Joint Base Charleston IFS

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A. OVERVIEW

Comply with Air Force Corporate Standards for Overview:
http://afcfs.wbdg.org/index.html

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

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

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

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

1. Conformance to Air Force Corporate Facilities Standards (AFCFS) and Installation Facilities Standards (IFS) are required by Air Force Instruction (AFI) 32-1023 and Air Force Memorandum. Please refer to the AFCFS website for links to documentation on current policy.

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

Application of DoD and Air Force Facilities Criteria

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

References
- IFS replaces the Architectural Compatibility Plan

Installation Setting
- IDP provides demographic, climatic and other data

IFS: Component Plan of the IDP
IDP Describes the Installation Setting
1. The Base Civil Engineer is responsible for maintaining Installation Facilities Standards (IFS) as a Component Plan of the base's Installation Development Plan (IDP).

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

- **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

![Preserved Open Space](image)

- **Site Plan Graphic**
- **Roadway Improvements Site Plan**
- **Housing Development Site Plan**

1. Maintain this Installation Facilities Standards (IFS) as a Component Plan of the base’s Installation Development Plan (IDP).

2. All installation elements, site development systems, facilities exteriors, and facilities interiors shall follow the basewide standards in this IFS. Any exceptions to the basewide standards are listed in Appendix F for each Facility District.
The city of Charleston began operating a small airfield in 1928. During the 1930s operations expanded, and the federal government assisted with modernization. Additional improvements were made by the Works Progress Administration. By the end of the 30s, the U. S. Army Air Corps began a buildup of bases in preparation for war. At Charleston, this included buildings and lengthening of runways.

The next day, the War Department assumed de facto control of the airport. However, they continued to allow Delta and Eastern airlines to operate from the airfield.

On March 23, 1942, approximately three months after taking control, the War Department signed a lease with the City of Charleston; formally activating and renaming, Charleston Municipal Airport, as Charleston Municipal Airport, First Air Force (a reference to the joint use).

Approximately seven months later, the name was shortened to Charleston Army Air Base, and then to Charleston Army Air Field on June 15, 1943. At the time of occupancy, Charleston Municipal Airport consisted of 732 acres, two runways and several buildings.

Later in 1942, the 16th Antisubmarine Squadron, flying B-34 Lexington bombers, joined the fledgling arsenal of aircraft. Their mission was to provide defense of the eastern seaboard from possible attack by German submarines.

By 1943, the base served primarily as an air depot training station, providing the final phase of training to service groups and air depot groups departing for the war overseas. In September 1943, the base saw a mission change. It now was responsible for the final phase of B-24 Liberator training.

In December 1943, the 454th Bombardment Group was the first group to complete their training before being transferred to European Theater of Operations. The same month, the 400th Bombardment Group arrived but their mission was to serve as a replacement training unit rather than an operational unit. Also, by 1943, the base had grown from 732 acres to over 2,084 acres and had spent over $12 million to build new facilities and other airfield improvements.

By 1944, with the defeat of Germany, the need for B-24 crews had diminished considerably. However, the need for air transport crews grew. So, on June 1, 1945, the base was transferred to Air Transport Command and began C-54 Skymaster crew training. That mission was short lived, ending in late August 1945 after the surrender of Japan and the end of hostilities.

A little known fact about Charleston Army Air Field was that it served as a prisoner of war camp. German prisoners were used as manual labor on base and as farm labor in several of the surrounding communities.

On April 25, 1946, as part of the massive postwar drawdown, Charleston Army Air Field was officially placed in a surplus status. Soon after, the City of Charleston requested that the field, which originally had been leased to the U.S. Army for $1 per year, be returned to the municipality. In 1947, the city council approved the construction of a new civilian air terminal and on October 19, 1948, the former Army Air Field was officially returned to the City of Charleston.

After a few years of operating as a civilian airport and the advent of the Cold War, more changes occurred. Congress awarded the Air Force a $28 million public works package to begin troop carrier operations out of Charleston.

Construction began in 1952 and, in 1953; the facility was named the Charleston Air Force Base. In early 1953, the 456th Troop Carrier Wing arrived at Charleston. The base was operational with the subsequent arrival of C-119 Flying Boxcars. In 1954 the 168th Air Transport Group arrived and they later received their first C-54 Skymaster transport plane. The base came under command of the Military Air Transport Command (MATS) and became the terminus for all C-54 airlifts to Europe and the Middle East.

During the Cold War, Congress provided additional funds for troop carrier operations out of Charleston's airport. C-141 Starlifters were brought to Charleston, and the 437th Military Airlift Wing took command in 1966. The base came under the 437th Airlift Wing in 1992. The base has remained an alert site for fighter-interceptor aircraft.

The Base Realignment and Closure list in 2005 resulted in Charleston AFB becoming a joint base with the nearby Naval Weapons Station. Joint Base Charleston became fully operational in 2010 with the installation managed by the Air Force. As of 2016, there are more than 23,000 active-duty, reserve and civilian personnel.
B01.1.3. Future Development

☐ 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

Aerial of Joint Base Charleston and Surroundings


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

☐ Applicable  ☐ N/A  Large graphics do not apply

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

1. Develop and evolve a hierarchical transportation network of arterial, collector and local streets following UFC 3-201-01 and its industry references.

2. Provide consistent functionality throughout the installation and a level of visual quality relating to the adjacent Facility Group number.

3. Routes along facilities in Group 1 may have materials, finishes and features with a higher visual quality than Groups 2, 3 and 4. Reduce maintenance requirements by installing highly durable materials and finishes in routes along Group 3 industrial facilities.

4. Special routes may have a visual quality comparable to those along facilities in Group 1.

5. Create and maintain arterials with two lanes of traffic in each direction with landscaped or paved medians as applicable to the local climate and adjacent facility group designation / land use.

6. Minimize stops and turns along arterials. Eliminate on-street parking along arterials and collector streets.

7. Connect arterials to local streets with appropriately scaled collector streets.

8. Provide appropriate landscape setbacks and pedestrian buffers along all streets.

9. Minimize and consolidate curb cuts along streets.

10. 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. Increase landscape setbacks along evacuation routes.

2. Stops and turns should be minimized and 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 foot 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

- **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

![Collector Streets graphic](image-url)

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

1. 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.

2. 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.
3. Signs, plantings and street lighting should reinforce the designation of “collector” street.

**B02.1.3. Local Streets**

- **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

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![Diagram of Local Streets](image)

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

---

1. Provide sidewalks on at least one side of collector streets and both sides of local streets where functionally required. Buffers are preferred but not required on collector streets.

2. On street parking may be allowed following UFC industry references.
3. Signs, plantings and street lighting should reinforce the designation of "local" street.

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

B02.1.4. Special Routes

☐ 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

![Divided Street with Security Elements](image)

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

B02.2. Hierarchy of Intersections

☐ Applicable  ☐ N/A  Large graphics do not apply

☐ Applicable  ☐ N/A  Small graphics do not apply

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. Provide an informal grouping of low lying native ground cover and shrubs with trees as a backdrop at all four corners. Monuments and static displays may be integrated into arterial intersection designs.
1. Provide an informal grouping of low lying native ground cover and shrubs with trees as a backdrop at all four corners.
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

[Images of Collectors graphics]

1. Provide an informal grouping of low lying native ground cover and shrubs with trees as a backdrop at all four corners.

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

[Images of Special Intersections graphics]

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

- Consistently maintain open space buffers following B03.2.3. Preserves.
- Refer to C06.1.7. Streetscape Landscaping for planting and screen wall requirements along street frontage.

B02.2.6. Sight Lines

- Provide adequate sight lines for an effective and safe traffic operation per 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 3

1. Emulate the streetscape area's pre-development hydrology using passive and active design features to help sustain the adjacent regionally appropriate landscape. Coordinate with the base Stormwater Management Plan.

2. Employ systems, materials and techniques to maximize streetscape sustainability. Consider pervious paving and reflectivity of surfaces appropriate for the local climate.

3. Install at-grade curbing and/or raised-profile curb and gutter as applicable to direct stormwater to bioswales and rain gardens as source water for vegetation. Do not paint concrete curbing.

4. Provide all on-site utility service lines and equipment below grade when adjacent to Facility Group 1. In routes along Group 2, 3 and 4, when mounting elements such as utility cabinets, communications equipment and water valves above grade is unavoidable, paint these consistently and provide visual screening following Installation Facilities Standards (IFS).

5. Provide traffic control devices including access control point/entry control facility signs, speed limit signs and street name signs following the current edition of the Manual on Uniform Traffic Control Devices (MUTCD) per UFC 3-120-01.

6. 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**: Yes  
- **N/A**: Yes  

Large graphics do not apply

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

Insert Paving graphic

- **Size image to**: 250 pixels width x 188 pixels height

Click here to insert image

- **Bitumenous Paving**
- **Functionally Required Concrete Paving**
- **Colored Concrete Paving at Crosswalk**

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**

- **Applicable**: Yes  
- **N/A**: Yes  

Large graphics do not apply

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

Insert Curb and Gutter graphic

- **Size image to**: 250 pixels width x 188 pixels height

Click here to insert image

- **Standard Curbing**
- **Mountable at Parking Areas and Group 4**

1. Curb all parking, access roads and streets (except remote/isolated).

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 no use asphalt curbs.
B02.3.3. Utility Service Elements

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

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

B02.3.5. Street Lighting

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

B02.3.6. Other
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  1
- **Applicable**  N/A  Select number of graphics / images (small: 250 px x 188 px) to insert  3

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Ceremonial Plaza at Group 1

Brick Plaza at Group 1

Concrete Plaza at Group 2

Rock Paving at Display Park
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.

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**B03.1.1. Paved Plazas**

- **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

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

2. Pavers shall match the color of pavers used on adjacent sidewalks using base standard range of red. Bricks used on plazas shall typically be 4" x 8" size. Unless otherwise directed, use a basket weave pattern for pavers.

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

- [ ] 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. Relate new sculpture, markers and statuary to the base's regional vernacular architectural 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

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

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

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 which match those respective design elements present at adjacent buildings.

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

11. Maintain currently 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.
B03.2.1. Parade Grounds

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

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

3. Prohibited picnic pavilion materials include wood, 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

![Water Feature as an Amenity](image1)

![Native Grasses and Trees](image2)

![Evergreen and Deciduous Species](image3)

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

![Brown Chain Link Fencing](image4)

![Brick and Metal Fence at Group 1](image5)

![Active Barriers at Gate](image6)

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  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

Coordinated Services, Access and Parking
1. Collect documentation to validate approvals and completion of the NEPA process.

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

3. Promote integrated design with on-site solutions such as engineered small-scale hydrologic controls verses 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, 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  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

DRIVING FACTORS

- Optimal solar orientation of the building
- Main entrance from Pepperell street
- Addressing the orientation of the future AOC
- Maximize the daylight & desirable views
- Siting existing vegetation and trees
- Separation between staff/office/military entrance
- Visibility of the new facility from main roads
- Meet the required AFPP standoff distance
- Create a unified campus
- Outdoor healing environment
- Implementation of landscape zones A, B, C & D

CONCEPTUAL DIAGRAM

Conceptual Site Analysis and Site Design Diagram

Local Solar Data

Local Climate 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 for rectilinear CONUS buildings.

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 gain, 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](http://afcfs.wbdg.org/site-development/index.html)

Comply with AF Corporate Standards for Utilities: [http://afcfs.wbdg.org/site-development/utilities/index.html](http://afcfs.wbdg.org/site-development/utilities/index.html)
C02.1. Utility Components

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

Comply with AF Corporate Standards for Parking Areas:
http://afcs.wbdg.org/site-development/parking-areas/index.html
C03.1. Configurations and Design

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

**Standard 90 Degree Configuration at Groups 2 - 3**

- **Small Lot Configuration**
- **Large Lot Configuration**
- **Facility Group 1 Configuration**
1. Evaluate adjacent sites and cost-effectively consolidate parking areas to maximize efficient use; ensure that all areas meet accessibility guidelines.

2. 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 standards while meeting ATFP requirements.

3. 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.

4. Define pedestrian access with approved hardscape and provide shading along the primary path from the parking area to the main entrance of the building.

5. Coordinate suitable landscape or barriers integrated with walls and fences to ensure adequate force protection.

6. Accessible parking spaces shall be marked according to UFC 3-120-01 and its references in ABAAS and the MUTCD.

7. Consider locations and requirements of near term and future electric vehicle charging stations.

8. Designate preferred parking spaces for electric vehicles and carpools near the main entrance.

9. Consider cost-effectively integrating solar photovoltaic arrays into covered parking structures.

10. 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

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

Insert Paving and Striping graphic
Size image to: 250 pixels width x 188 pixels height
Click here to insert image

Facility Group 1 paving materials shall be as follows.
Primary: Asphaltic concrete
Secondary: Concrete
Accent: Permeable pavers

Facility Group 2 paving materials shall be as follows.
Primary: Asphaltic Concrete
Secondary: N/A
Accent: N/A

Facility Group 3 paving materials shall be as follows.
Primary: Concrete where operationally required
Secondary: Asphaltic Concrete
Accent: N/A

Facility Group 4 paving materials shall be as follows.
Primary: Asphaltic Concrete
Secondary: N/A
Accent: N/A

1. All new parking lots in Groups 1 and 2 shall be constructed of asphaltic concrete paving.

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

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

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

5. All parking shall be marked with white stripes of paint or applied vinyl coatings. 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**

☐ Applicable  ☐ N/A  Large graphics do not apply

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

**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. All raised curbs shall be the rolled (mountable) type.

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 car bumpers could contact adjacent items such as poles, signs or pedestrians.
C03.1.3. Internal Islands and Medians

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

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 located 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

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  Large graphics do not apply

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

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 in areas that are not subjected to severe freeze-thaw cycles.

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

Comply with AF Corporate Standards for Sidewalks, Bikeways and Trails:
http://afcfs.wbdg.org/site-development/sidewalks-bikeways-trails/index.html
### C05.1. Circulation and Paving

- **Facility Group 1** sidewalks, plazas, and courtyards paving materials shall be as follows.
  - Primary: Pervious Pavers
  - Secondary: Concrete Edging
  - Accent: N/A

- **Facility Group 2** sidewalks, plazas, and courtyards paving materials shall be as follows.
  - Primary: Pervious Pavers
  - Secondary: Concrete Edging
  - Accent: N/A

- **Facility Group 3** sidewalks, plazas, and courtyards paving materials shall be as follows.
  - Primary: Permeable concrete
  - Secondary: N/A
  - Accent: N/A

- **Facility Group 4** sidewalks, plazas, and courtyards paving materials shall be as follows.
  - Primary: Permeable concrete
  - Secondary: N/A
  - Accent: N/A

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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 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 cars 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: red blend. Pavers used on walks shall typically be 4x8 nominal 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**

- 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. 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**

- Applicable  ☐ N/A  Large graphics do not apply

- Applicable  ☐ N/A  Small graphics do not apply

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
C06.1. Climate-based Materials

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** ☑ 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

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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 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 existing legal or contractual obligations, and prohibit potable-water irrigation in new construction beyond establishment following current DoD and Air Force policy.

C06.1.4. Plant Material Selection
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 lists available from the BCE.

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.

2. Provide irrigation systems in new construction to establish plant materials following "Water for Landscaping" in UFC 1-200-02. Note the climate zone and annual rainfall for the locale.
3. New buildings shall cost-effectively integrate a grey-water reclamation system following UFC 1-200-02, which provides source water for an automatic drip irrigation system; connect adaptive plantings adjacent to facilities to a grey-water irrigation system when available and discontinue the use of potable water for irrigation after the establishment period.

4. Provide irrigation design following UFC 3-201-02. Install drip irrigation products and components following UFGS Section 32 84 24 Irrigation Sprinkler Systems. Match the color of valve box lids to the adjacent ground treatment (i.e. green at turf & native seed areas, brown at wood mulch & rock areas).

5. Life cycle cost-effectively equip irrigation systems to sense soil moisture, rainfall and wind to minimize unnecessary watering; incorporate drip irrigation systems as the primary source.

**C06.1.6. Base Entrance Landscaping**

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

![Preserved Sight Lines](image1)
![Trees as Backdrop for Decorative Fence](image2)
![Ornamental Trees at Gate](image3)

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  6

Insert Streetscape Landscaping graphic
Size image to: 250 pixels width x 188 pixels height
Click here to insert image

Deciduous Trees along Street
Trees and Grasses in Median
Seasonal Color as Accent

Ornamental Grasses
Detached Sidewalk with Grasses
Grasses Used Predominantly at Group 4

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.

3. Where possible, divide main entrances with landscaped traffic medians between entry and exit lanes.

4. Continue the practice of planting street trees to delineate roadways, reduce pavement temperatures and provide shade on sidewalks. Maintain setbacks along evacuation routes greater than the mature height of the tree species.
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

1. Integrate appropriate landscaping elements into parking areas to visually soften the appearance at a minimum rate of ten 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  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  

Ornamental Trees and Shrubs for Screens and as Accents

Vegetative Screening

Trees as an Accent at Main Entrance

Trees Scaled Consistently with Facility
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](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](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. Site furnishings shall be powder coated steel. Generally match the site furniture and color of adjacent facilities and the facility district. Three colors may be used for site furnishings: Riley Green, dark bronze, and black.
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 all Groups and parks shall be powder coated steel.

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 filled, 6-inch or 8-inch diameter steel pipe with a domed top. Paint to blend with adjacent equipment or surfaces. Other bollards in high visibility areas shall be black anodized aluminum. Any painted bollards shall complement the adjacent wall surface. Similarly designed, illuminated bollards may be used as approved on a case basis to enhance pedestrian areas, pathways and building entrances.

8. Locate architecturally coordinated containers for recycling, litter, ash, vending, etc., to minimize visual clutter and so they are not 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. Flagpoles using approved materials may be installed at locations designated by IFS, and in accordance with AFI 34-1201.

11. Refer to the Overview Section “Facility Hierarchy” topic of 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. The design shall be approved by the BCE.

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 normally permitted only in Group 1. These would be brick walls with a precast cap if within 15 feet of a building. In formal settings, these brick walls can have ornamental iron inserts. If the screen wall is away from a building, it should be brick columns with a ‘shadowbox’ treated-wood fence insert.

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. Decorative metal fencing may be used for high visibility Group 1 facilities. Ornamental railing on walls and fences shall be dark bronze.

17. Do not use chain-link fencing at Group 1 or 2 facilities. Vinyl-clad chain-link fencing shall be installed at the base boundary of the housing area and where needed at Group 3 facilities. Limit the use of barbed-wire outriggers on chain-link fencing at industrial sites, unless required for additional security or protection of assets.

18. Wood fencing may be used in Facility Group 4 and in recreation areas following IFS for material and finish when there is sustained periodic maintenance.

19. Provide trash dumpster enclosures for Group 1, 2 and 4 using brick walls with a precast cap. Block and metal can be used for Group 3. Match adjacent facilities where applicable. All gates shall be metal factory finished dark bronze. Group 3 dumpsters require no screening if out of view.

20. Specify screen wall materials and finishes that do not require painting or maintenance beyond periodic cleaning.
21. Picnic tables and seating for all Groups shall be prefinished metal. Generally limit picnic tables, barbeque grills and drinking fountains to lodging, dormitories, housing areas, parks and recreation areas.

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

23. 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.

24. 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, Other
- **Mfr:** Ultra Play Systems, Inc.
- **Color:** Black
- **Finish:** Factory
- **Model #:** 629H
- **Other:** N/A
- **UFGS:** N/A
**Natural Gas**

- **Type:** Natural Gas
- ** Applies to:** [ ] Group 1  [x] Group 2  [ ] Group 3  [ ] Group 4  [x] 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

**C07.2.2. Benches**

- **Applicable** [x]  [ ] N/A  Number of base standards 2

- **Type:** Metal
- ** Applies to:** [ ] Group 1  [x] Group 2  [x] Group 3  [x] Group 4  [ ] Other
- **Mfr:** Victor Stanley, Inc.
- **Color:** Dark bronze
- **Finish:** Powder coat
- **Model #:** Steelsites RB-28
- **Other:** N/A

**UFGS:** N/A
**Low Brick Wall**

- **Type:** Low Brick Wall
- **Mfr:** Custom
- **Color:** Charleston brick, off-white precast
- **Finish:** Smooth
- **Model #:** N/A
- **Other:** Wall may have precast concrete cap; 18”+/ - high

**C07.2.3. Bike Racks**

- **Type:** Ribbon Type
- **Mfr:** Columbia Cascade
- **Color:** Black
- **Finish:** Factory
- **Model #:** Cycloops 2170-E-C
- **Other:** N/A

**UFGS:** N/A
Type: **Bollard Type**

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

Mfr: Columbia Cascade

Color: Black

Finish: Factory

Model #: Bollard 2173

Other: N/A

UFGS: N/A

---

**C07.2.4. Bike Lockers**

- Applicable
- N/A

---

**C07.2.5. Bollards**

- Applicable
- N/A

Number of base standards: 3

Type: **Lighted Round Flat Top**

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

Mfr: Kim Lighting

Color: Bronze or Black

Finish: Aluminum

Model #: VRB3 with LED Kit

Other: Where approved by BCE for pedestrian areas and building entrances. Round top designs may be used to match existing

UFGS: N/A
### Force Protection, Steel

<table>
<thead>
<tr>
<th>Applies to:</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Group 4</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mfr:</td>
<td>Local</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color:</td>
<td>Galvanized, Bronze or Black</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finish:</td>
<td>Powder coated</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model #:</td>
<td>6&quot; diameter steel with concrete fill, domed top</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>8&quot; diam. where required for extra security; for bollards protecting against vehicle damage to facility equipment, apply reflective tape</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UFGS:</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

### Building or Equipment Protection, Steel or Aluminum

<table>
<thead>
<tr>
<th>Applies to:</th>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Group 4</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mfr:</td>
<td>Similar in size and appearance to lighted bollards with domed top</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color:</td>
<td>Bronze or Black</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finish:</td>
<td>Steel, or Aluminum</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model #:</td>
<td>TBD, 6&quot; diameter</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>As approved by BCE. For bollards protecting against vehicle damage to facility equipment, apply reflective tape</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>UFGS:</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**C07.2.6. Bus Shelters**

- **Applicable**: Yes
- **N/A**: No
- **Number of base standards**: 1
- **Image Tool**: 250 x 188

**Type**: Brick and Glass with Metal Roof

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

**Mfr**: TBD

**Color**: Charleston brick, Riley Green roof.

**Finish**: Smooth

**Model #:** TBD

**Other**: Provide concrete slab, Select integrated or secured bench.

**UFGS**: N/A

**C07.2.7. Drinking Fountains**

- **Applicable**: Yes
- **N/A**: No
- **Number of base standards**: 1
- **Image Tool**: 250 x 188

**Type**: Pedestal

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

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

**Color**: Black powder coat

**Finish**: Factory

**Model #:** MDF 440 SMSS

**Other**: Accessible

**UFGS**: N/A
### C07.2.8. Dumpster Enclosures / Gates

**Type:** Brick and Steel

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

**Mfr:** Local

**Color:** Charleston brick, dark bronze gates

**Finish:** Face brick, powder coated gates

**Model #:** Brick with precast cap

**Other:** Gates to be dark bronze factory finished metal. Provide bollards to protect enclosure during dumpster servicing activity. Provide concrete pads and concrete access pads in front of enclosure doors.

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

---

**Type:** Block and Steel

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

**Mfr:** Local

**Color:** Match adjacent buildings or equipment

**Finish:** Split face block, powder coat steel

**Model #:** Metal can be similar to Style E fence

**Other:** Provide asphalt or concrete pads within and in front of the enclosure. Use gates as above if fairly visible. No gate or enclosure is required if in remote, out-of-sight area.

**UFGS:** N/A
C07.2.9. Fencing

Applicable

Type: **Style A Barrier: High Security, High Visibility**

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

- Mfr: Custom

- Color: Dark bronze or black to match local standard

- Finish: Powder coat

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

- Other: Charleston brock piers may be used

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

---

Type: **Style B Barrier: High Security, Medium Visibility**

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

- Mfr: Custom

- Color: Dark bronze or black to match local standard

- 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: High Security, Low Visibility

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

**Mfr:** General Wire Company

**Color:** Dark bronze or black

**Finish:** Vinyl clad galvanized steel

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

**Other:** Limit use of barbed wire outriggers at industrial sites unless required for additional security or protection of assets

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

---

### Style D Barrier: Low security, High visibility

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

**Mfr:** Custom

**Color:** Red brick blend, dark bronze fencing

**Finish:** Face brick, powder coated metal

**Model #:** Brick Piers with steel posts, rails and pickets

**Other:** Brick: 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
**Style E Barrier: Low security, High visibility**

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

Mfr:  Custom

Color:  Red brick blend, dark brown fencing

Finish:  Powder coated metal

Model #:  Brick Piers with steel posts, rails and alternating panels

Other:  Brick: 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

---

**Style F Barrier: Very low security, high visibility**

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

Mfr:  Custom

Color:  Integral mixed Davis Colors: dark warm gray

Finish:  Factory

Model #:  Post and rail

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

UFGS:  SECTION 03 33 00 Cast-In-Place Architectural Concrete
### Style G Barrier (Alternate): Very low security, high visibility

**Type:** Style G Barrier (Alternate): Very low security, high visibility

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

**Mfr:** James Hardie Building Products, Inc.

**Color:** Off white and Earth tones

**Finish:** Factory

**Model #:** Post and rail with vertical boards

**Other:** Posts: Height as required, 8’ max. spacing; apply boards to outside face.

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

### C07.2.10. Flagpoles

<table>
<thead>
<tr>
<th>Applicable</th>
<th>N/A</th>
<th>Number of base standards</th>
<th>1</th>
</tr>
</thead>
</table>

**Type:** Aluminum

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

**Mfr:** Eder Flag

**Color:** Natural aluminum

**Finish:** Brushed satin lustre

**Model #:** ECL30 IH, internal halyard

**Other:** 5” butt dia. 33’ H (30’ exposed), concrete base

**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: Metal Litter and Ash Receptacle**

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

Mfr: Victor Stanley

Color: Dark bronze

Finish: Factory powder coat

Model #: Concourse RS-10 for litter, Concourse FC-6 for ash

Other: High density plastic liner, keveling feet, stainless steel ashtray

UFGS: N/A

C07.2.13. Picnic Tables

Type: **Recycled Plastic**

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

Mfr: Park Warehouse

Color: Cedar slats, black frame

Finish: Standard Finish (Smooth)

Model #: ACPT 16-3

Other: Hexagonal from recycled plastic

UFGS: N/A
Type: **Metal, vinyl coated**

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

Mfr: Belson Outdoors

Color: Green

Finish: Factory powder coat

Model #: 347S-P6

Other: Perforated pattern, in-ground or surface mount w/ engineered slab

UFGS: N/A

---

**C07.2.14. Planters**

Applicable: [X] N/A

Number of base standards: 1

Type: **Precast concrete**

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

Mfr: Materials, Inc.

Color: Weatherstone Gray

Finish: Smooth

Model #: Santa Fe

Other: N/A

UFGS: N/A
C07.2.15. Play Equipment

Applicable: ☑  N/A
Number of base standards 1

Type: **Steel**

- Applies to: [ ] Group 1  [ ] Group 2  [ ] Group 3  [ ] Group 4  [ ] Other
- Mfr: Little Tikes Commercial
- Color: Varies
- Finish: Powdercoated Steel
- Model #: N-R-G Freestyle
- Other: Coordinate with Base Architect

UFGS: N/A

C07.2.16. Screen Walls

Applicable: ☑  N/A
Number of base standards 1

Type: **Brick / Steel**

- Applies to: [ ] Group 1  [ ] Group 2  [ ] Group 3  [ ] Group 4  [ ] Other
- Mfr: Custom
- Color: Red brick blend, dark brown fencing
- Finish: Powder coated metal
- Model #: Brick Piers with steel posts, rails and alternating panels
- Other: Brick: 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

<table>
<thead>
<tr>
<th>Type: Type 1</th>
<th>Type 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to: [ ] Group 1 [ ] Group 2 [ ] Group 3 [ ] Group 4 [ ] Other</td>
<td>[ ] Group 1 [ ] Group 2 [ ] Group 3 [ ] Group 4 [ ] Other</td>
</tr>
<tr>
<td>Mfr: Neenah Enterprises, Inc.</td>
<td>Urban Accessories</td>
</tr>
<tr>
<td>Color: Natural cast iron</td>
<td>Black</td>
</tr>
<tr>
<td>Finish: Cast</td>
<td>Matte</td>
</tr>
<tr>
<td>Model #: 2-Piece, round or square</td>
<td>Chinook</td>
</tr>
<tr>
<td>Other: N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>UFGS: N/A</td>
<td>N/A</td>
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</tbody>
</table>

#### C07.2.18. Other

<table>
<thead>
<tr>
<th>Applicable</th>
<th>N/A</th>
</tr>
</thead>
</table>

### C08. EXTERIOR SIGNS

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 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 3

Building Identification Sign  Traffic Device  Monument Sign

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.

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 actual 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

- **Applicable**  |  **N/A**  |  Large graphics do not apply
- **Applicable**  |  **N/A**  |  Small graphics do not apply

1. Fabricate sign panels from aluminum sheeting with vinyl sign faces and lettering. Sign posts shall be dark bronze anodized aluminum with capped ends in 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.
   - Standard Blue
   - Standard Dark Bronze (also Federal Standard Color 30040)
   - Standard Red
   - Standard Black (non-reflective)
   - Standard White
   - Standard Brown
**Materials and Color Specifications**

- **Type:** Typical Sign Fce

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

- **Mfr:** Custom

- **Color:** Medium bronze

- **Finish:** Matte vinyl

- **Model #:** Aluminum flat sheet

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

---

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

---

**Type:** Typical Sign Post

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

- **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
**Typical Sign Base**

- **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:** Y
- **N/A:** N
- **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

Applicable

Number of base standards 5

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

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

Mfr: Custom

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

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: Provide layout and sizes per UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

---

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

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

Mfr: Custom

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

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: Provide layout and sizes per UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications
Type: **Freestanding Tertiary Sign (Sizes and Uses per UFC)**

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

- **Mfr:** Custom

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

- **Finish:** Powder coat or vinyl sign face

- **Model #:** Aluminum sheet face, extruded aluminum posts

- **Other:** Provide layout and sizes per UFC.

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

---

Type: **Wall Mounted**

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

- **Mfr:** Custom

- **Color:** Medium brown, white lettering

- **Finish:** Satin vinyl applied to aluminum sheet

- **Model #:** Aluminum sheet with vinyl face and vinyl lettering

- **Other:** Provide layout and sizes following UFC.

- **UFGS:** N/A
### Glass Mounted

- **Type:** Glass Mounted
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** Custom
- **Color:** White vinyl lettering
- **Finish:** Matte vinyl
- **Model #:** Machine-cut sheet vinyl
- **Other:** Apply vinyl lettering to glass. Provide sizes following UFC.
- **UFGS:** N/A

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

- **Type:** Street Signs
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** Custom
- **Color:** White reflective lettering on a Standard Green or Brown background
- **Finish:** Powder coat or vinyl sign face
- **Model #:** Aluminum sign face, control arm or pole mounted
- **Other:** Mount 7’ above grade minimum, pictographs and logos are prohibited on street name signs per UFC.
- **UFGS:** Section 05 50 13 Miscellaneous Metal Fabrications
## C08.1.5. Directional and Wayfinding Signs

<table>
<thead>
<tr>
<th>Type</th>
<th>Vehicular</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>Medium brown face, dark bronze posts, white reflective lettering</td>
</tr>
<tr>
<td>Finish</td>
<td>Powder coat or vinyl sign face</td>
</tr>
<tr>
<td>Model #</td>
<td>Aluminum sheet face, extruded aluminum posts</td>
</tr>
<tr>
<td>Other</td>
<td>Conform to the requirements of the MUTCD and its DoD Supplement. Provide types and sizes where required by UFC.</td>
</tr>
</tbody>
</table>

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

### Type: Pedestrian

<table>
<thead>
<tr>
<th>Applies to</th>
<th>Group 1, Group 2, Group 3, Group 4, Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mfr.</td>
<td>Custom</td>
</tr>
<tr>
<td>Color</td>
<td>Medium brown face, dark bronze posts</td>
</tr>
<tr>
<td>Finish</td>
<td>Powder coat or vinyl sign face</td>
</tr>
<tr>
<td>Model #</td>
<td>Aluminum sheet face, extruded aluminum posts</td>
</tr>
<tr>
<td>Other</td>
<td>White vinyl lettering. Provide types and sizes where required by UFC.</td>
</tr>
</tbody>
</table>

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

### C08.1.6. Informational Signs

<table>
<thead>
<tr>
<th>Applicable</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large graphics</td>
<td>do not apply</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Applicable</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small graphics</td>
<td>do not apply</td>
</tr>
</tbody>
</table>

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 background.

3. Hours of operation signs shall have a level of quality equivalent to the Facility Group number.
4. Temporary / Project Signage shall be judiciously placed to avoid visual clutter. Schedule and arrange for the removal of these signs prior to installation.

**C08.1.7. Motivational Signage**

- Applicable  N/A  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

**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  Large graphics do not apply

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

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**

- **Applicable** ☑ N/A  Number of base standards 2

<table>
<thead>
<tr>
<th>Type: Style 1 Rectangular</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to: Group 1 ☑ Group 2 ☑ Group 3 ☑ Group 4 ☑ Other</td>
</tr>
<tr>
<td>Mfr: Hubbell Lighting</td>
</tr>
<tr>
<td>Color: Dark bronze anodized</td>
</tr>
<tr>
<td>Finish: Factory</td>
</tr>
<tr>
<td>Model #: RAR2 Ratio, LED lamp, single arm or dual arm mount</td>
</tr>
<tr>
<td>Other: Follow manufacturer’s recommendations for fixture base.</td>
</tr>
</tbody>
</table>

UFGS: N/A
### Style 2 Historic

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

**Mfr:** TBD

**Color:** Dark bronze anodized

**Finish:** Factory

**Model #:** Match existing in historic areas

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

**UFGS:** N/A

### 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

---

**C09.2.2. Parking Lot Lighting**

- **Applicable:** Yes
- **N/A:** No
- **Number of base standards:** 2
- **Image Tool 250 x 188**

---

**Double-mount**
**Parking Lot Fixture Base**

- **Type:** Parking Lot Fixture Base
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - 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**

- **Type:** Lighted Round Dome Top
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr.:** Kim Lighting
- **Color:** Black
- **Finish:** Aluminum
- **Model #:** VRB1
- **Other:** Where approved by BCE for pedestrian areas & building entrances
- **UFGS:** N/A
**Lighted Square Sloped Top**

- **Type:** Lighted Square Sloped Top
- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr:** Kim Lighting
- **Color:** Platinum Silver
- **Finish:** Aluminum
- **Model #:** VSB1 Square
- **Other:** Where approved by BCE for pedestrian areas & building entrances

**UFGS:** N/A

---

**C09.2.4. Sidewalk Lighting**

- **Applicable:** Yes
- **N/A:** No
- **Number of base standards:** 2

**Rectilinear Cutoff**

- **Type:** Rectilinear Cutoff
- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr:** Hubbell, Kim Lighting
- **Color:** Dark bronze anodized
- **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
### Historic Lighting

<table>
<thead>
<tr>
<th>Type</th>
<th>Historic</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>Match existing</td>
</tr>
<tr>
<td>Finish</td>
<td>Powder coated or anodized</td>
</tr>
<tr>
<td>Model #</td>
<td>Pole mounted with globe</td>
</tr>
<tr>
<td>Other</td>
<td>LED lamp. Mount as recommended by the manufacturer</td>
</tr>
<tr>
<td>UFGS</td>
<td>N/A</td>
</tr>
</tbody>
</table>

#### C09.2.5. Walls / Stairs Lighting

<table>
<thead>
<tr>
<th>Applicable</th>
<th>N/A</th>
<th>Number of base standards 1</th>
<th>Image Tool 250 x 188</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Style 1</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>Vista Lighting</td>
</tr>
<tr>
<td>Color</td>
<td>Dark bronze anodized</td>
</tr>
<tr>
<td>Finish</td>
<td>Smooth</td>
</tr>
<tr>
<td>Model #</td>
<td>Aluminum Step and Brick Lights, 5230 round louvered</td>
</tr>
<tr>
<td>Other</td>
<td>Lamp: LED</td>
</tr>
<tr>
<td>UFGS</td>
<td>N/A</td>
</tr>
</tbody>
</table>

#### C09.2.6. Other

<table>
<thead>
<tr>
<th>Applicable</th>
<th>N/A</th>
</tr>
</thead>
</table>
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
  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

Visitor Center, Main Gate at JB Charleston

Group 2 Architectural Features  Group 3 Materials in High Visibility Area  Group 4 Officer Housing

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

![Image 1](image1.jpg)

![Image 2](image2.jpg)

![Image 3](image3.jpg)

Group 2

![Image 4](image4.jpg)

![Image 5](image5.jpg)

![Image 6](image6.jpg)

Group 3

![Image 7](image7.jpg)

![Image 8](image8.jpg)

![Image 9](image9.jpg)

Group 4

![Image 10](image10.jpg)

![Image 11](image11.jpg)

![Image 12](image12.jpg)
D03.1. Orientation, Massing and Scale

1. Orient new buildings to maximize energy efficiency, passive solar and daylighting potential of the building; narrow buildings oriented along an east-west axis are preferred to minimize heat gain in the summer months and maximize heat gain in the winter months resulting in less overall energy usage.

2. Provide orthogonal geometry for principal building form; angular geometry may be used sparingly for Group 1 and used only for emphasis at specific areas such as building entrances and stairwells.

3. Maintain a human scale and reduce the visual scale of large buildings with sub-massing related to interior functional operations; create consistent form and scale in adjacent buildings with compatible profiles or silhouettes.

4. Building heights shall not be limited; however, building heights over 2 stories shall be considered on a case basis.

5. Combine functions where practical to avoid a proliferation of small, independent structures.

6. Use and coordinate shading devices with orientation and for function.

D03.2. Architectural Character


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

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

4. Reinforce the contemporary adaptation of the regional vernacular as the basewide architectural theme.

5. All facilities shall express sustainability through their orientation, massing, shape, form, materials, and detailing. Provide louvers, fins and other shading devices to control heat gain and glare and to 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 native landscape in brick, block, stucco and powder-coated metals. Refer to wall systems for detailed material listings.

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

3. 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.

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.

Other: Moderate to heavy annual rainfall

---

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

**Wall:** Integral shading features and devices

**Doors:** Recessed are preferred

**Windows:** Limit non-shaded windows; maximize windows on south facades with shading

**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:** Optimize shading devices to provide summer shade and allow winter solar heat gain

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

**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

Type: **Style 1 Aluminum Windows**

- Applies to: [ ] Group 1 [ ] Group 2 [ ] Group 3 [ ] Group 4 [ ] Other
- Mfr: Kawneer (or equivalent)
- Color: Clear (or dark bronze as approved by BCE)
- Finish: Anodized
- Model #: 2x4, awning type
- Other: Provide screens and thermally broken frames.

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

---

Type: **Style 2 Steel Windows**

- Applies to: [ ] Group 1 [ ] Group 2 [ ] Group 3 [ ] Group 4 [ ] Other
- Mfr: Steelcraft (or equivalent)
- Color: Dark bronze
- Finish: Powder coat
- Model #: 2x4 frame, awning or sliding type
- Other: Provide screens and thermally broken frames

UFGS:
### Style 3 Aluminum-clad Wood Windows

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

**Mfr:** Marvin (or equivalent)

**Color:** White or earth tones

**Finish:** Factory

**Model #:** 4" depth, double-hung

**Other:** Provide screens

**UFGS:** Section 08 14 00 Wood Doors

---

### D03.3.3. Thermal Mass

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

**Type:** Style 1 Interior Wall Material

**Mfr:** Custom

**Color:** Beige or Charleston brick

**Finish:** Light texture

**Model #:** Modular face brick

**Other:** N/A

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

**Applicable**

**Number of base standards** 2

| Image Tool 250 x 188 |

<table>
<thead>
<tr>
<th>Type:</th>
<th><strong>Style 1 Wall Devices</strong></th>
</tr>
</thead>
</table>
| Applies to: | ✔ Group 1  ✔ Group 2  ✔ Group 3  ✔ Group 4  Other
| Mfr: | Kawneer (or equivalent) or custom |
| Color: | Clear or 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

<table>
<thead>
<tr>
<th>Type:</th>
<th><strong>Style 2 Wall Devices</strong></th>
</tr>
</thead>
</table>
| Applies to: | ✔ Group 1  ✔ Group 2  ✔ Group 3  ✔ Group 4  Other
| Mfr: | Steelcraft (or equivalent) |
| Color: | Dark bronze |
| Finish: | Factory, to match frames |
| Model #: | Louver, powder coated |
| Other: | Shading device may be attached to frames or structure |

**UFGS:** Section 08 11 13 Steel Doors and Frames
D03.3.5. Renewable Heating/Cooling

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

**Type**: Style 1 Geothermal (Ground Source)

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

**Mfr**: Climate Master (or equivalent)

**Color**: N/A

**Finish**: N/A

**Model #**: Varies

**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**: No
- **Number of base standards**: 1

**Type**: Style 1

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

**Mfr**: Varies

**Color**: Factory

**Finish**: Factory

**Model #**: Flat panel

**Other**: Ground mount or roof mount. If roof mounted, coordinate with roofing manufacturer and utility provider.

**UFGS**: Section 26 31 00 Solar Photovoltaic (PV) Components
## D03.3.7. Solar Thermal System

- **Type:** Style 1
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr.:** TBD
- **Color:** Factory
- **Finish:** Factory
- **Model #:** Flat plate collector
- **Other:** Wall mount or roof mount

**UFGS:** Section 48 14 13.00 20 Solar Liquid Flat Plate & Evac. 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.

Image Tool 250 x 188
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 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. Gabled roof forms are preferred. Cloth awnings may be used only with permission of the BCE.

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 facilities shall be primarily “Charleston” brick. Brick may be used, when appropriate, for lintels, sills, arches or quoins. Architectural precast concrete may be used for lintels, sills, water tables, belt courses and friezes. Insulated metal panels can be used as an accent. Architectural precast walls may be utilized when approved by the BCE. Refer to the Appendix for special requirements of Facility Districts.

3. Group 2 facilities shall be a combination of “Charleston” brick and light, off-white architectural precast concrete, the latter used for lintels, sills, water tables, belt courses and friezes. Burnished CMU may be used as a secondary wall material. Split-face concrete block and ribbed metal sheeting are acceptable for inconspicuous areas. Refer to the Appendix for special requirements of Facility Districts.

4. Group 3 facilities shall be split-face concrete block, ribbed metal sheeting or insulated metal panels. Use brick on all one- and two-story buildings in high-visibility areas. Flightline security walls should be coordinated with the design of adjacent facilities or the immediate context. Refer to the Appendix for special requirements of Facility Districts.

5. Group 4 siding shall be either fiber-cement, brick or a combination. At housing, use trim and accent colors that are compatible with the field colors and that highlight significant building features. Vinyl siding is not permitted per AFCFS. Alternate randomly exterior color schemes using the paint and siding. Exterior materials should be low maintenance.

6. Multi-story Group 1 facilities may include a transition in material, color or detailing to create a visual base. Generally limit brick, concrete block, fiber-cement siding and stucco to a single color for each on Group 2, 3 and 4 facilities.

7. Brick shall have a running bond pattern with tooled concave joints. Conceal expansion joints with downspouts or locate them at transitions in the wall such as at pilasters or reveals. Header, rowlock and soldier coursing or other accents are encouraged.

8. Precast work may have castings with designs and patterns to create an individual character for a single facility or complex. Architectural precast shall be light, off-white in color.

9. Concrete block shall be standard 8x8x16 split-faced in a running bond with tooled concave joints. Header coursing may be used as accents.

10. Use natural colored Portland cement mortar. Efflorescence in masonry work is unacceptable. Measures must be provided to prevent it.

11. Where stucco is allowed, use a traditional three-coat stucco system. Scratch and brown coats should be cement-based mixes with the finish coat being a synthetic-based plaster. Sand finish is the standard. The use of large areas of stucco is discouraged. Stucco should have proper detailing to allow moisture out of the wall and it should not be used adjacent to grade. Do not use an Exterior Insulation Finish System (EIFS).

12. Limit the use of prefinished metal wall panels to special applications and large industrial facilities. Factory finish all exposed metals with a coating application such as Kynar-500.

13. Glass block is an acceptable material for limited use in building facades with ACRB approval. Comply with ATFP requirements.

14. A clearly defined articulated building base with a minimum height of 30 inches is preferred for new buildings. Distinguish the base from the façade with detailing and/or a change in material.

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

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

17. Use integrally colored materials and factory-finished metals. Do not paint concrete block.
18. 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.

19. 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 at west entrances. Deciduous trees may be used for shading.

4. Shading systems may be included as part of a manufacturer's window system or may be custom systems integrated into the wall.

5. Provide appropriate transitions between dissimilar materials to mitigate effects of thermal expansion and galvanic action.

6. All joint sealants shall be slightly darker than adjacent surfaces.

7. Materials requiring regular maintenance are not permitted; do not use exposed structural steel or other materials that require painting.

8. Refer to C07.2.16. Screen Walls for materials and colors of freestanding walls.

9. Refer to D07. Roofs for downspouts.

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**: Brick or insulated metal panels
- **Secondary**: Cast-in-place concrete or (with brick) precast
- **Accent**: Optional: (with brick) insulated metal panels

**Facility Group 2** wall materials shall be as follows.
- **Primary**: Brick
- **Secondary**: Arch. precast, insul. mtl. panels, stucco
- **Accent**: Split face CMU, ribbed metal, cast-in-place conc.

**Facility Group 3** wall materials shall be as follows.
- **Primary**: Ribbed mtl. shtg., insl. mtl. panels, split-face CMU
- **Secondary**: Ribbed mtl. sheet in alt. color or brick
- **Accent**: Brick

**Facility Group 4** wall materials shall be as follows.
- **Primary**: Fiber cement siding
- **Secondary**: Fiber cement siding, trim boards, brick or stucco
- **Accent**: Concrete or brick foundation cladding

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

**D05.4.1 Flat Metal Panels**

- **Type**: Style 1
- **Applies to**: Group 1, Group 2, Group 3, Group 4, Other
- **Mfr**: Alucobond
- **Model #**: Alucobond Classic, Rainscreen I
- **Color**: Anodic Clear Mica PVDF 2
- **Finish**: Anodized
- **Other**: Route and Return Dry Seal

**UFGS**:
- Section 07 42 13 Metal Wall Panels: [Link](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 42 13.pdf)
- Section 07 42 63 Fabricated Wall Panel Assemblies: [Link](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 42 63.pdf)
### D05.4.2. Brick Veneer

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<td>Type 2</td>
<td>2</td>
<td>✔</td>
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<td></td>
</tr>
</tbody>
</table>

#### Type 1
- **Applies to:**
  - □ Group 1
  - □ Group 2
  - ✔ Group 3
  - □ Group 4
  - □ Other
- **Mfr:** Richtex Brick Co.
- **Model #:** Southern 355, 'Charleston' brick with flash
- **Color:** Red blend
- **Finish:** Straight edges, smooth texture
- **Other:** Nominal size: 4x8x2.6
- **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)

#### Type 2
- **Applies to:**
  - □ Group 1
  - □ Group 2
  - □ Group 3
  - □ Group 4
  - □ Other
- **Mfr:** Richtex Brick Co.
- **Model #:** See Section D05.4.12
- **Color:** See Section D05.4.12
- **Finish:** Straight edges, smooth texture
- **Other:** Nominal size 4x8x2.6, brick color varies with siding color
- **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)
### Style 1 Coursed Precast

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<tr>
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<td>Local, TBD</td>
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<tr>
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**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)

### Style 2 Architectural Precast Panels

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<td>Model #:</td>
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<td>Color:</td>
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<td>Finish:</td>
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**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: Style 3 Architectural Precast Cladding |
| Applies to: | Group 1 | Group 2 | Group 3 | Group 4 | Other |
| Mfr: | TBD |
| Model #: | Smooth Casting |
| Color: | Off White, Light Gray |
| Finish: | Very light texture |
| Other: | N/A |
| 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: Style 1 |
| Applies to: | Group 1 | Group 2 | Group 3 | Group 4 | Other |
| Mfr: | Acrocrete |
| Model #: | AC-518 |
| Color: | Per ACRB approval |
| Finish: | Sand texture |
| Other: | Use of stucco must be approved by the BCE. |

### D05.4.5. Curtain Wall

| Type: |
| Applies to: | Group 1 | Group 2 | Group 3 | Group 4 | Other |
| Mfr: | |
| Model #: | |
| Color: | |
| Finish: | |
| Other: | |
| UFGS: | |
D05.4.6. Cast-In-Place Concrete

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

**Type**: Style 1

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

**Mfr**: TBD

**Model #**: Sheet-formed with exposed tie reveals

**Color**: 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)

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D05.4.7. Tilt-Up Concrete

- **Applicable**: Yes
- **N/A**: No

---

D05.4.8. Ribbed Metal Sheeting

- **Applicable**: Yes
- **N/A**: No

**Type**: Flush Seam

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

**Mfr**: Berridge

**Model #**: Flush Seam Panel

**Color**: Beige

**Finish**: Embossed Texture, factory finished

**Other**: 24 Gauge Steel


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D05.4.9. EIFS

- **Applicable**: Yes
- **N/A**: No
### D05.4.10. GFRC

- **Applicable**: ✔
- **N/A**: ☐

### D05.4.11. Concrete Block

- **Applicable**: ✔
- **N/A**: ☐
- **Number of base standards**: 2

#### Type: **Concrete Masonry Unit (CMU) Split Face**

- **Applies to**:
  - ✔ Group 1
  - ✔ Group 2
  - ✔ Group 3
  - ☐ Group 4
  - ☐ Other
- **Mfr**: TBD
- **Model #**: Split Face CMU
- **Color**: Light or medium beige
- **Finish**: Medium texture
- **Other**: 8x8x16 nominal face and corner units. Group 4 use with ACRB approval.
- **UFGS**: [Section 04 20 00 Unit Masonry](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 04 20 00.pdf)

#### Recommended Image:

- **Detail of concrete block**
- **Size image to**: 250 pixels width x 188 pixels height
- **Click here to insert image**

#### Type: **Concrete Masonry Unit (CMU) Polished Face**

- **Applies to**:
  - ✔ Group 1
  - ✔ Group 2
  - ✔ Group 3
  - ☐ Group 4
  - ☐ Other
- **Mfr**: TBD
- **Model #**: Polished Face CMU
- **Color**: Light or medium beige
- **Finish**: Polished face with exposed aggregate
- **Other**: 8x8x16 nominal face and corner units
- **UFGS**: [Section 04 20 00 Unit Masonry](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 04 20 00.pdf)
D05.4.12. Fiber Cement Siding

Applicable

Number of base standards 5

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: Bluish gray with white trim; use with brown blend brick
- Finish: Wood Texture
- Other: Hardie Plank, Hardie Shingle

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

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Type: **Style 2**

- Applies to: [ ] Group 1 [ ] Group 2 [ ] Group 3 [ ] Group 4 [ ] Other
- Mfr: James Hardie Building Products, Inc.
- Model #: Horizontal lap siding, shingle siding
- Color: Reddish tan with white trim; use with #355 & #455 brick
- Finish: Wood texture
- Other: Hardie Plank, Hardie Shingle

UFGS: SECTION 074646 Fiber Cement Siding: (Not Available on UFGS)
Type: **Style 3**

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

Mfr: James Hardie Building Products, Inc.

Model #: Horizontal lap siding, shingle siding

Color: Yellowish tan with white trim; use with #142 & #388 brick

Finish: Wood texture

Other: Hardie Plank, Hardie Shingle

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

---

Type: **Style 4**

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

Mfr: James Hardie Building Products, Inc.

Model #: Horizontal lap siding, shingle siding

Color: Ivory with white trim; use with Buffstone (yellow-tan) brick

Finish: Wood texture

Other: Hardie Plank, Hardie Shingle

UFGS: SECTION 074646 Fiber Cement Siding: (Not Available on UFGS)
Type:  **Style 5**

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

Mfr:  James Hardie Building Products, Inc.

Model #:  Horizontal lap siding, shingle siding

Color:  Ivory with white trim; use with 93% #370 and 7% #125 brick

Finish:  Wood texture

Other:  Hardie Plank, Hardie Shingle

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

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**Type:**  **Ceramic Tile**

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

Mfr:  TBD

Model #:  Ceramic wall tile; comply with ANSI A137.1

Color:  Off White

Finish:  Smooth or light texture

Other:  Setting method, tile and grout must be suitable for exterior use

UFGS:  Section 09 30 10 Ceramic, Quarry and Glass Tiling
**D06. DOORS AND WINDOWS**

Comply with AF Corporate Standards for Facilities Exteriors:

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 the existing ones. Use full glass panels on primary entry doors of Groups 1, 2 and significant Group 3 buildings.

2. Punched window openings with frames set back 4” from the façade are preferred. Define openings with sills and lintels in a contrasting material, pattern or detail. Operable windows are preferred and should have screens.

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

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

5. Automatic doors are allowed only where functionally necessary.

6. Limit hollow metal doors and frames to security doors, utility rooms and mechanical rooms in Groups 1 and 2 and to any application in Group 3 facilities.

7. Utility and emergency egress doors shall match the wall color.

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

9. Windows must meet force protection requirements.

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

11. Glass block is acceptable for limited use in building facades with BCE approval.

12. All windows, doors and storefronts must be designed to meet the current wind-borne debris impact requirements. Where approved on small projects, provide permanent stainless steel hooks in walls at windows to accommodate temporary protective boards when required for hurricanes. Do not anchor temporary protection boards to exterior walls.

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, intrusion and coordinate sound ratings.

5. Arched openings may be used in Group 1 buildings with BCE approval.

D06.3. Glazing and Shading

1. Bronze tinted, energy-efficient, low-e, double-pane glazing is required.

2. Glazing color shall follow Installation Facilities Standards (IFS).

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

4. Do not use mirrored or plastic 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. Select U-shaped door pulls, lever handles, and thin-line panic bars.

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. Where required, develop simple rectangular designs that are unobtrusive.

**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**

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

**Type:** Anodized Aluminum Windows and Frames

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

**Mfr:** Kawneer (or equivalent)

**Color:** Clear Anodized; or Dark Bronze to match existing with BCE approval

**Finish:** Factory anodized

**Model #:** 1600 UT with GLASSvent operable windows

**Other:** Provide thermally broken frames; Dove Gray color option at Weapons Station

**UFGS:** Section 08 41 13 Aluminum-Framed Entrances and Storefronts: [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 41 13.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 41 13.pdf)
**Anodized Aluminum Doors**

- **Type:** Anodized Aluminum Doors
- **Applies to:**
  - [ ] Group 1
  - [ ] Group 2
  - [ ] Group 3
  - [ ] Group 4
  - [ ] Other
- **Mfr:** Kawneer (or equivalent)
- **Color:** Dark bronze, match existing or clear with BCE approval
- **Finish:** Factory anodized
- **Model #:** Insulclad 260
- **Other:** Provide thermally broken frames. Dove Gray color option @ Weapons Station

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

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**Hollow Metal**

- **Type:** Hollow Metal
- **Applies to:**
  - [ ] Group 1
  - [ ] Group 2
  - [ ] Group 3
  - [ ] Group 4
  - [ ] Other
- **Mfr:** Hollow Metal Doors, Windows and Frames
- **Color:** Dark brown or match wall
- **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

- **Applicable**: Yes
- **N/A**: No
- **Image Tool**: 250 x 188
- **Number of base standards**: 1

**Type:** Aluminum-clad Residential

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

**Mfr:** Marvin

**Color:** White

**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](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 14 00.pdf)

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## D06.5.4. Other

- **Applicable**: No
- **N/A**: Yes
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. Refer to the Appendix for special requirements of Facility Districts. Hipped roofs are preferred for most buildings.

3. Group 1 and 2 buildings shall use sloped, standing seam metal roofs.

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 not permitted.

6. Group 2 and 3 facilities under 5,000 sf and narrow in plan geometry, may use gabled or hipped standing seam metal roofs. Larger facilities 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, sized and proportioned to the height of the facility and to the window openings being shaded.

9. Gabled elements are encouraged at entries and to break up large masses.

10. Coordinate metal fascia height with the scale of the facility. Avoid the use of turn-down standing seam metal fascias.

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

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


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

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

16. 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.

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

D07.2. Roof Slope

1. All buildings shall use sloped roofs, min. 3-1/2:12, but low-slope shall not be the predominant roof form. A slope of 5:12 should be used where possible. Curved roofs are permissible on a limited basis with approval of the BCE.

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.

3. Group 4 facilities shall use 4:12 to 6:12 roof slopes.

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. Generally provide hip or gable roof forms. Where there are parapets, extend wall materials vertically above the roof line and provide metal copings or properly flashed precast concrete copings. Continuous parapet walls are discouraged and should be limited to special use facilities.

2. Ensure copings are properly flashed and detailed to avoid roof leaks. Precast copings should have raked joints filled with elastomeric sealant. Painted metal copings are to be prefinished (Kynar 500 or equal) and match the roof color.

3. Sloped parapets with horizontal flanks on the gabled end should be the same slope as the roof.

D07.4. Color and Reflectivity

1. Metal roofs in Groups 1 and 2 and smaller facilities in Group 3 may be dark bronze only for additions to or renovations of an existing building or where immediately adjacent to an existing building with that color. Otherwise follow SRI requirements below.

2. All minimal-slope membrane roofs shall use only use high-albedo, high reflectivity color to help decrease the temperature around the buildings and minimize damage to human and wildlife habitat.

3. Sloped roofs in Group 4 shall be earth tones.

4. Comply with UFC 3-110-03 and ASHRAE 90.1 for Solar Reflectance Index (SRI) and thermal requirements.

5. All roof flashing shall match the color of the predominant background material.

D07.5. Gutters, Downspouts, Scuppers, Drains

1. 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.

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. Provide concrete splash blocks or cast iron receivers at grade, connected to the storm drainage system where available.

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

1. Minimize and consolidate roof penetrations into a single, inconspicuous point whenever possible.
2. On sloped roofs clad pipe penetrations to match the roofing material.
3. Avoid the use of rooftop mechanical equipment, however for renovations and unavoidable configurations ensure units are screened.
4. Provide access points and service routes to equipment that protect the roof.
5. Screen all large vents.
6. Ensure attic spaces are properly vented at ridges and soffits.
7. Match roof color for all exposed equipment and vents.
8. Avoid roof-mounted antenna systems.
9. Arrange Lightning Protection Systems (LPS) components in an ordered, uncluttered, inconspicuous appearance and integrated into the organization of the roof and wall systems.
10. Ensure that LPS roof mounting systems are approved by the roofing manufacturer.
11. Additions to a roof shall not interfere with LPS or other rooftop systems that may be required.
12. Permanent fall protection shall be included with any addition to a roof with a slope above 3:12 per UFC 3-110-03.

**D07.7. Clerestories and Skylights**

1. Clerestories and 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 and 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  N/A  Number of base standards 1

Type:  Style 1

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

Mfr:  Berridge

Color:  Medium bronze, per BCE meeting SRI requirements

Finish:  Factory finished Kynar 500 or Hylar 5000

Model #:  Zee-Panel, 24 ga.

Other:  Shed, gabled or hipped standing seam metal, UL 90 rated. Tundra color at Weapons Station

UFGS:  Section 07 61 14 Steel Standing Seam Roofing


D07.9.2. Membrane Single-ply

Applicable  N/A  Number of base standards 1

Type:  Style 1

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

Mfr:  Carlisle Systems

Color:  Off-white

Finish:  Smooth

Model #:  TPO 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)

D07.9.3. Built-up Multi-ply

Applicable  N/A

Joint Base Charleston IFS  Page 124 of 181  Back to Table of Contents
**D07.9.4. Concrete Tile**

- Applicable: ✗ N/A

**D07.9.5. Clay Tile**

- Applicable: ✗ N/A

**D07.9.6. Slate Shingles**

- Applicable: ✗ N/A

**D07.9.7. Vegetated System**

- Applicable: ✗ N/A

**D07.9.8. Ribbed Metal Sheeting**

- Applicable: Yes 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.:** Berridge

  **Color:** 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:** GAF Materials Corporation
- **Color:** Weatherwood Gray, Misty Gray, or Golden Cedar
- **Finish:** Factory
- **Model #:** Timberline asphalt shingles
- **Other:** Gabled or hipped with transverse gable or hipped features

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


**D07.9.10. Other**

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

- Type: Cast-In-Place
- Applies to: Group 1, Group 2, Group 3
- 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: Hot-dipped galvanized metal
Finish: Matte
Model #: Structural steel shapes
Other: N/A

UFGS: Section 05 12 00 Structural Steel
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 05 12 00.pdf

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: Local, TBD
Color: Hot-dipped galvanized metal, factory primed
Finish: Matte
Model #: Moment Frame
Other: Draped insul. may be used behind wall finish system; deflection criteria must follow IBC; Behlen standing seam roof may be used for Group 3

UFGS: Section 13 12 00 Steel Building Systems
(Not Available on UFGS)
Section 13 34 19 Metal Building Systems
D08.2.5. Masonry

Type: Interior Load-Bearing Masonry

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

Mfr: Custom

Color: Red or Beige

Finish: Smooth texture

Model #: Brick or ground face CMU

Other: Internal thermal mass walls following LCCA

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

D08.2.6. Heavy Timber

☑ Applicable ☐ N/A

D08.2.7. Light-gauge Steel

☑ Applicable ☐ N/A

Type: Steel Framing

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

Mfr: Local, TBD

Color: Factory

Finish: Galvanized

Model #: Standard structural shapes

Other: N/A

UFGS: Section 05 45 00 Light Gauge Steel Framing System
(Not Available on UFGS)
D08.2.8. Lumber Framing
☐ Applicable  ☑ N/A

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.

Image Tool 250 x 188

Group 1

Group 2

Group 3

Group 4
D09.1. Passive and Active Systems

1. Fully integrate passive heating and cooling systems into facility designs whenever practical for the local climate 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 AT/FP requirements.

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

5. Coordinate the location of all exterior meters, equipment and devices to provide convenient access and an overall coordinated and orderly appearance.

6. Design emergency generator systems integrally with all other building systems and avoid incompatible building additions; locate generators near service areas and ensure they are not visible from primary entrances.

7. When structure is exposed as a finished ceiling, fully integrate MEP and fire protection systems to provide an organized uncluttered appearance.

8. Conceal ducts, piping, conduits, devices, etc., when permanent walls, suspended ceilings or raised floors are provided; locate sprinkler heads in orderly configuration.

9. Limit interior wall-mounted equipment in occupied personnel spaces; avoid surface-mounted conduit and pipes.

10. Provide efficient utility rooms with layouts to facilitate system performance and maintenance; provide convenient access to controls, clearly label systems and include operating and maintenance instructions.

11. Separate mechanical and electrical and communications rooms.

12. Integrate recessed and wall-mounted fixtures such as fire standpipe cabinets and drinking fountains within permanent walls.
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.

Image Tool 250 x 188

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 lifespan.

2. Create flexible interior configurations using Furniture, Fixtures & Equipment (FF&E) and limit private offices and private rooms. Refer to AFMAN 32-1084 for space requirements. To the greatest extent, limit permanent partitions to core areas such as toilet rooms, stairs, mechanical and utility rooms.

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 HQ AFCEC standards.

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

- **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)

### E02.1.2. Natural Stone and Terrazzo

- **Type:**

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

- **Mfr:** Local (TBD)

- **Color:** Natural gray cement, light to dark beige aggregates

- **Finish:** Medium polished texture, slip resistant

- **Model #:** Medium to small aggregate

- **Other:** N/A

- **UFGS:** Section 03 35 45 Polished Concrete Finishing (Not Available on UFGS)
E02.1.3. 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


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

Type: **Style 2 Ceramic**

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

Mfr: Daltile

Color: Earth tones

Finish: Matte, slip resistant

Model #: Ceramic tile

Other: Use in low traffic area toilet rooms.

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

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**E02.1.5. Resilient Floor**

[ ] Applicable  [ ] N/A  Number of base standards 1

Type: **Style 1 Stair Treads**

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

Mfr: Roppe

Color: Neutral tones

Finish: Factory

Model #: Raised design rubber tread

Other: Stair treads material

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
- **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](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
- **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](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 68 00.pdf)

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**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 concrete (or 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  Number of base standards 1

Type: **Cast-in-Place**

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

Mfr:  Local (TBD)

Color:  Natural gray cement, neutral aggregates

Finish:  Board formed, panel formed, hand rubbed

Model #:  Medium to small aggregate

Other:  See Section 03 35 00 Concrete Finishing

UFGS:  Section 04 20 00 Unit Masonry  

---

E03.1.2. Masonry
Applicable  N/A  Number of base standards 1

Type: **Modular Face Brick**

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

Mfr:  Local (TBD)

Color:  Red blend, Charleston brick

Finish:  Light texture

Model #:  Coursed unit masonry

Other:  Brick is preferred. Concrete block may only be used in Group 3 when approved by the BCE.

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)
**E03.1.3. Ceramic Tile**

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

**UFGS:**
- Section 09 30 10 Ceramic, Quarry, and Glass Tiling
- Section 09 90 00 Paints and Coatings
  http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 90 00.pdf

---

**E03.1.5. Metal Panels**

- **Applicable:** No
- **Other:** N/A
E03.1.6. Wood Paneling

☐ Applicable  ☑ N/A

E03.1.7. Rapidly-Renewable Products

☐ Applicable  ☑ N/A

E03.1.8. Other

☐ Applicable  ☑ N/A

E04. Ceilings

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

E04.1. Ceiling Materials

Facility Group 1 ceiling materials shall be as follows.

Primary: Exposed framing (roof / floor structure above)
Secondary: Grid and acoustical tile
Tertiary: Gypsum board (painted)

Facility Group 2 ceiling materials shall be as follows.

Primary: Exposed framing (roof / floor structure above)
Secondary: Grid and Acoustical Tile
Tertiary: Gypsum board (painted)

Facility Group 3 ceiling materials shall be as follows.

Primary: Exposed Framing (Roof / Floor Structure Above)
Secondary: Exposed Framing (Roof / Floor Structure Above)
Tertiary: Gypsum board (painted) (restrooms)

Facility Group 4 ceiling materials shall be as follows.

Primary: Gypsum board (painted)
Secondary: N/A
Tertiary: N/A

1. 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)

<table>
<thead>
<tr>
<th>Type:</th>
<th>Style 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
<td>Group 1</td>
</tr>
<tr>
<td>Mfr:</td>
<td>Vulcraft</td>
</tr>
<tr>
<td>Color:</td>
<td>Neutral colors reviewed on a case basis</td>
</tr>
<tr>
<td>Finish:</td>
<td>Field painted (Sheen per UFGS)</td>
</tr>
<tr>
<td>Model #:</td>
<td>Formlok floor and roof decking</td>
</tr>
<tr>
<td>Other:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**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

| | 
| --- | --- |

### E04.1.3. Grid and Acoustical Tile

<table>
<thead>
<tr>
<th>Type:</th>
<th>Style 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
<td>Group 1</td>
</tr>
<tr>
<td>Mfr:</td>
<td>Armstrong</td>
</tr>
<tr>
<td>Color:</td>
<td>White</td>
</tr>
<tr>
<td>Finish:</td>
<td>Factory</td>
</tr>
<tr>
<td>Model #:</td>
<td>2'x2' Tegular with reveal edge and fine texture, grid 15/16&quot;</td>
</tr>
<tr>
<td>Other:</td>
<td>Performance characteristics are Class A; NRC-0.70; CAC-40; LR-0.86; minimum recycled content 82%.</td>
</tr>
</tbody>
</table>

**UFGS:** Section 09 51 00 Acoustical Ceilings
[http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 51 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 51 00.pdf)
E04.1.4. Gypsum Board

- **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: Hollow metal (painted)

Tertiary: N/A

**Facility Group 2**

door (leaf) materials shall be as follows.

Primary: Hardwood veneer

Secondary: Hollow metal (painted)

Tertiary: N/A

**Facility Group 3**

door (frame) and window frame materials shall be as follows.

Primary: Hollow metal (galvanized, painted)

Secondary: N/A

Tertiary: N/A

**Facility Group 3**

door (leaf) materials shall be as follows.

Primary: Hollow metal (galvanized, painted)

Secondary: N/A

Tertiary: N/A

**Facility Group 4**

door (frame) and window frame materials shall be as follows.

Primary: 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

- Applicable
- N/A
- Number of base standards: 1

**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
- Section 08 71 00 Door Hardware
  [https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf](https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf)

---

E05.1.2. Hollow Metal

- Applicable
- N/A
- Number of base standards: 2

**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
- Section 08 71 00 Door Hardware
  [https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf](https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf)
**Steel Frames**

**Type:** Steel Frames

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

**Mfr:** Steelcraft

**Color:** Neutral colors

**Finish:** Paint (Sheen per UFGS)

**Model #:** Hollow metal, frame grouted solid

**Other:** Satin stainless steel hardware

**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](https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf)

---

**E05.1.3. Wood**

- **Applicable:** Yes
- **N/A:** No
- **Number of base standards:** 2
- **Image Tool 250 x 188**

**Type:** Style 1, Administrative

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

**Mfr:** Simpson

**Color:** Natural hardwood veneer

**Finish:** Clear Sealer, satin (aqueous)

**Model #:** 3’x7’x 1 ¾”, solid core

**Other:** Satin stainless steel hardware, Glass lites may be used. Stained birch veneer face, 5 ply construction, rotary cut finish.

**UFGS:**
- Section 08 14 00 Wood Doors
  - [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 14 00.pdf](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](https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf)
<table>
<thead>
<tr>
<th>Type: Style 2, Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
</tr>
<tr>
<td>Group 1</td>
</tr>
<tr>
<td>Mfr: Simpson</td>
</tr>
<tr>
<td>Color: Natural hardwood veneer or paint grade</td>
</tr>
<tr>
<td>Finish: Clear Sealer or paint, satin (aqueous)</td>
</tr>
<tr>
<td>Model #: Full slab or panels</td>
</tr>
<tr>
<td>Other: Satin nickel hardware</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**
- **N/A**

**E06. Casework Systems**
Comply with Air Force Corporate Standards for Casework Systems:
http://afcfs.wbdg.org/facilities-interiors/casework-systems/index.html

**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

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

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

- **Mfr:** Formica
- **Color:** Medium Earth tones and neutral tones
- **Finish:** Light textured
- **Model #:** High pressure laminate
- **Other:** Combine with matching solid-surface banding on casework edges.

**UFGS:** Section 06 41 16.00 10 Plastic-Laminate-Clad Architectural Cabinets
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 06 41 16.00 10.pdf

---

E06.1.2. Solid Polymer Surface

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

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

- **Mfr:** Corian
- **Color:** Medium Earth tones and neutral tones
- **Finish:** Light textured
- **Model #:** Solid Surface
- **Other:** Faces and edge banding

**UFGS:** Section 12 36 00 Countertops
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf
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

**Aplicable**  ☐ N/A

---
E06.2. Countertop Materials

E06.2.1. Plastic Laminate

Type: Style 1, Low Use Areas

Applies to: Group 1, Group 2, Group 3

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

Applies to: Group 1, Group 2, Group 3

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

---

### 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
E06.2.5. Metal

Applicable  N/A  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 countertops

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  N/A

---

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:


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
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
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  11

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: F01. Basewide Standards

Map of District

JOINT BASE CHARLESTON
FACILITY DISTRICTS MAP

LEGEND
1 Basewide Standards
2 Flightline / Industrial
3 East and West Side
4 South Annex
5 North Side and Waterfront
6 Ordnance
7 Marrington
8 Nuclear Training and Medical
9 Reserves and Training Overlay
10 Brig Overlay
11 Family Housing

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

Group 1 ☐ Applicable ☐ N/A
Group 2 ☐ Applicable ☐ N/A
Group 3 ☐ Applicable ☐ N/A
Group 4 ☐ Applicable ☐ N/A
Other ☐ Applicable ☐ N/A
**FACILITY DISTRICTS**

JB Charleston Air Force Base 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 Base Civil Engineer for additional information. A brief description of each district follows.

All installation elements, site development features and systems, facilities exteriors, and facilities interiors shall follow the basewide standards in this IFS. Any exceptions to the basewide standards are listed below for each Facility District.

- **F01. Basewide Standards**
- **F02. Flightline / Industrial District**
- **F03. East and West Side Districts**
- **F04. South Annex District**
- **F05. North Side and Waterfront Districts**
- **F06. Ordnance District**
- **F07. Marrington District**
- **F08. Nuclear Training and Medical Overlay**
- **F09. Reserves and Training Overlay**
- **F10. Brig Overlay**
- **F11. Family Housing**

**F01. Basewide Standards**

Facilities in the Basewide district should continue to be pedestrian in scale. The district forms a band across the middle of the Air Base. Application of the installation prevailing architectural theme, contemporary regional vernacular, should be implemented during major renovations or new construction as appropriate. This district follows basewide standards in the IFS; refer to sample images in the body of this document.
Name of District: F02. Flightline / Industrial

Map of District

JOINT BASE CHARLESTON
FACILITY DISTRICTS MAP

LEGEND
1 Basewide Standards
2 Flightline / Industrial
3 East and West Side
4 South Annex
5 North Side and Waterfront
6 Ordnance
7 Marrington
8 Nuclear Training and Medical
9 Reserves and Training Overlay
10 Brig Overlay
11 Family Housing

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

<table>
<thead>
<tr>
<th></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>
F02. Flightline / Industrial
The Flightline / Industrial District includes facilities that are industrial in nature and may support flightline operations. Large buildings may be monumental in scale. Other uses 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. This district covers the north and most of the east side of the airbase. Facilities in this district should generally match adjacent buildings to ensure architectural compatibility and shall follow standards for Facility Group 3 as defined in this IFS. This district follows basewide standards in the IFS; refer to it for sample images.
Name of District: F03. East and West Side

Map of District

JOINT BASE CHARLESTON
FACILITY DISTRICTS MAP

LEGEND
1 Basewide Standards
2 Flightline / Industrial
3 East and West Side
4 South Annex
5 North Side and Waterfront
6 Ordnance
7 Merrington
8 Nuclear Training and Medical
9 Reserves and Training Overlay
10 Brig Overlay
11 Family Housing

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

Group 1  ○ Applicable  ○ N/A
F03. East and West Side

The East and West Side districts should be pedestrian in scale. Application of the installation prevailing architectural theme, contemporary regional vernacular, should be implemented during major renovations or new construction as appropriate. This and the following districts are northeast of the airfield and closer to the Cooper River. Facilities in this area shall follow standards for Facility Group 2 in this IFS. Exceptions to the basewide standard are listed below by section number:

D05. Wall Systems
1. Trellis or porch elements are encouraged on south and west facades.
2. Limit the use of stucco to accents.

D06. Doors and Windows
1. Use of a different material or color for entry doors is allowable.
2. Window glazing for an individual building should be consistent, but variations in color may be provided on a case basis when approved by the BCE.

D07. Roof Systems
1. Low sloped roof structures should have additive hipped or gabled elements along the front façade.
2. Metal roofing should be Kynar Tundra (gray).
3. Downspouts may match the roof instead of the wall, but they should be compatible with the wall color(s).
Name of District: F04. South Annex

Map of District

JOINT BASE CHARLESTON
FACILITY DISTRICTS MAP

LEGEND
1 Basewide Standards
2 Flightline / Industrial
3 East and West Side
4 South Annex
5 North Side and Waterfront
6 Ordnance
7 Marrington
8 Nuclear Training and Medical
9 Reserves and Training Overlay
10 Brig Overlay
11 Family Housing

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

Group 1  ☑ Applicable  ☐ N/A
F04. South Annex

The South Annex district should be pedestrian in scale. Application of the installation prevailing architectural theme, contemporary regional vernacular, should be implemented during major renovations or new construction as appropriate. Facilities in this area shall follow standards for Facility Group 2 in this IFS. Exceptions to the basewide standard are listed below by section number:

D05. Wall systems
1. The standard brick color is Hanson 350 Red.
2. Yellow brick can be used as an accent, belt course or other decorative element; bands of color should be limited to 2-3 courses.
3. The use of stucco for large areas is discouraged.
4. Use belt courses to break up large blank walls.
5. Use offsets from rectangular floor plan to add interest.
6. Entry overhangs should generally be projections into the main mass of the structure.

D05.4.2 Brick Veneer
Type: Style 1
Applies to: Group 1, Group 2, Group 3, Group 4
Mfr: Richtex Brick Co.
Model: 350 Red Iron wire cut
Color: Red/yellow
Model: Straight edges, smooth texture
Other: Nominal size, 4x8x.6
UFGS: SECTION 04 20 00 Unit Masonry

D06. Doors and Windows
1. Lintels should be the same material as the surrounding wall with a change in coursing, color or texture.
2. Vertical punched openings and ribbon windows can be intermixed.

D07. Roof Systems
1. Roofs should be predominantly hip-formed.
2. Metal roofing should be Kynar Tundra (gray).
3. Downspouts may match the roof instead of the wall, but they should be compatible with the wall color(s).
Name of District: F05. North Side and Waterfront

JOINT BASE CHARLESTON
FACILITY DISTRICTS MAP

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9 Reserves and Training Overlay
10 Brig Overlay
11 Family Housing

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

Group 1  ○ Applicable  ○ N/A
Group 2  ○ Applicable  ○ N/A
F05. North Side and Waterfront
The North Side and Waterfront districts should be pedestrian or monumental in scale. Application of the installation prevailing architectural theme, contemporary regional vernacular, should be implemented during major renovations or new construction as appropriate. Facilities in this area shall follow standards for Facility Groups 2 or 3 in this IFS. Exceptions to the basewide standard are listed below by section number:

C06. Landscaping
1. Minimal landscaping is acceptable along the waterfront and areas away from the main road.

D05. Wall Systems
1. Large buildings in these areas should have simplified detailing.
2. The stock of existing non-conforming structures should be modified to match the material and color scheme of the IFS when they are renovated.
3. Provide a minimum 30” high brick water table at building walls.
Name of District: F06. Ordnance

Map of District

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

<table>
<thead>
<tr>
<th>Group</th>
<th>Applicable</th>
<th>N/A</th>
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<tbody>
<tr>
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<td>Group 4</td>
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<td>Other</td>
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</table>
F06. Ordnance
Application of the installation prevailing architectural theme, contemporary regional vernacular, should be implemented during major renovations or new construction as appropriate. Exceptions to the basewide standard are listed below by section number:

B03. Open Space / Public Space
1. No screening is required. Place mechanical equipment, dumpsters, etc. away from view outside the district.
2. Use screen walls, raised planters, and defined roadways in selected locations to direct and limit facility access and increase force protection.
3. No landscaping is required. Provide grass in disturbed areas.

D03. Architectural Features
1. Set industrial buildings back so that they are not seen from outside the district.

D05. Wall Systems
1. Any structures constructed within 100 feet of the district boundary should follow guidelines for the adjoining district.
2. Metal, masonry or concrete building materials are allowable.

D05.4.2 Brick Veneer
Type: Style 1
Applies to: Group 1, Group 2, Group 3, Group 4
Mfr: Richtex Brick Co.
Model: 224 Red Iron Spot / Oxford ENM
Color: Red
Model: Straight edges, smooth texture
Other: Nominal size, 4x8x.6
UFGS: SECTION 04 20 00 Unit Masonry

D07. Roof Systems
1. Any roof system is allowable.
Name of District: F07. Marrington

Map of District

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

Group 1  ☐ Applicable  ☐ N/A
Group 2  ☐ Applicable  ☐ N/A
Group 3  ☐ Applicable  ☐ N/A
Group 4  ☐ Applicable  ☐ N/A
**F07. Marrington**
The Marrington district should be pedestrian in scale. Application of the installation prevailing architectural theme, contemporary regional vernacular, should be implemented during major renovations or new construction as appropriate. Exceptions to the basewide standard are listed below by section number:

**B03. Open Space / Public Space**
1. This area will be left mostly natural. Any new buildings should be small in scale and designed as ancillary structures.
2. Mechanical and service areas can be screened with a simple wood fence.

**D03. Architectural Features**
1. Site buildings so they do not block views of the landscape, and they should be no taller than necessary.

**D05. Wall Systems**
1. Buildings should blend into the background to the extent possible.
2. Simple rural detailing is preferred.
3. Use metal, wood or fiber cement panels and siding. Brick and CMU should be used only as a base or accent element.

**D07. Roof Systems**
1. Avoid use of parapet walls.
2. All roofs must have hipped or gable roof forms.
3. Use dark bronze or green anodized aluminum metal roofing; surface attached systems are allowable for open structures.
Name of District: F08. Nuclear Training and Medical Overlay

Map of District

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

Group 1
- Applicable
- N/A
F08. Nuclear Training and Medical Overlay
The Nuclear Training and Medical Overlay district should be pedestrian in scale. Application of the installation prevailing architectural theme, contemporary regional vernacular, should be implemented during major renovations or new construction as appropriate. Facilities shall follow standards for Facility Group 2 in this IFS. Exceptions to the basewide standard are listed below by section number:

D05. Wall Systems
1. Generally match facilities in this district as opposed to the overall Weapons Station.
2. The Clinic, any additions to it, and significant medical facilities should continue to have a distinct look of importance.
3. All buildings should have a precast or cast stone base with reveals; the base should touch the ground.
4. Trellis and porch elements are encouraged, particularly on the south and west facades.
5. The standard brick is Hanson 225 Red Iron Spot, but the Clinic shall have Hanson Oxford ENM.
6. Provide horizontal relief to large brick walls by recessing or protruding courses, using different coursing methods, or the introduction of different material.
7. CMU is only allowed as a minor decorative element.
8. Except for the Clinic, stucco should be used sparingly as a decorative element or background material.
9. The use of trellises and porches as sun shading devices is encouraged where appropriate.

D06. Doors and Windows
1. Windows should be vertically proportioned punched openings; square or horizontal punched windows can be used on a limited basis to form a window pattern.

D07. Roof Systems
1. Predominantly gable roof forms should be used; provide interest by introducing different materials, adding major louver elements and changing the predominant window size or pattern.
2. Parapets are allowed only on gable ends; low sloped roofed elements should be expressed as porch elements and not hidden behind parapets.
3. The use of dormers as mechanical louvers is encouraged.
4. Downspouts may match the roof instead of the wall, but they should be compatible with the wall color(s).
5. Metal roofing shall be Kynar Tundra (gray).
Name of District: F09. Reserves and Training Overlay

Map of District

Joint Base Charleston Facility Districts Map

Legend:
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4. South Annex
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7. Marrington
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9. Reserves and Training Overlay
10. Brig Overlay
11. Family Housing

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

Group 1  ☐ Applicable  ☑ N/A
F09. Reserves and Training Overlay
The Reserves and Training Overlay District should be pedestrian in scale. Application of the installation prevailing architectural theme, contemporary regional vernacular, should be implemented during major renovations or new construction as appropriate. Facilities shall follow standards for Facility Group 2 in this IFS. The Border Training facilities will follow guidelines for the East Side and West Side Districts above. Exceptions to the basewide standard for the remaining Army and Marine Reserves are listed below by section number:

Marine Reserves Area
D03. Architectural Features
1. Through the use of building siting, screen walls and landscaping, maximize the visual screening of the overlay campus from the surrounding district.

D05. Wall Systems
1. Buildings will have a masonry base with stucco or metal panels above; there will be a rowlock course above the masonry made of brick, precast or shaped concrete masonry units.
2. Brick color should match concrete block in the vicinity.
3. Concrete block should match the existing reddish-pink color. Extend the concrete block up a minimum of 8’ in industrial spaces.
4. Use stucco for the wall finish above the base. New stucco should match the existing yellow color.
5. Use vertical metal wall panels as an option for the wall finish above the base. Metal panels shall match the standard stucco or metal roofing color.

D05.4.4. Stucco Over Sheathing
Type: Style 1
Applies to: Group 1, Group 2, Group 3
Mfr: Acrocrete
Model: AC-518
Color: New Day
Finish: Sand texture
D06. Doors and Windows
1. High bay garage and warehouse buildings shall have ribbon clerestory windows.
2. Provide minimal window surrounds and trim.

D07. Roof Systems for Marine Reserve Area
1. Use gable roof form to delineate non-industrial entrances only.
2. Metal roofing should be Kynar Tundra (gray) to meet the SRI requirements.
3. Downspouts may match the roof instead of the wall, but they should be compatible with the wall color(s).

Army Reserves Area
D05. Wall Systems for Army Reserves Area
1. Army Reserve buildings should be brick with precast banding and decorative elements. Follow the example of the existing main building.
2. Brick should match the existing grayish brown color.
3. Use wide precast bands, columns and parapet caps to break up the wall mass.

D05.4.4. Stucco Over Sheathing
Type: Style 1
Applies to: Group 1, Group 2, Group 3
Mfr: Acrocrete
Model: AC-518
Color: New Day
Finish: Sand texture
Other: N/A
UFGS: SECTION 09 24 23 Cement Stucco

D06. Doors and Windows
1. Except for small punched openings, glazing should consist of large expanses of storefront recessed into the main form a minimum of 2 feet.

D07. Roof Systems for Army Reserves Area
1. Use gable roof form to delineate non-industrial entrances only.
2. Low sloped roofing, with parapets, is allowed.
Name of District: F10. Brig Overlay

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

Group 1  ☐ Applicable  ☐ N/A
Group 2  ☐ Applicable  ☐ N/A
F10. Brig Overlay
The Brig Overlay district should be pedestrian in scale. Application of the installation prevailing architectural theme, contemporary regional vernacular, should be implemented during major renovations or new construction as appropriate. Exceptions to the basewide standard are listed below by section number:

C06. Landscaping
1. Due to security concerns, no landscaping is required.
2. Provide grass in disturbed areas.

C07. Site Furnishings
1. Screen mechanical equipment and dumpsters from the outlying areas.

D05. Wall Systems
1. New buildings should match existing design and materials.
2. Minimize projections that would create potential hiding places.
3. Walls shall be concrete or CMU with a stucco finish.
4. Match existing banding to break up blank facades.
5. Integrate physical security measures into the design to the extent possible.

D07. Roof Systems
1. Match existing low-slope roofing.
2. Screening of rooftop mechanical units is not required.
Name of District: F11. Family Housing

Map of District

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

Group 1   ○ Applicable   ○ N/A
Group 2   ○ Applicable   ○ N/A
Group 3   ○ Applicable   ○ N/A
Group 4   ○ Applicable   ○ N/A
Other     ○ Applicable   ○ N/A
F11. Family Housing
Family housing is provided at the south end of the airbase and at two locations in the Weapons Station area. Family housing is privatized at Joint Base Charleston. It should generally match adjacent buildings to ensure architectural compatibility, and it shall follow standards for Facility Group 4 as defined in this IFS. Refer to the body of this IFS document for sample images.

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