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A. OVERVIEW

Comply with Air Force Corporate Standards for Overview:
http://afcs.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. Requests to deviate from any installation facilities standards, that are Unified Facilities Criteria (UFC) requirements, will follow the process outlined in the AFCFS for UFC waivers and exemptions.

3. 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.

4. 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.

5. 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.

6. 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.

7. References and Supplementary Documents listed in Appendix G are included in these Installation Facilities Standards by reference and are fully part of this document. Please refer to Appendix G for a listing of documents, which are available via hyperlink for viewing and downloading.

8. Installations outside the United States: Per UFC 1-200-01 DOD BUILDING CODE, 8 Oct 2019, "All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (HNFA), and in some instances, Bilateral Infrastructure Agreements (BIA). Therefore, the acquisition team must ensure compliance with the most stringent of the UFC, the SOFA, the HNFA, and the BIA, as applicable." Refer to Appendix G for applicable agreements. "Use UFC 1-202-01 for design of host nation facilities that support military operations."
A01. FACILITY HIERARCHY
Comply with AF Corporate Standards for Facility Hierarchy (and subsections):
http://afcfs.wbdg.org/facility-hierarchy/index.html

A02. FACILITY QUALITY
Comply with AF Corporate Standards for Facility Quality (and subsections):
http://afcfs.wbdg.org/facility-quality/index.html

A03. 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://afcfs.wbdg.org/installation-elements/index.html

B01. COMPREHENSIVE PLANNING
Comply with Air Force Corporate Standards for Comprehensive Planning:
http://afcfs.wbdg.org/installation-elements/comprehensive-planning/index.html

B01.1. Installation Development Plan (IDP)
Applicable N/A Select number of graphics / images (large: 800 px x 440 px) to insert 1
Applicable N/A Small graphics do not apply

Application of DoD and Air Force Facilities Criteria

1. The Civil Engineer Squadron (CES) is responsible for developing, maintaining and coordinating design standards with the Commander Navy Region Hawaii’s 2013 Installation Appearance Plan and to ensure that facility standards are coordinated with the Installation Development Plan (IDP) referencing AFI 32-7062.

2. Refer to the IDP for information on climate and weather and for demographics and related data.

3. Refer to the 2013 Flightline Southside Area Development Plan Training Practicum Report for applicable data.
1. Maintain this Installation Facilities Standards (IFS) as a supplement to the Installation Appearance Plan and as a Component Plan of the Installation Development Plan (IDP) following AFI 32-7062.
In 1934, the Army Air Corps saw the need for another airfield in Hawaii and assigned the Quartermaster Corps the job of constructing a modern airdrome from tangled brush and sugar cane fields adjacent to Pearl Harbor on the island of Oahu. The site selected consisted of 2,200 acres of ancient coral reef, covered by a thin layer of soil, located between Oahu's Waianae and Koolau mountain ranges, with the Pearl Harbor channel and naval reservation marking its western and northern boundaries, John Rodgers Airport to the east, and Fort Kamehameha on the south. The new airfield was dedicated on 31 May 1935 and named in honor of Lt. Col. Horace Meek Hickam (pictured), a distinguished aviation pioneer who was killed in an aircraft accident on 5 November 1934, at Fort Crockett in Galveston, Texas.
While construction was still in progress, the first contingent of twelve men and four aircraft under the command of 1st Lt. Robert Warren moved from Luke Field on Ford Island to Hickam on 1 September 1937. Hickam Field, as it was then known, was completed and officially activated on 15 September 1938. It was the principal army airfield in Hawaii and the only one large enough to accommodate the B-17 bomber.

In connection with defense plans for the Pacific, aircraft were brought to Hawaii throughout 1941 to prepare for potential hostilities. The first mass flight of bombers (21 B-17Ds) from Hamilton Field, California, arrived at Hickam on 14 May 1941. By December 1941, the Hawaiian Air Force had been an integrated command for slightly more than one year and consisted of 754 officers and 6,706 enlisted men, with 233 aircraft assigned at its three primary bases on Oahu (Hickam, Wheeler, and Bellows Fields).

When the Japanese attacked Oahu's military installations on 7 December 1941, Hickam suffered extensive property damage, aircraft losses, and personnel casualties totaling 139 killed and 303 wounded. The bombing and strafing of Hickam Field was an important objective, because the success of the Japanese attack on the Pacific Fleet at Pearl Harbor was dependent on eliminating air opposition and precluding US planes from following their aircraft back to their carriers and bombing the task force. During the war years, the base played a major role in pilot training and aircraft assembly work, in addition to seeing as a supply center for both air and ground troops. Hickam served as the hub of the Pacific aerial network, supporting transient aircraft ferrying troops and supplies to, and evacuating wounded from, the forward areas, not only during World War II but also during the Korean conflict and the Vietnam War.

After World War II, the Air Force in Hawaii was primarily comprised of the Air Transport Command and its successor, the Military Air Transport Service, until 1 July 1957 when Headquarters Far East Air Forces completed its move from Japan to Hawaii and was re-designated the Pacific Air Forces. The 6486th Air Base Wing (1957-1971) and the 15th Air Base Wing (later the 15th Airlift Wing as of 2003, then 15th Wing as of 2010) (1971-current), the host units at Hickam Air Force Base (AFB), supported the Apollo astronauts in the 1960s and 1970s; Operation Homecoming (return of prisoners of war from Vietnam) in 1973; Operation Babylift/New Life (movement of nearly 94,000 orphans, refugees, and evacuees from Southeast Asia) in 1975; and NASA's space shuttle flights during the 1980s, continuing into the 1990s.

In October 1980, the Secretary of the Interior designated Hickam AFB as a National Historic Landmark, recognizing it as one of the nation's most significant historic resources associated with World War II in the Pacific. A bronze plaque reflecting Hickam's "national significance in commemorating the history of the United States of America" took its place among other memorials surrounding the base flagpole. Dominating the area is a large bronze tablet engraved with the names of those who died as a result of the 7 December 1941 attack.

Other reminders of the attack can be seen at Hickam today, including the tattered American flag that flew over the base that morning. It is encased and on display in the lobby of the Pacific Air Forces Headquarters building, where bullet-scarred walls have been carefully preserved as a constant reminder to never again be caught unprepared.
B01.1.3. Future Development


2. Address all future development under the Installation Development Plan (IDP).

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:
B02.1. Hierarchy of Streets

1. Develop and evolve a hierarchical transportation network of arterial, collector and local streets following UFC 3-201-01 and its industry references. Coordinate the designation, operation and maintenance of evacuation routes with the Installation Development Plan and the Installation Appearance Plan.

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 facility group designation / land use.

6. Minimize stops and turns along arterials. Eliminate on-street parking along arterials and provide on collector streets only on lower speed roadways such as residential 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. Ensure access for emergency and service vehicles.

11. Define bicycle traffic routes in the Installation Development Plan or its applicable component plans.

12. Define appropriate force protection features, site furnishings, signs, lighting, utilities, and paving in the IFS.
B02.1.1. Arterial Streets

1. These specific requirements shall be incorporated into all arterial projects including roadway modifications/upgrades and associated building sites adjacent to the street: Maintain increased landscape setbacks along evacuation routes.

2. Minimize stops and turns along arterials; on-street parking shall not be allowed at any point along arterial streets.

3. Provide sidewalks on at least one side of arterial streets and both sides of arterial streets in developed areas. Provide a 6’ buffer between the road and sidewalk where space allows.

4. Limit curb cuts on arterial streets to entries into major facilities, building groups and major parking areas.
5. Reinforce the importance of arterial streets with appropriate signs, plantings and street lighting.

**B02.1.2. Collector Streets**

- Frequent traffic stops and low speeds are permitted on collector streets.
- Provide sidewalks on at least one side of collector streets and both sides of collector streets where functionally required. Buffers are preferred but not required on collector streets.
3. On-street parking may be allowed on one side where secondary roads are not less than 34 feet wide. Parking shall not interfere with intersections or traffic flow.

4. Signs, plantings and street lighting should reinforce the designation of “collector” street.

**B02.1.3. Local Streets**

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

1. Frequent traffic stops and low speeds are permitted on local streets.
2. Provide sidewalks on at least one side of local streets and both sides of local streets where functionally required. Buffers are preferred but not required on local streets.

3. On-street parking may be allowed following UFC industry references.

4. Signs, plantings and street lighting should reinforce the designation of “local” street.

5. Cul-de-sacs are only permitted in family housing areas.

B02.1.4. Special Routes

1. Develop all special routes consistently with those adjacent to Group 1 facilities.
B02.2. Hierarchy of Intersections

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

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

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

1. At arterial intersections adjacent to Group 1, landscaping of native grasses and shrubs may be provided; trees may be included when maintenance and non-potable irrigation is available. Monuments and static displays may be integrated into arterial intersection designs.

B02.2.2. Arterial/Collector

1. At arterial/collector intersections adjacent to Group 1, landscaping of native grasses and shrubs may be provided; trees may be included when maintenance and non-potable irrigation is available.
B02.2.3. Collectors

- Applicable  N/A  Large graphics do not apply
- Applicable  N/A  Select number of graphics / images (small: 250 px x 188 px) to insert  3

1. At collector intersections adjacent to Group 1, landscaping of native grasses and shrubs may be provided; trees may be included when maintenance and non-potable irrigation is available. Intersections adjacent to Group 2 may be developed similarly, but with less detailing.

B02.2.4. Special Intersections

- Applicable  N/A  Large graphics do not apply
- Applicable  N/A  Select number of graphics / images (small: 250 px x 188 px) to insert  3

1. Develop all special intersections consistently with those adjacent to Group 1 facilities.
B02.2.5. Street Frontage Requirements

- Applicable  N/A  Select number of graphics / images (large: 800 px x 440 px) to insert  1
- Applicable  N/A  Select number of graphics / images (small: 250 px x 188 px) to insert  3

1. Consistently maintain open space buffers following B03.2.3. Preserves.
2. Refer to C06.1.7. Streetscape Landscaping for planting and screen wall requirements along street frontage.
B02.2.6. Sight Lines

- **Applicable**  
- **N/A**  
  Select number of graphics / images (large: 800 px x 440 px) to insert 1
  
- **Applicable**  
- **N/A**  
  Select number of graphics / images (small: 250 px x 188 px) to insert 3

1. Provide adequate sight lines for an effective and safe traffic operation per UFC referencing American Association of State Highway and Transportation Officials (AASHTO) standards and local municipality guidelines.
B02.3. Street Elements

☐ Applicable  ☐ N/A  Large graphics do not apply

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

Insert Street Elements graphic
Size image to: 250 pixels width x 188 pixels height
Click here to insert image

Coordinated Sign at Crosswalk
Coordinated Elements
Fire Hydrant Accessible

Coordinated Elements
Integrated Storm Inlet
Standard Painted Crosswalk

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 high reflectivity of surfaces, which are 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. Crosswalk markings shall follow the MUTCD for Streets and Highways, current edition. Provide white markings that define the edges of the crosswalk or a tone of lines defining the area of the crosswalk consistent with common practices found in the adjacent municipality.

7. Follow UFC 3-120-01 for directional and wayfinding signs and address both vehicular and pedestrian traffic.
8. 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  Select number of graphics / images (large: 800 px x 440 px) to insert  1
- **Applicable**  N/A  Select number of graphics / images (small: 250 px x 188 px) to insert  3

1. Pavement design shall comply with UFC 3-250-01. Ensure appropriate analysis and design of subgrade conditions to promote low maintenance, high performance pavements. Apply all applicable best practices from Appendix B of the UFC.

2. Materials 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 bituminous pavement.
B02.3.2. Curb and Gutter

1. Curb all streets except remote/isolated roads and rock-paved service roads.

2. All streets should have integral concrete curbs and gutters. Painted curbs are prohibited because they are very difficult to maintain.

3. Use concrete for sidewalks and curbs. Do not use asphalt curbs.
B02.3.3. Utility Service Elements

Applicable  N/A  Large graphics do not apply

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

Image Tool 250 x 188

1. Provide all utility service lines below grade when streets are adjacent to Facility Group 1; when mounting elements (such as utility cabinets, communications equipment and water valves) above grade is unavoidable, paint these consistently and provide visual screening following Site Development, Landscaping.

2. Overhead service lines along streets adjacent to Facility Groups 2, 3 and 4 are discouraged.

B02.3.4. Traffic Signs

Applicable  N/A  Large graphics do not apply

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

Image Tool 250 x 188

1. Refer to Exterior Signs, Colors and Types for Traffic Control Devices, which includes signs.
B02.3.5. Street Lighting

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

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

1. Refer to the Lighting section for appropriate applications along streets.
B02.3.6. Other

☐ Applicable  ☐ N/A  Large graphics do not apply

☐ Applicable  ☐ N/A  Small graphics do not apply

B03. OPEN SPACE / PUBLIC SPACE

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

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

B03.1. Plazas, Monuments and Static Displays

☐ Applicable  ☐ N/A  Select number of graphics / images (large: 800 px x 440 px) to insert  2

Image Tool 800 x 440

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

Image Tool 250 x 188

Static Display of Aircraft
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 the 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 Installation Facilities Standards (IFS).

4. Select systems, products and materials for paving, walls, and structures following IFS.
1. Mitigate heat island effect 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. Pavers shall match the color of pavers used on adjacent sidewalks using base standard range of beige blend. Red brick pavers may be used when approved on a case basis. Pavers shall typically be 4” x 8” size.
B03.1.2. Sculptures, Markers and Statuary

- Applicable  □ N/A  Select number of graphics / images (large: 800 px x 440 px) to insert  1
- Applicable  □ N/A  Select number of graphics / images (small: 250 px x 188 px) to insert  3

1. Relate new sculpture, markers and statuary to the base's architectural 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.

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. When sculpture requires a base, match the materials and/or color palette of adjacent buildings.

5. Use direct or indirect lighting to accentuate features or enhance an intended effect.

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  Select number of graphics/images (large: 800 px x 440 px) to insert  1  
  ![Image Tool 800 x 440](image)

- Applicable  ○ N/A  Select number of graphics/images (small: 250 px x 188 px) to insert  3  
  ![Image Tool 250 x 188](image)

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**: Yes
  - Select number of graphics / images (large: 800 px x 440 px) to insert: 1
  - Image Tool 800 x 440

- **Applicable**: Yes
  - Select number of graphics / images (small: 250 px x 188 px) to insert: 3
  - Image Tool 250 x 188

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 utility service lines below grade when adjacent to Facility Group 1 and when economically feasible for Facility Groups 2, 3 and 4. When service lines are located above grade, create an ordered, coordinated appearance.

6. Follow the requirements of this IFS regarding all utility structures and service lines 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 that match those respective design elements present at adjacent buildings.

10. Paint aboveground equipment and associated components such as electrical piping or exposed plumbing lines dark bronze.

11. Maintain existing buried utility service lines as a visual asset.

12. Bury the following exposed above-grade items in future projects when economically feasible:
   - Electrical power grid and service lines
   - Telephone lines
   - Cable TV lines
   - Communications lines
   - Exterior lighting service lines
   - Any similar system of above-ground lines serving the base

13. Consolidate and enclose service utility lines in underground utility corridors when feasible. Create routes along the inside edge of parking lot islands.

14. All development of open space requires prior coordination and approval from the Base Civil Engineer.
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 ongoing maintenance are preferred. The Base Civil Engineer shall determine quantities, sizes, and products on a case basis.
B03.2.2. Parks

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

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

1. Bleachers and picnic pavilions may be provided in parks where there is a documented need.

3. Prohibited picnic pavilion materials include wood, concrete masonry units (CMU) or metal pre-manufactured storage sheds. Use only materials and detailing that are low maintenance and endure with minimal weathering.

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 Large graphics do not apply

☐ Applicable ☑ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 3

1. Preserve areas adjacent to runways, taxiways, aprons, golf course roughs, storage areas, antenna facilities, and ammunition storage areas as open space.

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 Large graphics do not apply

☐ Applicable ☑ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 3

1. Design, install and maintain the base’s perimeter fence following UFC 4-022-03.

2. Stringently comply with ATFP requirements following UFC 04-010-01 for all spaces adjacent to the base’s perimeter fence and all gates.

3. Fencing, gates and other elements that are associated with the main gates shall be a level of quality equivalent to Facility Group 1.

4. Maintain a positive visual quality along the traffic corridor on both sides of the main gates. Specifically address pedestrian access, circulation and common areas.
C. SITE DEVELOPMENT
Comply with Air Force Corporate Standards for Site Development:
http://afcfs.wbdg.org/site-development/index.html

C01. SITE DESIGN
Comply with Air Force Corporate Standards for Site Development:
http://afcfs.wbdg.org/site-development/index.html

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

C01.1. Site Design Considerations

☐ Applicable ☐ N/A Large graphics do not apply

☐ Applicable ☐ N/A Small graphics do not apply

1. Collect documentation to validate approvals and completion of the NEPA process.

2. Ensure site design compliance with the Installation Appearance Plan and the Installation Development Plan (IDP), its component plans, and Installation Facilities Standards (IFS).

3. Promote integrated design with on-site solutions such as engineered small-scale hydrologic controls versus base-wide infrastructure; consider open space, natural features, bioswales, building roofs, streets, and paved surfaces.

4. Limit the impact of development on land and water resources. All site elements and infrastructure shall reinforce an image of sustainability, with reduced energy demand, renewable-energy usage, and water conservation.

5. Consider energy conservation during site design for the following categories: building and site lighting, auxiliary systems and equipment (refrigerators, elevators, etc.), building envelope, electric power and distribution, HVAC systems and equipment, service hot water, and energy management (metering, EMCS).

6. Coordinate on-site renewable-energy systems and components to minimize area requirements and maximize efficiencies. Appropriately buffer and screen these and other mechanical systems and equipment.

7. New building projects should preserve open space and protect natural habitat.

8. Conform to existing topography to the greatest extent possible and use slopes to increase site and building efficiencies. Design sites to minimize irrigation and impacts to stormwater runoff.

9. Carefully study new project sites to identify the character of adjacent buildings, streets, landscaping, and site design elements. Reinforce the existing character in new site design.

10. Consider relationships to adjacent facilities and district / centralized heating and cooling infrastructure and cost effectively connect building systems to harvest heat, grey water or other beneficial byproducts.

11. Minimize existing and planned obstructions from landscaping, structures, topography, and adjacent developments to preserve solar access and natural ventilation.

12. Purposefully integrate service access, receiving and storage areas to eliminate the need for visual screening.

13. Appropriately connect to the base network of streets, sidewalks and trails using drive aisles, parking areas, walkways, paths, and bicycle routes addressing both vehicles and pedestrians.

14. Applicably coordinate heat island mitigation in paving and roof designs when implementing an integrated approach to stormwater management.
15. Consider the location of “Designated Tobacco Areas.”

**C01.2. Building Orientation**

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

- **Applicable**  
  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 Peakea street
- Addressing the orientation of the future ACC
- Maximise the daylight & desirable views...
- Siting existing vegetation and trees
- Visibility of the new facility from main roads
- Meet the required ATFIP standoff distance
- Separation between staff/labor/merchandise entrance
- Required parking spaces for public and staff
- Create a unified campus
- Outdoor healing environment
- Implementation of landscape zones A, B, C & D

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**CONCEPTUAL DIAGRAM**

- Conceptual Site Analysis and Site Design Diagram

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**LOCAL SOLAR DATA**

- Local Solar Data

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**LOCAL CLIMATE DATA**

- Local Climate Data

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**SITE DATA**

- Site Data
1. Ensure the site will accommodate optimum requirements for building orientation, which is with the long axis parallel to the east/west direction and a shaded southern exposure for rectilinear buildings north of the equator.

2. Meet Installation Facilities Standards (IFS) requirements for the locations of the building’s passive and renewable-energy systems—including geothermal and solar systems—and exterior shading systems.

3. Locate the building(s) and permitted ancillary structures to promote solar shading, natural ventilation, rainwater harvesting, wind buffering and other beneficial passive systems. Consider natural ventilation during the design of HVAC systems.

4. Consider relationships to adjacent sites and their facilities and infrastructure, and cost effectively integrate building systems to harvest heat, grey water or other beneficial byproducts.

5. 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://afcfs.wbdg.org/site-development/index.html

Comply with AF Corporate Standards for Utilities:
http://afcfs.wbdg.org/site-development/utilities/index.html

C02.1. Utility Components

☐ Applicable ☐ N/A Large graphics do not apply

☐ Applicable ☐ N/A Small graphics do not apply

1. Provide all on-site utility service lines below grade for Facility Group 1; 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. Provide installation of utility infrastructure to support near term and future electric vehicle charging stations.

3. 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.

4. Include consideration of appropriate placement of meters in support of Automated Revenue Management Services (ARMS).

5. Limit exterior mechanical distribution systems such as exterior steam, chilled water, and hot water distribution to Group 3 facilities; when required for Group 1 and 2 facilities integrate with the architecture and provide visual screens following IFS.
6. 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://afcfs.wbdg.org/site-development/index.html](http://afcfs.wbdg.org/site-development/index.html)

Comply with AF Corporate Standards for Parking Areas:  
[http://afcfs.wbdg.org/site-development/parking-areas/index.html](http://afcfs.wbdg.org/site-development/parking-areas/index.html)

**C03.1. Configurations and Design**

- Evaluate adjacent sites and cost-effectively consolidate parking areas to maximize efficient use; ensure that all areas meet accessibility guidelines.
- 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. Comply with IFS while meeting ATFP requirements.
- Integrate at-grade and raised-profile curbing, permeable paved areas, and parking islands with the stormwater system and direct stormwater to bioswales and rain gardens as source water for regionally appropriate native vegetation.
- Define pedestrian access with approved hardscape and provide shading along the primary path from the parking area to the building’s main entrance.
- Coordinate suitable landscape or barriers integrated with walls and fences to ensure adequate force protection.
- Accessible parking spaces shall be marked according to UFC 3-120-01 and its references in ABAAS and the MUTCD.
- Consider locations and requirements of near term and future electric vehicle charging stations.
- Designate preferred parking spaces for electric vehicles and carpools near the main entrance.
- Consider cost-effectively integrating solar photovoltaic arrays into covered parking structures.
- Reserved parking is discouraged except for Facility Group 1.
11. On-street parking is discouraged except in multi-use areas. When used, provide approved on-street parking configurations following UFC 3-201-01.

12. Access and service drives should accommodate the largest vehicle serving the facility.

**C03.1.1. Paving and Striping**

☐ Applicable ☐ N/A Large graphics do not apply

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

*Insert Paving and Striping graphic
Size image to:
Click here to insert image
Asphaltic Concrete with White Striping
Asphaltic Concrete with White Striping
Asphaltic Concrete with White Striping

**Facility Group 1** paving materials shall be as follows.
- **Primary**: Bituminous Pavement
- **Secondary**: Decorative Concrete Pavement
- **Accent**: Concrete Unit Pavers (Optional)

**Facility Group 2** paving materials shall be as follows.
- **Primary**: Bituminous Pavement
- **Secondary**: Concrete Pavement
- **Accent**: N/A

**Facility Group 3** paving materials shall be as follows.
- **Primary**: Bituminous Pavement
- **Secondary**: Concrete Where Operationally Required
- **Accent**: N/A

**Facility Group 4** paving materials shall be as follows.
- **Primary**: Concrete Pavement (Driveways)
- **Secondary**: N/A
- **Accent**: N/A

1. All new parking lots in Groups 1 and 2 shall be constructed of bituminous pavement or, when functionally required, concrete pavement may be used, following UFC 3-250-01.

2. All new parking lots in Groups 1 and 2 shall be constructed of bituminous pavement following UFC 3-250-01.

3. Porous paving may be considered on a case basis.

4. Cost-effectively provide light-colored concrete to reduce heat island effect; otherwise install bituminous pavement. Dirt, gravel, and grass lots are not allowed.

5. Use consistent striping, angles and stall sizes in all parking areas.

6. All parking shall be marked with white stripes of paint or applied vinyl coatings. Red or yellow markings shall only be used for safety purposes and must be kept to a minimum. All lines shall be four inches (4") wide.
C03.1.2. Curbing

Facility Group 1 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 3 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 with either raised-profile or at-grade curbing to promote drainage and protect paving edges.

2. Integrate curbing to direct stormwater to bioswales and rain gardens as source water for regionally appropriate native vegetation.
3. Wheel stops are not permitted except at locations where vehicle bumpers could contact adjacent items such as poles, signs or pedestrians.

**C03.1.3. Internal Islands and Medians**

- Applicable  ○ N/A  Select number of graphics / images (large: 800 px x 440 px) to insert  1
- Applicable  ○ N/A  Select number of graphics / images (small: 250 px x 188 px) to insert  3

1. Install landscape islands and medians as visual breaks, to reduce heat island effects and to accommodate bioswales and rain gardens. Coordinate suitable landscape or barriers integrated with walls and fences to ensure adequate force protection.

2. When lighting is necessary, contain fixture bases within medians or internal landscape islands.
C03.2. Parking Structures

☐ Applicable  ☑ N/A  Large graphics do not apply

☐ Applicable  ☑ N/A  Small graphics do not apply

1. Parking structures are encouraged in land-constrained locations when economically feasible.

2. Consider near-term and future electric vehicle charging stations and renewable energy generation development during the analysis and design.

3. Consider opportunities for integrating parking structures into multi-use developments with pedestrian-oriented uses on the ground floor and parking on upper levels; ensure ATFP guidelines are fully addressed.

4. Structures may be constructed below grade with roofs serving as vegetated areas or plazas.

C03.3. Connectivity

☐ Applicable  ☑ N/A  Large graphics do not apply

☑ Applicable  ☑ N/A  Select number of graphics / images (small: 250 px x 188 px) to insert

Direct Link to Main and Secondary Entrances

Alignment with Aisle at Accessible Spaces

Alignment with Aisle at Accessible Spaces

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.

C04. STORMWATER MANAGEMENT

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

Comply with AF Corporate Standards for Stormwater Management:
C04.1. Stormwater Requirements

- Applicable  N/A

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

- Applicable  N/A

Select number of graphics / images (small: 250 px x 188 px) to insert 9

Landscaped Drainage

Street Run Off

Low Elevation Drainage

Stormwater Pipe at Street
1. 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.

2. Incorporate bioswales into the design of all roadway, parking and facility roof systems to enhance water quality and support the overall stormwater system.

3. Permeable paving may be used.

4. Provide rainwater harvesting and storage that is attached to the building’s roof drain systems to support grey water irrigation.

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.


**C05. SIDEWALKS, BIKEWAYS AND TRAILS**

Comply with AF Corporate Standards for Site Development: [http://afcfs.wbdg.org/site-development/index.html](http://afcfs.wbdg.org/site-development/index.html)

C05.1. Circulation and Paving

- Applicable
- N/A

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

1

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

3

Connectivity to Entrances and Parking

Connectivity to Entrances

Connectivity to Secondary Entrances

Detached Sidewalk at Group 4
Facility Group 1 sidewalks, plazas, and courtyards paving materials shall be as follows.

Primary: Pervious Pavers
Secondary: Concrete Paving and Edging
Accent: Colored Concrete (Optional)

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

Primary: Pervious Pavers
Secondary: Concrete Paving and Edging
Accent: Colored Concrete (Optional)

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

Primary: Permeable Concrete Paving
Secondary: N/A
Accent: N/A

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

Primary: Permeable Concrete Paving
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.

4. Mitigate heat island effect by providing high-albedo, shaded sidewalks. Pervious pavers shall be used on all sidewalks, 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.

5. Only experienced contractors will install pervious pavements.

6. Consider an integrated approach that could include stormwater management (permeable surfaces) and complement the design of the storm drainage system when appropriate.

7. Pedestrian paths should be at least 5’ in width to allow for comfortable side-by-side walking.

8. Sidewalks leading to a building main entrance and at the interior of parking lots shall be a minimum width of 6’. Walks greater than 10’ wide may be used at high-density pedestrian areas where volumes of traffic justify added material.

9. Where vehicles park adjacent and head-in to the sidewalk and wheel stops are not used, such perimeter walks shall be increased to a minimum width of 8’ to accommodate overhangs of the parked vehicles.

10. All sidewalks shall have positive drainage to prevent ponding of water with slopes ranging from 2.1% to 4.2%. Walks with a slope greater than 4.2% shall be designed as ramps following accessibility guidelines. All walks shall have a minimum cross slope of 2.1%.

11. Pavers shall conform to the following range of color: Beige or approved red blend. Pavers used on walks shall typically be 4"x8” in size.

12. Connect to the bicycle circulation system and provide bicycle parking with a suitable means for securing bicycles following IFS. Consider changing/shower facilities for use by cyclists.

13. Refer to the Installation Development Plan for future trails, bicycle paths, and sidewalks.
C05.1.1. Ramps and Stairs

1. Use ramps instead of stairs for sidewalks, bikeways and trails and at all buildings where possible. Where steps are unavoidable, follow UFC 1-200-01 and its references to the International Building Code.

C05.1.2. Lighting
1. Provide lighting for all stairs and landings where traffic warrants.

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://afcfs.wbdg.org/site-development/index.html

Comply with AF Corporate Standards for Landscape:
http://afcfs.wbdg.org/site-development/landscape/index.html
1. 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: Yes, N/A: No

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

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

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. In tree clusters replace grass with naturalized shrub beds and leaf litter mulch to eliminate mowing requirements.

10. Use plantings in open spaces to reinforce the space as a visual asset.

11. Consider landscape windbreaks when suitable for the local climate.

12. Integrate security requirements into the landscape design. Coordinate the heights of trees and shrubs and note restrictions for plantings following UFC 4-010-01.

13. 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  Large graphics do not apply

- [ ] Applicable  [ ] N/A  Select number of graphics / images (small: 250 px x 188 px) to insert  3  

1. Apply xeriscape principles following UFC 3-201-02, Appendix B, and referencing 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

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 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

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 plant list available from the 647th Civil Engineer Squadron.

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)

1. Comply with DoD and Air Force policy on potable-water irrigation systems.


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  Large graphics do not apply

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

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  Large graphics do not apply

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

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  
  Large graphics do not apply

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

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  
  Large graphics do not apply

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

1. Integrate appropriate landscaping elements into parking areas to visually soften the appearance at a minimum rate of 10 percent of the total area.

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 Large graphics do not apply

☐ Applicable  ☑ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 3

![Vegetative Screening](image)

![Vegetative Screening](image)

![Vegetative Screening](image)

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 Large graphics do not apply

☐ Applicable  ☑ N/A Small graphics do not apply

C07. SITE FURNISHINGS

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

Comply with AF Corporate Standards for Site Furnishings:
http://afcfs.wbdg.org/site-development/site-furnishings/index.html
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, telephone booths, vending machines, walls and fences to reduce visual clutter and to lessen the requirements for maintenance.

3. Group 1, 2 and 3 site furnishings shall be precast concrete; powder-coated metal may be used when weather protection is provided. Parks adjacent to Group 4 site furnishings may be of recycled content. 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 entrances. Low walls shall match facility architecture.

5. Benches in Groups 1 and 2 shall be precast; powder coated aluminum may be used with weather protection. Recycled content benches may be used in Group 3 and in parks adjacent to Group 4.

6. Integrate functional bicycle racks with the design of the building’s main entrance grounds in Facility Groups 1 and 2 while meeting ATFP requirements.

7. Limit the use of bollards, but when necessary for force protection use concrete in Groups 1 and 2; steel bollards in Group 3; and concrete in parks and trails. Illuminated bollards of aluminum with powder-coated finishes may be used as approved on a case basis.

8. Locate architecturally coordinated containers for recycling, litter, ash, vending, etc., to minimize visual clutter and not be visible from the building’s main entrance. Minimize the use of freestanding planters.

9. Generally limit picnic tables, barbeque grills and drinking fountains to lodging, dormitories, housing areas, parks and recreation areas following IFS.

10. The Installation Flagpole location shall comply with the guidance for the display of flags in AFI 34-1201. Each Air Force installation is authorized to fly one United States Flag, normally in front of the installation headquarters. Waivers for non-authorized locations must be submitted in accordance with AFI 33-360 and approved waivers (AF Form 679) must be maintained by the installation protocol office.

11. Refer to the Overview Section “Facility Hierarchy” topic of this AFCFS for guidelines regarding ancillary structures such as pavilions and shade shelters.

12. Bus shelters shall be provided only where there is a documented need and when approved on a case basis. Generally emulate the designs of adjacent shelters using concrete construction.

13. Monuments and static displays shall be limited. New elements are generally discouraged unless these are fully vetted through the base’s approval process and designed following IFS.

14. When visual screening is necessary, consider landscaping as the first option; screen walls are permitted only in Group 1 finished with stucco.

15. For fencing, apply the standards for “Products, Materials and Color” in the following section. Limit those with the highest visual quality to Facility Group 1 where there is sustained maintenance. Define all levels of security and visual quality.

16. Do not use chain-link fencing at Group 1, 2 or 4 facilities; Limit the use of barbed-wire outriggers on chain-link fencing at industrial sites, unless required for additional security or protection of assets.

17. Wood fencing is prohibited due to high maintenance requirements. Fencing in Group 4 and in recreation areas may use cementitious board fence in areas free from impacts and wearing.

18. Provide trash dumpster enclosures for Group 1 and 2 with concrete or stucco to match adjacent facilities and for Group 3 with stucco or CMU to match adjacent facilities; all gates shall be metal factory finished dark beige of medium bronze.

19. Specify screen wall materials and finishes that do not require painting or maintenance beyond periodic cleaning.

20. Group 1, 2, 3 and park area picnic tables and seating shall be precast. Group 4 and recreational areas may use factory finished metal picnic tables and seating when protected from weathering. Generally limit picnic tables, barbeque grills and drinking fountains to lodging, dormitories, housing areas, parks and recreation areas.

21. Limit the use of freestanding planters to areas with ongoing maintenance.

22. Provide kiosks only where there is a documented need for visual communication of posted messages. When used, match adjacent facilities in materials and detailing and consolidate kiosks with other site furnishings within 30 feet of major pedestrian paths. Limit kiosks to facility Groups 1 and 2 and parks.
23. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

**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**

- **Type:** Charcoal

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

  - **Mfr:** Most Dependable Fountains, Inc.

  - **Color:** Natural stainless steel

  - **Finish:** Mill

  - **Model #:** SS BBQ Grill

  - **Other:** Concrete foundation, coordinate with Base Architect

  - **UFGS:** N/A

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- **Type:**

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

  - **Mfr:** BBQ Coach

  - **Color:** Natural stainless steel

  - **Finish:** Mill

  - **Model #:** 32” 4-Burner

  - **Other:** Built-in Concrete or masonry, coordinate with Base Architect

  - **UFGS:** N/A
### Concrete

**Type:** Concrete

**Applies to:**
- [x] Group 1
- [x] Group 2
- [ ] Group 3
- [ ] Group 4
- [ ] Other

**Mfr:** Custom or catalog item

**Color:** Natural concrete to match adjacent

**Finish:** Smooth casting

**Model #:** Slab bench and optional back

**Other:** N/A

---

**UFGS:** N/A

### Recycled Content

**Type:** Recycled Content

**Applies to:**
- [x] Group 1
- [x] Group 2
- [ ] Group 3
- [ ] Group 4
- [ ] Other

**Mfr:** Belson Outdoors

**Color:** Neutral to match adjacent

**Finish:** Optional: Factory powder coated frame

**Model #:** Slatted seat and back

**Other:** N/A

---

**UFGS:** N/A
C07.2.3. Bike Racks

Type: Style 1

Applies to: 

- Group 1
- Group 2
- Group 3
- Group 4
- Other

Mfr: Brandir International Inc.

Color: Galvanized

Finish: Factory

Model #: The Ribbon Bike Rack, RB-07

Other: N/A

UFGS: N/A

C07.2.4. Bike Lockers

C07.2.5. Bollards

Type: Lighted Round Dome Top - Clear Lens

Applies to: 

- Group 1
- Group 2
- Group 3
- Group 4
- Other

Mfr: Kim Lighting

Color: Dark bronze

Finish: Powder coated aluminum

Model #: 8 inch round with dome top

Other: Flared cone, 3000K LED lamp

UFGS: N/A
**Lighted Round Dome Top - Louvered Lens**

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

- **Mfr:** Lithonia Lighting Products

- **Color:** Dark bronze

- **Finish:** Anodized aluminum

- **Model #:** KBA

- **Other:** Flared cone, 3000K LED lamp

- **UFGS:** N/A

---

**Building Protection, steel**

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

- **Mfr:** (Bollard Cover) Reliance Foundry

- **Color:** Brown cover may be field painted dark bronze

- **Finish:** Factory

- **Model #:** 6" Steel pipe, concrete filled, Cover: R-7173

- **Other:** A 1" (25.4 mm) rigid conduit and box with shroud may be provided at top of bollard with a receiver/key switch application

- **UFGS:** N/A
C07.2.6. Bus Shelters

Type: **Concrete Structure**

- Applies to: [ ] Group 1  [ ] Group 2  [ ] Group 3  [ ] Group 4  [ ] Other
- Mfr: Custom
- Color: Dark brown base, light beige walls with CMU infill
- Finish: Integrally colored concrete
- Model #: Bearing wall and timber framing
- Other: Precast bench

UFGS: N/A

---

C07.2.7. Drinking Fountains

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

- **Type:** 1: Brick and Steel

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

- **Mfr:** Custom

- **Color:** Beige stucco blend, dark brown metal doors

- **Finish:** Sand finish stucco, powder coated doors

- **Model #:** Match adjacent building

- **Other:** Steel gates and hardware, dark brown, dumpsters shall be painted dark brown

- **UFGS:** Section 04 20 00 Unit Masonry

C07.2.9. Fencing

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

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

- **Mfr:** General Wire Co.

- **Color:** Dark brown

- **Finish:** PVC coating over galvanized steel

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

- **Other:** N/A

- **UFGS:** Section 32 31 13 Chain Link Fences and Gates
**Style B Barrier: High security, medium visibility**

**Applies to:**
- [ ] Group 1  
- [ ] Group 2  
- [ ] Group 3  
- [ ] Group 4  
- [ ] Other

**Mfr:** Custom

**Color:** Dark brown

**Finish:** Powder coat

**Model #:** Steel grid: flat bar stock verticals, round rod horizontals

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

**UFGS:** Section 05 50 13 Miscellaneous Metal Fabrications

---

**Style C Barrier: Medium security, medium visibility**

**Applies to:**
- [ ] Group 1  
- [ ] Group 2  
- [ ] Group 3  
- [ ] Group 4  
- [ ] Other

**Mfr:** Custom

**Color:** Dark Brown

**Finish:** Powder coat

**Model #:** Steel posts, rails and pickets (vertical, bent outward at top)

**Other:** Posts, rails, and pickets in heights, lengths and gauges as required, (see Appendix for Facility Districts requirements)

**UFGS:** Section 05 50 13 Miscellaneous Metal Fabrications
Type: **Style D Barrier: Low security, High visibility**

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

Mfr: Custom

Color: Beige CMU blend, dark brown fencing

Finish: Ground face CMU, powder coated metal

Model #: CMU piers with steel posts, rails and pickets

Other: CMU: 2’x2’ (Height as required, equally spaced 12’ to 40’), Steel posts: 4”x4” (equally spaced), Rails: 2”x2”, Pickets: 1”x1” (6”o.c.); close all ends of tubing

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

Type: **Style E Barrier: Low security, High visibility**

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

Mfr: Custom

Color: Beige CMU blend, gray or brown fencing

Finish: Powder coated metal

Model #: CMU piers with steel posts, rails and alternating panels

Other: CMU: 2’x2’ (Height as required, equally spaced 8’ to 40’), Steel posts: 4”x4” (equally spaced), Rails: 1-1/4”x1-1/2”, vertical steel panels spaced alternately on each side of the rails; matching gates; close all ends

UFGS: Section 04 20 00 Unit Masonry, Section 05 50 13 Misc. Metal
<table>
<thead>
<tr>
<th>Type: Style F Barrier: Very low security, high visibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
</tr>
<tr>
<td>Mfr: Custom</td>
</tr>
<tr>
<td>Color: Integral mixed Davis Colors: dark warm gray</td>
</tr>
<tr>
<td>Finish: Factory</td>
</tr>
<tr>
<td>Model #: Post and rail</td>
</tr>
<tr>
<td>Other: Concrete 3-rail, wood-grain textured (4,000 psi at 28 days); Posts: 39” height, 8’ spacing, set 30” deep below grade with footing, typical</td>
</tr>
<tr>
<td>UFGS: SECTION 03 33 00 Cast-In-Place Architectural Concrete</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type: Style G Barrier (Alternate): Very low security, high visibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
</tr>
<tr>
<td>Mfr: James Hardie Building Products, Inc.</td>
</tr>
<tr>
<td>Color: Off white and Earth tones</td>
</tr>
<tr>
<td>Finish: Factory</td>
</tr>
<tr>
<td>Model #: Post and rail with vertical boards</td>
</tr>
<tr>
<td>Other: Posts: Height as required, 8’ max. spacing; apply boards to outside face</td>
</tr>
<tr>
<td>UFGS: Not Available (SECTION 074646 Fiber Cement Siding)</td>
</tr>
</tbody>
</table>
C07.2.10. Flagpoles

Type: 1

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

Type: Style 1: Precast concrete

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

Mfr: Materials, Inc.

Color: Weatherstone Gray

Finish: Smooth

Model #: TR-3225 Sante Fe (round or square)


UFGS: N/A
**Type:** Style 2: Metal

**Applies to:**
- [ ] Group 1
- [ ] Group 2
- [ ] Group 3
- [ ] Group 4
- [ ] Other

**Mfr:** Wabash Valley

**Color:** Black or as approved

**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 Tool 250 x 188**

**Type:**

**Applies to:**
- [ ] Group 1
- [ ] Group 2
- [ ] Group 3
- [ ] Group 4
- [ ] Other

**Mfr:**

**Color:** Brown top and seats, black base

**Finish:** Factory

**Model #:**

**Other:**

**UFGS:** N/A
### C07.2.14. Planters

<table>
<thead>
<tr>
<th>Type:</th>
<th>Precast concrete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
<td>Group 1</td>
</tr>
<tr>
<td>Mfr:</td>
<td>Materials, Inc.</td>
</tr>
<tr>
<td>Color:</td>
<td>Beige</td>
</tr>
<tr>
<td>Finish:</td>
<td>Smooth</td>
</tr>
<tr>
<td>Model #:</td>
<td>Santa Fe</td>
</tr>
<tr>
<td>Other:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

---

### C07.2.15. Play Equipment

<table>
<thead>
<tr>
<th>Type:</th>
<th>Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
<td>Group 1</td>
</tr>
<tr>
<td>Mfr:</td>
<td>Little Tikes Commercial</td>
</tr>
<tr>
<td>Color:</td>
<td>Varies</td>
</tr>
<tr>
<td>Finish:</td>
<td>Powdercoated Steel</td>
</tr>
<tr>
<td>Model #:</td>
<td>N-R-G Freestyle</td>
</tr>
<tr>
<td>Other:</td>
<td>Coordinate with Base Architect</td>
</tr>
</tbody>
</table>

---

UFGS: N/A
C07.2.16. Screen Walls

- **Type:** CMU / Steel
- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr.:** Custom
- **Color:** Beige CMU blend, dark brown fencing
- **Finish:** Powder coated metal
- **Model #:** CMU piers with steel posts, rails and alternating panels
- **Other:** CMU: 2'x2' (Height as required, equally spaced 8’ to 40’), Steel posts: 4"x4" (equally spaced), Rails: 1-1/4"x1-1/2", vertical steel panels spaced alternately on each side of the rails; matching gates; close all ends
- **UFGS:** Section 04 20 00 Unit Masonry, Section 05 50 13 Misc. Metal

C07.2.17. Tree Grates

- **Type:** Cast Iron
- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr.:** Neenah Enterprises, Inc.
- **Color:** Natural cast iron
- **Finish:** Cast
- **Model #:** 2-Piece, round or square
- **Other:** N/A
- **UFGS:** N/A

C07.2.18. Other

- **Applicable:** No
- **N/A:** Yes
C08. EXTERIOR SIGNS

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

Comply with AF Corporate Standards for Exterior Signs:
http://afcfs.wbdg.org/site-development/exterior-signs/index.html

C08.1. Colors and Types

☐ Applicable  ☐ N/A  Large graphics do not apply

☐ Applicable  ☐ N/A  Select number of graphics / images (small: 250 px x 188 px) to insert

![Image Tool 250 x 188](image_url)

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. Follow IFS for specifications appropriate for the local climate to withstand weathering.

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. Use clear concise terms for content consistent with UFC 3-120-01.

5. Display of emblems on building exterior walls or other permanent structures is prohibited by UFC.

6. Raised “standout” letters and numbers may be used for Group 1 with approval on a case basis. Avoid conditions where signs are subject to weathering where they may stain wall surfaces.

7. Group 2 and 3 facilities shall have wall mounted facility signs with sizes and layouts following UFC 3-120-01. Signs are not permitted for Group 4 facilities.

8. 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.

9. 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. Coordinate street signs with this IFS.

10. Provide Directional and Wayfinding Signs and address both pedestrian and vehicular traffic following UFC 3-120-01 for size, layout and content.
11. Reserved parking signs should be kept to a minimum. When approved, provide post-mounted sign faces in base standard materials and colors. Consider "bracketing" a designated area with a single sign at each end.

12. Parking lot identification signs may be used to identify areas or rows within large lots.

13. Follow the guidelines and requirements in ABAAS and the MUTCD for accessible parking signs.

14. Follow UFC 3-120-01 for Informational and Motivational Signs for size, layout and content.

15. Symbols or pictographs (graphic expressions of objects) may be used to indicate service, mandatory / prohibitory, sports, and recreation when rapid communication is necessary.

16. Force Protection signage may be applied to glass doors using white vinyl lettering.

17. Refer to UFC 3-120-01 for prohibited signs, which include those with animated, blinking, chasing, flashing, or moving effects.

18. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

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

- Large graphics do not apply
- Small graphics do not apply

1. Fabricate sign panels from aluminum sheeting. Sign posts shall be powder coated aluminum with capped ends and a concrete base.

2. Fence mounted sign panels may be attached with exposed fasteners.

3. All signage shall follow Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) using standard colors. Refer to MUTCD color specifications, which provide cross-referenced Pantone Matching System (PMS) numbers.
   a. Standard Blue
   b. Standard Dark Bronze (also Federal Standard Color 30040)
   c. Standard Red
   d. Standard Black (non-reflective)
   e. Standard White
   f. Standard Brown
### Materials and Color Specifications

**Typical Sign Face**

- **Type:** Typical Sign Face
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** Custom
- **Color:** Medium bronze
- **Finish:** Matte vinyl
- **Model #:** Aluminum flat sheet
- **Other:** Mount to square posts. Provide sizes following UFC.

---

**Typical Sign Post**

- **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 Tool 250 x 188

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 coat or vinyl sign face

Model #: Metal frame and panels, buff stone base

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

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
### Freestanding Tertiary Sign (Sizes and Uses per UFC)

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

**Applies to:**
- [ ] Group 1
- [ ] Group 2
- [x] 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

---

### Wall Mounted

**Type:** Wall Mounted

**Applies to:**
- [x] Group 1
- [x] Group 2
- [x] 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
**C08.1.4. Traffic Control Devices (Street Signs)**

**Applicable**  
**Number of base standards** 1  
**Image Tool 250 x 188**

<table>
<thead>
<tr>
<th>Type:</th>
<th>Street Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
<td>[ ] Group 1  [ ] Group 2  [ ] Group 3  [ ] Group 4  [ ] Other</td>
</tr>
<tr>
<td>Mfr:</td>
<td>Custom</td>
</tr>
<tr>
<td>Color:</td>
<td>White reflective lettering on a Standard Brown background</td>
</tr>
<tr>
<td>Finish:</td>
<td>Powder coat or vinyl sign face</td>
</tr>
<tr>
<td>Model #:</td>
<td>Aluminum sign face, control arm or pole mounted</td>
</tr>
<tr>
<td>Other:</td>
<td>Mount 7’ above grade minimum, pictographs and logos are prohibited on street name signs per UFC.</td>
</tr>
</tbody>
</table>

**UFGS:**  
Section 05 50 13 Miscellaneous Metal Fabrications
C08.1.5. Directional and Wayfinding Signs

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**

- **Large graphics do not apply**
- **Small graphics do not apply**

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 brown color.
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  Large graphics do not apply
- Applicable  N/A  Small graphics do not apply

1. Provide professionally produced motivational signs as important elements of campaigns to boost morale, improve safety, aid in recruiting, and accomplish other motivational objectives. Consolidate this signage to reduce visual clutter.

2. Motivational signs shall be limited to an electronic "marquee" type changeable sign near each gate. Temporary signs are not permitted. Motivational information may also be posted in a small, printed format on kiosks in specified, high pedestrian use areas. Refer to kiosks under Site Furnishings.

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

4. Mount marquee signs on reinforced concrete bases with a natural warm gray color.

**C08.1.8. Parking Lot Signs**

- Applicable  N/A

1. Follow UFC 3-120-01 and refer to AFCFS.

**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://afcfs.wbdg.org/site-development/index.html
Comply with AF Corporate Standards for Lighting:
http://afcfs.wbdg.org/site-development/lighting/index.html

C09.1. Fixtures and Lamping

- Applicable  N/A  Select number of graphics / images (large: 800 px x 440 px) to insert  1
- Applicable  N/A  Select number of graphics / images (small: 250 px x 188 px) to insert  6

Arterial Double Mount Lighting

Single Mount along Special Route  Single Mount at Group 2 Parking  Double Mount Lighting
1. Provide, coordinate and efficiently install street, parking lot, sidewalk and facility lighting with appropriate luminaires, lamping, placement and spacing following UFC 3-530-01 and Installation Facilities Standards (IFS); ensure the level of quality is consistent with the adjacent facility group number. Pole-mounted, wall-mounted and bollard fixtures are permitted.

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. Economically provide renewable-energy power sources such as solar photovoltaic when feasible.

5. Use appropriately designed or shielded luminaires to direct light downward to minimize light pollution and intrusion onto adjacent sites and to facilitate night training.

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

7. Sufficiently address environmental factors to prevent corrosion and weathering of fixtures, plinths and other components.

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

9. Efficient accent lighting of architectural and landscape features may be provided for Group 1, lodging and historical applications. Accent lights in ground-mounted locations may be provided for static displays and signs when these do not conflict or cause hazards with overhead aircraft.

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

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

12. 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.

13. 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.

14. 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 median or island.

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

16. Landscape accent lighting may be used in public gathering spaces and in Group 1 facilities. Coordinate the design, luminaire selection, and placement with the location of trees, shrubs, and site furnishings.
17. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

**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

[Image of Street Lighting]

- **Type:** Style 1
- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr:** Hubbell, Kim Lighting
- **Color:** Dark Bronze Anodized (or Clear Anodized as approved by BCE)
- **Finish:** Factory
- **Model #:** Rectilinear Cutoff, Single Arm or Dual Arm Mount
- **Other:** Lamp: LED. Follow manufacturer’s recommendations for fixture base.

- **UFGS:** N/A

[Image of Street Lighting]

- **Type:** Style 2
- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr:** Hubbell, Kim Lighting
- **Color:** Clear Anodized as approved by BCE
- **Finish:** Factory
- **Model #:** Round Cutoff, Single Arm or Dual Arm Mount
- **Other:** Lamp: LED. Follow manufacturer’s recommendations for fixture base.

- **UFGS:** N/A
C09.2.2. Parking Lot Lighting

Type: Parking Lot Style 1

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

Mfr: Hubbell, Kim Lighting

Color: Dark Bronze Anodized (or Clear Anodized as approved by BCE)

Finish: Factory

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

Other: Lamp: LED. Follow manufacturer’s recommendations for fixture base.

UFGS: N/A

Type: Parking Lot Fixture Base

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

Mfr: Custom

Color: Natural gray

Finish: Trowel

Model #: Form-cast, round

Other: N/A

UFGS: Section 03 33 00 Cast-In-Place Architectural Concrete
### C09.2.3. Lighted Bollards

<table>
<thead>
<tr>
<th>Type: Lighted Round Dome Top - Louvered Lens</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
<td></td>
</tr>
<tr>
<td>Mfr:</td>
<td>Lithonia Lighting Products</td>
</tr>
<tr>
<td>Color:</td>
<td>Dark Bronze</td>
</tr>
<tr>
<td>Finish:</td>
<td>Anodized aluminum</td>
</tr>
<tr>
<td>Model #: KBA</td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>Flared cone, 3000K LED Lamp. Follow manufacturer’s recommendations for fixture base.</td>
</tr>
<tr>
<td>UFGS:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type: Lighted Round Dome Top - Clear Lens</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
<td></td>
</tr>
<tr>
<td>Mfr:</td>
<td>Kim Lighting</td>
</tr>
<tr>
<td>Color:</td>
<td>Dark Bronze</td>
</tr>
<tr>
<td>Finish:</td>
<td>Powder coated aluminum</td>
</tr>
<tr>
<td>Model #:</td>
<td>8 inch round with dome top</td>
</tr>
<tr>
<td>Other:</td>
<td>Flared cone, 3000K LED lamp</td>
</tr>
<tr>
<td>UFGS:</td>
<td>N/A</td>
</tr>
</tbody>
</table>
C09.2.4. Sidewalk Lighting

Applicable  □ N/A  Number of base standards 1

Type: Rectilinear Cutoff

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

Mfr: Hubbell, Kim Lighting

Color: Dark Bronze Anodized (or Clear Anodized as approved by BCE)

Finish: Anodized aluminum

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

Other: Lamp: LED. Follow manufacturer’s recommendations for fixture base.

UFGS: N/A

C09.2.5. Walls / Stairs Lighting

Applicable  □ N/A  Number of base standards 1

Type: Style 1

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

Mfr: Vista Lighting

Color: Dark bronze or clear aluminum

Finish: Powder coat

Model #: Aluminum Step and Brick Lights, 5230 round louvered

Other: Lamp: LED

UFGS: 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

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

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

OPTIONAL: Insert Facilities Exteriors graphic that represents the base-wide standard
Size image to:
800 pixels width x 440 pixels in height
Click here to insert image (jpg or png format)

Group 2 Base Standard Materials and Palette

Group 3 Three-Bay Hangar

Historical Group 1

D01. SUPPORTING THE MISSION
Comply with AF Corporate Standards for Supporting the Mission:

D02. SUSTAINABILITY
Comply with Air Force Corporate Standards for Sustainability:
D03. ARCHITECTURAL FEATURES

Comply with AF Corporate Standards for Facilities Exteriors:
http://afcfs.wbdg.org/facilities-exteriors/index.html

Comply with AF Corporate Standards for Architectural Features:
http://afcfs.wbdg.org/facilities-exteriors/architectural-features/index.html

Insert 3 photos for each facility group.

Image Tool 250 x 188

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 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 unless stipulated in the Installation Development Plan; 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


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

3. Designs for new facilities shall 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 contemporary vernacular theme with architectural features 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 roof overhangs, 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. Provide a palette of earth-tone colors related to the architectural theme precast panels, stucco, block, stucco and powder-coated metals. Refer to D05. Wall Systems for detailed material listings.

2. Relate the level of architectural detailing to the Facility Group number.

3. In new designs and renovations, use only integrally colored materials as the predominant exterior building material; do not use materials that require field painting and ongoing maintenance.

4. 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.

5. Noncorrosive metals with factory applied color finishes are required; exposed ferrous metals are not permitted.

6. Combine details and color with orientation, massing, scale and architectural character to maintain base compatibility.

7. 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 and the climatic effect of weathering
Other: Consider proximity to moderate wind speed area for electricity generation; moderate potential for solar PV and solar thermal

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

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

**Doors:** Recessed are preferred

**Windows:** Provide insulating glazing and integrate maximize shading for windows on east, west and south facades

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

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

**MEP:** Ground-source and solar photovoltaic following LCCA

**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  

Type: Style 1 Aluminum Windows

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

Mfr: Kawneer (or equivalent)

Color: Dark Bronze (or clear anodized as approved by BCE)

Finish: Anodized

Model #: 2x4, slider or awning type

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  

Type: Style 1 Interior Wall Material

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

Mfr: Custom, TBD

Color: Beige stucco

Finish: Light texture

Model #: 3-coat stucco system

Other: CMU may be used in Group 3 only when approved by the BCE

UFGS: Section 04 20 00 Unit Masonry
### D03.3.4. Thermal Shading

- **Type:** Style 1 Wall Devices
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr.:** Kawneer (or equivalent) or custom
- **Color:** Dark bronze
- **Finish:** Factory, to match frames
- **Model #:** Louver
- **Other:** Shading devices may be attached to frames or structure

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

### D03.3.5. Renewable Heating/Cooling

- **Type:** Style 1 Geothermal (Ground Source)
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr.:** Climate Master
- **Color:** N/A
- **Finish:** N/A
- **Model #:** N/A
- **Other:** Vertical ground loop well field

UFGS: Section 23 81 47 Water-Loop and Ground-Loop Heat Pump Systems
### D03.3.6. Solar Photovoltaic System

**Applicable:** Yes  □ N/A  
**Number of base standards:** 2  
**Image Tool:** 250 x 188

<table>
<thead>
<tr>
<th>Type: Ground-Mounted PV Panels</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Applies to:</strong></td>
</tr>
<tr>
<td><strong>Mfr.:</strong></td>
</tr>
<tr>
<td><strong>Color:</strong></td>
</tr>
<tr>
<td><strong>Finish:</strong></td>
</tr>
<tr>
<td><strong>Model #:</strong></td>
</tr>
<tr>
<td><strong>Other:</strong></td>
</tr>
</tbody>
</table>

**UFGS:** Section 48 14 00 Solar Photovoltaic Systems

<table>
<thead>
<tr>
<th>Type: Roof-Mounted PV Array</th>
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</thead>
<tbody>
<tr>
<td><strong>Applies to:</strong></td>
</tr>
<tr>
<td><strong>Mfr.:</strong></td>
</tr>
<tr>
<td><strong>Color:</strong></td>
</tr>
<tr>
<td><strong>Finish:</strong></td>
</tr>
<tr>
<td><strong>Model #:</strong></td>
</tr>
<tr>
<td><strong>Other:</strong></td>
</tr>
</tbody>
</table>

**UFGS:** Section 48 14 00 Solar Photovoltaic Systems
### D03.3.7. Solar Thermal System

<table>
<thead>
<tr>
<th>Type:</th>
<th>Wall-Mounted or Roof-Mounted Panels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
<td>Group 1  Group 2  Group 3  Group 4  Other</td>
</tr>
<tr>
<td>Mfr:</td>
<td>TBD</td>
</tr>
<tr>
<td>Color:</td>
<td>Factory</td>
</tr>
<tr>
<td>Finish:</td>
<td>Matte</td>
</tr>
<tr>
<td>Model #:</td>
<td>Flat plate collector</td>
</tr>
<tr>
<td>Other:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

UFGS: Section 48 14 13 Solar Liquid Flat Plate and Evacuated Tube Collectors
D04. BUILDING ENTRANCES

Comply with AF Corporate Standards for Facilities Exteriors:
http://afcfs.wbdg.org/facilities-exteriors/index.html

Comply with AF Corporate Standards for Building Entrances:

Insert 3 photos for each facility group.
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. Provide vestibules at entries in Groups 1, 2 and 3 unless used infrequently or serving unconditioned space following ASHRAE 90.1.

3. Fully integrate all elements including the design of handicap ramps in the overall design of the primary entrance in an organized, uncluttered appearance.

4. Install paved transitional spaces sized for the building function and occupancy.

5. Install appropriate lighting and site furniture following ATFP and IFS.

6. Protect entrances from heavy rains and from direct sun.

7. Provide porte cocheres or covered drop-offs when justified for lodging and medical facilities; do not use for prestige or 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.
D05. WALL SYSTEMS

Comply with AF Corporate Standards for Facilities Exteriors:
http://afcfs.wbdg.org/facilities-exteriors/index.html

Comply with AF Corporate Standards for Doors and Windows:

Comply with AFCFS Recommended Materials:

Insert 3 photos for each facility group.
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 predominantly precast panels; stucco or cast-in-place concrete may also be used as a primary material to match adjacent facilities. Flat metal panels may be used as an accent. Refer to the Appendix for special requirements of Facility Districts.

3. Group 3 facilities shall be insulated metal panels and/or metal sheeting; lower levels may receive ground face or burnished face CMU or stucco as an accent material. Generally limit CMU and stucco to a single color on Group 3 facilities.

4. Group 4 shall be stucco; cementitious horizontal siding may be used with approval. Generally limit color schemes to two colors: a single predominant color and a single accent color.

5. Multi-story Group 1 facilities may include a transition in material, color or detailing to create a visual base.

6. Use high-performance building envelopes following UFC 1-200-02.

7. Use detailing not subject to excessive weathering. Provide wall accents consistently throughout the base.

8. Use integrally colored materials and factory-finished metals. Do not paint concrete, CMU, non-ferrous metals, or factory finishes.

9. Translucent wall 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.

10. 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 at all exterior glazing exposed to summer UV heat gain as a passive design measure to reduce energy use. Ensure adequate shading along south facades and at west entrances. Deciduous trees may be used to supplement fixed shading devices.

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 per UFGS 07 60 00 Flashing and Sheet Metal.

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.
3. Avoid visual clutter and where surface-mounted elements are required they shall match the wall color.

**D05.4 Wall Systems Materials**

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

- **Primary:** Precast Panels, Concrete or Stucco
- **Secondary:** Alternate Material or Color Listed above
- **Accent:** Optional: Metal Panels

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

- **Primary:** Precast Panels, Concrete or Stucco
- **Secondary:** Alternate Material or Color Listed above
- **Accent:** Optional: Metal Panels

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

- **Primary:** Insulated Metal Panels
- **Secondary:** CMU or Stucco
- **Accent:** Optional: Alternate Color of Metal Panels

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

- **Primary:** Stucco or Fiber Cement Siding
- **Secondary:** Accent Trim in Alternate Color
- **Accent:** Exposed Concrete Foundation

**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 2

![Image Tool 250 x 188](Image Tool 250 x 188)

**Type:** Insulated Metal Wall System

**Applies to:** ☑ Group 1 ☑ Group 2 ☑ Group 3 ☐ Group 4 ☐ Other

**Mfr:** Metl Span or TBD

**Model #:** Interlocking panel system

**Color:** Beige or off-white

**Finish:** Heavy stucco-embossed

**Other:** Aluminum or galvanized steel cladding as approved

**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)
Type: **Lap Seam Panel – Powder Coated Aluminum**

Applies to:  [ ] Group 1  [x] Group 2  [ ] Group 3  [ ] Group 4  [ ] Other

Mfr: Berridge

Model #: Lap-seam cladding

Color: Off white, beige or, when approved, red

Finish: Powder coated aluminum

Other: Panels may be used for soffits in Groups 1 and 2


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)

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**D05.4.2. Brick Veneer**

- [ ] Applicable  [ ] N/A

---

**D05.4.3. Architectural Precast**

- [ ] Applicable  [ ] N/A  Number of base standards 3

Image Tool 250 x 188

Type: **Precast Wall Panels**

Applies to:  [ ] Group 1  [x] Group 2  [ ] Group 3  [ ] Group 4  [ ] Other

Mfr: Local, TBD

Model #: Smooth Casting

Color: Light beige, dark beige accents

Finish: Very Light texture

Other: Relief and texture may vary based on facility design

UFGS: Section 03 45 00 Precast Architectural Concrete: [http://www.wbdg.org/FFC/DOD/UFGS/UFGS_03_45_00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_03_45_00.pdf)
Type: **Coursed Precast Units**

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

- **Mfr:** Local, TBD

- **Model #:** Smooth casting

- **Color:** Light beige, dark beige accents

- **Finish:** Very light texture

- **Other:** Window sills, belt courses, etc.

- **UFGS:** Section 03 45 00 Precast Architectural Concrete:
  - [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 45 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 45 00.pdf)

---

Type: **Precast Medallions**

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

- **Mfr:** Pineapple Grove

- **Model #:** Smooth casting

- **Color:** Light beige, dark beige accents

- **Finish:** Very light texture

- **Other:** Coordinate artwork for medallions with the BCE

- **UFGS:** Section 03 45 00 Precast Architectural Concrete:
  - [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 45 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 45 00.pdf)
D05.4.4. Stucco Over Sheathing

**Type:** Stucco Over Masonry or Sheathing

- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr:** La Habra
- **Model #:** 3-coat cementitious stucco, integrally colored
- **Color:** Light beige integral color
- **Finish:** Sand
- **Other:** Accent color may be used; do not paint integral color finish coat


---

D05.4.5. Curtain Wall

- **Aplicable**
- **N/A**

D05.4.6. Cast-In-Place Concrete

- **Aplicable**
- **N/A**

**Type:** Formed Bearing Walls

- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr:** Custom
- **Model #:** Board-formed or sheet-formed with exposed-tie reveals
- **Color:** Natural with exposed aggregate
- **Finish:** N/A
- **Other:** Medium texture (or media blasted)

**UFGS:** Section 03 33 00 Cast-In-Place Architectural Concrete: [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 33 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 33 00.pdf)

---

D05.4.7. Tilt-Up Concrete

- **Aplicable**
- **N/A**
### D05.4.8. Ribbed Metal Sheeting

- **Type:** Flush Seam
- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr:** Berridge
- **Model #:** Flush Seam Panel
- **Color:** Beige
- **Finish:** Embossed texture, factory finished
- **Other:** 24 Gauge Steel
- **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)

### D05.4.9. EIFS

- **Applicable**
- **N/A**

### D05.4.10. GFRC

- **Applicable**
- **N/A**

### D05.4.11. Concrete Block

- **Applicable**
- **N/A**
- **Number of base standards:** 1
- **Type:** Concrete Masonry Unit (CMU) Ground Face
- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr:** TBD
- **Model #:** 8x8x16 Nominal, face and corner units
- **Color:** Light or medium beige
- **Finish:** Light texture
- **Other:** N/A
- **UFGS:** Section 04 20 00 Unit Masonry: [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 04 20 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 04 20 00.pdf)
D05.4.12. Fiber Cement Siding

Type: Style 1

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

Mfr: James Hardie Building Products, Inc.

Model #: Horizontal Lap Siding, Shingle Siding

Color: Earth Tones

Finish: Wood Texture

Other: Hardie Plank, Hardie Shingle

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

D05.4.13. Other

Applicable N/A

Recommended Image:
Detail of fiber cement siding
Size image to: 250 pixels width x 188 pixels height
Click here to insert image
D06. DOORS AND WINDOWS

Comply with AF Corporate Standards for Facilities Exteriors:
http://afcfs.wbdg.org/facilities-exteriors/index.html

Comply with AF Corporate Standards for Doors and Windows:

Comply with AFCFS Recommended Materials:

Insert 3 photos for each facility group.
D06.1. Types

1. Clear anodized aluminum doors, windows and frames with thermal breaks are preferred for Facility Groups 1-3 because they show less wear and weathering than dark anodized finishes; match the color of the door and frame. For renovation projects the color of new windows, doors and frames may match existing. Off-white powder coated finishes may be used with approval. Dark color is permitted only with approval from CES and when windows and doors are protected from weathering.

2. Aluminum clad wood windows are preferred for Facility Group 4.

3. Standard-sized hinged doors are preferred. Use sliding, folding, overhead, sectional and other door configurations only to support mission operations.

4. Automatic doors are allowed only where functionally necessary.

5. Limit the use of steel frames to areas that are protected from the elements. Used only where functionally required for security, durability and utility in Groups 1, 2 and 3.

6. Utility and emergency egress doors shall match or be harmonious with the wall color.

7. Passive thermal comfort methods of ventilation are encouraged where life cycle cost justified.

8. Windows must meet force protection requirements.

9. Adjacent joint sealants should be slightly darker than the frame color.

10. Make efforts to contain noise at its source with properly gasketed doors per UFC 3-450-01 Noise and Vibration Control.

11. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

D06.2. Layout and Geometry

1. Visually and functionally compose openings in walls for the climate-specific exposure.

2. Consistently use opening type, size, placement, mullion pattern, and color to reinforce the overall architectural design.

3. Openings shall augment interior lighting and space conditioning needs.

4. Protect against vandalism and intrusion.

D06.3. Glazing and Shading

1. Tinted, energy-efficient, low-e, double-pane glazing is encouraged; provide triple-pane glazing in extreme environments.

2. Glazing color shall be neutral.

3. Translucent wall panels may be integrated into wall systems.

4. Do not use mirrored glazing.

5. Fully integrate applicable shading designs for overhangs, louvers, light shelves and grilles.

6. Where appropriate, install window screens to take advantage of natural ventilation.

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 finishes and color on window and door systems throughout a facility. For renovation projects the color of new hardware may match the existing hardware.

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**

- **Type:** Anodized Aluminum Doors, Windows and Frames
- **Mfr:** Kawneer (or equivalent)
- **Color:** Dark Brown Anodized
- **Finish:** Matte
- **Model #:** 2x4
- **Other:** Provide thermally broken frames

UFGS: Section 08 41 13 Aluminum-Framed Entrances and Storefronts:
D06.5.2. Hollow Metal

Type: Hollow Metal Doors, Windows and Frames

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

Mfr: TBD

Color: Dark brown

Finish: Powder coated, satin

Model #: 2x4 frame

Other: Provide thermally broken frames

UFGS: Section 08 11 13 Steel Doors and Frames:

D06.5.3. Aluminum-clad Wood

Type: Aluminum-clad Residential

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

Mfr: Marvin

Color: White or Earth tones

Finish: Powder coated, satin

Model #: Aluminum-clad wood windows

Other: Double hung

UFGS: Section 08 14 00 Wood Doors
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 14 00.pdf

D06.5.4. Other

☐ Applicable  ☐ N/A
D07. ROOF SYSTEMS

Comply with AF Corporate Standards for Facilities Exteriors:
http://afcfs.wbdg.org/facilities-exteriors/index.html

Comply with AF Corporate Standards for Roof Systems:

Comply with AFCFS Recommended Materials:

Insert 3 photos for each facility group.

Image Tool 250 x 188

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, 2 and 3 facilities under 5,000 sf, or with massing narrow in plan geometry, may use sloped standing seam metal roofs. Minimal-slope roofs may be used on roofs greater than 5,000 sf or as approved on a case basis.

4. Provide screens for roof-mounted appendages and equipment of the same materials, which are used predominantly in the building’s roof systems.

5. Roof translucent panels are permitted only in clerestory elements in Group.

6. Group 3 facilities over 5,000 sf may use sloped-roof features in conjunction with predominantly minimal-sloped “flat” membrane roofs.

7. Group 4 facilities shall have gabled or hipped composite shingle roofs.

8. Roof eaves shall extend beyond the exterior wall for roof drainage and shading. Provide overhangs for shading in response to local climatic conditions; these should be sized and proportioned to the height of the facility and to the window openings being shaded.

9. South-facing eaves shall coordinate with adjacent wall-mounted shading devices.

10. The color, shape and slope of the eave and soffit shall be compatible with adjacent facilities.

11. Keep roofs uncluttered and minimize penetrations.

12. Diminish massive roofs into coordinated smaller components consistent with adjacent facilities; avoid random, arbitrary changes.

13. Increase the insulation value of existing roofing systems during renovations if supported by life-cycle cost and structural analysis.

14. 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.

15. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

D07.2. Roof Slope

1. Group 1 and 2 buildings shall use sloped roofs, min. 3:12.

2. Low-sloped roofs are allowed for larger structures or to match existing conditions on renovation projects. Minimal-sloped roofs may also be used for Group 3 facilities in high-visibility areas.


4. Ensure adequate drainage and connect to the subsurface rain collection system where available.

5. Provide roof slopes to accommodate solar photovoltaic, solar thermal, passive systems and daylighting when applicable following UFC 1-200-02.

6. Provide underlayments as required for the roofing type as directed by the UFC.
D07.3. Parapets and Copings

1. Extend wall materials vertically above the roofline and provide metal copings to match the wall. Ensure copings are properly flashed and detailed to avoid roof leaks.

D07.4. Color and Reflectivity

1. Light beige, off-white or approved red sloped roofs shall be used in Groups 1 and 2 and smaller facilities in Group 3 to match adjacent facilities and follow requirements of IFS.

D07.5. Gutters, Downspouts, Scuppers, Drains

1. All sloped roofs shall use gutters and downspouts. Gutters shall be outside the fascia.

2. 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.

3. All gutters and fascias shall match the roof color.

4. Size the roof drainage system per IBC and SMACNA for the region.

5. Use scuppers as required in parapet walls. Arrange scuppers in an orderly manner consistent with other elements of the wall system.

6. When open scuppers are connected to downspouts, provide transitions consistent with adjacent facilities.

7. 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).

8. Fabricate downspouts from non-corrosive materials such as aluminum or zinc-coated steel. Provide powder-coated finishes in medium bronze.

9. All downspouts shall be solid.

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 and inconspicuous appearance; integrate components 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.

**D07.7. Clerestories and Skylights**

1. Clerestories are permitted in Group 1 facilities. These are allowed in Group 3 facilities only when serving passive systems and are justifiable by life-cycle analysis.

2. Clerestories are preferred to skylights to avoid roof penetrations. Skylights are not permitted.

3. Design clerestories 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 must comply with UFC 4-10-01.

**D07.8. Vegetated Roof**

1. Not applicable.

**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 Yes | N/A No  Number of base standards 1

Type: **Style 1**

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

Mfr: Berridge

Color: Light beige or, when approved for Groups 1 and 3, red

Finish: Matte

Model #: 12"-16" Tee-Panel

Other: Shed, gabled or hipped standing seam metal

UFGS: Section 07 61 14 Steel Standing Seam Roofing

D07.9.2. Membrane Single-ply

- Applicable
- N/A
- Number of base standards: 1
- Image Tool 250 x 188

Type: **Style 1**

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

- **Mfr.:** Carlisle Systems
- **Color:** Off-white
- **Finish:** Smooth
- **Model #:** TPO or EPDM single-ply, “flat” minimal slope
- **Other:** N/A

**UFGS:**
- Section 07 53 23 Ethylene-Propylene-Diene-Monomer Roofing
- Section 07 54 50 TPO Thermoplastic Single-Ply Roofing
  (Not Available on UFGS)

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D07.9.3. Built-up Multi-ply

- Applicable
- N/A

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D07.9.4. Concrete Tile

- Applicable
- N/A
- Number of base standards: 1
- Image Tool 250 x 188

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 Grande Blend with ridge tile and closures
- **Other:** Concrete tile roofing for Group 1 facilities must be approved by CES; Only tile roofing accent features are permitted for Group 3 facilities when matching existing

**UFGS:**
- Section 07 32 16 Concrete Roof Tile
  (Not Available on UFGS)
D07.9.5. Clay Tile

- **Type:** Terra Cotta
- **Mfr:** MCA-tile
- **Color:** Terra cotta
- **Finish:** Factory
- **Model #:** Flat interlocking or barrel roof tile
- **Other:** Use only for renovation projects or to match adjacent

UFGS:
- Section 07 32 13 Clay Roof Tiles
- (Not Available on UFGS)
- Section 07 32 14 Clay Tile Roofing Replacement or Repair

D07.9.6. Slate Shingles

- **Applicable**

D07.9.7. Vegetated System

- **Applicable**
D07.9.8. Ribbed Metal Sheeting

- Type: **Style 1**
- Applies to: 
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- Mfr: Berridge
- Color: Light beige or galvalume
- Finish: Factory
- Model #: High Seam Tee-Panel
- Other: 24 gauge steel, Width: 16" Batten height: 1-3/4"

UFGS: Section 07 41 13.19 Batten-Seam Metal Roof Panels
(Not Available on UFGS)

D07.9.9. Composite Shingles

- Type: **Style 1**
- Applies to: 
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- Mfr: Tamko
- Color: Earth Tones
- Finish: Factory
- Model #: Heritage
- Other: Gabled or hipped with transverse gable or hipped features

UFGS: Section 07 31 13 Glass-fiber-reinforced Asphalt Shingles

D07.9.10. Other

- Applies to: 
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- Mfr: 
- Color: 
- Finish: 
- Model #: 
- Other: 

UFGS: 

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JBPHH Hickam IFS
D08. STRUCTURAL SYSTEMS

Comply with AF Corporate Standards for Facilities Exteriors:
http://afcfs.wbdg.org/facilities-exteriors/index.html

Comply with AF Corporate Standards for Structural Systems:

Comply with AFCFS Recommended Materials:

Insert 3 photos for each facility group.

Image Tool 250 x 188
D08.1. Systems and Layouts

1. Pre-engineered structural steel framing may be used for Groups 1, 2 and 3 facilities; Installation-appropriate thermal envelopes, materials and detailing are required.

2. Select economical structural systems that integrate roof and wall systems.

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. Limit the use of specialty systems (such as space frames, vaults or domes) and of structure as a visual feature.

7. Cost-effectively design interior bearing walls as thermal mass.

8. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

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

<table>
<thead>
<tr>
<th>Applicable</th>
<th>N/A</th>
<th>Number of base standards</th>
</tr>
</thead>
</table>

Type: **Cast-In-Place**

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

Mfr: Custom

Color: Natural gray

Finish: Light texture

Model #: Post and beam and/or waffle slab

Other: Coordinate with mechanical for chilled beam technologies

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
D08.2.2. Insulated Concrete Forming (ICF)
☐ Applicable  ☐ N/A

D08.2.3. Steel
☐ Applicable  ☐ N/A  Number of base standards 1

Type: Rigid Framing

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

Mfr: US Steel

Color: Shop primed

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

D08.2.4. Pre-Engineered Steel
☐ Applicable  ☐ N/A  Number of base standards 1

Type: Moment Frame

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

Mfr: Behlen Building Systems

Color: Factory primed

Finish: Matte

Model #: Moment frame

Other: Draped insulation may be used behind wall finish system; Behlen standing seam roof system may be used for Group 3; Deflection must meet IBC.

UFGS: Section 13 12 00 Steel Building Systems (Not Available on UFGS)
Section 13 34 19 Metal Building Systems
D08.2.5. Masonry
☐ Applicable  ☑ N/A

D08.2.6. Heavy Timber
☐ Applicable  ☑ N/A

D08.2.7. Light-gauge Steel
☐ Applicable  ☑ N/A  Number of base standards 1

Type: Steel Framing

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

Mfr: Steelrite

Color: Factory

Finish: Galvanized

Model #: Structural framing 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

D08.2.9. Other
☐ Applicable  ☑ N/A
D09. MECHANICAL, ELECTRICAL AND PLUMBING

Comply with AF Corporate Standards for Facilities Exteriors:
http://afcfs.wbdg.org/facilities-exteriors/index.html

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

Insert 3 photos for each facility group.
D09.1. Passive and Active Systems

1. Fully integrate passive heating and cooling systems into facility designs whenever practical for the local climate 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 including geo-exchange (ground source heat pumps) 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 domestic hot water systems are required when life-cycle cost effective for the climate.

6. Integrate shading into building exteriors to reduce solar heat gain during hot seasons.

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 ATFP requirements.

4. Keep equipment away from main building entrances; locate service area/yard on least visible side of a building.
E. FACILITIES INTERIORS

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

Insert 3 photos for each facility group.

Recommended Image:
Typical facility interior
Size image to:
250 pixels width x 188 pixels height
Click here to insert image

Recommended Image:
Interior features
Size image to:
250 pixels width x 188 pixels height
Click here to insert image

Recommended Image:
Interior detail
Size image to:
250 pixels width x 188 pixels height
Click here to insert image

Group 1

Group 2

Group 3

Group 4
E01. Building Configurations
Comply with Air Force Corporate Standards for Building Configurations:

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 life span.

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.

3. 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.

4. Provide high-performance building configurations following UFC 1-200-02. Ensure passive design strategies are cost effectively incorporated before active mechanical systems are designed.

5. 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.


7. 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.

8. 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.

9. Through open-plan configurations, preserve all passive and natural design strategies and fully integrate facility interiors with overall building systems.

10. Professional interior designers, or architects with significant interior design experience, must accomplish the design and review of applicable new construction, renovations and maintenance projects.

11. Consult with the State Historic Preservation Officer (SHPO) and base-level Historic Preservation offices 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.

12. 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:

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.

5. Allow no direct sight lines into restrooms.

6. Situate utility and core areas to minimize impact on daylighting and to maximize use as thermal buffers.
7. Ensure electrical, lighting and communications system can be adaptable to configuration changes.

8. Avoid power poles to the maximum extent; when poles are necessary minimize the number and coordinate locations with furniture placement and other elements.

9. Avoid sloping floors to maintain flexibility and eliminate future structural changes.

10. Special consideration may apply to Sensitive Compartmented Information Facilities (SCIFs).

**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 AFM 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 UFC 3-120-10.

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:

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.


E02. Floors

Comply with Air Force Corporate Standards for Floors:
http://afcfs.wbdg.org/facilities-interiors/floors/index.html

E02.1. Floor Materials

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

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

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

- Primary: Prepared Slabs (Ground, Polished)
- Secondary: Ceramic tile
- Tertiary: Carpet, Rubber Stair Treads

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

- Primary: Prepared Slabs (Ground)
- Secondary: Prepared Slabs (Sealer)
- Tertiary: N/A

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

- Primary: Carpet
- Secondary: Ceramic tile
- Tertiary: N/A

1. Natural stone and terrazzo flooring may be used in high traffic areas of Group 1 as approved on a case basis.

2. Resilient and rapidly renewable flooring may be used in low traffic areas in Group 1, 2 and 4.

3. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

**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: Yes  N/A

Number of base standards: 2

Image Tool: 250 x 188

E02.1.1.1. Style 1, Ground and Polished

Type: Style 1, Ground and Polished

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 polished texture

Model #: Medium to small aggregate

Other: N/A

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

E02.1.1.2. Natural Stone and Terrazzo

Applicable: Yes  N/A

Number of base standards: 2

Image Tool: 250 x 188

E02.1.2. Natural Stone and Terrazzo

Applicable: Yes  N/A

Number of base standards: 2

Image Tool: 250 x 188
### E02.1.3. Quarry Tile

- **Type:** Style 1
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** Daltile
- **Color:** Earth tones
- **Finish:** Matte, slip resistant
- **Model #:** N/A
- **Other:** Use in commercial kitchen flooring.

UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling  

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### E02.1.4. Ceramic Tile

- **Type:** Style 1 Porcelain
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** Daltile
- **Color:** Earth tones
- **Finish:** Matte, slip resistant
- **Model #:** Porcelain tile
- **Other:** Use in high traffic areas. Epoxy grout is recommended.

UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling  
<table>
<thead>
<tr>
<th>Type</th>
<th>Style 2 Ceramic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to</td>
<td>Group 1 Group 2 Group 3 Group 4 Other</td>
</tr>
<tr>
<td>Mfr</td>
<td>Daltile</td>
</tr>
<tr>
<td>Color</td>
<td>Earth tones</td>
</tr>
<tr>
<td>Finish</td>
<td>Matte, slip resistant</td>
</tr>
<tr>
<td>Model #</td>
<td>Ceramic tile</td>
</tr>
<tr>
<td>Other</td>
<td>Use in low traffic area toilet rooms.</td>
</tr>
</tbody>
</table>

UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling

E02.1.5. Resilient Floor

<table>
<thead>
<tr>
<th>Type</th>
<th>Style 1 Stair Treads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to</td>
<td>Group 1 Group 2 Group 3 Group 4 Other</td>
</tr>
<tr>
<td>Mfr</td>
<td>Roppe</td>
</tr>
<tr>
<td>Color</td>
<td>Neutral tones</td>
</tr>
<tr>
<td>Finish</td>
<td>Factory</td>
</tr>
<tr>
<td>Model #</td>
<td>Raised design rubber tread</td>
</tr>
<tr>
<td>Other</td>
<td>Stair treads material</td>
</tr>
</tbody>
</table>

UFGS: Section 09 65 00 Resilient Flooring
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 65 00.pdf
E02.1.6. Carpet

Type: **Style 1**

- Applies to: [ ] Group 1 [ ] Group 2 [ ] Group 3 [ ] Group 4 [ ] Other
- Mfr: Mohawk Group
- Color: Neutral multi-colored tones/patterned/solid
- Finish: Yarn: Nylon 6 or 6.6/cut pile or loop pile
- Model #: Broadloom, 6’ wide rolled, carpet tiles, entry walk-off carpet
- Other: N/A

UFGS: UFGS 09 68 00 Carpeting
http://www.wbdg.org/FFC/DOD/UFGS/UFGS_09_68_00.pdf

Type: **Style 2**

- Applies to: [ ] Group 1 [ ] Group 2 [ ] Group 3 [ ] Group 4 [ ] Other
- Mfr: Mohawk Group
- Color: Earth tones
- Finish: Factory
- Model #: Broadloom, residential loop, “Smartstrand”
- Other: N/A

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
E03. Walls

Comply with Air Force Corporate Standards for Walls:
http://afcfs.wbdg.org/facilities-interiors/walls/index.html

E03.1. Wall Materials

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

- **Primary:** Brick (or other as approved by the BCE)
- **Secondary:** Gypsum board (painted)
- **Tertiary:** Ceramic tile (restrooms)

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

- **Primary:** Brick
- **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:** N/A
- **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. Follow UFC 3-450-01 (Vibration and Noise Control) for acoustic design issues including speech privacy, sound isolation or sound masking.

2. Select and apply paint with sheens (gloss levels) appropriate for the application following UFGS Section 09 90 00 Paints and Coatings.

3. Provide ceramic tile on wet walls of kitchens, toilet rooms, locker rooms, etc., in all facility groups.

4. Neutral split-face or ground-face integrally colored block with a clear sealer may be used in Group 3. Do not paint block.

5. Provide rubber base on drywall partitions in Groups 1 and 2.

6. Hardwood base may only be used in Group 1 as approved on a case basis.

7. Hardwood chair rails / bumper rails 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.

8. Decorative moldings may be used only in Group 1 when approved on a case basis.

9. Corner guards are permitted only 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 brushed finish may be judiciously used in Group 3.

10. Group 4 may use painted composite wood base.

11. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

**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

Type:  Stucco Over CMU, Concrete or Sheathing

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

Mfr:  Local (TBD)

Color:  Light Beige

Finish:  Light texture

Model #: Three-coat cementitious system

Other:  Ground face concrete block may only be used in Group 3 when approved

UFGS:  Section 04 20 00 Unit Masonry
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 04 20 00.pdf

E03.1.3. Ceramic Tile
☐ Applicable  ☑ N/A  Number of base standards 1

Type:  Style 1

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

Mfr:  Daltile

Color:  Earth tones

Finish:  Gloss, Semi-gloss

Model #: Ceramic wall tile

Other:  Located on wet walls in restrooms

UFGS:  Section 09 30 10 Ceramic, Quarry, and Glass Tiling
### E03.1.4. Gypsum Board

- **Type:** Style 1
- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr.:** US Gypsum
- **Color:** Solid Earth tone colors
- **Finish:** Paint (Sheen per UFGS)
- **Model #:** Tapered edge
- **Other:** N/A

**UFGS:** Section 09 29 00 Gypsum Board
- [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 29 00.pdf](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](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 90 00.pdf)

### 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:

### E04.1. Ceiling Materials
Facility Group 1 ceiling materials shall be as follows.

<table>
<thead>
<tr>
<th>Primary</th>
<th>Exposed Framing (Roof / Floor Structure Above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary</td>
<td>Grid and Acoustical Tile</td>
</tr>
<tr>
<td>Tertiary</td>
<td>Gypsum Board (Painted)</td>
</tr>
</tbody>
</table>

Facility Group 2 ceiling materials shall be as follows.

<table>
<thead>
<tr>
<th>Primary</th>
<th>Exposed Framing (Roof / Floor Structure Above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary</td>
<td>Grid and Acoustical Tile</td>
</tr>
<tr>
<td>Tertiary</td>
<td>Gypsum Board (Painted)</td>
</tr>
</tbody>
</table>

Facility Group 3 ceiling materials shall be as follows.

<table>
<thead>
<tr>
<th>Primary</th>
<th>Exposed Framing (Roof / Floor Structure Above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary</td>
<td>Exposed Framing (Roof / Floor Structure Above)</td>
</tr>
<tr>
<td>Tertiary</td>
<td>Gypsum Board (Painted)</td>
</tr>
</tbody>
</table>

Facility Group 4 ceiling materials shall be as follows.

<table>
<thead>
<tr>
<th>Primary</th>
<th>Gypsum Board (Painted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary</td>
<td>N/A</td>
</tr>
<tr>
<td>Tertiary</td>
<td>N/A</td>
</tr>
</tbody>
</table>

1. Accent ceiling materials such as metal, wood, and rapidly renewable may be used in Group 1 as approved on a case basis.

2. Follow UFC 3-450-01 (Vibration and Noise Control) for acoustic design issues including speech privacy, sound isolation or sound masking.

3. 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: Yes  N/A  Number of base standards: 1

- **Type:** Style 1
- **Applies to:** Group 1, Group 2, Group 3
- **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](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

Type:  Style 1

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

Mfr: Armstrong

Color: White

Finish: Factory

Model #: 2’x2’ Tegular with reveal edge and fine texture, grid 15/16”

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

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

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
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

E05. Doors and Windows
Comply with Air Force Corporate Standards for Doors and Windows:

E05.1. Doors and Windows and Frames Materials
Facility Group 1
door (frame) and window frame materials shall be as follows.
Primary: Aluminum, Clear Anodized
Secondary: Hollow Metal (Painted)
Tertiary: N/A

Facility Group 1
door (leaf) materials shall be as follows.
Primary: Hardwood Veneer
Secondary: Hollow Metal (Painted)
Tertiary: N/A

Facility Group 2
door (frame) and window frame materials shall be as follows.
Primary: Aluminum, Clear Anodized
Secondary: Composite Solid Core
Tertiary: N/A

Facility Group 3
door (frame) and window frame materials shall be as follows.
Primary: Hollow Metal (Galvanized, Painted)
Secondary: Hollow Metal (Galvanized, Painted)
Tertiary: N/A

Facility Group 3
door (leaf) materials shall be as follows.
Primary: Hollow Metal (Galvanized, Painted)
Secondary: Hollow Metal (Galvanized, Painted)
Tertiary: N/A

Facility Group 4
door (frame) and window frame materials shall be as follows.
Primary: Hardwood Veneer
Secondary: Hollow Metal (Painted)
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. Hardwood casings may be provided over metal frames in Group 1 as approved on a case basis.
2. Paneled textured doors are preferred in Group 4.
3. Do not use hollow-core wood doors.
4. Generally match original hardware in renovations.
5. 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

- Type: **Style 1**
- Applies to: 
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- Mfr: Kawneer
- Color: Clear anodized
- Finish: Factory
- Model #: InFrame Interior Framing, (2x4 nominal framing)
- Other: Satin stainless steel hardware

**UFGS:**
- Section 08 41 13 Aluminum-Framed Entrances and Storefronts
  - [PDF](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 41 13.pdf)
- Section 08 71 00 Door Hardware
  - [PDF](https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf)

---

E05.1.2. Hollow Metal

- 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
  - [PDF](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 11 13.pdf)
- Section 08 71 00 Door Hardware
  - [PDF](https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf)
<table>
<thead>
<tr>
<th>Type: Steel Frames</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to: Group 1  Group 2  Group 3  Group 4  Other</td>
</tr>
<tr>
<td>Mfr: Steelcraft</td>
</tr>
<tr>
<td>Color: Neutral colors</td>
</tr>
<tr>
<td>Finish: Paint (Sheen per UFGS)</td>
</tr>
<tr>
<td>Model #: Hollow metal, frame grouted solid</td>
</tr>
<tr>
<td>Other: Satin stainless steel hardware</td>
</tr>
</tbody>
</table>

UFGS: Section 08 11 13 Steel Doors and Frames  
Section 08 71 00 Door Hardware  
https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf

---

**E05.1.3. Wood**

<table>
<thead>
<tr>
<th>Applicable  N/A  Number of base standards 2</th>
</tr>
</thead>
</table>

**Type:** Style 1, Administrative

<table>
<thead>
<tr>
<th>Applies to: Group 1  Group 2  Group 3  Group 4  Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mfr: Simpson</td>
</tr>
<tr>
<td>Color: Natural hardwood veneer</td>
</tr>
<tr>
<td>Finish: Clear Sealer, satin (aqueous)</td>
</tr>
<tr>
<td>Model #: 3’x7’x 1 ¾”, solid core</td>
</tr>
<tr>
<td>Other: Satin stainless steel hardware, Glass lites may be used. Stained birch veneer face, 5 ply construction, rotary cut finish.</td>
</tr>
</tbody>
</table>

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:

**E06.1. Casework Materials**

1. Select casework systems and materials considering durability, maintenance requirements and LCCA.

2. Natural stone and cast stone countertops may only be used in Group 1 with approval on a case basis.

3. Metal cabinets and countertops shall be provided in heavy-use operations and in Group 3.

4. Refer to AFCFS for approved materials.

5. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.
## E06.1.1. Plastic Laminate

**Applicable:** Yes  
**N/A:** No  
**Number of base standards:** 1

<table>
<thead>
<tr>
<th>Type:</th>
<th><strong>Style 1, Low Use Areas</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
<td></td>
</tr>
</tbody>
</table>
| Group 1 | [ ]  
| Group 2 | [X]  
| 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. |

**UFGS:**  
Section 06 41 16.00 10 Plastic-Laminate-Clad Architectural Cabinets  

## E06.1.2. Solid Polymer Surface

**Applicable:** Yes  
**N/A:** No  
**Number of base standards:** 1

<table>
<thead>
<tr>
<th>Type:</th>
<th><strong>Style 1, High Use Areas</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
<td></td>
</tr>
</tbody>
</table>
| Group 1 | [X]  
| Group 2 | [X]  
| Group 3 | [X]  
| Group 4 | [ ]  
| Other | [ ] |
| Mfr: | Corian |
| Color: | Medium Earth tones and neutral tones |
| Finish: | Light textured |
| Model #: | Solid Surface |
| Other: | Faces and edge banding |

**UFGS:**  
Section 12 36 00 Countertops  
E06.1.3. Rapidly-Renewable Products

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

---

E06.1.4. Metal

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

---

E06.1.5. Other

[ ] Applicable [ ] N/A

---
E06.2. Countertop Materials

E06.2.1. Plastic Laminate

Type: **Style 1, Low Use Areas**

Applicability: Yes

- 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: Only use rounded half or full bullnose and integral backsplash. Do not use plastic laminate edge banding on front edges.

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

---

E06.2.2. Solid Polymer Surface

Type: **Style 1, High Use Areas**

Applicability: Yes

- 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

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

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

Number of base standards 1

Type: 

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

Mfr: Local (TBD)

Color: Natural stainless steel

Finish: Mill

Model #: Custom fabricated countertoops

Other: Provide integral fronts, sides and backsplash

UFGS: Section 12 31 00 Manufactured Metal Casework

http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 31 00.pdf

E06.2.6. Other

Applicable

Number of base standards 1

E07. Furnishings

Comply with Air Force Corporate Standards for Furnishings:

http://afcfs.wbdg.org/facilities-interiors/furnishings/index.html

E07.1. Durability and Serviceability

Comply with AF Corporate Standards for Durability and Serviceability:


E07.2. Accessories

Comply with AF Corporate Standards for Accessories:


1. Comply with AFCFS.

E08. Interior Signs

Comply with Air Force Corporate Standards for Interior Signs:

http://afcfs.wbdg.org/facilities-interiors/interior-signs/index.html

E08.1 Types and Color
Comply with Air Force Corporate Standards for Types and Color:

E08.2. Interior Signs Materials

1. Natural stone, masonry and cast stone signs may only be used in Group 1 with approval on a case basis.

E09. Lighting, Power and Communication


E09.1. Functionality and Efficiency

Comply with Air Force Corporate Standards for Functionality and Efficiency:

E09.2. Types and Color

1. Comply with AFCFS.
F. APPENDIX - Facility Districts

- Applicable
- N/A

Comply with Air Force Corporate Standards for Facility Districts:  
http://afcfs.wbdg.org/facility-districts/index.html

Facilities Districts Overview Map:

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.
Name of District: Basewide Standards

Map of District

JBPHH-HICKAM DISTRICTS MAP

LEGEND
1 Basewide
2 Flightline Southside
3 Family Housing

Photos for each facility group within the Facility District as applicable.

<table>
<thead>
<tr>
<th>Group</th>
<th>Applicable</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FACILITY DISTRICTS
JBPHH Hickam is divided into districts that align with land use zones as defined in the Installation Development Plan. Each district has designated uses that support the base’s operations. Generally match adjacent facilities in new construction to promote architectural compatibility throughout the installation. Please refer to Section D03.2. and contact the 647th Civil Engineer Squadron for additional information. A brief description of each district follows.

1. Basewide
Facilities in the Basewide District should continue to be pedestrian in scale. Application of the installation prevailing architectural theme, contemporary vernacular, should be implemented during major renovations or new construction as appropriate. Facilities in this district are administrative or community oriented, should generally match adjacent buildings to ensure architectural compatibility and shall follow standards for Facility Group 1 and 2 as defined in this IFS.

2. Flightline Southside
The Flightline Southside District includes facilities that are industrial in nature and may support flightline operations. Uses may 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. Family Housing
The Family Housing District consists of detached single family and multi-family residential units occupied by enlisted and officer families. This area is currently under a housing privatization contract, but housing shall follow standards for Facility Group 4 as defined in this IFS.

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 these areas requires prior coordination and approval from the 647th Civil Engineer Squadron.

G. APPENDIX - References
Comply with Air Force Corporate Standards:
http://afcfs.wbdg.org/index.html

Note: The below listed Supplementary Documents are provided as part of this IFS and shall become fully part of the IFS. If there are any discrepancies between the requirements of this IFS and the Supplementary Documents, the IFS shall govern.

647th CIVIL ENGINEER SQUADRON
JBPHH Hickam IFS Painting Guidelines