

# PATRICK AIR FORCE BASE INSTALLATION FACILITIES STANDARDS (IFS)



Installation Elements



Site Development



Facilities Exteriors



Facilities Interiors

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Signature Field

**Patrick Air Force Base IFS**

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## A. OVERVIEW

Comply with Air Force Corporate Standards for Overview:

<http://afcfs.wbdg.org/index.html>

This Installation Facilities Standards (IFS) document is part of the Air Force Corporate Facilities Standards (AFCFS) program to assist bases in implementing and maintaining facilities standards as appropriate for efficient operations within the respective climate region. IFS fully replaces, consolidates and simplifies existing facilities standards documents, such as the Architectural Compatibility Plan (ACP) or ACGs, FEPs, etc., and organizes information using the same structure, or Table of Contents, as the AFCFS website.

IFS reflects the AFCFS' concepts of "Facility Hierarchy" (categorizing facilities into group numbers) and "Facility Quality" (assigning an appropriate level of quality to each group number) and applies these principles at the base level. Applicable DoD and Air Force criteria such as UFCs, AFIs, Memoranda, and UFGSs (Guide Specs) are referenced and linked within IFS to ensure the document is always current.

Navigating within this IFS is efficient and straightforward. Please use the interactive Table of Contents to locate subject matter, and click on the title of a section to access it. From any page, click on the "Back to Table of Contents" footer to return. Content is organized into 4 major sections: Installation Elements, Site Development, Facilities Exteriors and Facilities Interiors.

This IFS document begins as a fill-in PDF form, which is fully editable, and becomes a "living document" that can be regularly updated by base-level personnel following a format that is consistent across the Air Force. While the format is standardized, IFS content is customized for base operations and the local climate to ensure mission success while emphasizing reduced maintenance and reduced initial costs, life-cycle costs, energy use, and water use.

1. Conformance to Air Force Corporate Facilities Standards (AFCFS) and Installation Facilities Standards (IFS) are required by Air Force Instruction (AFI) 32-1023 and Air Force Memorandum. Please refer to the AFCFS website for links to documentation on current policy.
2. The IFS is a component plan of the Installation Development Plan (IDP) per Air Force Instruction (AFI) 32-7062 (replacing the Architectural Compatibility Plan). All military construction projects and Non-Appropriated Funds (NAF) facilities are required to comply with the IDP and its IFS component plan by AFI 32-1023. The Base Civil Engineer (BCE) maintains and implements the IDP and its component plans, to include the IFS.
3. Please refer to the AFCFS website as a portal to reference materials and requirements documents for design and construction projects (via links). Specific references to current DoD memoranda and Air Force criteria are updated periodically to provide the most current guidance and requirements. Programming, design and contract documents should list "current edition" for all reference and requirements documents. The documents in force at the date of execution of the design and/or construction contract shall be the governing version.
4. *Advanced Modeling Requirements:*  
*For all Air Force projects requiring advanced modeling, to include 3D visualization, Building Information Modeling (BIM), facility data, quantity take-off, geospatial, etc., follow the Army standards. Refer to USACE Minimum Model Matrix (M3) and Project Execution Plan (PxP) which outline required model uses. Refer to [CAD BIM Technology Center \(Contract Requirements\)](#) for more information on M3 and PxP.*
5. Joint Bases shall implement IFS under their Joint-Base designation with volume numbers for individual installations following the IFS Development Tool template. For example, for Joint Base Langley-Eustis, provide: Vol. 1 Langley AFB and Vol. 2 Fort Eustis.

### A.01. FACILITY HIERARCHY

Comply with AF Corporate Standards for Facility Hierarchy (and subsections):

<http://afcfs.wbdg.org/facility-hierarchy/index.html>

### A.02. FACILITY QUALITY

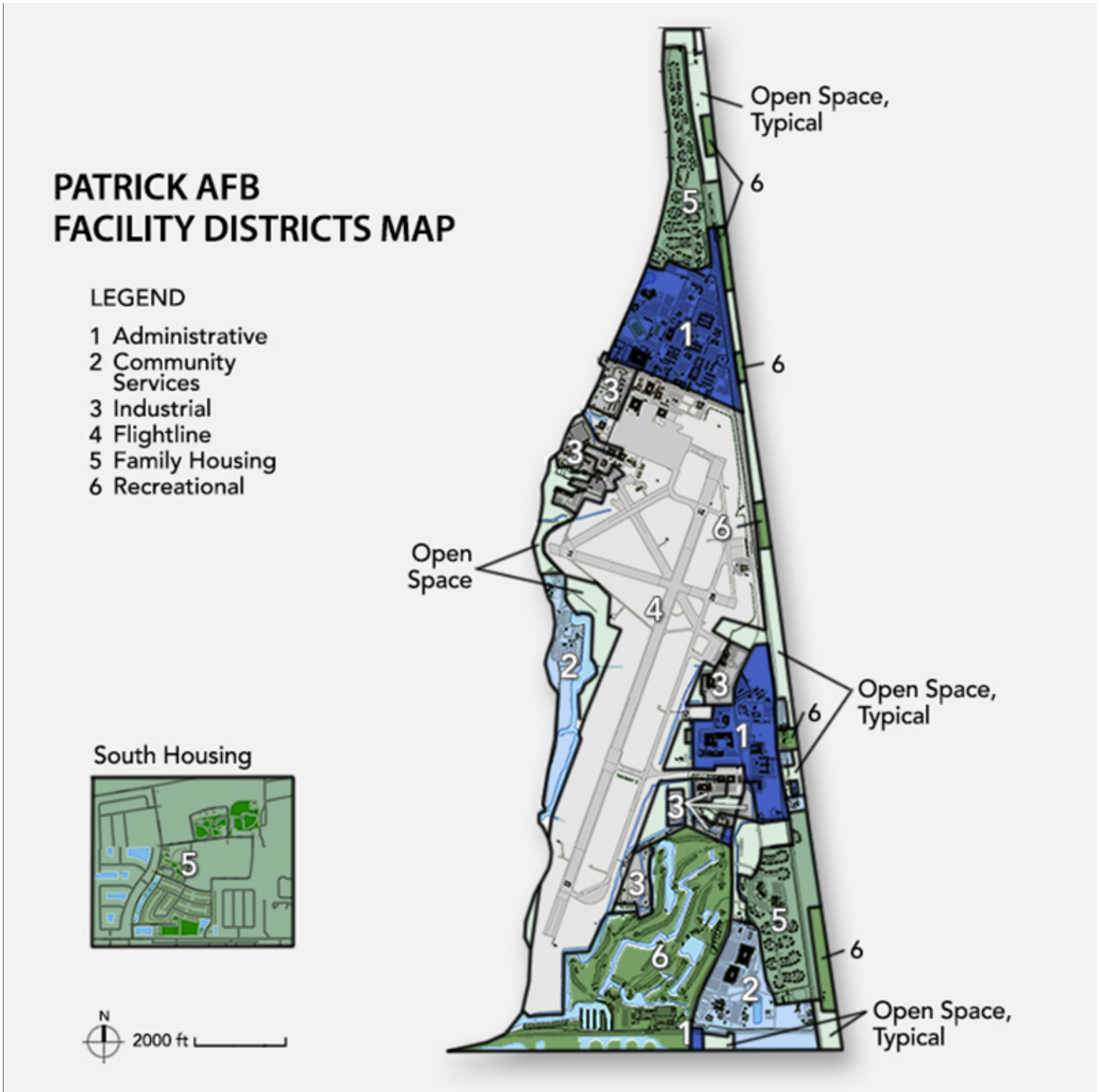
Comply with AF Corporate Standards for Facility Quality (and subsections):

<http://afcfs.wbdg.org/facility-quality/index.html>

### A.03. FACILITY DISTRICTS

Comply with AF Corporate Standards for Facility Districts (and subsections):

<http://afcfs.wbdg.org/facility-districts/index.html>



**Note:** Apply the base-wide standards in this IFS for Installation Elements, Site Development, Facilities Exteriors and Facilities Interiors (products, materials, color, etc.). Following application of the base-wide standards, refer to the Appendix and apply any additional requirements specifically related to the Facility District.

## B. INSTALLATION ELEMENTS

Comply with Air Force Corporate Standards for Installation Elements:  
<http://afcs.wbdg.org/installation-elements/index.html>

### B.01. COMPREHENSIVE PLANNING

Comply with Air Force Corporate Standards for Comprehensive Planning:  
<http://afcs.wbdg.org/installation-elements/comprehensive-planning/index.html>

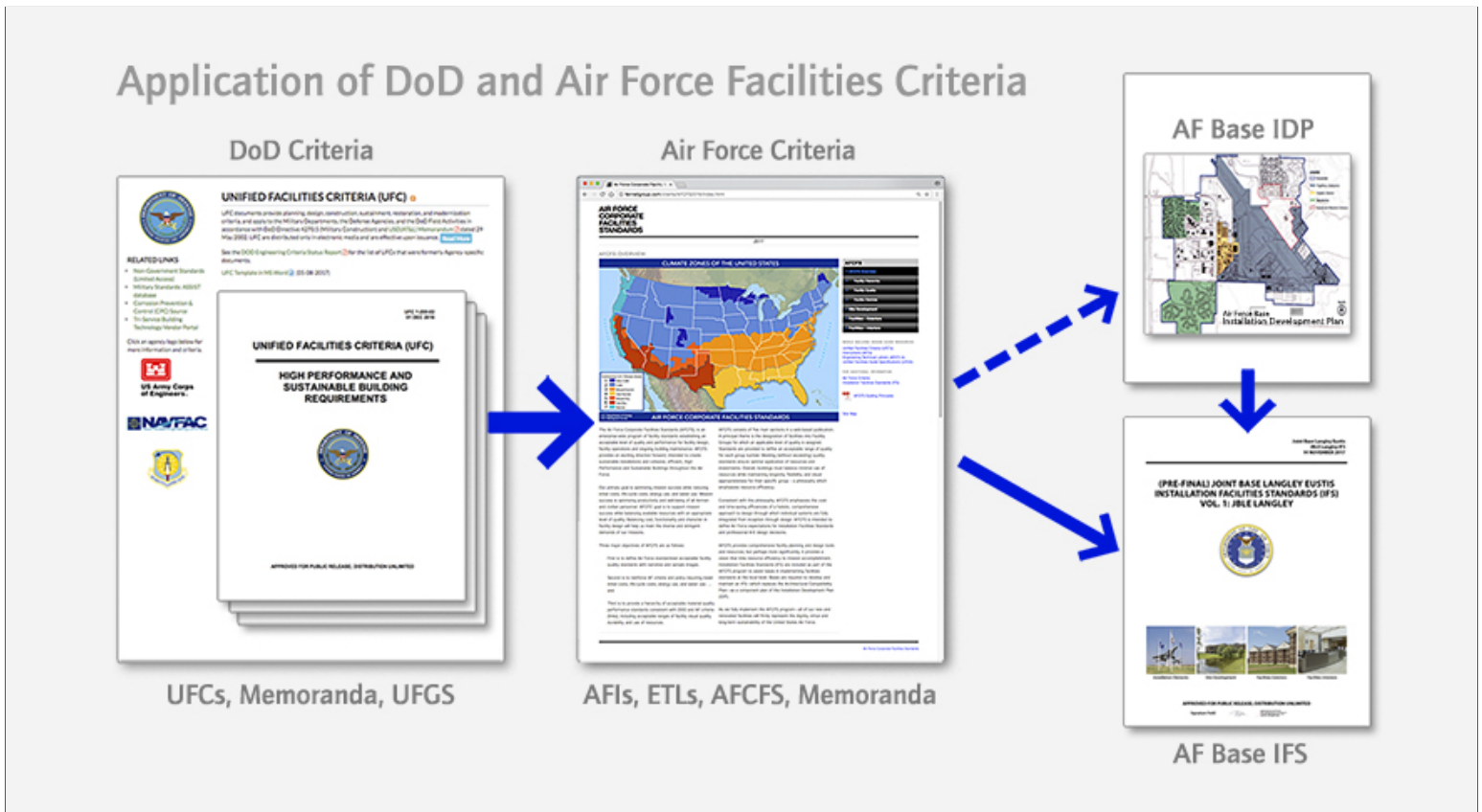
#### B01.1. Installation Development Plan (IDP)

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Department of Defense, Department of the Air Force and Air Force Base Criteria

1. The Base Civil Engineer is responsible for developing, maintaining and implementing the installation's Comprehensive Planning documents and to ensure that the Installation Development Plan (IDP) is prepared, maintained, and implemented following AFI 32-7062.

2. The 45th Space Wing Installation Development Plan was completed in July 2017 and includes recommended Planning Districts and Sub-Districts. The Patrick AFB and Cape Canaveral AFS General Plans will continue to be followed for guidance on Area Development Plans. The Facility Districts included in Appendix F of this Patrick AFB IFS are representative of the Planning Districts.

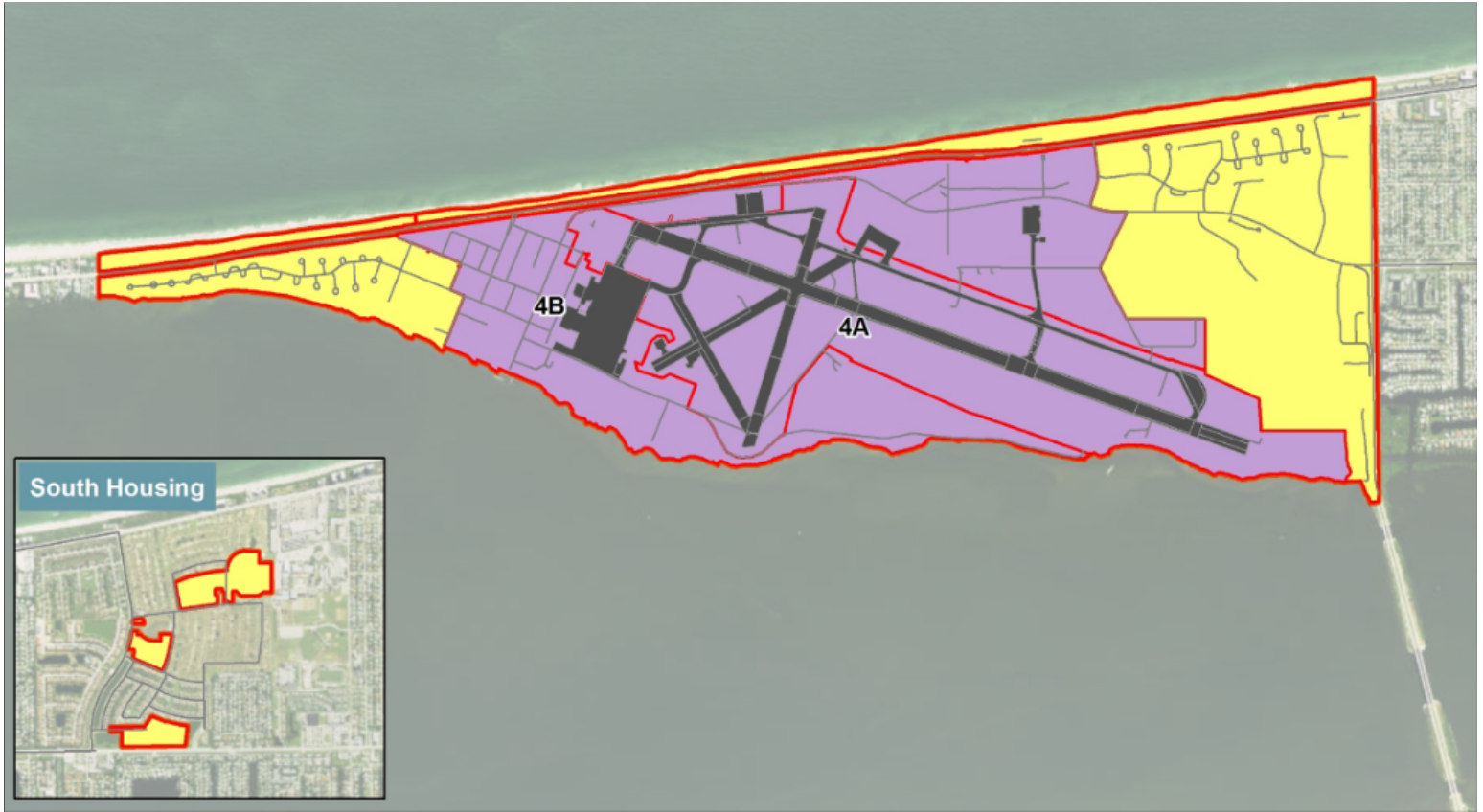
### B01.1.1. IFS Component Plan of IDP

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Map of Housing Zones

1. Maintain this Installation Facilities Standards (IFS) as a Component Plan of the base's Installation Development Plan (IDP).
2. The 45th Space Wing Installation Development Plan was completed in July 2017 and includes recommended planning districts and subdistricts. The Patrick AFB and Cape Canaveral AFS General Plans will continue to be followed for guidance on Area Development Plans. The Facility Districts included in Appendix F of this Patrick AFB IFS are representative of the planning districts.

The delineation of planning districts is supported by the installation's layout and infrastructure as indicated in the planning district maps. It also is intended to ensure that future development is achieved in an orderly manner, to complement the installation's environment and effectively meet the priorities defined in the Vision Statement. The planning districts also are divided into subdistricts for the purpose of development of planning standards and allowable uses later in the IDP subdistricts are established by their unique physical nature and programmatic requirements.

Planning districts for Patrick AFB include:

1. River Planning District --Encompasses the areas along the Banana River, north to Endeavor Road and south to the Manatee Golf Course northern perimeter, and also includes the Family Camp area, Munitions, the Airfield, and the 45 SW HQ.

- Subdistrict 4A --Flightline mission-specific with development restrictions.



- Subdistrict 4B --Defined by airfield operations and maintenance (O&M), light industrial, administrative and training facilities, lodging, unaccompanied housing, community support, and open space.

2. Ocean Planning District --Encompasses the recreational areas east of State Road A1A, north to the North Housing Area and south to South Gate, including the Manatee Golf Course, and the Medical and South Housing Area.

### B01.1.2. Brief History of Base

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Aerial View of Patrick AFB from the Northeast



U.S. Naval Air Station Banana River FL



45th Space Wing Patrick Air Force Base



45th Space Wing Patrick Air Force Base

For 50 years, the Air Force's continuous participation in missile and space operations on the Eastern Range has been a particular source of pride for the 45<sup>th</sup> Space Wing and its predecessor organizations. The 45th Space Wing supports the Air Force

in providing an effective national defense force, with space power being a critical component. The wing's vision - "to be the world's premier gateway to space" - is embodied in the individual efforts of the installation staff.

Both CCAFS and PAFB are located in Brevard County, Florida, and are approximately 9.5 miles from each another. The installations are within the Eastern Range and work concurrently under the command of the AFSPC, the 45th Space Wing (45 SW). The 45 SW Headquarters building and administrative facilities are based at PAFB and work to support the AFSPC mission of space and cyberspace operations, which are located at CCAFS.

CCAFS was transferred from the U.S. Navy to the USAF in 1948. Formerly named Banana River Naval Air Station, the USAF first renamed the installation Joint Long Range Proving Ground (JLRPG), as the area commonly was used for missile testing. The installation was known as JLRPG only for three months in 1951 before it was renamed to CCAFS.

PAFB was a deactivated Naval Air Station in 1948, and was transferred to the USAF in 1949. Formerly named Banana River Naval Air Station, in 1950 the USAF renamed the installation Patrick Air Force Base after Army Major General Mason Patrick. The primary function at PAFB is administration of space launch operations at CCAFS, to assure access to pace.

Ranging in average elevation from 8 to 9.8 feet above mean sea level, CCAFS/PAFB are situated on a barrier island along the eastern coastline of Brevard County, Florida, approximately 60 miles east of Orlando, 155 miles south of Jacksonville, and 210 miles north of Miami. Development is constrained on both installations by the Atlantic Ocean to the east, the Banana River to the west, and community development in-between.

Known locally as the Space Coast, Brevard County houses a resident population of 545,184, with the communities of Cape Canaveral, Cocoa Beach, and Satellite Beach adjacent to the installations. CCAFS is bounded by Port Canaveral to the south and Kennedy Space Center (KSC) to the north and west. Together, CCAFS and KSC are referred to as the Cape Canaveral Spaceport (CCS). South of CCAFS, Cape Canaveral and Cocoa Beach geographically separate CCAFS and PAFB, and frequently are occupied by a tourist population on their beaches as well as at space exploration-related amenities available to the public.

### **B01.1.3. Future Development**

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The existing physical layout of Patrick AFB is a result of historic development, physical limitations, systems technology, and military strategy. The array of land uses and the location of buildings, roads, and utilities have changed over time, as missions and needs evolved. The placement of activities has also responded to the physical and natural environs that existed when each use was developed. The locations of infrastructure, the proximity of functionally-related activities, and constraints and opportunities have, in combination, determined the arrangement of structures and activities on PAFB.

The base contains 2,254 acres, of which 70 acres are water. It is split into two land parcels, with the South Housing Area physically located one mile south of the base and surrounded by Brevard County and the City of Satellite Beach. The predominant land use on PAFB is associated with the Airfield, which uses 693 acres for runways, taxiways, and aprons, and 33 acres for aircraft operations and maintenance. The other main land uses on PAFB include 408 acres for family housing and 273 acres for outdoor recreation, most of which is occupied by the golf course and the marina.

Industrial land use encompasses 217 acres, while 74 acres are administrative land use. There are 352 acres of open space on the base, but a large part of it is found on the 4.2-mile Atlantic Ocean beachfront, which is not a buildable area. There is also some open space on the eastern side of the airfield and along the Banana River to the west of the airfield, which may be available for facility development. Smaller land uses include Community Commercial (74 acres), Community Service (13 acres), and Unaccompanied Housing (24 acres), areas that take up 111 acres total. Medical land use accounts for 22 acres of on-base land. The industrial area, located along the Banana River, abuts the base's administrative and Unaccompanied Housing areas.

Several types of land uses occur on sites within the Airfield Clear Zones, including industrial, administrative, community services and commercial, and outdoor recreation facilities. Many of these incompatible land uses are scheduled for phased removal from the Clear Zones. One of the more interesting land uses at PAFB is a 2-acre plot of Launch and Range Control property that supports the Cape Canaveral Air Force Station launch mission. It is located east of SR-A1A, south of the Tides Club.

## B02. STREET ENVELOPE STANDARDS

Comply with Air Force Corporate Standards for Installation Elements:

<http://afcs.wbdg.org/installation-elements/index.html>

Comply with AF Corporate Standards for Street Envelope Standards:

<http://afcs.wbdg.org/installation-elements/street-envelope-standards/index.html>

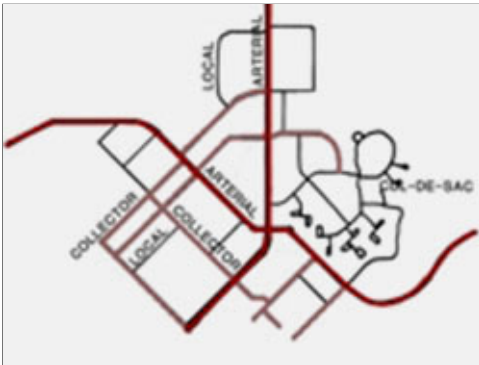
### B02.1. Hierarchy of Streets

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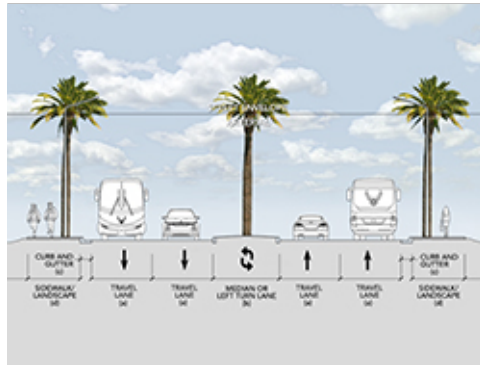
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Hierarchy of Streets



Street Envelope Section

1. Develop and evolve a hierarchical transportation network of arterial, collector and local streets following UFC 3-201-01 and its industry references.
2. Provide consistent functionality throughout the installation and a level of visual quality relating to the adjacent Facility Group number.
3. Routes along facilities in Group 1 may have materials, finishes and features with a higher visual quality than Groups 2, 3 and 4. Reduce maintenance requirements by installing highly durable materials and finishes in routes along Group 3 industrial facilities.
4. Special routes may have a visual quality comparable to those along facilities in Group 1.
5. Create and maintain arterials with two lanes of traffic in each direction with landscaped or paved medians as applicable to the local climate and adjacent land use.
6. Minimize stops and turns along arterials. Eliminate on-street parking along arterials and collector streets.
7. Connect arterials to local streets with appropriately scaled collector streets.
8. Provide appropriate landscape setbacks and pedestrian buffers along all streets.
9. Minimize and consolidate curb cuts along streets.
10. Provide two basic types of lanes (travel and auxiliary) throughout the street system to accommodate continuous "through" traffic and to satisfy requirements for turning, parking, and emergency and service vehicles. Turning lanes may be used as either left-turn or right-turn lanes at intersections.

11. Define bicycle traffic routes in the Installation Development plan or its applicable component plans. Currently there is too little bicycle traffic to warrant designate bike lanes on streets. Bike trails with connections to off-installation trails should be considered.

12. Use consistent landscape treatment at all base entrances. Plant material massing, spacing, and height are characteristics that should visually reinforce the type of street.

**B02.1.1. Arterial Streets**

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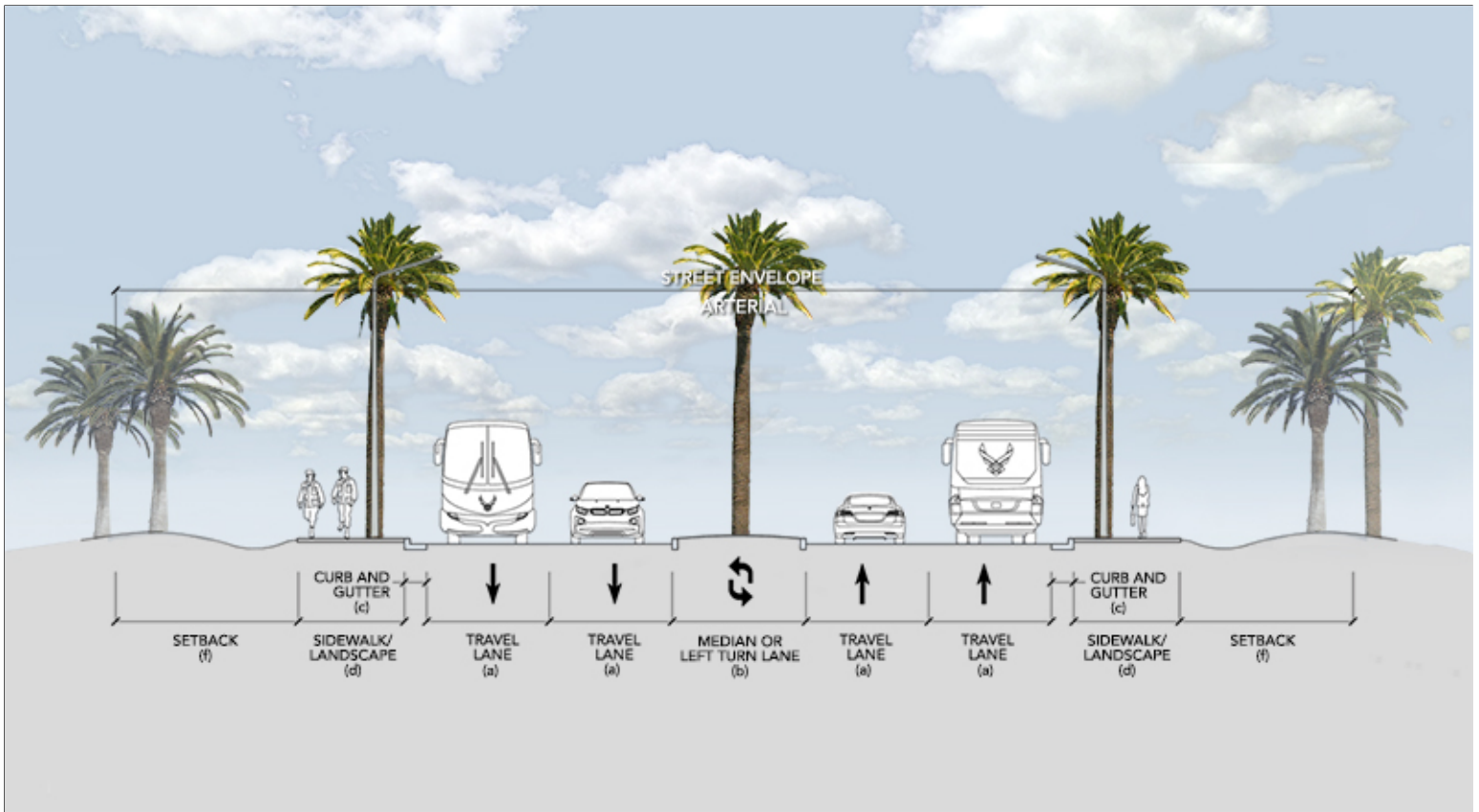
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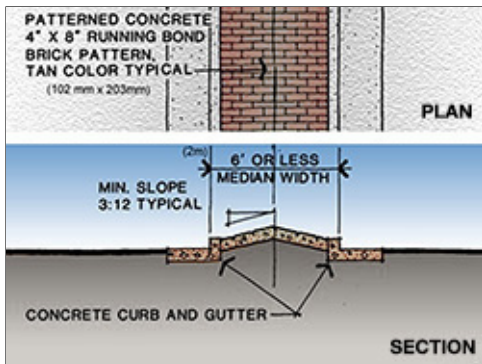
Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 2

Image Sizing and Cropping Tool (small)



Travel Lane (a): 12' Median (b): 12' Curb and Gutter (c): 2' Sidewalk / Landscape (d): 12' Setback (f): Min. 35' or per ATFP



Paved Median



Axial Relationship

1. Maintain the following with this designation as arterial streets: Jupiter Street from the East Gate and the section of South Patrick Drive from the AFTAC Area to the South Gate. Refer to the illustration for general dimensions that pertain to all base arterial streets.

2. The following specific requirements shall be incorporated into all arterial projects including roadway modifications/upgrades and associated building sites adjacent to the street.

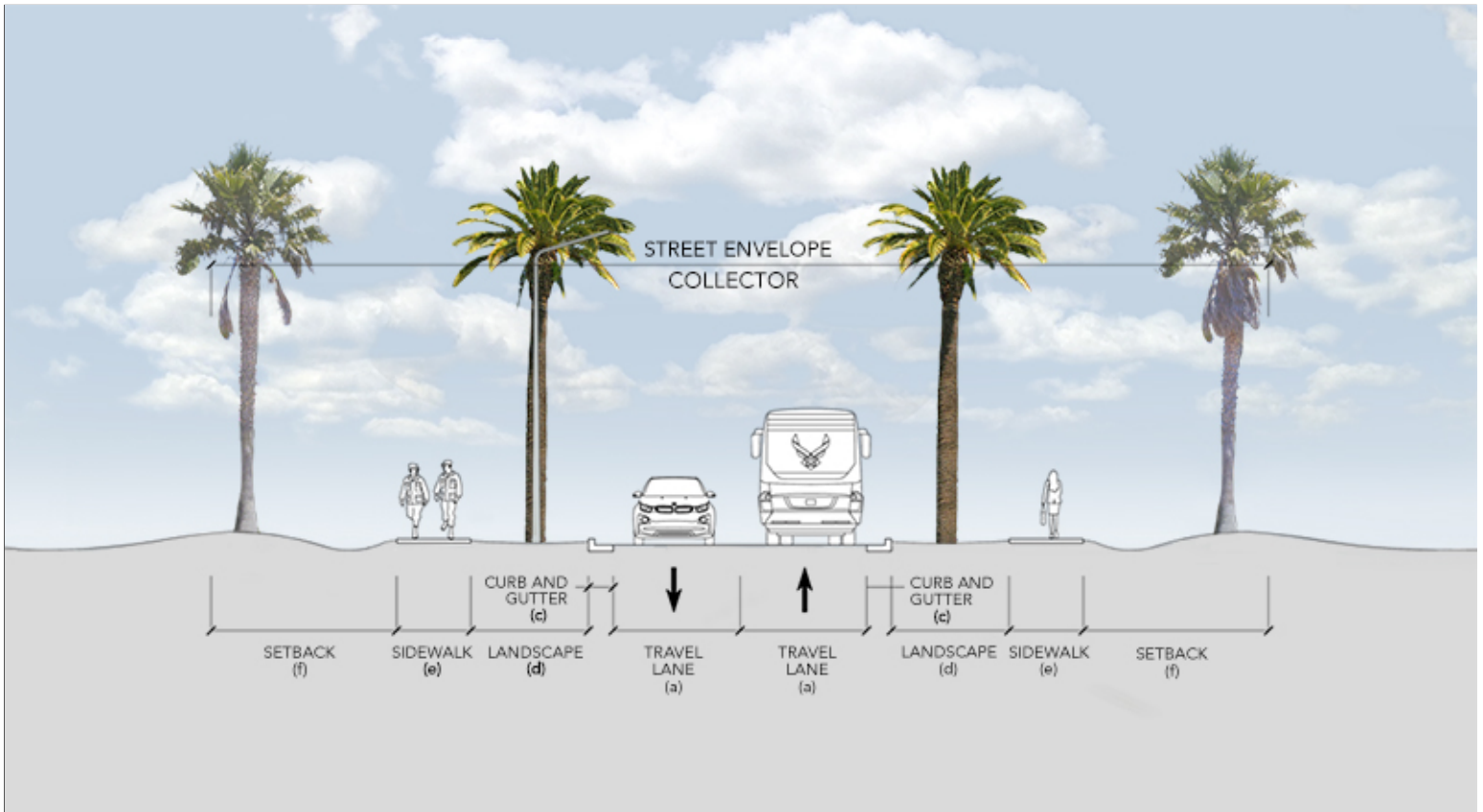
### B02.1.2. Collector Streets

Applicable  N/A Has large graphics to include (800px x 440px)

Select number of graphics / images (large: 800 px x 440 px) to insert 1

Image Sizing and Cropping Tool (large)

Applicable  N/A Has small graphics to include (250px x 188px)



Travel Lane (a): 12' Median (b): N/A Curb and Gutter (c): 2' Landscape (d): 10' Sidewalk (e): 6' Setback (f): Min. 35' or per AFTP

1. Design collector streets less prominent than arterials.
2. Maintain the following as collector streets: Spacelift Avenue, Atlas Avenue, and Rescue Road.
3. Match the level of quality of street elements to the adjacent Facility Group number.

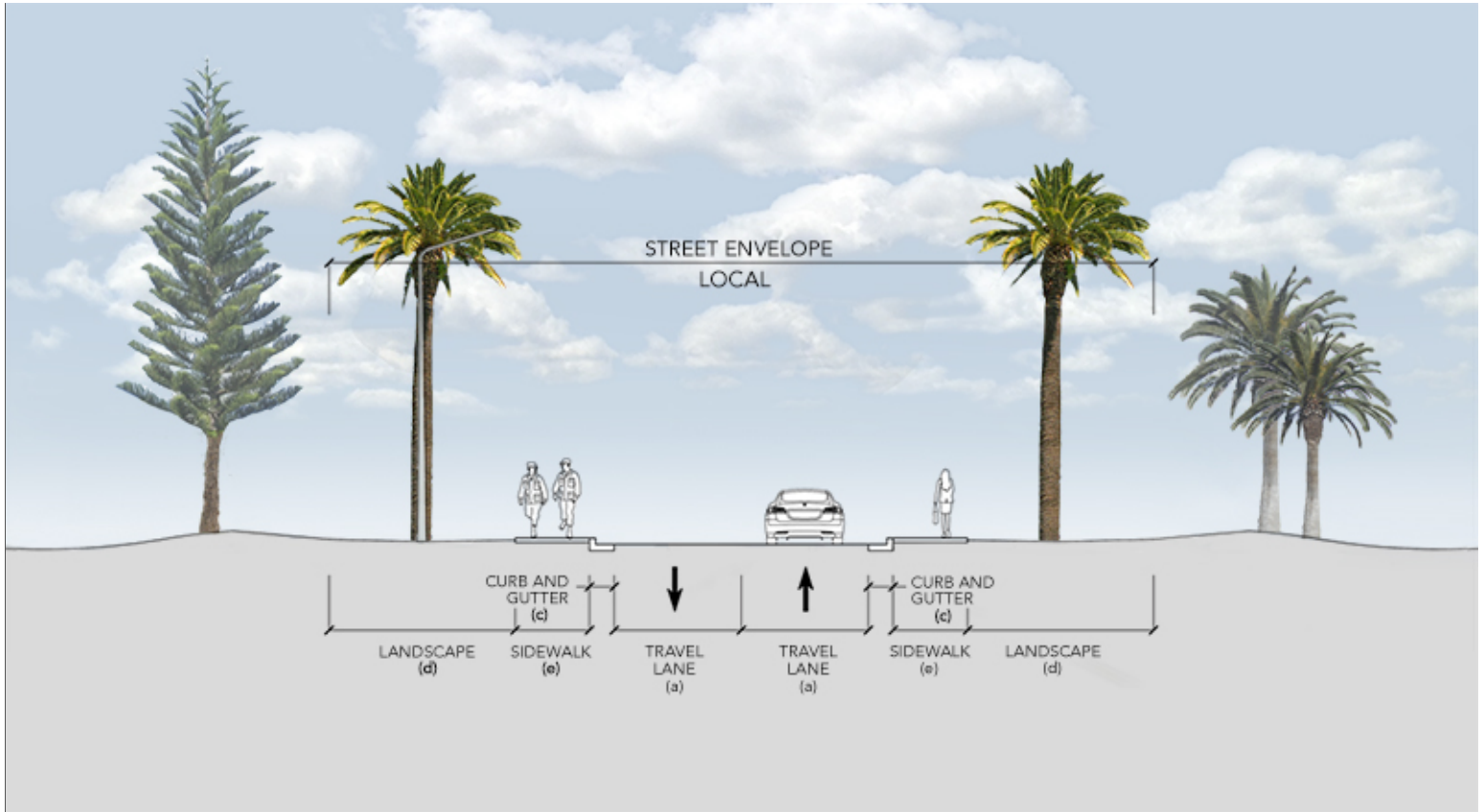
### B02.1.3. Local Streets

Applicable  N/A Has large graphics to include (800px x 440px)

Select number of graphics / images (large: 800 px x 440 px) to insert 1

Image Sizing and Cropping Tool (large)

Applicable  N/A Has small graphics to include (250px x 188px)



Travel Lane (a): 11' Median (b): N/A Curb and Gutter (c): 1.5' Landscape (d): 15' Sidewalk (e): 6'

1. Design and maintain local streets in due proportion to the amount of traffic.
2. Generally encourage the development of street frontage of adjacent sites to positively contribute features such as landscaping.
3. Maintain consistent local streetscapes for visual and functional continuity.

### B02.1.4. Special Routes

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Develop all special routes consistently with those adjacent to Group 1 facilities.

## B02.2. Hierarchy of Intersections

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Provide a hierarchy of intersections to include arterial, arterial-collector, collector, collector-local and local following UFC 3-201-01 and its industry references.
2. Passive systems such as traffic circles are preferred to active systems such as signalized intersections. Aggressively pursue passive systems to lower maintenance requirements and reduce energy use.
3. Use a level of visual quality for an intersection equal to the quality found in the related streetscape, which corresponds to the adjacent Facility Group number.

### B02.2.1. Arterials

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Provide a circular design that encompasses the four corners of the intersection with a double row of ornamental trees. In front of this, provide a large shrub bed made up of indigenous shrubs. Provide a perennial flower bed in front of the shrubs.

### B02.2.2. Arterial/Collector

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Provide a circular design including all four corners of the intersection. Use a single row of ornamental trees, with indigenous shrubs providing the foreground, and a perennial flower bed in the foreground.

### B02.2.3. Collectors

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Provide an informal group of small ornamental trees on each of the intersection four corners.

#### **B02.2.4. Special Intersections**

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Develop all special intersections consistently with those adjacent to Group 1 facilities.

#### **B02.2.5. Street Frontage Requirements**

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Maintain open space buffers.

2. Refer to C06.1.7. Streetscape Landscaping for planting and screen wall requirements along street frontage.

3. Open parking spaces (except in family housing areas) shall be screened from view from adjacent streets to a minimum height of 3' by the use of berms, plantings and trees.

#### **B02.2.6. Sight Lines**

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Provide adequate sight lines for an effective and safe traffic operation per American Association of State Highway and Transportation Officials (AASHTO) standards.

2. Sight lines will vary based on the speed and classification of the roadway or intersection. Plants and any related signage within the sight triangle should follow these rules:

- Shrubs may not exceed thirty inches (30") growing height within sight triangles.
- Trees may not be located in the sight line triangle unless there is a minimum clear understory of 6' in height.

#### **B02.3. Street Elements**

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)



1. Emulate the streetscape area's pre-development hydrology using passive and active design features to help sustain the adjacent regionally appropriate landscape. Coordinate with the base Stormwater Management Plan.
2. Employ systems, materials and techniques to maximize streetscape sustainability. Consider pervious paving and reflectivity of surfaces appropriate for the local climate.
3. Install at-grade curbing and/or raised-profile curb and gutter as applicable to direct stormwater to bioswales and rain gardens as source water for vegetation. Do not paint concrete curbing.
4. Provide all on-site utility service lines and equipment below grade when adjacent to Facility Group 1. In routes along Group 2, 3 and 4, when mounting elements such as utility cabinets, communications equipment and water valves above grade is unavoidable, paint these consistently and provide visual screening following Installation Facilities Standards (IFS).
5. Provide traffic control devices including access control point/entry control facility signs, speed limit signs and street name signs following the current edition of the Manual on Uniform Traffic Control Devices (MUTCD) per UFC 3-120-01.
6. Follow UFC 3-120-01 for directional and wayfinding signs and address both vehicular and pedestrian traffic.
7. Reduce energy consumption and reduce maintenance requirements by providing street lighting only when functionally required to ensure safety and to address antiterrorism following UFC 4-010-01. Ensure the quality and quantities of lighting and fixtures are appropriate for the adjacent Facility Group number.

### B02.3.1. Paving

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Pavement design shall comply with UFC 3-250-01. Ensure appropriate analysis and design of subgrade conditions to support low maintenance high performance pavements.
2. Materials for pavements shall be specified in accordance with UFC 3-250-01 and must conform to requirements set forth in the Unified Facility Guide Specifications (UFGS) for concrete and asphaltic concrete.

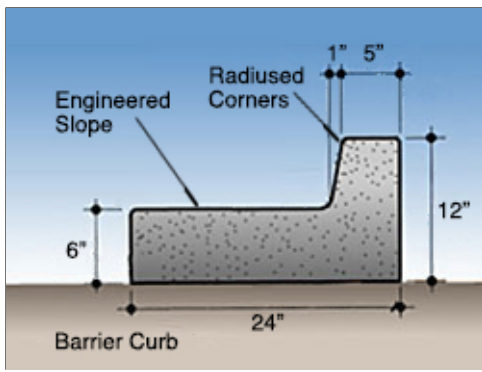
### B02.3.2. Curb and Gutter

Applicable  N/A Has large graphics to include (800px x 440px)

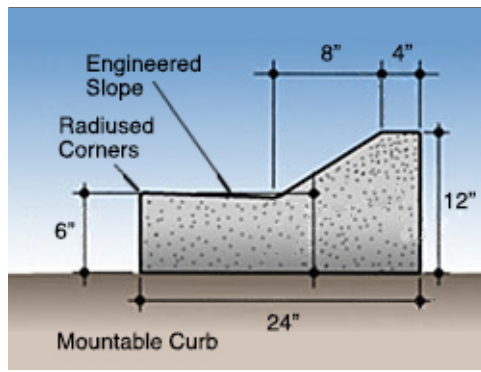
Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 3

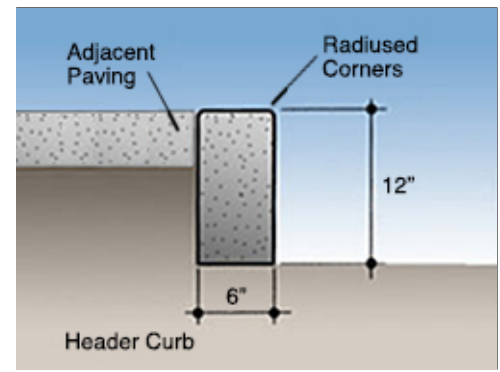
Image Sizing and Cropping Tool (small)



Barrier



Mountable



Header

1. Continuous concrete curbs shall be provided at paved roads and parking areas adjacent to Group 1, Group 2 and Group 4 facilities.
2. Integral concrete curb and gutter shall be used at areas with drainage (asphalt sloped towards curb). A header curb without gutter shall be allowed in areas if adjacent asphalt is sloped away.
3. A minimum standard curb height of 6 inches shall be consistently maintained. "Rolled" mountable curbs are allowed in Facility Group 4.

### B02.3.3. Utility Service Elements

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Provide all utility service lines below grade; when mounting elements (such as utility cabinets, communications equipment and water valves) above grade is unavoidable, paint these either Dark Green (high-luster) finish for transformers and switch gear, etc. or Patrick AFB Conch Shell for incidental piping, backflow prevention devices, fire hydrants, etc. as appropriate and with markings as required by UFC or code. Provide visual screening following Site Development, Landscaping.
2. Overhead service lines are prohibited.

### B02.3.4. Traffic Signs

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Refer to Exterior Signs, Colors and Types for Traffic Control Devices, which includes signs.

### B02.3.5. Street Lighting

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Refer to the Lighting section for appropriate applications along streets.

### B02.3.6. Other

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

## B03. OPEN SPACE / PUBLIC SPACE

Comply with Air Force Corporate Standards for Installation Elements:

<http://afcs.wbdg.org/installation-elements/index.html>

Comply with AF Corporate Standards for Open Space / Public Space:

<http://afcs.wbdg.org/installation-elements/open-space-public-space/index.html>

### B03.1. Plazas, Monuments and Static Displays

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 2

Image Sizing and Cropping Tool (small)



Central Plaza



Monument Feature

1. Natural features and culturally or historically significant features or events may be recognized and acknowledged with physical elements such as plazas, monuments and static displays. However, limit these elements on a base to ensure judicious use of resources and to reduce ongoing maintenance requirements.

2. Design highly durable plazas, monuments and static displays with a level of quality comparable to Facility Group 1.

3. Link plazas, monuments and static displays to the pedestrian circulation system. Install landscaping, site furnishings and lighting appropriate for the application and local climate following applicable sections of Installation Facilities Standards (IFS).

4. Select systems, products and materials for paving, walls, and structures following IFS.

### B03.1.1. Paved Plazas

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 3

Image Sizing and Cropping Tool (small)



Riverside Dining Facility Outside Dining Area



45th Space Wing Memorial Plaza



Outdoor Courtyard

1. Mitigate heat island by providing high-albedo, shaded plazas. Pervious pavers shall be used on all plazas and courtyards in Facility Groups 1 and 2; use pervious concrete in Groups 3 and 4. The designer shall incorporate appropriate expansion and construction joints.

2. Concrete masonry pavers or tiles may be used as accent materials at courtyards and similar public spaces to provide a different texture. Where such pavers are used, the color shall conform to the range of beiges with accents in terra cotta. Pavers used on walks shall be solid and set with mortar. Use pavers or stone walkways only to emphasize high profile facilities in Facility Groups 1 and 2 or to achieve some special effect. Use these types of walks sparingly because they are traditionally more expensive and require more maintenance than concrete sidewalks.

3. Scored/tooled concrete can also be used. Concrete stain can be used to highlight the scored area. Example shown has 24"x24" scored concrete with 6" quarry tiles as an accent. Use Wausau tile brick and concrete pavers, or equal.

### B03.1.2. Sculptures, Markers and Statuary

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Relate new sculpture, markers and statuary to the 45th Space Wing space mission design theme. Generally limit these elements to frequently used locations adjacent to Facility Group 1 and highly traveled community pedestrian spaces.

2. Consider entry gates as possible sites for new displays. The East Gate at Patrick AFB shall be the initial area of focus.
3. All proposed memorials shall follow AFI 36-3108 and be limited to highly deserving individuals or groups as deemed appropriate by the installation leadership. Living memorials (tree plantings / etc) are discouraged due to added maintenance requirements.
4. Match the materials and / or color palette of adjacent buildings.
5. Use direct or indirect lighting to accentuate features or enhance an intended effect as approved by the BCE. Accent and aesthetic lighting is not authorized from 1 May to 31 October due to USFWS light management requirements for threatened and endangered sea turtle protection (45 SWI 32-7001 latest edition). Additionally, no uplighting is authorized for sea turtle and migratory bird protection.
6. Ensure that all sculpture, markers and statuary are honorable and inspiring, provide a sense of place, positively contribute to the base's visual quality, and encourage pride for the community and the US Air Force.

**B03.1.3. Static Display of Aircraft**

- Applicable  N/A Has large graphics to include (800px x 440px)
- Applicable  N/A Has small graphics to include (250px x 188px)

1. Follow IFS base-wide standards for all elements of the display area with specific attention to traffic sight lines, pedestrian circulation, site furnishings, signs, and lighting. Address requirements for the Facility District as well.
2. Generally locate concrete base/foundation structures for static displays below grade.
3. At static displays where pedestrian paths are provided, a minimum of one trash receptacle and one bench shall be provided. Receptacle and bench design must conform to IFS requirements.

**B03.2. Grounds and Perimeters**

- Applicable  N/A Has large graphics to include (800px x 440px)
- Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 3

Image Sizing and Cropping Tool (small)



Fencing along River



Retention Pond in Open Space



Open Space Buffer

1. Provide formal spaces for parade and review functions, recreational areas and parks following the base's Installation Development Plan (IDP) and Installation Facilities Standards (IFS). Refer to the Site Furnishings topic for additional information.
2. Maintain preservation areas following the IDP and IFS.
3. Comply with UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings and UFC 4-022-03 Security Fences and Gates for all elements associated with the base's gates and perimeter fence.
4. Identify and describe base-wide utility corridors in the IDP.
5. Base-wide utility infrastructure shall be inconspicuous. Bury all utility service lines below grade.
6. Follow the requirements of this IFS regarding all utility structures located above grade that visually impact the installation.
7. Where screening of utility equipment and structures is provided, allow adequate and proper clearance for safety and maintenance.
8. Reduce visual clutter and visual impact of the following items through a combination of careful placement, screen walls, landscaping and painting:
  - Electrical switch-stations.
  - Sewage lift stations.
  - Water well pumps, storage tanks and/or related structures.
  - Gas piping, meters and similar incidental items.
  - Above ground fuel storage tanks.
  - Any ground-mounted freestanding utility item exposed to view.
9. Larger structures such as electrical switch-stations, sewage lift stations, fuel storage tanks and mechanical/electrical equipment shall be screened from view, using materials, forms, and colors in the screen walls which match those respective design elements present at adjacent buildings.
10. Paint above-ground equipment and associated components such as electrical piping or exposed plumbing lines in either Dark Green (high-luster) finish for transformers and switch gear, etc. or Patrick AFB Conch Shell for incidental piping, backflow prevention devices, fire hydrants, etc. as appropriate and with markings as required by UFC or code.
11. Maintain currently buried utility service lines as a visual asset.
12. Consolidate and enclose service utility lines in underground utility corridors when feasible. Create routes along the inside edge of parking lot islands.

### **B03.2.1. Parade Grounds**

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Follow UFC 3-201-02, Appendix B for the planning and design process and criteria for parade grounds.
2. Establish and maintain parade grounds only where there is a confirmed need and provide landscape materials appropriate for the locale following IFS.
3. Bleachers may be installed only when there is a documented requirement at parade grounds. Nonferrous metals that do not require painting or going maintenance are required. The Base Civil Engineer shall determine quantities, sizes, and products on a case basis.

### B03.2.2. Parks

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 3

Image Sizing and Cropping Tool (small)



Beach Bath House



Typical Pavilion



Riverside Running Trail

1. Bleachers may be installed only when there is a documented requirement at parks and fields for recreational events. Follow guidance under Parade Grounds.

2. Picnic pavilions may be provided in parks where there is a documented need.

3. Prohibited picnic pavilion materials include wood or metal pre-manufactured storage sheds. Pavilions should be permanent in nature and constructed of concrete masonry block (CMU) with integral stucco finish or split face concrete block.

4. When picnic pavilions are permitted near facilities, generally match the architecture of the adjacent facility and provide a level of quality of the adjacent facility group number.

### B03.2.3. Preserves

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 6

Image Sizing and Cropping Tool (small)



Dune and Beach Protection



South Base Stormwater Canals



Dune and Beach Protection



Native Species



Preserved Dune Vegetation



Preserved Open Space

1. Preserve areas that are designated as open space on the General Plan.
2. Provide minimal maintenance with mowing as needed for controlling bird behavior for airfield safety, or eliminating fire hazards.

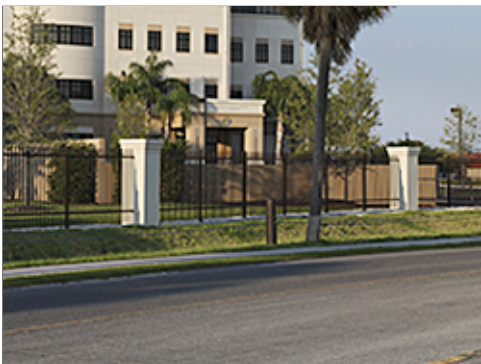
### B03.2.4. Perimeter Fence

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 2

Image Sizing and Cropping Tool (small)



Powder Coated Steel Fencing



Perimeter Fence Detail

1. Design, install and maintain the base's perimeter fence following UFC 4-022-03.
2. Stringently comply with AT / FP requirements following UFC 04-010-01 for all spaces adjacent to the base's perimeter fence and all gate
3. Fencing, gates and other elements that are associated with the main gates shall be a level of quality equivalent to Facility Group 1. Perimeter base walls and housing walls shall be constructed of stacked split face block to match the existing tan and terra cotta colors of the established Mediterranean architecture. Masonry joints shall match the block color. Installation gates and decorative fencing must be powder coated or black anodized aluminum picket with stucco "conch shell" colored pilasters or stacked split face block pilasters to match existing. Any approved chain link fencing must be black vinyl coated galvanized chain link with black vinyl coated galvanized posts.
4. Maintain a positive visual quality along the traffic corridor on both sides of the installation gates and reinforce the base's spcae mission visual theme in applicable elements and features. Specifically address pedestrian access, circulation and common areas.



## C. SITE DEVELOPMENT

Comply with Air Force Corporate Standards for Site Development:  
<http://afcs.wbdg.org/site-development/index.html>

### C01. SITE DESIGN

Comply with Air Force Corporate Standards for Site Development:  
<http://afcs.wbdg.org/site-development/index.html>

Comply with AF Corporate Standards for Site Design / NEPA:  
<http://afcs.wbdg.org/site-development/site-design-nepa/index.html>

#### C01.1. Site Design Considerations

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 3

Image Sizing and Cropping Tool (small)



Generally Flat Site



Integrated Water Feature



Connectivity

The topography of Patrick AFB is generally flat. The drainage canals convey runoff from the north area of the base south to the Golf Course canals that ultimately discharges to the Banana River Lagoon. All new construction sites shall take note the very low elevation of the installation and subsequent roads and airfield pavement areas constructed in the 1940's. New construction shall adhere to a finish floor elevation (FFE) at a minimum elevation of 10.5 feet (NAVD88). This minimum requirement is based on storm surge predicted from the National Oceanic Atmospheric Administration (NOAA) Sea, Lake and Overland Surges from Hurricanes (SLOSH) model although according to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Map Number 12009C0451E, many sites on Patrick AFB are located in Zone X-Other Areas which is defined as areas determined to be outside the 500-year floor plain. The 45SW has determined that no project to include Mission Partner facilities shall be constructed under 9.0 feet based on NAVD88 and all sites shall receive final approval of the FFE from the BCE. Recent MILCON projects include the AFTAC Campus, the Security Forces Facility, the Child Development Center, the 920RQW Weapons Maintenance Facility, the 920 RQW Aircrew Life Support Facility, and the awarded Fire Crash/Rescue Facility.

#### C01.2. Building Orientation

Applicable  N/A Has large graphics to include (800px x 440px)

Select number of graphics / images (large: 800 px x 440 px) to insert 1

Image Sizing and Cropping Tool (large)

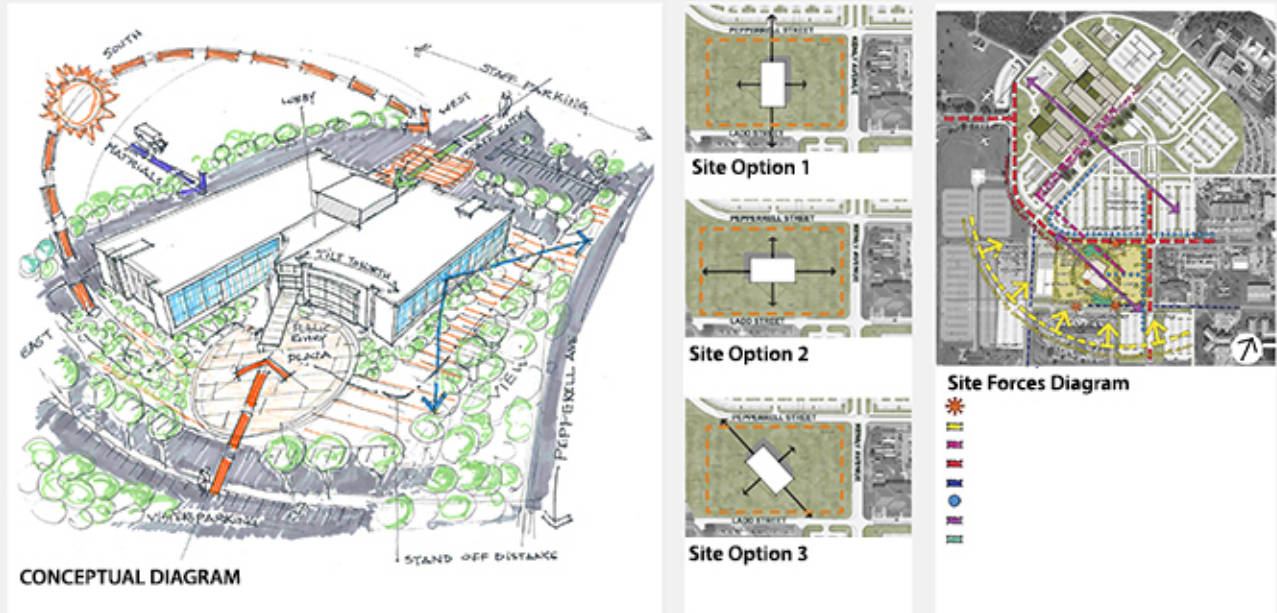
Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 6

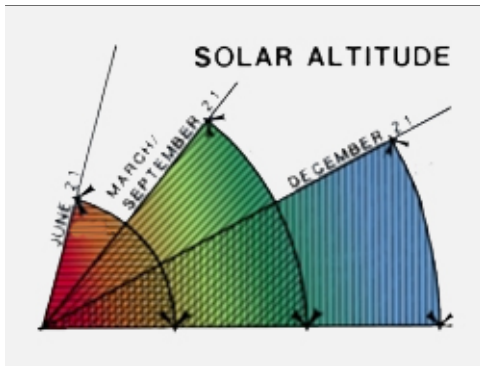
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## DRIVING FACTORS

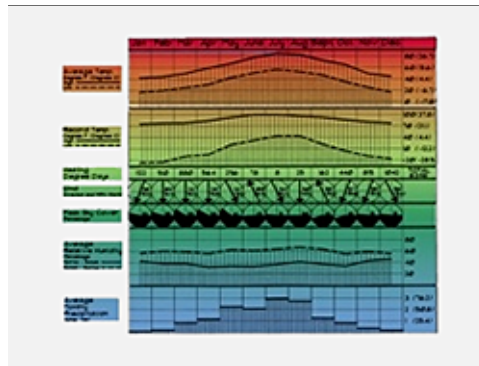
- Optimal solar orientation of the building.
- Main entrance from Pepperrell street.
- Addressing the orientation of the future ACC
- Maximize the daylight & desirable views.
- Saving existing vegetation and trees
- Visibility of the new facility from main roads
- Meet the required AT/FP standoff distance
- Separation between staff/public/materials entrance
- Required parking spaces for public and staff
- Create a unified campus
- Outdoor healing environment
- Implementation of landscape zones A, B, C & D



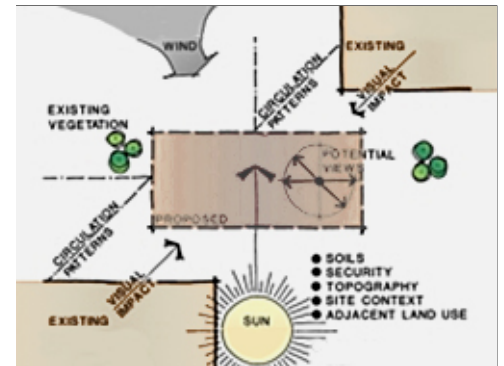
Conceptual Site Analysis and Site Design Diagram



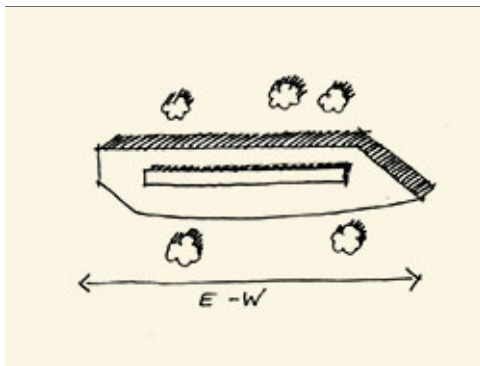
Local Solar Data



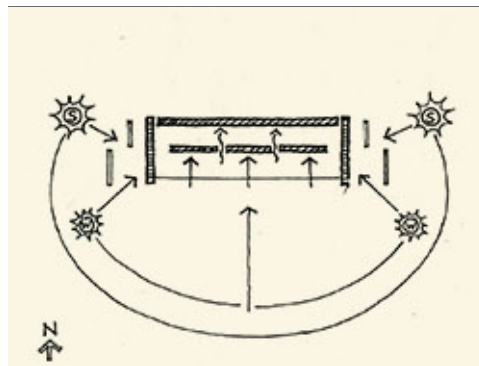
Local Climate Data



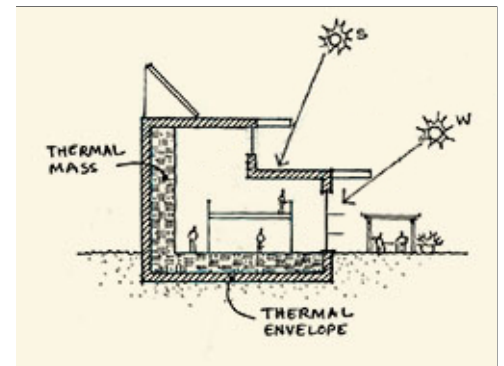
Site Data



East-West Axis



Optimum Solar Control



Maximized Southern Exposure

1. Ensure the site will accommodate optimum requirements for building orientation, which is with the long axis parallel to the east/west direction for rectilinear CONUS buildings.

2. Meet Installation Facilities Standards (IFS) requirements for locating the building’s passive and renewable-energy systems—including geothermal and solar systems—and exterior shading systems.
3. Locate buildings and permitted ancillary structures to promote solar gain (winter), solar shading (summer), daylighting, natural ventilation, rainwater harvesting, wind buffering and other beneficial passive systems. Consider natural ventilation during the design of HVAC systems.
4. Limit the use of courtyards and restrict their use to Group 1 and 2 facilities. When provided, conform to the geometry of rectilinear narrow buildings developed along an east-west axis. Define space with a building’s exterior wall and with supplementary screen walls matching facility materials and detailing. Locate these near the main entrance, align with view corridors, and provide appropriate landscaping, site furnishings and lighting.
5. At a minimum, a courtyard must have one trash receptacle, one bench, moveable or built-in planters, and one (1) picnic table with seating. Generally use concrete or brick paving at all courtyards following standards for plazas.
6. Consider relationships to adjacent sites and their facilities and infrastructure, and cost effectively integrate building systems to harvest solar, wind, grey water or other beneficial byproducts.
7. Consider the “public side” of the building, its views and the location of the main entrance.

**C02. UTILITIES**

Comply with AF Corporate Standards for Site Development:

<http://afcs.wbdg.org/site-development/index.html>

Comply with AF Corporate Standards for Utilities:

<http://afcs.wbdg.org/site-development/utilities/index.html>

**C02.1. Utility Components**

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 6

Image Sizing and Cropping Tool (small)



Underground Utility Services



Screened Utility Component



Finishes to Match Wall



Screened Retaining Walls



Underground Utility Services



Underground Utility Services

1. Provide all on-site utility service lines below grade. When mounting elements (such as utility cabinets, communications equipment and water valves) above grade is unavoidable, paint these consistently and provide visual screening following Installation Facilities Standards (IFS).
2. Overhead service lines are prohibited. Bury these lines to include: electrical power grid and service lines; telephone, cable TV, and communications lines; exterior lighting service lines; and any similar system serving Patrick AFB.
3. Consolidate and enclose buried service lines in underground utility corridors and route these along the inside edge of parking lot islands.
4. Define all service entry points into the building and route distribution below grade into an interior space within the facility; exposed conduits, cables and wires on exterior walls are not permitted for Facility Group 1 and 2.
5. Screen the following elements with screen walls integrated into the adjacent building design: storage buildings, temporary buildings, miscellaneous utility structures, transformer buildings, etc.
6. Screen utility equipment and structures while allowing required clearance for safety and maintenance for the following: building-related mechanical/electrical equipment; gas piping, meters and similar incidental items; and any ground-mounted free-standing utility item exposed to view. (Note: window air conditioners are not permitted.)
7. Paint above-ground equipment and associated components such as electrical piping or exposed plumbing lines in either Dark Green (high-luster) finish for transformers and switch gear, etc. or Patrick AFB Conch Shell for incidental piping, backflow prevention devices, fire hydrants, etc. as appropriate and with markings as required by UFC or code.
9. Include consideration of appropriate placement of meters in support of Automated Revenue Management Services (ARMS).
10. Limit exterior mechanical distribution systems such as chilled water distribution to Group 3 facilities; when required for Group 1 and 2 facilities integrate with the architecture and provide visual screening following IFS.
11. Direct roof drainage to underground collection when feasible or provide splash blocks / paved channels to intercept roof drainage at grade.

### C03. PARKING AREAS

Comply with AF Corporate Standards for Site Development:

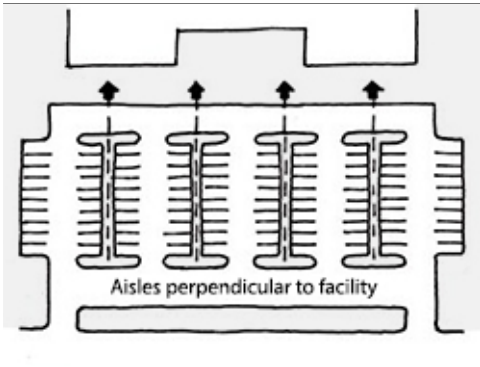
<http://afcs.wbdg.org/site-development/index.html>

Comply with AF Corporate Standards for Parking Areas:

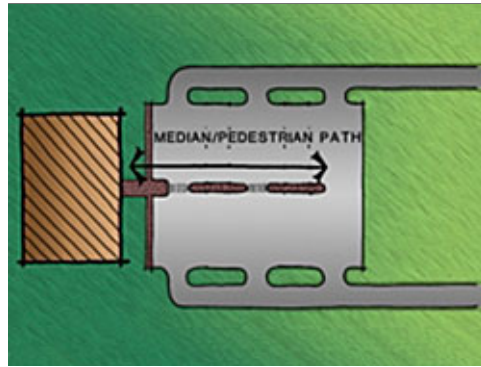
<http://afcs.wbdg.org/site-development/parking-areas/index.html>

#### C03.1. Configurations and Design

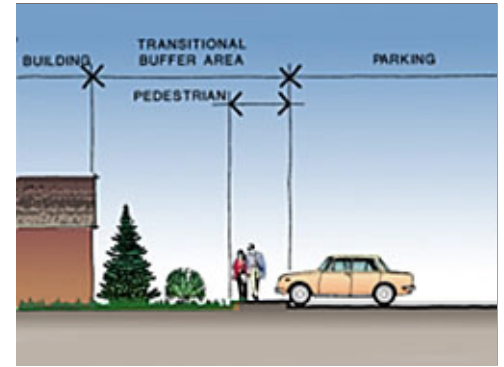
Applicable  N/A Has large graphics to include (800px x 440px)



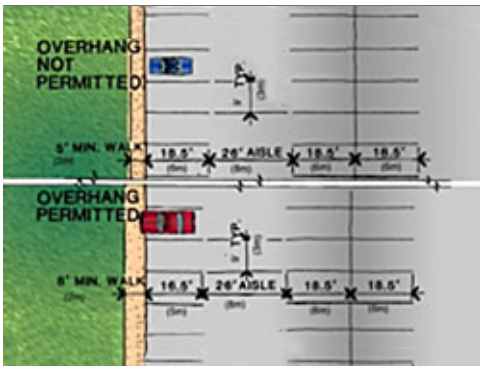
Appropriate Size and Configuration



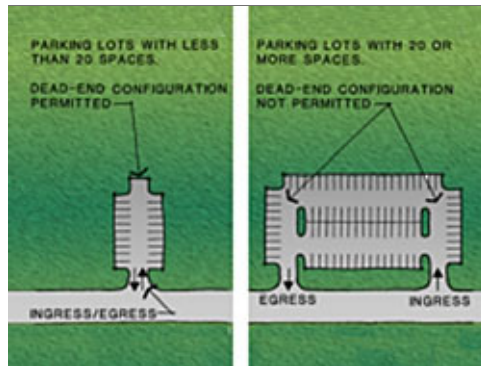
Defined Pedestrian Path



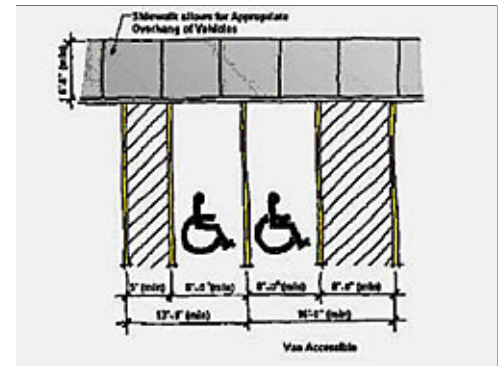
Appropriate Buffers



Preferred Geometry



Internal Layout



ADAG/ABA Parking

1. Evaluate adjacent sites and cost-effectively consolidate parking areas to maximize efficient use; ensure that all areas meet accessibility guidelines.
2. The preferred arrangement is off-street lots containing no more than seventy-five (75) to one hundred (100) full-car spaces. Facilities requiring more than one hundred (100) spaces shall have a series of lots connected by an external perimeter access drive.
3. Provide the number of spaces required for a facility on the site and meet design requirements for following Air Force Manual 32-1084. Allow sufficient space and potential future expansion.
4. Parking lots must accommodate all vehicles that will serve the facility. Provide access for fire apparatus according to NFPA.
5. Parking lot layouts that promote cross-traffic between parallel streets should be avoided for safety reasons.
6. Generally envision on-site parking as a series of small connected singular areas selectively placed around the facility served, rather than a single large area; buffer parking areas from the facility main entrance with a transition space and provide drop-offs to decrease close-in parking.
7. Locate all parking lots outside required setbacks and preserves. Encroachments must be approved on a case basis and incorporate landscaping, berms, and screen walls as required by Installation Facilities Standards (IFS). Setback requirements from buildings shall be calculated from UFC 4-010-01 Antiterrorism Standoff Distances for Buildings.
8. Appropriately size loading and service dock areas based on operational requirements. Locate these areas to the rear or sides of a building, away from the main building entrance, related high visibility areas, or an incompatible adjacent land use. Clearly separate service areas from adjacent parking lots and access drives with curb and gutter and landscaped "divider strips."

9. Dead-end parking lots shall be avoided and two access drives provided for lots exceeding twenty (20) spaces. If additional access (ingress/egress) drives cannot be provided for larger lots, convenient interior circulation should allow for efficient maneuvering of vehicles.
10. Access drives, which serve parking lots, may be either two-way or one-way.
11. Two-way access drives shall be twenty-six feet (26') wide measured from back of curb to back of curb. One-way access drives shall be fifteen feet (15') wide measured from back of curb to back of curb.
12. Access drives shall be separated from street intersections by a minimum distance of: (a) one hundred feet (100') along arterial streets, (b) seventy-five feet (75') along collector streets, and (c) fifty feet (50') along local streets. To minimize conflicts with street traffic, parking lot ingress and egress access roads should be kept to the minimum necessary.
13. Access and service drives should accommodate the largest vehicle serving the facility.
14. 90-degree spaces and two-way traffic aisles shall typically be used. If required by site limitations or high rate of turnover, 60-degree spaces may be used with one-way traffic aisles. Use consistent and stall sizes throughout a parking area.
15. Parking space dimensions shall be nine feet (9') by eighteen feet (18'-0"); where vehicle overhang is permitted, provide stalls nine feet (9') by sixteen feet six inches (16'-6").
16. Motorcycles can be placed at 4 ½' width, thus two per standard vehicle space. Motorcycle parking must have concrete pavement surfaces to support motorcycle kick stands.
17. Provide parking spaces for disabled use in quantities, sizes and locations as prescribed in the Architectural Barriers Act (ABA).
18. Consider shading for parking lots following a LCCA. Consider cost-effectively integrating solar photovoltaic arrays into covered parking structures.
19. Reserved parking is discouraged except for Facility Group 1. The Base Security Forces Squadron with direction from the installation commander shall determine the number of reserved parking spaces on an as-needed basis.
20. On-street parking is discouraged except in multi-use areas and family housing areas. When used, provide approved on-street parking configurations following UFC 3-201-01.
21. Drainage water from parking lots should be directed to adjacent landscaped areas and storm water retention areas as required which may be necessary to accommodate runoff from larger paved areas.
22. A principal factor in parking lot grading shall be to provide positive drainage away from buildings and to prevent ponding of water on pavement surfaces.
23. Screen open parking lots (except in family housing areas) from view from adjacent buildings with a minimum height of three feet by the use of berms and/or plantings. A minimum of 50% of the affected parking lot perimeter must have the required screen.
24. Signage used in conjunction with reserved parking must conform to AFCFS and IFS.

### **C03.1.1. Paving and Striping**

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

**Select number of graphics / images (small: 250 px x 188 px) to insert 2**

**Image Sizing and Cropping Tool (small)**



Asphaltic Paving



White Striping

**Facility Group 1** paving materials shall be as follows.

- Primary: Asphaltic concrete
- Secondary: Concrete
- Accent: Permeable pavers

**Facility Group 2** paving materials shall be as follows.

- Primary: Asphaltic Concrete
- Secondary: N/A
- Accent: N/A

**Facility Group 3** paving materials shall be as follows.

- Primary: Concrete where operationally required
- Secondary: Asphaltic Concrete
- Accent: N/A

**Facility Group 4** paving materials shall be as follows.

- Primary: Asphaltic Concrete
- Secondary: N/A
- Accent: N/A

1. Parking stall areas in Groups 1 and 2 shall be constructed of asphalt or permeable pavers/asphalt. If provided, paver stall areas shall be separated from the asphalt drive aisles with a 6" wide by 12" deep at grade concrete edge barrier.
2. Cost-effectively provide light-colored concrete to reduce heat island effect; otherwise install asphaltic concrete paving. Dirt, gravel, and grass lots are not allowed.
4. Use consistent striping, angles and stall sizes in all parking areas.
5. All parking shall be marked with white stripes of paint or applied vinyl coatings. Yellow markings shall only be used for safety purposes and must be kept to a minimum. All lines shall be four inches (4") wide.
6. Disabled spaces shall be marked with signs following section C08.1.8.

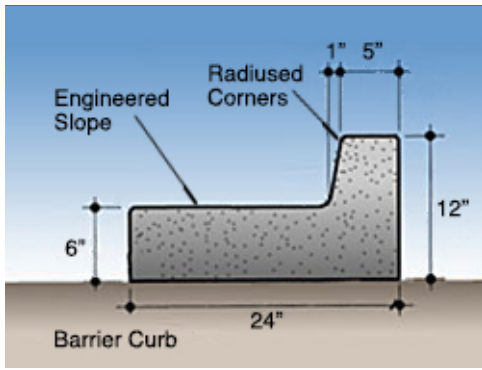
**C03.1.2. Curbing**

Applicable  N/A Has large graphics to include (800px x 440px)

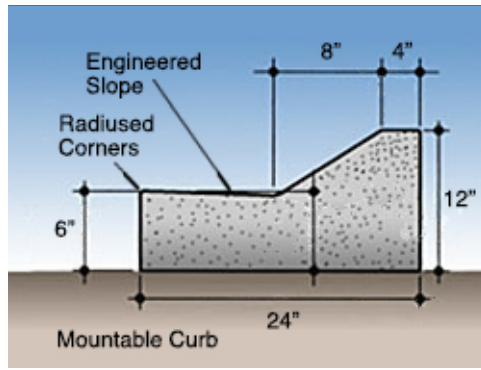
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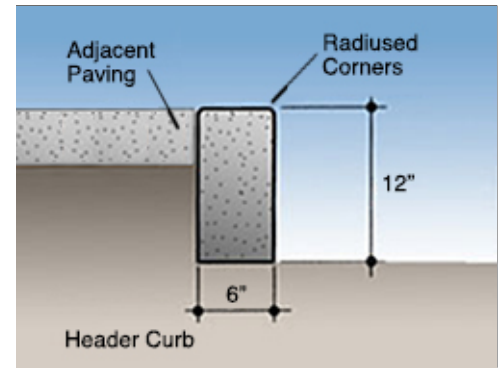
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"Barrier" Curb



"Mountable" Curb



Header Curb

**Facility Group 1** curbing / edging materials shall be as follows.

- Primary: Concrete
- Secondary: N/A
- Accent: N/A

**Facility Group 3** curbing / edging materials shall be as follows.

- Primary: Concrete
- Secondary: N/A
- Accent: N/A

**Facility Group 2** curbing / edging materials shall be as follows.

- Primary: Concrete
- Secondary: N/A
- Accent: N/A

**Facility Group 4** curbing / edging materials shall be as follows.

- Primary: Concrete
- Secondary: N/A
- Accent: N/A

1. Define all parking lots edges with curbing to present a clean, orderly appearance, eliminate significant safety hazards, and to define and conserve transitional landscaped areas between parking lots and adjacent buildings. All curbs shall be the rolled (mountable) type.
2. Integrate curbing, asphalt pavements, permeable paved areas, and parking islands with the stormwater system and consider stormwater as source water for regionally appropriate native vegetation.
3. Wheel stops are allowed on a case-by-case basis.

### C03.1.3. Internal Islands and Medians

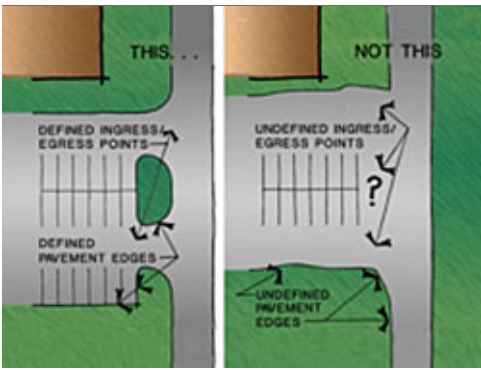
Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

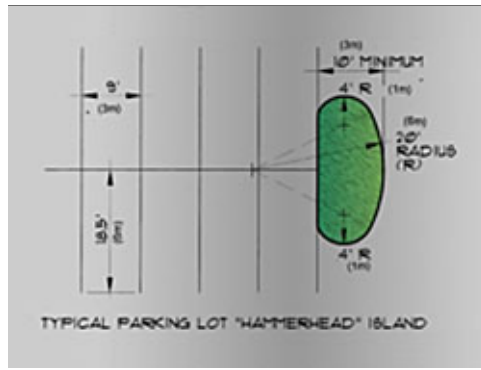
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Image Sizing and Cropping Tool (small)

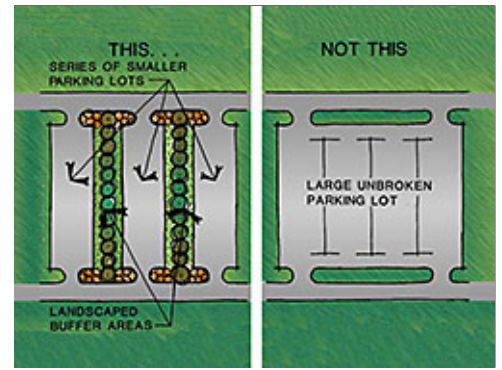




Defined Entrance



Internal Island



Internal Median

1. Install landscape islands and medians as visual breaks and to reduce heat island effects. Coordinate suitable landscape or barriers integrated with walls and fences to ensure adequate force protection.
2. When lighting is necessary, contain fixture bases within internal landscape islands. Accent and aesthetic lighting is not authorized from 1 May to 31 October due to USFWS light management requirements for threatened and endangered sea turtle protection (45 SWI 32-7001 latest edition). Additionally, no uplighting is authorized for sea turtle and migratory bird protection.

### C03.2. Parking Structures

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 1

Image Sizing and Cropping Tool (small)



AFTAC Parking Structure

1. Parking structures are permitted in land-constrained locations such as the new AFTAC campus where economically feasible.
2. Consider opportunities for integrating parking structures into multi-use developments with pedestrian-oriented uses located on the ground floor and parking on upper levels.

### C03.3. Connectivity

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Refer to the Installation Development Plan (IDP) for locations of transit stops and pedestrian and cycling networks; provide appropriately sized sidewalks and bike paths to connect facilities and users to these networks.
2. Provide amenities such as rain and shade shelters, trees, and benches to encourage and facilitate use of public transportation.
3. Evaluate the IDP for the current and planned network of roads and optimally develop vehicular access to and from the site.
4. Define pedestrian access with approved hardscape, provide shading, and provide safe, efficient travel from vehicles along the primary path from the parking area to the main entrance of the building. Emphasize building main entrances in the alignment of landscape median/pedestrian paths.

#### C04. STORMWATER MANAGEMENT

Comply with AF Corporate Standards for Site Development:  
<http://afcs.wbdg.org/site-development/index.html>

Comply with AF Corporate Standards for Stormwater Management:  
<http://afcs.wbdg.org/site-development/stormwater-management/index.html>

##### C04.1. Stormwater Requirements

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 3

Image Sizing and Cropping Tool (small)



Stormwater Pond



Stormwater System



South Base Regional Stormwater Canal

1. Stormwater management is a significant concern with any new construction and may require permitting through Saint Johns River Water Management District (SJRWMD) and/or the Florida Department of Environmental Protection (FDEP), IAW62-330 the Clean Water Act (CWA) and F.A.C. 62-330. All stormwater permitting should be coordinated through the BCE.
2. Sustainable site design shall include the application of stormwater management strategies. Configure project sites to minimize stormwater runoff where possible.
3. Design all stormwater systems including retention ponds, detention areas, channels, etc. as on-site amenities that are consistent with natural systems and drainage patterns, that help sustain the base landscape with beneficial functionality and that provide aesthetic appeal; coordinate with the base Stormwater Management Plan.
4. Incorporate bioswales into the design of all roadway, parking and facility roof systems to enhance water quality and support the overall stormwater system.
5. When underground drainage systems are required establish a maintenance program to include removal of sediments and debris; inspect joints seasonally for alignment to prevent leakage and the development of voids and surface failures.

6. Install water quality ponds or oil grit separators as surface water runoff filtration systems.

7. Cost-effectively integrate stormwater systems with AT/FP measures.

### C05. SIDEWALKS, BIKEWAYS AND TRAILS

Comply with AF Corporate Standards for Site Development:

<http://afcs.wbdg.org/site-development/index.html>

Comply with AF Corporate Standards for Sidewalks, Bikeways and Trails:

<http://afcs.wbdg.org/site-development/sidewalks-bikeways-trails/index.html>

#### C05.1. Circulation and Paving

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 3

Image Sizing and Cropping Tool (small)



Riverside Dining Facility Courtyard



45th Space Wing Memorial Plaza



Riverside Trail

**Facility Group 1** sidewalks, plazas, and courtyards paving materials shall be as follows.

Primary: Travertine Pavers on cast concrete formed ramps

Secondary: Natural Travertine 16.24 1.25" thik, honed and fille

Accent: N/A

**Facility Group 2** sidewalks, plazas, and courtyards paving materials shall be as follows.

Primary: Pervious Pavers or wood for shoreline areas

Secondary: Concrete Edging as appropriate

Accent: N/A

**Facility Group 3** sidewalks, plazas, and courtyards paving materials shall be as follows.

Primary: Permeable concrete or Pervious Pavers

Secondary: N/A

Accent: N/A

**Facility Group 4** sidewalks, plazas, and courtyards paving materials shall be as follows.

Primary: Permeable concrete or wood for shoreline areas

Secondary: N/A

Accent: N/A

1. Maintain efficient geometry and accessibility to connect building entrances to adjacent parking areas and activity areas and to the base transportation system following ATFP. Efficiently use materials to optimize life-cycle costs and to minimize maintenance.

2. Generally conform horizontal layouts of sidewalks to the geometric configuration of adjacent buildings, streets, parking lots, and other adjacent related site amenities. Occasional meanders and/or jogs may be included to capture views, to coordinate with landscaping or accommodate site constraints.

3. Walks in parking areas shall provide a direct path using "safe islands" and "peninsulas" to encourage safety. Walks parallel to streets shall follow streetscape guidelines. Clearly mark pedestrian crossings at vehicular routes.

### C05.1.1. Ramps and Stairs

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Use ramps instead of steps for sidewalks, bikeways and trails and at all buildings. Where steps are unavoidable, the following shall apply:

a. The minimum clear width of steps shall be five feet.

b. Materials shall be limited to combinations of concrete and brick pavers conforming to this IFS.

c. Minimum riser height shall be 4" and a maximum of 7", and the minimum tread depth shall be 11".

d. Open treads or recesses at nosings that may catch shoe toes shall not be used.

e. Provide black picket style anodized aluminum handrails at steps containing two (2) or more risers. Do not use a central rail unless steps are more than 88" wide.

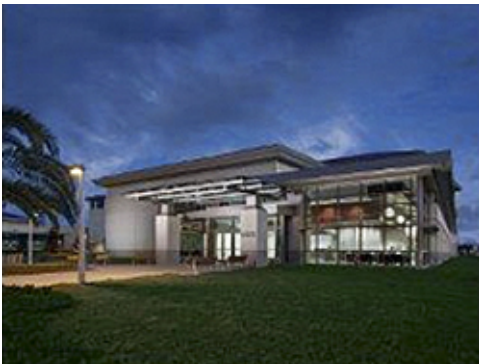
### C05.1.2. Lighting

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 1

Image Sizing and Cropping Tool (small)



Coordinated Path and Entrance Lighting

1. Lighting shall be provided for all steps and landing areas where traffic warrants. Appropriate fixtures that maintain shielded light on walkways is necessary instead of non-directional lighting that illuminates entire areas (USFWS light management requirements).

2. Refer to the Lighting section for path lighting along sidewalks, bikeways and trails.

## C06. LANDSCAPE

Comply with AF Corporate Standards for Site Development:

<http://afcs.wbdg.org/site-development/index.html>

### C06.1. Climate-based Materials

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 3

Image Sizing and Cropping Tool (small)



Seagrape



Pink Muhly Grass



Florida Coontie

1. Please refer to the 45 SW Master Plant List contained in the Appendixes for a complete listing of approved indigenous and native groundcover, palms, shrubs, trees, and turf. Also reference the Florida Exotic Pest Plant Council 2017 list of Category I and II invasive plants.

Master Plant List

[http://www.wbdg.org/FFC/AF/AFIFS/45\\_SW\\_Master\\_Plant\\_List\\_Mar18.pdf](http://www.wbdg.org/FFC/AF/AFIFS/45_SW_Master_Plant_List_Mar18.pdf)

List of Invasive Plant Species

[http://www.wbdg.org/FFC/AF/AFIFS/FLEPPC\\_Invasive\\_Plant\\_List\\_2017.pdf](http://www.wbdg.org/FFC/AF/AFIFS/FLEPPC_Invasive_Plant_List_2017.pdf)

2. Use only native, naturally occurring, drought tolerant indigenous plant species (including grasses) appropriate for the locale to promote energy efficiency and water conservation, preserve drainage patterns, inhibit erosion, improve air quality, lower maintenance, and add beauty.

#### C06.1.1. Landscape Design Concept

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 3

Image Sizing and Cropping Tool (small)



Ornamental Species at Group 1



Native Species



Xeric Grasses and Trees

1. Develop, maintain and implement a climate-based plant list with landscape features using a regionally appropriate palette of materials to promote energy efficiency, preserve drainage patterns, inhibit erosion, improve air quality, lower maintenance and add beauty. Follow UFC 3-201-02 Landscape Architecture.
2. Landscaping is required for all newly developed sites and facilities; preserve existing native landscape where possible and avoid overplanting.
3. Concentrate landscaping in Facility Group 1 and along major thoroughfares and integrate these landscaped areas into the base's stormwater management plan. Refer to the Streetscape Envelope Standards in this IFS.
4. All Facility Group 1 and 4 sites shall be landscaped at their entire perimeter; limit formal planting arrangements to formal spaces typically associated with Group 1. Landscape public spaces near the main entrances of Group 1 facilities.
5. Facility Group 2 and 3 sites may have a native undisturbed landscape except at the main entrances of Group 2, which should be newly landscaped.
6. Facility plantings shall follow the Installation Facilities Standards (IFS) plant list, which is based on the specific microclimates created by the adjacent building; shadow areas, protected areas, zones adjacent to thermal mass, and availability of rainwater and/or grey water.
7. Provide open spaces as transitions between developed and native areas that promote quality of life and provide visual relief and allow walkable connections to the transportation system.
8. Return suitable areas to a natural state to minimize and, whenever possible, eliminate ground maintenance requirements; expand prairie areas where appropriate with native plants to eliminate mowing and maintenance requirements.
9. Use plantings in open spaces to reinforce the space as a visual asset.
10. Consider landscape windbreaks when suitable for the local climate.
11. Integrate security requirements into the landscape design. Coordinate the heights of trees and shrubs and note restrictions for plantings following UFC 4-010-01.
12. Berms may be used as an integral part of the overall landscape strategy for screening, security and/or visual interest.

### **C06.1.2. Xeriscape Design Principles**

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Apply xeriscape principles following UFC 3-201-02, Appendix B, and Air Force Corporate Facilities Standards.

2. Facility plantings are encouraged to use native plant species and to consider specific microclimates created by the adjacent building: shadow areas, protected areas, zones adjacent to thermal mass, and availability of rainwater and/or grey water.

### C06.1.3. Minimizing Water Requirements

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Reasonably reduce demand on potable water while seeking opportunities to increase alternative water sources for irrigation. Reduce or eliminate the use of potable/domestic water for purposes of landscape architecture maintenance, consistent with existing legal or contractual obligations, and prohibit potable-water irrigation in new construction beyond establishment following current DoD and Air Force policy.

### C06.1.4. Plant Material Selection

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 6

Image Sizing and Cropping Tool (small)



Typical Groundcover



Fantail Palm



White Geiger Tree



Silver Buttonwood



Sunshine Mimosa



Cabbage, Sabal and Canary Date Island Palms

1. Use only native, naturally occurring plant materials including grasses or turf suited for the local climatic conditions in the landscape design; potable-water irrigation systems are discouraged beyond the establishment period.

2. New facilities are encouraged to use native plant species as indicated on the installation plant list.

3. Trees should be the focus of landscape plantings and, where possible, should be a mix of deciduous and evergreen species for variety; provide tree grates when appropriate and use tree guards on smaller trees.
4. Ground covers are only recommended when minimal maintenance is required.
5. Turf areas should be limited to those that can be sustained by natural rainfall or grey water (non-potable) irrigation systems; turf may be defined by at-grade concrete mow strips to lessen maintenance.
6. Analyze soils and provide organic amendments as needed to improve plant growth and conserve water.
7. All plant material shall have one-year warranty and is subject to approval by the Base Landscape Architect.

**C06.1.5. Water Budgeting (Hydrozones)**

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 2

Image Sizing and Cropping Tool (small)



Foundation Planting



Preserved Native Vegetation

1. Comply with DoD and Air Force policy on potable-water irrigation systems.
2. Provide irrigation systems in new construction to establish plant materials following “Water for Landscaping” in UFC 1-200-02. Note the climate zone and annual rainfall for the locale.
3. New buildings shall cost-effectively integrate a grey-water reclamation system following UFC 1-200-02, which provides source water for an automatic drip irrigation system; connect adaptive plantings adjacent to facilities to a grey-water irrigation system when available and discontinue the use of potable water for irrigation after the establishment period.
4. Provide irrigation design following UFC 3-201-02. Install drip irrigation products and components following UFGS Section 32 84 24 Irrigation Sprinkler Systems. Match the color of valve box lids to the adjacent ground treatment (i.e. green at turf & native seed areas, brown at wood mulch & rock areas).
5. Life cycle cost-effectively equip irrigation systems to sense soil moisture, rainfall and wind to minimize unnecessary watering; incorporate drip irrigation systems as the primary source.

**C06.1.6. Base Entrance Landscaping**

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)



Select number of graphics / images (small: 250 px x 188 px) to insert 1

Image Sizing and Cropping Tool (small)



Ornamental Native Species

1. At the main gate, reinforce a sense of arrival through a well-designed concentration of landscape elements consistent in visual quality with Facility Group 1.
2. Ensure landscaping has seasonal features with spring and fall color and a combination of evergreen and deciduous trees and shrubs for winter interest.
3. Integrate base signs and street and pedestrian lighting whenever feasible.

#### C06.1.7. Streetscape Landscaping

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 1

Image Sizing and Cropping Tool (small)



Street Trees and Grasses

1. Provide landscape designs with plant materials appropriately representing the level of quality of the adjacent Facility Group number. Refer to the Installation Elements section.
2. Select a variety of regionally appropriate streetscape plantings and grading to create a visual interest.

#### C06.1.8. Pedestrian Circulation Landscaping

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)



Detached Sidewalk at Street



Attached Sidewalk at Parking Area

1. Define walkways with landscaping where appropriate.
2. Provide rest areas along the pedestrian circulation network with human-scaled deciduous shade trees. Supplement tree plantings with finely textured shrubs when appropriate for the climate.
3. Provide wind breaks where required.

**C06.1.9. Parking Lot Landscaping**

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)



Landscape Island



Xeric Plantings

1. Integrate appropriate landscaping elements into parking areas to visually soften the appearance and to provide shading as needed for the application.
2. Avoid trees that drop sap, fruit, or seeds, and use long-lived species; keep trees trimmed, removing dead and dying trees or branches.
3. Provide planting in islands within parking lots for shade and appeal following IFS and the base stormwater management plan.
4. Rain garden islands shall be landscaped to receive rainwater runoff from adjacent impervious parking areas to be absorbed into the ground/planting bed. Native plants and groundcovers are recommended within the rain garden areas, which can survive without supplemental irrigation once established.

**C06.1.10. Screen/Accent Landscaping**

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 1

Image Sizing and Cropping Tool (small)



Landscape Screening

1. Provide complimentary accent landscaping at monuments and static displays.
2. At Facility Group 1, provide landscaping adjacent to all freestanding signs without distracting from the written communication.
3. Provide landscape screening of utility elements adjacent to Facility Group 1.
4. Providing landscaping as visual screening is preferred to the construction of walls and fences; berming and mounding may supplement landscape screening.

#### C06.1.11. Other

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

### C07. SITE FURNISHINGS

Comply with AF Corporate Standards for Site Development:

<http://afcs.wbdg.org/site-development/index.html>

Comply with AF Corporate Standards for Site Furnishings:

<http://afcs.wbdg.org/site-development/site-furnishings/index.html>

#### C07.1. Furnishings and Elements

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

Select number of graphics / images (small: 250 px x 188 px) to insert 3

Image Sizing and Cropping Tool (small)



Concrete Bollards



Coordinated Concrete Site Furnishings



Screen Walls and Planters

1. Provide a coordinated consistent inventory of site furnishings to positively contribute to the visual environment, image, and identity of the base; ensure durability, low maintenance, reduced visual clutter, and compatibility with the adjacent architecture.
2. Remove poorly located or redundant litter / ash receptacles, newspaper and bicycle racks, vending machines, walls and fences to reduce visual clutter and to lessen the requirements for maintenance.
3. Group 1 and 2 site furnishings shall be architecturally compatible, able to withstand the extreme corrosive environment and must be approved by the BCE. Group 3 and 4 site furnishings shall be vinyl-coated galvanized aluminum or equal utilizing a mesh, open-weave design. Generally match the site furniture of adjacent facilities and the facility district.
4. Install needed outdoor seating (benches and low walls) in public gathering spaces near main and secondary building walls shall match facility architecture.
5. Provide bicycle racks as needed. Use the approved stanchion design or curvilinear design with heavy-duty galvanized steel or anodized aluminum. Locate racks per ATRP requirements.
6. Limit the use of bollards except as a best choice for walkways to direct lighting on the path and reduce unnecessary wasted area lighting. When required for force protection use precast concrete non-illuminated bollards for all facility groups, parks and trails. Illuminated bollards may be used as approved on a case basis; light shields shall be factory finished anodized aluminum black.
7. When visual screening is necessary, consider landscaping as the first option; screen walls are permitted finished with concrete masonry block (CMU) with integral colored stucco or split face block and detailed to match the adjacent facilities.
8. Perimeter base walls and housing walls shall be constructed of stacked split face block to match the existing tan and terra cotta colors of the established Mediterranean architecture. Masonry joints shall match the block color. Installation gates and decorative fencing must be black anodized aluminum picket with stucco "conch shell" colored pilasters or stacked split face block pilasters to match existing. Any approved chain link fencing must be black vinyl coated galvanized chain link with black vinyl coated galvanized posts.
9. Provide trash dumpster enclosures with concrete masonry block (CMU) with integral colored stucco or split face block and detailed to match the adjacent facilities.
10. Group 1, 2 and 3 picnic tables and seating shall be precast concrete with a textured finish to match similar to benches. Group 4 and recreational areas shall have vinyl-coated galvanized steel picnic tables and seating in an open mesh design. Generally limit picnic tables, barbecue grills and drinking fountains to lodging, dormitories, housing areas, parks and recreation areas.
11. Limit the use of freestanding planters to areas with ongoing maintenance.
12. Flagpoles using Patrick AFB standards may be installed in accordance with AFI 34-1201 as approved on a case basis. Flagpole lighting requires coordination with the BCE to ensure special requirements are met due to sea turtle protection requirements.
13. Refer to the Overview Section "Facility Hierarchy" topic of this IFS for guidelines regarding ancillary structures such as pavilions.

## C07.2. Site Furnishings Products, Materials and Color

**Note:** Apply the below base-wide standards for Site Furnishings (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.

### C07.2.1. Barbeque Grills

Applicable  N/A

### C07.2.2. Benches

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Concrete Bench**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Dura Art Stone

Color: Weatherstone Gray

Finish: Standard Finish (Smooth)

Model #: N/A

Other: N/A

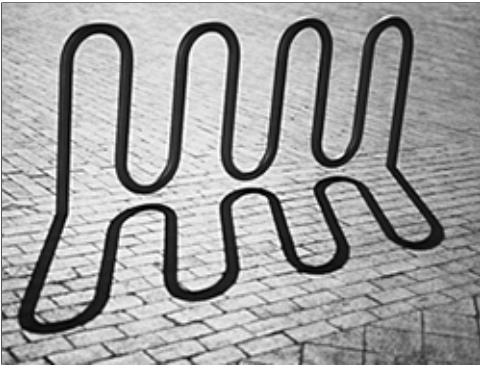
UFGS: N/A

### C07.2.3. Bike Racks

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Multiple bike rack**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Brandir International Inc.

Color: Black Anodized aluminum

Finish: Factory finish black or powder coated

Model #: The Ribbon Bike Rack, RB-07

Other: Racks should be secured to the ground and constructed for high security and heavy use

UFGS: N/A

### C07.2.4. Bike Lockers

Applicable  N/A

### C07.2.5. Bollards

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Pre-cast concrete**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Dura Art Stone

Color: Weatherstone Gray

Finish: Textured

Model #: Rock and seashell aggregate

Other: Bollards shall be of durable pre-cast concrete construction and treated for outdoor use and the salt environment. Light options for effective walkway downlighting must be turtle-friendly and approved by the BCE

UFGS: N/A

### C07.2.6. Bus Shelters

Applicable  N/A

### C07.2.7. Drinking Fountains

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Pedestal**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Most Dependable Fountains, Inc.

Color: Natural

Finish: Stainless Steel

Model #: MDF 440 SMSS

Other: Accessible

UFGS: N/A

### C07.2.8. Dumpster Enclosures / Gates

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Concrete Masonry Block (CMU) with Stucco or Split Face Block**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Demaco Block or equivalent

Color: Camel to match Patrick AFB Conch Shell color

Finish: CMU/integral stucco finish or split face block, powder coated gates and p

Model #: Match adjacent building

Other: Powdered coated or anodized aluminum gates and hardware, black

UFGS: Section 04 20 00 Unit Masonry

### C07.2.9. Fencing

Applicable  N/A Number of base standards 2

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Style A Barrier: High security, low visibility**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: General Wire Co.

Color: Black

Finish: PVC coating over hot-dipped galvanized steel with an internal coating fo

Model #: Chain link, steel posts and rails, gates and accessories

Other:

UFGS: Section 32 31 13 Chain Link Fences and Gates



Type: **Style B Barrier: High security, medium visibility**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

Color: Black Picket Fencing/Patrick AFB Conch Shell Columns

Finish: Powder coated aluminum railing/CMU with integral 5-part STO stucco fin

Model #: Aluminum grid, verticals, round rod horizontals

Other: Aluminum posts, horizontal bars, braces, and accessories, in heights, lengths, and gauges as required; Close all ends of tubing

UFGS:

### C07.2.10. Flagpoles

Applicable  N/A

Number of base standards 2

[Image Sizing and Cropping Tool \(small\)](#)





Type: 1

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Stresscrete

Color: Beige tones to terra cotta

Finish: Aggregate texture

Model #: As approved by BCE

Other: Installation flagpole and decorative flagpoles in Memorial Plaza

UFGS: N/A



Type: Spun Aluminum

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Eder Flag

Color: Natural aluminum

Finish: Satin Lustre

Model #: ECL30 IH, Internal Halyard

Other: 5" Butt Dia. 33' H (30' Exposed)

UFGS: N/A

### C07.2.11. Lighting – Landscape / Accent

Please refer to the Lighting section.

### C07.2.12. Litter and Ash Receptacles

Applicable  N/A      Number of base standards 2

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Style 1: Precast concrete**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Dura Art Stone

Color: Weatherstone Gray

Finish: Smooth

Model #: As approved by the BCE

Other: Rigid plastic internal liner

UFGS: N/A



Type: **Style 2: Metal**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Wabash Valley

Color: Black

Finish: Perforated Pattern

Model #: Urbanscape "E" with liner, 32 Gallon

Other: With dome top, without side door

UFGS: N/A

### C07.2.13. Picnic Tables

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Precast concrete**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Dura Art Stone

Color: Weatherstone Gray

Finish: Standard Finish (Smooth)

Model #: As approved by BCE

Other: N/A

UFGS: N/A

### C07.2.14. Planters

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Precast concrete**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Dura Art Stone

Color: Weatherstone Gray

Finish: Standard finish (smooth)

Model #: Size and shape as approved by the BCE

Other: N/A

UFGS: N/A

### C07.2.15. Play Equipment

Applicable  N/A

### C07.2.16. Screen Walls

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Concrete Masonry Block (CMU) with stucco or split-face block**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Demaco

Color: Camel tones to match Patrick AFB Conch Shell color

Finish: Medium stucco texture or split-face block

Model #: CMU stacked bond with matching grout and precast top cap

Other: CMU (or stucco) piers and concrete infill panels may be used or anodized aluminum or powdered coated black fencing shall be allowed

UFGS: Section 04 20 00 Unit Masonry, Section 05 50 13 Misc. Metal

### C07.2.17. Tree Grates

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Cast Iron**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Neenah Enterprises, Inc.

Color: Natural cast iron or black

Finish: Cast

Model #: 2-Piece, round or square

Other: N/A

UFGS: N/A

### C07.2.18. Other

Applicable  N/A

Number of base standards 2

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Decorative Walls**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Quartzite stone panels

Color: Grey tones as approved by the BCE

Finish: Textured

Model #: Stone veneer facing on concrete walls

Other: Builders Direct, www.builddirect.com or equal

UFGS:



Type: **Sun Shades**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Pre-manufactured Membrane Sun Shades

Color: To be approved by the BCE

Finish: Use stainless steel hardware and connectors

Model #: TBD

Other: Sun shades are only allowed in recreational or operational areas as required and approved by the BCE. Structures shall meet Florida Bldg Code and fabric must be able to be easily removed in high wind.

UFGS:

## C08. EXTERIOR SIGNS

Comply with AF Corporate Standards for Site Development:

<http://afcs.wbdg.org/site-development/index.html>

Comply with AF Corporate Standards for Exterior Signs:

<http://afcs.wbdg.org/site-development/exterior-signs/index.html>

### C08.1. Colors and Types

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Provide concise functional signs as a visually unifying element with consistent colors and types for all Installation and Gate Identification Signs; Building Identification Signs; Traffic Control Devices; Directional and Wayfinding Signs; and Informational and Motivational Signs.
2. Provide signs with the lowest overall life cycle costs considering initial cost, ongoing maintenance and lifespan while meeting quality standards.
3. Reduce the number of signs, reduce visual clutter and provide only essential signs required for identification, directions, instructions, and customer service following UFC 3-120-01. Remove non-conforming signs during renovation projects.
4. Maintain the existing Installation and Gate Identification Signs in color, lettering, materials and construction methods and match these in future entrance signs. Follow UFC 3-120-01 for sign layout and content. No unit names, unit mottos, or names and titles of individuals are permitted.
5. Provide Building Identification Signs following UFC 3-120-01 for size, layout and content.
6. Group 1 facilities shall have a freestanding monolithic facility sign in metal on an understated natural warm gray concrete base or brick base. Provide "Patrick Brown" backgrounds with white Helvetica Medium sentence case lettering, 6" capital and 3" lower case letters. Organizational emblems in full color (command shield, branch insignia, shoulder sleeve insignia, coat of arms, etc.) may be included 6" from top at the left side of the panel following UFC 3-120-01.
7. Display of emblems on building exterior walls or other permanent structures is strictly prohibited.
8. Raised "standout" letters and numbers may be used for Group 1 with approval on a case basis. Clear anodized aluminum with a smooth surface or PAFB standard Dark Bronze letters may be used as directed by the Base Civil Engineer.
9. Group 2 and 3 facilities shall have wall mounted facility signs. Provide 2'-3" x 2'-3" x 2" panels with general layouts following UFC 3-120-01, except provide only the building's address number and not the street name. Signs are not permitted for Group 4 facilities.
10. Only one identification sign is permitted at each building entrance. Include a building address consistent with US Postal Service protocols following UFC 3-120-01.
11. Traffic Control Devices, which regulate vehicular traffic on the installation, shall conform to the standards in the Manual of Uniform Traffic Control Devices (MUTCD) published by the Federal Highway Administration. Provide street signs following this IFS.
12. Provide Directional and Wayfinding Signs and address both pedestrian and vehicular traffic following UFC 3-120-01 for size, layout and content.
13. Reserved parking signs should be kept to a minimum. When approved, provide post-mounted sign faces with Patrick AFB Brown backgrounds and white Helvetica lettering, 1-1/2" in height.
14. Follow UFC 3-120-01 for Informational and Motivational Signs for size, layout and content.
15. Symbols or pictographs (graphic expressions of actual objects) may be used to indicate service, mandatory / prohibitory, sports, and recreation when rapid communication is necessary. Provide a square symbol background with rounded corners and a consistent border line-weight for all symbols.
16. Force Protection signage may be applied to glass doors using white vinyl lettering. The sign shall be oval in shape with a ¼" white border. FP CON lettering shall be 1 3/8" Arial Bold with the words "REAL" and "EXERCISE" letter in ¾" Arial Regular lettering spaced accordingly. The bottom of this lettering shall be placed at the midpoint of border.
17. Refer to UFC 3-120-01 for prohibited signs, which include those with animated, blinking, chasing, flashing, or moving effects.
18. To reduce costs, Patrick AFB prefers to fabricate signs in house where possible. This has been successful in saving money and creating a consistent aesthetic thread throughout the base. See destination signage for dimensional requirements.

### **C08.1.1. Materials and Color Specifications**

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Follow UFC 3-120-01 for size, layout and content as indicated below.

### Materials and Color Specifications

Applicable  N/A Number of base standards 3

Image Sizing and Cropping Tool (small)



Type: **Typical Sign Face**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

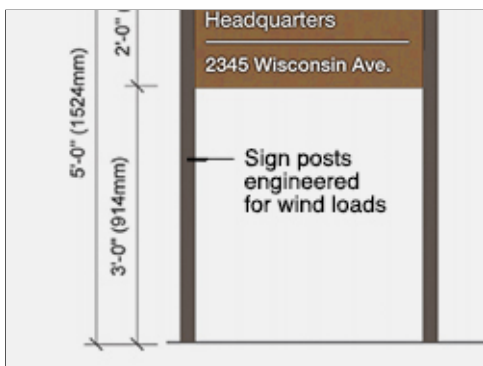
Color: Medium brown

Finish: Matte vinyl

Model #: Aluminum flat sheet

Other: Mount to square posts. Provide sizes following UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Typical Sign Post**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

Color: Dark bronze, powder coat finish

Finish: Matte

Model #: Extruded aluminum with capped top ends

Other: Square posts and squared ends. Provide engineered sizes.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

Type: **Typical Sign Base**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

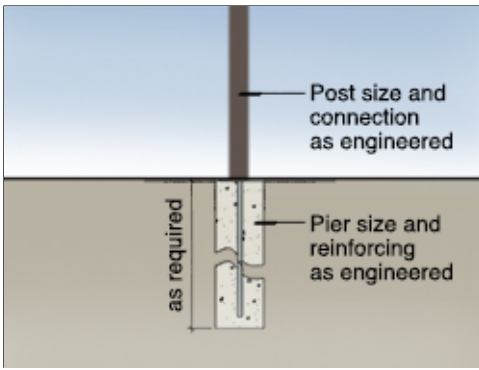
Color: Natural Gray

Finish: Sonotube-formed

Model #: 24" height x 12" diameter, as engineered.

Other: At grade with 3/4" chamfer. Provide engineered sizes.

UFGS: UFGS 03 30 00 Cast-in-place Concrete



### C08.1.2. Installation and Gate Identification Signs

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)

Type: **Primary, Secondary and Tertiary (Uses per UFC)**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

Color: Dark bronze, brushed aluminum, accents per UFC

Finish: Powder coated aluminum or vinyl sign face

Model #: Monument base split face CMU or CMU with 5-part STO integral stucco f

Other: White vinyl lettering. Provide dimensions per UFC. Secondary signs shall match primary sign's materials, but shall be smaller in size per UFC. Tertiary signs shall follow the UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



### C08.1.3. Building Identification Signs

Applicable  N/A Number of base standards 5

[Image Sizing and Cropping Tool \(small\)](#)





Type: **Freestanding Primary Sign (Sizes and Uses per UFC)**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

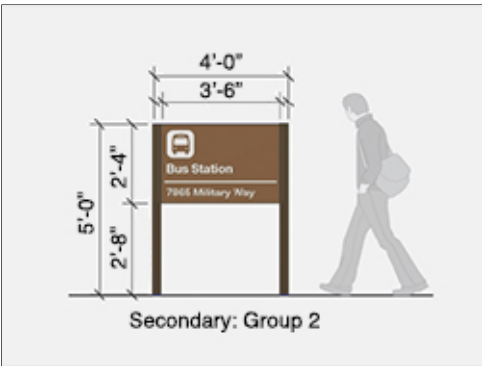
Color: Medium brown face, dark bronze posts, white vinyl lettering

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: Provide layout and sizes per UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Freestanding Secondary Sign (Sizes and Uses per UFC)**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

Color: Medium brown face, dark bronze posts, white vinyl lettering

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: Provide layout and sizes per UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

Type: **Freestanding Tertiary Sign (Sizes and Uses per UFC)**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

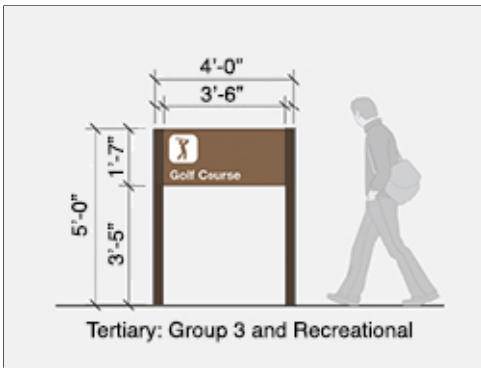
Mfr: Custom

Color: Medium brown face, dark bronze posts, white vinyl lettering

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: Provide layout and sizes per UFC.



UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

Type: **Wall Mounted**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

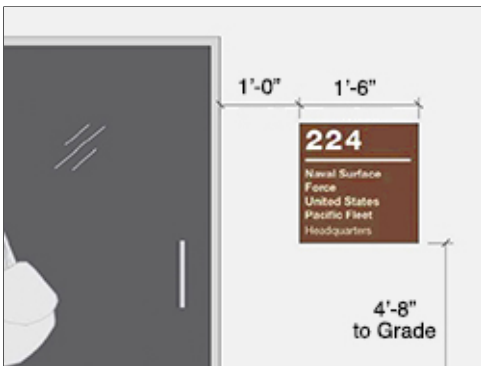
Mfr: Custom

Color: Medium brown, white lettering

Finish: Satin vinyl applied to aluminum sheet

Model #: Aluminum sheet with vinyl face and vinyl lettering

Other: Provide layout and sizes following UFC.



UFGS: N/A



Type: **Glass Mounted**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

Color: White vinyl lettering

Finish: Matte vinyl

Model #: Machine-cut sheet vinyl

Other: Apply vinyl lettering to glass. Provide sizes following UFC.

UFGS: N/A

### C08.1.4. Traffic Control Devices (Street Signs)

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Street Signs**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

Color: White reflective lettering on a Medium Brown background

Finish: Powder coat or vinyl sign face

Model #: Aluminum sign face, control arm or pole mounted

Other: Mount 7' above grade minimum, pictographs and logos are prohibited on street name signs per UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

### C08.1.5. Directional and Wayfinding Signs

Applicable  N/A Number of base standards 2

[Image Sizing and Cropping Tool \(small\)](#)

Type: **Vehicular**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

Color: Medium brown face, dark bronze posts, white reflective lettering

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: Conform to the requirements of the MUTCD and its DoD Supplement. Provide types and sizes where required by UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Pedestrian**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

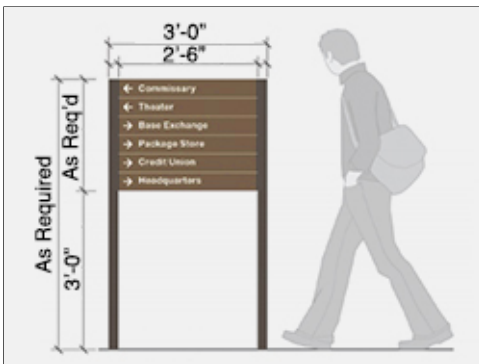
Color: Medium brown face, dark bronze posts

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: White vinyl lettering. Provide types and sizes where required by UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



### C08.1.6. Informational Signs

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Minimize informational signs such as static display signs, hours of operation, and project signs to reduce visual clutter.
2. Static display signs shall have standard blue background.
3. Hours of operation signs shall have a level of quality equivalent to the Facility Group number.
4. Temporary/Project Signage shall be judiciously placed to avoid visual clutter. Schedule and arrange for the removal of these signs prior to installation.

### C08.1.7. Motivational Signage

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Temporary signs are not permitted. Motivational information may also be posted in a small, printed format in approved, high-use pedestrian areas.

2. Follow UFC 3-120-01 for color and layout. Note that animated, blinking, chasing, flashing, or moving effects are prohibited by the UFC.

### C08.1.8. Parking Lot Signs

Applicable  N/A

### C08.1.9. Regulatory Signs

Applicable  N/A

1. Regulatory signage, which restricts, warns and advises, shall be limited to those mandated under Highway/Traffic, Government Warning, and/or Parking Regulation. Follow UFC 3-120-01 and its industry references for color and layout.

2. Provide a comprehensive, systematic approach to regulatory signage to avoid clutter and confusion from “over signage.”

3. Maintain base warning signs for safety and security at the base perimeter and at specific secure areas. Use these to notify visitors of restrictions governing conduct on the base, as well as other security procedures.

### C08.1.10. Other

Applicable  N/A

## C09. LIGHTING

Comply with AF Corporate Standards for Site Development:  
<http://afcs.wbdg.org/site-development/index.html>

Comply with AF Corporate Standards for Lighting:  
<http://afcs.wbdg.org/site-development/lighting/index.html>

### C09.1. Fixtures and Lamping

Applicable  N/A Has large graphics to include (800px x 440px)

Applicable  N/A Has small graphics to include (250px x 188px)

1. Provide a coordinated life cycle cost efficient lighting system for parking lots, pedestrian routes, and facilities to promote operations and safety while preserving a visual environment appropriate for the facility group. All lighting must comply with sea turtle friendly requirements as outlined in the 45 SWI 32-7001. All proposed light fixtures and cut sheet data must be reviewed by the BCE for review/approval.

Instruction 32-7001 - Exterior Lighting Management

[http://www.wbdg.org/FFC/AF/AFIFS/45\\_SWI\\_32\\_7001\\_Nov12.pdf](http://www.wbdg.org/FFC/AF/AFIFS/45_SWI_32_7001_Nov12.pdf)

2. Integrate controls to automatically reduce lighting power during periods of non-activity; automatically turn off power when sufficient daylight is available.

3. Ensure continuity and consistency of lighting elements. In new construction generally match post types, fixture types, styles, heights, sizes, materials, colors, and lamp types of adjacent facilities and the facility district.

4. Use appropriately designed or shielded luminaires to direct light downward to minimize light pollution and intrusion onto adjacent sites.

5. Wall mounted fixtures should respond to the architectural character of the facility.

6. Calculate illuminant levels for all lighting applications following UFC 3-530-01 and ensure compliance with pre-curfew maximum brightness level requirements.

7. Accent and aesthetic lighting of architectural and landscape features is not authorized as it is not mission-essential and not in compliance with sea turtle light management requirements. Shielded and downward directed sign lighting can be installed on top of signs to shine down and new LED signs can be programmed to shut off during the critical times of 2100 to 0600 from 1 May to 31 October.

8. Comply with UFC 3-530-01 for light source technology and lamp types. High efficiency lamping such as LED is preferred for most applications.

9. Provide round tapered or round non-tapered concrete aggregate poles and aluminum fixtures with square, rectangular or circular housings in colors and shapes to match adjacent facilities and the facility district.

10. Install lighted bollards only at Group 1 and high-traffic Group 2 facilities. Generally match materials, colors and shapes of adjacent facilities and the facility district.

11. Install natural warm gray color, smooth finished concrete bases for all poles in heights appropriate for the facility group and application. Generally Groups 1, 2 and 4 shall have at-grade bases. Group 3 shall have taller bases for added durability.

12. When parking lot lighting is necessary, provide an illuminated path to the building's main entrance. Pole bases should be contained within an internal landscape island.

13. Consistently install lighting for sidewalks, bikeways and trails to match adjacent facilities.

## C09.2. Light Fixture Types

**Note:** Apply the below base-wide standards for Light Fixtures (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.

### C09.2.1. Street Lighting

Applicable  N/A      Number of base standards 1

Image Sizing and Cropping Tool (small)

Type: **Street Lighting**



Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Hubbell, Kim Lighting

Color: Black or clear anodized in the AFTAC Campus

Finish: Factory

Model #: Rectilinear Cutoff, Single Arm or Dual Arm Mount

Other: Lamp: LED. Follow manufacturer's recommendations for fixture base.  
All lighting must comply with sea turtle friendly requirements.

UFGS: N/A

### C09.2.2. Parking Lot Lighting

Applicable  N/A      Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Parking Lot Lighting**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Hubbell, Kim Lighting

Color: Black or clear anodized in the AFTAC Campus

Finish: Factory

Model #: Rectilinear Cutoff, Single Arm or Dual Arm Mount

Other: Lamp: LED. Follow manufacturer's recommendations for fixture base.  
All lighting must comply with sea turtle friendly requirements.

UFGS:

### C09.2.3. Lighted Bollards

Applicable  N/A      Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Lighted Bollard**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Dura Art Stone

Color: Weatherstone gray

Finish: Standard Finish (smooth), black louver

Model #: As approved by the BCE

Other: Flared cone, 3000K LED Lamp. Follow manufacturer's recommendations for fixture base. All lighting must comply with sea turtle friendly requirements.

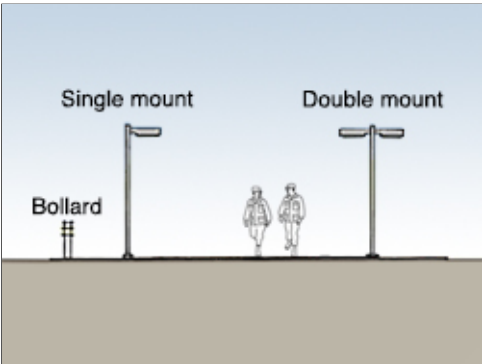
UFGS: N/A

### C09.2.4. Sidewalk Lighting

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Rectilinear Cutoff**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Hubbell, Kim Lighting

Color: Black or clear anodized

Finish: Anodized aluminum

Model #: Rectilinear Cutoff, Single Arm or Dual Arm Mount

Other: Lamp: LED. Follow manufacturer's recommendations for fixture base. All lighting must comply with sea turtle friendly requirements.

UFGS: N/A

### C09.2.5. Walls / Stairs Lighting

Applicable  N/A

### C09.2.6. Other

Applicable  N/A



## **D. FACILITIES EXTERIORS**

Comply with Air Force Corporate Standards for Facilities Exteriors:

<http://afcfs.wbdg.org/facilities-exteriors/index.html>

### **D01. SUPPORTING THE MISSION**

Comply with AF Corporate Standards for Supporting the Mission:

<http://afcfs.wbdg.org/facilities-exteriors/supporting-the-mission/index.html>

### **D02. SUSTAINABILITY**

Comply with Air Force Corporate Standards for Sustainability:

<http://afcfs.wbdg.org/facilities-exteriors/supporting-the-mission/index.html>

### D03. ARCHITECTURAL FEATURES

Comply with AF Corporate Standards for Facilities Exteriors:

<http://afcs.wbdg.org/facilities-exterior/index.html>

Comply with AF Corporate Standards for Architectural Features:

<http://afcs.wbdg.org/facilities-exterior/architectural-features/index.html>

*Insert 3 photos for each facility group.*

Image Sizing and Cropping Tool (small)

Group 1



Group 2



Group 3



Group 4



### **D03.1. Orientation, Massing and Scale**

1. Orient new buildings to maximize energy efficiency, passive solar and daylighting potential of the building; narrow buildings oriented along an east-west axis are preferred to minimize heat gain in the summer months and maximize heat gain in the winter months resulting in less overall energy usage.
2. Provide orthogonal geometry for principal building form; angular geometry may be used sparingly for Group 1 and used only for emphasis at specific areas such as building entrances and stairwells.
3. Maintain a human scale and reduce the visual scale of large buildings with sub-massing related to interior functional operations; create consistent form and scale in adjacent buildings with compatible profiles or silhouettes.
4. Building heights shall not be limited; however, building heights over 2 stories shall be considered on a case basis.
5. Combine functions where practical to avoid a proliferation of small, independent structures.
6. Use and coordinate shading devices with orientation and for function.

### **D03.2. Architectural Character**

The functional land uses of Patrick AFB develop distinct visual areas. Although diverse, these areas should blend and create an architecturally compatible campus. Two styles of architectural character are prominent at Patrick AFB. Florida Mediterranean architecture was adopted by the base in the early 1990s based on the location, natural vegetation, and use of materials and compatibility. This architecture involves principles responding to climate and environment, while using indigenous materials and simple, intuitive building techniques. The Florida Coastal architecture evolved to serve a functional role by providing shelter from sun and rain along the coastal perimeter of the Banana River. These two styles have been established as the standard for Patrick Air Force Base. While Florida Mediterranean architecture is the primary, base-wide detail, Florida Coastal architecture is reserved for use primarily in areas adjacent to the Banana River. Each style is discussed in more detail in the following sections and in each of the District Architectural Character Sections to follow.

Florida Mediterranean architecture involves the principles of providing comfortable shelter, using indigenous materials and simple, intuitive building techniques. Florida Mediterranean architecture achieves a sensitive interaction with the environment using simple rectangular forms of stucco with deep recesses, covered walkways/entrances, accents at roofs, and subtle sun-washed wall color. Florida Mediterranean is the primary architecture for buildings at Patrick AFB.

Florida Mediterranean is architecture of shared or common building elements. Facades, roofs, and finishes continuously flow, connecting a variety of building forms into common visual composition. Shared elements create architecture of efficiency and community.

Entrances and common areas are elevated, enhanced, and expressed through landscape and hardscape.

Characteristics include:

- Human scale and massing.
- Minimal overhang with detailed eaves.
- Arched entryways and openings.
- Upper level balconies.
- Covered walkways.
- Recessed doors and windows.
- Barrel tile roofing on gabled or hipped roofs.
- Light "sun-washed" wall colors and accent colors.
- Flat roof with parapet banding.
- Black railings and accessories.
- Divided light doors and window detail.
- Two- to three-story buildings.
- Main entrances signified with porticos and formal landscaping.
- Punched windows.
- Defined exterior courtyards with arcades and building placement.

A developed material, detail, and landscape hierarchy is also a characteristic. This hierarchy should make important facilities visually prominent and lesser facilities more subtle in appearance. See building types for hierarchy standards. The latest

implementations of this style includes the new AFTAC Campus, new Security Forces Facility, new Fire Crash/Rescue Facility, new Air Passenger Terminal/Base Supply Campus, and proposed new 920 RQW Guardian Angel Facility. These designs successfully combine recessed alcoves, tile roofs, covered walkways, and portico entrances. Clusters of palms and native vegetation provide a tropical buffer from the elements.

### **Florida Coastal "Fish Camp"**

Florida Coastal architectural style evolved to provide shelter from sun and rain, similar to architecture found along the coastal waterways. Although created from necessity, the Florida Coastal architecture transitions well from the Mediterranean detailing through use of the same geometric shapes and clearly defined hierarchy of space. The use of yellow tones for walls and weathered silver for roofing complements the Florida Mediterranean styles while providing a distinct recreational architecture. The latest implementations of this style includes the new Beach House, the Beach area pavilions and bath facilities, and Family Campground new construction. These designs successfully combine metal roofs, warm yellow tones and exterior clapboard similar to architecture found along the Florida coast. Clusters of palms and native vegetation provide a tropical buffer from the elements.

Proportion and scale are the basis of Florida Coastal architecture, with simple openings centered in the walls and simple roof structures providing relief from sun and wind. Pedestrian approach to this architecture follows an axially organized path created by landscaped buffers and textured walkways, emphasizing river view and breezes in lieu of complicated architecture.

Characteristics include:

- Docks, decks and piers.
- Metal roofing on gabled or hipped roofs - ridge parallel to entry.
- Exposed rafter eaves.
- Entry centered in façade.
- Overhangs.
- Aluminum hurricane shutters.
- Stucco columns and walls.
- Timber construction.
- Indigenous landscaping.
- Main entrances signified with entrance canopies and landscaping.
- Punched windows
- Simplicity.
- Tongue-and-groove decking.

### **Florida Coastal - Materials and Color**

Choose materials for their longevity and maintenance characteristics.

- Use materials with integral colors -avoid painting exterior colors.
- Use yellow tones of colored stucco or hardi-board architectural planks for exterior walls. Add sun-washed accent colors sparingly. Accent colors can be used in recesses and to accent certain portions of a building's façade.
- Use prefinished materials where possible -gutters, window frames, door frames, etc.
- Use v-crimped weathered galvalume roofs to match the concrete barrel tile roofs on sloped roofs.
- Exposed treated lumber is acceptable.
- Use marine grade wood in lieu of recycled material for boardwalks, piers, decks, etc. for ease of long term maintenance.
- Refer to the sustainability section of this document for recycled product information.

1. Develop architectural features, materials and detailing appropriate for the Facility Group designation. Refer to Building Entrances, Wall Systems and Roof Systems.

2. Respond to the local climate and regional influences with environmentally functional architectural features.

3. For new facilities design generally maintain consistency and visual unity in the character of the adjacent buildings through compatible architectural features: repeated use of similar forms such as roofs, and through recurring elements such as doors, windows, materials and colors.

4. Reinforce the campus environment and educational theme with a related architectural theme expressive of innovation and technology that represents the current mission.

5. All facilities shall express sustainability through their orientation, massing, shape, form, materials, and detailing. Provide louvers, fins and other shading devices to control heat gain and glare and to and improve energy efficiency.

6. Strive for economical construction without compromising a high-quality, professional appearance.

### **D03.3. Details and Color**

1. For both architectural styles at Patrick AFB, choose materials for their longevity and maintenance characteristics. Use materials with integral colors -avoid painting exterior colors. Florida Mediterranean style facilities should use base standard "conch" colored stucco for exterior walls. Add sun-washed accent colors sparingly. Accent colors can be used in recesses and to accent certain portion. Use prefinished materials to include copper gutters, anodized aluminum window frames, door frames, etc. Use blended color concrete barrel tiles on pitched roofs. Use Modified Bitumen or Fibertite on flat roofs. Refer to the sustainability section of this document for recycled product information.
2. The Florida Mediterranean architectural style has been adopted by Patrick Air Force Base as the standard. There are, however, exceptions to this standard. Certain recreational facilities located along the Banana River and Atlantic Ocean are to follow the criteria for the Florida Coastal style. If there is a facility where the Florida Mediterranean style is not to be used, it will be listed as an exception under the facility types listed below. Anyone reading these standards should also reference the Facilities portion of the Development Considerations, Exteriors section. These pages have further information regarding the architectural styles and specific recommendations for each facility and facility type.
3. Provide a palette of earth-tone colors in block, stucco and powder-coated metals. Refer to wall systems for detailed material listings.
4. Relate the level of architectural detailing to the Facility Group number.
5. Use only integrally colored materials as the predominant exterior building material; do not use materials that require field painting and ongoing maintenance.
6. Provide consistent and compatible colors for every exterior building feature, including walls, roofs, doors, windows, gutters, downspouts, utility and mechanical elements, and other visible elements.
7. Noncorrosive metals with factory applied color finishes are required.
8. Combine details and color with orientation, massing, scale and architectural character to maintain base compatibility.
9. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

#### **D03.3.1. Climate-based Data and Life-Cycle Cost-Effective Passive and Natural Design Strategies:**

- Climate dominated by mechanical cooling
- Climate dominated by mechanical heating
- Climate with similar mechanical cooling / heating needs
- Climate with minimal mechanical cooling / heating needs
  
- Climate with high humidity
- Climate with moderate humidity
- Climate with low humidity

- High Solar Insolation
- Moderate Solar Insolation
- Low Solar Insolation
  
- Soils with High Thermal Conductivity
- Soils with Average Thermal Conductivity
- Soils with Low Thermal Conductivity

Other: Consider the potential for flooding and corrosion.

Other:

*Facility:* Narrow buildings along E-W axis are preferred

*Wall:* Integral shading features and devices / interior masonry thermal mass walls (for cooling)

*Doors:* Recessed doors, openings and walkways

*Windows:* Provide low-e solar gray insulating glazing on north-facing windows / maximize shading for windows on south façades

*Roof:* High to medium albedo, moderate slope for all buildings except hangars / large industrial facilities

*Structure:* Do not expose any type of ferrous metals. Provide factory finished non-ferrous metals or concrete

*MEP:* Always consider LCCA. Never consider GSHP. Solar is a possible option.

*Other:* Internal thermal mass walls may be used for cooling following LCCA.

*Other:*

**Note:** Apply the below base-wide standards for Architectural Features (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.

### D03.3.2. Natural Ventilation System

Applicable  N/A      Number of base standards 1

Image Sizing and Cropping Tool (small)



Type: **Style 1 Aluminum Windows**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Kawneer (or equivalent)

Color: Black (or clear anodized as approved by BCE)

Finish: Anodized Aluminum

Model #: 2x4, double/single hung or casement, ensure % of openings allow for se

Other: Provide thermally broken frames

UFGS: Section 08 41 13 Aluminum-Framed Entrances and Storefronts

### D03.3.3. Thermal Mass

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Style 1 Interior Wall Material**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom, TBD

Color: CMU / Plaster

Finish: Light texture

Model #: Coursed unit masonry

Other: Concrete block may only be used when finished with cement plaster as approved by the BCE. Base standard is Sto 5-part integral stucco system with plastic lath only or integral colored split-face stucco.

UFGS: Section 04 20 00 Unit Masonry

### D03.3.4. Thermal Shading

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Style 1 Wall Devices**

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Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Kawneer (or equivalent) or custom

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Color: Black or clear anodized aluminum in AFTAC campus only

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Finish: Factory, to match frames

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Model #: Louver

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Other: Shading devices may be attached to frames or structure

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UFGS: Section 08 41 13 Aluminum-Framed Entrances and Storefronts

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### D03.3.5. Renewable Heating/Cooling

Applicable  N/A

### D03.3.6. Solar Photovoltaic System

Applicable  N/A

### D03.3.7. Solar Thermal System

Applicable  N/A



## D04. BUILDING ENTRANCES

Comply with AF Corporate Standards for Facilities Exteriors:

<http://afcs.wbdg.org/facilities-exteriors/index.html>

Comply with AF Corporate Standards for Building Entrances:

<http://afcs.wbdg.org/facilities-exteriors/building-entrances/index.html>

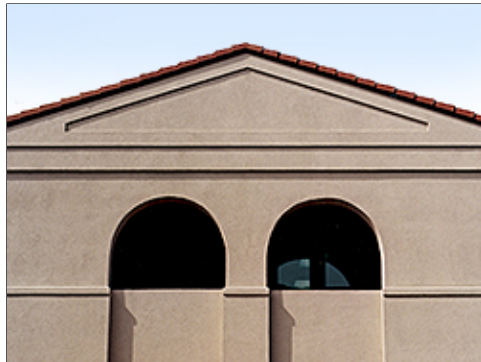
*Insert 3 photos for each facility group.*

Image Sizing and Cropping Tool (small)

Group 1



Group 2



Group 3



Group 4



## **D04.1. Primary Entrances**

1. Emphasize the primary entrance in the overall building design with a projecting or recessed covering for weather protection following Installation Facilities Standards (IFS) for Facility Group designations.
2. Group 1 entrances shall be identified by the use of wall plane changes, vertical elements, or similar manipulation of entrance design elements and/or changes in materials.
3. Group 2 entrances may have adjacent pedestrian gathering space to enhance a sense of entrance to facilities.
4. Express primary building entrances as the focal point of the façade and align these with pedestrian access points. Locate main building entrances on south facades whenever possible.
5. Provide vestibules at entries in Groups 1, 2 and 3 unless used infrequently or serving unconditioned space following ASHRAE 90.1.
6. Fully integrate all elements including the design of handicap ramps in the overall design of the primary entrance in an organized uncluttered appearance.
7. Install paved transitional spaces sized for the building function and occupancy.
8. Install appropriate lighting and site furniture following AT/FP and IFS.
9. Provide porte cocheres or covered drop-offs when justified for lodging and medical facilities; do not use for prestige architectural accents.

## **D04.2. Secondary Entrances**

1. Provide vestibules at entries in Groups 1, 2 and 3 unless used infrequently or serving unconditioned space following ASHRAE 90.1; use of stair towers as vestibules for multi-story buildings is encouraged when building and / or energy codes are satisfied.
2. Reflect the character of the primary entrance to a lesser extent with a smaller scale.
3. Include a recess or projection for weather protection and shading.
4. Integrate service and egress doors and loading areas with the building design by matching the materials and detailing and reflect the overall quality of the facility.
5. Incorporate egress structures such as stair towers into the facility design.
6. Canopies may be used for service and loading areas; weather protection beyond weatherstripping is not required at doors used only for life safety egress.
7. Develop building massing and orientation to minimize the appearance of service and loading areas; physically and visually separate these from primary entrances.
8. Loading areas must be organized, orderly and have an uncluttered appearance.
9. Covered walkways are building elements, but are discussed in this section due to their use as connectors between various site areas. These structures provide shelter for pedestrians walking between buildings and parking lots or other buildings. In the hot, yet rainy, Florida climate, the rain protection and shade provided by these walkways can make a great difference in the pedestrian's experience when walking even short distances. Covered walkways should be designed to conform to the established base-wide Mediterranean architectural theme consisting of red Spanish clay tiles on pitched roofs, and a 5-part synthetic integral stucco with plastic lath as an exterior wall material.

## D05. WALL SYSTEMS

Comply with AF Corporate Standards for Facilities Exteriors:

<http://afcs.wbdg.org/facilities-exteriors/index.html>

Comply with AF Corporate Standards for Doors and Windows:

<http://afcs.wbdg.org/facilities-exteriors/wall-systems/index.html>

Comply with AFCFS Recommended Materials:

<http://afcs.wbdg.org/facilities-exteriors/wall-systems/materials/index.html>

*Insert 3 photos for each facility group.*

Image Sizing and Cropping Tool (small)

Group 1



Group 2



Group 3



Group 4



### **D05.1. Hierarchy of Materials**

1. Group 1 facilities may have more refined detailing than Group 2 and Group 2 may have more definition than Group 3.
2. Group 1 and 2 facilities shall be a combination of concrete block with integral synthetic five-part stucco finish, integral color split face masonry units or precast architectural precast panels at Patrick AFB. Insulated powder-coated or hot-dipped pre-finished galvanize aluminum sandwich panels at Cape Canaveral AFS and pre-engineered pre-finished ribbed metal building panels at Patrick AFB is acceptable for Group 3 facilities. Refer to the Appendix for special requirements of Facility Districts.
3. Group 4 shall be a combination of two of the following materials: concrete block with integral synthetic five-part stucco finish first floor and metal stud second floor is acceptable with integral 5-part stucco finish.
4. Multi-story Group 1 and 2 facilities may include a transition in material, color or detailing to create a visual base. Generally limit accent split face block or ribbed masonry block accents to a single color on Group 3 and 4 facilities.
5. Use high-performance building envelopes following UFC 1-200-02.
6. Use detailing not subject to excessive weathering. Provide wall accents consistently throughout the base.
7. Use integrally colored materials and factory-finished metals conducive to the extreme corrosive environment. Do not paint concrete block or pre-finished metal building materials.
8. Translucent wall and roof panels may be used in Facility Group 1 and recreational uses in Group 2 when protected from direct solar gain. Provide insulating panels and shading appropriate for the orientation and exposure. Consider the use of translucent panels in replacement hangar door panels to provide natural light and AT/FP protection. All glass in windows and doors of beachfront facilities that are in line of sight of the beach must have tinting meeting the Florida Statute 62B-55.006 for 45% transmittance (inside to outside) or less.
9. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

### **D05.2. Layout, Organization and Durability**

1. Organize wall components including doors, windows, accents, shading devices, control joints, etc., to provide an ordered, professional appearance.
2. Integrate shading devices into the overall composition of the wall.
3. Integrate fixed shading devices as at all exterior glazing exposed to summer UV heat gain as a passive design measure to reduce energy use. Ensure adequate shading at west entrances. Deciduous trees may be used for shading.
4. Shading systems may be included as part of a manufacturer's window system or may be custom systems integrated into the wall.
5. Provide appropriate transitions between dissimilar materials to mitigate effects of thermal expansion and galvanic action.
6. All joint sealants shall be slightly darker than adjacent surfaces.
7. Materials requiring regular maintenance are not permitted; do not use exposed structural steel or other materials that require painting.
8. Refer to C07.2.16. Screen Walls for materials and colors of freestanding walls.

### **D05.3. Equipment, Vents and Devices**

1. Arrange all mechanical, electrical, fire alarm, lightning protection and other system components to create an orderly appearance that integrates with the wall system.
2. Do not expose conduits, cables, piping, lightning protection components, etc. on exterior walls; if unavoidable in renovations, finish these elements to match the adjacent wall surface.

## D05.4 Wall Systems Materials

Facility Group 1 wall materials shall be as follows.

Primary: CMU / integral synthetic five-part stucco finish  
Secondary: Architectural precast  
Accent: Optional: Integral colored split-faced CMU or stone

Facility Group 2 wall materials shall be as follows.

Primary: CMU / integral synthetic five-part stucco finish  
Secondary: Fiber cement lap siding factory pre-painted finish  
Accent: N/A

Facility Group 3 wall materials shall be as follows.

Primary: Pre-finished aluminum insulated wall panel  
Secondary: Optional: CMU / five-part Stucco  
Accent: N/A

Facility Group 4 wall materials shall be as follows.

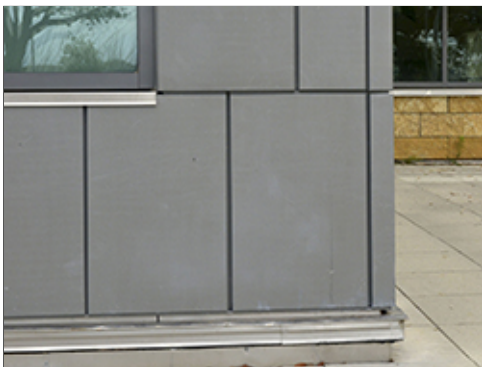
Primary: CMU / integral synthetic five-part stucco finish  
Secondary: Stud with synthetic stucco over sheathing or fiber cement  
Accent: Concrete or Brick Foundation Cladding

**Note:** Apply the below base-wide standards for Wall Systems (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.

### D05.4.1. Flat Metal Panels

Applicable  N/A Number of base standards 1

Image Sizing and Cropping Tool (small)



Type: **Alucobond**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Alucobond

Model #: Alucobond Classic, Rainscreen I

Color: Patrick AFB Conch Shell

Finish: Matte

Other: Route and Return Dry Seal

UFGS: Section 07 42 13 Metal Wall Panels:  
[http://www.wbdg.org/FFC/DOD/UFGS/UFGS\\_07\\_42\\_13.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_07_42_13.pdf)  
Section 07 42 63 Fabricated Wall Panel Assemblies:  
[http://www.wbdg.org/FFC/DOD/UFGS/UFGS\\_07\\_42\\_63.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_07_42_63.pdf)

### D05.4.2. Brick Veneer

Applicable  N/A

### D05.4.3. Architectural Precast

Applicable  N/A Number of base standards 1

Image Sizing and Cropping Tool (small)



Type: **Architectural Precast**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: (Local Precast Company)

Model #: N/A

Color: Patrick AFB Conch Shell with accent

Finish: Smooth Casting

Other: Very Light texture

UFGS: Section 03 45 00 Precast Architectural Concrete:  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 45 00.pdf>

#### D05.4.4. Stucco Over Sheathing

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Cementitious Stucco with Synthetic Finish**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Sto

Model #: StoQuik Silver Drain Sto Emerald Coat

Color: Patrick AFB Conch Shell

Finish: Very Light Texture

Other: Sto DrainScreen, Sto BTS Xtra, Sto Mesh, Sto Guard Mesh 4.2.5, Sto Prime

UFGS: Section 09 24 23 Cement Stucco:  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 24 23.pdf>

#### D05.4.5. Curtain Wall

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Curtain Wall**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Kawneer

Model #: N/A

Color: Anodized Aluminum Black or mill finish if in AFTAC campus area

Finish: Very Light Texture

Other: N/A

UFGS: Section 08 44 00 Curtain Wall and Glazed Assemblies:  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 44 00.pdf>

#### D05.4.6. Cast-In-Place Concrete

Applicable  N/A

#### D05.4.7. Tilt-Up Concrete

Applicable  N/A

#### D05.4.8. Ribbed Metal Sheeting

Applicable  N/A      Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Flush Seam**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: TBD

Model #: Flush Seam Panel or to match surrounding facilities as approved by the B

Color: Patrick AFB Conch Shell

Finish: Factory finished

Other: A1046/A0146M standard specification for steel sheet, zinc-aluminum-ma

UFGS: Section 07 42 13 Metal Wall Panels:  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 42 13.pdf>

#### D05.4.9. EFIS

Applicable  N/A

### D05.4.10. GRFC

Applicable  N/A

### D05.4.11. Concrete Block

Applicable  N/A      Number of base standards 2

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Split-Face Concrete Block**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: (Local Manufacturer)

Model #: Demaro Block or equivalent

Color: Camel to match Patrick AFB Conch Shell or similar accents with matching

Finish: Very Light Texture

Other: Split Face block, stacked or concrete block with 5-part integral synthetic

UFGS: Section 04 20 00 Unit Masonry:

<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 04 20 00.pdf>



Type: **Stone Veneer**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: TBD

Model #: N/A

Color: Neutral Grays

Finish: Textured

Other: Top cap to match

UFGS: Section 04 20 00 Unit Masonry:

<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 04 20 00.pdf>

### D05.4.12. Fiber Cement Siding

Applicable  N/A      Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)





Type: **Style 1**

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Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: James Hardie Building Products, Inc.

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Model #: Horizontal Architectural Lap Siding, Shingle Siding

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Color: Yellow tones for recreational facilities or housing only

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Finish: Wood Texture

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Other: Fiber Cement HardiePlank Clapboards and Trim

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UFGS: SECTION 074646 Fiber Cement Siding:  
(Not Available on UFGS)

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#### D05.4.13. Other

Applicable  N/A

## D06. DOORS AND WINDOWS

Comply with AF Corporate Standards for Facilities Exteriors:

<http://afcs.wbdg.org/facilities-exteriors/index.html>

Comply with AF Corporate Standards for Doors and Windows:

<http://afcs.wbdg.org/facilities-exteriors/doors-and-windows/index.html>

Comply with AFCFS Recommended Materials:

<http://afcs.wbdg.org/facilities-exteriors/doors-and-windows/materials/index.html>

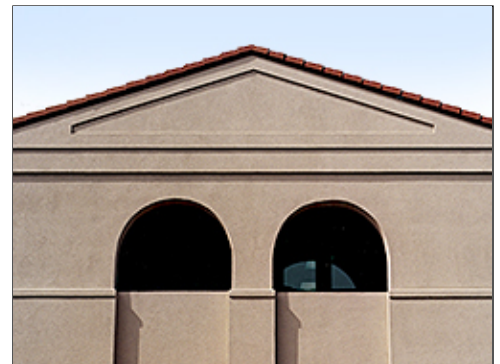
*Insert 3 photos for each facility group.*

Image Sizing and Cropping Tool (small)

Group 1



Group 2



Group 3



Group 4



## **D06.1. Types**

1. Door and window frame systems shall be a storefront type and incorporate a thermal break feature. All doors and windows shall meet AT/FP requirements as well as Florida Building Code hurricane wind requirements.
2. Black anodized aluminum finishes are required with the exception of the AFTAC campus facilities which will use clear anodized aluminum finishes; match the color of the door and frame. For renovation projects the color of new windows, doors and frames may match existing.
3. Group 1 and 2 facilities shall have casement operable windows for a minimum of one half (1/2) of the total window area unless prohibited by interior operations.
4. Group 1 facilities shall have metal windows, doors and frames of clear anodized aluminum or powder coated steel factory finished silver to be compatible with stainless steel, factory finished steel or aluminum panels.
5. Group 2 facilities may have metal windows, doors and frames similar to Group 1 or anodized aluminum or powder coated steel factory finished black. Limit hollow metal doors and frames to security doors, utility rooms and mechanical rooms in Groups 1 and 2 facilities.
6. Group 3 facilities shall have metal windows, doors and frames factory finished to match black.
7. Group 3 secondary entrances may be hollow metal clad to match the adjacent wall.
8. Group 3 and 4 buildings shall employ casement or double hung operable windows for a minimum of one half (1/2) of the total window area. Casement windows may be used when matching existing conditions.
9. Provide insulation in metal doors and thermal breaks in metal frames.
10. Standard-sized hinged doors are preferred. Use sliding, folding, overhead, sectional and other door configurations only to support mission operations.
11. Automatic doors are allowed only where functionally necessary.
12. Utility and emergency egress doors shall match the wall color.
13. Passive thermal comfort methods of ventilation are encouraged where life cycle cost justified.
14. Windows must meet force protection requirements.
15. Adjacent joint sealants should be slightly darker than the frame color.

## **D06.2. Layout and Geometry**

1. Develop fenestration geometries in new construction and renovations generally matching adjacent facilities and to promote horizontal visual emphasis. Horizontal and vertical alignment of fenestration units as a visual composition in the exterior building envelope is required.
2. All south facing fenestration shall be recessed a minimum of four feet (4') (1.22 m) from the adjacent exterior wall planes (or shading device), providing protection from the wind and sun.
3. Visually and functionally compose openings in walls for the climate-specific exposure.
4. Consistently use opening type, size, placement, mullion pattern, and color to reinforce the overall architectural design.
5. Openings shall augment interior lighting and space conditioning needs.
6. Protect against vandalism, intrusion and coordinate sound ratings.
7. Large service or garage doors shall be carefully screened from entries and similar "people" places.

### D06.3. Glazing and Shading

1. Provide 1" insulating glass at all window and door applications, tempered where required by code, and laminated safety glass at sloped applications. Install 1/4" glass at spandrel panel (opaque) locations.
2. All window and door glass shall be solar gray in color of the manufacturer's standard tint, visible light transmittance of 42% and shading coefficient of 0.64 for 1/4" thick glass. Insulating glass units: daylight transmittance - 40% maximum, daylight reflectance (outdoors) - 8% maximum, shading coefficient (no shade) - 0.60 maximum. This is for all new construction and in renovations as approved by the BCE.
3. Provide High Solar Heat Gain Coefficient (SHGC) dual-pane glazing where interior thermal mass walls and operable insulating curtains are installed.
4. Translucent wall panels may be approved on a case basis.
5. Do not use mirrored glazing.
6. Fully integrate applicable shading designs for overhangs, louvers, light shelves and grilles.
7. Install window screens on operable windows.

### D06.4. Hardware

1. Provide hardware appropriate for the Facility Group while considering activity and frequency of use and local climate; hardware may be of higher visual quality for Facility Group 1.
2. Ensure hardware will perform throughout the facility's lifespan without showing extreme wear.
3. Select finishes that will not degrade by intensity of operation or exposure to the elements.
4. Use consistent finish and color on window and door systems throughout a facility. For renovation projects the color of new hardware may match existing.
5. Design building systems to eliminate the need for security screens whenever possible.

### D06.5. Doors and Windows Materials

**Note:** Apply the below base-wide standards for Doors and Windows (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.

#### D06.5.1. Anodized Aluminum

Applicable  N/A      Number of base standards 1

Image Sizing and Cropping Tool (small)



Type: **Anodized Aluminum Doors, Windows and Frames**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Kawneer (or equivalent)

Color: Anodized Aluminum Black or mill finish if in AFTAC campus area

Finish: Matte

Model #: Engineered frame sizes

Other: Provide thermally broken frames.  
Overhead doors shall be insulated and factory prefinished color to be determined by BCE.

UFGS: Section 08 41 13 Aluminum-Framed Entrances and Storefronts:  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 41 13.pdf>

### D06.5.2. Hollow Metal

Applicable  N/A

### D06.5.3. Aluminum-clad Wood

Applicable  N/A

### D06.5.4. Other

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Vinyl Residential**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: TBD

Color: White or Black as determined by the BCE

Finish: Powder coated, satin

Model #: TBD

Other: Double-hung or Casement

UFGS:

## D07. ROOF SYSTEMS

Comply with AF Corporate Standards for Facilities Exteriors:

<http://afcs.wbdg.org/facilities-exteriors/index.html>

Comply with AF Corporate Standards for Roof Systems:

<http://afcs.wbdg.org/facilities-exteriors/roof-systems/index.html>

Comply with AFCFS Recommended Materials:

<http://afcs.wbdg.org/facilities-exteriors/roof-systems/materials/index.html>

*Insert 3 photos for each facility group.*

Image Sizing and Cropping Tool (small)

Group 1



Group 2



Group 3



Group 4



## D07.1. Roof Type and Form

1. Use proven, cost-effective roof systems with high durability, weather resistance, and low maintenance that are compatible with Installation Facilities Standards (IFS) and requirements for the designated Facility Group.
2. Generally match the roof type and form of existing adjacent facilities in new construction.
3. Group 1 and 2 buildings shall use hipped roof clay or concrete barrel tile roofs as appropriate with a combination of "flat" membrane roofs with parapets, emphasizing the horizontal lines of the building.
4. Provide screens for roof-mounted appendages and equipment of the same materials, which are used predominantly in the building's wall systems.
5. Group 4 facilities shall have gabled or hipped concrete barrel tile or composite shingle roofs.
6. Roof eaves shall extend beyond the exterior wall for roof drainage and shading. Provide overhangs for shading in response to local climatic conditions, sized and proportioned to the height of the facility and to the window openings being shaded.
7. South-facing eaves shall coordinate with adjacent wall-mounted shading devices.
8. The color, shape and slope of the eave and soffit shall be compatible with adjacent facilities.
9. Keep roofs uncluttered and minimize penetrations.
10. Diminish massive roofs into coordinated smaller consistent with adjacent facilities; avoid random, arbitrary changes.
12. Increase the insulation value of existing roofing systems during renovations if supported by life cycle cost and structural analysis.
13. Roofs shall be maintained for the life of the system and replaced in accordance with UFC 3-110-04 and AFI 32-1051. A warranty is required on all new roofs. All facilities must be carefully designed for wind uplift. All roofs should be designed according to the latest edition ASCE 7 and Florida Building Code. Damage occurs from uplift at building overhangs and roofs, caused by differential pressures.
14. All Florida Mediterranean facilities shall have clay barrel tile roofs, concrete barrel tile roofs, or pre-finished aluminum architectural standing seam roofing material factory painted. Use a blended color for the terra cotta clay or concrete roofing materials. Boral has been used successfully in the past for concrete barrel tile roofs. All flat roofs shall be a white granulated top ply similar to Sopraplast by Soprema with an aged solar reflective index of 86 or a modified bitumen membrane as approved by the BCE. Use only non-ferrous or stainless steel fasteners and components that are compatible with the roof material and ensure that they are strong enough to support gutters, downspouts, etc. and able to withstand extreme corrosive environment. Pre-engineered metal buildings where approved by the BCE should use hot-dipped galvanized materials.
15. In areas where Florida Coastal architectural style is required, a simulated aged galvalume Kynar500 finish corrugated aluminum "v-crimp" material shall be used. Use only stainless steel fasteners, joists, hangars, and associated components/connectors compatible with the roof material. Ensure strength will support gutters, downspouts, etc. and components are able to withstand extreme corrosive environment.

## D07.2. Roof Slope

1. Group 1, 2 and 3 buildings shall use "flat" minimally sloped roofs, min. 1/4":12" or minimum 4:12 slope dependent on adjacent facilities and facility requirements. Larger facilities may use sloped-roof features with predominantly min. 1/4":12" roofs.
2. Group 4 facilities shall use 4:12 roof slopes.
3. Ensure adequate drainage, and connect to the rain collection system.
4. Minimal-sloped roofing with vegetated roofs may be considered when economically justified.
5. Provide roof slopes to accommodate solar photovoltaic, solar thermal, passive systems and daylighting when applicable following UFC 1-200-02.

### **D07.3. Parapets and Copings**

1. Extend wall materials vertically above the roof line and provide complementary horizontal copings to conceal all structural roof elements. Ensure copings are properly flashed and detailed to avoid roof leaks.

### **D07.4. Color and Reflectivity**

1. Sloped roofs in Group 1 and 2 and smaller facilities in Group 3 shall follow the architectural style of adjacent facilities and follow requirements of the IFS.
2. All minimal-slope membrane roofs shall use only use high-albedo, high reflectivity color to help decrease the temperature around the buildings and minimize damage to human and wildlife habitat.
3. Sloped roofs in Group 4 shall be integrally colored earth tones unless otherwise determined by the BCE to meet energy efficiency initiatives.
4. Comply with UFC 3-110-03 and ASHRAE 90.1 for Solar Reflectance Index (SRI) and thermal requirements.
5. All roof flashing shall match the color of the predominant background material.

### **D07.5. Gutters, Downspouts, Scuppers, Drains**

1. Provide copper gutters with all clay tile or concrete tile roof systems in Group 1-4 facilities.
2. Provide painted aluminum gutters and downspouts for all Florida Coastal architectural style to match simulated aged galvalume Kynar500 finish corrugated aluminum "v-crimp" material in Group 2 facilities.
3. Provide integral gutters and downspouts to match silver colored Kynar500 finish galvalume standing seam metal roof materials in Group 2 and 3 facilities.
4. All sloped roofs shall use gutters and downspouts. Gutters shall be outside the fascia.
5. Internal roof drainage systems are not permitted in new construction. Minimal-sloped roofs shall be sloped to drain to the building perimeter through scuppers into downspouts.
6. Size the roof drainage system per IBC and SMACNA for the region unless otherwise specified by the BCE.
7. Use scuppers as required in parapet walls. Arrange scuppers in an orderly manner consistent with other elements of the wall system. When open scuppers are connected to downspouts, provide transitions consistent with adjacent facilities.
8. Integrate downspouts with the architectural details of the wall system and arrange in an orderly, non-prominent appearance. Generally blend downspouts with the color of the wall (not contrasting it). All downspouts shall be solid.
9. Fabricate downspouts from non-corrosive materials such as aluminum or zinc-coated steel. Provide powder-coated finishes when not copper.
10. Provide angled transitional pieces for downspouts to fit closely against the wall for their entire length.
11. Coordinate locations of downspouts to conceal control joints in masonry walls when possible.
12. Place downspouts away from building entries. Water discharged should not run across sidewalks.

### **D07.6. Roof Vents and Elements**

1. Minimize and consolidate roof penetrations into a single, inconspicuous point whenever possible.
2. On sloped roofs clad pipe penetrations to match the roofing material.
3. Avoid the use of rooftop mechanical equipment, however for renovations and unavoidable configurations ensure units are screened.



4. Provide access points and service routes to equipment that protect the roof.
5. Screen all large vents.
6. Ensure attic spaces are properly vented at ridges and soffits.
7. Match roof color for all exposed equipment and vents.
8. Avoid roof-mounted antenna systems.
9. Arrange Lightning Protection Systems (LPS) components in an ordered, uncluttered, inconspicuous appearance and integrated into the organization of the roof and wall systems.
10. Ensure that LPS roof mounting systems are approved by the roofing manufacturer.
11. Additions to a roof shall not interfere with LPS or other rooftop systems that may be required.
12. Permanent fall protection shall be included with any addition to a roof with a slope above 3:12 per UFC 3-110-03. to a roof.

### D07.7. Clerestories and Skylights

1. Clerestories and skylights are permitted in Group 1 facilities and allowed in Group 2, 3 and 4 facilities only when serving passive systems, are justifiable by life-cycle analysis and as approved by the BCE. Use of Kalwall brand or equal translucent panels as the preferred product is recommended. Skylights when within direct visibility of the beach or for large facilities where interior lighting will be visible to the exterior and will cause excessive light pollution/sky glow. All skylights must be approved by the BCE.
2. Clerestories are preferred to skylights to avoid roof penetrations. Skylights, when permitted, must be simple in shape and integrated with the roof system to eliminate leakage.
3. Design clerestories and skylights using the same principles for seasonal shading that are required for walls and roof overhangs.
4. Translucent panel systems are preferred in clerestory applications due to lack of window cleaning.
5. Clerestories and skylights must comply with UFC 4-10-01.

### D07.8. Vegetated Roof

1. Vegetated roofs are encouraged when they can be sustained with low maintenance, without potable irrigation systems and when they provide energy savings.
2. Use of a vegetative roof should include a maintenance contract for unique requirements.
3. Ensure that a vegetated roof is appropriate for the specific application and climate zone and where justifiable by life-cycle analysis.
4. Provide walking paths and pads for access and maintenance.
5. Do not use vegetative roofs near flightlines.

### D07.9. Roof Systems Materials

**Note:** Apply the below base-wide standards for Roof Systems (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.

#### D07.9.1. Standing Seam Metal

Applicable  N/A      Number of base standards 1

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Type: **Standing Seam Panels**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Berridge

Color: Dark red, silver or white as determined by the BCE

Finish: Kynar500 coated aluminum 20yr warranty

Model #: Tee-Panel

Other: Shed, gabled or hipped standing seam metal depending on location and adjacent facilities. 12 3/4" wide exposure with 1" high standing snap lock seams.

UFGS: Section 07 61 14 Steel Standing Seam Roofing  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 61 14.00 20.pdf>

### D07.9.2. Membrane Single-ply

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Single-Ply Membrane**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Suprema Soprastar or equal

Color: White

Finish: Smooth

Model #: TPO single-ply, "flat" minimal slope

Other: White granulated top ply with an aged solar relective index of 86

UFGS: Section 07 53 23 Ethylene-Propylene-Diene-Monomer Roofing  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 53 23.pdf>  
Section 07 54 50 TPO Thermoplastic Single-Ply Roofing  
(Not Available on UFGS)

### D07.9.3. Built-up Multi-ply

Applicable  N/A

### D07.9.4. Concrete Tile

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)

Type: **Concrete S-Tile**



Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Boral or equivalent

Color: Dark Red flashed or blended

Finish: Factory

Model #: Barcelona 900 Casa Grand Blend S-Tile (large scale facilities), Villa 900 Ca

Other: Concrete tile roofing for Group 1 facilities to be approved by BCE. Only tile roofing accent features are permitted for Group 3 facilities. Only use Florida Standard Weight concrete tile as recommended for Florida.

UFGS: Section 07 32 16 Concrete Roof Tile  
(Not Available on UFGS)

### D07.9.5. Clay Tile

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Clay S-Tile**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Boral or equivalent

Color: Dark Red flashed or blended

Finish: Factory

Model #: Fire Flash, El Camino or Newport Blend S-Tile with ridge caps and closure

Other: Clay tile roofing shall be used for Group 1 facilities - exceptions shall be approved by the BCE.

UFGS: Section 07 32 13 Clay Roof Tiles  
(Not Available on UFGS)  
Section 07 32 14 Clay Tile Roofing Replacement or Repair  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 32 14.pdf>

### D07.9.6. Slate Shingles

Applicable  N/A

### D07.9.7. Vegetated System

Applicable  N/A

### D07.9.8. Ribbed Metal Sheetting

Applicable  N/A

### D07.9.9. Composite Shingles

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Style 1**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: GAF

Color: Sunset Brick or blended tones as determined by the BCE

Finish: 25 year Architectural dimensional tab

Model #: Timberline Armorshield

Other: Gabled or hipped with transverse gable or hipped features

UFGS: Section 07 31 13 Glass-fiber-reinforced Asphalt Shingles  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 31 13.pdf>

### D07.9.10. Other

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Corrugated Kynar500 aluminum V-Crimp roofing**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Local Manufacturer TBD

Color: Simulated aged galvalume Kynar500 finish

Finish: Fish camp look

Model #: V-Crimped profile, Cementitious hard board vented soffit. Min. = 10 S.F.

Other: Corrugated .040 alum "V Crimp" roof (1/2" corrugations @ 12" O.C. w 2 intermediate corrugations) w/aged galvalume Kynar500 finish. St Stl clips fasteners, joists, hangars, & associated components/connections

UFGS:

## D08. STRUCTURAL SYSTEMS

Comply with AF Corporate Standards for Facilities Exteriors:

<http://afcs.wbdg.org/facilities-exteriors/index.html>

Comply with AF Corporate Standards for Structural Systems:

<http://afcs.wbdg.org/facilities-exteriors/structural-systems/index.html>

Comply with AFCFS Recommended Materials:

<http://afcs.wbdg.org/facilities-exteriors/structural-systems/materials/index.html>

*Insert 3 photos for each facility group.*

Image Sizing and Cropping Tool (small)

Group 1



Group 2



Group 3



Group 4



## D08.1. Systems and Layouts

1. Concrete framing is preferred for all Facility Groups. Hot-dipped galvanized pre-engineered structural steel framing is acceptable for Groups 1, 2 and 3 facilities; conventional thermal envelopes and IFS-approved wall materials and detailing are required. Rigid steel framing may be used for Groups 1 and 2.
2. Wood framing or light-gauge steel framing shall be used for Group 4.
3. Narrow buildings 60' or less in width with column-free interiors are preferred for office, administrative and personnel spaces; when interior columns are required optimize the structural grid layout for open-plan arrangements.
4. Fully coordinate structural grids with exterior window systems to align columns with window frames or wall systems.
5. When structure is exposed provide an organized appearance and coordinate with mechanical, electrical, plumbing, fire protection, information technology, and communications systems.
6. Specialty systems (such as space frames, vaults or domes) and of structure as a visual feature may be approved on a case basis.
7. Cost-effectively designed interior bearing walls may be used for thermal mass.

## D08.2. Structural Systems Materials

**Note:** Apply the below base-wide standards for Structural Systems (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.

### D08.2.1. Concrete

Applicable  N/A

Number of base standards 1

Image Sizing and Cropping Tool (small)



Type: **Concrete**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

Color: Natural Gray

Finish: Light texture

Model #: Post and beam, waffle slab

Other: N/A

UFGS: Section 03 30 53 Miscellaneous Cast-In-Place Concrete  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 30 53.pdf>  
Section 03 33 00 Cast-In-Place Architectural Concrete  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 33 00.pdf>  
Section 03 47 13 Tilt-Up Concrete  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 47 13.pdf>

### D08.2.2. Insulated Concrete Forming (ICF)

Applicable  N/A

### D08.2.3. Steel

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Rigid Framing**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: US Steel

Color: Hot-dipped galvanized metal

Finish: Matte

Model #: Structural steel shapes

Other: N/A

UFGS: Section 05 12 00 Structural Steel

[http://www.wbdg.org/FFC/DOD/UFGS/UFGS\\_05\\_12\\_00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_05_12_00.pdf)

### D08.2.4. Pre-Engineered Steel

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Moment Frame**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Local TBD

Color: Hot-dipped galvanized metal

Finish: Matte

Model #: Moment Frame

Other: Draped insulation may be used behind wall systems. Deflection criteria must follow IBC.

UFGS: Section 13 12 00 Steel Building Systems  
(Not Available on UFGS)

Section 13 34 19 Metal Building Systems

[http://www.wbdg.org/FFC/DOD/UFGS/UFGS\\_13\\_34\\_19.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_13_34_19.pdf)

### D08.2.5. Masonry

Applicable  N/A

### D08.2.6. Heavy Timber

Applicable  N/A

Number of base standards 2

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Heavy Timber with corrugated aluminum Kynar500 v-crimped roofi**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

Color: Natural Marine Grade Lumber - natural rot and insect resistant

Finish: Sealed

Model #:

Other: All open structures shall be constructed of heavy timber. Use of lumber and pre-engineered trusses is unacceptable. All fasteners shall be concealed stainless steel. Use IPE wood top caps and stl steel cable infill.

UFGS: Section 06 13 00 Heavy Timber Construction  
(Not Available on UFGS)

Type: **Heavy Timber with thatch roofing**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Custom

Color: Natural Cypress - natural rot and insect resistant

Finish: Sealed

Model #:

Other: All open structures shall be constructed of heavy timber only. Fasteners shall be concealed stl steel. Use 1-1/2" tube high grade type 316 stl steel for exterior handrails/posts w/IPE wood top caps, stl steel mesh infill.

UFGS: Section 06 13 00 Heavy Timber Construction  
(Not Available on UFGS)

### D08.2.7. Light-gauge Steel

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)





Type: **Light Gauge Steel Framing**



Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Local

Color: Hot-dipped galvanized metal

Finish: Matte

Model #: Standard Structural Shapes

Other: N/A

UFGS: Section 05 45 00 Light Gauge Steel Framing System  
(Not Available on UFGS)

### D08.2.8. Lumber Framing

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Lumber Framing**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Local

Color: Natural Marine Grade

Finish: Sealed

Model #: Standard S4S framing lumber

Other: Lumber framing is only allowed for use on enclosed facilities and not on open structures. All fasteners shall be concealed and shall be stainless steel

UFGS: Section 06 10 00 Rough Carpentry  
[http://www.wbdg.org/FFC/DOD/UFGS/UFGS\\_06\\_10\\_00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_06_10_00.pdf)  
Section 06 11 00 Wood Framing and Sheathing  
(Not Available on UFGS)

### D08.2.9. Other

Applicable  N/A

## D09. MECHANICAL, ELECTRICAL AND PLUMBING

Comply with AF Corporate Standards for Facilities Exteriors:

<http://afcs.wbdg.org/facilities-exteriors/index.html>

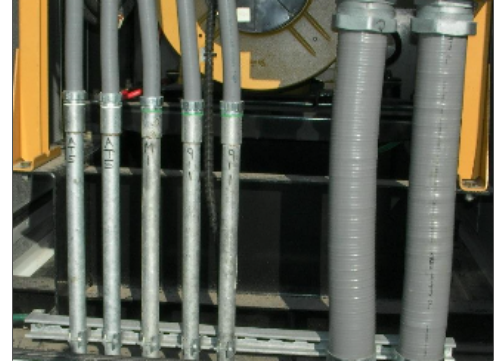
Comply with AF Corporate Standards for Mechanical, Electrical and Plumbing:

<http://afcs.wbdg.org/facilities-exteriors/mechanical-electrical-and-plumbing/index.html>

*Insert 3 photos for each facility group.*

Image Sizing and Cropping Tool (small)

Group 1



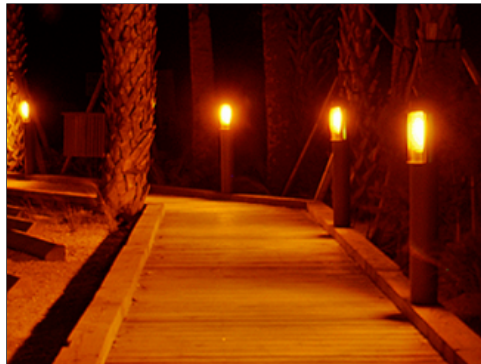
Group 2



Group 3



Group 4



## **D09.1. Passive and Active Systems**

1. Fully integrate passive heating and cooling systems into facility designs whenever practical for the local climate, which is dominated by mechanical cooling loads, prior to the design of active mechanical systems.
2. Provide optimized passive and active systems; design active mechanical systems to supplement thermal mass walls and floors.
3. Develop renewable energy systems when life cycle cost effective.
4. Performance display screens, which report energy performance and utility savings, are encouraged; when provided locate these in building lobbies or common areas.
5. Solar or natural gas domestic hot water systems are required when life cycle cost effective.
6. Integrate shading into building exteriors to reduce solar heat gain during the summer.

## **D09.2. Functionality and Efficiency**

1. Fully coordinate mechanical, electrical, plumbing (MEP) and fire protection systems with each other and with the building structure, enclosure, thermal envelope and interior design.
2. Ensure direct exterior access is provided (for CE) to main mechanical and electrical rooms.
3. Screen exterior equipment from primary views (landscape, building masses, screen walls) and comply with AT/FP requirements.
4. Keep equipment away from main building entrances; locate service area/yard on least visible side of a building.
5. Coordinate the location of all exterior meters, equipment and devices to provide convenient access and an overall coordinated and orderly appearance.
6. Design emergency generator systems integrally with all other building systems and avoid incompatible building additions; locate generators near service areas and not visible from primary entrances.
7. When structure is exposed as a finished ceiling, fully integrate MEP and fire protection systems to provide an organized uncluttered appearance.
8. Conceal ducts, piping, conduits, devices, etc., when permanent walls, suspended ceilings or raised floors are provided; locate sprinkler heads in orderly configuration.
9. Limit interior wall-mounted equipment in occupied personnel spaces; avoid surface-mounted conduit and pipes.
10. Provide efficient utility rooms with layouts to facilitate system performance and maintenance; provide convenient access to controls, clearly label systems and include operating and maintenance instructions.
11. Separate mechanical and electrical and communications rooms.
12. Integrate recessed and wall-mounted fixtures such as fire standpipe cabinets and drinking fountains within permanent walls.
13. Paint the body of all fire hydrants and backflow prevention devices to match PAFB Conch Shell Color. Paint bonnets and fire connections only per NFPA based on the established flow of the hydrant or red.
14. All fire alarm systems shall have "Point to Point" capability for the main fire alarm system. Point to Point capability identifies down to the specific room and specific device for device activation or device failure.
15. Each facility shall include provisions to interface with the base EMCS system.
16. Asbestos containing materials (ACM) shall not be used, even ACM fully encapsulated in gasket material.
17. Provide for clean pleated filters to be installed at system acceptance, with a new separate standby filter to be turned over to the Government at that time.

18. All equipment, design, calculations, etc. must meet at minimum the current UFC, IBC, ASHRAE Standards and SMACNA

19. All HVAC equipment shall be easily accessible for maintenance on all sides per manufacturer's minimum maintenance clearance.

20. Eliminate the need for above-ceiling return air plenum by using ducted return, where possible.

21. All mechanical equipment shall be mounted on vibration isolators to prevent the transmission of vibration and mechanically transmitted sound to the building structure. Provide positive ventilation in attics and crawl spaces.

#### **D09.2.2. Controls, Energy Efficiency, Energy Monitoring and Electrical**

1. All HVAC equipment shall have a Direct Digital Control (DDC) System that can be fully integrated with the base's existing EMCS.

2. Do not use pneumatic control components.

3. Environmental controls for new construction and renovations shall be capable of communicating via Base LAN Ethernet connection with the existing Certified and Accredited server system. Communication shall be via Tridium Niagara or DIACAP approved, platform and software located in the base EMCS office. The control systems shall be constructed of certified LONworks devices.

4. Energy savings and LEED projects shall be provided with commissioning services during construction and at occupancy. Projects shall include power consumption monitoring of HVAC equipment to verify energy cost savings and to facilitate maintenance and troubleshooting.

5. Chillers and other equipment shall have optimum energy ratings to qualify for Florida Power and Light rebates. Specific information is available at [www.fpl.com](http://www.fpl.com). Contractor shall obtain rebates and provide maintenance engineering energy manager all documentation.

6. Phase loss/Phase rotation protection shall be provided on all motors.

7. Over-current protection shall be provided in all HVAC equipment and at EMCS panels. All VFD's shall be located in interior conditioned space.

8. All motors shall be premium efficiency.

9. All systems will be programmed at install to be connected to the emergency management shut down button located on the EMCS front end.

10. All systems will be programmed at install to be connected to the EMCS alarm panel for real time notification of equipment failure.

#### **D09.2.3. Water, Gas and Fuel Systems**

1. Natural gas distribution lines shall be polyethylene pipe, yellow or orange in color, conforming to AGA standard PE 2406 or PE 2306. Connections shall be made by heat fusion and metallic tape shall be installed above.

2. Water & Gas smart meters shall be installed for new construction or in renovation projects and tied into the base EMCS system. Water meters shall provide direct read in gallons.

3. Use of natural gas is preferred.

4. Liquid fuel tanks shall be installed in concrete vaults above ground.

#### **D09.2.4. Equipment Rooms**

1. Design equipment rooms to be located along exterior walls with exterior access doors.

2. Sufficiently large doors or easily removable panels shall be designed to allow passage of large piece of equipment.

3. Floors are to be sloped to interior drain.
4. Room shall be provided with domestic water with hose bib and 115-volt power outlets.
5. Adequate wall space or full-standing partitions shall be provided for mounting of controls.
6. Adequate space shall be allowed for wire brushing of water-cooled condensers, chillers and coils, filter removal, access to control actuators, etc.
7. Verify all manufacturer minimum equipment clearances are met within the equipment rooms, where applicable.
8. Emergency lighting shall be provided in mechanical rooms.
9. Provide heating, cooling and humidity control sized to meet room demands, where applicable.

#### **D09.2.5. HVAC Design Criteria**

1. Outdoor design temperatures: Summer: 93 degree F dry bulb, 79 degree F wet bulb. Winter: 32 degrees F dry bulb. Exception: If an air-cooled condenser cannot be located in shade, the design temperature may be adjusted up 5 degrees Fahrenheit higher, at the discretion of the design engineer.
2. Indoor design temperatures: Summer: 75 degrees F dry bulb, 45% -55% relative humidity. Winter: 70 degrees F dry bulb. However, it can be dictated by mission requirements documentation.
3. In the design analysis, heating and cooling load calculations submitted in the form of computer printouts must include enough information to permit verification of the calculated results without a computer analysis and shall include a list of input data, legend describing the abbreviations and terms, and a short explanation of how to interpret the printouts.
4. Supply, exhaust, return and outside air states/conditions in at all points around air handler and energy recovery devices.
5. Provide formal factory training of operation and maintenance for chillers, VFDs, and AHUs. Provide site training for all installed HVAC equipment to HVAC personnel. Minimum 8 hours on site or 5 days in classroom.
6. Provide formal factory training of Environmental controls and site training to EMCS personnel. Provide a copy of the control program on disc to the EMCS personnel. Minimum 8 hours on site or 5 days in classroom.
7. Laminate, frame and mount as-built mechanical plan, sequence of operation, and controls on mechanical room wall near the entrance. Provide one full size set of each to the HVAC and EMCS shops.
8. Install pad-mounted HVAC equipment when possible. Use ridgeline vents or gable vents, instead of roof-mounted rotating fan vents. Install soffit vents.
9. Equipment shall be mounted on 6" house-keeping pads with non-compressible neoprene spacers at all corners and midway spans as a minimum or an inertia base with spring isolation.

#### **D09.2.6. HVAC Outdoor Air Configuration**

1. When SHR exceeds 70 to 80%, consider use of a separate outdoor air cooling coil, especially in chilled water systems. Leaving air temperature shall be 50-52 degrees F, adjustable. Consider use of parallel OA/RA dual path air handlers in chilled water systems. DX OA coils shall incorporate hot gas reheat.
2. All dedicated outdoor air coils shall be copper tube/copper fin construction.
3. When OA is up to 500 CFM, use of energy recovery shall be considered and evaluated for cost benefit analysis.
4. When OA is 1000 CFM or greater, use of energy recovery is required. A&E shall provide life cycle cost analysis to determine actual payback period. Verify that based on cost benefit analysis provided by A&E, the payback period is not exceeding the expected life of the energy recovery equipment.

5. Types of energy recovery shall include: air to air heat exchanger, fixed enthalpy transfer plate or enthalpy wheel; refrigerant wrap around coil air to air exchanger; heat pipe (DX); and hot gas reheat.

6. When OA is 400 CFM or greater and it is highly preferred to provide energy recovery in all projects. The preferred energy recovery devices are fixed plate air to air energy recovery and hot gas reheat.

#### **D09.2.7. DX Units (Condensing)**

1. Condensers shall be copper tube/copper fin construction with factory applied Adsil, Heresite, Bronz-Glow Husky® Sea Coast Protector (HLF 781); or equal.

2. Low Ambient protection shall be included in design.

3. Provide condenser coil guards on all condensing units.

4. Short cycle prevention shall be integral with equipment

5. For air-to-air unitary heat pumps up to 19,000 btuh, the minimum SEER is 13.0. For units over 19,000 btuh, the minimum SEER is 13.0.

6. Air-to-air chillers are not authorized.

7. Heat high-bays and hangars with IR systems, unless prohibited by AFOSH safety regulations.

#### **D09.2.8. Ductwork**

1. Provide balancing dampers for all air device systems. Locate dampers at main trunk.

2. For all duct being reused in the project, the A&E shall inspect ducts for condition assessment. Duct cleaning shall be considered on AHU replacement or retrofit projects as required. Include Specification section for duct cleaning.

3. All grilles, diffusers and registers shall be insulated, aluminum with powder coating. They shall be selected based on supply or return.

4. Outdoor air louvers shall be stainless steel or anodized aluminum, wind driven rain hurricane models. Duct connections should slope to exterior.

5. Outdoor air ducts shall be stainless steel or duct board with FSK or equivalent lining on both sides and installed per mfg requirements. (e.g., Knauf duct)

6. Avoid above ceiling areas as return plenum.

7. Standard duct material is galvanized steel constructed in accordance with SMACNA guidelines, wrapped with R-6 fiberglass insulation with foil vapor barrier. Ductwork and insulation shall be sealed with vapor proof mastic.

8. No more than 4 feet of flexible ducting will be used at any air outlet.

9. All exterior ductwork shall have pitched stainless jacketing, minimum 22 gauge.

10. Any take-off from rigid duct to a flexible duct connection shall begin with a minimum of 6 inches of rigid duct or prefabricated galvanized fitting with an adjustable damper.

11. The use of duct board in HVAC systems is not allowed for units over 5 tons.

12. Sheet metal ductwork shall be specified to be constructed to IAW SMACNA, "Low Pressure Duct Construction Standards or High Pressure Duct Construction Standards," as applicable.

13. Specify maximum ductwork leakage rates of 2% for round and 5% for rectangular (to be tested and verified during air balance).

14. Specify a vapor barrier material for all insulation intended for air conditioning ductwork.
15. Provide access doors/panels at all locations which require periodic cleaning; i.e., reheat coils and VAV terminals.
16. Branch ducts are to be offset from the main trunk duct (not opposite each other) for improved "balanceability."
17. Design of supply and return ductwork shall prevent stratification. Use baffles if necessary. All return air shall have ducted returns.
18. Specify manually operated, opposed blades or parallel blade, quadrant-type volume dampers for each branch duct take off after leaving the main duct. Splitter dampers and volume extractors are not suitable for volume control.
19. Specify double thickness or single thickness extended edge turning vanes in rectangular elbows for flow over 1000 cfm. Use 1.5 diameter round elbows.
20. All volume dampers are to be located at least two diameters from a fitting and as far as possible from outlets.
21. Install CO2 sensors in air return ducts for HVAC units over 20 tons.

#### **D09.2.9. Air Cooled Condensers**

1. Selected condensers shall provide a maximum condensing temperature of 20-degrees above design ambient.
2. Solar effects and other site specific operating conditions shall be considered when specifying capacity.
3. Multiple fans and necessary controls shall be included for head pressure control.
4. Roof top installation is prohibited.

#### **D09.2.10. Air Handlers**

1. Air Handling Unit (AHU) Motors shall be internal with a direct access door.
2. All roof top and exterior mounted package units greater than 7.5 tons and all interior units greater than 15 tons shall be double walled galvanized steel for outside or units located in unconditioned spaces.
3. Condensate drain pans shall be sloped stainless steel or PVC of suitable thickness.
4. Access doors shall be provided for fans, coils and filters. Manufacturers' recommendations for maintenance clearance shall be provided and shown in design/construction documents. Show all required equipment access clearances on design drawings to minimize conflicts.
5. AHU shall have the cooling and heating coil As-Built capacities, CFM, size and quantities of belts, bearings, and filters, motor data, pressure drop through coil(s), and manufacturer's part numbers for all motor and AHU accessories indicated on the exterior cabinet of the unit:
6. Provide concrete housekeeping pad under all air handlers, extend four to eight inches beyond dimensions of air handler.
7. Provide neoprene isolation pads under air handling unit base, or factory-provided spring isolators.
8. On new construction, provide individual condensate piping to the floor drain. Preferred options include pipe to storm drain, pipe to rock bed adjacent to building. Allowable options are drain to sanitary or to French drain.
9. Provide a hose bib in the mechanical room.
10. Avoid locating air handlers, water heaters, pumps, and expansion tanks installed above ceilings. If no other option, then AHU must be installed with drain pans piped to drain; if space permits, provide work platforms on two sides.
11. Air handlers above suspended ceilings are to be provided with servicing platforms, extended a minimum of thirty inches from the edge of the equipment, with a 36-inch high clear working space on the control side and other side where access is necessary.

12. Install air handling units in equipment rooms where possible.

#### **D09.2.11. Hydronic Devices**

1. Larger chilled water HVAC systems (100 tons and greater) shall utilize variable flow technology such as variable speed pumps and 2-way control valves on coils. Smaller chilled water systems shall utilize this technology when economically feasible.

2. For water systems provide pressure drop ports for pumps, coils and chillers.

3. Chemical feed shall be installed on the low pressure (suction) side of the pumps.

4. Chemical treatment for condenser water shall include an algaecide, a biocide and a scale inhibitor with a pump for each. Provide a conductivity meter with a minimum 4 relays for the chemical pumps and the bleed off valve.

5. All hydronic devices shall have manual isolation valves in addition to modulating or two-position valves.

6. Access openings are specified in fan guards for checking fan speed.

7. Provide, motor speed control, and variable discharge dampers for control of VAV systems. Do not rely on "fan tracking" as a method of control.

8. Specify extended greases fittings for bearings where required for access.

9. Provide access doors to clean BOTH sides of heating and cooling coils, drain pans, and fan blades.

10. Specified equipment should be in the mid range of cataloged performance to allow for adjustment during commissioning.

11. Inside lights should be provided in air handlers having 25 square feet of coil area or larger. Use exterior mounted switch with indicator light.

12. Ensure fan-coils are installed so as to allow full opening of all access doors.

13. Adequate clearance for servicing to include space for coil removal and filter changing should be available.

14. Consult the most current ASHRAE Standards for indoor air quality, heating and cooling requirements, and other design criteria.

#### **D09.2.12. Hydronic Piping**

1. Chilled water piping in mechanical rooms shall be schedule 80 PVC pipe insulated with 1-1/2 inch (minimum) cellular glass with an aluminum jacket.

2. Chilled water piping underground shall be HDPE pre insulated pipe is highly preferred. Second choice is pre-insulated schedule 80 PVC pipe with 1-1/2 inch (minimum) cellular glass insulation and PVC jacket. Avoid using steel pipe underground.

3. Hot water lines shall be insulated with fiberglass.

4. Steam lines shall be insulated with calcium silicate with an aluminum jacket.

5. Provide connection fittings on exterior of building for connection to temporary chillers.

6. All exterior piping shall have stainless steel jacketing.

#### **D09.2.13. Chillers and Cooling Towers**

1. Chiller relief valves shall be exhausted outside the mechanical room in accordance with ASHRAE Standard 15.

2. Cooling towers shall have HDPE or 316 SS housing. All hardware shall be 316 SS.



3. Cooling towers are preferred for loads exceeding 80 tons and highly preferred for loads exceeding 150 tons.
4. Consider provide variable speed fan motor drives on cooling towers with drive located in interior mechanical room.
5. All chillers shall be under cover.
6. Chillers shall be premium efficiency from Trane, York and Carrier.
7. Magnetic bearing compressors are not permissible.
8. Chillers and cooling towers shall be fully LON compatible as a manufacturer option.
9. Where applicable, cooling towers shall have safety railings, platforms, and maintenance ladders.

#### **D09.2.14. Louvers, Dampers and Mixing Boxes**

1. Ensure that fresh air louvers are not located adjacent to heat rejection equipment (cooling towers, etc.). Also, louvers shall be at heights which will satisfy Force Protection criteria.
2. Ensure that fresh air louvers are motorized and connected to the control system. All components shall be stainless steel.
3. Specify pressure independent balancing dampers downstream of VAV terminals.
4. Specify full quadrant balancing dampers for all fresh air and return air ductwork to all handling units.
5. Specify duct access doors on both sides of all dampers.
6. Specifications shall require the use of high efficiency dampers for all fresh air dampers and mixing boxes.
7. Wind driven hurricane louvers required, max face velocity not to exceed 500FPM.
8. Connections to louvers shall slope to exterior.

#### **D09.2.15. General Refrigerant Requirements**

1. Only Non-Class ODS (Ozone Depleting Substances) refrigerant shall be used. Class I and II ODS refrigerants are no longer authorized for use. All systems purchased will be in compliance with AFI32-7086 (Hazardous Materials Management), Chapter 4 (ODS Management).
2. Equipment rooms with refrigerant containing equipment shall be designed in accordance with ASHRAE Standard 15 (i.e. refrigerant monitors, proper ventilation).
3. R-22 systems shall be recovered by the government, as required. All other system refrigerants shall be salvaged and turned over to the government.
4. Compressors are to be located in equipment rooms. Do not locate on roofs.
5. Suction discharge and oil pressure gauges with isolation valves shall be permanently mounted on equipment room walls or free standing partitions. (Do not mount on equipment.)
6. For refrigerant lines, standard insulation material is closed cell foam insulation.
7. For ductwork, standard insulation material is fiberglass wrap with foil vapor barrier.
8. For domestic hot and cold water lines, the standard is fiberglass wrap with Kraft paper and glass fiber yarn backing, bonded to aluminized film, secured with self-sealing longitudinal laps. Indoor piping shall have a vinyl jacket, and outdoor piping shall have a stainless jacket with prefabricated elbows of the same material.
9. For high temperature water heating lines and steam lines, the standard is calcium silicate with cover.

10. Refrigerant and chilled water coils shall be copper tubing with copper or aluminum fins. Aluminum tubing shall not be used.
11. HVAC refrigerant systems shall use the refrigerant. HFC 134A or 410 equipment and others may be submitted by the design engineer for approval.
12. Provide training classes for government maintenance employees on system operation, four hours instruction for basic systems, and up to two full days or factory training for more complex systems. The design engineer will specify the number of government attendees.

#### **D09.2.16. Chilled and Hot Water Piping**

1. Specify thermometers and gauges at inlets and outlets of all heat exchange devices; i.e., converters, chillers, water cooled condensers, boilers, etc.
2. Specify air vents with isolation valves at all high points and at heat exchanges.
3. See if vapor barrier material is called for all chilled water piping insulation.
4. Specify chemical feeders for water treatment.
5. Specify dielectric unions at all connections of dissimilar metals.
6. Specify flow measurement equipment (i.e., orifice plates) for all major heat exchange devices and each pump.

#### **D09.2.17. Refrigeration Piping**

1. Piping should be designed to provide adequate oil return.
2. Size suction and discharge gas risers for minimum gas velocities of 1000 fpm.
3. Horizontal suction and discharge gas lines shall be sized for minimum gas velocities at 500 fpm.
4. Specify p-traps at the bottom of all gas risers with more than 8 feet of vertical run.
5. Specify double gas risers for systems with unloading compressors.
6. See that all horizontal refrigerant lines are sloped 0.5 inches per 10 feet in the direction of flow.
7. Design shall provide isolation valves at inlets and outlets of all system components, every major piece of equipment and on each end of long refrigeration lines. Each separable element of the refrigeration system must have provisions for localized evacuation. Critical systems must be provided with valved bypass lines at all filter drier locations.

#### **D09.2.18. Piping Identification**

1. Standard color-coded labels (ANSI A 13.1) are to be specified for all piping at ten-foot intervals. Colored pipe labels shall be printed to indicate the type of fluid carried.
2. Use PVC/CPVC for condensate drain lines.

#### **D09.2.19. Fire Alarm Systems**

1. Frequency for the fire alarm system at Patrick AFB is 141.4125 MHZ. (FSK)
2. Frequency for the fire alarm system at Patrick AFB is 138.9250 MHZ. DTMF (obsolete)
3. Plans shall show all fire alarm and mass notification devices. Visual devices shall show the candela rating of each device.
4. Riser diagram shall show all power connections, initiating devices, alarm devices and any interconnections of shutdowns such as AHUs or door releases.

5. Provide a matrix showing what action each device will initiate.
6. Location of the fire alarm panel shall be as directed by the fire department. Panel shall be accessible to the fire department and CE technicians when the building is not occupied. The preferred location is a climate controlled mechanical room.
7. Vendor shall provide a detailed transmitter zone schedule. A minimum of 16 Zones shall be supplied with the capability to expand to 32 or 64 depending on the size of the facility.
8. The fire alarm reporting system is a Monaco D-21 radio transceiver system using an addressable panel. The transmitter radio (BTX) shall be Monaco.
9. The building fire alarm system shall be an addressable system and/or a combination fire alarm/mass notification system. System shall use combination speaker/strobes and the strobes as specified in UFC 4-021-01. Facility PA system shall not be tied to MNS speakers or system.
10. Fire alarm panel shall have "Point to Point" capability. "Point to Point" capability identifies down to a specific room and device for specific location of device activation or device failure.
11. Manual fire pull stations shall NOT have glass rods. Fire Pull stations shall be single action except for specific facilities such as Child Development Center or Youth Center, and other similar facilities with approval of the Authority Having Jurisdiction (AHJ), (These type facilities should use dual action manual pull stations to prevent unintentional fire alarm activation)
12. No 'T' tapping shall be permitted.
13. All fire panels, associated panels, fire pull stations are to be keyed the same; #AUE-001 key is recommended.
14. Antenna shall have direct line of sight to Building 1319 (location of D-21 Central Receiving Station) and 3 ft. above edge of roof line.
15. Any smoke detector that is installed over fire alarm panel shall be no higher than 2 ft. above the fire alarm panel.
16. Contracting Officer shall provide Certifications of all Installers, Testers, Certifiers, Fire Protection Engineers and other persons involved in the installation of Fire Alarm or anything dealing with Fire Protection requirements prior to commencing installation.
17. All NAC panels shall be individually zoned with trouble and battery fault conditions with a visual monitor module appropriate for the system.
18. All wires shall be clearly identified for bell circuit and/or speaker/audio for MNS.
19. The AHJ shall be notified after conduit is installed for visual inspection. No panels shall be installed without prior coordination or approved location(s).
20. Contracting Officer shall provide a final inspection and acceptance checklist with the Material Register for each project. The Authority Having Jurisdiction (AHJ) must attend the final inspection for the Fire Protection System and sign/certify all documents confirming to the Government that the systems were installed to meet the required standards. During final acceptance testing a check list shall be provided by the contractor IAW NFPA and/or UFC standards prior to the final inspection. The most stringent standard shall take precedence. Each checklist shall provide procedures to test all Fire Protection systems that were installed. This checklist shall comply with the current edition of the NFPA 72 and shall incorporate the procedures to test all aspects of the Fire Protection System; Fire Alarms, Mass Notification and other systems as applicable. If the contractor installs the Fire Protection system different from that shown in the design, a revised final inspection and acceptance checklist shall be submitted for review, two weeks prior to the final acceptance for the system. All checklists shall be approved by AHJ (ACC FPE and the local AHJ).
21. Connections to Fire Alarm Control Panel(s) (FACP) to BTX-M or BTX shall be by a serial port or Data line connection. No relay/communication/data links may be used between the FACP and transmitter. Only hardwired connections shall be acceptable. Installation of FACP and transmitter shall be IAW manufacturer's specifications and shall be compatible with Patrick AFB D-21 monitoring system.
22. All initiating circuits shall be 4-wire Class A circuits unless prior authorization from AHJ.

23. Any 2-wire Class B circuit must have the last device installed and must have a sign stating the value and location of the end of line resistor. The sign should be placed on the device or junction box, if visible from below. It can also be identified on the FACP door.
24. All junction box covers for the fire alarm system shall be painted "RED" IAW NFPA and all couplings shall be painted RED.
25. On all suspended ceiling grids, the cross grid intersections shall be marked with a RED dot indicating the location of fire alarm junction boxes.
26. Contractor shall post a laminated schematic drawing next to the fire alarm systems and MNS panels and clearly mark on the drawing the location of all fire junction boxes.
27. All fire alarm and MNS notification system panels and accessories panels shall reset on their own after a power bump or electrical outage.
28. All devices shall be addressable and resettable through the fire alarm panel.
29. All duct detectors shall be 24 volt.

## E. FACILITIES INTERIORS

Comply with Air Force Corporate Standards for Facilities Interiors:  
<http://afcs.wbdg.org/facilities-interiors/index.html>

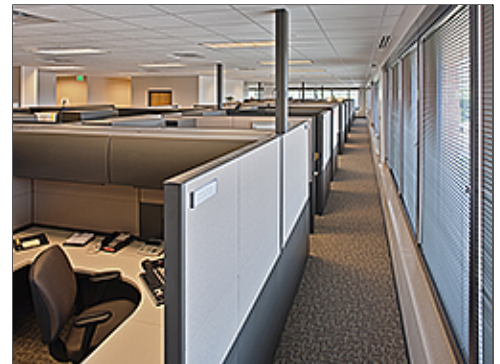
*Insert 3 photos for each facility group.*

Image Sizing and Cropping Tool (small)

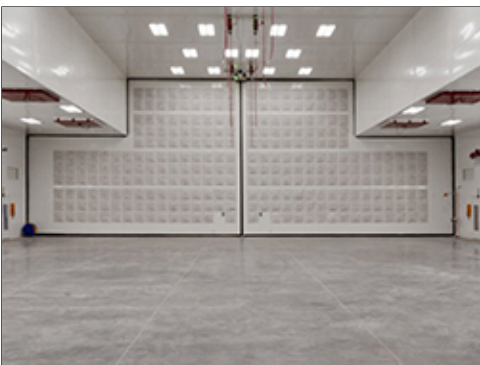
Group 1



Group 2



Group 3



Group 4



## **E01. Building Configurations**

Comply with Air Force Corporate Standards for Building Configurations:

<http://afcfs.wbdg.org/facilities-interiors/buildings-configurations/index.html>

1. Provide open-plan configurations for office, administrative, operational and related activities and spaces for maximum flexibility. Use a “core and shell” approach in which all building systems, infrastructure and permanent interior partitions anticipate two or more uses (operations) during a facility’s lifespan.
2. Create flexible interior configurations using Furniture, Fixtures & Equipment (FF&E) and limit private offices and private rooms. Refer to AFMAN 32-1084 for space requirements. To the greatest extent, limit permanent partitions to core areas such as toilet rooms, stairs, mechanical and utility rooms. Use more durable long-lasting finishes in core areas for walls, ceilings, floor coverings and built-in casework. Coordinate interior FF&E layouts with structural grids during space planning.
3. Provide high-performance building configurations following UFC 1-200-02. Ensure passive design strategies are cost effectively incorporated before active mechanical systems are designed.
4. Comply with UFC 1-200-01, general building requirements. UFC 1-200-01 provides applicability of model building codes and government unique criteria for typical design disciplines and building systems, as well as for accessibility, antiterrorism, security, high performance and sustainability requirements, and safety.
5. Meet security and force protection requirements in UFC 4-010-01: DoD Minimum Antiterrorism Standards for Buildings.
6. Comply with AFCFS for supporting mission requirements, addressing human comfort and well being, and creating highly flexible interiors while satisfying metrics for high performance and sustainable buildings.
7. Provide a level of quality for interior features, materials and finishes that is appropriate for the Facility Group number. Group 1 may receive higher quality than Groups 2 thru 4. Refer to Facility Hierarchy.
8. Provide open-plan configurations for office, administrative, operational and related activities and spaces for maximum flexibility using a “core and shell” approach as defined in AFCFS. Fully integrate facility interiors with overall building systems and preserve all passive and natural design strategies.
9. Design and review must be accomplished by, or in consultation with, professional interior designers or architects with significant interior design experience. For in-house design and maintenance projects that require interior design applications, the 45th CES Architect and/or Interior Designer is expected to work on the project.
10. Consult with the State Historic Preservation Officer (SHPO) and Advisory Council on Historic Preservation regarding proposed changes to properties listed on or eligible for listing on the National Register of Historic Places. Follow requirements of The National Historic Preservation Act and Secretary of the Interior Standards for the Treatment of Historic Properties.
11. Maintain architectural compatibility following AFCFS and this Installation Facilities Standards (IFS) document to create continuity while avoiding monotony.

### **E01.1. Layout and Common Areas**

Comply with Air Force Corporate Standards for Layout and Common Areas:

<http://afcfs.wbdg.org/facilities-interiors/buildings-configurations/layout-and-common-areas/index.html>

1. Create open-plan interior environments to accommodate changes.
2. Limit interior partitions, private offices and rooms; use furniture or modular systems to provide privacy and acoustic control.
3. When partitions are functionally justified such as for conference rooms, use systems furniture and moveable (demountable) floor-to-ceiling wall systems for acoustical or visual privacy.
4. Proportion lobbies and common spaces based on type of function, activity and facility group and flexibility to support multiple missions over time. Provide distinct boundaries for waiting areas with a variety of comfortable and moveable furniture arranged in small flexible groupings to accommodate the widest range of persons and families.

5. Design common areas to accommodate and manage a sudden influx of people that rapidly reaches the maximum occupant load.
6. Allow no direct sight lines into restrooms.
7. Situate utility and core areas to minimize impact on daylighting and to maximize use as thermal buffers.
8. Ensure electrical, lighting and communications systems can be adaptable to configuration changes.

### **E01.1.1. Interior Design Process**

1. Comply with UFC 3-120-10 for the Comprehensive Interior Design (CID,) which includes both Structural Interior Design (SID) and Furniture, Fixtures & Equipment (FF&E) design services.
2. Use a collaborative, integrated planning and design team, composed of user, government support staff, and appropriate professionals. Integrate architectural features using simple detailing to create a professional appearance; avoid extravagant or excessive detailing.
3. Ensure interior designs satisfy the functional requirements within the context of flexibility, sustainability and the building's energy performance.
4. Base space planning on square foot allocations from AFH 32-1084. Identify special requirements if any, such as privacy separation, VIP areas, gathering spaces and storage. Note: The occupant's rank and position will influence the square footage and selection of materials.
5. Provide clear circulation and pathway finding for both horizontal and vertical directions that accommodate the number of personnel in the facility.
6. Maximize efficiencies in the space plan for functional relationships and adjacencies for all facility users. Efficiently create and situate rooms and support rooms such as conference/meeting rooms and break rooms.
7. Provide interior design building-related illustrations, drawings, schedules, materials selections, specifications and cost estimates as listed in UFC 3-120-10. Refer to Furnishings in this IFS also.
8. SID Format shall follow HQ AFCEC standards. Additionally, provide the following minimum requirements:
  - a. Final order data sheets shall be provided in an electronic format that is readily used such as Word or Excel.
  - b. Information and samples are to be submitted in separate binders: 8 ½" x 11" format; white 3" D-ring binders, only; pockets on the inside of the covers; more than one binder may be used; limit fold-out items to 25 ½".
  - c. Label the SID outside spine, outside cover and inside title page with the following information:
    - Phase %
    - SID
    - Project Title and Number
    - Location of Project
    - Submittal Date
    - A&E or Project firm
    - Volume Number (ex: Vol. 1 of 3)
  - d. Each sheet within the SID binder is to be labeled:
    - Project title
    - Location
    - A&E or Project firm name
    - Sheet number
9. Base the FF&E package on the furniture footprint developed in the SID. Identify all new or existing equipment needed and its users within each facility or each area of the facility. Provide specific information on: equipment sizes, electrical requirements, ventilation requirements, weight (if heavy), quantity, and security level if required. Presume all administrative spaces have computers and supporting equipment.

### **E01.1.2. Codes and Regulations**

1. Refer to UFC 1-200-01 for modifications to the International Building Code (IBC) to determine applicable sections of the IBC. Both the IBC Chapter 3 and UFC 3-600-01 govern "Use and Occupancy Classification" for example.
2. Fire code requirements shall be as defined in the International Building Code (IBC) and must be used where dictated by UFC 1-200-01 DoD Building Code (General Building Requirements) except where noted in UFC 3-600-01 (Fire Protection Engineering For Facilities).
3. National Fire Protection Association (NFPA) 101 must be utilized to determine the occupancy classification as it relates to fire/ smoke resistance rating of interior non-load bearing partitions (other than occupancy separation), means of egress, interior finish, features of fire protection (including vertical openings) and associated requirements.

### **E01.2. Quality and Comfort**

Comply with Air Force Corporate Standards for Quality and Comfort:

<http://afcs.wbdg.org/facilities-interiors/buildings-configurations/quality-and-comfort/index.html>

1. Include durability in the life cycle cost analysis for best-value material selections with long life expectancies that do not show excessive wearing.
2. Select long-lasting materials and finishes for permanent core areas such as lobbies, restrooms and stairs.
3. Select low-maintenance materials and products that reduce ongoing servicing and repair and that are easy to clean.
4. Relate the visual quality of finishes to the Facility Group number.
5. Building and interior configurations should address both operations and climatic responses.
6. Convey a professional image; avoid trendy patterns and textures.
7. Use materials and finishes that provide a healthy indoor environment.
8. Orient interior spaces toward views while maintaining cost-effective building performance and efficiency.
9. Promote air movement and daylighting for human health and wellbeing.
10. Investigate customs or cultural influences that might become protocol issues and comply with Federal Government policy regarding protection and enhancement of the cultural environment. For example, no symbol of any kind (that could relate to any religion) is allowed in the chapel.

### **E02. Floors**

Comply with Air Force Corporate Standards for Floors:

<http://afcs.wbdg.org/facilities-interiors/floors/index.html>

#### **E02.1. Floor Materials**



**Facility Group 1** floor materials shall be as follows.

- Primary: Terrazzo and Prepared Slabs (Ground, Polished)
- Secondary: Porcelain tile
- Tertiary: Carpet, Tile StairTreads

**Facility Group 2** floor materials shall be as follows.

- Primary: Prepared Slabs (Ground, Polished, Stained) /BCE
- Secondary: Porcelain tile, LVT
- Tertiary: Carpet, Rubber Stair Treads

**Facility Group 3** floor materials shall be as follows.

- Primary: Prepared Slabs (Ground, Stained)
- Secondary: Resilient Vinyl Tile, LVT/LVP (No wax vinyl)
- Tertiary: Carpet (admin only)

**Facility Group 4** floor materials shall be as follows.

- Primary: Carpet (Commercial Grade)
- Secondary: Porcelain tile, LVT
- Tertiary: N/A

1. Select floor materials in response to the amount of foot traffic a floor receives and to local conditions to provide the greatest long-term value.
  2. Floor treatments (patterns and layouts) should convey the designation of the Facility Groups (Group 1, 2, 3 or 4), type of use, and type of space while considering a life cycle cost analysis. Facility Group 1 may receive higher quality treatments than Facility Groups 2 through 4, but should not convey an excessive use of resources.
  3. Lower the initial cost of flooring in new construction while providing durability appropriate for the facility type.
  4. Carpet must comply with requirements for performance, aesthetics, functional use and maintenance; refer to UFGS 09680 Carpet and ETL 07-4 Air Force Carpet Standard. Coordinate carpet selections and specifications with installation design standards.
- Carpet Waiver  
[http://www.wbdg.org/FFC/AF/AFIFS/Carpet\\_Waiver\\_Patrick\\_AFB\\_Dec17.pdf](http://www.wbdg.org/FFC/AF/AFIFS/Carpet_Waiver_Patrick_AFB_Dec17.pdf)
5. Natural stone and terrazzo flooring shall be used in high traffic areas of Group 1.
  6. Resilient and rapidly renewable flooring may be used in low traffic areas in Group 1, 2 and 4.
  7. Acceptable resilient floor includes rubber, VCT, LVT, cork, and linoleum. Resilient flooring may be used for stairs, office break rooms, dining areas, fitness areas, and (rubber) floor base.
  8. Use carpet tiles under system furniture installations. Refer to TARR Rating for carpets following AF criteria. Refer to AFCFS.

**Note:** Apply the below *base-wide standards* for Floors (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.

### E02.1.1. Prepared Slabs

Applicable  N/A      Number of base standards 1

Image Sizing and Cropping Tool (small)



Type: **Ground and Polished Slabs**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Local (TBD)

Color: Natural gray cement, light to dark beige aggregates

Finish: Fine to medium polished texture, slip resistant

Model #: Medium to small aggregate

Other: N/A

UFGS: Section 03 35 45 Polished Concrete Finishing  
(Not Available on UFGS)

### E02.1.2. Natural Stone and Terrazzo

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Ground and Polished Terrazzo**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Local (TBD)

Color: Natural gray cement, light to dark beige aggregates

Finish: Fine to medium polished texture, slip resistant

Model #: Medium to small aggregate

Other: N/A

UFGS: Section 09 63 40 Stone Flooring  
(Not Available on UFGS)  
Section 09 66 13 Portland Cement Terrazzo Flooring  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 66 13.pdf>

### E02.1.3. Quarry Tile

Applicable  N/A

### E02.1.4. Ceramic Tile

Applicable  N/A Number of base standards 5

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Porcelain Ceramic Style 1**

---

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: American Olean

---

Color: Stone Claire (Floor) Color: EL91 Ashen, Bordeaux (Floor) Color: BD02 Cha

---

Finish: Glazed, slip resistant

---

Model #: Porcelain tile

---

Other: Urethane grout required to match tile. Sizes 13x13, 20x20, 13x20, or 6.5 x 6.5

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UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 30 10.pdf>

---



Type: **Porcelain Ceramic Style 2**

---

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Daltile

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Color: Porcealto Color: Pepi Grigio

---

Finish: Glazed, slip resistant

---

Model #: Porcelain tile

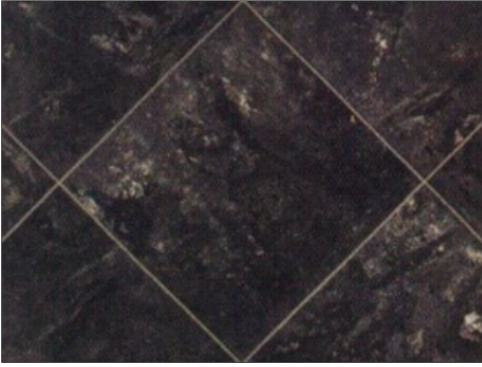
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Other: Urethane grout required to match tile. Sizes 12 x 12 or similar

---

UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 30 10.pdf>

---



Type: **Porcelain Ceramic Tile Style 3**

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Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Crossville

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Color: Empire Color: Black Swan VS86-UP, General's Gray VS85-UP or as approv

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Finish: Thru-body

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Model #: Porcelain tile

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Other: Urethane grout required to match tile, Size 12x12

---

UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 30 10.pdf>

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Type: **Porcelain Ceramic Tile Style 4**

---

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Daltile

---

Color: Saddle Brook XT Gravel Road XT SD86

---

Finish: Color-body

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Model #: Porcelain Tile

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Other: Urethane grout required to match tile, Size 6 x 36 with matching 3 x 18 base and matching trim

---

UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 30 10.pdf>

---



Type: **Porcelain Ceramic Tile Style 5**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: American Olean Historic Bridge Collection

Color: #03 Banks Bridge

Finish: Glazed, slip resistant

Model #: Porcelain Tile

Other: Urethane grout required to match tile, Size 6 x 36 with matching 3 x 18 base and matching trim

UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 30 10.pdf>

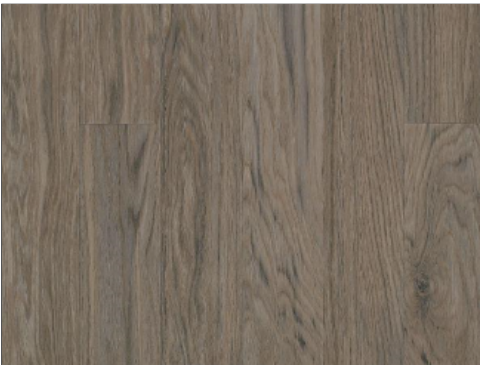
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### E02.1.5. Resilient Floor

Applicable  N/A

Number of base standards 3

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Luxury Vinyl Tile (LVT)**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Mohawk

Color: Living Local Collection #949 Gorgeous Gray with acoustical underlay, act

Finish: Factory

Model #: T&G or factory edge C2038, C2039

Other: Clic/Glue Down 4.5mm, 20mil wear layer, 6 x 38" planks

UFGS: Section 09 65 00 Resilient Flooring  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 65 00.pdf>



Type: **Rubber Base Style 1**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Roppe Pinnacle

Color: Neutral to match flooring

Finish: Matte

Model #: Roll goods

Other: Straight and cove base, 4" rolled goods

UFGS: Section 09 65 00 Resilient Flooring  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 65 00.pdf>



Type: **Rubber Base Style 2**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Burke

Color: Neutral to match flooring

Finish: Matte

Model #: Roll goods

Other: Straight and cove base, 4" rolled goods

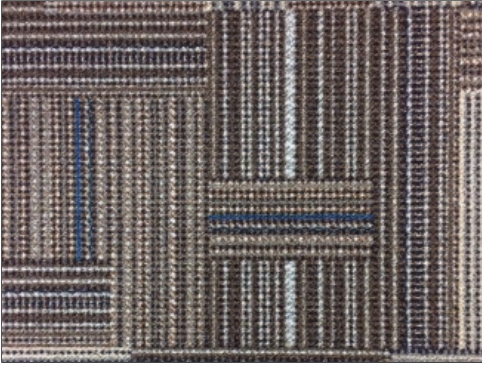
UFGS: Section 09 65 00 Resilient Flooring  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 65 00.pdf>

### E02.1.6. Carpet

Applicable  N/A

Number of base standards 4

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Carpet Tile Style 1**

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Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Milliken with Tractionback

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Color: REMIX Freestyle, Stone/Indigo

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Finish: Loop

---

Model #: REMIX

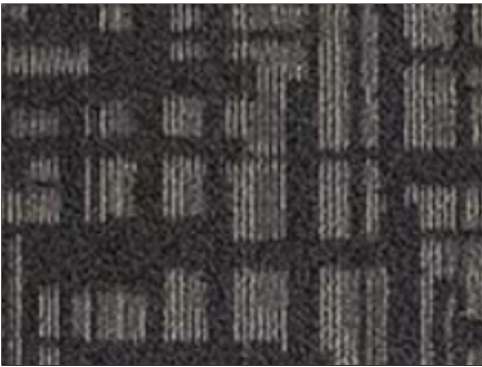
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Other: Carpet tiles 18 x 18 or 36 x 36

---

UFGS: UFGS 09 68 00 Carpeting  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 68 00.pdf>

---



Type: **Carpet Tile Style 2**

---

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Milliken with Tractionback

---

Color: Nugget Color: Headliner NG310, Ring A Ding NG308

---

Finish: Loop

---

Model #: Monuments & Shrines Design

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Other: Carpet tiles 18 x 18 or 36 x 36

---

UFGS: UFGS 09 68 00 Carpeting  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 68 00.pdf>

---



Type: **Carpet Tile Style 3**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Milliken with Tractionback

Color: Nexus Modular Color: NEX41 Abbey&Grove End Rd, MET41 Abbey&Gro

Finish: Loop

Model #: Nexus & Metro Design

Other: Carpet tiles 18 x 18 or 36 x 36

UFGS: UFGS 09 68 00 Carpeting  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 68 00.pdf>



Type: **Carpet Tile Style 4**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Milliken with Tractionback

Color: Consequence Color: Cascade 106-27

Finish: Loop

Model #: Consequence Design Pattern: Upshot (open offices, hallways), Outcome

Other: Carpet tiles 18 x 18 or 36 x 36

UFGS: UFGS 09 68 00 Carpeting  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 68 00.pdf>

### E02.1.7. Rapidly-Renewable Products

Applicable  N/A

### E02.1.8. Other

Applicable  N/A

Number of base standards 5

Image Sizing and Cropping Tool (small)





Type: **Raised Computer Flooring**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: TBD

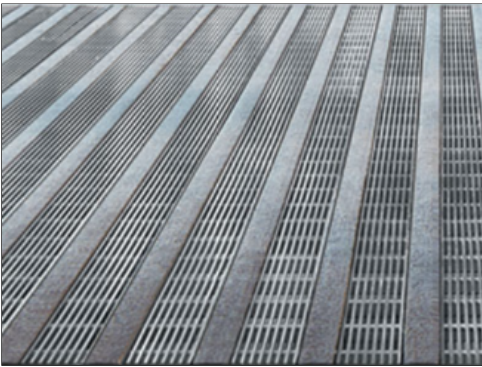
Color: Formica Folkstone Grafix 507-58 or as approved by the BCE

Finish: Factory Matte Finish

Model #:

Other: N/A

UFGS:



Type: **Walk-off Mat**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: CS Group

Color: Gridline 2 with Slip-knot

Finish: Stainless Steel

Model #: Type 316 SS

Other: N/A

UFGS: Section 12 48 13 Entrance Floor Mats And Frames  
<http://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/ufgs-12-48-13>



Type: **Grout**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Bostik

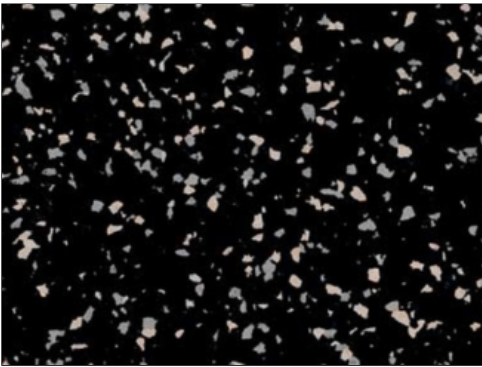
Color: Trucolor

Finish: Rapid Cure Urethane

Model #: N/A

Other: N/A

UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 30 10.pdf>



Type: **Fitness Flooring**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Johnsonite

Color: Replay Interlocking Tile

Finish: Jeans #527

Model #:

Other: 24x24 or use rolled goods for Fitness Center

UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 30 10.pdf>

Type: **Wood baseboard**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Local

Color: Sherwin Williams SW7006 Extra white or stained wood as approved by th

Finish: Satin

Model #: N/A

Other: Use of oak is not permitted unless approved by the BCE

UFGS:



## E03. Walls

Comply with Air Force Corporate Standards for Walls:  
<http://afcs.wbdg.org/facilities-interiors/walls/index.html>

### E03.1. Wall Materials

**Facility Group 1** wall materials shall be as follows.

Primary: Cement Plaster over CMU

Secondary: Gypsum board (painted)

Tertiary: Ceramic tile (restrooms)

**Facility Group 2** wall materials shall be as follows.

Primary: Cement Plaster over CMU

Secondary: Gypsum board (painted)

Tertiary: Ceramic tile (restrooms)

**Facility Group 3** wall materials shall be as follows.

Primary: Ground face block, sealed (do not paint)

Secondary: Pre-finished aluminum or gypsum board (painted)

Tertiary: Ceramic tile (restrooms)

**Facility Group 4** wall materials shall be as follows.

Primary: Gypsum board (painted)

Secondary: N/A

Tertiary: Ceramic tile (restrooms)

1. Provide durable low-maintenance wall materials and finishes for a long life span with the possibility of one or more uses of spaces during that time. Apply wall finishes assuming a 10-year lifespan. Color shall be cohesive and of consistent quality throughout a facility.

2. Comply with Unified Facilities Criteria for Sound Transmission Loss (TL), Noise Reduction (NR) and Sound Transmission Class (STC) ratings.

3. Follow UFC 3-450-01 (Vibration and Noise Control) for acoustic design issues including speech privacy, sound isolation or sound masking.

4. Provide a level of finish following UFGS Section 09 29 00 Gypsum Board.
5. Select and apply paint with sheens (gloss levels) appropriate for the application following UFGS Section 09 90 00 Paints and Coatings.
6. Provide ceramic tile on wet walls of kitchens, toilet rooms, locker rooms, etc., in all facility groups.
7. Neutral split-face or ground-face integrally colored block with a clear sealer may be used in Group 3. Do not paint block.
8. Provide stained wood base on drywall partitions in Groups 1 and 2.
9. Hardwood chair rails / bumper rails other than oak may be used in high-use areas of Groups 1 and 2; aqueous clear finishes are preferred to reduce maintenance; plastic chair rails are permitted only in medical applications.
10. Corner guards are not permitted with the exception of the Medical Clinic facilities as required in all high traffic areas such as corridors, lobbies, elevator areas, large open offices, service areas. Use 2" solid color vinyl in office areas; use satin stainless steel angle in service areas and other areas of heavy use.
11. Decorative wainscots and moldings may be used only in Group 1 when approved on a case by case basis.
12. Corner guards are permitted in high traffic spaces with wheeled or cart use such as private service areas in Groups 1 and 2; stainless steel corners guards with a satin finish or appropriate equivalent may be judiciously used in Group 3.
13. Group 4 may use painted composite wood base.

**Note:** Apply the below base-wide standards for Walls (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.

#### E03.1.1. Concrete

Applicable  N/A

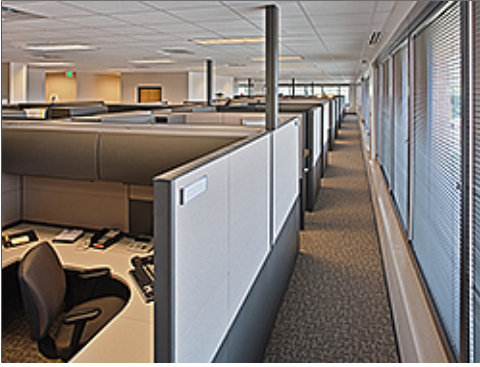
#### E03.1.2. Masonry

Applicable  N/A

Number of base standards 1

Image Sizing and Cropping Tool (small)

Type: **CMU Back-up with Cement Plaster Finish**



Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Local TBD

Color: Sherwin Williams SW7029 Agreeable Gray

Finish: Sand

Model #: 2-coat cementitious system

Other: Interior plaster may be painted

UFGS: Section 03 33 00 Cast-In-Place Architectural Concrete  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 33 00.pdf>

### E03.1.3. Ceramic Tile

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Style 1**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Daltile

Color: Colour Scheme Glazed Porcelain

Finish: Gloss, Semi-gloss

Model #: Ceramic wall tile with Bostic urethane grout to match

Other: Located on wet walls in kitchens, restrooms, etc.

UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 30 10.pdf>

### E03.1.4. Gypsum Board

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Style 1**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: US Gypsum

Color: Sherwin Williams Agreeable Gray SW7029 Eggshell finish or as approved

Finish: (Sheen per UFGS)

Model #: Tapered edge

Other: N/A

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UFGS: Section 09 29 00 Gypsum Board  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 29 00.pdf>  
Section 09 90 00 Paints and Coatings  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 90 00.pdf>

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### E03.1.5. Metal Panels

Applicable  N/A

### E03.1.6. Wood Paneling

Applicable  N/A

### E03.1.7. Rapidly-Renewable Products

Applicable  N/A

### E03.1.8. Other

Applicable  N/A

## E04. Ceilings

Comply with Air Force Corporate Standards for Ceilings:  
<http://afcs.wbdg.org/facilities-interiors/ceilings/index.html>

### E04.1. Ceiling Materials

**Facility Group 1** ceiling materials shall be as follows.

- Primary: Exposed Framing (Roof / Floor Structure Above)
- Secondary: Grid and Acoustical Tile
- Tertiary: Gypsum board (painted)

**Facility Group 2** ceiling materials shall be as follows.

- Primary: Exposed Framing (Roof / Floor Structure Above)
- Secondary: Grid and Acoustical Tile
- Tertiary: Gypsum board (painted)

**Facility Group 3** ceiling materials shall be as follows.

- Primary: Exposed Framing (Roof / Floor Structure Above)
- Secondary: Exposed Framing (Roof / Floor Structure Above)
- Tertiary: Gypsum board (painted) (restrooms)

**Facility Group 4** ceiling materials shall be as follows.

- Primary: Gypsum board (painted)
- Secondary: N/A
- Tertiary: N/A

1. Provide durable low-maintenance ceiling materials for a long facility life span with flexibility for two or more uses during that time.
2. Structural roof and floor decks and other components may be exposed when cost effective to eliminate or minimize secondary suspended ceilings. Promote passive heating and cooling, natural ventilation and daylighting to the maximum extent possible.
3. Provide daylighting for occupied interiors whenever possible. Create a cost-effective layered system of ambient light, task light and accent light. A single overhead illumination system (with equal lighting throughout open plans) is discouraged.
4. All individual elements placed on ceilings or suspended from ceilings shall be fully coordinated and have an ordered appearance. Ceiling types, layouts and materials should be cohesive and consistent throughout a facility.
5. Limit the transmittance of sound through building components and the reflectance of sound within interior spaces following UFC 3-450-01. Comply with Unified Facilities Criteria for Sound Transmission Loss (TL), Noise Reduction (NR) and Sound Transmission Class (STC) ratings.
6. Accent ceiling materials such as metal, wood, and rapidly renewable may be used in Group 1 as approved on a case basis.
7. Follow UFC 3-450-01 (Vibration and Noise Control) for acoustic design issues including speech privacy, sound isolation or sound masking.
8. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

**Note:** Apply the below *base-wide standards* for Ceilings (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.

**E04.1.1. Exposed Framing (Roof / Floor Structure Above)**

Applicable  N/A      Number of base standards 1

Image Sizing and Cropping Tool (small)



Type: **Style 1**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Vulcraft

Color: Neutral colors reviewed on a case basis

Finish: Field painted (Sheen per UFGS)

Model #: Formlok floor and roof decking

Other: N/A

UFGS: Section 05 30 00 Steel Decks  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 05 30 00.pdf>

### E04.1.2. Exposed Concrete

Applicable  N/A

### E04.1.3. Grid and Acoustical Tile

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Style 1**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Armstrong

Color: Dune or Cirris Humiguard Plus, Sag-resistant White as approved by the B

Finish: Factory

Model #: 2'x2' Tegular with reveal edge and fine texture, Prelude grid 15/16" or Su

Other: Performance characteristics are Class A; NRC-0.70; CAC-40; LR-0.86; minimum recycled content 82%.

UFGS: Section 09 51 00 Acoustical Ceilings  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 51 00.pdf>

### E04.1.4. Gypsum Board

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)





Type: **Style 1**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: US Gypsum

Color: Solid neutral colors

Finish: Paint (sheen per UFGS)

Model #: Tapered edge

Other: N/A

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UFGS: Section 09 29 00 Gypsum Board  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 29 00.pdf>  
Section 09 90 00 Paints and Coatings  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 90 00.pdf>

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#### E04.1.5. Metal Panels

Applicable  N/A

#### E04.1.6. Wood

Applicable  N/A

#### E04.1.7. Rapidly-Renewable Products

Applicable  N/A

#### E04.1.8. Other

Applicable  N/A

Number of base standards 2

Image Sizing and Cropping Tool (small)



Type: **Recreational Ceiling Fans**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Hampton Bay Altura Indoor/Outdoor Ceiling Fan

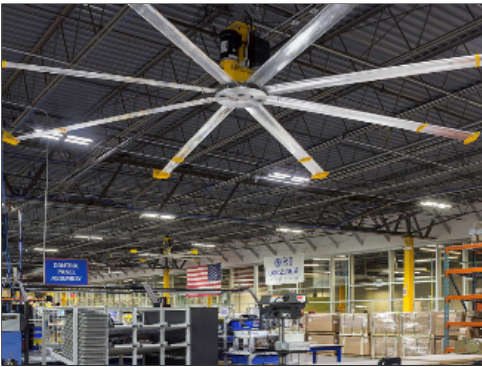
Color: Oil Rubbed Bronze

Finish:

Model #: Model 2660, 5 all-weather blades, 22 degree pitch to blades, with down

Other: UL Listed, CSA listed, Energy Star Rated, 3 speed with remote control, air flow rate 6,886 CFM, 67.2 watts, 102 cu. ft./minute/watt, lifetime motor warranty.

UFGS:



Type: **Industrial Ceiling Fans**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Big Ass Fans

Color: Silver or as approved by the BCE.

Finish:

Model #: Powerfoil X3.0

Other: Features include a patented system of aerospace-designed airfoils and winglets, and the NitroSeal Drive gearbox requires no maintenance – ever. Backed by a thorough, non-prorated 15-year warranty.

UFGS:

## E05. Doors and Windows

Comply with Air Force Corporate Standards for Doors and Windows:

<http://afcs.wbdg.org/facilities-interiors/doors-and-windows/index.html>

### E05.1. Doors and Windows and Frames Materials

**Facility Group 1**

door (frame) and window frame materials shall be as follows.

Primary: Aluminum glass storefront finish to be determined

Secondary: N/A

Tertiary: N/A

**Facility Group 1**

door (leaf) materials shall be as follows.

Primary: Wood solid core, hardwood veneer

Secondary: Hollow metal door frame (painted to match wall, s

Tertiary: N/A

**Facility Group 2**

door (frame) and window frame materials shall be as follows.

Primary: Aluminum, black anodized or mill finish

Secondary: N/A

Tertiary: N/A

**Facility Group 2**

door (leaf) materials shall be as follows.

Primary: Wood solid core, hardwood veneer

Secondary: Hollow metal (painted)

Tertiary: N/A

**Facility Group 3**

door (frame) and window frame materials shall be as follows.

Primary: Aluminum, black anodized

Secondary: Hollow metal (galvanized)

Tertiary: N/A

**Facility Group 3**

door (leaf) materials shall be as follows.

Primary: Hollow metal (galvanized, painted)

Secondary: N/A

Tertiary: N/A

**Facility Group 4**

door (frame) and window frame materials shall be as follows.

Primary: Wood

Secondary: N/A

Tertiary: N/A

**Facility Group 4**

door (leaf) materials shall be as follows.

Primary: Wood solid core

Secondary: Composite solid core

Tertiary: N/A

1. Provide doors and windows for a long facility life span and for maximum flexibility under adaptive use. Install durable doors, windows and frames made of low-maintenance materials. Hardware types and finishes shall not degrade or show excessive wear over their lifespan.

2. Install glazing in doors and locate windows to preserve paths of sunlight. Create openings to enhance air flow and to facilitate passive ventilation. Balance building performance with occupant comfort, health, safety, security and productivity.

3. Visually integrate doors and windows with the overall facility design to create an organized appearance. These elements must convey an image of lasting quality and efficiency without extravagance. Ensure systems and materials are appropriate for the Facility Group.

4. Hardwood casings may be provided over metal frames in Group 1 as approved on a case basis.

5. Paneled textured doors are preferred in Group 4.

6. Do not use hollow-core wood doors.

7. Generally match original hardware in renovations but consider ABA/ADA requirements.

8. All door locks shall be keyed to meet 45 SW keying requirements and shall use BEST commercial/heavy duty locks.

9. Provide satin finish stainless steel door hardware, US32D, for all commercial applications.

10. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

**Note:** Apply the below *base-wide standards* for Doors and Windows (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.

### E05.1.1. Aluminum

Applicable  N/A

Number of base standards 1

Image Sizing and Cropping Tool (small)



Type: **Style 1**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Kawneer

Color: Aluminum Glass door/curtain wall black or clear anodized as approved b

Finish: Factory

Model #: Interior Framing

Other: Satin stainless steel hardware

UFGS: Section 08 41 13 Aluminum-Framed Entrances and Storefronts  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 41 13.pdf>  
Section 08 71 00 Door Hardware  
<https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf>

### E05.1.2. Hollow Metal

Applicable  N/A

Number of base standards 2

Image Sizing and Cropping Tool (small)



Type: **Steel Doors**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Steelcraft

Color: Neutral colors

Finish: Paint (Sheen per UFGS)

Model #: Hollow metal, 2" w. frames, 16 gauge (welded corners) grouted solid

Other: Provide in Group 3 and in utility areas of Group 1 and 2. Provide A25 "galvannealed" coating. All interior steel doors shall have a factory applied primer finish. Provide satin stainless steel hardware.

UFGS: Section 08 11 13 Steel Doors and Frames  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 11 13.pdf>  
Section 08 71 00 Door Hardware  
<https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf>

Type: **Steel Frames**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Steelcraft

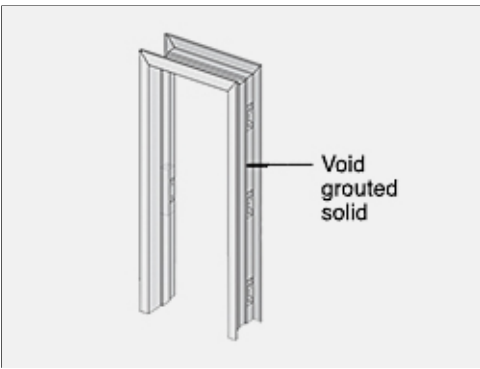
Color: Neutral colors

Finish: Factory or Paint (Sheen per UFGS)

Model #: Hollow metal, 2" w. frames, 16 gauge (welded corners) grouted solid

Other: Provide in Group 3 and in utility areas of Group 1 and 2. Provide A25 "galvannealed" coating. All interior steel frames shall have a factory applied primer finish. Provide satin stainless steel hardware.

UFGS: Section 08 11 13 Steel Doors and Frames  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 11 13.pdf>  
Section 08 71 00 Door Hardware  
<https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf>



**E05.1.3. Wood**

Applicable  N/A

Number of base standards 2

Image Sizing and Cropping Tool (small)



Type: **Style 1, Administrative Wood Doors**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Simpson

Color: Natural hardwood veneer solid core - maple

Finish: Clear Sealer, satin (aqueous)

Model #: 3'x7'x 1 3/4", solid core

Other: Satin stainless steel hardware, Glass lites may be used. Stained birch veneer face, 5 ply construction, rotary cut finish.

UFGS: Section 08 14 00 Wood Doors  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 14 00.pdf>  
Section 08 71 00 Door Hardware  
<https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf>



Type: **Style 2, Residential Wood Doors**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Simpson

Color: Natural hardwood veneer, clear sealer or paint-grade, white

Finish: Satin (aqueous)

Model #: Full slab or panels

Other: Fiberglass doors may be used in VQ or TLF areas with BCE approval, painted white. Provide satin nickel hardware

UFGS: Section 08 14 00 Wood Doors  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 14 00.pdf>  
Section 08 71 00 Door Hardware  
<https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf>

**E05.1.4. Other**

Applicable  N/A

**E06. Casework Systems**

Comply with Air Force Corporate Standards for Casework Systems:  
<http://afcs.wbdg.org/facilities-interiors/casework-systems/index.html>

**E06.1. Casework Materials**

1. Cabinets, countertops and hardware shall be appropriate for the Facility Group and for the particular application and frequency of use. Materials should be durable and not show excessive wear over their lifespan. Countertops should be neutral in color, smooth-to-light textured and compatible with adjacent cabinet surfaces and plumbing fixtures.

2. When used for storage, furniture systems are preferred rather than built-in cabinetry or casework in office, administrative and operational applications. Casework or architectural millwork may be provided in main lobbies in Groups 1 and 2, consolidated break areas and work areas, and food service areas in Groups 1, 2, and 3 and in kitchens and baths in Group 4.

3. Materials, shapes, and detailing should convey an image of long-lasting quality without extravagance; avoid trendy designs. Comply with Architectural Woodwork Institute (AWI).

4. Select casework systems and materials considering durability, maintenance requirements and LCCA.

5. Provide countertops/backsplashes in restrooms, kitchenettes and break rooms shall be fabricated of a minimum ½" solid surface material.

6. Natural stone and cast stone countertops may only be used in Group 1 with approval on a case basis.

7. Metal cabinets and countertops shall be provided in heavy-use operations and in Group 3.

8. Refer to AFCFS for approved materials.

### E06.1.1. Plastic Laminate

Applicable  N/A

Number of base standards 2

Image Sizing and Cropping Tool (small)



Type: **Style 1, Low Use Areas Only**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Formica

Color: Medium Earth tones and neutral tones

Finish: Light textured

Model #: High pressure laminate

Other: Combine with matching solid-surface banding on casework edges.  
Only for use as approved by the BCE in an Facility Group.

UFGS: Section 06 41 16.00 10 Plastic-Laminate-Clad Architectural Cabinets  
[http://www.wbdg.org/FFC/DOD/UFGS/UFGS\\_06\\_41\\_16.00\\_10.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_06_41_16.00_10.pdf)



Type: **Style 2, Low Use Areas Only**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Wilsonart

Color: Pewter Mesh #487838

Finish: Light texture

Model #: High Pressure Laminate

Other: Combine with matching solid-surface banding on casework edges.  
Only for use as approved by the BCE in an Facility Group.

UFGS: Section 06 41 16.00 10 Plastic-Laminate-Clad Architectural Cabinets  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 06 41 16.00 10.pdf>

**E06.1.2. Solid Polymer Surface**

Applicable  N/A      Number of base standards 2

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Style 1, High Use Areas**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Corian (or equivalent)

Color: Cameo white or as approved by BCE

Finish: Smooth

Model #: Solid Surface

Other: Faces and edge banding

UFGS: Section 12 36 00 Countertops  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf>



Type: **Style 2, High Use Areas**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: LG

Color: Poplar

Finish: Light Texture

Model #: Eden Plus

Other: Face and edge banding



UFGS: Section 12 36 00 Countertops

[http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_12_36_00.pdf)

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### E06.1.3. Rapidly-Renewable Products

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)

Type: **Style 1 Moderate Use Areas**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Plyboo

Color: Natural or amber

Finish: Satin

Model #: Flat grain bamboo plywood

Other: FSC® Certified 100%.



UFGS: Section 12 32 00 Manufactured Wood Casework

[http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 32 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_12_32_00.pdf)

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### E06.1.4. Metal

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Style 1**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Steel Sentry

Color: Natural stainless steel or neural colors (steel)

Finish: Mill (stainless) or Powder coated (steel)

Model #: Lab, workbench, computer workstation

Other: Provide highly durable fabrications and finishes in Group 3 which are subjected to heavy use.

UFGS: Section 12 31 00 Manufactured Metal Casework  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 31 00.pdf>

## E06.2. Countertop Materials

### E06.2.1. Plastic Laminate

Applicable  N/A

### E06.2.2. Solid Polymer Surface

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Style 1, High Use Areas**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Corian

Color: Medium Earth tones and neutral tones

Finish: Light textured

Model #: Solid Surface

Other: Faces and edges

UFGS: Section 12 36 00 Countertops  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf>

### E06.2.3. Natural Stone

Applicable  N/A Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Style 1, Group 1 High Visibility, Heavy Use**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Local (TBD)

Color: Neutral tones

Finish: High polish, sealer

Model #: Custom cut slabs

Other: N/A

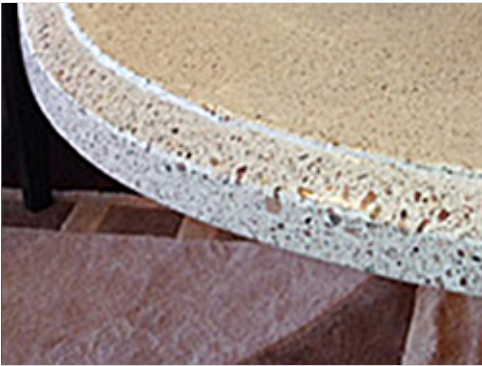
UFGS: Section 12 36 00 Countertops  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf>

#### E06.2.4. Cast Stone

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Style 1, Group 1 High Visibility, Heavy Use**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Local (TBD)

Color: Neutral tones

Finish: High polish, sealer

Model #: Custom cast or cut slabs

Other: N/A

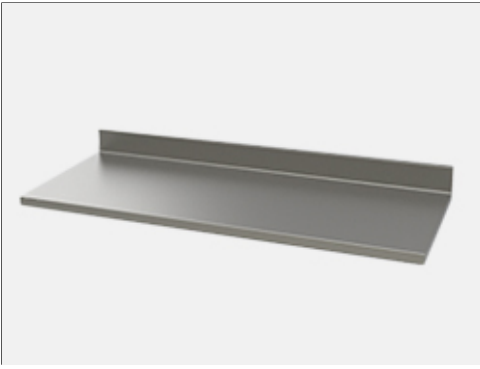
UFGS: Section 12 36 00 Countertops  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf>

#### E06.2.5. Metal

Applicable  N/A

Number of base standards 1

[Image Sizing and Cropping Tool \(small\)](#)



Type: **Stainless Steel Countertops**

Applies to:  Group 1  Group 2  Group 3  Group 4  Other

Mfr: Local (TBD)

Color: Natural stainless steel

Finish: Mill

Model #: Custom fabricated countertops

Other: Provide integral fronts, sides and backsplash

UGFS: Section 12 31 00 Manufactured Metal Casework  
<http://www.wbdg.org/FFC/DOD/UGFS/UGFS 12 31 00.pdf>

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## E07. Furnishings

Comply with Air Force Corporate Standards for Furnishings:  
<http://afcs.wbdg.org/facilities-interiors/furnishings/index.html>

### E07.1. Durability and Serviceability

Comply with AF Corporate Standards for Durability and Serviceability:  
<http://afcs.wbdg.org/facilities-interiors/furnishings/durability-and-serviceability/index.html>

### E07.2. Accessories

Comply with AF Corporate Standards for Accessories:  
<http://afcs.wbdg.org/facilities-interiors/furnishings/accessories/index.html>

## E08. Interior Signs

Comply with Air Force Corporate Standards for Interior Signs:  
<http://afcs.wbdg.org/facilities-interiors/interior-signs/index.html>

### E08.1 Types and Color

Comply with Air Force Corporate Standards for Types and Color:  
<http://afcs.wbdg.org/facilities-interiors/interior-signs/types-and-color/index.html>

### E08.2. Interior Signs Materials

1. Interior signage must meet PAFB and UFC standards and receive approval by the BCE.

## E09. Lighting, Power and Communication

<http://afcs.wbdg.org/facilities-interiors/lighting-power-and-communication/index.html>

### E09.1. Functionality and Efficiency

Comply with Air Force Corporate Standards for Functionality and Efficiency:  
<http://afcs.wbdg.org/facilities-interiors/lighting-power-and-communication/functionality-and-efficiency/index.html>

## **E09.2. Types and Color**

1. Interior administrative lighting shall be Lithonia Breez Series Recessed LED Model 2B2L4, Architectural Recessed LED Lighting 2x2 or 2x4 or similar as approved by the BCE.

## F. APPENDIX - Facility Districts

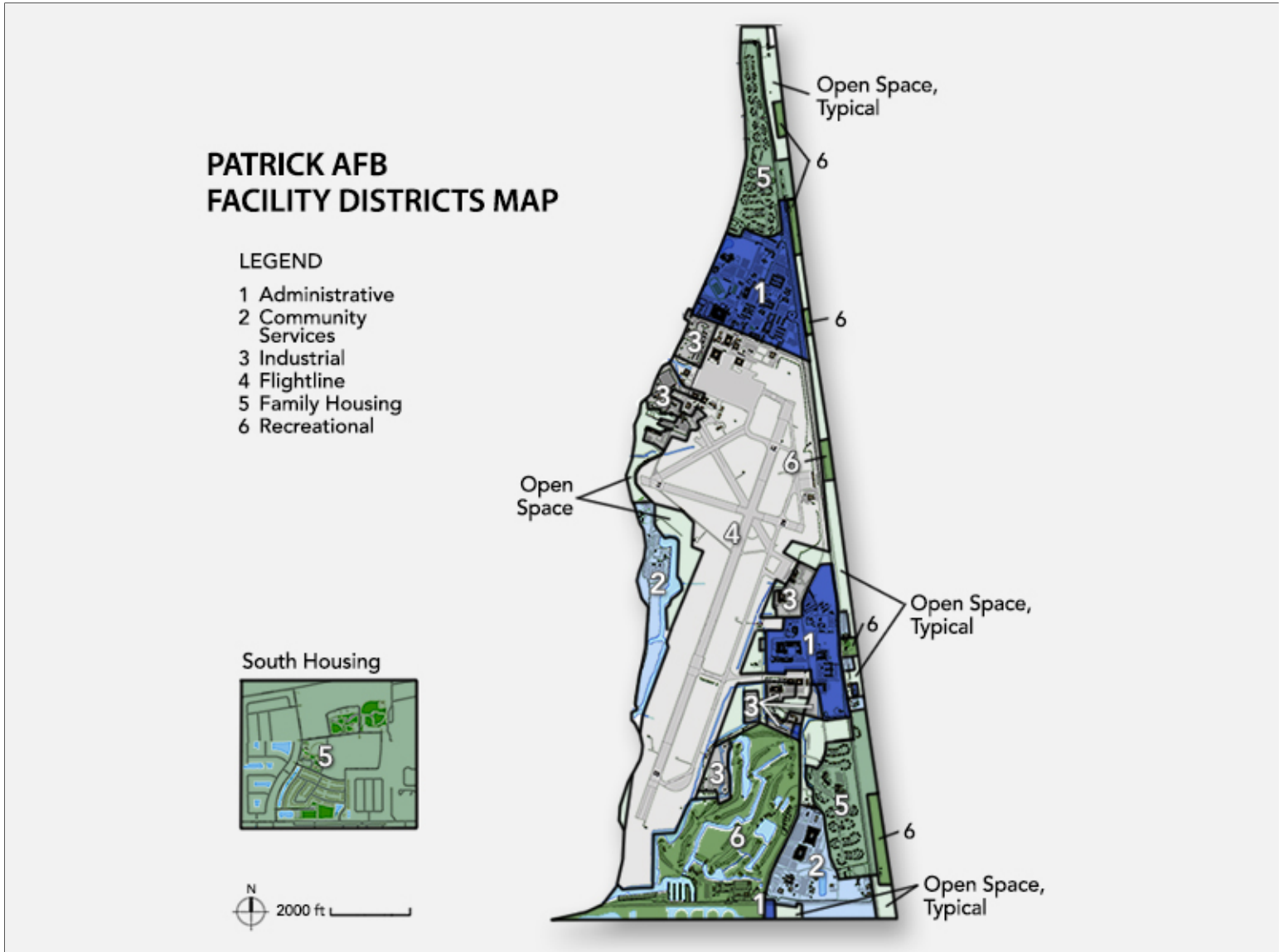
- Applicable
- N/A

Comply with Air Force Corporate Standards for Facility Districts:

<http://afcs.wbdg.org/facility-districts/index.html>

Facilities Districts Overview Map:

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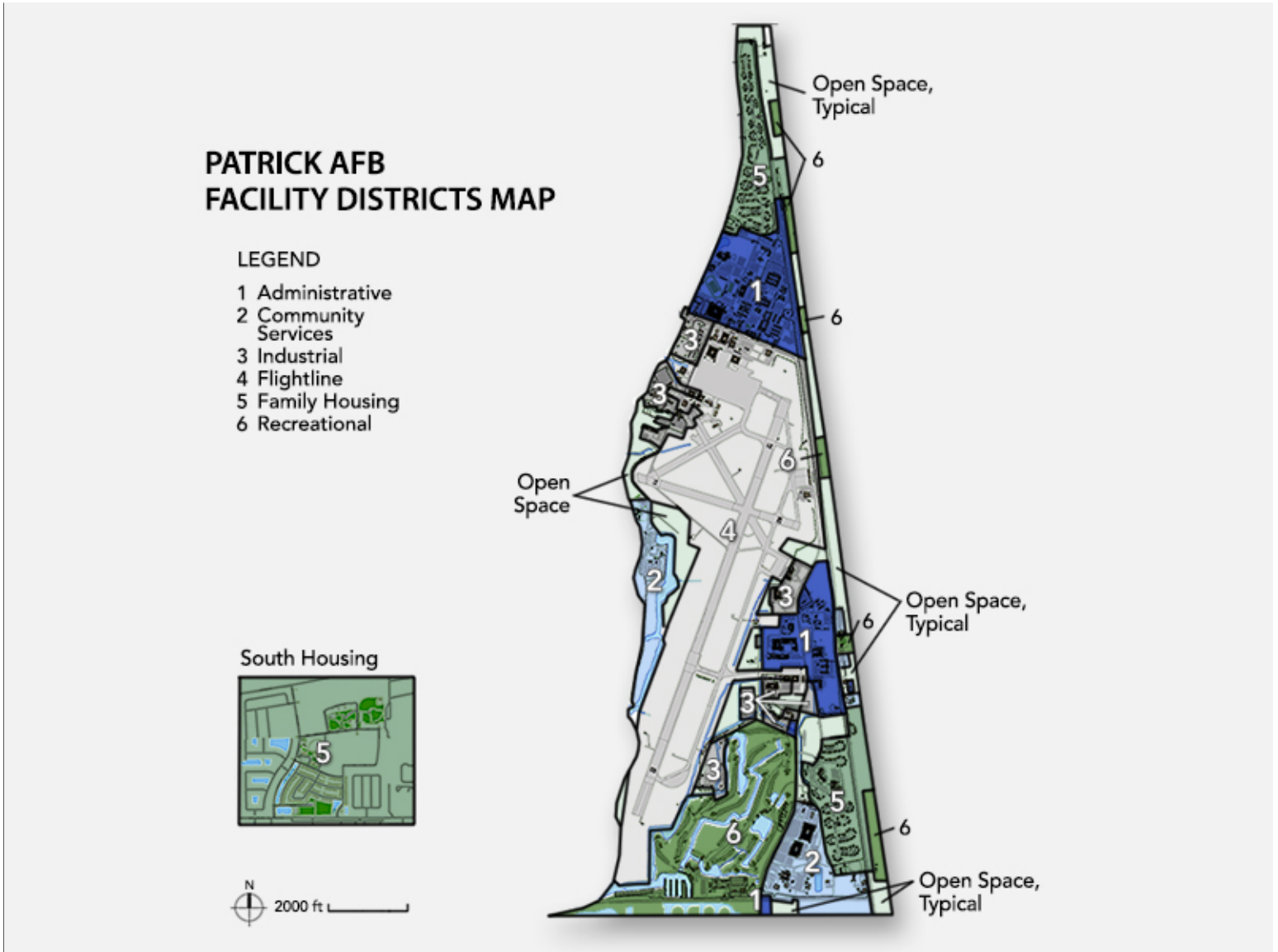
**Note:** Apply the base-wide standards in this IFS for Installation Elements, Site Development, Facilities Exteriors and Facilities Interiors (products, materials, color, etc.). Following application of the base-wide standards, refer to the Appendix and apply any additional requirements specifically related to the Facility District.

Enter No. of Facility Districts 1

The following Facility Districts list exceptions to the base standards that are unique to each district. Please refer to the Site Development, Facilities Exteriors, and Facilities Interiors sections of this IFS for base standards.

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Map of District



Insert 3 photos for each facility group within the Facility District as applicable.

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Group 1     Applicable     N/A



Group 2  Applicable  N/A



Group 3  Applicable  N/A



Group 4  Applicable  N/A



Other  Applicable  N/A

### FACILITY DISTRICTS

Patrick Air Force Base is divided into districts that align with land use zones as defined by the installation's General Plan. Each district has designated uses that help to define facility operations. Generally match adjacent facilities in new construction to promote architectural compatibility throughout the installation. Please refer to Section D03.2. and contact the Base Civil Engineer for additional information. A brief description of each of the districts follows.

#### 1. Administrative

Facilities in the Administrative District should continue to be pedestrian in scale. Application of the installation prevailing architectural style, Florida Mediterranean, should be implemented during major renovations or new construction as appropriate. Florida Coastal architecture is reserved for use primarily in areas adjacent to the Banana River.

#### 2. Community Services

The Community Services District should be pedestrian in scale. Application of the installation prevailing architectural style, Florida Mediterranean, should be implemented during major renovations or new construction as appropriate.

#### 3. Industrial

The Industrial District includes facilities that are industrial in nature. These facilities may support flightline operations. Other facilities include warehouses for various base activities including maintenance, storage, utility functions, industrial services,



transportation storage, communications, civil engineering, supply and equipment, fuel storage, vehicle maintenance/motor pool complex, open storage, emergency/disaster response facilities, ordnance and weapons storage areas, and other industrial uses. Facilities in this district are industrial in nature, should generally match adjacent buildings to ensure architectural compatibility and shall follow standards for Facility Group 3 as defined in this IFS.

#### **4. Flightline**

The Flightline District includes the entire airfield pavement system (runway, taxiway and apron), related open space, navigational aids, and aircraft operations and maintenance facilities. Buildings in this district are mostly comprised of aircraft support facilities such as hangars, shops, and terminals and are industrial in nature and should remain so. Facilities should generally match adjacent buildings to ensure architectural compatibility and shall follow standards for Facility Group 3 as defined in this IFS.

#### **5. Family Housing**

The Family Housing District consists of detached single family residential units occupied by enlisted and officer families. This area is currently under a housing privatization contract, but shall follow standards for Facility Group 4 as defined in this IFS.

#### **6. Recreation**

The Recreation District includes outdoor areas that are very important to the quality of life at Patrick AFB. Uses included are parks, picnic areas, jogging paths, golf courses, swimming pools, athletic fields and baseball, basketball, and tennis courts. Facilities in this district are pedestrian in scale and, in many areas, are directly adjacent to open spaces further enhancing the aesthetic qualities of this district. Application of the installation prevailing architectural style, Florida Mediterranean, should be implemented during major renovations or new construction as appropriate. Florida Coastal architecture is reserved for use in areas adjacent to the Banana River and along the Atlantic coast beaches.

#### **Open Space and Preserves**

Open space includes undeveloped land both inside and outside of the immediate cantonment area. It both separates and defines the various sections of the base and creates a natural setting for the cantonment area. Areas classified as open space may be undeveloped to act as a buffer space between incompatible uses or for safety or security clearances or there may be other constraints that are not readily visible. All development in this district requires prior coordination and approval from the Base Civil Engineer.

### **G. APPENDIX - References**

Comply with Air Force Corporate Standards:

<http://afcs.wbdg.org/index.html>

45TH SPACE WING

Carpet Waiver

[http://www.wbdg.org/FFC/AF/AFIFS/Carpet\\_Waiver\\_Patrick\\_AFB\\_Dec17.pdf](http://www.wbdg.org/FFC/AF/AFIFS/Carpet_Waiver_Patrick_AFB_Dec17.pdf)

Instruction 32-7001 - Exterior Lighting Management

[http://www.wbdg.org/FFC/AF/AFIFS/45\\_SWI\\_32\\_7001\\_Nov12.pdf](http://www.wbdg.org/FFC/AF/AFIFS/45_SWI_32_7001_Nov12.pdf)

Master Plant List

[http://www.wbdg.org/FFC/AF/AFIFS/45\\_SW\\_Master\\_Plant\\_List\\_Mar18.pdf](http://www.wbdg.org/FFC/AF/AFIFS/45_SW_Master_Plant_List_Mar18.pdf)

FLORIDA EXOTIC PEST PLANT COUNCIL

List of Invasive Plant Species

[http://www.wbdg.org/FFC/AF/AFIFS/FLEPPC\\_Invasive\\_Plant\\_List\\_2017.pdf](http://www.wbdg.org/FFC/AF/AFIFS/FLEPPC_Invasive_Plant_List_2017.pdf)