AIR FORCE INSTALLATION FACILITIES STANDARDS

2019

JBER Richardson 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 UFGSSs (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.
Denali, Named Officially in 2015, Was Previously Named Mount McKinley in 1917 to Commemorate US President William McKinley

Headquarters with Sub-Alpine Flora

Recreational Area in Mountain Setting

Common Wildlife Sighting

**A01. FACILITY HIERARCHY**
Comply with AF Corporate Standards for Facility Hierarchy (and subsections):
http://afcfs.wbdg.org/facility-hierarchy/index.html

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

**A03. FACILITY DISTRICTS**
Comply with AF Corporate Standards for Facility Districts (and subsections):
http://afcfs.wbdg.org/facility-districts/index.html
Note: Apply the base-wide standards in this IFS for Installation Elements, Site Development, Facilities Exteriors and Facilities Interiors (products, materials, color, etc.). Following application of the base-wide standards, refer to the Appendix and apply any additional requirements specifically related to the Facility District.
B. INSTALLATION ELEMENTS
Comply with Air Force Corporate Standards for Installation Elements:
http://afcfs.wbdg.org/installation-elements/index.html

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

B01.1. Installation Development Plan (IDP)

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

Applicable ☑  N/A  Small graphics do not apply

Application of DoD and Air Force Facilities Criteria

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

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

1. Maintain this Installation Facilities Standards (IFS) as a Component Plan of the base’s Installation Development Plan (IDP).
B01.1.2. Brief History of Base

☐ Applicable  ☑ N/A  Large graphics do not apply

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

Fort Richardson was built between 1940 and 1941 on the grounds of where present-day JBER Elmendorf is located. It soon became the headquarters of the United States Army, Alaska (USARAL), although the base was moved in 1950 to the area occupied currently by JBER Richardson. Originally, the base supported 500 soldiers and had a rifle range, a hospital, bachelor office quarters, and some warehouses within the vicinity. Alaska was the only state aside from Hawaii that was affected by the wars. Following the two world wars and the Cold War, the US focused on building up air defense, and a large number of its forces were assigned to Alaska.

Eventually, the Alaskan Command (ALCOM) was created in January 1947, and this was put in full control of all of the military forces (ground forces, Navy forces, and air forces) in the state. The headquarters of ALCOM was in Elmendorf Air Force Base, and it was the first of the unified commands that were under the direction of the Department of Defense. In that same year, the ground forces of Alaska were renamed as the United States Army Alaska (USARAL).

Because of ALCOMs overall command, Fort Richardson and Elmendorf Field were considered as the same base. However, with the establishment of Alaska’s Air Force as distinct from the Army Air Corps in 1947, the military leaders sought to make Fort Richardson and Elmendorf Field into two different installations. As such, the Elmendorf Air Force Base was constructed to serve as the home of the Air Force in Alaska.

During peacetime many military bases in Alaska were considered redundant. As such, some were discontinued while others were repurposed. The 172nd Infantry Brigade (Mechanized) took over the reins of Fort Richardson. Subsequently, USARAL was discontinued, but the 172nd Infantry Brigade continued to be headquartered at the fort, with their squad reporting to the Forces Command at Fort McPherson, GA. While there were designated troops in Fort Richardson, some soldiers were also brought there for training, being made to go through unforgiving arctic conditions to prepare them for equally difficult situations in their military tours. Eventually, Fort Richardson became the home of US Army Alaska (USARAK), alongside Fort Wainwright.

The 2005 Air Force and Army operations were realigned into a new configuration and established as Joint Base Elmendorf-Richardson (JBER). The decision listed the Air Force as the supporting agency, implementing and providing the funding vehicle for support to the entire joint base.

JBER comprises 5,500 joint military and civilian personnel, supporting America's Arctic Warriors and their families. The joint base supports and enables three Air Force total-force wings, two Army brigades and 75 associate and tenant units.

For an expanded history, please refer to the Joint Base Elmendorf-Richardson website.
B01.1.3. Future Development


2. Address all future development under the Installation Development Plan (IDP).
B02. STREET ENVELOPE STANDARDS

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

Comply with AF Corporate Standards for Street Envelope Standards:

B02.1. Hierarchy of 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  2

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. Consider snow removal operations and snow storage areas in all designs.

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. Remote service roads may be paved with a rock/clay mix that is suitable for the service vehicles. Appropriately size roads to accommodate service vehicle traffic.
B02.1.1. Arterial Streets

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

1. Minimum arterial street dimensions shall be as follows:
   a. Travel Lane.  12’
   b. Median (if used).  12’
   c. Curb and Gutter.  2’
   d. Sidewalk.  6’
   e. Parking.  12’ setback or per ATFP
   f. Buildings.  35’ setback or per ATFP
   g. Obstructions.  6’ setback or per ATFP
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. Signs, plantings and street lighting should be added to reinforce the importance of arterial streets.

**B02.1.2. Collector Streets**

- **Applicable** ◼️ **N/A**  Select number of graphics / images (large: 800 px x 440 px) to insert  2
- **Applicable** ◼️ **N/A**  Select number of graphics / images (small: 250 px x 188 px) to insert  3

![Collector Streets graphic](Image Tool 800 x 440)

![Collector Streets graphic](Image Tool 250 x 188)

Travel Lane (a): 12’   Median (b): Optional   Curb and Gutter (c): 2’   Landscape (d): 10’   Sidewalk (e): 6’   Setback (f): Min. 35’ or per ATFP
1. Minimum collector street dimensions shall be as follows:
   a. Travel Lane. 12’
   b. Median (if used). 12’
   c. Curb and Gutter. 2’
   d. Sidewalk. 6’
   e. Parking. 12’ setback or per ATFP
   f. Buildings. 35’ setback or per ATFP
   g. Obstructions. 3’ setback or per ATFP

2. Frequent traffic stops and low speeds are permitted on collector streets.

3. Provide sidewalks on at least one side of collector streets. Buffers are preferred but not required on collector streets.

4. On street parking may be allowed on one side where secondary roads are over 28 feet wide but not less than 34 feet wide. Parking shall not interfere with intersections or traffic flow.
5. Signs, plantings and street lighting should be added to reinforce the importance of arterial streets.

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

Travel Lane (a): 11’  Median (b): Optional  Curb and Gutter (c): 1.5’  Landscape (d): 15’  Sidewalk (e): 6’

1. Minimum local street dimensions shall be as follows:
   a. Travel Lane. 11’
   b. Curb and Gutter. 1.5’
   c. Sidewalk. 6’
   d. Landscape. 15’ setback or per ATFP
   e. Buildings. 35’ setback or per ATFP
   f. Obstructions. 3’ setback or per ATFP
2. Frequent traffic stops and low speeds are permitted on local streets.

3. Provide sidewalks on at least one side of local streets. Buffers are preferred but not required on local streets.

4. On street parking may be allowed on one side where secondary roads are over 28 feet wide but not less than 34 feet wide. Parking shall not interfere with intersections or traffic flow.

5. Signs, plantings and street lighting should be added to reinforce the importance of arterial streets.

6. Cul-de-sacs are to only be used in the Family Housing areas. The minimum radius for cul-de-sacs shall be 50’.

**B02.1.4. Special Routes**

☐ Applicable ☐ N/A Large graphics do not apply

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

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

2. Special routes shall include the following streets:

   a. JBER Elmendorf to Richardson Drive to D street

3. Maintain the allee of trees, grasses, landscape beds, trails and setback area along Richardson Drive.
1. Provide a hierarchy of intersections to include arterial, arterial-collector, collector, collector-local and local following UFC 3-201-01 and its industry references.

2. Passive systems such as traffic circles are preferred to active systems such as signalized intersections. Aggressively pursue passive systems to lower maintenance requirements and reduce energy use.

3. Use a level of visual quality for an intersection equal to the quality found in the related streetscape, which corresponds to the adjacent Facility Group number.
B02.2.1. Arterials

☐ Applicable  ☑ N/A  Large graphics do not apply

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

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

B02.2.2. Arterial/Collector

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

☐ Applicable ☐ N/A Large graphics do not apply

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

![Image 1: Coordinated Striping and Markings](image1.png)

![Image 2: Typical Intersection Signs](image2.png)

1. At collector intersections adjacent to Group 1, landscaping of native grasses and shrubs may be provided; trees may be included when maintenance and non-potable irrigation is available. Intersections adjacent to Group 2 may be developed similarly, but with less detailing.
B02.2.4. Special Intersections

- **Applicable**  N/A

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

- **Applicable**  N/A

Small graphics do not apply

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Signalized intersection at Vandenberg Avenue and Arctic Warrior Drive

1. Develop all special intersections consistently with those adjacent to Group 1 facilities.
**B02.2.5. Street Frontage 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. Consistently maintain open space buffers following B03.2.3. Preserves.
2. Refer to C06.1.7. Streetscape Landscaping for planting and screen wall requirements along street frontage.

**B02.2.6. Sight Lines**

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

1. Provide adequate sight lines for an effective and safe traffic operation per American Association of State Highway and Transportation Officials (AASHTO) standards and local municipality guidelines.
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 low reflectivity of surfaces, which is appropriate for the local climate.

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

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

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

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

7. Follow UFC 3-120-01 for directional and wayfinding signs and address both vehicular and pedestrian traffic.

8. Reduce energy consumption and reduce maintenance requirements by providing street lighting only when functionally required to ensure safety and to address antiterrorism following UFC 4-010-01. Ensure the quality and quantities of lighting and fixtures are appropriate for the adjacent Facility Group number.
B02.3.1. Paving

☐ Applicable ☐ N/A Large graphics do not apply

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

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

2. Materials shall be specified in accordance with UFC 3-250-01 and must conform to requirements set forth in the Unified Facility Guide Specifications (UFGS) for concrete and bituminous pavement.

B02.3.2. Curb and Gutter

☐ 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. Curb all streets except remote/isolated roads and rock-paved service roads. Header curbs may be used to facilitate snow plowing operations when coordinated with the base stormwater plan.

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**

- 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

![Coordinated Inlet and Sidewalk](image1)
![Fire Hydrant and Electrical Cabinet](image2)
![Storm Inlet with Access Cover](image3)

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

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

**B02.3.4. Traffic Signs**

- Applicable ☐ N/A  Large graphics do not apply
- Applicable ☐ N/A  Select number of graphics / images (small: 250 px x 188 px) to insert 1

![Standard Traffic Signs](image4)

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

☐ 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

![Base Standard Street Lighting](image)

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

B02.3.6. Other

☐ Applicable  ☐ N/A  Large graphics do not apply

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

![Integrated ATFP Systems](image) ![Coordinated Bus Shelters](image) ![Base Standard Crosswalk Striping](image)
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  Small graphics do not apply

Group 1 Plaza with Colored Concrete Accents

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.
B03.1.1. Paved Plazas

☐ 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. Pervious pavers may be used on all plazas and courtyards in Facility Groups 1 and 2; pervious concrete may be used in Groups 3 and 4. The designer shall incorporate appropriate expansion and construction joints.

2. Pavers shall match the color of pavers used on adjacent sidewalks using base standard range of beige or tan. Bricks used on plazas shall typically be 4” x 8” size. Avoid the use of pavers that effloresce or corrode when exposed to snow-melt chemicals.

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 architectural design theme. Generally limit these elements to frequently used locations adjacent to Facility Group 1 and highly traveled community pedestrian spaces.

2. Consider entry gates as possible sites for new displays.

3. All proposed memorials shall follow AFI 36-3108 and be limited to highly deserving individuals or groups as deemed appropriate by the installation leadership. Living memorials (tree plantings / etc.) are discouraged due to added maintenance requirements.

4. When sculpture requires a base, match the materials and / or color palette of adjacent buildings.
5. Use direct or indirect lighting to accentuate features or enhance an intended effect.

6. Ensure that all sculpture, markers and statuary are honorable and inspiring, provide a sense of place, positively contribute to the base's visual quality, and encourage pride for the community and the US Air Force.

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

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

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

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

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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.

**B03.2.1. Parade Grounds**

- Applicable  N/A  Large graphics do not apply

- Applicable  N/A  Small graphics do not apply

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.
B03.2.2. Parks

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 is low maintenance and endures 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**  
  - Large graphics do not apply

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

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

2. Provide minimal maintenance with mowing as needed for controlling bird behavior for airfield safety, or eliminating fire hazards.

**B03.2.4. Perimeter Fence**

- **Applicable**  
  - Large graphics do not apply

- **Applicable**  
  - Select number of graphics / images (small: 250 px x 188 px) to insert 6
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  Small graphics do not apply

Fitness Center and Adjacent Grounds

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 versus base-wide infrastructure; consider open space, natural features, bioswales, building roofs, streets, paved surfaces, and snow storage areas.

4. Integrate snow storage areas with adjacent streets and parking areas; coordinate snow storage with the base stormwater plan.

5. 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.
6. 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).

7. 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.

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

9. 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.

10. 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.

11. 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.

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

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

14. 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.

15. Applicably coordinate roof designs and roof drainage when implementing an integrated approach to stormwater management.

16. 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 ACC
- Visibility of the new facility from main roads
- Meet the required ASFP standoff distance
- Separation between staff/office/meeting rooms
- Staff parking spaces for public and staff
- Create a unified campus
- Outdoor healing environment
- Implementation of landscape zones A, B, C & D

**CONCEPTUAL DIAGRAM**

Conceptual Site Analysis and Site Design Diagram

**SOLAR ALTITUDE**

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 and main entrance facing south to southeast.

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

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

C02.1. Utility Components

- Applicable  N/A  Large graphics do not apply
- Applicable  N/A  Select number of graphics / images (small: 250 px x 188 px) to insert 6

![Pad-Mounted Electrical Cabinet](Image)

![Standpipe Connection](Image)

![Electrical Gear at Access Drive](Image)
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 medium bronze and provide visual screening following Installation Facilities Standards (IFS).

2. All ground mounted utility components such as fire hydrants, shall be painted medium bronze. Include vertical markers to locate components when buried in deep snow.

3. Provide installation of utility infrastructure to support near term and future electric vehicle charging stations.

4. Define all service entry points into the building and route distribution below grade into an interior space within the facility; exposed conduits, cables and wires on exterior walls are not permitted for Facility Group 1.

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

6. 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.

7. Direct roof drainage to bioswales when feasible or paved channels to intercept roof drainage at grade.

C03. PARKING AREAS
Comply with AF Corporate Standards for Site Development:
http://afcfs.wbdg.org/site-development/index.html

Comply with AF Corporate Standards for Parking Areas:
http://afcfs.wbdg.org/site-development/parking-areas/index.html
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. Configure curbing to facilitate snow removal. Ensure snow storage areas are coordinated with the stormwater plan.

4. Define pedestrian access with approved hardscape 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 car pools near the main entrance.

9. Cost-effectively integrate electric service outlets in parking areas for automobile block heaters where vehicles may be parked overnight.

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

- Applicable  
- N/A  

Select number of graphics / images (small: 250 px x 188 px) to insert 3
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 bituminous 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  3
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 6

Image Tool 250 x 188

Group 1 Median
Paved Median
Central Median as Focal Point
1. Install landscape islands and medians as visual breaks, to reduce heat island effects and to accommodate bioswales and rain gardens with consideration for snow storage and removal. 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 ATF guidelines are fully addressed.

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

**C03.3. Connectivity**

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

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

Bioswale
Native Plant Species
Stormwater Drainage Area
Outlet to Rip Rap Swale
Tree Planting along Swale
Inlet Cover
1. Design all stormwater systems including retention ponds, detention areas, snow storage 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; consider freeze protection for winter months.

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

Applicable  N/A  Large graphics do not apply

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

Concrete Paving at Group 1  Connection to Main Entrance  Paved Plaza at Group 1

Attached Sidewalk  Standard Paving and Adjacent Rock Mulch  Connection between Entrances

Controlled Access  Concrete Sidewalk  Asphalt Paving at Trail
Facility Group 1 sidewalks, plazas, and courtyards paving materials shall be as follows.

Primary: Pervious Pavers with Concrete Edging
Secondary: Concrete
Accent: Optional: Accent color of pavers

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

Primary: Pervious Pavers with Concrete Edging
Secondary: Concrete
Accent: N/A

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

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

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

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

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

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

3. Walks in parking areas shall provide a direct path using "safe islands" and "peninsulas" to encourage safety. Walks parallel to streets shall follow streetscape guidelines. Clearly mark pedestrian crossings at vehicular routes. Include markers in unplowed areas that exceed the height of snowpack.

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 or ice accumulation 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: medium to dark beiges and tans. Pavers used on walks shall typically be 4”x8” 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

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

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

- 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

Native Species Sustained by Annual Rainfall

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.

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

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

C06.1.4. Plant Material Selection

☐ Applicable  ☐ N/A  Large graphics do not apply

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

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 current Plant List available from the Base Civil Engineer.

3. Trees should be the focus of landscape plantings and, where possible, should be a mix of deciduous and evergreen species for variety; provide tree grates when appropriate and use tree guards on smaller trees.

4. Ground covers are only recommended when minimal maintenance is required.
5. Turf areas should be limited to those that can be sustained by natural rainfall or grey water (non-potable) irrigation systems; turf may be defined by at-grade concrete mow strips to lessen maintenance.

6. Analyze soils and provide organic amendments as needed to improve plant growth and conserve water.

7. All plant material shall have one-year warranty and is subject to approval by the Base Landscape Architect.

C06.1.5. Water Budgeting (Hydrozones)

☐ Applicable ☑ N/A Large graphics do not apply

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

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


3. New buildings shall cost-effectively integrate a grey-water reclamation system following UFC 1-200-02, which provides source water for an automatic drip irrigation system; connect adaptive plantings adjacent to facilities to a grey-water irrigation system when available and discontinue the use of potable water for irrigation after the establishment period.

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

5. Life cycle cost-effectively equip irrigation systems to sense soil moisture, rainfall and wind to minimize unnecessary watering; incorporate drip irrigation systems as the primary source.
C06.1.6. Base Entrance Landscaping

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

1. At the main gate, reinforce a sense of arrival through a well-designed concentration of native landscape elements consistent in visual quality with Facility Group 1.

2. Ensure landscaping has seasonal features with spring and fall color and a combination of evergreen and deciduous trees and shrubs for winter interest.

3. Integrate base signs and street and pedestrian lighting whenever feasible.

C06.1.7. Streetscape Landscaping

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

1. Provide landscape designs with plant materials appropriately representing the level of quality of the adjacent Facility Group number. Refer to the Installation Elements section.

2. Select a variety of regionally appropriate streetscape plantings and grading to create a visual interest.
C06.1.8. Pedestrian Circulation Landscaping

- **Group 1 Pathway and Planting**
- **Landscape Defining Edge**
- **Emphasizing Vertical Proportions**
- **Site Graded from Walkway**
- **Landscape Defining Walkway**
- **Planters in Plaza Area**

1. Define walkways with landscaping where appropriate.

2. Provide rest areas along the pedestrian circulation network with human-scaled deciduous shade trees. Supplement tree plantings with finely textured shrubs when appropriate for the climate.

3. Provide wind breaks where required.
C06.1.9. Parking Lot Landscaping

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

- Avoid trees that drop sap, fruit, or seeds, and use long-lived species; keep trees trimmed, removing dead and dying trees or branches.

- Provide planting in islands within parking lots for shade and appeal following IFS and the base stormwater management plan.

- Rain garden islands shall be landscaped to receive snowmelt and 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

- Group 1 Accent Planting
- Screening or Parking and Utilities
- Street Accent and Screening
1. Provide complimentary accent landscaping at monuments and static displays.

2. At Facility Group 1, provide landscaping adjacent to all freestanding signs without distracting from the written communication.

3. Provide landscape screening of utility elements adjacent to Facility Group 1.

4. Providing landscaping as visual screening is preferred to the construction of walls and fences; berming and mounding may supplement landscape screening.

C06.1.11. Other

☐ Applicable  ☑ N/A  Large graphics do not apply

☐ Applicable  ☑ N/A  Small graphics do not apply
C07. SITE FURNISHINGS

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

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

C07.1. Furnishings and 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. Provide a coordinated consistent inventory of site furnishings to positively contribute to the visual environment, image, and identity of the base; ensure durability, low maintenance, reduced visual clutter, and compatibility with the adjacent architecture.

2. Remove poorly located or redundant litter / ash receptacles, newspaper and bicycle racks, telephone booths, vending machines, walls and fences to reduce visual clutter and to lessen the requirements for maintenance.

3. Group 1, 2, 3 and 4 site furnishings shall be non-ferrous metals such as aluminum or stainless steel. Group 2, 3 and 4 may be powder coated medium bronze. Generally match the site furniture of adjacent facilities and the facility district.

4. Install needed outdoor seating (benches and low walls) in public gathering spaces near main and secondary building entrances. Low walls shall match facility architecture.

5. Benches in Group 1, 2, 3 and 4 site furnishings shall be non-ferrous metals such as aluminum or stainless steel. Group 2, 3 and 4 may be powder coated medium bronze. Recreational areas may use wood benches when protected by a roof structure.

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 powder coated aluminum in Groups 1, 2 and 3; bollards in Group 4 and recreational areas may be heavy timber. Illuminated bollards may be used as approved on a case basis.

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

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

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

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

12. Bus shelters shall be provided only where there is a documented need and when approved on a case basis. Generally emulate the designs of adjacent shelters using concrete foundations and bases, non-ferrous metal structures and wall sheeting, and standing seam metal roofing. Structure may be silver of dark bronze when approved by the BCE. Provide a full enclosure using an aluminum storefront framing and glazing system.

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

14. When visual screening is necessary, consider landscaping as the first option; screen walls are permitted only in Group 1 when finished to match the adjacent building.

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

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

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

18. Provide trash dumpster enclosures for Group 1, 2 and 3 with screen walls to match the adjacent building; all gates shall be metal factory finished dark bronze.

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

20. Group 1, 2, 3 and 4 picnic tables and seating shall be non-ferrous metals such as aluminum or stainless steel. Group 2, 3 and 4 may be powder coated medium bronze. Generally match the site furniture of adjacent facilities and the facility district. Generally limit barbeque grills and drinking fountains to lodging, dormitories, housing areas, parks and recreation areas.

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

22. Provide kiosks only where there is a documented need for visual communication of posted messages. When used, match adjacent facilities in materials and detailing and consolidate kiosks with other site furnishings within 30 feet of major pedestrian paths. Limit kiosks to facility Groups 1 and 2 and parks.

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

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

**Note:** Apply the below base-wide standards for Site Furnishings (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.
**C07.2.1. Barbeque Grills**

**Applicable** ☑ N/A  
Number of base standards 2  
Image Tool 250 x 188

---

**Charcoal**

- **Type:** Charcoal
- **Applies to:** Group 1  ☑ Group 2  ☑ Group 3  ☑ Group 4  ☑ Other
- **Mfr:** Most Dependable Fountains, Inc.
- **Color:** Natural stainless steel
- **Finish:** Mill
- **Model #:** SS BBQ Grill
- **Other:** Concrete foundation, coordinate with Base Architect
- **UFGS:** N/A

---

**Natural Gas**

- **Type:** Natural Gas
- **Applies to:** Group 1  ☑ Group 2  ☑ Group 3  ☑ Group 4  ☑ Other
- **Mfr:** BBQ Coach
- **Color:** Natural stainless steel
- **Finish:** Mill
- **Model #:** 32” 4-Burner
- **Other:** Built-in Concrete or masonry, coordinate with Base Architect
- **UFGS:** N/A

---
### C07.2.2. Benches

<table>
<thead>
<tr>
<th>Type:</th>
<th><strong>Aluminum Park Bench</strong></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>Belson Outdoors</td>
</tr>
<tr>
<td>Color:</td>
<td>Silver</td>
</tr>
<tr>
<td>Finish:</td>
<td>Powder-Coated</td>
</tr>
<tr>
<td>Model #:</td>
<td>Model CBPB-6A1B-SL, 6’ Length</td>
</tr>
<tr>
<td>Other:</td>
<td>N/A</td>
</tr>
<tr>
<td>UFGS:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

---

### C07.2.3. Bike Racks

<table>
<thead>
<tr>
<th>Type:</th>
<th><strong>Style 1</strong></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>Brandir International Inc.</td>
</tr>
<tr>
<td>Color:</td>
<td>Galvanized</td>
</tr>
<tr>
<td>Finish:</td>
<td>Factory</td>
</tr>
<tr>
<td>Model #:</td>
<td>The Ribbon Bike Rack, RB-07</td>
</tr>
<tr>
<td>Other:</td>
<td>N/A</td>
</tr>
<tr>
<td>UFGS:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

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### C07.2.4. Bike Lockers

| | |
C07.2.5. Bollards

Applicable ☑ N/A

Number of base standards 2

Image Tool 250 x 188

Type: **Lighted Round Flat Top**

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

- **Mfr:** Lithonia Lighting Products
- **Color:** Dark Bronze
- **Finish:** Anodized aluminum
- **Model #:** KBR
- **Other:** 3000K LED Lamp, 360° downlighting

**Recommended Image:**
Example of Bollard Type

Size image to:
250 pixels width x 188 pixels height

Click here to insert image

**UFGS:** N/A

---

Type: **Building Protection, steel**

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

- **Mfr:** (Bollard Cover) Reliance Foundry
- **Color:** Brown cover may be field painted dark bronze
- **Finish:** Factory
- **Model #:** 6" Steel pipe, concrete filled, Cover: R-7173
- **Other:** A 1” (25.4 mm) rigid conduit and box with shroud may be provided at top of bollard with a receiver/key switch application

**Recommended Image:**
Example of Bollard Type

Size image to:
250 pixels width x 188 pixels height

Click here to insert image

**UFGS:** N/A

---
C07.2.6. Bus Shelters

Type: 1

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

Mfr: Custom

Color: Dark Bronze, Medium Bronze, Natural Aluminum, Natural Concrete

Finish: Powder coated, anodized frames

Model #: Gabled roof

Other: Provide concrete slab and 2 pre-manufactured aluminum benches

UFGS: N/A

C07.2.7. Drinking Fountains

Type: Pedestal

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

Mfr: Most Dependable Fountains, Inc.

Color: Natural

Finish: Stainless Steel

Model #: MDF 440 SMSS

Other: Accessible

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

Type: **1: CMU and Steel**

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

Mfr: Custom

Color: Brown CMU blend, dark brown doors

Finish: Split Face CMU, powder coated doors

Model #: Match adjacent building

Other: Steel gate hardware and accessories shall be dark brown, dumpsters shall be dark brown

UFGS: Section 04 20 00 Unit Masonry

C07.2.9. Fencing

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

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

Mfr: Custom

Color: Dark bronze or black

Finish: Powder coated

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

Other: Brick or split face CMU piers may be used

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications
<table>
<thead>
<tr>
<th>Type: Style B Barrier: High security, medium visibility</th>
<th>Type: Style C Barrier: High security, low visibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to: [ ] Group 1  [ ] Group 2  [ ] Group 3  [ ] Group 4  [ ] Other</td>
<td>Applies to: [ ] Group 1  [ ] Group 2  [ ] Group 3  [ ] Group 4  [ ] Other</td>
</tr>
<tr>
<td>Mfr: Custom</td>
<td>Mfr: General Wire Company</td>
</tr>
<tr>
<td>Color: Dark bronze or black</td>
<td>Color: Dark bronze or black</td>
</tr>
<tr>
<td>Finish: Powder coat</td>
<td>Finish: Powder coated galvanized steel</td>
</tr>
<tr>
<td>Model #: Steel grid: flat bar stock verticals, round rod horizontals</td>
<td>Model #: Chain link, steel posts and rails, gates and accessories</td>
</tr>
<tr>
<td>Other: Steel posts, horizontal bars, braces, and accessories, in heights, lengths, and gauges as required; Close all ends of tubing</td>
<td>Other: N/A</td>
</tr>
</tbody>
</table>

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

UFGS: Section 32 31 13 Chain Link Fences and Gates
Type: **Style D Barrier: 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**

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

Type: 1

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

Mfr: Eder Flag

Color: Natural aluminum

Finish: Satin Lustre

Model #: ECL30 IH, Internal Halyard

Other: 5” Butt Dia. 33’ H (30’ Exposed)

UFGS: N/A

---

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

Please refer to the Lighting section.
C07.2.12. Litter and Ash Receptacles

Type: **Style 1: Precast concrete**

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

- **Mfr:** Materials, Inc.

- **Color:** Weatherstone Gray

- **Finish:** Smooth

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

- **Other:**
  - Rigid plastic internal liner,

- **UFGS:** N/A

Type: **Style 2: Metal**

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

- **Mfr:** Wabash Valley

- **Color:** Black or as approved

- **Finish:** Perforated Pattern

- **Model #:** Urbanscape “E” with liner, 32 Gallon

- **Other:**
  - With dome top, without side door

- **UFGS:** N/A
### C07.2.13. Picnic Tables

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

**Type:** Steel, Rectangular

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

- **Mfr:** Belson

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

- **Finish:** Factory

- **Model #:** 238-V6 or 238-V8

- **Other:** Length to be determined by user

- **UFGS:** N/A

---

### C07.2.14. Planters

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

**Type:** Precast concrete

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

- **Mfr:** Local Precast Company TBD

- **Color:** Gray

- **Finish:** Smooth Casting

- **Model #:** Round

- **Other:** N/A

- **UFGS:** N/A
C07.2.15. Play Equipment

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

Type: CMU

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

Mfr: Custom

Color: Brown CMU blend

Finish: Split Face CMU

Model #: Match adjacent building

Other: Match coursing and detailing of adjacent building

UFGS: Section 04 20 00 Unit Masonry
### C07.2.17. Tree Grates

<table>
<thead>
<tr>
<th>Type</th>
<th>Cast Iron</th>
</tr>
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<tbody>
<tr>
<td>Applies to</td>
<td>Group 1  ✔️  Group 2  ✔️  Group 3  ❌  Group 4  ❌  Other  ❌</td>
</tr>
<tr>
<td>Mfr</td>
<td>Neenah Enterprises, Inc.</td>
</tr>
<tr>
<td>Color</td>
<td>Natural cast iron</td>
</tr>
<tr>
<td>Finish</td>
<td>Cast</td>
</tr>
<tr>
<td>Model #:</td>
<td>2-Piece, round or square</td>
</tr>
<tr>
<td>Other</td>
<td>N/A</td>
</tr>
</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

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

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

UFC Standard Signs
Building Identification Sign
Directional and Wayfinding Signs

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**

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


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

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

Type: **Typical Sign Face**

- Applicable: Yes
- N/A: No
- Number of base standards: 3

**Image Tool 250 x 188**

**Recommended Image:** Example of Materials and Color Specifications

- Size image to: 250 pixels width x 188 pixels height
- Click here to insert image

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

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

---

**Type: Typical Sign Post**

- Applicable: Yes
- N/A: No
- Number of base standards: 3

**Image Tool 250 x 188**

**Recommended Image:** Example of Materials and Color Specifications

- Size image to: 250 pixels width x 188 pixels height
- Click here to insert image

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

- Type: Typical Sign Post
- 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.
**Typical Sign Base**

- **Type:** Typical Sign Base
- **Applies to:** [ ] Group 1 [ ] Group 2 [ ] Group 3 [x] 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:** Yes
- **Number of base standards:** 1

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

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

- **Applies to:** [ ] Group 1 [x] 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, beige stone base
- **Other:** White vinyl lettering. Provide dimensions per UFC. Secondary signs shall match primary sign’s materials, but shall be smaller in size per UFC. Tertiary signs shall follow the UFC.

**UFGS:** Section 05 50 13 Miscellaneous Metal Fabrications
C08.1.3. Building Identification Signs

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

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

**Mfr:** Custom

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

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

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

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

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

---

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

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

**Mfr:** Custom

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

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

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

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

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

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

---

**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

### 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 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

Type: Vehicular

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

Mfr: Custom

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

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

Type: Pedestrian

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

Mfr: Custom

Color: Medium brown face, dark bronze posts

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

C08.1.6. Informational Signs

Large graphics do not apply

Small graphics do not apply

1. Minimize informational signs such as static display signs, hours of operation, and project signs to reduce visual clutter.

2. Static display signs shall have standard bronze color.

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

**C08.1.7. Motivational Signage**

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

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

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

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

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

**C08.1.8. Parking Lot Signs**

- Applicable  N/A

**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

Image Tool 250 x 188

Group 1 Coordinated Fixture Design

Group 3 Wall Mounted Fixtures

Group 3 Ground Mounted Fixtures

Group 1 Coordinated Fixture Design

Parking Lot Fixture

Lighted Bollard

Wall Mounting at Secondary Entrance

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**: 1

**Type**: Style 1

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

**Mfr**: Hubbell, Kim Lighting

**Color**: Clear Anodized (or Clear Anodized as approved by BCE)

**Finish**: Factory

**Model #**: Angular 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**: ☑️

**N/A**: ☐️

**Number of base standards**: 2

**Type**: Parking Lot Style 1

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

**Mfr**: Hubbell, Kim Lighting

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

**Finish**: Factory

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

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

**UFGS**: N/A
### Parking Lot Fixture Base

<table>
<thead>
<tr>
<th>Type: Parking Lot Fixture Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to: □ Group 1 □ Group 2 □ Group 3 □ Group 4 □ Other</td>
</tr>
<tr>
<td>Mfr: Custom</td>
</tr>
<tr>
<td>Color: Natural gray</td>
</tr>
<tr>
<td>Finish: Trowel</td>
</tr>
<tr>
<td>Model #: Form-cast, round</td>
</tr>
<tr>
<td>Other: N/A</td>
</tr>
</tbody>
</table>

UFGS: Section 03 33 00 Cast-In-Place Architectural Concrete

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#### C09.2.3. Lighted Bollards

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

<table>
<thead>
<tr>
<th>Type: Lighted Round Flat Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to: □ Group 1 □ Group 2 □ Group 3 □ Group 4 □ Other</td>
</tr>
<tr>
<td>Mfr: Lithonia Lighting Products</td>
</tr>
<tr>
<td>Color: Dark Bronze</td>
</tr>
<tr>
<td>Finish: Anodized aluminum</td>
</tr>
<tr>
<td>Model #: KBR</td>
</tr>
<tr>
<td>Other: 3000K LED Lamp, 360° downlighting</td>
</tr>
</tbody>
</table>

UFGS: N/A
C09.2.4. Sidewalk Lighting

Type: **Rectilinear Cutoff**

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

Mfr: Hubbell, Kim Lighting

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

Finish: Anodized aluminum

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

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

UFGS: N/A

C09.2.5. Walls / Stairs Lighting

Type: **Style 1**

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

Mfr: Vista Lighting

Color: Clear anodized aluminum, or stainless steel

Finish: Satin

Model #: Aluminum step light, linear louvered

Other: Lamp: LED

UFGS: N/A

C09.2.6. Other

Mfr: N/A
D. FACILITIES EXTERIORS

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

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

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

Optional: Insert Facilities Exteriors graphic that represents the base-wide standard
Size image to:
800 pixels width x 440 pixels in height
Click here to insert image

Optional: Insert Facilities Exteriors graphic that represents the base-wide standard
Size image to:
250 pixels width x 188 pixels height
Click here to insert image

JBER Richardson Base-wide Standard Materials Palette for Facility Group 2

D01. SUPPORTING THE MISSION

Comply with AF Corporate Standards for Supporting the Mission:

D02. SUSTAINABILITY

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

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

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

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1

Group 2

Group 3

Group 4
D03.1. Orientation, Massing and Scale

1. Orient new buildings to maximize energy efficiency, passive solar and daylighting potential of the building; narrow buildings oriented along an east-west axis are preferred with fixed shading for appropriate levels of heat gain in the spring, summer and autumn months resulting in less overall energy usage.

2. Generally orient the main entrance, the majority of windows and parking areas to the south, maximizing solar heat gain.

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

4. 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.

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

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

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

D03.2. Architectural Character


2. Respond to the local climate with environmentally functional architectural features. Understated references to the historical architecture may be made but avoid directly reproducing features and ornamental detailing.

3. For new facilities design generally maintain consistency and visual unity with 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 JBER Richardson Sub-Alpine theme, which is generally characterized by lightly colored monolithic building form, highly textured human-scaled main entrances and pronounced building bases in a contrasting color or material.

5. Projecting gabled entrances with round exterior structural concrete or precast-clad columns 16 to 24 inches in diameter are encouraged in entrance features as a subtle reference to “frontier” log construction. Rectilinear concrete masonry unit (CMU) columns may be used in Group 2 and 3. Refer to D08. Structural Systems.

6. All facilities shall express sustainability through their orientation, massing, shape, form, materials, and detailing. Provide louvers, overhangs and other strategies to optimize heat gain and reduce glare and to improve energy efficiency. Use only low-maintenance and highly durable materials.

7. Minimize exterior surface area to maximize energy conservation. Earth sheltering concepts may be used when approved by the BCE.

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

D03.3. Details and Color

1. Provide a compatible palette of earth-tone colors related to existing facilities in concrete, masonry and powder-coated nonferrous metals. Refer to wall systems and roof systems for detailed material listings.

2. Relate the level of architectural detailing to the Facility Group number. Group 1 is reserved for the highest quality detailing.

3. Use only integrally colored or factory finished 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, 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: Extremely low levels of daylight during the winter months and high levels in summer months

Other: Proximity to medium wind power class

---

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

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

**Doors:**  Projecting gabled roofs are required over entrances

**Windows:**  Stringently limit north-facing windows and appropriately locate windows on south façades to optimize solar heat gain when needed

**Roof:**  Low to medium albedo, minimal to moderate slope

**Structure:**  Do not expose ferrous metals; provide factory finished non-ferrous metals or concrete
**MEP:** Ground-source, radiant heating and heat recovery following LCCA

*Other:* Optimize shading devices to allow appropriate levels of solar heat gain year round

*Other:* Internal thermal mass walls to supplement radiant heat systems 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

- **Applicable**  
  - Number of base standards: 1

  ![Image Tool 250 x 188](Example of Natural Ventilation System)

- **Type:** Style 1 Aluminum Windows

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

  - **Mfr:** Kawneer (or equivalent)

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

  - **Finish:** Anodized

  - **Model #:** 2x4, slider or awning type

  - **Other:** Provide thermally broken frames.

- **UFGS:** Section 08 41 13 Aluminum-Framed Entrances and Storefronts
### D03.3.3. Thermal Mass

**Type:** Style 1 Interior Wall Material  

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

**Mfr:** Custom, TBD  

**Color:** Natural concrete, beige masonry or brown masonry  

**Finish:** Light texture concrete, Ground face or split face CMU  

**Model #:** Board-formed or sheet-formed concrete, coursed unit masonry  

**Other:** Precast or cast-in-place concrete is preferred for Group 1. Concrete block may only be used in Group 1 when approved by the BCE.  

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

---

### D03.3.4. Thermal Shading

**Type:** Style 1 Wall Devices  

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

**Mfr:** Kawneer (or equivalent) or custom  

**Color:** Dark bronze  

**Finish:** Factory, to match frames  

**Model #:** Louver  

**Other:** Shading devices may be attached to frames or structure  

**UFGS:** Section 08 41 13 Aluminum-Framed Entrances and Storefronts
D03.3.5. Renewable Heating/Cooling

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

UFGS: Section 23 81 47 Water-Loop and Ground-Loop Heat Pump Systems

D03.3.6. Solar Photovoltaic System

- **Type:** Roof-Mounted PV Panels
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** TBD
- **Color:** Factory
- **Finish:** Matte
- **Model #:** Flat plate collector
- **Other:** Coordinate installation with roofing manufacturer

UFGS: Section 26 31 00 Solar Photovoltaic (PV) Components
**Ground-Mounted PV Panels**

- **Mfr:** TBD
- **Color:** Factory
- **Finish:** Matte
- **Model #:** Flat plate collector, fixed or tracking
- **Other:** Coordinate with local utility provider

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

---

**D03.3.7. Solar Thermal System**

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

**Wall-Mounted or Roof-Mounted Panels**

- **Mfr:** TBD
- **Color:** Factory
- **Finish:** Matte
- **Model #:** Flat plate collector
- **Other:** N/A

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

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

Comply with AF Corporate Standards for Building Entrances:

Insert 3 photos for each facility group.

Image Tool 250 x 188
D04.1. Primary Entrances

1. Emphasize the primary entrance in the overall building design with a projected covering for weather protection in a color to contrast with the overall facade. Generally provide sloped metal roofs supported by exposed non-ferrous metal and/or concrete structure that will endure without degradation due to weathering and with zero to very low maintenance requirements. Ensure an appropriate level of quality consistent with the Facility Group designation.

2. Provide a gabled roof over all entrances to shed snow and ice away from pedestrians. Covered arcade elements may be used for Facility Group 1.

3. Provide vestibules at entries in Groups 1, 2 and 3 unless used infrequently or serving unconditioned space following ASHRAE 90.1. Design vestibules (air locks) to minimize heat loss during the action of opening and closing doors.

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

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

6. Snow-melt systems may be provided on roofing or in paving as required to ensure efficient mission-critical operations.

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

8. Protect entrances from falling ice and snow. Develop roof form and slopes to avoid the need for gutters and to prevent water from discharging onto sidewalks.

9. Provide porte cocheres or covered drop-offs when justified for lodging and medical facilities; do not use for prestige or architectural accents.

D04.2. Secondary Entrances

1. Provide vestibules at entries in Groups 1, 2 and 3 unless used infrequently or serving unconditioned space following ASHRAE 90.1; use of stair towers as vestibules for multi-story buildings is encouraged when building and / or energy codes are satisfied.

2. Reflect the general character of the primary entrance but to a lesser extent with a smaller scale and to blend with the adjacent wall using a matching color.

3. Include a recess or projection for weather protection.

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 where there is a documented need; provide weatherstripping and appropriate insulation for all doors including those 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 predominantly off-white or light beige insulated metal panel systems. Dark bronze corrugated metal sheeting may be used as an accent. Integrally colored light or medium tan concrete masonry units (CMU) with varied textures of split face and ground face units may be used in orderly patterns as accent walls or wainscots.

3. Group 2 facilities shall be predominantly light or medium beige insulated metal panel systems. Light beige CMU may be used as a visual base and accent. Medium beige CMU may be used as accents. EFIS may be used at upper levels and otherwise where protected from impacts.

4. Large-scale Group 3 facilities shall be predominantly light beige insulated metal panel systems with medium beige CMU wainscots. Beige EFIS may be used at upper levels and otherwise where protected from impacts.

5. Group 4 shall be predominantly cementitious horizontal lap siding in medium Earth tones and neutral color; white cementitious trim boards and muted warm-colored shingles or vertical siding may be used as accents.

6. Multi-story Group 1, 2 and 3 facilities may include a transition in material, color or detailing to create a visual base. Generally limit Group 1 and 2 facilities to three field colors and Group 3 and 4 facilities to two field colors.

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

8. Use detailing that is not subject to excessive weathering. Generally provide wall accents consistently throughout the base for each facility group.

9. Use integrally colored concrete masonry units (CMU) with clear sealers when recommended by the manufacturer. Do not paint CMU.

10. Use integrally colored concrete and masonry with clear sealers when recommended by the manufacturer. Do not paint concrete or concrete masonry units (CMU).

11. Translucent wall panels may be used in Facility Groups 1, 2 and 3 with appropriate insulation.

12. 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. When weathering steel is used for shading devices, provide weathering steel wall cladding to direct drainage along the wall to the ground to avoid staining adjacent light-colored materials.

3. Integrate fixed shading devices to reduce glare and promote daylighting in interiors. Generally promote solar gain into interiors as a passive design measure to reduce energy use.

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, exposed glued laminated construction or other materials that require field painting.

8. Refer to C07.2.16. Screen Walls for materials and colors of freestanding walls.
9. Refer to D07. Roofs for parapets.

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: Insulated Metal Panels or CMU
Secondary: Metal Sheeting or CMU
Accent: Alternate color of CMU

Facility Group 2 wall materials shall be as follows.

Primary: Insulated Metal Panels or CMU
Secondary: Metal Sheeting or CMU
Accent: Alternate color of CMU

Facility Group 3 wall materials shall be as follows.

Primary: Insulated Metal Panels
Secondary: Metal Panels in a Contrasting Color or CMU
Accent: N/A

Facility Group 4 wall materials shall be as follows.

Primary: Fiber Cement Siding
Secondary: Fiber Cement Siding, Trim Boards
Accent: Fiber Cement Vertical Siding or Shingles

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 Insulated Metal Panel System\*

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

**Mfr:** Metl-Span

**Model #:** Insulated Metal Wall System

**Color:** Off-White, Light Beige and Medium Beige

**Finish:** Smooth

**Other:** N/A

**UFGS:**
- Section 07 42 63 Fabricated Wall Panel Assemblies: [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 42 63.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 42 63.pdf)

**Recommended Image:** Detail of flat metal panel

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

**Click here to insert image**

## D05.4.2. Brick Veneer

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

## D05.4.3. Architectural Precast

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

## D05.4.4. Stucco Over Sheathing

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

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D05.4.5. Curtain Wall
☐ Applicable  ☒ N/A

D05.4.6. Cast-In-Place Concrete
☐ Applicable  ☒ N/A

D05.4.7. Tilt-Up Concrete
☐ Applicable  ☒ N/A

D05.4.8. Ribbed Metal Sheeting
☐ Applicable  ☒ N/A  Number of base standards 1

Type: **Flush Seam**

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

Mfr: Berridge

Model #: Flush Seam Panel

Color: Beige

Finish: Embossed Texture, factory finished

Other: 24 Gauge Steel

UFGS: Section 07 42 13 Metal Wall Panels:
D05.4.9. EIFS

Type: Continuous Insulation and Finish System

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

Mfr: Dryvit

Model #: Mechanically Fastened

Color: Beige

Finish: Sand

Other: Confirm class of system with the BCE

UFGS: Section 07 24 00 Exterior Insulation and Finish Systems:
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 24 00.pdf

D05.4.10. GFRC

Type: Concrete Masonry Unit (CMU) Split Face

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

Mfr: Local TBD

Model #: 8x8x16 nominal, face and corner units

Color: Light or medium beige

Finish: Heavy Texture

Other: Accent coursing may include alternate color

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

D05.4.11. Concrete Block

Type: Continuous Insulation and Finish System

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

Mfr: Local TBD

Model #: 8x8x16 nominal, face and corner units

Color: Beige

Finish: Sand

Other: Confirm class of system with the BCE

UFGS: Section 07 24 00 Exterior Insulation and Finish Systems:
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 24 00.pdf
D05.4.12. Fiber Cement Siding

Type: **Style 1**

- **Applies to:** □ Group 1 □ Group 2 □ Group 3 □ Group 4 □ Other
- **Mfr:** James Hardie Building Products, Inc.
- **Model #:** Horizontal Lap Siding, Shingle Siding
- **Color:** Earth Tones
- **Finish:** Wood Texture
- **Other:** Hardie Plank, Hardie Shingle
- **UFGS:** SECTION 074646 Fiber Cement Siding: (Not Available on UFGS)

D05.4.13. Other

- **Applies to:** □ Group 1 □ Group 2 □ Group 3 □ Group 4 □ Other
- **Mfr:** Local TBD
- **Model #:** 8x8x8 nominal, face and corner units
- **Color:** Light or medium beige
- **Finish:** Heavy Texture
- **Other:** Stack bond; accent coursing may include alternate color
- **UFGS:** Section 04 20 00 Unit Masonry: http://www.wbdg.org/FFC/DOD/UFGS/UFGS 04 20 00.pdf

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**Concrete Masonry Unit (CMU) Split Face**

- **Type:** Concrete Masonry Unit (CMU) Split Face
- **Applies to:** □ Group 1 □ Group 2 □ Group 3 □ Group 4 □ Other
- **Mfr:** Local TBD
- **Model #:** 8x8x8 nominal, face and corner units
- **Color:** Light or medium beige
- **Finish:** Heavy Texture
- **Other:** Stack bond; accent coursing may include alternate color
- **UFGS:** Section 04 20 00 Unit Masonry: http://www.wbdg.org/FFC/DOD/UFGS/UFGS 04 20 00.pdf
D06. DOORS AND WINDOWS

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

Comply with AF Corporate Standards for Doors and Windows:

Comply with AFCFS Recommended Materials:

Insert 3 photos for each facility group.

Image Tool 250 x 188
D06.1. Types

1. Dark Bronze or clear anodized aluminum doors, windows and frames with insulation and thermal breaks are preferred for Facility Groups 1-3. Clear finish is preferred in heavy used administrative areas because they show less wear and weathering than dark anodized finishes; match the color of the door and frame. For renovation projects the color of new windows, doors and frames may match existing.

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

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

4. Automatic doors are allowed only where functionally necessary.

5. Limit hollow metal doors and frames to security doors, utility rooms and mechanical rooms in Groups 1 and 2, but these may be used in any application in Group 3 facilities.

6. Utility and emergency egress doors shall match the wall color and for an inconspicuous appearance.

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

8. Windows must meet force protection requirements.

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

10. 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; generally minimize glazing on north-facing facades.

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.

D06.3. Glazing and Shading

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

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

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

4. Do not use mirrored glazing.

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

6. Where appropriate for the facility use, install window screens to take advantage of natural ventilation.

D06.4. Hardware

1. Provide hardware appropriate for the Facility Group while considering activity and frequency of use and local climate; hardware may be of higher visual quality for Facility Group 1.

2. Ensure hardware will perform throughout the facility’s lifespan without showing extreme wear.

3. Select finishes that will not degrade by intensity of operation or exposure to the elements.
4. Use consistent finishes and colors on window and door systems throughout a facility. For renovation projects the color of new hardware may match the existing hardware.

5. Design building systems to eliminate the need for security screens whenever possible.

**D06.5. Doors and Windows Materials**

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

**D06.5.1. Anodized Aluminum**

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

**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)
D06.5.2. Hollow Metal
Applicable

Type: Hollow Metal Doors, Windows and Frames

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

Mfr: Steelcraft (or equivalent)

Color: Dark Brown

Finish: Powder Coated, Satin

Model #: 2x4 frame

Other: Provide thermally broken frames

UFGS: Section 08 11 13 Steel Doors and Frames:

D06.5.3. Aluminum-clad Wood
Applicable

Type: Aluminum-clad Residential

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

Mfr: Marvin

Color: White or Earth tones

Finish: Powder coated, satin

Model #: Aluminum-clad wood windows

Other: Double hung

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

D06.5.4. Other

Applicable

Other:
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.

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 immediately adjacent existing facilities in new construction.

3. Group 1, 2 and 3 facilities under a 5,000 sf footprint and/or narrow in plan geometry, may use shed, gabled or hipped standing seam metal roofs. Larger facilities may use sloped-roof features in conjunction with predominantly minimal-sloped “flat” membrane roofs.

4. Generally follow local practices for “Cold Roof” design, which optimizes venting and air movement with appropriate coordination of the thermal envelope. Provide roof configurations that minimize or eliminate snow management requirements.

5. Provide screens for roof-mounted appendages and equipment, which are clad to match standing seam roofs or parapet walls.

6. Roof translucent panels and skylights are not permitted in roofs.

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

8. Roof eaves shall extend beyond the exterior wall to avoid drainage onto wall surfaces.

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

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

11. Keep roofs uncluttered and minimize penetrations.

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

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

14. Roofs shall be maintained for the life of the system and replaced in accordance with UFC 3-110-04 and AFI 32-1051. A warranty is required on all new roofs.

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

D07.2. Roof Slope

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

2. Low-sloped roofs are allowed for larger structures of Groups 1, 2 and 3.

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

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

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

6. Provide underlayments as required for the roofing type as directed by the UFC.

D07.3. Parapets and Copings

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

D07.4. Color and Reflectivity
1. Sloped roofs in Groups 1, 2 and 3 may be red or galvalume; generally match the color of any immediately adjacent facilities.

2. All minimal-slope membrane roofs may use low-albedo because heat island effect is not applicable.

3. Sloped roofs in Group 4 shall be natural medium to dark wood 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. Roofs shall not use gutters and downspouts due to ice formation.

2. Internal roof drainage systems are allowed for minimal-slope applications.

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

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

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

1. Minimize and consolidate roof penetrations into a single, inconspicuous point whenever possible.

2. On sloped roofs clad pipe penetrations to match the roofing material.

3. Avoid the use of rooftop mechanical equipment, however for renovations and unavoidable configurations ensure units are screened.

4. Provide access points and service routes to equipment that protect the roof.

5. Screen all large vents.

6. Ensure attic spaces are properly vented at ridges and soffits.

7. Match roof color for all exposed equipment and vents.

8. Avoid roof-mounted antenna systems.

9. Arrange Lightning Protection Systems (LPS) components in an ordered, uncluttered, inconspicuous appearance and integrated into the organization of the roof and wall systems.

10. Ensure that LPS roof mounting systems are approved by the roofing manufacturer.

11. Additions to a roof shall not interfere with LPS or other rooftop systems that may be required.

12. Permanent fall protection shall be included with any addition to a roof with a slope above 3:12 per UFC 3-110-03 to a roof with a slope above 3:12 per UFC 3-110-03.

**D07.7. Clerestories and Skylights**

1. Clerestories are permitted in Group 1, 2 and 3 facilities only when serving passive systems and are justifiable by life-cycle analysis.

2. Design clerestories using the same principles for seasonal shading that are required for walls and roof overhangs.

3. Translucent panel systems are preferred in clerestory applications due to lack of window cleaning.

4. Clerestories must comply with UFC 4-10-01.
5. Skylights are not permitted.

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: Red or Galvalume

Finish: Matte

Model #: Tee-Panel

Other: Shed, gabled or hipped standing seam metal

UFGS: Section 07 61 14 Steel Standing Seam Roofing
## D07.9.2. Membrane Single-ply

**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**

### 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

- **Type:** Style 1
- **Mfr.:** Berridge
- **Color:** Red or Galvalume
- **Finish:** Factory
- **Model #:** High Seam Tee-Panel
- **Other:** 24 gauge steel, Width: 16", Batten height: 1-3/4"
- **UFGS:** Section 07 41 13.19 Batten-Seam Metal Roof Panels

(Not Available on UFGS)

D07.9.9. Composite Shingles

- **Type:** Style 1
- **Mfr.:** Tamko
- **Color:** Earth Tones
- **Finish:** Factory
- **Model #:** Heritage
- **Other:** Gabled or hipped with transverse gable or hipped features

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

D07.9.10. Other

- **Mfr.:** 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

Group 1

Group 2

Group 3

Group 4
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. Rigid frame steel systems and concrete systems may be used following a LCCA.

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

4. 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.

5. Fully coordinate structural grids with exterior window systems to align columns with window frames or wall systems.

6. When structure is exposed on building exteriors, it must be made of concrete or non-ferrous metals such as aluminum or stainless steel. Exposed non-ferrous metals are only permitted with weatherproof non-ferrous metal cladding or precast concrete cladding. Metal cladding must be factory finished and shall not be field painted. Heavy timber or log construction is only permitted in additions when matching existing conditions, or in the Otter Lake Recreation Area.

7. When structure is exposed on building interiors, provide an organized appearance and coordinate with mechanical, electrical, plumbing, fire protection, information technology, and communications systems.

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

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

10. 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
  - Group 4
  - Other
- **Mfr:** Custom
- **Color:** Natural Gray
- **Finish:** Light texture
- **Model #:** Post and beam and/or waffle slab
- **Other:** N/A

**UFGS:**
- Section 03 30 53 Miscellaneous Cast-In-Place Concrete
- 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)
- Section 03 47 13 Tilt-Up Concrete

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

- **Applicable:** No

### D08.2.3. Steel

- **Type:** Rigid Framing
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** US Steel
- **Color:** Shop primed
- **Finish:** Matte
- **Model #:** Structural steel shapes
- **Other:** N/A

**UFGS:**
- Section 05 12 00 Structural Steel
  - [http://www.wbdg.org/FFC/DOD/UFGS/UFGS_05_12_00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_05_12_00.pdf)
### D08.2.4. Pre-Engineered Steel

**Type:** Moment Frame

- **Applies to:** Group 1, Group 2, Group 3
- **Mfr.:** Behlen Building Systems
- **Color:** Factory primed
- **Finish:** Matte
- **Model #:** Moment Frame
- **Other:** Draped insulation may be used behind wall system; Behlen standing seam roof system may be used for Group 3

**UFGS:**
- Section 13 12 00 Steel Building Systems
- Section 13 34 19 Metal Building Systems


### D08.2.5. Masonry

**Type:** Load-Bearing Masonry

- **Applies to:** Group 1, Group 2, Group 3, Group 4
- **Mfr.:** Custom, TBD
- **Color:** Natural concrete, beige masonry or brown masonry
- **Finish:** Ground face or split face
- **Model #:** Board-formed or sheet-formed concrete, coursed unit masonry
- **Other:** Precast or cast-in-place concrete is preferred for Group 1. Concrete block may only be used in Group 1 when approved by the BCE.

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

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

### D08.2.6. Heavy Timber

- **Aplicable:** ✔
- **N/A:** ☐

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**JBER Richardson IFS**

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D08.2.7. Light-gauge Steel

Type: Steel Framing

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

Mfr: Steelrite

Color: Factory

Finish: Galvanized

Model #: Structural framing shapes

Other: N/A

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

D08.2.8. Lumber Framing

Type: Lumber Framing

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

Mfr: Boise Cascade Wood Products

Color: N/A

Finish: S4S

Model #: Structural dimensional lumber

Other: N/A

UFGS: Section 06 10 00 Rough Carpentry
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 06 10 00.pdf
Section 06 11 00 Wood Framing and Sheathing
(Not Available on UFGS)

D08.2.9. Other

Applicable N/A

Number of base standards 1

Image Tool 250 x 188

Click here to insert image

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 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 and include heat recovery measures to improve efficiency; design active mechanical systems to supplement thermal mass walls and floors where applicable.

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 permitted following a LCCA.

6. Integrate shading into building exteriors to reduce solar heat gain during as applicable for the exposure.

D09.2. Functionality and Efficiency

1. Fully coordinate mechanical, electrical, plumbing (MEP) and fire protection systems with each other and with the building structure, enclosure, thermal envelope and interior design.

2. Ensure direct exterior access is provided (for CE) to main mechanical and electrical rooms.

3. Screen exterior equipment from primary views (landscape, building masses, screen walls) and comply with ATFP requirements.

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

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.

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. Coordinate passive systems to optimize active heat-recovery systems.

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. Identify all heat-recovery systems and ensure their efficient operation.

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. 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.

### E01.2. 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

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:


**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:** Style 2, Medium 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:** 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
### Style 2 Ceramic

<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>Daltile</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color:</td>
<td>Earth tones</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Finish:</td>
<td>Matte, slip resistant</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model #:</td>
<td>Ceramic tile</td>
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<tr>
<td>Other:</td>
<td>Use in low traffic area toilet rooms.</td>
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<td></td>
</tr>
</tbody>
</table>

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

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### Style 1 Stair Treads

<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>Roppe</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Color:</td>
<td>Neutral tones</td>
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<td></td>
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<td></td>
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<tr>
<td>Finish:</td>
<td>Factory</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model #:</td>
<td>Raised design rubber tread</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other:</td>
<td>Stair treads material</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

**UFGS:** Section 09 65 00 Resilient Flooring  
[http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 65 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 65 00.pdf)
### E02.1.6. Carpet

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

- **Mfr:** Mohawk Group

- **Color:** Neutral multi-colored tones/patterned/solid

- **Finish:** Yarn: Nylon 6 or 6.6/cut pile or loop pile

- **Model #:** Broadloom, 6’ wide rolled, carpet tiles, entry walk-off carpet

- **Other:** N/A

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

- **Recommended Image:** Detail of Carpeting

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

- **Type:** Style 2

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

- **Mfr:** Mohawk Group

- **Color:** Earth tones

- **Finish:** Factory

- **Model #:** Broadloom, residential loop, “Smartstrand”

- **Other:** N/A

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

- **Recommended Image:** Detail of Carpeting

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

### 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:** Concrete or CMU
- **Secondary:** Gypsum board (painted)
- **Tertiary:** Ceramic tile (restrooms)

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

- **Primary:** CMU
- **Secondary:** Gypsum board (painted)
- **Tertiary:** Ceramic tile (restrooms)

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

- **Primary:** CMU, 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

Type: **Formed Concrete**

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

Mfr: Custom, TBD

Color: Natural concrete

Finish: Medium texture

Model #: Board-formed or sheet-formed concrete

Other: Vertical or horizontal forming is permitted

UFGS: Section 04 20 00 Unit Masonry
http://www.wbdg.org/FFC/DOD/UFGS/UFGS_04_20_00.pdf

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E03.1.2. Masonry

Type: **Unit Masonry**

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

Mfr: Local (TBD)

Color: Beige masonry or brown masonry

Finish: Ground face or split face

Model #: Coursed unit masonry

Other: CMU block may only be used in Group 1 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
E03.1.3. Ceramic Tile

Applicable  N/A  Number of base standards 1

- **Type:** Style 1
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** Daltile
- **Color:** Earth tones
- **Finish:** Gloss, Semi-gloss
- **Model #:** Ceramic wall tile
- **Other:** Located on wet walls in restrooms

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

E03.1.4. Gypsum Board

Applicable  N/A  Number of base standards 1

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

**UFGS:**
- Section 09 29 00 Gypsum Board
  http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 29 00.pdf
- 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  N/A  Number of base standards 1
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: N/A

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)

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)

- **Type:** Style 1
- **Mfr:** Vulcraft
- **Color:** Neutral colors reviewed on a case basis
- **Finish:** Field painted (Sheen per UFGS)
- **Model #:** Formlok floor and roof decking
- **Other:** N/A

- **UFGS:** Section 05 30 00 Steel Decks
  - [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 05 30 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 05 30 00.pdf)

## E04.1.2. Exposed Concrete

- **Type:** Style 1
- **Mfr:** Armstrong
- **Color:** White
- **Finish:** Factory
- **Model #:** 2'x2' Tegular with reveal edge and fine texture, grid 15/16"
- **Other:** Performance characteristics are Class A; NRC-0.70; CAC-40; LR-0.86; minimum recycled content 82%.

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

- **Applicable**: Yes
- **N/A**: No
- **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.**: 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](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 29 00.pdf)

Section 09 90 00 Paints and Coatings

[http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 90 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 90 00.pdf)

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E04.1.5. Metal Panels

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

---

E04.1.6. Wood

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

---

E04.1.7. Rapidly-Renewable Products

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

---

E04.1.8. Other

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

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E05. Doors and Windows

Comply with Air Force Corporate Standards for Doors and Windows:


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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

- **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:** Hollow metal (galvanized, painted)
  - **Tertiary:** N/A

- **door (leaf) materials shall be as follows.**
  - **Primary:** Hollow metal (galvanized, painted)
  - **Secondary:** Hollow metal (galvanized, 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

- **door (leaf) materials shall be as follows.**
  - **Primary:** Hardwood veneer
  - **Secondary:** Hollow metal (painted)
  - **Tertiary:** N/A

### Facility Group 4

- **door (frame) and window frame materials shall be as follows.**
  - **Primary:** Hardwood veneer
  - **Secondary:** Hollow metal (painted)
  - **Tertiary:** N/A

- **door (leaf) materials shall be as follows.**
  - **Primary:** Wood solid core
  - **Secondary:** Composite solid core
  - **Tertiary:** N/A

---

1. Hardwood casings may be provided over metal frames in Group 1 as approved on a case basis.
2. Paneled textured doors are preferred in Group 4.
3. Do not use hollow-core wood doors.
4. Generally match original hardware in renovations.
5. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

**Note:** Apply the below base-wide standards for Doors and Windows (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.
E05.1.1. Aluminum

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

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

---

E05.1.2. Hollow Metal

- **Type:** Steel Doors
- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr:** Steelcraft
- **Color:** Neutral colors
- **Finish:** Paint (Sheen per UFGS)
- **Model #:** Hollow metal, 2” w. frames, 16 gauge (welded corners) grouted solid
- **Other:** Provide in Group 3 and in utility areas of Group 1 and 2. Provide A25 “galvannealed” coating. All interior steel doors shall have a factory applied primer finish. Provide satin stainless steel hardware.

- **UFGS:** Section 08 11 13 Steel Doors and Frames

---
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)

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**E05.1.3. Wood**

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

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  
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)
**Type:**  
*Style 2, Residential*

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

**Mfr:** Simpson

**Color:** Natural hardwood veneer or paint grade

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

**Model #:** Full slab or panels

**Other:** Satin nickel hardware

---

**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)

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### E05.1.4. Other
- ☐ Applicable  ☒ N/A

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### E06. Casework Systems
Comply with Air Force Corporate Standards for Casework Systems:  

### E06.1. Casework Materials

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

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

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

4. Refer to AFCFS for approved materials.

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

- 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  

---

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

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E06.1.5. Other

- Applicable
- N/A
### E06.2. Countertop Materials

#### E06.2.1. Plastic Laminate

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

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

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

**Mfr:** Formica

**Color:** Medium Earth tomes 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

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

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

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

**Mfr:** Corian

**Color:** Medium Earth tomes 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
Available at [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf)

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### E06.2.4. 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
Available at [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf)
### 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](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 31 00.pdf)

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### E06.2.6. Other

| Applicable | N/A |

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### E07. Furnishings

Comply with Air Force Corporate Standards for Furnishings:

### 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:

### 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 1

The following Facility Districts list exceptions to the base standards that are unique to each district. Please refer to the Site Development, Facilities Exteriors, and Facilities Interiors sections of this IFS for base standards.
Photos for each facility group within the Facility District as applicable.
FACILITY DISTRICTS
JBER Richardson is divided into districts that align with land use zones as defined in the installation’s General 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.

1. Government Hill
   Please refer to the JBER Elmendorf IFS.

2. JBER-E
   Please refer to the JBER Elmendorf IFS.

3. Airfield
   Please refer to the JBER Elmendorf IFS.

4. Central
   Please refer to the JBER Elmendorf IFS.

5. Muldoon
   Please refer to the JBER Elmendorf IFS.

6. Training South
   The Training South District should be pedestrian in scale. Application of the installation prevailing architectural theme, Sub-Alpine, should be implemented during major renovations or new construction as appropriate. Facilities in this district may use weathering lumber and heavy-timber framing as approved by the BCE.

7. Richardson Housing
   The Richardson Housing District should be pedestrian in scale. Application of the Residential theme should be implemented during major renovations or new construction as appropriate. Facilities in this district shall follow standards for Facility Group 4 as defined in this IFS.

8. JBER-R
   The JBER-R District should be pedestrian in scale. Application of the installation prevailing architectural theme, Sub-Alpine, should be implemented during major renovations or new construction as appropriate.

9. National Guard
   The National Guard District should be pedestrian in scale. Application of the installation prevailing architectural theme, Sub-Alpine, should be implemented during major renovations or new construction as appropriate.

10. Training North
    Please refer to the JBER Elmendorf IFS.

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