equivalent) is achievable, the clear distance between active vehicle barriers and adjacent passive vehicle barriers shall not exceed 4 feet.

F. Maintenance:

Maintenance of the AVB system will be considered during the design, construction and selection of AVB systems.

i. During the time that an active vehicle barrier is undergoing maintenance the lane, the barrier signals may stay dark, green or go to red depending upon the safety scheme being

used. The measures taken during the maintenance of an active vehicle barrier shall be similar to that used for temporary lane closure during construction. Signage, marking and other measures will be in accordance with national roadway standards applicable for temporary lane closure. For OCONUS locations relevant host nation criteria related to temporary lane closure shall be utilized. If no applicable host nation criterion exists, the U.S. national standards shall be utilized.

ii. Active vehicle barrier systems should be maintained in accordance with manufacturer's recommendations.

iii. AVB O&M manuals developed by manufacturers often include requirements that are not feasible for the configuration of the access control point. In such cases the requirement will either be mitigated or an alternate product selected.

G. Active Vehicle Barrier Commissioning

i. Commissioning of active vehicle barriers will be in accordance with UFGS 34 75 13.13 "Crash Rated Active Vehicle Barriers and Controls".

ii. The active vehicle barrier system will be commissioned by the U.S. Army Corps of Engineers, Protective Design Mandatory Center of Expertise (PD-MCX) or a representative designated by the PD-MCX.

a. On-site commissioning effort will not take place until after the review of required commissioning related materials (as defined in the aforementioned UFGS) by the PD-MCX.

b. The endurance testing period identified in UFGS 34 75 13.13 may occur during normal ACP operations. However, it will include periodic (at least once daily) operation of the AVB system regardless of whether or not such operation is part of normal ACP operations.

H. Primary and Secondary ACPs

The AVBs will be permanent systems (not portable or transportable).

2.5.5. ID Check Area

A. ID Check Area Islands

i. Design shall provide opportunity for a guard to step out of guard booth onto a flat, relatively level surface or step.

ii. Locations where ID checks occur shall include all likely positions for such operations along and within the ID check island (for lighting and island surface).

B. ID Check Area Canopy

i. Individual canopy columns shall limit field of view from ID check guard booth by no more than 11 degrees. Where automated means include driver use of pedestal mounted credential validation, no canopy feature shall interfere with the view of this pedestal from the related ID check guard booth.

ii. Canopy shall provide 15 feet clear height where ACP use is limited to POVs.

iii. Canopy shall provide 17.5 feet clear height where commercial traffic is allowed.

iv. Canopy shall cover, as a minimum, routinely occupied guard positions and locations where drivers or pedestrians are required to interact with guards or equipment.

v. Foundations for canopy columns shall be raised at least 6" above adjacent surface to prevent corrosion of the steel columns, unless otherwise justified.

vi. Ceiling/underside of canopy roof should include reflective coating to aid light distribution.

vii. Canopy clear height shall include lighting, signage and all other objects or equipment hung from, or projecting from, the canopy.

viii. Provide an open/close visual indicator on the canopy over each lane that is controlled from the ID Check area or Command and Control.

ix. Communication and Security Systems – General Requirements. See paragraph 3.9 Communication and Security Systems.

x. Electrical – General Requirements. See paragraph 3.10 Electrical Requirements for electrical and lighting requirements.

C. Turn-Arounds

i. Definition - Turn-around 'lane' shall be defined as a median opening, widened area or other feature(s) devised to permit an inbound vehicle to move from the ingress to the egress lanes.

ii. Turnaround – For the turn around prior to the ID check the turning movement analysis shall, as a minimum, allow rejection of the largest common commercial vehicle allowed (without special permit) on the public roads near the Access Control Point.

iii. Rejection - For ACPs restricted to POV use; turning movement analysis for the rejection after the ID check shall, at a minimum, allow rejection of the largest POV common to public roadways leading to the Installation. Where commercial vehicles are allowed, turning movement analysis for the rejection after the ID check shall, at a minimum, allow rejection of the largest common commercial vehicle allowed on the public road leading to the Installation.

D. Remotely Manned Egress Only Vehicle ACPs

Do not require ID Check Area features due the absence of inbound traffic. No ID Check Islands or Canopies are required.

2.5.6. Search Area

Assumption must be that the search area will not be open 24/7. Search area lanes must be capable of closure during periods when search area is vacant.

A. Closure of search area lanes shall consist of one of the following:

i. Vehicle blockage - Utilize vehicle blockage to prevent or mitigate the inconspicuous movement of vehicles through the search area when the search area is unmanned. Blockage shall be sufficient to ensure that in the event of attempted circumvention, guards notice/are made aware of an attempted bypass.

ii. Delineation of closure with alarm for ID check location - Alarm annunciation will be audible (above traffic and other background noise) for guards in each ID check guard booth(s), at the command and command-and-control functional area and all areas under

the ID check area canopy where guards may be standing adjacent to inbound lanes conducting validation of credentials. Alarm levels will be 85 – 90 dB interior and 105 – 115 dB exterior to guard booth(s).

iii. Search Area Canopy

a. Canopy shall provide 15 feet clear height where ACP use is limited to POVs.

b. Canopy shall provide 17.5 feet clear height where commercial traffic is allowed.

c. Canopy clear height shall include lighting, signage and all other objects or equipment hung from, or projecting from, the canopy.

d. Canopy shall cover, as a minimum, the search lane(s) routinely occupied guard positions and locations where drivers or pedestrians are required to interact with guards or equipment.

e. Canopy or enclosed facility shall extend a minimum of 4 feet beyond these locations.

f. Ceiling/underside of structure should include reflective coating to aid light distribution.

g. Communication and Security Systems – General Requirements. See paragraph 3.9.

iv. Search Area Enclosed Facility

Where necessary for protection in extreme climatological areas/zones an enclosed facility may be utilized in lieu of a canopy. In locations with both a Search Area Enclosed Facility functional area and Search Area Office functional area, the two functional areas may be combined into one facility.

a. Enclosed Facility shall provide 15 feet clear height where ACP use is limited to POVs.

b. Enclosed Facility shall provide 17.5 feet of clear height where ACP allows commercial traffic.

c. Enclosed Facility clear height shall include the structure itself as well as lighting, signage and all other objects hung from, or projecting from, the underside of the roof structure, doorways, or other facets of the facility.

d. Enclosed Facility shall cover, as a minimum, the search lane(s) and the locations routinely occupied by guards as well as locations where drivers or pedestrians are required to interact with guards or equipment.

e. The inside of the Search Area Enclosed Facility should include a light reflective coating to aid in light distribution.

f. Ventilation of the Enclosed Facility shall be designed in accordance with all relevant standards related to ventilation of enclosed spaces which accommodate motor vehicles.

g. HVAC is required for enclosed occupied spaces (e.g. offices, waiting areas, etc.) within the Search Area Enclosed Facility.

h. HVAC is not normally feasible for the vehicle search bay(s). However, consider the use of radiant heating for northern climates.

i. Provide interior power outlets for offices or other spaces if they are included within the Search Area Enclosed Facility.

j. Provide interior power outlets for the Search Area Enclosed Facility. Outlets must be provided along the periphery of the Facility as well as near each search lane.

k. Provide exterior power outlets near the entry and egress points (both vehicular and pedestrian doors).

l. Provide Electronic Security, Duress Alarms and IDS

v. Search Area Shelter - A search area shelter is required in order to shelter occupants removed from vehicles being searched. This may be accomplished in the search area office (if provided), or in a standalone search area shelter. Consider obscuration in this location such that the search of the vehicle cannot be observed by its occupants.

vi. Inclusion of a Search Area Office – If the ACP will have a significant search area function that will be frequently manned by one or more personnel, a search area office must be considered. Proximity of other facilities must be considered. If no other facility is nearby and/or cannot be used by search area personnel, a search area office is recommended.

vii. Remotely Manned Egress Only Vehicle ACPs – No inbound traffic is allowed and, as a result, no search facilities are required.

2.5.7. Command and Control

A. Functional Location – The command-and-control function will be located in either the Access Control Zone or the Response zone. The location will be conducive to the monitoring of activities at and near the ID check area canopy as well as the rejection path for vehicles being turned away from the ID check area. The location will also allow monitoring of vehicles exiting the search area to ensure that proper actions are taken by those vehicles. For Remotely Manned Egress Only Vehicle ACPs the remote manning location will be considered an extension of the Access Control Zone.

B. Field of View - Shall include a view of the ID check area. View shall be direct if the command-and-control function is located within the control zone. If the command-and-control function is located within the response zone the view of ID check area will be augmented with CCTV where direct view is distant or limited. Remotely manned egress only vehicle ACPs will utilize CCTV to provide the required views. Monitor(s) presenting all required views will be provided for guards in the remote manning location.

C. Ballistic Rating

i. Ballistic rating shall protect against all feasible firing angles achievable from a ground-based attack from a direct fire weapon.

ii. Ballistic rating shall include ceiling/roof protection where the topography or the structures' location provides opportunity for direct fire from an elevated position (when angle is sufficient to impact guard standing and/or sitting at the counter).

iii. When combined with other facilities only the portion of the facility defined as Command and Control and all other areas specifically designated as requiring a ballistic rating shall require a ballistic rating. Under these circumstances, the requirement for a ballistic rating shall include both the exterior walls and the interior walls which separate the command-and-control function from other functional areas.

iv. Shall include, as a minimum, a UL 752 - Level 3 ballistic rating with a higher level being required if prescribed in a local threat analysis or policy.

D. HVAC

i. Requirement - The Command & Control function includes a requirement for ballistic protection. Ballistic rating precludes the feasibility of mechanical ventilation as an alternative to heating or air conditioning.

ii. Both heating and air conditioning shall be provided.

iii. Ballistic Rating - Building envelope penetrations created by HVAC components shall be mitigated to provide the same level of ballistic protection as the structure itself.

E. Provide exterior power outlet sufficient to power hand-held searchlights, and bug zappers etc.

F. Provide interior power outlet sufficient for radio chargers, and computers, etc.

G. Provide active vehicle barrier control console with enunciator, computer workstation, and communications equipment including Local Area Network (LAN), telephone, and Internet connections.

H. Communications. Provide a minimum of two (2) means of communications from the facility and with the Central Security Monitoring Station.

I. Electronic Security. Intrusion Detection. The entry doors to the Command and Control are to be equipped with Balanced Magnetic Switches (BMS) for intrusion detection.

J. Active Vehicle Barrier Controls

i. Provide emergency-fast-operate (EFO) controls for all active vehicle barriers related to the ACP.

ii. Panel is to have LED indicator lights showing whether or not the panel is functional and capable of barrier deployment.

2.5.8. Overwatch

A. The ACP will include an overwatch position in accordance with one of the following alternatives:

i. Overwatch Pad: The Overwatch pad alternative shall include size and pavement section capable of supporting the identified Overwatch vehicle. The minimum vehicle shall be that associated with a High-Mobility Multipurpose Wheeled Vehicle (HMMWV). The Overwatch pad includes Items 4) Location and 6) Communications and Security System below.

ii. Overwatch Facility: The Overwatch Facility alternative includes all the items listed below.

iii. Remotely Manned Egress Only Vehicle ACPs shall include AVB controls, alarm annunciation and other features associated with overwatch at the remote manning location.

B. Dimensions

Dimensions shall be sufficient for movement of guard personnel within the structure.

C. Fighting Position

Design must provide adequate space for movement of a guard and use of both handgun and shoulder fired weapon with gunports.

Gunports shall be provided on each face of the overwatch.

All gunports shall be usable for both handgun and shoulder fired weapons. Gunport design shall not require weapons to be oriented in an unusual way (e.g. gunport being placed immediately above counter and counter interfering with vertical orientation of pistol magazine).

D. Ballistic Rating

Overwatch facility shall include, as a minimum, UL 752- Level 3 ballistic rating.

A higher ballistic rating is required when such is identified during mandatory review of 'local' threat analysis and policy.

Ballistic ratings shall be provided for all walls, glazing, doors and frames.

A ballistic rating is required for the roof and/or floor only if direct fire striking of that surface is possible and the trajectory could result in guard impact.

E. Location

The overwatch position must be located such that it is near the AVBs but within site of the ID Check Area. The overwatch position will be utilized as a fighting position. If the AVBs and/or the ID Check Area are not directly observable, then observation will be supplemented by CCTV.

Remotely manned egress only vehicle ACPs shall utilize wrong way sensors and CCTV and other features to provide remote capabilities similar to an on-site Overwatch position.

F. Protection Against Errant Impact

Provide passive barrier protection for facility if located less than 3 feet behind the face of curb when adjacent to a curbed roadway section.

Provide passive barrier protection for facility if located less than 7 feet from the traveled lane when adjacent to a shouldered roadway section.

G. Communications and Security Systems

i. Active Vehicle Barrier Controls.

a. Provide emergency-fast-operate (EFO) controls for all active vehicle barriers related to the ACP.

b. Panel is to have LED indicator lights showing whether or not the panel is functional and capable of barrier deployment.

c. A full discussion on the requirements on Active Vehicle Barrier Controls can be found in paragraph 3.9 Communications and Security Systems of this document.

ii. Communications. Provide a minimum of two (2) means of communications from the facility and with the Central Security Monitoring Station, when present.

iii. Information Connectivity. Facility shall have LAN connectivity.

iv. Electronic Security. Intrusion Detection. The entry doors to the Overwatch Facility are to be equipped with Balanced Magnetic Switches (BMS) for intrusion detection.

v. CCTV. If the facility does not have a direct visual view of the ID Check Area, then provide necessary connectivity to the CCTV to allow CCTV monitors to be installed.

vi. Electrical Requirements

a. Provide interior power outlets sufficient for radio chargers, and computers, etc.

b. Electrical – General Requirements. See paragraph 3.10 Electrical Requirements.

2.5.9. Primary Spaces (Functional Areas)

A. Visitor Processing: Provide the capability to process visitors. The following elements may be included.

i. Vestibule

The vestibule is a small antechamber between the outer door of a building and an interior door. The vestibule saves energy by not allowing exterior conditions to enter the building. The space is not required to be ballistic rated but may be located in a blast resistant (hardened) building. If blast resistance is required, the wall of the vestibule opposite the door will need to be constructed of reinforced concrete or masonry to stop the door from traveling through the building in the event of a bomb blast.

ii. Waiting Room

The waiting area contains seating for people waiting processing on to the Installation. The space is not required to be ballistic rated.

iii. Processing Room

The processing area is normally an area with casework and cabinets that houses personnel who will verify credentials for temporary access onto the Installation. A counter is normally the only separation between the working personnel and those requiring a vehicle and individual passes. The space is not required to be ballistic rated.

iv. Break Room

The break room is space for eating or recreation of the personnel staffing the access control point. The space may also be used for interrogation of persons of interest. The space is not required to be ballistic rated.

v. Office

The office is a space where the supervisor may be located. The space may be used to perform interviews and appraisals and requires sound deadening materials within the walls to reduce the amount of sound transfer. The space is not required to be ballistic rated.

vi. Provost Marshal/ Military Police

The Marshal/ Military Police occupies office space within the facility. The space may be used to perform interviews of persons of interest and requires sound deadening materials within the walls to reduce the amount of sound transfer. The space may also be used to detain such persons and is required to have a separate exterior entrance to allow detainees to be removed from the building without encountering anyone within the waiting area. The space is not required to be ballistic rated but may be located in a ballistic rated or blast resistant (hardened) building.

vii. ID Check Area Canopy

The ID Check Area Canopy will be a structure that covers the islands of the ID Check Area. The canopy height will be a minimum 15'-0" clear height above the road surface if only automobiles will be using the ACP but will be increased 17'-6" clear height above the road surface if oversize vehicles such as firefighting equipment would need to pass under the canopy. The roof of the canopy can be in any configuration but should be in conformance with the Installation Design Guidance. The canopy structure shall be designed by a registered professional engineer. Less than 11 degrees of obscuration of vision from the Guard Booth shall be maintained.

viii. ID Check Guard Booth

Ballistic resistant guard booths will be installed on islands adjacent to each incoming lane of traffic under the ID Check Canopy for protection of guards performing vehicle/passenger ID checks. Locate Guard Booths on a raised island in the ID Check Area under the ID Check Canopy. Guard booths can be pre-manufactured units. Guard booths are not required to be ABA/ADA compliant. Guard booths shall have sliding doors and a counter.

ix. Search Area Shelter

The search area shelter is a space to house individuals whose vehicles are being searched. The space should hold persons for the short time their vehicle is being inspected. The space should have large windows on the exterior to observe the people within the space and allow the inspectors to observe occupants. The space is not required to be ballistic rated. The function is not normally located in a blast protected building. Depending on installation requirements, this may either be a bus stop type shelter or building.

x. Truck Search Area Canopy

Canopy: The Truck Search Canopy will be a structure that covers the Truck Search Area. The canopy shall be sized for one or more of the largest vehicles expect to enter the Installation. The canopy height will be a minimum 17'-6" clear height above the road surface. The roof of the canopy can be in any configuration but should be in conformance with the Installation Design Guidance. The canopy structure shall be designed by a registered Professional Engineer.

Enclosed Facility: The Truck Search Enclosed Facility will be a structure that encloses the Truck Search Area. The facility shall be sized for one or more of the largest vehicles expected to enter the Installation. The clear height of the facility will be a minimum of 17'-6" above the surface of the roadway. The roof of the facility can be in any configuration but should be in conformance with the Installation Design Guidance.

xi. Passenger Vehicle Search Area Canopy

Canopy: The Passenger Vehicle Search Canopy will be a structure that covers the Passenger Vehicle Search Area. The building shall be large enough to allow the searching of a minimum of two vehicles at a time. The canopy clear height will be a minimum 15'-0" clear above the road surface. The roof of the canopy can be in any configuration but should be in conformance with the Installation Design Guidance. The canopy structure shall be designed by a registered Professional Engineer.

Enclosed Facility: The Passenger Vehicle Search Enclosed Facility will be a structure that covers the Passenger Vehicle Search Area. The facility shall be large enough to allow the search of, as a minimum, two vehicles at a time. The clear height above the road surface will be a minimum or 15'-0". The roof of the facility can be in any configuration but should be in conformance with the Installation Design Guidance.

xii. Command- and- Control

The Command-and-Control area will contain the controls to activate the AVB in the event of an unauthorized vehicle tries to penetrate the installation's perimeter. The Command-and-Control area shall have a clear view of all ID Check area, and if possible, the Search Area Canopies. Due to the function of this area the public will not be allowed to enter the area. Therefore, this function/room is not required to be ABA/ ADA compliant. The function will be protected with ballistic resistant construction.

Remotely Manned Egress Only Vehicle ACPs will meet the requirements of the Command-and-Control Functional Area at a remote location.

xiii. Toilet

Toilets can be unisex units or single sex units, sized in accordance with ABA/ ADA criteria. The toilets shall be handicapped accessible with grab bars, tilted handicapped mirrors, etc. All toilet accessories are to be mounted in accordance with ABA/ ADA criteria unless the toilet is to be operated by only able-bodied personnel. Toilets operated by able bodied personnel shall not be required to meet ABA/ ADA requirements but must follow ABA/ADA to the greatest extent feasible.

xiv. Janitor's Closet/Inside Storage

The room may contain cleaning supplies, mops, a mop rack, mop bucket and a mop sink. Space is not normally ballistic resistant construction.

xv. Outside Storage

The Outside Storage function will house equipment used within the ID Check and Search Area. Equipment may include traffic cones, and mirrors used for vehicle inspection. The building can be a prefabricated storage unit or stick built construction. The building may be located on a raised curb under the ID Check Canopy. The function does not require ballistic protection.

xvi. Electrical/Communications Room

Electrical/ Communications room shall be sized to accommodate all required equipment. This functional space houses communications equipment, telephone equipment, along with space for CCTV equipment racks, and back-up generator equipment, used in the operation of the access control point. Equipment shall be arranged in the facility to maintain individual security and access. Equipment shall be located in secure areas within the facility. Some space may require separate entrances. This functional space also includes mechanical equipment necessary to heat and/or cool the equipment.

xvii. Pedestrian ID Check

The Pedestrian ID Check area occupied by guard personnel shall be ballistic rated. Pedestrian ID Check can be pre-manufactured or stick built construction. The Pedestrian ID Check area occupied exclusively by guard personnel is not required to be ABA/ADA compliant, however any area utilized by pedestrians during the vetting process shall be ABA/ADA compliant. A Pedestrian ID Check functional area with no pedestrian pass-through shall have a single door with a counter. The counter will include a deal tray for the passage of identification, and a speaking port to allow communication between the guard and persons wishing to enter the installation.

xviii. Miscellaneous Functional Elements

The following items may be included:

a. Janitor's Closet/Inside Storage

The space contains cleaning supplies, mops, a mop rack, mop bucket and a mop sink. The space does not require a ballistic rating may be located in a blast resistant building.

b. Recycle Room

The space contains bins for recycled materials. The space does not require a ballistic rating may be located in a blast resistant building.

c. Standalone Storage Building

The facility will house equipment used at the I.D. Check Canopy such as cones, and vehicle inspection mirrors. k The facility does not require ballistic or blast protection.

B. Overwatch Position

i. Overwatch Building

Ballistic resistant Overwatch building installed near the active barrier and providing occupant(s) the ability to oversee response zone traffic and operations at the ID Check Area. The Overwatch building may be a pre-manufactured unit or stick built. The Overwatch building is not ABA/ADA compliant. The Overwatch building is a fighting position and shall be equipped with gunports to allow for the occupant to respond to inbound threats. Overwatch building shall have a 360 degree360-degree field of view.

ii. Overwatch Pad

A paved pad designed to accommodate at a minimum one High-Mobility Multipurpose Wheeled Vehicle (HMMWV). This pad includes a pedestal for AVB controls.

2.5.10. Combinations/Square Foot Limitations for Various Functional Areas

The following represent standard designs for both functional areas and combinations of functional areas. Square footage limitations for these designs are listed in the Army Standard. Other functions may be combined even though it might not be addressed in the Army Standard or this document.

A. Gatehouse - Includes command and control, toilet, janitor's closet/inside storage, outside storage, mechanical/ electrical room and communications room. Ooutside storage is optional.

B. Command and Control - Includes command and control, toilet, janitor's closet/inside storage, and a mechanical/electrical room.

C. Toilet Small Search Building –Includes office, break room, toilet, janitor's closet/inside storage, mechanical/electrical room, communications room, and outside storage.

D. Large Search Building –Includes processing room, waiting room, provost marshal room, break room, toilet, janitor's closet/inside storage, mechanical/electrical room, communications room, and outside storage.

E. ID Check Canopy – Varies with the number of lanes.

F. Passenger Vehicle Search Area Canopy or Enclosed Facility – Varies with the number of lanes and configuration.

G. Truck Search Area Canopy or Enclosed Facility – Varies with the number of lanes and configuration.

H. Two (2) Processor Visitor Control Center – Includes waiting and processing room, vestibule, toilet, janitor's closet, break room, mechanical/electrical room, and communications room.

I. Three (3) and Six (6) Processor Visitor Control Center – Includes waiting room, processing room, vestibules, janitor's closet, toilets, break room, office, dedicated provost marshal room, mechanical/electrical room, and communications room.

J. Nine (9) Processor Visitor Control Center – Includes waiting room, processing room, vestibules, toilets, break room, office, dedicated provost marshal room, janitor's closet, storage room, mechanical/electrical room, and communications room.

2.6. SITE FUNCTIONAL REQUIREMENTS

2.6.1. General

A. Location and construction of the new facilities including associated structures, roads, parking, and utilities and landscaping shall be as indicated and as specified herein. All site layout changes are subject to review and approval by the Government. Government supplied site plans are provided to assist the Contractor in the preparation of their proposal and design. Any errors identified shall be brought to the attention of the Contracting Officer immediately for resolution and direction. Take all professionally prudent and reasonable actions to verify the accuracy of the data provided. The Contractor is responsible for final site plans.

B. Installation Physical Security and Antiterrorism requirements that are in addition to the requirements of this section will be included in a separate document. [RFP Wizard: See Part 3 for any additional security requirements required by the installation Physical Security and Antiterrorism including the requirements in this section.]

C. Visitor Control Center

i. The Visitor Control Center (VCC), if present, shall be placed such that the processing of visitors is done prior to entry into the Installation. This shall mean that the visitor vetting is conducted prior to inbound traffic (vehicular and pedestrian) reaching the ID check and search area.

ii. The VCC parking and driveway shall not provide undetected bypass of the ID check area.

D. ID Check Area

i. The ID check area shall be configured in a manner that allows ID check guards to be aware of all inbound vehicle and pedestrian traffic.

E. Overwatch Position

i. The overwatch position is both a location for overwatch and a potential fighting position. As such it shall be located in a position where a guard within the structure has some ability to defend the Installation from a potential threat in the ACP response zone.

ii. Overwatch firing ports will be oriented to allow guards to fire from all sides of the position. Specific consideration will be given to the most likely threat locations. This shall include the response zone near the final denial active vehicle barriers.

F. Search Area

i. Search area(s) shall present the opportunity for vehicles to be designated for search prior to the ID check and must also support search for those vehicles selected for search at the ID check location.

ii. The search area must not provide opportunity for undetected bypass of the ID check area. The design will not be based on the search area being in operation during the entire time that the ACP is open. During closure the design must anticipate search area being unmanned at times and vehicle resistant measures and/or alarm and annunciation provided for ID check guards if a vehicle travels through toward the search area when it is closed.

2.6.2. Parking

A. Vehicle Parking

i. Provide clear and convenient traffic flow through and around the ACP parking areas and access drives that maximizes functional capabilities but minimizes traffic conflicts. If required coordinate inter-modal traffic within the ACP site.

ii. Provide sufficient parking spaces for the anticipated number of visitors and personnel at the ACP. See Military Surface Deployment and Distribution Command, Transportation Engineering Agency (SDDCTEA) Pamphlet 55-15 for the methodology to be used in determining the number of visitor parking spaces required. Provide ramps serving the handicapped spaces for access.

iii. Privately Owned Vehicle (POV) parking is to be off-street parking. Area lighting and landscaping is to reinforce the parking area while meeting functional and safety requirements. Pavement markings shall comply with MUTCD. [RFP Wizard: Minimum flexible and concrete pavement thickness and pavement calculations shall comply with the installation design guide and any additional requirements identified in Part 3.]

2.6.3. Access Roadways, Drives and Islands

A. Roadways and Access Drives: Design roadways to accommodate expected vehicles in the design, including, but are not limited to, passenger cars, emergency vehicles, garbage trucks, fire trucks, military vehicles, delivery service, utility vehicles, commercial vehicles and bicycles if present. The minimum roadway width in the approach and response zones is 11 feet. The minimum roadway width at the ID Check Area is 10 feet, but 11-12 feet is preferred. All roadway horizontal and vertical alignments must properly address the turning radius of the design vehicle(s). Pavement design shall follow the UFC or other approved methods. Host nation methods for determining concrete pavement section may be utilized where present. If no such documentation exists, the aforementioned minimum applies. [RFP Wizard: Minimum flexible and concrete pavement thickness and pavement calculations shall comply with the installation design guide and any additional requirements identified in Part 3.]

B. Devices in Pavements: Devices installed in the roadway surface will be rated for exterior use and will be installed in a manner which resists or avoids impact by snowplows. Housings for such devices will be metal capable of resisting corrosion. Recess devices where necessary to avoid snowplow impact.

C. ID Check Area Islands: Traffic islands in the ID Check Area are to be, at a minimum, 10 feet in width. Medians at the ID Check Area shall be a minimum of 10 feet in width.

D. ID Check Area Hardstand: ID Check Area will consist of a concrete hardstand extending a minimum of 3 feet before and after the ID Check Islands and canopy.

2.7. SITE AND LANDSCAPE REQUIREMENTS

2.7.1. Site Structures

A. Dumpsters: Dumpsters are not a requirement of the Army Standard Design, but maybe incorporated at the request of the installation.

i. Provide concrete pads and dumpster screen wall enclosure. Ensure minimum UFC 4-010-02 “DoD Minimum Antiterrorism Standoff Distances for Buildings” between the building and dumpster location is complied with. Construct the screen wall enclosures of materials to match the new facility exterior walls. Coordinate color with the installation. Integrate a gate keeper capable of holding the entry gate(s) in an open position and a locking mechanism into the entry gate design consistent with DA fence requirements.

ii. Coordinate with the Installation on the required recycling dumpsters (or storage containers). Collocate, but separate recycling dumpsters (or containers) with the dumpsters and screened as per dumpsters.

2.7.2. Landscaping/Hardscaping

A. Landscaping:

i. Lines-of-Sight

a. Landscaping shall not obscure lines of sight. Lines-of-sight shall be determined by the mature growth of trees and other plantings. Provide clear lines of sight between guards and the following functions:

b. Vehicle ID Check Guard Booth guards view of vehicle and driver during the vetting process will not be obstructed.

c. Pedestrian ID Check guards view of pedestrian being processed will not be obstructed.

d. Overwatch position view of ID Check Area.

e. Command and Control view of ID Check and Search Area exits.

f. Landscaping shall not infringe on sight distance for drivers. Sight distance shall bas defined in the AASTHTO Green Book (or applicable host nation criteria). If the specific issue of sight distance is not addressed by host nation criteria the AASHTO documentation shall be utilized.

ii. Make selection of landscape materials from among species well adapted to the region and consider maintenance requirements. Focus landscaping concepts on desirable environmental effects such as windbreaks, shade, and screening of undesirable views and definition of desirable enclosed areas.

iii. The landscaping plan is also to consider the irrigation requirements. Ideally, the selected species are to be native and drought resistant such that a permanent irrigation system is not required. In the event that a permanent irrigation system is required, include as a minimum, a backflow prevention and pop-up or drip type sprinkler heads.

B. Sidewalks: Provide an ample functional system of walks connecting structures, parking area(s), street(s), and other sidewalk(s) as pedestrian traffic demands. In addition, review paths of travel to determine a layout of sidewalks that is sufficient to meet the likely paths of travel. Slopes of all sidewalks are required to meet all requirements for ADA Accessibility Guidelines (ADAAG). Pedestrian sidewalks are to be a minimum of 6 feet wide and 10 feet wide for those anticipated to have bidirectional bicycle traffic. Construct pedestrian sidewalks of Portland Cement Concrete having a minimum 3,000 psi compressive strength. Conformance with Architectural Barriers Act

(ABA) is also required. Host Nation methods for determination of concrete section and strength may be utilized.

2.7.3. Site Design Requirements

For all site design requirements, excluding line-of-sight requirements, Host nation criteria may be used in lieu of the contents of this section. Use the requirements described in this section, if host nation criteria does not specifically address any of the features described herein.

A. Grading:

   i. Provide positive drainage for all areas and use existing drainage ways to the extent possible. It is desirable to direct drainage away from buildings to curb and gutter or road ditches. Avoid swales between buildings and parking areas, if possible. Grade parking areas such that storm water is directed off to the sides, with curbs and gutters to control drainage, and not down the center of the parking area, where possible. Balance earthwork to the extent possible without compromising the design. Keep the number of existing trees to be removed to a minimum. No grading is to be done within drip lines of existing trees to be preserved.

   ii. Design grading such that visual lines of sight are maintained throughout the ACP corridor between the major functional areas (Gatehouse, active vehicle barriers, Guard Booths, Search Area Building, Visitor Control Center, Vehicle Search Area, ID Check Area, etc.).

   iii. Comply with AASHTO Green book for vertical roadway profiles.

B. Line of Sight: Individual obstructions, to include canopy columns, shall not cause more than 11-degree interruption of line of sight of the inbound lanes (in both directions – both upstream and downstream) from vehicle ID Check guard booths and other routinely occupied vehicle ID Check guard locations.

C. Adjustment of Existing Structures: Adjust all manholes, valve boxes, or inlets of any nature within the project that do not conform to the finished grade in either surfaced or unsurfaced areas to the finished grade. Where inlets, manholes, or valve boxes fall within a surfaced or unpaved roadway or parking, remove the existing frames and cover and replace with a heavy-duty frame and cover. Adjust the structure as needed to fit the new conditions. Provide structures of a type suitable for the intended use and conforming to the requirements of the applicable sections herein.

D. Sidewalks: Provide concrete sidewalks with a transverse grade of 2 percent. The maximum longitudinal sidewalk grade adjacent to the roadway shall be less than or equal to the adjacent roadway grade. Sidewalks without railings shall have a maximum grade not to exceed 5 percent. Sidewalks with handrails and landing shall have a maximum slope of 8.333 percent (1V:12H) slope with 5 feet level landings at 30 feet maximum spacing and at the top and bottom of the slope. See Uniform Federal Accessibility Standards for additional requirements.

E. Stairs: Avoid the use of stairs in sidewalks whenever possible, this is especially important throughout the ACP. When stairs are unavoidable, they should have at least three risers and shall be provided with handrails. Provide all steps within a stair to have a uniform tread width and riser height. Provide risers with a height of 4.5 to 6 inches and treads with a width of 12 to 17 inches. Treads should slope 2 percent for positive drainage. Keep the height between landings to a maximum of 5 feet to allow a view of the next higher landing whenever possible. The height between landings is not to exceed 12 feet. Provide landings that are at least 4 feet long.

F. Transverse Parking Area Grades:

i. Desirable minimum of 2 percent.

ii. Absolute minimum of 1.5 percent for flexible pavement and 1 percent for rigid pavement.

G. Longitudinal Parking Area Grades: Maximum of 5 percent.

H. Road and Street Longitudinal Grades: Preferred maximum longitudinal road and street grades of 5 percent. Use of longitudinal road and street grades greater than 7 percent shall not be used.

I. Ramp Grades:

i. Desirable maximum of 7 percent.

ii. Absolute maximum of 10 percent for short distances only.

J. Gutter Grades:

i. Desirable minimum of 0.8 percent.

ii. Absolute minimum of 0.5 percent.

K. Building Floor Elevation: Set building finished floor elevation to ensure that the required minimum and maximum grades are met. Construct first floor of new buildings a minimum of 1 foot above the 100-year flood plain elevation, if applicable.

L. Grades Away from Building:

i. Minimum Soil Grade: 5 percent for 10 feet.

ii. Maximum Soil Grade: 10 percent for 10 feet.

iii. Sidewalk or Paved Grade: Preferred is 2 percent, maximum is 4 percent, and this shall be subject to approval by the Contracting Officer. This is especially important where sidewalks transition between the buildings and adjacent roadways or drives that have vehicle traffic.

M. Overlot Grades:

i. Minimum 1 percent for cohesionless sandy soils.

ii. Minimum 2 percent for cohesive soils or turfed areas.

iii. Side slopes for ditches, roads, and other turfed areas shall be no steeper than 3 Horizontal to 1 Vertical (3H:1V), preferred is 4 Horizontal to 1 Vertical (4H:1V). A 10-foot-wide shelf shall be constructed every 15 feet in elevation change on all cut and fill slopes. Retaining walls are an option to limit the amount of cut and fill.

N. Ditches: Grade ditches at non-erodible slopes or line the ditch with an appropriate material to prevent erosion. Use a design storm with a return period of at least 10 years to determine erodibility of ditches and swales. Provide the depth of ditches along pavement shoulders such that the water surface from the 10-year design storm is below pavement subbase and base courses which daylight through the adjacent shoulder.

O. Storm Drainage System: Comply with host nation requirements for storm drainage requirements. If no applicable host nation requirement exists, comply with UFCs requirements. Comply with the appropriate UFCs requirements for design, construction and material specified for storm drainage installation. State’s DOT requirements maybe used with Government approval. Use reinforced concrete pipe (RCP) with watertight joints for all storm drainage lines constructed under road, parking area and or surfaces subject to vehicular traffic.

P. Canopy Stormwater Drainage System: All drainage from canopy roofs shall be collected and either discharged into a storm drain system or onto non-paved areas with positive drainage. Roof drainage shall not be discharged onto islands, pavements, sidewalks, or any other areas that people or vehicles regularly access.

Q. Building Stormwater Drainage System: Stormwater from building roofs shall be collected and will be either discharged into a subsurface stormwater drainage system or onto non-paved areas in areas unlikely to be accessed by guard personnel or pedestrians. Provide positive slope away from facilities, roadways, sidewalks and other areas that may be accessed by pedestrians or vehicles.

R. Asphalt Pavement: Provide asphalt aprons, roads and parking areas per project requirements. Construct the asphalt areas with concrete curb and gutter at the project specific locations.

S. Concrete Pavement: Provide concrete pavement per project specific. Construct the concrete pavement with the curb type at project specific locations, minimum 6 inches high.

T. Traffic Signage, Pavement Markings and Striping: Provide traffic signage, pavement marking and striping for all roads and parking areas. Design signage, pavement markings and striping in accordance with MUTCD for Streets and Highways. Provide retro-reflectorized signs according to the minimum requirements of ASTM D 4956-07e1, Type III sheeting. Provide non-reflectorized paint for parking areas. Stripe roads and streets with reflectorized paint.

U. Exterior Signage: To be in accordance with installation requirements.

2.7.4. Minimum Anti-terrorism Standards for ACP Buildings

A. General

ACP structures shall be sited, designed and constructed in accordance with the minimum requirements of UFC 4-010-01, “DoD Minimum Antiterrorism Standards for Buildings”. Facilities which are, by occupancy, considered “inhabited structures”, per the criteria, which cannot be sited to meet conventional construction standoff distance requirements from threats, shall be designed as hardened facilities.

B. Standoff

Shall be in accordance with UFC 4-010-01” Minimum Antiterrorism Standards for Buildings.”

Standoff shall consider a moving vehicle threat scenario within the ACP corridor.

The element of UFC 4-010-01 that has the most significant impact on project planning is providing protection against explosives effects. That protection can either be achieved using conventional construction (including specific window requirements) in conjunction with establishing relatively large standoff distances to parking, roadways, and installation perimeters or through building hardening, which will allow lesser standoff distances. Even with the latter, the minimum standoff distances cannot be encroached upon. These setbacks will establish the maximum buildable area. All standards in Appendix B of UFC 4-010-01 must be followed. In addition to the UFC cited in this paragraph UFC 4-020-02FA, (2005) “Security Engineering: Concept Design”; UFC 4-020-03FA, (2005) “Security Engineering: Final Design”; UFC 4-020-04FA, (2005) “Electronic Security Systems: Security Engineering”; and UFC 4-021-01 “Design and O&M Mass Notification Systems” apply to the facility.

C. Visitor Control Center (VCC) and Multi-Function Building Combination

VCC Standard design facilities and multi-function building combinations where occupancy level is greater than 11 persons may necessitate standoff in compliance with UFC 4-010-01 depending on site placement of these facilities.

2.8. ARCHITECTURAL REQUIREMENTS:

2.8.1. General Requirements

The requirements below include both separate functional requirements and example combination of functional requirements, where identified.

A. Two (2) Processor Visitor Control Center (See drawings)

Visitor Control Center shall have occupancy under 11 persons and shall be considered an unoccupied facility and is not required to have blast resistant construction. The facility is non-ballistic rated construction. This Visitor Control Center contains, but not limited to, the following:

i. Waiting and Processing: Provide seating for visitors. The processing area will contain casework for processing operations.

ii. Vestibule: Provide exterior and interior vestibule doors with panic hardware.

iii. Toilet: Provide privacy lockset.

iv. Break Room/Provost Marshal Room: Provide passage latch set. Provide at least STC 45 sound rated walls. Provide a microwave and refrigerator. Verify if arms storage or personal lockers are required. Separate exterior door will be provided to allow the removal of arrested individuals, exterior door to have no exterior trim.

v. Mechanical/ Electrical room: Provide entry doors with locksets (coordinated keying with installation groups responsible for maintenance and operation).

vi. Communications room: Provide entry doors with locksets (coordinate keying with installation groups responsible for maintenance and operation).

vii. Janitor's Closet: Provide mop sink and mop holder with shelf.

B. Three (3) Processor Visitor Control Center (See drawings)

The Visitor Control Center is non-ballistic rated construction but may require blast rated construction based on stand-off distance (for hardened structures). This Visitor Control Center contains, but not limited to, the following:

i. Waiting Room: Provide seating for visitors.

ii. Processing Area: Provide raised flooring with ramp access and, if feasible, stair access. The processing area will contain casework for processing operations.

iii. Vestibules: Provide exterior and interior vestibule doors with panic hardware.

iv. Toilets: Provide privacy lockset.

v. Break Room: Provide latch set. Provide a microwave and refrigerator. Provide space for recycling receptacle. Verify if arms storage or personal lockers are required.

vi. Office: Provide office lockset. Provost Marshal Room: Provide office lockset on interior door. Provide at least STC 45 sound rated walls. Separate exterior door will be provided to allow the removal of arrested individuals, exterior door to have no exterior trim.

vii. Mechanical/ Electrical room: Provide entry doors with locksets (coordinated keying with installation groups responsible for maintenance and operation).

viii. Communications room: Provide entry doors with locksets (coordinate keying with installation groups responsible for maintenance and operation).

ix. Janitor's Closet: Provide mop sink and mop holder with shelf.

C. Six (6) Processor Visitor Control Center (See drawings))

The Visitor Control Center is non-ballistic rated construction but may require blast rated construction based on stand-off distance (for hardened structures). This Visitor Control Center contains, but not limited to, the following:

i. Waiting Room: Provide seating for visitors.

ii. Processing Area: Provide raised flooring with ramp access and, if feasible, stair access. The processing area will contain casework for processing operations. Vestibules: Provide exterior and interior vestibule doors with panic hardware.

iii. Vestibules: Provide exterior and interior vestibule doors with panic hardware.

iv. Toilets: Provide privacy lockset.

v. Break Room: Provide latch set. Provide a microwave and refrigerator. Provide space for recycling receptacle. Verify if arms storage or personal lockers are required.

vi. Office: Provide office lockset.

vii. Provost Marshal Room: Provide office lockset on interior door. Provide at least STC 45 sound rated walls. Separate exterior door to allow the removal of arrested individuals, exterior door to have no exterior trim.

viii. Mechanical/Electrical room: Provide entry doors with locksets (coordinated keying with installation groups responsible for maintenance and operation).

ix. Communications room: Provide entry doors with locksets (coordinate keying with installation groups responsible for maintenance and operation).

x. Janitor's Closet: Provide mop sink and mop holder with shelf.

D. Nine (9) Processor Visitor Control Center (Drawing Not Included)

The facility is non-ballistic rated construction but may require blast rated construction based on stand-off distance (for hardened structures). This Visitor Control Center contains, but not limited to, the following:

i. Waiting Area: Provide seating for visitors.

ii. Processing Area: Provide raised flooring with ramp access and, if feasible, stair access. The processing area will contain casework for processing operations.

iii. Vestibules: Provide exterior and interior vestibule doors with panic hardware.

iv. Toilets: Provide privacy lockset.

v. Break Room: Provide latch set. Provide a microwave and refrigerator. Provide space for recycling receptacle. Verify if arms storage or personal lockers are required.

vi. Office: Provide office lockset.

vii. Provost Marshal Room: Provide office lockset on interior door. Provide at least STC 45 sound rated walls. No ballistic protection required. Separate exterior door to allow the removal of arrested individuals, exterior door with no exterior trim.

viii. Mechanical/Electrical room: Provide entry doors with locksets (coordinated keying with installation groups responsible for maintenance and operation).

ix. Communications room: Provide entry doors with locksets (coordinate keying with installation groups responsible for maintenance and operation).

x. Janitor's Closet: Provide mop sink and mop holder with shelf.

xi. Storage Room: The space will be for dedicated storage. Provide standard utility space lockset.

E. ID Check Canopy (See drawings)

The ID Check Canopy will be a roof structure supported by columns that covers the islands and entry lanes of the ID Check Area. It is desirable to clad the structural members and provide soffits to the underside of the structure to prevent birds from nesting on the exposed legs of the steel beam flanges.

F. Vehicle ID Check Guard Booth (See drawings)

Ballistic rated construction. Provide 360-degree field of view. Provide two sliding ballistic rated doors with hardware. Provide at least 32-inch-deep stainless-steel countertop. Roof requires ballistic rating only where direct fire threat is possible from an elevated position.

G. Search Function Bus Shelter

The three-sided or four-sided glass and aluminum pre-manufactured bus shelter will have a wood or metal bench and doors, where needed. Bus shelter size may vary with search area traffic volume and manufacturer provided. Glazing shall be clear to allow guards to maintain visual contact with persons whose vehicle is being inspected. Ballistic rated construction is not required.

H. Small Search Area Building(s) (See drawings)

The Small Search Area Building(s) will be located adjacent to the Vehicle Search Area(s) to support the Search Area guards in performing their activities by providing a space for vehicle occupants to go during the vehicle inspection process. The Enclosed Search Area Facility will include additional CCTV to mitigate the loss of direct line of sight from other areas within the ACP Control Zone. The building will be designed and constructed to be Architectural Barriers Act (ABA) and Americans with Disabilities Act (ADA) Accessibility Guidelines compliance. Ballistic rated construction is not required. The Small Search Area Building contains, but not limited to, the following:

i. Waiting room/Office: Provide door with entry door hardware. Provide seating for visitors.

ii. Break room: Provide latch set and a microwave and refrigerator.

iii. Toilet: Provide privacy lockset.

iv. Janitor's Closet/Inside Storage: Provide standard utility space lockset. Provide mop sink and mop holder with shelf.

v. Communications Room: Provide entry doors with locksets (coordinated keying with installation groups responsible for maintenance and operation).

vi. Mechanical/ Electrical room: Provide entry doors with locksets (coordinate keying with installation groups responsible for maintenance and operation).

vii. Outside Storage: Provide entry door with locksets.

I. Large Search Area Building (See drawings)

The Large Search Area Building is located adjacent to the Vehicle Search Area to support the Search Area guards in performing their activities by providing a space for vehicle occupants to go during the vehicle inspection process. The Enclosed Search Area Facility will include additional CCTV to mitigate the loss of direct line of sight from other areas within the ACP Control Zone. The building will be designed and constructed to be Architectural Barriers Act ABA and Americans with Disabilities Act (ADA) Accessibility Guidelines compliant. At OCONUS locations host nation accessibility criteria may be utilized in lieu of ABA/ADA requirements. If no host nation criteria exists, the project will comply with ABA/ADA. Ballistic rated construction is not required for this facility. The Large Search Area Building contains, but not limited to, the following:

i. Optional X- Ray/Metal Detector: Provide a pair of doors with panic hardware on active leaf and lever action flush bolts on inactive leaf.

ii. Office/Provost Marshall Room: Provide interior door with office lockset. Provide separate exterior door to allow the removal of arrested individuals and make it have an entry door lockset.

iii. Toilet: Provide privacy lockset.

iv. Visitor Processing:Two (2) processors with office door with office lockset.

v. Break Room: Provide latch set and a microwave and refrigerator.

vi. Outside Storage: Provide entry door with utility room lockset.

vii. Mechanical/ Electrical room: Provide entry doors with locksets (coordinated keying with installation groups responsible for maintenance and operation).

viii. Communications room: Provide entry doors with locksets (coordinate keying with installation groups responsible for maintenance and operation).

ix. Janitor’s Closet/Inside Storage: Provide standard utility space lockset. Provide mop sink and mop holder with shelf.

x. Waiting room: Provide seating for visitors.

J. Truck Search Area Canopy (See drawings)

Canopy: The Truck Search Canopy will be a structure that covers the Truck Search Area. The roof of the canopy can be in any configuration, must conform with the Installation Design Guide. The canopy structure shall be designed by a registered Professional Engineer. Screening of search operations from casual observation should be considered. The structure may include screen walls as part of the canopy design.

Enclosed Facility: The Truck Search Enclosed Facility will be a structure that encloses the Truck Search Area. The roof of the facility can be any configuration that conforms to the Installation Design Guide. This facility shall be designed by a registered Professional Engineer. The Enclosed Facility may not require additional measure to screen from casual observation; however, it should still be considered during planning and design.

K. Passenger Vehicle Search Area Canopy (See drawings)

Canopy: The Passenger Vehicle Search Canopy will be a structure that covers the Passenger Vehicle Search Area. The roof of the canopy can be in any configuration, must conform with the Installation Design Guide. The canopy structure must be designed by a registered professional engineer. Screening of search operations from casual observation should be considered. The building may include screen wall(s) as part of the canopy design.

Enclosed Facility: The Passenger Vehicle Search Enclosed Facility will be structure that encloses the Passenger Vehicle Search Area. The roof of this facility can be of any configuration that conforms to the Installation Design Guide. This facility shall be designed by a registered Professional Engineer. The Enclosed Facility may not require additional measure to screen from casual observation; however, it should still be considered during planning and design.

L. Command-and-Control Function/Room

The Command-and-Control functional area will enable guards' oversight of the ID Check and Search Areas and will contain the master controls to activate the AVB in the event of an unauthorized vehicle tries to penetrate the ACP. The facility must have a 180-degree un-obstructed view. Areas not directly observable from the Command and Control can be monitored by closed circuit television (CCTV). Due to the function of the building, the public will not be allowed to enter therefore the facility is not required to be ABA/ADA compliant. All areas shall be ballistic rated. Roof requires ballistic rating only where direct fire threat is possible from an elevated position. The room is not required to be blast resistant. Casework provided in this function must be at least 2’ 6” in depth.

M. Gatehouse (See drawings)

Gatehouse shall be located to allow guards to observe and oversee the Identification (ID) Check Area, the exits from search areas, and must have a 180-degree un-obstructed view. Areas not directly observable from the Command-and-Control room can be monitored by closed circuit television (CCTV). A control panel for the Active Vehicle Barrier (AVB) will be located in the Command-and-Control room of the building and will activate the AVB in the event of an unauthorized vehicle tries to penetrate the ACP. The Gatehouse will be located on a raised island immediately after the last turn-around past the ID Check Canopy. Due to the function of the building the public will not be allowed to enter the building so therefore the facility will not be required to be ABA/ADA compliant. Spaces occupied by guard personnel shall be ballistic rated. Roof requires ballistic rating only where direct fire threat is possible from an elevated position. The facility is not designed to be blast resistant. A break room that provides personal storage may replace, or be combined with, inside storage or replace outside storage depending on user requirements. Also consider the addition of a small break room, especially when the gatehouse is located in a remote area.

i. Command and Control function: Provide ballistic resistant walls, windows and exterior doors with front door locksets. Roof requires ballistic rating only where direct fire threat is possible from an elevated position.

ii. Toilet: Provide privacy lockset. Provide a base cabinet with the sink to house equipment such as a water heater and miscellaneous supplies, if desired by users. This is recommended to be accessible directly from the Command-and-Control Room only.

iii. Janitor’s Closet/Inside Storage: Provide standard utility space lockset. Provide a mop sink and mop holder with shelf.

iv. Mechanical/Electrical room: Provide entry doors with locksets (coordinated keying with installation groups responsible for maintenance and operation).

v. Outside Storage (Optional): Provide entry door with locksets.

vi. Communications room: Provide entry doors with locksets (coordinate keying with installation groups responsible for maintenance and operation).

N. Standalone Toilets

Toilets can be single units or twin single units combined in a single building. The toilets when required to be ABA/ADA accessible shall be handicapped accessible with grab bars, tilted handicapped mirrors, etc. All toilet accessories are to be mounted in accordance with ABA/ADA criteria. At OCONUS locations host nation accessibility criteria may be utilized in lieu of ABA/ADA requirements. If no host nation criteria exists, the project will comply with ABA/ADA. Provide privacy lockset. No ballistic or blast protection is required.

O. Standalone Storage

The Standalone Storage will house equipment used within the ID Check and Search Areas. Equipment may include traffic cones, and mirrors used in vehicle inspection. The building can be a prefabricated storage unit or stick built construction. The building can be located on an island under the ID Check Canopy if the required field of view is maintained. Provide utility lockset. No ballistic or blast protection is required.

P. Communications with Mechanical/ Electrical Equipment Building (Standalone Building)

The facility will house electrical and Communications equipment. The mechanical and electrical equipment area will house heating and cooling equipment for the building. The building will contain CCTV equipment racks, Duress, AVB, AIE, IDS and other electrical equipment necessary for the operation of the ACP.

i. Communications: Provide entry doors with locksets (coordinated keying with installation groups responsible for maintenance and operation). No ballistic or blast protection is required.

ii. Mechanical room: If required, provide entry doors with locksets (coordinate keying with installation groups responsible for maintenance and operation). No ballistic or blast protection is required.

iii. Electrical room: If required, provide entry doors with locksets (coordinate keying with installation groups responsible for maintenance and operation). No ballistic or blast protection is required.

Q. Pedestrian ID Check

Ballistic rated construction. Provide 360-degree field of view. Provide sliding ballistic rated doors and hardware. Provide a countertop. Countertop to have deal tray for passing identification cards. Provide a ballistic rated speaking portal. Roof requires ballistic rating only where direct fire threat is possible from an elevated position. If acting as a Pedestrian ID Check Entrapment area for a combined facility, see the desired facility combination example for additional information.

R. Overwatch Building

The Overwatch Building will be a pre-manufactured or stick built unit. Overwatch shall have a single door and a minimum of 24-inch-deep stainless-steel counter. Ballistic rated construction for walls and windows is required. Provide 360-degree field of view for the overwatch. Provide single ballistic rated door with

hardware. Gun ports to be provided on all sides of the building. If there is substantial thickness to walls, such as a CMU wainscot veneer, the gunports need to be increased in size to accommodate the maneuverability of the gun and the personnel for aiming. Roof requires ballistic rating only where direct fire threat is possible from an elevated position.

2.8.2. Examples of Combinations of Facilities

See Army Standard for guidance on square footage limits and additions regarding combining multiple functions/facilities into one facility. The following combinations are examples of functions that can be combined into one facility. Combinations that are not addressed may still be combined but are not typical.

A. Gatehouse with Small or Large Search Area Function

All interaction between Command and Control and non-ACP personnel shall include ballistic rated protection (e.g. Intercom, Pass Through Drawers, etc.). See the Architectural General Requirements for these two facilities/functions to combine into one facility. An example drawing is provided on the MSRI website for this combination.

B. Gatehouse with Visitor Control Center Function

All interaction between Command and Control and non-ACP personnel shall include ballistic rated protection (e.g. Intercom, Pass Through Drawers, etc.). See the Architectural General Requirements for these two facilities/functions to combine into one facility.

C. Visitor Control with Small or Large Search Area Function

See the Architectural General Requirements for these two facilities/functions to combine into one facility.

D. Gatehouse with Small or Large Search Area Function and Pedestrian ID Check

All interaction between Command and Control and non-ACP personnel shall include ballistic rated protection (e.g. Intercom, Pass Through Drawers, etc.). The Pedestrian ID Check will act as an entrapment area that will be controlled by the command-and-control personnel. Wall between the Pedestrian Entrapment Area and Command and Control function will be ballistic rated. Doors will have locksets and electric strikes. See the Architectural General Requirements for these three facilities/functions to combine into one facility.

E. Gatehouse with Pedestrian ID Check and Visitor Control Center

All interaction between Command and Control and non-ACP personnel shall include ballistic rated protection (e.g. Intercom, Pass Through Drawers, etc.). The Pedestrian ID Check will act as an entrapment area that will be controlled by the command-and-control personnel. Wall between the Pedestrian Entrapment Area and Command and Control function will be ballistic rated. Doors will have locksets and electric strikes. See the Architectural General Requirements for these three facilities/functions to combine into one facility.

F. Pedestrian Entrapment Area ID Check and Visitor Control Center

Ballistic resistant Pedestrian ID Check Entrapment Area can be pre-manufactured or stick built construction and will be installed on the end of the Visitor Control Center portion. See the Architectural General Requirements for these two facilities/functions to combine into one facility.

G. Overwatch Building with Command-and-Control Function

See the Architectural General Requirements for these two facilities/functions to combine into one facility. This building will be just one room for the Command-and-Control portion of the Gatehouse (excludes storage, toilet room, etc.) and overwatch room. This combined facility will require other facilities on the ACP area for access to toilets, communication, electrical, storage, and mechanical requirements. An example drawing is provided on the MSRI website for this combination.

2.8.3. Architectural Specialties

A. GENERAL

i. Where gypsum wallboard and acoustical tile ceilings are provided, provide recessed light fixtures.

ii. Kick plate: Provide a minimum height of 18” on all interior doors.

iii. Exterior Doors: Provide door hardware to limit weather, bugs, etc. from entering into the door when closed.

2.9. INTERIOR DESIGN REQUIREMENTS:

2.9.1. General Requirements

A. Interior Building Appearance: Provide the facility interior with a warm, comfortable, and professional environment through the appropriate use of building materials, finishes, fabrics, color and texture. Provide materials of high quality, functional, easily maintained, and furnished as described herein. Provide complementary building finishes and details. Finish and fabrics shall provide a completely integrated interior design. Coordinate the interior building appearance with the exterior building appearance.

B. Interior Design Categories: Interior Design is divided into two categories (1) Structural Interior Design (SID) and (2) Furniture, Fixtures and Equipment (FF&E). SID is the design of building related interior finishes and includes the selection and specification of interior materials and finishes for the building environment. Items typically considered a part of the building design include, but are not limited to interior building materials, floor, wall and ceiling finishes, built-in casework, millwork, fixed equipment, trim items, signage, window treatment, etc. Building related items are generally applied or fastened to the building. Furniture related interior design (FF&E) is the design of the interior furniture and includes the selection and specification of these items. Items typically considered part of the furniture package but are not limited to workstations, desks, seating, tables, storage units, trash receptacles, etc. Provide appropriate furniture finishes and fabrics for the intended use. Provide upholstery fabric (color, pattern, and fiber content) that is easily cleaned and helps hide soiling.

C. Two (2) Processor Visitor Control Center

i. Waiting and Processing:

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b. Provide protective wallcovering minimum 36" h and maximum 4” h chair rail with painted gypsum wallboard above the protective wallcovering.

c. Provide chair rails along wall at location of seating at a minimum.

d. Provide painted gypsum wallboards for all other wall finish.

e. Include resilient corner guards on all exposed corners a minimum 48” h.

f. Provide solid surface material for window sills.

ii. Vestibule:

a. Provide walk-off mat in entire area.

iii. Toilet:

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b. Provide full height porcelain tile on all walls.

iv. Break Room/Provost Marshal Room:

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

.

b. Provided painted gypsum wallboard for the wall finish with protective wallcovering wainscot.

c. Provide plastic laminate or solid wood cabinetry.

d. Provide countertops and windowsills constructed of solid surface material.

e. Provide backsplash of solid surface or porcelain tile.

v. Mechanical/ Electrical room:

a. Provide sealed concrete for floor finish.

b. Provide resilient base for wall/floor trim.

c. Provide painted concrete masonry or gypsum wallboard.

vi. Communications room:

a. Provide sealed concrete for floor finish.

b. Provide resilient base for wall/ floor trim.

c. Provide painted concrete masonry or gypsum wallboard.

vii. Janitor's Closet:

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b. Provide painted gypsum wallboard for the wall finish with FRP panels or porcelain tile on wet walls.

D. Three (3), (6), (9) Processor Visitor Control Center

i. Waiting Room:

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b. Provide protective wallcovering minimum 36” h and maximum 4” h chair rail with painted gypsum wallboard above the protective wallcovering.

c. Provide chair rails along wall at location of seating at a minimum.

d. Provide painted gypsum wallboards for all other wall finish. Include resilient corner guards on all exposed corners a minimum 48” h.

e. Provide solid surface material for window sills.

ii. Processing Area:

a. Provide raised flooring with ramp access and, if feasible, stair access.

b. Provide carpet tile and resilient base finish.

c. Provide plastic laminate or solid wood casework with solid surface material countertops and backsplash.

iii. Vestibules:

a. Provide walk-off mat in entire area.

iv. Toilets:

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b. Provide full height porcelain tile on all walls.

v. Break Room:

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b. .

c. Provided painted gypsum wallboard for the wall finish with protective wallcovering wainscot.

d. Provide plastic laminate or solid wood cabinetry.

e. Provide countertops, and windowsills constructed of solid surface material.

f. Provide back splash of solid surface or porcelain tile.

vi. Office:

a. Provide carpet tile and resilient base finish.

b. Provided painted gypsum wallboard for the wall finish.

c. Provide solid surface material for windowsills.

vii. Provost Marshal Room:

a. Provide carpet tile and resilient base finish.

b. Provided painted gypsum wallboard for the wall finish.

c. Provide solid surface material for windowsills.

viii. Mechanical/ Electrical room:

a. Provide sealed concrete for floor finish.

b. Provide resilient base for wall/floor trim.

c. Provide painted concrete masonry or gypsum wallboard.

ix. Communications room:

a. Provide sealed concrete for floor finish.

b. Provide resilient base for wall/floor trim.

c. Provide painted concrete masonry or gypsum wallboard.

E. ID Check Canopy

i. N/A

F. Vehicle ID Check Guard Booth

i. Sealed concrete floor slab.

G. Search Function Bus Shelter

i. Sealed concrete floor slab.

ii. Benches can be metal or wood. Wood benches shall have manufacturer's approved sealant/preservative.

H. Small and Large Search Area Building(s)

i. Visitor Processor Area (Large Search Building Only):

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b. Provide protective wallcovering minimum 36" h and maximum 4" h chair rail with painted gypsum wallboard above the protective wallcovering.

c. Provide chair rails along wall at location of seating.

d. Provide painted gypsum wallboards for all other wall finish.

e. Include resilient corner guards on all exposed corners a minimum 48" h.

f. Provide solid surface material on window sills.

ii. Corridor (Large Search Building Only):

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b.

c. Provide protective wallcovering minimum 36" h and maximum 4" h chair rail with painted gypsum wallboard above the protective wallcovering.

d. Provide painted gypsum wallboards for all other wall finish. Include resilient corner guards on all exposed corners a minimum 48" h.

iii. Waiting Room/Office (Small Search Building) or Waiting Room (Large Search Building):

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b. Provide protective wallcovering minimum 36" h and maximum 4" h chair rail with painted gypsum wallboard above the protective wallcovering.

c. Provide chair rails along wall at location of seating at a minimum.

d. Provide painted gypsum wallboards for all other wall finish. Include resilient corner guards on all exposed corners a minimum 48" h.

e. Provide solid surface material for windowsills.

iv. Office/Provost Marshal Room (Large Search Building Only):

a. Provide carpet tile and resilient base finish.

b. Provided painted gypsum wallboard for the wall finish.

c. Provide solid surface material for windowsills.

v. Break Room:

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b. Provided painted gypsum wallboard for the wall finish with protective wallcovering wainscot.

c. Provide plastic laminate or solid wood cabinetry.

d. Provide countertops and windowsills constructed of solid surface material.

e. Provide back splash of solid surface or porcelain tile.

vi. Toilet:

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

vii. Janitor's Closet/Inside Storage:

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b. Provide painted gypsum wallboard for the wall finish with FRP panels or porcelain tile on wet walls.

viii. Outside Storage:

a. Provide sealed concrete for floor finish.

b. Provide resilient base for wall/floor trim.

c. Walls shall be painted concrete masonry or gypsum wallboard.

ix. Mechanical/ Electrical room:

a. Provide sealed concrete for floor finish.

b. Provide resilient base for wall/floor trim.

c. Provide painted concrete masonry or gypsum wallboard.

x. Communications room:

a. Provide sealed concrete for floor finish.

b. Provide resilient base for wall/floor trim.

c. Provide painted concrete masonry or gypsum wallboard.

I. Truck Search Area Canopy

i. N/A

J. Passenger Vehicle Search Area Canopy

i. Vehicle Search Area

a. Provide sealed concrete for floor finish.

b. Provide resilient base for wall/floor trim.

K. Gatehouse

i. Command and Control:

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b. Provide protective wallcovering minimum 36" h and maximum 4” h chair rail with painted gypsum wallboard above the protective wallcovering.

c. Provide chair rails along wall at location of seating at a minimum.

d. Provide painted gypsum wallboards for all other wall finish. Include resilient corner guards on all exposed corners a minimum 48” h.

e. Provide solid surface material for countertops, back splash and windowsills.

f. Provide a raised section of the ceiling in front of the front wall for the installation of CCTV monitors that place the monitor out of the line of sight of a person looking out the windows.

ii. Toilet:

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b. Provide full height porcelain tile on all walls.

iii. Janitor’s Closet/Inside Storage:

a. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

b. Provide painted gypsum wallboard for the wall finish with FRP panels or porcelain tile on wet walls.

iv. Mechanical/ Electrical room:

a. Provide exposed sealed concrete for floor finish.

b. Provide resilient base for wall/floor trim.

c. Provide painted concrete masonry or gypsum wallboard.

v. Communications:

a. Provide exposed sealed concrete for floor finish.

b. Provide resilient base for wall/floor trim.

c. Provide painted concrete masonry or gypsum wallboard.

vi. Outside Storage (Optional):

a. Provide sealed concrete for floor finish.

b. Provide resilient base for wall/floor trim.

c. Provide painted concrete masonry or gypsum wallboard.

L. Standalone Toilets:

i. Provide porcelain tile, rubber or epoxy floor finish and coordinate base material to match the floor finish.

ii. Provide full height porcelain tile on all walls.

M. Standalone Storage

i. Provide sealed concrete for floor finish.

ii. Provide resilient base for wall/floor trim.

N. Communications with Mechanical/ Electrical Equipment Building (Standalone Building)

i. Provide sealed concrete for floor finish.

ii. Provide resilient base for wall/floor trim.

O. Pedestrian ID Check

i. Provide rubber flooring.

ii. Provide resilient base for wall/floor trim.

iii. Provide solid surface material for countertop and back splash.

P. Overwatch Building

i. Provide sealed concrete for floor finish.

ii. Provide resilient base for walfloor trim.

Q. (Example Combination Facilities, See drawings)

i. See information above

2.9.2. Interior Finishes

The following requirements include both functional and (example combinations of functional requirements), where identified. Any reference to installation criteria is to establish materials and finishes consistent with the installation's architectural theme.

A. MINIMUM FINISH REQUIREMENTS

i. Carpet Tile

a. Provide antistatic carpet with a pattern containing a minimum of 3 distinctly different colors or a bold multi-colored tweed for maximum soil-hiding properties. Carpet must be tile with 100% continuous filament, solution dyed and/or yarn dyed, branded nylon with loop construction. Provide synthetic primary and secondary backing materials that are customarily used and accepted by the trade for each type of carpet. Preference should be given to products containing recovered material when possible. Carpet must meet the following minimum requirement:

b. Minimum Pile Characteristics
Provide carpet with tufted construction, loop pile, minimum 1/8" gauge and minimum pile density of 4725. Provide carpet with a greater than or equal to 3.0 (Heavy) TARR traffic level classification in accordance with ASTM D7330 or CRI Test Method 103.

c. Static Control
Provide static control that is appropriate for the function of the room. Flammability and Critical Radiant Flux Requirements Carpet must comply with 16 CFR 1630 or ASTM D2859.

d. Tuft Bind
Comply with ASTM D1335 for tuft bind force required to pull a tuft or loop free from carpet backing with a minimum 8-pound average force for modular carpet tile.

ii. Porcelain Tile

a. Provide large format porcelain tile that conforms to ANSI A137.1, less than 0.5 percent water absorption and is a minimum commercial heavy traffic grade. Porcelain tile and trim shall be unglazed with the color extending uniformly through the body of the tile or glazed with body color consistent with glaze color. Color of porcelain tile and porcelain tile grout shall be a medium range color to help hide soiling.

iii. Rubber Flooring

a. Provide flooring that conforms to ASTM F1344 for tile, Class 1 homogeneous, Type B (through mottled). Conform to ASTM F1859 (flooring without backing). Provide textured surface.

iv. Epoxy Flooring:

a. Provide a clear two-component compatible system epoxy resin binder consisting of: (1) a liquid blend of a biphenyl-based epoxy resin and an aliphatic polyglyceride ether, and (2) a liquid blend of two modified amine curing agents, which individually cures the epoxy resin at room temperature to a glossy smooth film.

b. Provide aggregate recommended by the resinous flooring manufacturer and approved by the Contracting Officer. Deliver aggregate to the site in three separate package gradations for blending.

c. Provide nonambering aliphatic or aromatic moisture-curing polyurethane surface sealer into which has been incorporated a flatting agent. Add flatting agent not more than 24 hours prior to actual application of the coating. Ensure cured coating with flatting agent yields 60-degree specular gloss of 10 to 20 when tested in accordance with ASTM D523.

v. Walk Off Mat

a. Provide surface-mounted extruded aluminum frames that have a tapered flexible aluminum or vinyl edge at least 1 ½" wide and a frame depth that accommodates a mat. Provide roll up mat in frame with tread inserts consisting of carpet composed of solution-dyed nylon or polypropylene carpet fibers fusion-bonded to a rigid two-ply backing to prevent fraying and supplied in continuous splice-free lengths. Carpet to have antistatic and anti-stain treatments. Ensure that pile weight is a minimum 30 ounces per square yard.

vi. Resilient Base:

a. Provide rubber or vinyl base 4 inches high and minimum of 1/8 inch thick.

vii. Solid Surfacing Material

a. Solid surface material to be homogeneous filled solid polymer, not coated, laminated or of a composite construction, meet CSA B45.5-11/IAPMO Z124 requirements, and be composed of cast 100 percent acrylic or a formulation composed of acrylic and polyester polymers, mineral fillers, and pigments. Acrylic polymer content must not be less than 5 percent and not more than 10 percent. Color and pattern must go through the thickness of the material. Provide minimum of ½ inch-thick material for countertops and windowsills. Solid surfacing material shall have patterns that are mottled, flecked or speckled, except for sinks. Countertops at sinks shall be light to medium range in color to help hide water spotting and to reduce appearance of scratches.

viii. Plastic Laminate

a. Provide High Density Pressure Laminate (HDPL) that are patterned are mottled, flecked, speckled or wood grain; solid colors are not acceptable.

ix. Protective Wall Covering

a. Provide wall covering/panels consisting of high impact rigid acrylic vinyl or polyvinyl chloride resilient material. Provide panel sizes of 3 x 8 or 4 x 8 feet and a minimum .060" thick. Minimum impact resistance must be 18 ft-lbs./sq. inch when tested in accordance with ASTM D256 (Izod impact, ft-lbs. per sq inch notched). Fire rating must be Class 1 when tested in accordance with ASTM E84 having a maximum flame spread of 25 and a smoke developed rating of 450 or

less. Material must be rated self-extinguishing when tested in accordance with ASTM D635. Finish top edge and seams of wallcovering/panels.

x. Corner Guards

a. Provide resilient corner guards a minimum 48 " h. Product must be fabricated of 16-gauge thick material and wings shall be minimum 1 ½" wide.

xi. Miscellaneous Items

a. Provide finish colors of fire extinguisher cabinets, receptacle bodies and plates, fire alarms/warning lights, emergency lighting, and other miscellaneous items must be coordinated with the building interior design. Match color of equipment items on ceilings (speakers, smoke detectors, grills, etc.) with the ceiling color.

2.9.3. Interior Specialties

A. Signage: Provide a complete interior signage system that coordinates with the interior design. The facility interior signage system shall be standardized throughout the building and shall be flexible to allow for the addition and deletion of signs and information.

B. Room signs for spaces in which the room name, function of the room, or personnel within a room may change shall have a changeable paper insert that can be changed by the User in the future. Provide rooms signs where appropriate.

C. Window Treatment: Provide commercial grade horizontal blinds for exterior windows with the exception of functions that required visibility (i.e. guard booth). Slats must be aluminum not less than .0070 thick.

2.9.4. FF&E (Furniture Fixtures & Equipment)

A. Furnishings

GENERAL:

Conceal clips, screws and other furniture construction elements where possible. Seating upholstery is required to meet Wyzenbeek Abrasion Test; 50,000 minimum double rubs. Furniture can be wood (where appropriate), plastic laminate or metal finish. Tops for case goods with plastic laminate or metal construction are to be plastic laminate. Location, use and frequency of moving furniture are to be considered when determining appropriate finish material and construction. Furniture constructed of particleboard with plastic laminate finish is not acceptable. Provide box and file drawers with a heavy-duty suspension system. Construct furniture with concealed fasteners. Furniture storage is to be lockable with keys provided to the user. Locks shall be keyed per user requirements. Coordinate style details and finishes within a room. Refer to the drawings for furniture layout. Trash receptacles shall be provided in all employee workspaces, waiting rooms and by copier and printers.

i. Task Chair: Provide ergonomic task chair that is rated for 24/7 use, minimum weight capacity 300 lbs., without arms, upholstered or mesh seat and back, back tilt and locking capability, pneumatic seat height adjustment, adjustable lumbar support, seat depth adjustment, five-star base and casters. Provide desk chairs with adjustable seat height range of 4 ½", range to include 16 1/2 – 20". (Exception private offices to have a task chair with arms).

ii. High Stool: Provide ergonomic swivel stool that is rated for 24/7 use, minimum weight capacity 300lbs, without arms, upholstered or mesh seat and back, variable back lock, pneumatic seat height adjustment, adjustable lumbar support, seat depth adjustment, five-

star base, foot ring and casters. Provide high stools with adjustable seat height range of 5 ½" to include 20-25 ½".

iii. Guest/Waiting Chair: Provide guest chairs without arms, upholstered cushioned seat and back that are compatible in style, finish and color with the desk chairs (approximately 1'-9 w x 1'-11" d x 2'-6"h in size).

iv. Nursing Mother's Room Chair & Table: See guidance in para 2.4.10.B

v. Break Room Chairs: Provide break room chairs without arms, that are easily cleaned. Verify style and finishes with user.

vi. Break Room Table: Provide table with high pressure laminate top with PVC, vinyl, or post formed high pressure plastic laminate edge. A high-pressure laminate plastic laminate self-edge is not acceptable.

vii. Waiting Room Table: Provide end table with high pressure plastic laminate top, metal or wood frames that are compatible in style, finish and color to waiting chairs.

viii. U-Shape Workstations: Provide U-shaped workstation with keyboard tray, overhead storage, tackboard and task light, under all overhead storage. The unit is to have modesty panels that allow access to the wall for power and communications including two pedestals and a pencil drawer. Provide a personal tower with coat storage, shelves, and file storage where possible. Provide desk of steel construction with high pressure plastic laminate work surface. Tops are to have a formed edge such as PVC, vinyl molding or post formed high pressured plastic laminate. A high-pressure plastic laminate self-edge is not acceptable. Provide knee space that is not obstructed by legs/storage units that interfere with knee space of seated person. Provide adjustable height worksurface with wire management.

ix. L-shaped Workstations: Provide electric height adjustable desk with wire management, return, pedestal storage, wardrobe, tackboard, task light, steel construction with high pressure laminate worksurfaces and PVC edge banding to match the worksurface

x. Lateral File Cabinet: Provide four drawer lateral file, unless limited by window design or other architectural features. File drawers are to be full extension, accommodate letter files and have rails for hanging folders. The drawers are to be capable of hanging files side-to-side and front-to-back. Drawer pulls are to be an integral pull, not an attached pull. Counterweights are to be provided when required by the manufacturer for stability.

xi. Bookcase: Provide four shelf metal bookcase(s) with adjustable shelves. Shelves are to be of sufficient height and depth to accommodate standard three ring binders. Bookcases can be inter-changed with lateral file cabinets, depending on user requirements or preferences.

xii. Supply Cabinet: Provide metal double door lockable supply cabinet with adjustable shelves.

xiii. Anti-Fatigue Mat: Provide an appropriate sized anti-fatigue mat.

xiv. Trash Receptacles: Provide rubber trash receptacles approximately 14" w x 11" d x 15" h.

xv. Recycling Center: Provide recycle center with four separate containers fastened together, decals and corresponding top opening for trash, paper recycling, plastic recycling and aluminum recycling. Provide 23-gallon capacity for each container, polyethylene liner included with hinged door for easy access to empty liners steel construction with powder

coated finish and adjustable foot glides. (Provide larger bins for larger buildings and smaller bins for smaller buildings).

2.10. STRUCTURAL REQUIREMENTS:

2.10.1. General

Structural design of all Access Control buildings shall be governed by the International Code Council publication, International Building Code (IBC), as modified by DoD Unified Facilities Criteria document, UFC 3-301-01, "Structural Engineering". The most current edition of UFC 3-301-01 shall apply, and the applicable edition of IBC shall be as identified in the UFC.

2.10.2. Loadings

Structural loadings for building designs shall be determined in accordance with the IBC, and, by reference, American Society of Civil Engineers publication, ASCE 7, using applicable occupancy data and climatic/seismic data tabulated in UFC 3-301-01 "Structural Engineering" for the location of the facility on which the Access Control structures are being constructed, unless specific design parameters are provided by the facility.

2.10.3. Seismic Design

Seismic design of buildings shall be in accordance with the IBC, except as modified by UFC 3-301-01, "Structural Engineering".

2.10.4. Ballistic Resistant Design

Facility buildings identified in the Architectural criteria as "ballistic resistant" shall be designed in accordance with the provisions of UFC 4-023-07, "Design to Resist Direct Fire Weapons Effects", in addition to the criteria identified in the Architectural design narrative.

2.10.5. Antiterrorism Design

ACP structures shall be sited, designed and constructed in accordance with the minimum requirements of UFC 4-010-01, "DoD Minimum Antiterrorism Standards for Buildings", unless a higher level of protection is mandated by local threat assessment and/or policy. Facilities which are, by occupancy, considered "inhabited structures", per the criteria, which cannot be sited to meet conventional construction standoff distance requirements from threats, shall be designed as hardened facilities. Hardened structures shall have walls, roof slabs, doors and windows designed and/or specified to resist blast pressures associated with the actual threat standoff distance per UFC 4-010-01.

Where prestressed concrete roof systems are used to support gravity loads for ACP structures that are required by the UFC to be designed to be hardened against blast threats, conventional reinforcement shall be provided in roof toppings and/or on the exterior side of prestressed members, designed to provide adequate reinforced resistance to the combined reverse flexural effects of the blast pressure dynamic elastic rebound member moments and the existing upward prestress member moments, where they exceed the resisting minimum dead load.

2.10.6. Canopies

A. Wind Loading

Vehicle canopies shall be considered as "open structures" with "clear wind flow" for calculation of wind pressures on roofs for main wind force resisting systems and component and cladding wind pressures in accordance with the UFC referenced edition of ASCE 7. Canopies shall be considered flexible structures,

having a Gust Effect Factor, “G”, of not less than 0.90, in accordance with ASCE 7, to account for flexibility of the building system. Canopy wind for the design of frames or columns shall include the summation of pressures on the various canopy elements having a projected area perpendicular to the wind direction under consideration. Projected areas include front and rear surfaces of both windward and leeward canopy fascias or other vertical roof structure surfaces, windward surfaces of all columns, and lateral components of wind on sloped roofs, in accordance with ASCE 7. Canopy fascias shall be considered as either inverted “parapets” or “solid freestanding signs”, in accordance with ASCE 7, depending upon their configuration. Wind pressure on columns shall be computed as for “open signs and/or lattice frameworks”, and shall be applied to all free-standing columns simultaneously, rather than just to the windward facing perimeter columns. Main wind force resisting system overall lateral wind forces from the roof, fascias and columns shall be applied in each (+/-) direction along the principal building axes as separate loading conditions, and as another set of load conditions, shall be applied coincident with a torsional moment equal to the sum of wind forces multiplied by a +/- eccentricity of 15% of the windward roof plan width dimension. Wind shall also be considered at 75% of the full pressure from additive orthogonal axis directions applied simultaneously (representing oblique wind directions).

B. Lateral Force Resisting System

Canopies shall have a rigid frame and/or cantilever column lateral force resisting structural system. Lateral forces shall be transferred to columns and frames by horizontally spanning spandrel members, structural diaphragms or horizontal bracing systems in the plane of the roof. The metal roof panels and liners shall not be used as a structural diaphragm unless analysis calculations in accordance with the provisions of the Steel Deck Institute (SDI), demonstrating the adequacy of the strength and stiffness of the panels and anchorage system, are performed. Roof and fascia panels shall similarly not be considered to provide lateral bracing for roof beams and purlins. Roof and liner panels shall be anchored to purlins or other framing members with screws or bolts. Clamp systems shall not be used to attach panels to the structure.

C. Column Anchorage and Foundations

Canopy column base anchorages shall be designed for combined shear, moment and uplift, as applicable, in accordance with the UFC referenced edition of American Concrete Institute code ACI 318, Chapter 17. Canopy foundations shall be designed to resist factored wind uplift and overturning. Soil bearing pressures shall be investigated for all loading conditions, including overturning.

2.11. THERMAL PERFORMANCE

[For RFP Wizard revise paragraph title to read: “SEE PART 3.7 THERMAL PERFORMANCE – NOT USED”]

[ACP Standard:

Thermal insulation must comply with the minimum requirements of ASHRAE Standard 189.1-2009.]

2.12. PLUMBING REQUIREMENTS:

OCONUS: All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (NNFA), and in some instances, bilateral Infrastructure Agreements (BIA). Therefore, the acquisition team must ensure compliance with the most stringent of any UFC applicable, the SOFA, the HNFA, and the BIA, as applicable.

2.12.1. Sanitary Sewer (where connection is possible)

A. Search Area Building and Search function

For Large and Small Army Standard Design or Custom Types Search Area Buildings, and search functions or rooms of combined facilities as shown on [Center of Standardization (COS) drawings] [RFP Wizard Appendix B – Drawings]; domestic cold and hot water are to be provided to all plumbing fixtures as required by code. A sink and garbage disposal is to be provided for the break room. Condensate drains from mechanical equipment are to be routed to a floor drain. Provide a sanitary drainage system as required by code.

B. Visitor Control Center & (Facilities including Visitor's Processing)

Domestic cold and hot water are to be provided to all plumbing fixtures as required by code. A sink and garbage disposal are to be provided for the break room. Condensate drains from mechanical equipment are to be routed to a floor drain. Provide a sanitary drainage and vent system as required by code.

C. Facilities including Command and Control function

Domestic cold and hot water are to be provided to all plumbing fixtures as required by code. A sink and garbage disposal are to be provided for the break room. Condensate drains from mechanical equipment are to be routed to a floor drain. Provide a sanitary drainage and vent system as required by code.

D. ID Check Guard Booth and Pedestrian ID Check or (Pedestrian ID Check "room" function)

No domestic cold and hot water are to be provided and no drainage and vent system.

E. Overwatch Building

No domestic cold and hot water are to be provided and no drainage and vent system.

2.12.2. Sanitary Sewer (where connections are not possible)

Design criteria for septic tanks, waterless toilets (composting toilet, incineration toilet, chemical toilet) and mounding systems shall be in accordance with UFC 3-240-02, "Domestic Wastewater Treatment".

2.12.3. Drinking Water

Drinking fountains are not required for an occupant load of 15 or fewer. See Center of Standardization (COS) furniture layout drawings for occupant count.

2.12.4. Sizing

OCONUS: All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (NNFA), and in some instances, bilateral Infrastructure Agreements (BIA). Ensure compliance with the most stringent of any UFC applicable, the SOFA, the HNFA, and the BIA, as applicable.

A. STANDARDS AND CODES: The plumbing system and water consuming equipment shall conform to APPLICABLE CRITERIA and ASHRAE Standard 189.1, Section 6.3, Mandatory Provisions, and either Section 6.4, Prescriptive Option, or Section 6.5, Performance Option. In addition, meet the requirements of ASHRAE Standard 189.1, Section 10.3.2. Exception: Paragraph 6.3.2.3. (c) Shall not be required to be provided.

B. HOT WATER SYSTEMS: For hot water heating and supply systems, meet the requirements in UFC 3-420-01 "Plumbing Systems" and amendments, and the service water heating requirements of ASHRAE 189.1.

C. SIZING HOT WATER SYSTEMS: Design in accordance with ASHRAE Handbook HVAC Applications, Chapter 49, “Service Water Heating,” UFC 3-420-01 and amendments, and ASHRAE 189.1, Section 7.4.4. Size and place equipment so that it is easily accessible and removable for repair or replacement.

D. WATER EFFICIENT PLUMBING FIXTURES: Indoor plumbing fixture equipment shall comply with the following criteria: ASHRAE 189.1, Section 6.3, Mandatory Provisions, and either Section 6.4, Prescriptive Option, or Section 6.5, Performance Option.

E. DRAINAGE SYSTEMS: Do not use engineered vent or Sovent® type drainage systems.

2.13. COMMUNICATIONS AND SECURITY SYSTEMS:

2.13.1. Communication

A. Communication system shall be installed in accordance with the Technical Guide for Installation Information Infrastructure Architecture (I3A) for exterior telecommunications work and use UFC 3-580-01 for interior telecommunications.

B. Command and Control, ID Check Guard Booth, Pedestrian ID Check, Search Area(s), Search Facilities, except Search Shelter, Overwatch Position, Overwatch Facility, and Visitor Control Center shall have a minimum of two (2) means of communication from the facility and, when present, the Central Security Monitoring Station.

C. Communication Handhole. Provide a communication handhole in each island/median in the ID Check Area. Conduit shall be run from the handhole to the island/median guard booth and to the next island/median handhole. This handhole/conduit system shall be used for all communication (copper and fiber) to the ID Check guard booths and to the area. The handhole cover is to be flush with the island/median.

2.13.2. Information Connectivity

A. Information Connectivity and LAN systems shall be installed in accordance with the Technical Guide for Installation Information Infrastructure Architecture (I3A) for exterior telecommunications and UFC 3-580-01 for interior telecommunications.

B. Command and Control, ID Check Guard Booth, Pedestrian ID Check, Search Facilities, Overwatch Facility, and Visitor Control Center shall have information connectivity to the LAN system and internet.

2.13.3. Closed Circuit Television (CCTV)

A. The ACP shall have a CCTV system installed.

B. CCTV cameras shall have sufficient resolution and wide dynamic range for real time assessment of activity detail.

C. Overwatch Cameras. CCTV cameras shall over watch the Approach Zone, ID Check Area, Search Area(s), and Active Vehicle Barrier area(s). Camera view at the active vehicle barriers shall include the nonsecure side of all active vehicle barriers as well as any traffic signals facing toward the nonsecure side. Camera view at the active vehicle barriers shall include a view of the secure side of outbound lane active vehicle barrier(s) and traffic signal.

D. ID Check Area. CCTV cameras shall be positioned to view drivers, ID Check guards, rear license plate, and the vehicle in the ID check lane.

E. Search Area(s) including Enclosed Search Facility. CCTV cameras shall be positioned to view drivers, Search guards, rear license plate, and the vehicle being searched.

F. Rear License Plates. Conduit shall be installed in the islands at the Search Areas and ID Check Area to accommodate future cameras to view rear license plates. Coordinate with the requirements given in the paragraph on Automated Installation Entry (AIE). Installations that will receive fixed AIE do not need an additional rear license plate camera for the ID Check Area, since there will be one that is part of the fixed AIE install package.

G. ID Verification. CCTV cameras are to be positioned to view visitors at pass and identification stations. These stations area located in the Visitor Control Centers. Command & Control does not have to be able to view the Visitor Control Center interior view. Search Offices may have an interior identification station, which would need a CCTV camera to view the visitor.

H. All cameras are intended to be fixed view except for the ID Check Area and Search Area overwatch cameras are allowed to be pan/tilt/zoom. The active vehicle barrier area cameras are to be fixed in order to ensure the proper view are always maintained.

I. Monitors. Monitors for CCTV shall be at the Command-and-Control location and the Central Security Monitoring Station as a minimum.

J. Digital Video Recording. The CCTV system shall include digital video recording for all ACP video cameras. The video recording shall operate 24 hours per day and seven (7) days a week and shall retain all imagery for a minimum of seven (7) days.

K. Pedestrian ACPs:

i. Overwatch Cameras. CCTV cameras shall over watch the approach to the booth from the entry gate to the area around the active pedestrian barrier including the booth.

ii. Monitors. Monitors for CCTV shall be at the Pedestrian ID Check. Monitors shall also be located at Command and Control and Central Security Monitoring, if part of a vehicle ACP. If not part of a vehicle ACP, then provide monitoring at the Central Security Monitoring Station.

iii. Digital Video Recording. The CCTV system shall include digital video recording for all ACP video cameras. The video recording shall operate 24 hours per day and seven (7) days a week and shall retain all imagery for a minimum of seven (7) days. Video recordings shall have the ability to be saved to external media for retention greater than seven (7) days.

2.13.4. Electronic Security

A. Duress Alarms. Guards at the ID Check Area Guard booth, Pedestrian Booth, Search Area(s) including Enclosed Search Facilities, Overwatch Facility, Overwatch Position, and Visitor Control Center shall have duress alarm capability that shall annunciate at both the Command-and-Control location and the Central Security Monitoring Station, when available. The Visitor Control Center shall ensure each Pass & ID station, as a minimum, have a means of duress.

i. Duress buttons shall be protected and not prone to accidental activation.

ii. Duress buttons shall be located within close proximity to all routinely manned positions.

iii. Duress button shall not be visible to the general public.

iv. Telephone shall not be considered a duress device in their normal configuration.

v. If there isn't a Central Monitoring Station, then annunciate at an alternate security force station or monitoring location.

vi. Wireless Duress Buttons. If wireless duress buttons are utilized in conjunction with mandatory hardwire buttons, then the wireless device shall have battery level monitoring, low battery level visible and audible warning, demonstrated transmission capacity of 150 feet greater than all usage locations, transmit of radio frequencies that do not interfere with or are impeded by any local wireless apparatus, and transmit in a spread spectrum mode.

B. Intrusion Detection. Exterior doors to the Command and Control, Gatehouse, Guard Booths, Overwatch, Search Office, Enclosed Search Facility, and Visitors Control Center shall be equipped with Balanced Magnetic Switches (BMS) for intrusion detection. Storage rooms that do not contain any security, CCTV or Communication equipment are not required to have BMS. Interior doors that go to rooms that contain Communication or security equipment shall be equipped with BMS.

C. Tamper Switches.

i. Electronic control cabinets for Communications, AIE, CCTV, and security controls shall be equipped with tamper switches. CCTV and security controllers shall be in cabinets or panels.

ii. Active vehicle barrier cabinets shall be equipped with tamper switches. Active vehicle barrier controllers shall be in cabinets or panels. Control panels associated with the AVB controls (master, guard booth, local, etc.) are required to be equipped with tamper switches.

iii. The cabinet at the Overwatch Position pad (if provided) shall be equipped with a tamper switch(es).

iv. Manholes and handholes that will contain duress alarm, AIE, CCTV, intrusion detection or AVB control wiring and there are splices present are to have tamper switches provided on the covers.

v. Uninterruptable power supply (UPS) cabinets shall be equipped with tamper switches.

2.13.5. Automation

A. Infrastructure to include the conduit pathways and space in facilities for Automated Installation Entry (AIE) per the latest requirements by PM-PFS and the requirements in this document shall be provided. AIE is not currently required in foreign countries. AIE includes a fixed pedestal card reader or a handheld card reader. Each system has different requirements.

i. Fixed AIE includes a rear license plate camera, a driver face camera, traffic arm with signal, and a card reader that is located on each ID Check Area Island.

ii. Fixed AIE includes equipment that is provided in each ID Check Area guard booth that monitors the camera views and the card reader.

iii. Fixed and Hand-Held AIE head end equipment is located in the communications room and is to be in a cabinet.

iv. Fixed and Hand-Held AIE require an antenna that is normally located at the ID Check Island.

B. Automation equipment other than AIE may be required. Provide infrastructure to include the conduit pathways, power, and space for this equipment.

2.13.6. Active Vehicle Barrier Control System

Each ACP shall be furnished with an Active Vehicle Barrier Control System (AVBCS). The AVBCS shall be an integrated control system and be include part or all of the following subsystems: active vehicle barriers, active vehicle barrier controls, traffic signals, traffic signal controls, traffic signs, pavement markings, traffic warning signs, traffic arms, vehicle overspeed detection & alarm, vehicle wrong-way detection & alarm., intrusion detection/duress alarm, CCTV, sequence event recorder (data logger), data transmission, other audible and visual alarms and all interconnecting wiring. The active vehicle barrier control system (AVBCS) shall collect alarm, status, and control sensor inputs at the ACP and provide control signals to the active vehicle barriers (AVB), traffic signals, traffic arms (when present), barrier lights, in roadway lights, and warning beacons. The AVBCS shall provide alarm, status, and control information to the Command and Control 'control console', each Guard Booth Control Panel, the Overwatch Position or Booth Control Panel, the Local Control Panel(s) at each AVB, Search Area Control Panel, Pedestrian Booth control panel, the CCTV subsystem for controlling camera presets, the duress alarm subsystem for controlling camera presets, and to the Installation's Central Security Monitoring System (CSMS)for annunciating alarms at both the CSMS alarm monitoring point and a CSMS provided annunciation panel at the Gatehouse.

A. Locations that do not have a CSMS shall have the alarms annunciate at the equivalent location.

B. CCTV and duress alarm subsystems may not be present when the AVBCS is installed. If that is the case, the AVBCS shall be provided with the necessary spare capacity for later installation.

C. The ACPCS system must utilize components and software that are intended for use in industrial or commercial control systems. The ACP control system shall not be a general-purpose computer or personal computer and shall not be consumer grade software.

D. Emergency-Fast-Operate (EFO), when required by the safety scheme, shall ensure the AVB closes in two (2) seconds or less.

E. Only guards in the Command and Control, ID Check Guard Booths, Search Areas, Pedestrian Booth, and Overwatch Position are required to have emergency fast operate close control of the active barriers. A master “Emergency-Fast- Operate” (EFO) button/switch shall be provided on a Barrier Master Control Panel located in Command and Control. Remote EFO buttons shall be located in each ID Check Guard Booth, Search Area, Pedestrian Booth, and the Overwatch Position. The “Emergency-Fast-Operate” buttons will close all active barriers in all inbound and outbound lanes, that are in EFO mode, simultaneously. Only those safety schemes that require an EFO have to comply with this requirement.

F. Command and Control, Guard Booths, Search Areas and Overwatch position shall have an enunciator providing audible and visual indication of alarms including over speed and wrong way.

G. Command and Control and the Overwatch position shall have an enunciator providing audible and visual indication of duress alarm.

H. Switches and indicating lights shall be provided on the AVB Master Control Panel to allow the Command-and-Control guard to individually enable or disable the remote EFO buttons.

I. Switches and indicating lights shall be provided on the AVB Master Control Panel to allow the Command-and-Control guard to individually open and close the active vehicle barriers.

J. Switches and indicating lights shall be provided on the AVB Local Control Panel to allow maintenance personnel to individually open and close the active vehicle barriers.

K. Installation shall maintain strict key control to ensure the EFO Reset, and the Test and Local modes are only operated when allowed by the head of the guards at that ACP.

L. See Access Control Point Standard drawing set for information on panel layouts and operation.

M. See UFGS 34 71 13.19, Appendix A for the appropriate SDDCTEA safety scheme and description on controls. Safety schemes that are not in Appendix A but have been approved by SDDCTEA are allowed. Description on the sequence of operation and operating panel layouts will be provided upon request.

N. Active Vehicle Barrier and In Roadway Lighting:

i. Active vehicle red delineation lighting is required to make barriers clearly visible when deployed, unless vehicle barriers are behind closed gates or the specific vehicle barriers are used to close service drives. Active vehicle barriers shall include red flashing lights facing the direction of the threat vehicle as a minimum. Required red lighting is dependent on the type of system required as listed below:

a. Bollard Systems – Include, as a minimum, one red light per bollard.

b. Plate Barriers Systems, 3 feet or greater in width – Include, as a minimum, 3 red lights with one mounted within 1 foot of each barrier edge and one mounted within 1 foot of the barrier centerline.

c. Plate Barrier Systems less than 3 feet in width – Include, as a minimum, one red light mounted within 1 foot of the barrier centerline.

d. Crash Barrier Systems – Include as a minimum, 3 red lights with one light mounted within 2 feet of each edge of the driving surface and one light mounted within 1 foot of the center of each lane spanned by the barrier.

e. Net Type Barrier Systems – No light is required to be mounted on this barrier type system, but mitigation (e.g. in-roadway lighting) must be provided.

ii. In-Roadway lighting is required where the AVB does not have all the required lighting on the AVB itself. Then hard-wired in-pavement lights are to be provided.

a. Provide red non-flashing roadway lighting in the pavement, with a minimum of 3 lights per lane per side. Luminaires shall have a sustained illumination level of 500,000 candela per square meter using the 10-degree refractor option at a distance of 30 feet.

b. Luminaire shall be rated for vehicular traffic and shall be manufactured for use in roadways.

c. Luminaire shall be unidirectional with a wide distribution pattern.

d. The luminaire shall not extend more than 0.5 inches above the road surface and shall have a smooth transition from the road surface.

e. In areas with snow, the luminaire shall be rated to handle snowplows. Select a product that has proven performance and will not be forced above the pavement surface by freeze/thaw cycles.

iii. Active Vehicle Barrier Markings/Finishes

Active vehicle barriers include retro-reflective material that is visible on both sides of the barrier when deployed. The markings/finishes are to comply with SDDTTEA Pamphlet 55-15 and MUTCD.

O. Guard booths. Provide a number on the exterior of each guard booth that is visible from Command and Control. The number will correspond with the Guard booth number used on the Master Control Panel for the barrier controls. Numbering shall be approved by the installation. Numbering shall be at least 6 inches high.

P. Overspeed detection, when required, shall be located to ensure the overspeed zone or zones are covered to ensure threat vehicle detection. Overspeed detectors are allowed to be several different types per UFGS 34 71 13.19 ACPCS; however, local weather conditions and topology requirements shall be taken into account. When overspeed detection is required, judicious use is required to prevent nuisance alarms associated with having set-points too low for the traffic flow. Set-points need to be sufficiently high over the posted speed to prevent nuisance alarms. Note that some installation will have posted speeds below 25 mph; however, set-points should still be set based on an assumed posted speed of at least 25 mph in order to limit nuisance alarms. Where overspeed detection settings of less than 30mph are utilized, the zone shall not extend more than 75 feet forward (toward the approach zone) when measured from the centerline of the ID Check guard booth. Such zones must utilize equipment that allows absolute cutoff at the 75 feet (or shorter) distance and will not utilize alarm settings lower than 25mph. Where possible, use 35mph as a minimum alarm setpoint for overspeed detection systems.

Q. Wrong-way detection shall be located to ensure that a vehicle that has not been cleared to proceed and try to use the outbound lane(s) to gain entry is detected. Wrong-way detectors are allowed to be several different types per UFGS 34 71 13.19 ACPCS; however, local weather conditions and topology requirements shall be taken into account. Wrong-way detection shall be located to ensure that rejected vehicles and other vehicles do not cause a nuisance alarm by traversing the in-bound and out-bound lanes.

R. Remotely Manned Egress Only Vehicle ACPs shall utilize the High Efficiency Presence Detection SDDCTEA safety scheme with the AVB being operated in the normally deployed position. The master control panel will be located at the remote manning location and will also provide the remote guard an option to lock the AVB in the deployed position. The remotely manned ACP is not intended to operate at FPCON levels in excess of Bravo+. If ACP operations are anticipated at higher FPCON levels on-site master control panel may also be necessary.

2.13.7. Cable Television (CATV)

Provide CATV in those facilities requested by the installation.

2.13.8. General Requirements

A. Exterior Wiring. Direct buried wiring is not allowed. All wiring shall be in conduit and shall be concrete encased. Exterior communication shall meet the requirements of I3A Technical Criteria for the Installation Information Infrastructure Architecture.

B. Signal System Handhole. Provide a signal system handhole in each island/median in the ID Check Area. Conduit shall be run from the handhole to the island/median guard booth and to the next island/median handhole. This handhole/conduit system shall be used for all signal systems (CCTV, IDS, Duress, AIE, AVB controls) to the ID Check guard booths and to the area. The handhole cover is to be flush with the island/median. A single handhole that handles both the signal and communication cables is allowed.

2.14. ELECTRICAL REQUIREMENTS:

2.14.1. Exterior Lighting

A. Visitor Control Center parking lot, sidewalks and other parking are to comply with the lighting requirements in UFC 3-530-01 “Design: Interior and Exterior Lighting and Controls”.

B. Lighting for the Pedestrian ACP shall maintain a minimum of two (2) Foot-Candles maintained illumination with an average to minimum ratio of 3:1 as measured at an elevation of 6 inches above the roadway surface. This includes areas of a vehicle ACP used for pedestrian access.

C. Access Control Point Corridor Lighting:

i. Approach Zone Roadway(s) are to have three (3) Foot-candles (FC) average maintained with an average to minimum ratio not to exceed 4:1 as measured at an elevation of 6 inches above the roadway surface. Lighting color rendering index (CRI) are to be not less than 50.

ii. Access Control Zone, ID Check Area and Search Area(s) are to have five (5) foot-candles (FC) average maintained with an average to minimum ratio not to exceed 3:1 as measured at an elevation of 6 inches above the roadway surface. In addition, where ID checks or searches are made, the illumination shall be 10 FC or twice the illumination in the immediate or surrounding area, whichever is greater. The vertical illumination shall be at least 25% of the horizontal illumination. ID Check Area and Search Areas shall have a color rendering index (CRI) of not less than 65. All other areas shall have a CRI of not less than 50.

iii. Response Zone Roadway(s) are to have three (3) Foot-candles (FC) average maintained with an average to minimum ratio not to exceed 4:1 as measured at an elevation of 6 inches above the roadway surface. Lighting shall have a CRI of not less than 50.

iv. The ACP corridor (Approach, Access Control and Response Zones) cannot have poles shorter than 15 feet. In situations where poles would need to be shorter to provide the lighting, then the COS is to be contacted. A proposed solution is required to be approved by the Surface Deployment and Distribution Command Transportation Agency (SDDCTEA) in order to ensure all aspects of motorist safety is maintained. The option to not provide lighting throughout the entire ACP Corridor will have to be justified in writing as to why there isn’t a workable solution.

v. ACP layouts will vary greatly, which will have an impact on the length of the Approach, Access Control and Response Zones. Situations where the zone length is too short to have sufficient transitional lighting will be taken on a case-by-case basis. Approval will be by the COS with consultation with SDDCTEA to ensure traffic safety is maintained. This may mean on a short Approach zone that it may be deemed better to have the appropriate transition lighting over having the full foot-candle level average immediately at the start of the ACP.

D. Color Rendering Index (CRI). Lighting at the ID Check Area, Access Control Zone, and Search Areas shall have a color rendition index (CRI) of not less than 65. All other light sources shall have a CRI of not less than 50.

E. Light Loss Factor (LLF).The design is to take into account a light loss factor for the life of the luminaires. The LLF is to be calculated in accordance with Illuminating Engineering Society of North American handbook. This includes using lamp depreciation factor (for LEDs this would include the driver and the luminaire) and the dirt depreciation factor. Instead of providing the

LLF calculation, a LLF of 0.75 can be used. The LLF can be adjusted, if the installation indicates that there is a relamping plan in place to replace all the luminaires after a specified time. In no case is a LLF used to be higher than 0.85.

F. Transition Lighting. Transition lighting shall be provided in accordance with UFC-3-530-01 “Design: Interior and Exterior Lighting and Controls”, SDDCTEA Pamphlet 55-15 “Traffic and Safety Engineering for Better Entry Control for Facilities”, and IES Handbook of North America. Transition lighting goes from the lower light levels prior to the Approach Zone up to the required light level for the Approach Zone and then again up to the required level for the Access Control Zone. Then the lighting will transition from the Access Control Zone to the lower level for the Response Zone. Then after the active vehicle barriers the light level needs to transition down to the lower light level for the street. Roadway geometry may impact the ability to do the transition lighting per the criteria; however, the best engineering attempt shall be accomplished.

G. Power Requirements. High intensity discharge luminaires indicated to be on generator back-up power shall have quartz-restrike provided when the luminaire is a type that either requires cool-down to restrike or takes considerable time to achieve full brightness. An exception to the quartz-restrike would be to provide a means to ensure the luminaire does not lose its arc during transition from normal or generator and back again.

H. Existing ACPs where roadways within the ACP are revised in width or geometry are required to bring that specific entire ACP Zone (approach zone, control zone or response zone) into compliance with the lighting levels. If adjoining ACP Zone(s) are not in compliance, then transitioning lighting is required from the upgraded zone to the existing zones.

I. Exterior lighting poles and the electrical connections shall be frangible when required by MUTCD.

J. Poles are to be located at least 2 ft. from any road edge or curb face. Comply with AASHTO Roadway Design Guide break-away requirements.

K. Exterior canopy lighting control requirements are to be coordinated with the local installation as to location and method. Command and Control shall be provided with a Hand/Off/Automatic controller(s) with the automatic means, as a minimum, being a photocell for controlling the Approach Zone, Access Control Zone and Response Zone, unless the Customer approves in writing an alternate location or different requirements.

L. Exterior doors are to have a luminaire above or adjacent to the door that can be controlled via an automatic means such as a photocell or a manual means. These luminaires shall be LED unless local conditions dictate a more appropriate light source. The following facilities are exempt from this requirement: ID Check Guard Booths, Pedestrian ID Check and Overwatch building.

M. Provide an open/close visual indicator on the ID Check canopy over each lane that is controlled from the ID Check area or Command and Control. The preferred style of indicator is the red “X” and green “Arrow”, but other types are allowed if approved in writing by the local installation and the COS-ACP.

N. Provide an open/close visual indicator on the Search canopy(s) or Enclosed Facility over each lane that is controlled from the Canopy area or Command and Control. The preferred style of indicator is the red “X” and green “Arrow”, but the two head traffic signal (red/green) is allowed, but other types are allowed, such as red/green signal, if approved in writing by the local installation and the COS-ACP. Luminaires shall be Light Emitting Diode (LED). If there is only one search lane, then it is up to the Installation to determine if a visual indicator is desired. If the approach lanes have curves such that the line of site for drivers would make it difficult to see the

canopy mounted indicators, additional indicators should be added in the approach zone to make drivers aware of lanes that are open/closed.

O. Provide under-vehicle lighting, when required by the User, for one lane in each Search Area. The lane must be under the canopy. Those areas that may have snowplows go through the lane are to ensure the lights are flush with or below the finished surface. Provide a manual switch in the area to turn the lights on/off. The local installation can state in writing that they do not want this under-vehicle lighting. Only those lanes under a canopy can have under-vehicle lighting.

2.14.2. Interior Lighting

A. Interior lighting shall comply with UFC 3-530-01 "Design: Interior and Exterior Lighting and Controls "and with the sustainability requirements.

B. Lighting for most spaces with suspended acoustic ceilings shall be of the recessed type.

C. Lighting in Command and Control, ID Check Guard Booth, Pedestrian ID Check, and Overwatch facility shall be dimmable.

D. Emergency and Exit Lighting. Provide emergency lighting and exit lighting per NFPA 101, UFC 3-600-01 "Fire Protection Engineering Facilities" and UFC 4-010-01 "DoD Minimum Antiterrorism Standards for Buildings". Emergency and exit access lighting are to be on battery backup. Facilities that have stand-by generator power are required to have the power to the emergency and exit lights on a generator circuit and also have battery back-up. The battery back-up is considered the primary source. All signage as required by life safety codes are to be included in designs.

2.14.3. General Power Requirements

A. Requirements for heating, ventilation, and air conditioning system shall be determined by the project criteria package. Access around equipment shall be provided for service and air flow. In cold climates, provide features that will protect plumbing, water lines, and other lines from freezing.

B. The power panelboard shall not be installed below a counter. This includes prefabricated structures such as the Vehicle ID Check Area Guard Booths, Pedestrian Check Area both and Overwatch Booth.

C. Exterior Wiring. Direct buried wiring is not allowed. All 600V or less wiring shall be in conduit. If the conduit is within six (6) ft. of a roadway, then the conduit shall be concrete encased or in rigid steel conduit. All wiring over 600V shall be concrete encased.

D. Provide power receptacles per NFPA 70 and in conjunction with the proposed equipment and furniture layouts. Provide duplex receptacles adjacent (at least 6 inches away) to each telecommunication outlet. Special receptacles may be required for equipment to be installed by others to include package scanners. The following are in addition to the general requirements.

   i. Search Function/Bus Shelter is to have at least one duplex receptacle.

   ii. ID Check Guard Booth, Pedestrian ID Check, Overwatch Building. Provide one duplex receptacle at the counter that is either on a UPS circuit or provide a standalone UPS.

   iii. ID Check Guard Booth. Provide an exterior receptacle on each of the narrow ends. Provide at least one receptacle below the eave along each of the long sides.

   iv. Overwatch Pad. Provide a duplex receptacle at the pad.

v. ID Check Canopy. Provide at least one duplex receptacle per island.

vi. Truck Search Area Canopy or Enclosed Facility, Passenger Vehicle Search Area Canopy or Enclosed Facility. Provide at least one duplex receptacle on a column on each side of the inspection space. Provide a dedicated circuit for each side of the inspection space receptacles.

vii. ID Check Canopy, Truck Search Area Canopy, Passenger Vehicle Search Area Canopy. Coordinate with the User on any special power requirements for portable heaters or misters. This typically will require a 20-amp circuit at either 208VAC, 240VAC, 277VAC or similar voltage depending on the country. Provide an appropriate receptacle for the amperage and voltage configuration and have an adjacent disconnecting means.

viii. Truck Search Enclosed Facility, Passenger Vehicle Search Enclosed Facility. Provide duplex receptacles spaced around the perimeter of the inspection space. Provide a dedicated circuit for each side of the inspection space.

E. Other Equipment and Systems. See discussion on COMMUNICATIONS AND SECURITY SYSTEMS for other equipment and systems that will need power. Provide power for communications equipment per UFC 3-580-01 Telecommunications.

F. Power Handhole. Provide a power handhole in each island/median in the ID Check Area. Conduit shall be run from the handhole to the island/median guard booth and to the next island/median handhole. This handhole/conduit system shall be used for all 600V or less power to the ID Check guard booths and to the area. The handhole cover is to be flush with the island/median.

G. Design and locate the service transformer(s) to be either located within the ACP corridor (inside the passive barrier) or on the outside. Location needs to ensure access is maintained to the transformer. If on the outside, this may include a manual gate with the appropriate crash rating in the passive barrier.

H. Panelboards and other cabinets that are located in the ID Check Area or in Search Areas cannot be located closer than 18 inches to the curb face. Locations where the equipment may be struck by an errant vehicle are to provide bollards for protection.

I. Search Canopies. Provide traffic arms with a signal light for each search lane.

J. ID Check area. Provide a traffic arm with or without a signal light for each ID Check Lane, if the installation is not on the list to have fixed Automated Installation Entry installed at this ACP.

2.14.4. Back-up Power

A. Generator

i. Automatic start-up within 10 seconds after the normal source of electrical power fails.

ii. Generator shall have an alternate fuel source and/or sufficient on-site fuel to maintain full-load operation for a minimum of 12 hours. Natural gas line to the generator will be accepted as meeting the 12 hr. on-site fuel source.

iii. Status monitored at Command and Control to include alarms for loss of normal power, generator malfunction, and low fuel.

iv. The generator is to be installed so that it is at least 30 feet from the service entrance transformer and 30 ft. from any ACP building.

v. Design and locate the generator to be either located within the ACP corridor (inside the passive barrier) or on the outside. Location needs to ensure access to the generator is maintained for adding fuel and performing maintenance. If on the outside, this may include a manual gate with the appropriate crash rating in the passive barrier.

vi. The following loads shall be on generator power:

a. Interior lighting for Command and Control, the Gatehouse, Guard Booths, Pedestrian ID Check, Overwatch position, and Search Offices.

b. Canopy lighting in the ID Check Area and the Search Areas.

c. Where canopies are utilized for Search Areas: Canopy lighting for the Search Areas.

d. Where enclosed facilities are utilized for search areas: Interior lighting for the Search Area Enclosed Facility.

e. External lighting in the Access Control Area.

f. External lighting in the Search Areas this shall include 100 ft. on both sides of the Search canopy.

g. Approach Zone and Response Zone lighting within 100 feet of the Access Control Zone.

h. External lighting 150 feet on both sides of the final vehicle barriers.

i. ID Check Area traffic arms.

j. Uninterruptible Power Supplies (UPS).

k. Search Area traffic arms.

vii. Under Vehicle Inspection System (UVIS). An ACP is not required to have a UVIS, but if provided then all equipment associated with the UVIS system needs to be on generator power.

B. Uninterruptible Power Supply (UPS). The ACP shall have one or more hard-wired Uninterruptible Power Supplies to power critical security, Communications, and safety loads when the normal source of electrical power fails. Plug in electrical connection is not acceptable. The UPS shall provide a minimum of 10 minutes back-up power. A centralized UPS is to have a remote monitoring panel located at the Command and Control to report alarms associated with the UPS. The following loads shall be on UPS:

i. Primary communications system

ii. Duress alarm system.

iii. Computers.

iv. CCTV system.

v. Intrusion Detection Systems (IDS).

vi. Automation (Automated Installation Entry) excludes the island traffic arms.

vii. Lighting:

a. One luminaire for each ID Check Lane. This luminaire shall be located near the location where ID checks are performed.

b. One luminaire at each Active Vehicle Barrier to include requirement of CCTV cameras for real time assessment of activity detail.

viii. Access Control Equipment including:

a. Active vehicle barrier controls.

b. Active barrier activation system for one complete operation cycle (opens to close and close to open). Hydraulic systems do not need to have the pump motor on UPS, if the system can maintain enough pressure for 1.5 cycles. The hydraulic pump motor then only needs to be on generator back-up power for a hydraulic system having sufficient capacity.

c. Traffic arms located at the active vehicle barriers.

d. Traffic sensors (wrong way, over speed, and presence detectors). Traffic signals and warning lights.

ix. Under Vehicle Inspection System (UVIS). The computer that operates the UVIS needs to be on UPS.

2.14.5. Lightning Protection System

A. A risk analysis per NFPA 780 is to be performed to determine if a lightning protection system is required. If required, but the installation does not desire a lightning protection system, then the installation shall provide direction in writing.

B. The lightning protection systems are to comply with the requirements found in UFC 3-575-01 “Lightning and Static Electricity Protection Systems”.

C. Provide surge protection per requirements found in UFC 3-575-01 “Lightning and Static Electricity Protection Systems” and UFC 3-520-01 “Interior Electrical Systems”. In addition, all exterior power panelboards and those panelboards that primarily power communications, LAN, exterior site lighting, security equipment and active vehicle barrier controls are to have surge protection.

2.15. HEATING VENTILATING AND AIR CONDITIONING (HVAC) REQUIREMENTS:

OCONUS: All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (NNFA), and in some instances, bilateral Infrastructure Agreements (BIA). Compliance with the most stringent of any UFC applicable, the SOFA, the HNFA, and the BIA, as applicable.

2.15.1. Sizing

A. The capacity of HVAC systems and equipment shall be calculated in accordance with ASHRAE Handbooks, ASHRAE 62.1, ASHRAE 55, and ASHRAE 189.1. Outdoor and Indoor Calculations and Requirements: Indoor design conditions and load calculations shall be in accordance with UFC 3-410-01FA “Heating, Ventilating, and Air Conditioning”. Outdoor air and exhaust ventilation requirements for indoor air quality shall be in accordance with ASHRAE 62.1-2007. All Buildings with minimum LEED Silver requirement (or better) will earn LEED Credit EQ 7.1, Thermal Comfort-Design, except were precluded by other project requirements.

B. Indoor Air Quality: Buildings indoor air quality systems, thermal comfort, acoustical control, equipment, calculation procedures, construction and start-up shall comply with ASHRAE Standard 189.1, Section 8.3, Mandatory Provisions, and Section 8.4, Prescriptive Option, or Section 8.5, Performance Option.

C. Outdoor Air Delivery Monitoring: Spaces Ventilated by Mechanical Systems. Reference Sections 7.4.3.2, 8.3.1.2.1, and 10.3.2, of ASHRAE Standard 189.1. A densely occupied space is defined as those spaces with a design occupant density greater than or equal to 25 people per 1000 ft2.

D. Environmental Tobacco Smoke:

i. Smoking shall not be allowed inside the building. Signage stating such shall be posted within 10 ft. of each building entrance.

ii. Any exterior designated smoking areas shall be located a minimum of 50 ft. away from building entrances, outdoor air intakes, and operable windows.

iii. Section 6.2.9 of ANSI/ASHRAE Standard 62.1 shall not apply.

2.15.2. Ballistic Resistant Rated Structures

A. Command and Control function

The occupied portions of the command-and-control functional areas of combined facilities, which are a ballistically protected area, are to be heated and air conditioned, and controlled for temperature (settings) are to be easily accessed by staff. Locate mechanical equipment when provided for heating and cooling in the Mechanical equipment room or in other areas where space is provided for clearance and accessibility for maintenance. Provide insulation on all ductwork, equipment, and other items as required by code. Provide toilets when required and janitor closets or areas with a mop sink with an exhaust system. The system is to maintain exhaust rates as required by the applicable code. Exhaust fans are to be accessible for repair or maintenance. Communications room when provided are to be air conditioned to maintain a space temperature of 75 degrees F at the design load. The mechanical/electrical room and inside storage is to be heated and ventilated as required by code and to prevent damage from excessive space temperatures.

B. ID Check Guard Booth

This is a ballistic rated structure, heating and air conditioning of the structure is mandatory.

C. Overwatch Building.

This is a ballistic rated structure, heating and air conditioning of the structure is mandatory.

D. Pedestrian ID Check & (Pedestrian ID Check functional areas “room”)

This is a ballistic rated structure, heating and air conditioning of the structure is mandatory.

2.15.3. Non-Ballistic Resistant Rated Structures

A. Search Area Building and Search Function

For large and small standard army design or custom type Search Area Buildings, and search functions or rooms of combined facilities: Occupied portions of the facility are to be heated and air conditioned for occupant comfort, unless otherwise not required by the Installation Design Guidance (IDG). Search area may not be air conditioned. Controls for temperature settings are to be easily accessed by staff. Locate mechanical equipment for heating and cooling in the Mechanical equipment room when required or in other areas where space is provided for clearance and accessibility for maintenance. Provide insulation on all ductwork, equipment, and other items as required by code. Provide Toilet when required and janitor

closets or areas with a mop sink with an exhaust system. The system is to maintain exhaust rates as required by the applicable code. Exhaust fans are to be accessible for repair or maintenance. The mechanical and electrical rooms and inside storage are to be heated and ventilated as required by code and to prevent damage from excessive space temperatures.

B. Two (2)- Three (3)- Six (6)- Nine (9) Processor Visitor Control Center & (Combined facilities including Visitor Processing)

Occupied portions of the facility (Office, Provost Marshal, Vestibule, Hall, and Breakroom, Etc.) and the visitor processing area of combined facility are required to be heated and air conditioned for occupant comfort. Controls for temperature settings are to be easily accessed by staff. Locate mechanical equipment for heating and cooling in the Mechanical room when required or in other areas where space is provided for clearance and accessibility for maintenance. Provide insulation on all ductwork, equipment, and other items as required by code. Provide Toilet when required and janitor closets or areas with a mop sink with an exhaust system. The system is to maintain exhaust rates as required by the applicable code. Exhaust fans are to be accessible for repair or maintenance. Communications room when required are to be air conditioned to maintain a space temperature of 75 degrees F at the design load. The mechanical/electrical room and inside storage is to be heated and ventilated as required by code and to prevent damage from excessive space temperatures.

C. Environmental Requirements for Communications Rooms:

Comply with ANSI/EIA/TIA 569 (including applicable Addenda). Maintain environmental conditions at the Class 1 and 2 Recommended Operating Environment. Before being introduced into the room, filter and pre-condition outside air to remove particles with the minimum MERV filtration quality shown in the ASHRAE HVAC Applications, Chapter 19. Maintain rooms under positive pressure relative to surrounding spaces. Design computer room air conditioning units specifically for Communications room applications. Build and test units in accordance with the requirements of ANSI/ASHRAE Standard 127. A complete air handling system shall provide ventilation, air filtration, cooling and dehumidification, humidification (as determined during the design phase), and heating. The system shall be independent of other facility HVAC systems and operation shall be required year-round.

2.16. ENERGY CONSERVATION REQUIREMENTS

OCONUS: All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (NNFA), and in some instances, bilateral Infrastructure Agreements (BIA). Ensure compliance with the most stringent of any UFC applicable, the SOFA, the HNFA, and the BIA, as applicable.

2.16.1. Whole Building Approach

A whole building approach should be used in achieving the target energy reduction. Energy consumption levels for both the baseline and proposed building shall be determined by using the Performance Rating Method found in ASHRAE Standard 90.1-2007 Appendix G, with process and plug loads; see paragraph Energy Policy. All calculations shall be performed using a professionally recognized and proven computer program or programs that integrate architectural features with air-conditioning, heating, lighting, and other energy producing and consuming systems. These programs will be capable of simulating the features, systems, and thermal loads used in the design. The energy savings and any parasitic energy loads associated with the utilization of recovered energy and other renewable or waste heat applications shall be included. All calculations shall be included as part of the design analysis. A summary of the energy reduction features should also be included as part of the design analysis. This summary should include for

both the baseline and proposed building such items as building insulation values, glass SHGC and U-factor, roof construction, equipment efficiencies and lighting levels.

2.16.2. Energy Calculation Methodologies and Substantiation Requirements:

The calculation methodology used for the documentation and analysis shall follow the guidelines set forth in Appendix G of ASHRAE 90.1, with the exception that receptacle and process loads may not be omitted from the calculation and; this calculation shall address all energy consuming systems in a single integrated methodology. Individual calculations for heating, cooling, power, and lighting systems etc. will not be acceptable. The following building simulation software is acceptable for use in calculating building energy consumption: Hourly Analysis Program (HAP) by Carrier Corp., TRACE 700 by Trane Corp., DOE-2 by US Department of Energy, and EnergyPlus by DOD/DOE.

2.16.3. Design After Award

Interim and final design submittals shall demonstrate that each building including the building envelope, HVAC systems, service water heating, power, and lighting systems meet the Mandatory Provisions and the Prescriptive Path requirements of ASHRAE 90.1. Interim and final design submittals which address energy consuming systems, (heating, cooling, service hot water, lighting, power, etc.) must also include calculations in a separate Energy Conservation Section of the Design Analysis which demonstrate and document:

A. The baseline energy consumption for the facility or facilities under contract, that would meet the requirements of ANSI/ASHRAE/IESNA Standard 90.1-2007,

B. The energy consumption of the facility or facilities under contract utilizing the materials and methods required by this construction contract.

2.17. FIRE PROTECTION REQUIREMENTS:

OCONUS: All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (NNFA), and in some instances, bilateral Infrastructure Agreements (BIA). Ensure compliance with the most stringent of any UFC applicable, the SOFA, the HNFA, and the BIA, as applicable.

2.17.1. Building Function Requirements

The facilities shall be designed in compliance with UFC 3-600-01 “Fire Protection Engineering for Facilities”. The typical construction is Type IIB. The facilities are a combination of Business and Assembly occupancies. Due to the nature of the facility (size, and mission criteria), the facilities are generally not provided with a fire sprinkler system unless officially requested by a specific command. For Life Safety and Egress, the latest version of NFPA 101 shall be used in the development of the buildings. For general square footage, building areas, and heights, the latest version of IBC shall be complied with in the development of the buildings.

2.17.2. Fire Alarm System

The fire alarm system, when required, is to comply with UFC 3-600-01 “Fire Protection Engineering for Facilities". Buildings with a fire alarm system shall have an addressable fire alarm evacuation system with manual pull stations (break glass not allowed), audible and visual alarms. The facilities shall be designed in compliance with UFC 3-600-01, and NFPA 101

2.17.3. Mass Notification

Mass notification system is to be integrated into the fire detection system when both are required. The building mass notification system is to meet the requirements of UFC 4-021-01 “Design and Operation & Maintenance (O&M): Mass Notification System. The system is to be fully compatible with local mass notification system.

2.18. SUSTAINABLE DESIGN

OCONUS: All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (NNFA), and in some instances, bilateral Infrastructure Agreements (BIA). Ensure compliance with the most stringent of any UFC applicable, the SOFA, the HNFA, and the BIA, as applicable.

2.18.1. General

Many features that make a facility sustainable can be integrated into a typical building and site. Reduction in the use of water is a key element that generally applies to every building and site. However, other very beneficial features/techniques (such as shading devices for buildings or building orientation for sites) or materials might also have application but need to have a more tailored building and site to be effective.

The offeror (for design-build contracts) or designer (for design-bid-build contracts) is encouraged to suggest sustainable material substitutions or building feature modifications for consideration where they appear to provide benefit without appearing to interfere with functionality. One aspect of sustainability is the over-all energy consumption of a building and mandated federal criteria are regularly being revised to decrease such energy consumption by increasing energy efficiency.

Documents, such as ASHRAE 189.1-2009, have been developed to focus building design on steadily improving their levels of energy efficiency.

It is expected that meeting certain levels of energy efficiency will require the use of such features as horizontal shades or overhangs above windows in hotter climates and these techniques are acceptable even though not required for every climate application. The target for this facility type at the time this Army Standard Design was approved for application to specific projects was 30% energy savings from the base-line energy use defined in the criteria of ASHRAE 90.1-2007. The U. S. Army has decided to include/use site energy for the HVAC, lighting, and hot water loads to determine the energy savings.

It is recommended that facilities provided for climate zones 1a & b, 2a & b and 3a, b & c have horizontal shades above the windows, shading grills, or other devices or building geometry (like being deeply recessed) techniques (clerestories close to the roof line may accomplish the same benefit with overhangs) to allow for meeting the required energy savings.

It is assumed that both the governing criteria and the energy target (as defined by the U. S. Governments and organizations such as the United States Green Building Council (USGBC)) will change regularly. Provide every facility (these will generally be projects appropriated at specific times over several years) so that it meets the requirements of governing criteria and the energy target that are applicable at the time of project development.

Many federally mandated definitions/requirements or measures of energy consumption criteria (energy cost savings) are not identical with other measures of energy efficiency or sustainability. Examples of different measures are those described in the USGBC “LEED” point criteria.

Provide a comprehensive analysis of energy consumption during specific project design processes and incorporate what appears to be the best/most-appropriate blend of features/characteristics that will reduce

energy consumption of the facility to the minimum practicable levels. Also meet whatever the current mandates or criteria that apply at the time of the specific project under design:

A. FY08-FY12, and FY13 and beyond: New facilities or minor renovations that don't meet LEED minimum program requirements (occupied building, climate control (heating and/or cooling) for human comfort and 1000 S.F. or greater):

   i. Scored using LEED-NC and incorporate sustainable design features to the maximum extent life cycle cost effective and technically possible.

   ii. Supporting documentation will be developed (including LEED checklist).

2.18.2. LEED and Third-Party Validation

Reference: UFC 1-200-02 High Performance and Sustainable Building Requirements, latest

A. GENERAL. Except where indicated otherwise, these requirements apply worldwide to all facility construction activities on permanent Active Army installations, Army Reserve, Army Readiness Centers, Army National Guard Facilities and Armed Forces Reserve Centers, regardless of funding source and including Base Realignment and Closure (BRAC) and non-Army tenant facilities on Army property. For tenant projects on Army property, USACE project Master Planner and Project Manager (PM) will make the tenant organization aware of Army Sustainability requirements and the tenant responsibility to coordinate directly with the installation Department of Public Works (DPW) if the requirements cannot be met. These requirements apply to permanent facility construction only. Excluded are overseas contingency construction and continental United States (CONUS) interim facilities. However, overseas contingency construction and CONUS interim facilities should incorporate as many sustainability features as life cycle cost effective especially passive sustainability measures. The UFC 1-200-02 "High Performance and Sustainable Building Requirements" will be used for all DOD projects, except ASHRAE 90.1-2007 shall be used and work for other customers where appropriate. All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (NNFA), and in some instances, bilateral Infrastructure Agreements (BIA). Therefore, the acquisition team must ensure compliance with the most stringent of the UFC, the SOFA, the HNFA, and the BIA, as applicable.

B. MINIMUM REQUIREMENT - NEW FACILITIES IN THE UNITED STATES AND ITS TERRITORIES. Facilities which meet the requirements for Sustainability HPSB validation shall be registered with one of the organizations which provide sustainability validation indicated in the UFC. The project shall incorporate all applicable requirements of the DoD or Army Sustainability/HPSB Score Sheet. Sustainability validation shall be completed by one of the validation methods through one of the organizations indicated in the UFC. DoD or Army Sustainability/HPSB Score Sheet shall be completed and updated throughout the project life and copies shall be forwarded to the Army PM at each design phase and upon request during construction. Final validation and certification documents shall be forwarded to the PM for record and data calls. Projects which do not meet minimum requirements for sustainability validation or certification shall document sustainability features which are applicable to the scope involved. Documentation of this type of projects shall use the DoD or Army Sustainability/HPSB Score Sheet and additional data collected, such as construction waste recycling shall be provided to the DPW and the Army PM.

C. ENERGY POLICY

Directive and Guidance for FY13 and beyond MCA Projects - See Reference ECB 2012-13.

   i. References:

a. Memorandum, ASA (IE&E), 27 Oct 10, Subject: “Sustainable Design and Development Update (Environmental and Energy Performance)”

b. ANSI/ASHRAE/IESNA Standard 189.1-2009: “Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings”

c. Memorandum of Understanding (MOU), 06 Mar 2006, “Guiding Principles for Federal Leadership in High Performance and Sustainable Buildings”

d. Engineering and Construction Bulletin (ECB) 2011-1, 19 Jan 2011, Subject: “High Performance Energy and Sustainability Policy”

e. Engineering and Construction Bulletin (ECB) 2012-13, 23 Apr 2013, Subject: “Energy Implementation Guidance Update, ASHRAE 189.1, Life-Cycle Cost Analysis Requirements”

f. Energy Independence and Security Act (EISA) of 2007, Section 433” Federal Building Energy Efficiency Performance Standards”

g. Methodology and Procedures for Life-Cycle Cost Analysis, Subpart A, Code of Federal Regulations, Part 436

h. ANSI/ASHRAE/IES Standard 90.1-2010 “Final Qualitative Determination, Pacific Northwest National Laboratory”, October 2011

ii. General

a. The purpose is to update and clarify the Energy and Sustainability guidance previously issued by ECB 2011-1 (Reference d). Specifically, this establishes a minimum energy requirement for compliance with ASHRAE Standard 189.1-2009 (Reference b) for prescriptive and performance paths and establishes ASHRAE Standard 189.1 as our baseline facility criteria for the purpose of life-cycle cost analysis (LCCA). Previous guidance issued in ECB 2011-1 related to LCCA for features that exceed 1% of the Programmed Amount will no longer apply starting with FY13 projects and beyond. Instead, projects should follow guidance stated herein.

b. We are in the process of reviewing the most current versions of ASHRAE Standards 189.1-2011 and 90.1-2010 to determine what the impacts are, if any, of adopting the latest versions of the Standards. ASHRAE Standard 189.1-2011 references the 2010 version of ASHRAE Standard 90.1 and according to an analysis conducted by the Pacific Northwest National Laboratory (Reference g) there are 109 changes to the 90.1-2010 version compared to the 90.1-2007 version of which 62 changes have an impact on energy. Expect additional guidance regarding adoption of these new standards.

c. As stated in ECB 2011-1 (Reference d), all FY13 and beyond projects are required to meet the Energy and Sustainability requirements of ASHRAE Standard 189.1 according to Department of the Army Sustainable Design and Development Policy Update (Reference a) with the noted exemptions. The Army established ASHRAE Standard 189.1 as a minimum standard and recognizes that Congressional Law and Executive Orders drive project solutions beyond the requirements of ASHRAE Standard 189.1; an example being EISA 2007 fossil fuel reduction targets (Reference e).

d. The Energy Independence & Security Act of 2007 (EISA 2007) requires the progressive reduction in site fossil fuel use, compared to a 2003 Commercial building Energy Consumption survey (CBECS) average per building type as published by the Energy Information Administration (EIA), with the goal of eliminating consumption of fossil fuels by 2030.

e. In terms of the fossil fuel reduction statute, there is currently no formal guidance issued by an expert agency detailing how the calculations for fossil fuel reduction should be performed. In general, DOD implementation guidance would follow expert agency guidance. In absence of formal implementation guidance, USACE cannot require the fossil fuel avoidance as pertains to EISA 2007, which requires a reduction of 65% for the average building type in CBECS with respect to ASHRAE 90.1-2007 for buildings FY15-FY19 and 55% reduction respectfully for FY10-FY14.

f. Per Army Policy, ASHRAE 189.1 is a minimum requirement and shall be used as the project baseline for life-cycle cost comparisons. A LCCA is not required on the baseline project. An incremental LCCA shall be completed for all energy efficiency or conservation features provided in excess of the baseline to ensure the payback period is no greater than the lesser of 40 years or the projected life of the facility. Equipment procurement, fuel, maintenance, repair, replacement, and any other quantifiable benefits and costs are to be included in the LCCA. The LCCA will be documented and made part of the design analysis.

g. When applying ASHRAE Standard 189.1 energy performance standards, ensure that the minimum energy savings to be achieved, through performance or prescriptive paths, is at least 30 percent better than ASHRAE Standard 90.1-2007 (including process and plug loads) by the use of Energy use analysis: see paragraph Energy Conservation. This 30 percent savings threshold may in some cases be a slight improvement upon the standard for certain facility types in some climatic zones.

h. The Energy Policy Act of 2005 (EPact 2005) amended and extended by Executive Orders, subsequent legislation, and the “Federal Leadership in High Performance and Sustainable Buildings Memorandum of Understanding” (FLHPSB MOU) establishes a betterment goal for the proposed project compared to an ASHRAE 90.1-2004 standard baseline model. Epact is applicable to all buildings and is an Energy Use based analysis, which excludes plug and process loads but the requirements of the paragraph above including process and plug loads is a much more extensive, conservative and stricter requirement for energy use savings.

i. 10 CFR Part 436 (Reference f) establishes a methodology to conduct a LCCA for determining energy and water conservation improvements for Federal Buildings. The Building Life-Cycle Cost (BLCC) program developed by the National Institute of Standards and Technology (NIST) was designed to comply with 10 CFR Part 436 and includes a MILCON Analysis module. All project delivery teams shall use the BLCC program and follow the methodology in 10 CFR Part 436 to determine the LCCA for each project when requesting additional funds for features in excess of the baseline described in paragraph (c). A link is provided below with instructions on how to download the BLCC program for free:

http://www1.eere.energy.gov/femp/information/download_blcc.html

j. A request for an exemption to HQUSACE may be made for any specific requirement included herein or by reference that the PDT determines would adversely affect mission performance, security requirements, health, safety, or welfare. The request for exemption shall only apply to the specific requirements in conflict. Any approved exemptions to the guidance shall be documented with reference to the specific requirement in conflict and included in the project documentation.

2.19. CYBERSECURITY FOR FACILITY RELATED CONTROL SYSTEMS (FRCS):

All planning, design, and construction of FRCS for existing and new facilities including integration into existing control systems shall be done in accordance with the requirements set forth. The following is a non-comprehensive list of potential FRCS:

A. Electronic Security Systems (ESS) which include Intrusion Detection Systems (IDS), Access Control Systems (ACS), and Video Monitoring Systems/Closed Circuit TV (CCTV)

B. Fire Protection Life-Safety Systems which include Fire Alarm Reporting System (FA), Fire Suppression System, Mass Notification System (MN) and Sound Masking Systems

C. Building (Level) Automation Control System (BCS) which includes Heating, Ventilation and Air Conditioning Systems (HVAC) and Direct Digital Control (DDC)

D. Energy Monitoring and Control System (EMCS) and Utility Monitoring and Control System (UMCS)

E. Building Lighting System (UFC 3-530-01) and Receptacle Control System

F. Physical Access Control Systems (PACS)

G. Variable Frequency Drives

H. Automated Rollup Doors

I. Automated Window Shades

J. Electrical Distribution System (Exterior and Interior) with micrologic processors

K. Generator, Controller, Automatic Transfer Switch and Uninterruptible Power Supply

L. Utility Metering System (Advanced Meters, AMI, etc.)

M. Public Address System (PA)

N. Audio/Visual Systems (A/V)

O. Supervisory Control and Data Acquisition (SCADA) Systems

P. Gate Controllers

Q. Other FRCS as defined by Project Requirements, and not specifically identified. Any system, or component of a system, which has wireless, radio frequency (rf), Bluetooth, network communication capabilities, or a port for connecting a laptop/computer.

As the project design progresses the inventory list of FRCS will be narrowed and fully defined and edited. 25 05 11 Cybersecurity for Facility-Related Control Systems specification sections will be included. An ECIFP (Engineering Considerations and Instructions for Field Personnel) will be provided to Construction to facilitate the implementation of cybersecurity controls and inventorying process.

Preliminary categorization for this facility is presumed to be mission essential, depending upon the existence of an alternate ACP. Refer to "Distribution of the FRCS Master List Memo - signed 7_16_21" and "Addendum - FRCS Master List Update 7_16_21". The Confidentiality-Integrity-Availability (C-I-A) Impact Level Ratings may be taken from the FRCS Master List as preliminary until all of the FRCS has been inventoried, and the respective System Owner (SO), Information System Security Manager/Officer (ISSM/ISSO) is able to provide the respective C-I-A impact level ratings in accordance with UFC 04 010 06.

Identification of the SO, ISSM/ISSO is the first and foremost task of the Cybersecurity Subject Matter Expert (SME) or Cybersecurity Designer, whose credentials should be a minimum Information Assurance Manager (IAM) Level II Certification per DoD 8570.01-M.

Provide a Cybersecurity Design Analysis write up which documents the cybersecurity design process for the project.

2.20. FACILITY SPECIFIC REFERENCES

A. These references are to be included [in addition to those in Part 3 of the Army RFP Wizard].

i. ASTM F2656/F2656M (2018a) “Standard Test Methods for Vehicle Crash Testing of Perimeter Barriers”

ii. Military Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA) Pamphlet 55-15, “Traffic and Safety Engineering for Better Entry Control Facilities”

iii. Army Standard (AS) for Access Control Points (ACPs) – 13 April 2012 available at: https://mrsi.erdc.dren.mil/cos/army-standards

B. OTHER UFC REFERENCES IN THIS STANDARD:

UFC 1-200-02 (2022) High Performance and Sustainable Building Requirements, with Change 2

UFC 3-101-01 (2021) Architecture with Change 1

UFC 3-201-01 (2021) Civil Engineering, with Change 5

UFC 3-240-01 (2021) Wastewater Collection and Treatment, with Change 2

UFC 3-301-01 (2022) Structural Engineering, with Change 1

UFC 3-410-01 (2021) Heating, Ventilating, and Air Conditioning Systems, with Change 8

UFC 3-420-01 (2021) Plumbing Systems

UFC 3-520-01 (2021) Interior Electrical Systems, with Change 2

UFC 3-530-01 (2019) Interior and Exterior Lighting and Controls, with Change 4

UFC 3-575-01 (2021) Lightning and Static Electricity Protection Systems, with Change 1

UFC 3-600-01 (2021) Fire Protection Engineering for Facilities, with Change 6

UFC 3-701-01 (2022) DoD Facilities Pricing Guide, with Change 1

UFC 4-010-01 (2022) DoD Minimum Antiterrorism Standards for Buildings with Change 2

UFC 4-010-06 (2017) Cybersecurity of Facility-Related Control systems, with Change 1

UFC 4-020-02FA (2005) Security Engineering: Concept Design (FOUO)

UFC 4-020-03FA (2005) Security Engineering: Final Design (FOUO)

UFC 4-021-01 (2010) Design and O&M: Mass Notification Systems, with Change 1

UFC 4-021-02 (2019) Electronic Security Systems, with Change 1

UFC 4-022-01 (2017) Security Engineering: Entry Control Facilities / Access Control Points

UFC 4-023-07 (2017) Design to Resist Direct Fire Weapons Effects, with Change 1

ANSI A137.1 (2019) Specifications for Ceramic Tile

ASTM F1066 (2004; R 2018) Standard Specification for Vinyl Composition Floor Tile

ASTM F2656/F2656M (2020) “Standard Test Methods for Vehicle Crash Testing of Perimeter Barriers”

FISMA Federal Information Security Modernization Act, dating back to 2002

Military Surface Deployment and Distribution Command Transportation Engineering Agency (SDDC-TEA) Pamphlet 55-15, “Traffic and Safety Engineering for Better Entry Control Facilities” available at: https://www.sddc.army.mil/sites/TEA/Functions/SpecialAssistant/TrafficEngineeringBranch/Pages/pamphlets.aspx

Army Standard (AS) for Access Control Points (ACPs) – 13 April 2012 available at: https://mrsi.erdc.dren.mil/cos/army-standards

2.21. ACP WAIVERS

See Army Standard (AS) for Access Control Points (ACPs). Army Standard exception and waiver process is identified in AR 420-1.

Waivers to the Army ACP Standard Design must require a COS position statement and approved by HQ USACE.

APPENDIX A

COST INFORMATION

Cost Information for DD1391/PAX Support for Access Control Points is available at:

https://mrsi.erdc.dren.mil/cos/nwo/acp/

The cost templates being used for Access Control Points only provides a rough order of magnitude. Specific projects for DD1391/PAX Support shall be coordinated with the U.S. Army Corps of Engineers, Omaha District (Center of Standardization)

APPENDIX B

DRAWINGS (UNDER SEPARATE COVER)

All Standard Design documents including narrative, drawings, and BIM model are available at:

https://mrsi.erdc.dren.mil/cos/nwo/acp/

APPENDIX C

FRCS MASTER LIST 07-16-2021