RAF CROUGHTON
INSTALLATION FACILITIES STANDARDS (IFS)


Installation Elements


Site Development


Facilities Exteriors


Facilities Interiors

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AIR FORCE INSTALLATION FACILITIES STANDARDS

2025

RAF Croughton IFS

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A. OVERVIEW

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

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

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

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

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

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

2. Requests to deviate from any installation facilities standards, that are Unified Facilities Criteria (UFC) requirements, will follow the process outlined in the AFCFS for UFC waivers and exemptions.

3. All Air Force designs including Non-Appropriated Funds (NAF) facilities are required to conform to AFCFS per Air Force Instruction (AFI) 32-1023; AFCFS will be used to formulate Installation Facilities Standards (IFS) per the AFI. The Base Civil Engineer (BCE) maintains and implements 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 will 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 will implement IFS under their Joint-Base designation with volume numbers for individual installations following the IFS Development Tool template. For example, for Joint Base Langley-Eustis, provide: Vol. 1 Langley AFB and Vol. 2 Fort Eustis.

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

8. Host Nation Facilities: Use the International Building Code(r) (IBC) for planning, design and construction of all facilities built for Host Nation personnel use outside of the United States and its territories and possessions. Use the IBC in conjunction with Status of Forces agreements (SOFA), bilateral agreements or other Host Nation (HN) agreements.
   UFC 1-200-01 DoD Building Code: https://www.wbdg.org/dod/ufc/ufc-1-200-01

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

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

Group 1 Medical Facility

Group 2 Facility

Group 3 Fire Station

Group 4 Family Housing

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

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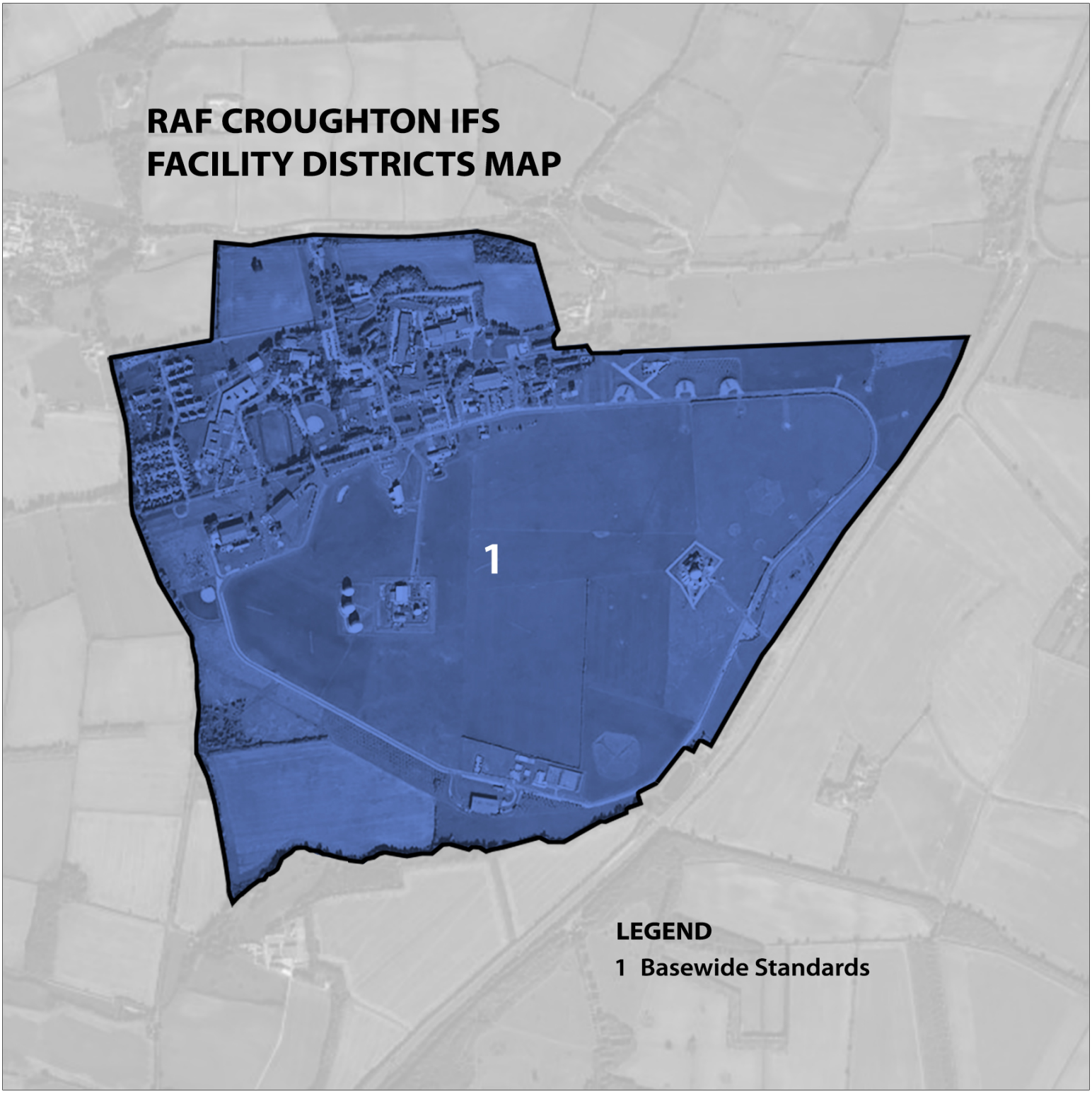


Note: *Apply the base-wide standards in this IFS for Installation Elements, Site Development, Facilities Exteriors and Facilities Interiors (products, materials, color, etc.). Following application of the base-wide standards, refer to the Appendix and apply any additional requirements specifically related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

B. INSTALLATION ELEMENTS

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

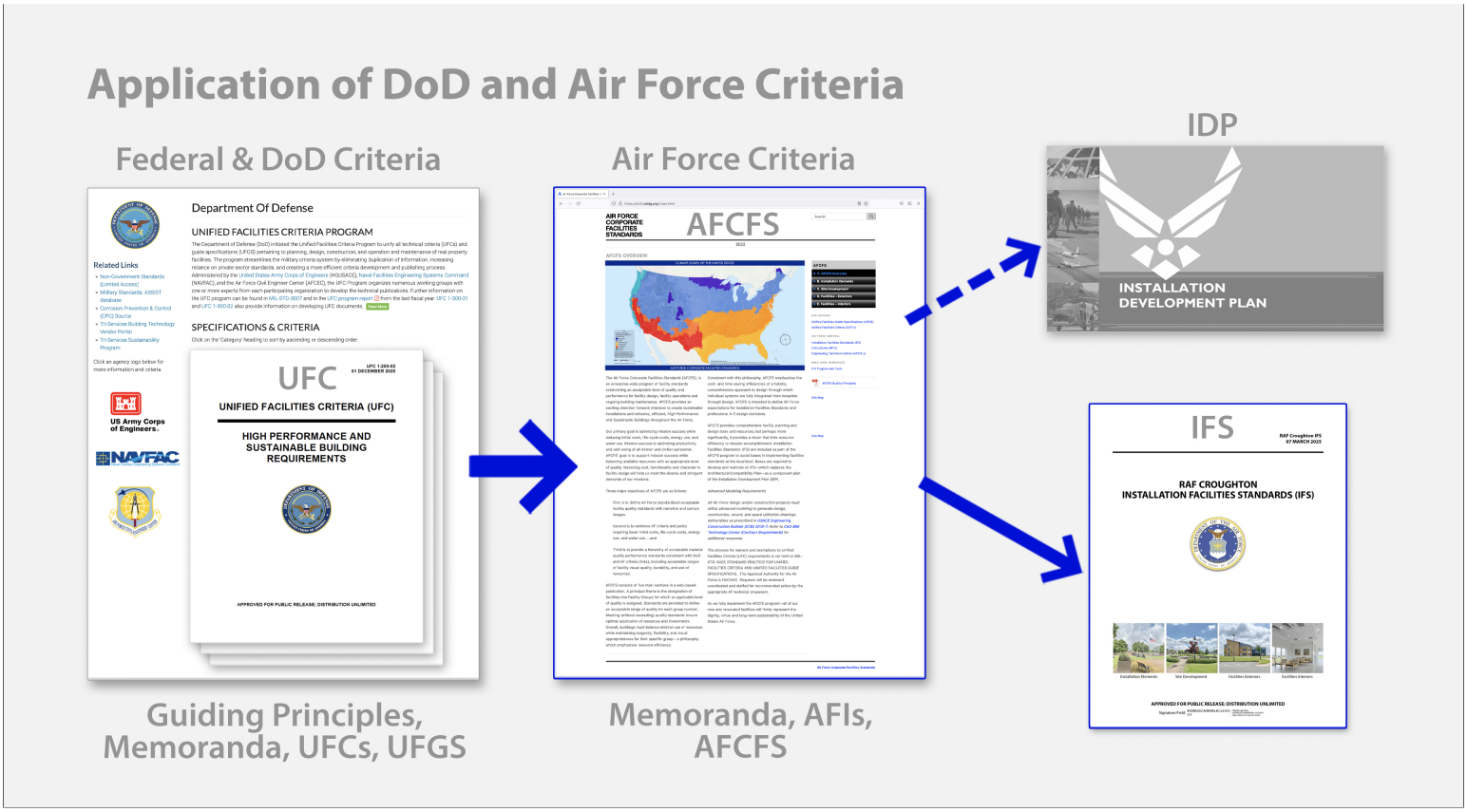
B01. COMPREHENSIVE PLANNING

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 Image Tool 800 x 440

○ Applicable ◉ N/A Small graphics do not apply



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 Planning documents and to ensure that the Installation Development Plan (IDP) is prepared, maintained, and implemented following AFI 32-1015.

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

B01.1.1. IFS Requirements and Documents

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

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

2. Host Nation Facilities: Refer to Appendix G for a listing of any supplementary documents that govern design and construction.

B01.1.2. Brief History of Base

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

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

Historical World War II Fighter Pens at RAF Croughton Designed Originally as Rolling Hills to Blend with Terrain

Troops near RAF Croughton Circa 1941

Training Command Airspeed Oxford Mark II

Brick Entrance to Fighter Pen

History of Royal Air Force (RAF) Croughton

RAF Station Croughton was built in 1938, and the station was first known as Brackley Landing Ground until 1940 when it became RAF Brackley. In July 1941, the name changed again and the station became RAF Croughton.

It consisted of 694 acres (2.81 km2) consolidated from three farms. Three grass runways with concrete taxiways dominated the high ground with the tower and other infrastructure buildings along the north side of the station and the slope leading up to the runways. In June 1940, the station became a satellite for RAF Upper Heyford for No 16 Operational Training Unit (No 16 OTU) to provide the unit with extra airfield space for night-flying training.

As World War II was getting more and more intense, the British government decided to split the British military bases in two categories – primary and secondary. The secondary ones were designated to receive the damaged aircrafts and repair them. RAG Croughton was one of them. They were considered to be emergency bases. Although the move was not quite the smartest, it did confuse the powerful Luftwaffe squad. The German pilots could barely make their decision about what targets are important. At the same time, these emergency bases were not that heavily guarded, so they represented some easy targets.

After World War II ended, the base was inactivated. It was turned into a storage site between 1947 and 1950. By the end of 1950, the base was given to the American forces. The first unit hosted on site was the 1969-th Communications Squadron, representing the start for a continuous update that turned the base into what it is today.

RAF Croughton is located in Northamptonshire, 40 minutes north of Oxford, and hosts the headquarters of the 422d Air Base Group, as well as the 422d Communications Squadron, the 422d Civil Engineer Squadron, the 422d Security Forces Squadron, the 422d Medical Squadron, and the 422d Air Base Squadron. RAF Croughton also hosts members of the Department of State.

B01.1.3. Future Development

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

○ Applicable ◉ N/A Small graphics do not apply

Aerial Image of RAF Croughton

1. Follow AFI 32-1015 for Air Force Comprehensive Planning, the Comprehensive Planning Process, Comprehensive Planning Requirements, and Geospatial Mapping.

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

End of Section

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:
http://afcfs.wbdg.org/installation-elements/street-envelope-standards/index.html

B02.1. Hierarchy of Streets

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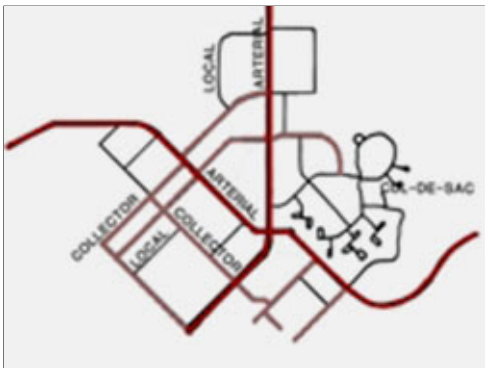
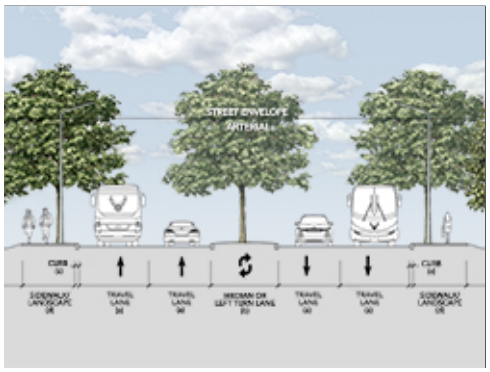


Hierarchy of Streets


Street Envelope Section


Streetscape at Group 4 Family Housing

1. Develop and evolve a hierarchical transportation network of arterial, collector and local streets following installation's Area Development Plan (ADP), 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. Utilise consistent design in areas of multiple facility group designations with the emphasis on adopting the higher classification aesthetics. Create consistency for the length of the street.

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 provide on collector streets only on lower speed roadways such as residential streets.

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

8. Provide appropriate landscape setbacks and pedestrian buffers along all streets meeting antiterrorism (AT) requirements.

9. Minimize and consolidate curb cuts along streets.

10. Ensure access for emergency and service vehicles.

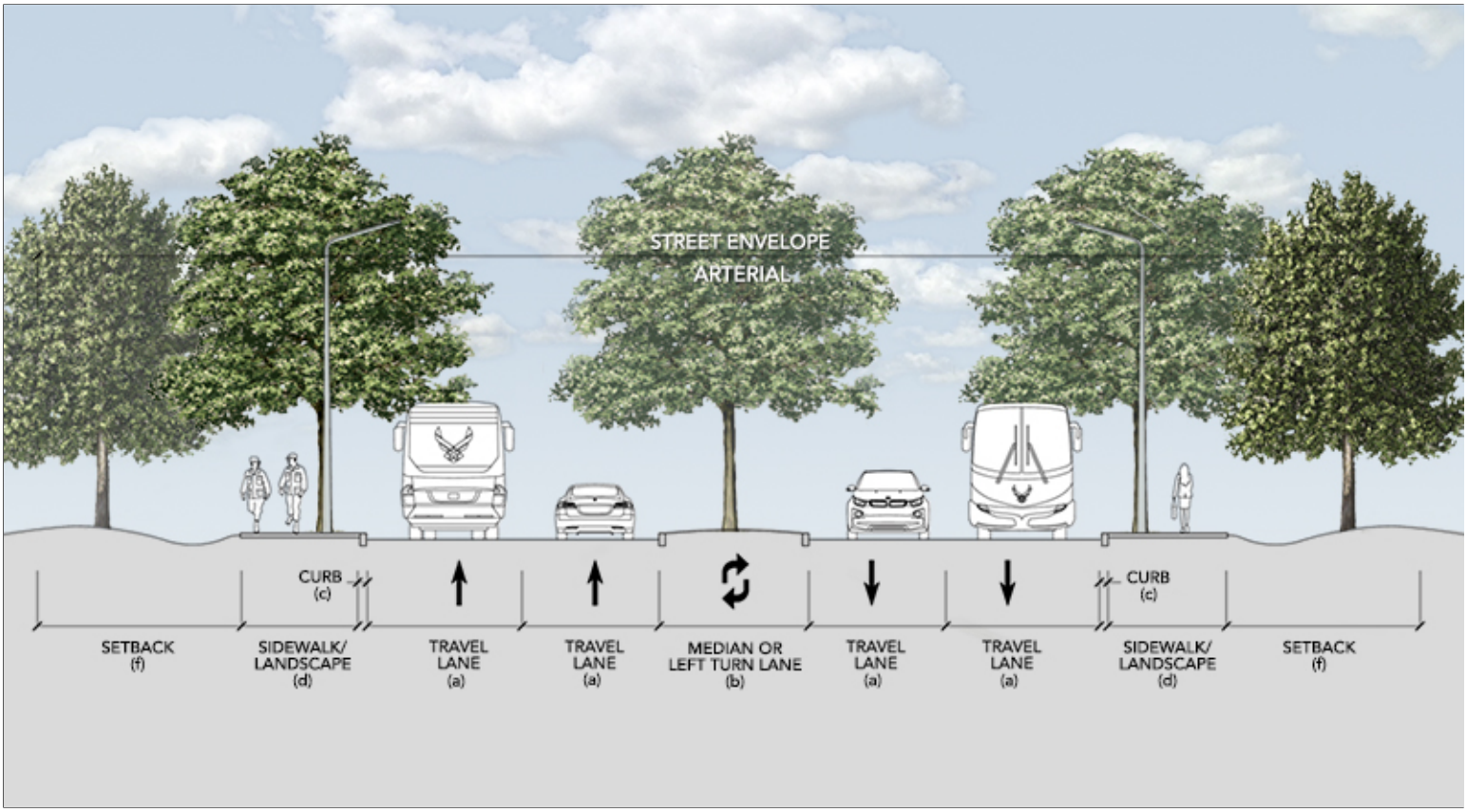
11. Define bicycle traffic routes in the Installation Development Plan or its applicable component plans.

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

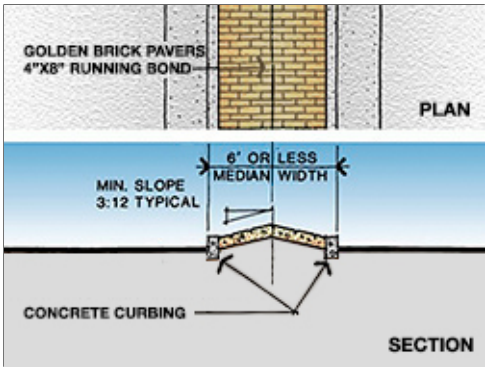
B02.1.1. Arterial Streets

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

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



4-Lane Example: Travel Lane (a): 12' Median (b): 12' Curb (c): 6" Sidewalk / Landscape (d): 12') Setback (f): Min. 35' or per AT



Example of Paved Median

Perimeter Road Adjacent to Boundary Fence

Streetscape near Community Facilities

1. Stops and turns will be minimized and on-street parking will not be allowed at any point along arterial streets.

2. 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.

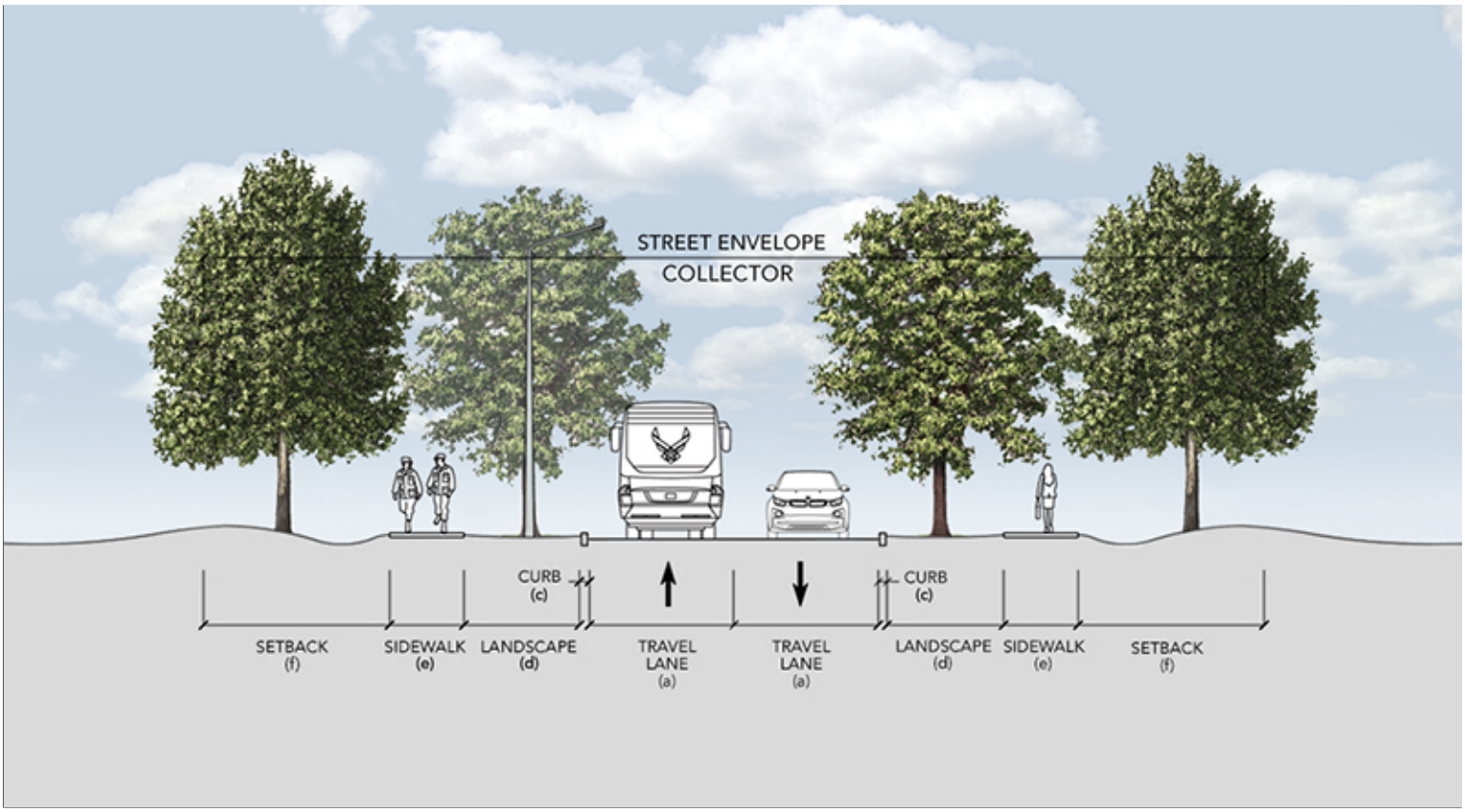
3. Limit curb cuts on arterial streets to entries into major facilities, building groups and major parking areas.

4. Signs, plantings and street lighting will 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 1 Image Tool 800 x 440

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



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

Coordinated Landscape and Signs

Maintained Landscape at Shoulder

Attached Sidewalk

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

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

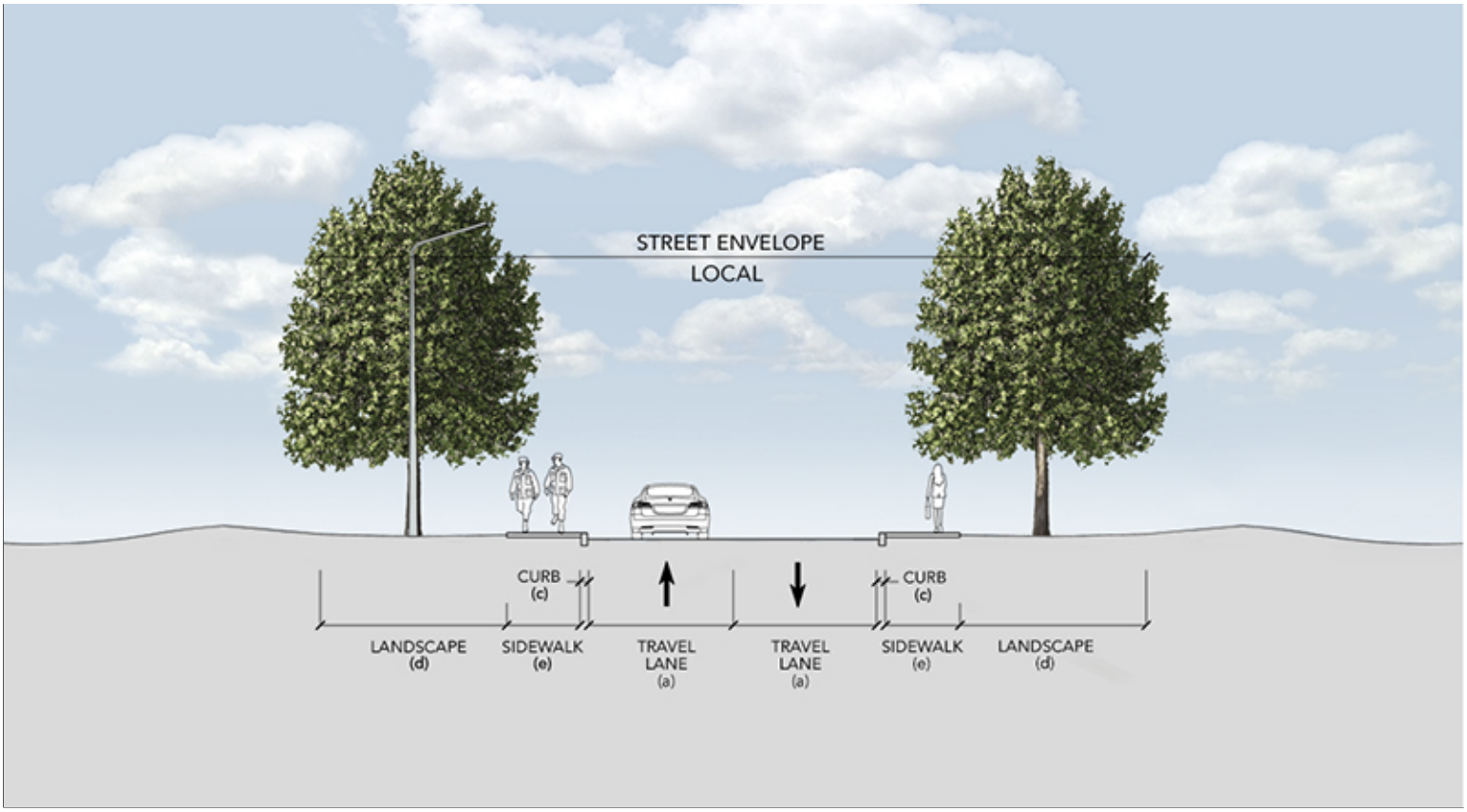
3. On-street parking may be allowed on one side where secondary roads are not less than 34 feet wide. Parking will not interfere with intersections or traffic flow.

4. Signs, plantings and street lighting will be added to reinforce the importance of collector streets.

B02.1.3. Local Streets

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

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



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

Standard Street Markings

One-Way Local Street

Typical Streetscape at Group 4

1. Frequent traffic stops and low speeds are permitted on local streets.

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

3. On street parking may be allowed on one side where secondary roads are not less than 34 feet wide. Parking must not interfere with intersections or traffic flow.

4. Signs, plantings and street lighting will be added to reinforce the importance of "local" street.

5. Cul-de-sacs are to only be used in the Family Housing areas. The minimum radius for cul-de-sacs will be 50'.

B02.1.4. Special Routes

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

○ Applicable ◉ N/A Small graphics do not apply

Special Route with Security Elements

1. Develop all special routes, such as distinguished visitor routes, consistently with those adjacent to Group 1 facilities.

2. Contact the Base Civil Engineer for roads designated as special routes.

3. Maintain the streetscape and street elements along special routes with a level of quality comparable to Group 1.

B02.2. Hierarchy of Intersections

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

1. Provide a hierarchy of intersections to include arterial, arterial-collector, collector, collector-local and local following UFC 3-201-01 and its industry references.

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

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

B02.2.1. Arterials

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

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

B02.2.2. Arterial/Collector

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

○ Applicable ◉ N/A Small graphics do not apply

Coordinated Placement of Paving, Curbing, Sidewalk, Striping, Signs, Lighting, and Landscaping

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.

End of Section

B02.2.3. Collectors

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

○ Applicable ◉ N/A Small graphics do not apply

Coordinated Street Elements

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

B02.2.4. Special Intersections

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

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 Small graphics do not apply

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 Small graphics do not apply

1. Provide adequate sight lines for an effective and safe traffic operation per UK Highway Code and local guidelines.

B02.3. Street Elements

○ Applicable ◉ N/A Large graphics do not apply

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


Integrated On-Street Parking in Group 4


Standard Traffic Devices


Building Identification Sign


Attached Sidewalk


Curb Ramp and Crosswalk


Uniformly Spaced Street Trees

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 are appropriate for the local climate.

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

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

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

6. Crosswalk markings will follow the UK Highway Code, 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 Small graphics do not apply

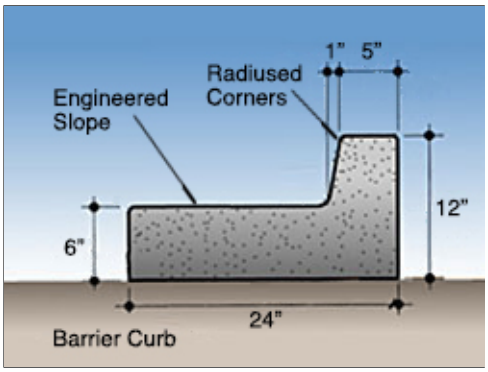
1. Pavement design will comply with UFC 3-250-01. Ensure appropriate analysis and design of subgrade conditions to promote low maintenance, high performance pavements. Apply all applicable best practices from Appendix B of the UFC.

2. Materials will 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.

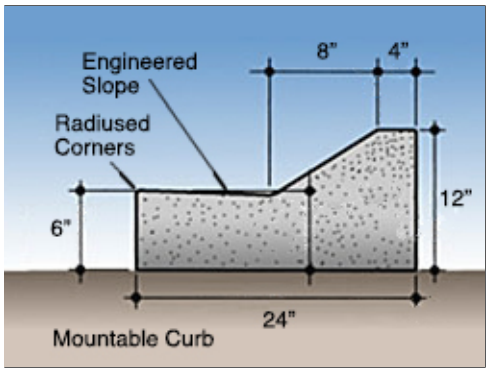
B02.3.2. Curb and Gutter

○ 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 Image Tool 250 x 188



Typical Barrier Curb Section



Mountable Curb Section


Precast Concrete Curb Units

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 will have integral concrete curbs and gutters. Painted curbs are prohibited because they are very difficult to maintain.

3. Use concrete for curbs. Do not use asphalt curbs.

B02.3.3. Utility Service Elements

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

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 Small graphics do not apply

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

2. Comply with the UK Highway Code for road and traffic signage.

B02.3.5. Street Lighting

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

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

B02.3.6. Other

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

1. Not applicable.

End of Section

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:
http://afcfs.wbdg.org/installation-elements/open-space-public-space/index.html

B03.1. Plazas, Monuments and Static Displays

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

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

Plaza Adjacent to Park in Group 4 with Coordinated Lighting and Site Furnishings

Plaza Adjacent to Memorial

Recreational Plaza and Pavilion

Commemorative Plaza

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 Image Tool 250 x 188

Permeable Pavers

Rock Paving

Precast Concrete Unit Pavers

1. Permeable 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 will incorporate appropriate expansion and construction joints.

2. Pavers will match the color of pavers used on adjacent sidewalks using base standard range of neutral, muted red or light brown tones. Pavers used on plazas will be the local standard size and shape. 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 Small graphics do not apply

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 will 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.

End of Section

B03.1.3. Static Display of Aircraft

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

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 will be provided. Receptacle and bench design must conform to IFS requirements.

End of Section

B03.2. Grounds and Perimeters

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

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

Maintained Open Space at Installation Perimeter

Buffer with Trees and Security Elements

Trees Defining Space

Shrubs Used to Define Space

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 will 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 will be screened from view, using materials, forms, and colors in the screen walls that match those respective design elements present at adjacent buildings.

10. Paint above-ground equipment and associated components such as electrical piping or exposed plumbing lines dark brown (a dark shade of orange / brown tone).

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

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

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

14. All development of open space requires prior coordination and approval from the Base Civil Engineer.

15. Landscaping will be native and low maintenance where practicably possible.

B03.2.1. Parade Grounds

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

1. Follow UFC 3-201-02, Appendix B for the planning and design process and criteria for parade grounds.

2. Establish and maintain parade grounds only where there is a confirmed need and provide landscape materials appropriate for the locale following IFS.

3. Bleachers may be installed only when there is a documented requirement at parade grounds. Nonferrous metals that do not require painting or ongoing maintenance are preferred. The Base Civil Engineer will determine quantities, sizes, and products on a case by case basis.

B03.2.2. Parks

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

○ Applicable ◉ N/A Small graphics do not apply

Park Adjacent to Group 4 with Pavilion and Play Equipment

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

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

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

B03.2.4. Perimeter Fence

○ Applicable ◉ N/A Large graphics do not apply

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


Continuous Perimeter Fencing


Pedestrian Entrance at Gate


Fencing Adjacent to Group 1 Facility

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

2. Stringently comply with AT following UFC 04-010-01, Appendix D 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 will 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.

End of Section

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

C01.1. Site Design Considerations

○ Applicable ◉ N/A Large graphics do not apply

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


Accessible Route to Building Entrance


Ancillary Structure Adjacent to Dormitory


Elements to Promote Connectivity

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, and paved surfaces.

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

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

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

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

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

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

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

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

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

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

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

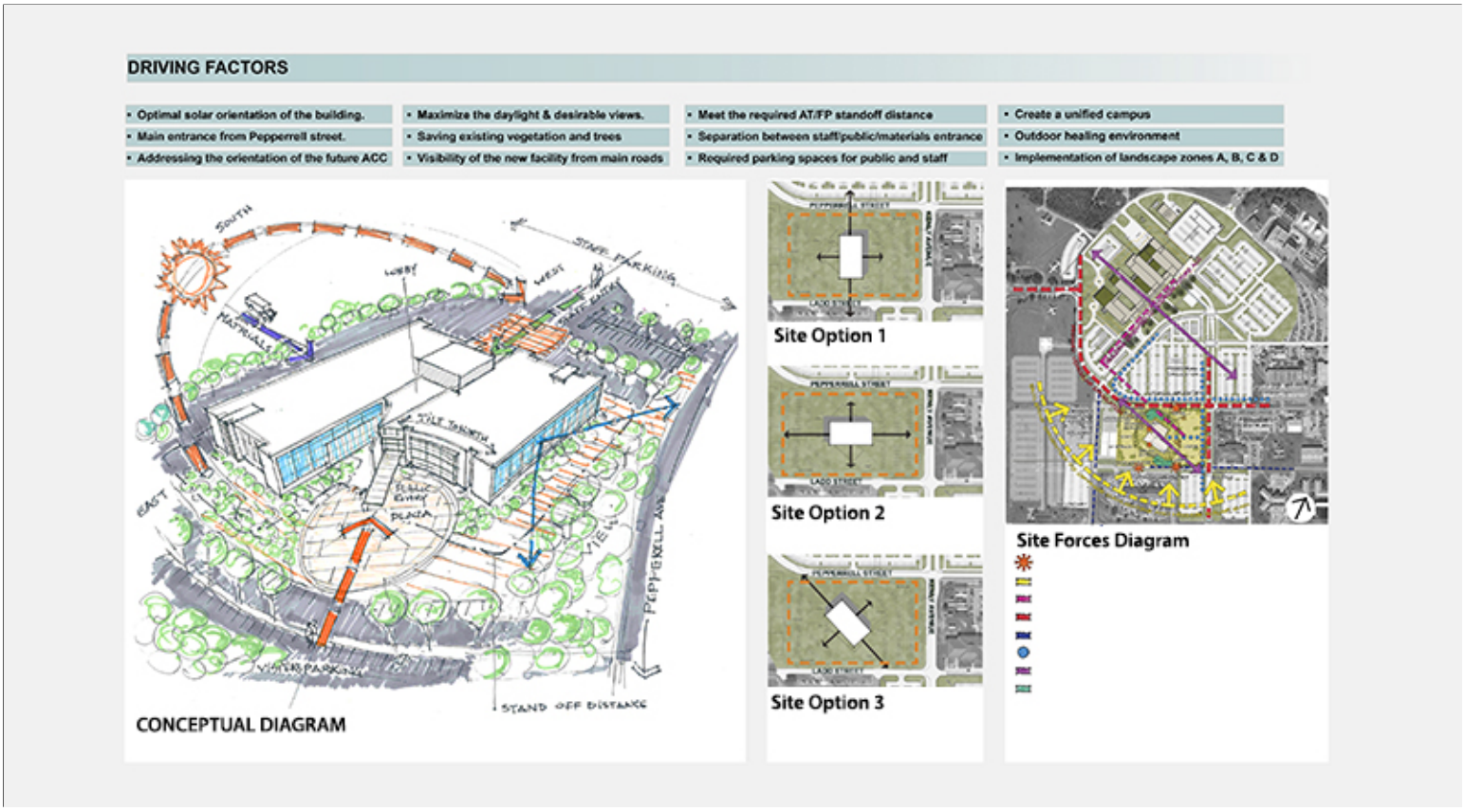
15. Consider the location of "Designated Tobacco Use Areas" (DTA).

End of Section

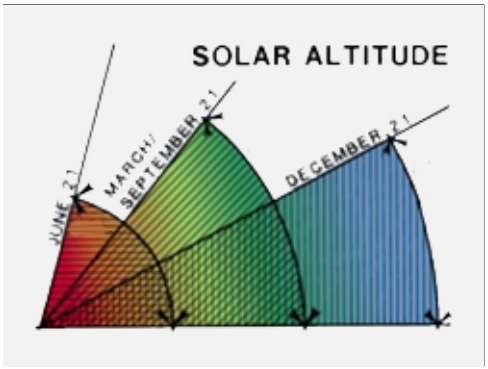
C01.2. Building Orientation

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

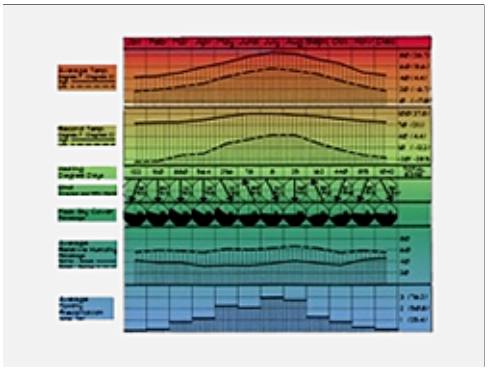
◉ Applicable ○ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 6 Image Tool 250 x 188



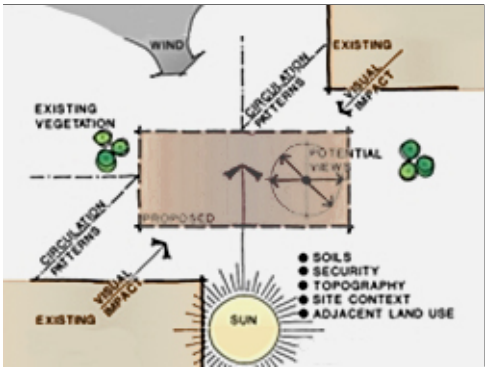
Conceptual Site Analysis and Site Design Diagram



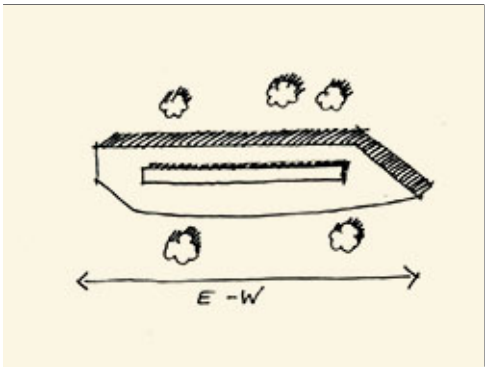
Local Solar Data



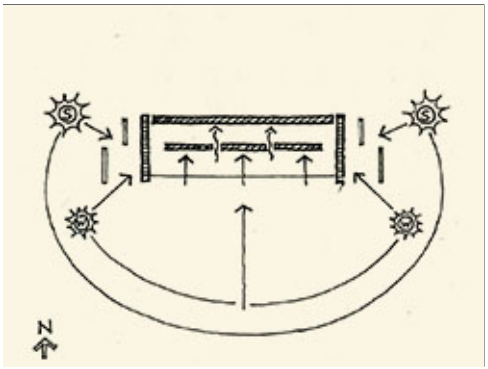
Local Climate Data



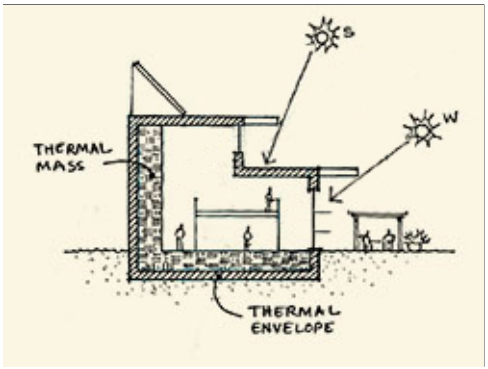
Site Data



East-West Axis



Optimum Solar Control



Maximized Shading

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

End of Section

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 3 Image Tool 250 x 188


Underground Service to Building Transformer


Building On-Site Energy Production


Pole-Mounted Solar Photovoltaic Panels

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 dark brown and provide visual screening following Installation Facilities Standards (IFS).

2. All ground mounted utility components such as fire hydrants, will be painted dark brown.

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.

End of Section

C03. PARKING AREAS

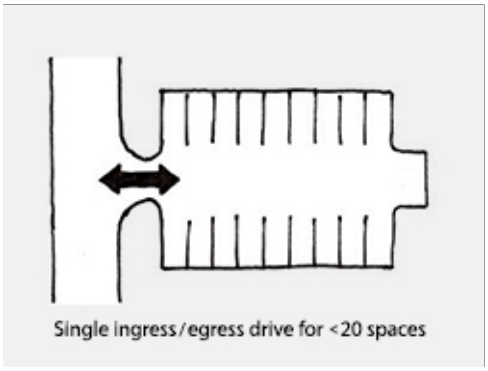
Comply with AF Corporate Standards for Site Development:
http://afcfs.wbdg.org/site-development/index.html

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

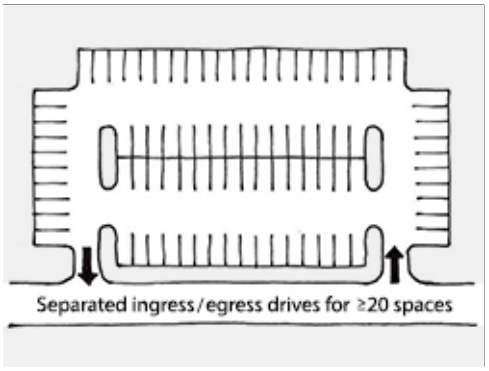
C03.1. Configurations and Design

○ Applicable ◉ N/A Large graphics do not apply

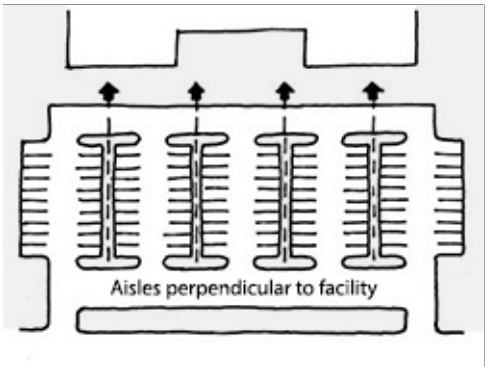
◉ Applicable ○ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 6 Image Tool 250 x 188



Small Lot Configuration



Large Lot Configuration



Facility Group 1 Configuration

Exit to Street

Landscaped Median with Integrated Lighting

Entrance with Standard Paving and Striping

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 AT following UFC 04-010-01, Appendix D.

3. Integrate at-grade and raised-profile curbing, permeable paved areas, and parking islands with the stormwater system and direct stormwater to bioswales and rain gardens as source water for regionally appropriate native vegetation.

4. Define pedestrian access with approved hardscape and provide shading along the primary path from the parking area to the building's 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 will be marked according to UFC 3-120-01 and its references in ABAAS, the MUTCD, The UK Highway Code and UK Building Regulations.

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

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

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

10. For reserved parking, see Appendix Base Standard section G08.2 G2020 Parking.

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 will accommodate the largest vehicle serving the facility.

13. See DAFMAN 32-1084 Facility Requirements to assist in determining the number of parking spaces required.

C03.1.1. Paving and Striping

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

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

Base Standard Bituminous Paving and 90° Configuration

White Striping for Parking Spaces

White Markings for Direction

Striping with Coordinated Lighting

Facility Group 1 paving materials will be as follows.

Primary:	Bituminous Paving; Seepage / Interlocking Pavers
Secondary:	Concrete
Accent:	Optional: Colored Pavers May Define Walkways

Facility Group 2 paving materials will be as follows.

Primary:	Bituminous Paving; Seepage / Interlocking Pavers
Secondary:	Concrete
Accent:	N/A

Facility Group 3 paving materials will be as follows.

Primary:	Bituminous Paving
Secondary:	Concrete where Operationally Required
Accent:	N/A

Facility Group 4 paving materials will be as follows.

Primary:	Interlocking Paver Blocks
Secondary:	N/A
Accent:	N/A

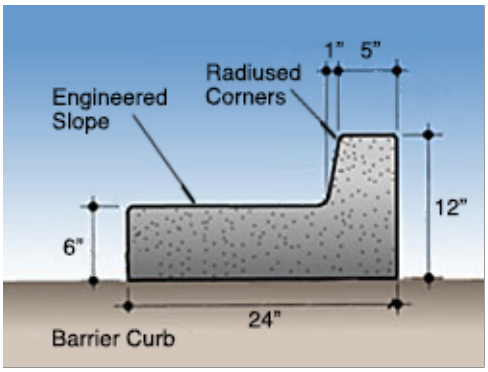
1. All new parking lots in Groups 1 and 2 will be constructed of bituminous paving, except seepage pavers may be used at parking spaces where loads allow.
2. Perforated pavement surfaces may be used for parking spaces in forest and peripheral wooded areas instead of seepage, or concrete pavement where functionally required, following UFC 3-250-01.
3. Dirt, gravel, and grass lots are not allowed.
4. Use consistent striping, angles and stall sizes in all parking areas.

End of Section

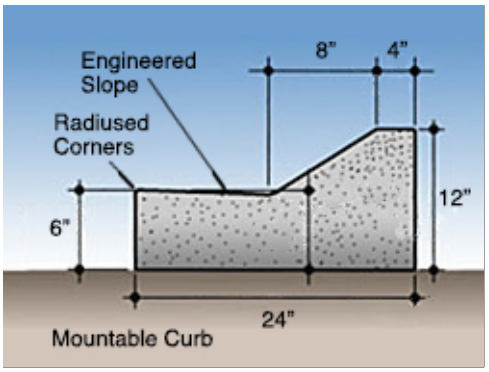
C03.1.2. Curbing

○ Applicable ◉ N/A Large graphics do not apply

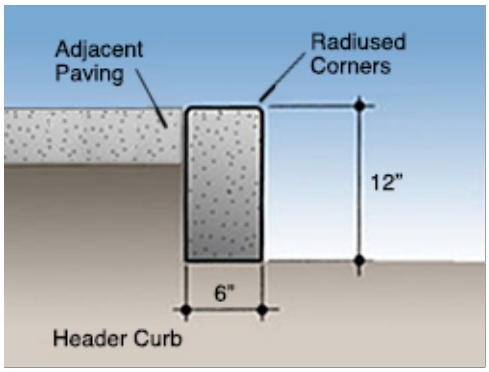
◉ Applicable ○ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 3 Image Tool 250 x 188



"Barrier" Curb



"Mountable" Curb



Header Curb

Facility Group 1 curbing / edging materials will be as follows.

Primary: Concrete

Secondary: N/A

Accent: N/A

Facility Group 2 curbing / edging materials will be as follows.

Primary: Concrete

Secondary: N/A

Accent: N/A

Facility Group 3 curbing / edging materials will be as follows.

Primary: Concrete

Secondary: N/A

Accent: N/A

Facility Group 4 curbing / edging materials will be as follows.

Primary: Concrete

Secondary: N/A

Accent: N/A

1. Define all parking lots with either raised-profile or at-grade curbing to promote drainage and protect paving edges.
2. Integrate curbing to direct stormwater to bioswales and rain gardens as source water for regionally appropriate native vegetation.
3. Wheel stops are not permitted except at locations where car bumpers could contact adjacent items such as poles, signs or pedestrians.
4. See Appendix for additional curb requirements.

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 3 Image Tool 250 x 188

Landscaped Island Used for Visual Screening

Medians with Ornamental Plantings

Maintained Landscape at Group 1

1. Install landscape islands and medians as visual breaks, to reduce heat island effects and to accommodate bioswales and rain gardens. Coordinate suitable landscape or barriers integrated with walls and fences to ensure adequate force protection.
2. When lighting is necessary, contain fixture bases within medians or internal landscape islands.

End of Section

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 AT following UFC 04-010-01, Appendix D are fully addressed.

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

C03.3. Connectivity

○ Applicable ◉ N/A Large graphics do not apply

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

Direct Access to Main Entracne

Alignment with Entrance

Link to Base Sidewalk System

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.

End of Section

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:
http://afcfs.wbdg.org/site-development/stormwater-management/index.html

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 6 Image Tool 250 x 188

Landscaped Area as a Rain Garden

Use of Permeable Paving

Downspout Attached to Stormwater System

Area Drains at Corner of Parking Lot

Inlet at Accessible Parking Curb Ramp

Traffic-Rated Trench Drain at Parking Lot

1. Design all stormwater systems including retention ponds, detention areas, channels, etc. as on-site amenities that are consistent with natural systems and drainage patterns, that help sustain the base landscape with beneficial functionality and that provide aesthetic appeal; coordinate with the base Stormwater Management Plan.

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

3. Permeable paving may be used in areas that are not subjected to severe freeze-thaw cycles.

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

6. Cost-effectively integrate stormwater systems with AT following UFC 04-010-01, Appendix D.

7. See additional requirements for stormwater management in the Appendix.

End of Section

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

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

Sidewalk with Permeable Pavers and Concrete Edging

Concrete Paving

Width to Accommodate Volume of Use

Pathway with Lighted Bollards

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

Primary:	Permeable Pavers
Secondary:	Alternate Color Paving and Edging
Accent:	N/A

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

Primary:	Permeable Pavers
Secondary:	Concrete Paving and Edging
Accent:	N/A

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

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

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

Primary:	Permeable Pavers
Secondary:	Alternate Color Paver Edging
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 AT following UFC 04-010-01, Appendix D. 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. Use curves for changes of direction.

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

4. Permeable pavers will be used on all sidewalks, plazas and courtyards. The designer will 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 will 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 will be a minimum width of 6’. Walks greater than 10’ wide may be used at high-density pedestrian areas where volumes of traffic justify added material.

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

10. All sidewalks will 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% will be designed as ramps following accessibility guidelines. All walks will have a minimum cross slope of 2.1%.

11. Pavers will conform to the following range of color: light gray or buff to medium brown. Pavers used on walks will typically be similar to those in use.

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

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

C05.1.1. Ramps and Stairs

○ Applicable ◉ N/A Large graphics do not apply

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

Guardrail Used at Group 4

Site Stair at Group 1

Site Stair at Group 2

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.

2. 'Flat' stairs (extended treads) and ramps will be paved with the same interlocking pavers as the connecting walkways. Edges of stairs and front edge of treads will have flush curb trim.

3. Curved stairs are to be discouraged.

4. Normal, 'steep,' stairs will be constructed of cast-in-place concrete. Provide handrails if over 3 risers. Provide drains at top or bottom if water accumulates.

5. Ramp slopes will not exceed 6 percent. Provide turning areas needed for wheelchair users.

6. See Appendix for more requirements on stairs and ramps.

C05.1.2. Lighting

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

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

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

End of Section

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 Image Tool 800 x 440

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

Use of Native Trees, Shrubs and Grasses

Predominant Use of Native Grasses

Shrubs Defining Space

Ornamental Shrubs Used for Color

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.

2. Plants will be indigenous to the area and able to survive without the introduction of potable water after establishment.

End of Section

C06.1.1. Landscape Design Concept

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

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

Placement of Landscape Elements Used to Define Open Space Buffers at Installation Perimeter

Open Space Buffer along Roadway

Use of Hedge to Define Space

Naturally Forming Native Tree Species

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 will have a higher priority for landscaping. 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 will be newly landscaped.

6. Facility plantings will 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 Small graphics do not apply

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 Small graphics do not apply

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.

End of Section

C06.1.4. Plant Material Selection

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

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

Ornamental Species with Complementary Colors

Accent Planting at Sign

Tree Planting to Define Space and for Shade

Varied Colors and Textures

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 will be the focus of landscape plantings and, where possible, will 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 will 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 will 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 Small graphics do not apply

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

2. Provide irrigation systems in new construction to establish plant materials following "Water for Landscaping" in UFC 1-200-02. Note the climate zone and annual rainfall for the locale.

3. New buildings will 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 Image Tool 250 x 188

Tree Placement to Preserve Sight Lines

Security Elements with Tree Planting

Trees Defining Pedestrian Access

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 Small graphics do not apply

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

2. Select a variety of regionally appropriate streetscape plantings and grading to create a visual interest.

C06.1.8. Pedestrian Circulation Landscaping

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

1. Define walkways with landscaping where appropriate.

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

3. Provide wind breaks where required.

C06.1.9. Parking Lot Landscaping

○ Applicable ◉ N/A Large graphics do not apply

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


Tree Planting for Screening and Shade


Shrubs to Screen Vehicles and Add Beauty


Ornamental Shrub Planting

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

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

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

4. Rain garden islands will 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

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

○ Applicable ◉ N/A Small graphics do not apply

Island Landscape Planting Used as a Visual Screen

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

1. Not Applicable

End of Section

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

( ) Applicable (•) N/A Small graphics do not apply

Installation Standard Site Furnishings

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

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

3. Group 1, 2 and 3 site furnishings will be primarily powder coated steel, concrete or recycled plastic. 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 will match facility architecture.

5. Benches in Group 1, 2, and 3 will be recycled plastic or concrete. Recreational areas may use recycled plastic benches or wood 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 AT following UFC 04-010-01, Appendix D

7. Limit the use of bollards, but when necessary for force protection use powder coated aluminum in Groups 1 and 2; bollards in Group 3 and recreational areas may be steel or concrete. Illuminated bollards may be used as approved on a case by case basis. Bollards on roads or in parking lots must have a black epoxy finish with white raised rings and white reflective tape between the top two rings. The reflective tape can be omitted in non-traffic areas. Pop-up bollards will be used where required.

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

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

10. The Installation Flagpole location will 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 will be provided only where there is a documented need and when approved on a case by case basis. Generally, emulate the designs of adjacent shelters using concrete foundations and bases, non-ferrous metal structures and wall sheeting, and metal roofing. Structure may be silver or dark brown when approved by the BCE. Provide a full enclosure using an aluminum storefront framing and glazing system.

13. Monuments and static displays will 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 will be metal factory finished dark brown.

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

20. Group 1, 2,and 3 picnic tables and seating will be powder coated steel or recycled plastic. 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 in sections C07.2.1. - C07.2.18. are provided only to establish a level of quality for use when designers write the salient characteristics of the brand-name item in project specifications following Federal Acquisition Regulations (FAR) or UK Building Regulations.

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

Type: **Charcoal**

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

Mfr: Most Dependable Fountains, Inc. (US) or UK equivalent

Color: Natural stainless steel

Finish: Mill

Model #: SS BBQ Grill

Other: Concrete foundation, coordinate with Base Architect

UFGS: N/A

Type: **Natural Gas**

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

Mfr: BBQ Coach (US) or UK equivalent

Color: Natural stainless steel

Finish: Mill

Model #: 32" 4-Burner

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

UFGS: N/A

C07.2.2. Benches

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Metal and Hardwood Bench**

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

Mfr: Local to be Determined (TBD)

Color: Weatherstone Gray

Finish: Standard Finish (Smooth)

Model #: Mesa, Rectangular design

Other: N/A

UFGS: N/A

C07.2.3. Bike Racks

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Cycle Shelters**

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

Mfr: ClearView PET (sheeting) roof and end panels

Color: Natural galvanized frame and stands, clear sheeting

Finish: hot dipped galvanized frame to BS EN ISO 1461

Model #: 4100mm(l) x 2140mm(w) x 2150mm(h)

Other: Provide 10 cycle stands: BROXAP BXMW/GH Harrogate, galvanized

UFGS: N/A

C07.2.4. Bike Lockers

○ Applicable ◉ N/A

C07.2.5. Bollards

◉ Applicable ○ N/A Number of base standards 3 Image Tool 250 x 188

Type: **Antiterrorism (AT) and Force Protection - Steel, Fixed**

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

Mfr: Local TBD

Color: Dark brown

Finish: Powder coated steel

Model #: Fixed cylinder with flat top

Other: N/A

UFGS: N/A

Type: **Antiterrorism (AT) and Force Protection - Steel, Retractable**

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

Mfr: Local TBD

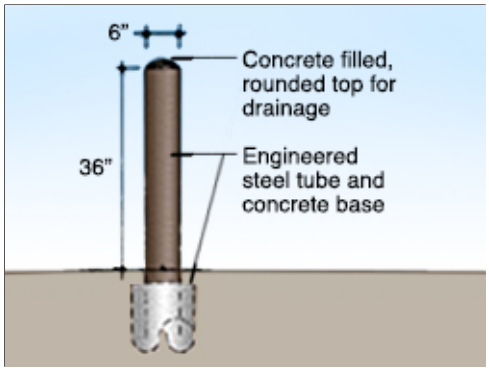
Color: Dark brown or black

Finish: Powder coated steel

Model #: Retractable "Coffin" bollard, cylinder with flat top and handles

Other: N/A

UFGS: N/A



Type: **Building Protection, steel**

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

Mfr: (Bollard Cover) Reliance Foundry (US) or UK equivalent

Color: Brown cover may be field painted dark bronze

Finish: Factory

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

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

UFGS: N/A

C07.2.6. Bus Shelters

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Aluminum and Acrylic**

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

Mfr: Belson Outdoors (US) or UK equivalent

Color: Dark brown

Finish: Powder coated

Model #: Two opening, upper clear panels and clear barrel roof

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

UFGS: N/A

C07.2.7. Drinking Fountains

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Pedestal**

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

Mfr: Most Dependable Fountains, Inc. (US) or UK equivalent

Color: Natural

Finish: Stainless Steel

Model #: MDF 440 SMSS

Other: Accessible

UFGS: N/A

C07.2.8. Dumpster Enclosures / Gates

◉ Applicable ○ N/A Number of base standards 3 Image Tool 250 x 188

Type: **Brick and Steel**

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

Mfr: Local TBD

Color: Golden brick blend, Doors: gray to match aluminum

Finish: Face brick, powder coated doors

Model #: Match adjacent building

Other: Steel gates and hardware, dark brown, dumpsters must be painted dark brown

UFGS: Section 04 20 00 Unit Masonry

Type: **Galvanized Steel Frame with Wood Board Cladding**

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

Mfr: TBD

Color: Natural galvanized steel frame, dark brown wood board cladding

Finish: Galvanized steel, aqueous stained lumber

Model #: 2"x2" steel frame, 6" square tube posts, 4" wide x 6' high boards

Other: Refer to C07.1.16 and C07.1.19, apply 2 coats of Base Standard Johnstone's Dark Oak water base stain, or approved equal, to lumber at completion

UFGS: Section 05 50 13 Misc. Metal, Section 06 20 00 Finish Carpentry

Type: **Lumber Frame with Wood Board Cladding**

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

Mfr: TBD

Color: Medium brown

Finish: Transparent stain on lumber frame and wood board slats

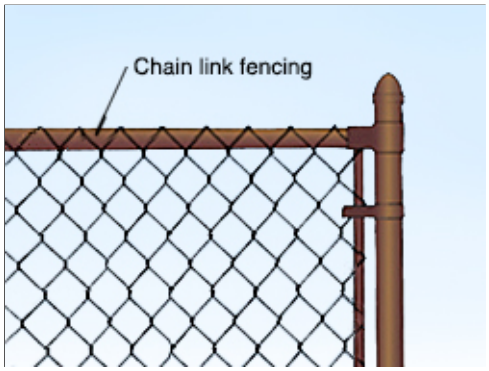
Model #: Corner posts and diagonal slats, galvanized steel hardware

Other: N/A

UFGS: Section 05 50 13 Misc. Metal, Section 06 20 00 Finish Carpentry

C07.2.9. Fencing

◉ Applicable ○ N/A Number of base standards 6 Image Tool 250 x 188



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

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

Mfr: General Wire Co. (US) or UK equivalent

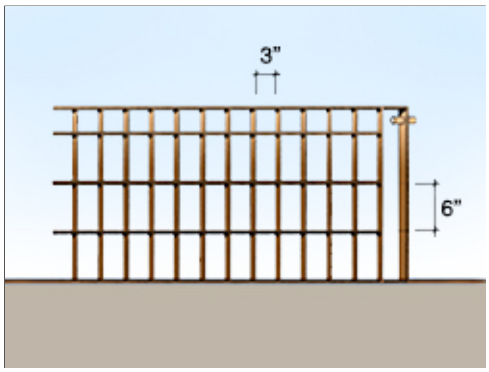
Color: Dark brown

Finish: PVC coating over galvanized steel

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

Other: N/A

UFGS: Section 32 31 13 Chain Link Fences and Gates



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

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

Mfr: TBD

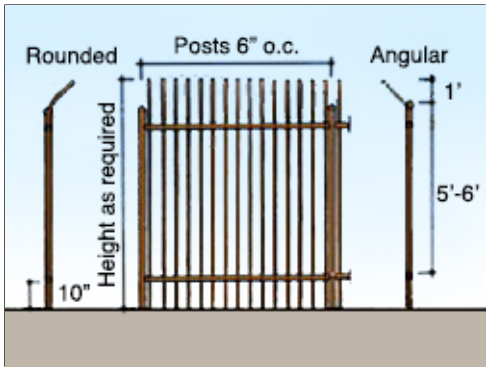
Color: Dark brown

Finish: Powder coat

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

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



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

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

Mfr: TBD

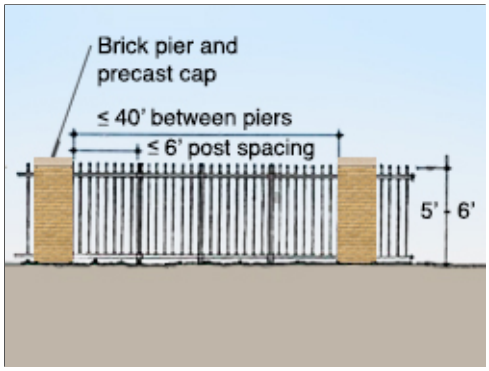
Color: Dark Brown

Finish: Powder coat

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

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Style D Barrier: Low Security, High Visibility**

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

Mfr: TBD

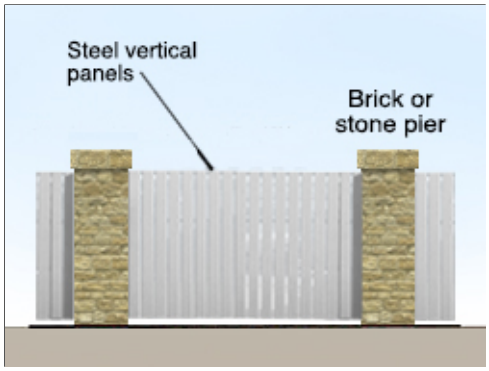
Color: Golden brick, black or dark brown fencing

Finish: Face brick, powder coated metal

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

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

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



Type: **Style E Barrier: Low Security, High Visibility**

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

Mfr: TBD

Color: Golden brick or Cotswold stone, silver or light gray fencing

Finish: Powder coated metal

Model #: Brick or stone piers with steel posts, rails and alternating panels

Other: Brick or stone piers: 2'x2' (Height as required, equally spaced 8' to 40'), Steel posts: 4"x4", Rails: 1-1/2"x3", vertical steel panels on outside face of rails; matching gates; close all ends

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

Type: **Style F Barrier: Very Low security, High Visibility**

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

Mfr: TBD

Color: Natural concrete posts, dark brown wood boards

Finish: Factory

Model #: Concrete post and wood rail

Other: Concrete posts: 39" height, 8' spacing, set 30" deep below grade with footing, typical , 2x4 rails, 4" vertical board fencing

UFGS: Section 03 45 00 Precast Architectural Concrete

C07.2.10. Flagpoles

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **1**

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

Mfr: Eder Flag (US) or UK equivalent

Color: Natural aluminum

Finish: Satin Lustre

Model #: ECL30 IH, Internal Halyard

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

UFGS: N/A

C07.2.11. Lighting – Landscape / Accent

Please refer to the Lighting section.

C07.2.12. Litter and Ash Receptacles

◉ Applicable ○ N/A Number of base standards 4 Image Tool 250 x 188

Type: **Durapol Polymer Litter Bin**

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

Mfr: Glasdon International Ltd http://www.glasdon.com

Color: Black with Gold Label and Striping

Finish: Smooth

Model #: Topsy Jubilee Litter Bin, 1100mm High x 560mm diameter, 110 liters

Other: Rigid plastic internal liner,
http://materialsinc.com/wp-content/uploads/2014/10/
TR-3225_SANTA_FE.pdf

UFGS: N/A

Type: **Precast Concrete Litter Bin**

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

Mfr: TBD

Color: Light beige

Finish: Plinth base

Model #: Round with with liner, 32 Gallon

Other: With composite dome top and plinth base

UFGS: N/A

Type: **Composite Recycling Collection Bin**

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

Mfr: TBD

Color: Black base with blue-green lid and front panel

Finish: Factory

Model #: Recycling container for bottles and cans

Other: Surface mounted base

UFGS: N/A

Type: **Ash Receptacle - Composite**

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

Mfr: Justrite Mfg www.justritemfg.com or similar

Color: Deco black or light gray

Finish: Factory

Model #: Smokers Cease Fire Cigarette Butt Receptacle 26800D

Other: Other designs may be approved by CES

UFGS: N/A

C07.2.13. Picnic Tables

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Lumber or Composite Table with Benches**

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

Mfr: TBD

Color: Dark brown

Finish: Standard finish (smooth)

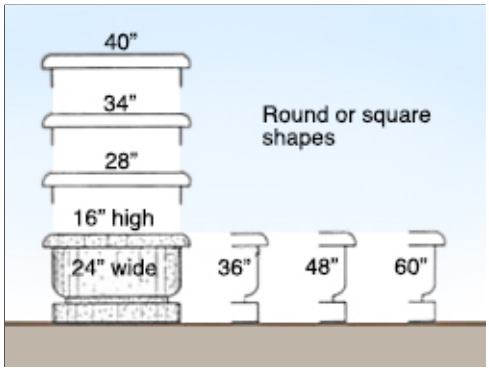
Model #: A-Frame with slat top and two benches

Other: (N/A

UFGS: N/A

C07.2.14. Planters

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188



Type: **Precast Concrete**

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

Mfr: Materials, Inc. (US) or UK equivalent

Color: Weatherstone Gray

Finish: Smooth

Model #: Santa Fe

Other: N/A

UFGS: N/A

C07.2.15. Play Equipment

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Steel**

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

Mfr: Little Tikes Commercial (US) or UK equivalent

Color: Varies

Finish: Powdercoated Steel

Model #: N-R-G Freestyle

Other: Coordinate with Base Architect

UFGS: N/A

C07.2.16. Screen Walls

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Concrete Post and Steel Rail with Board Cladding**

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

Mfr: TBD

Color: Natural concrete posts, dark brown wood boards

Finish: Factory galvanized rails

Model #: Concrete posts with galvanized steel rails and vertical boards

Other: Posts: 84" (or height as required, equally spaced 8' or less), Rails: 1-1/2"x3", 4" vertical wood boards on outside of rails; matching gates; close all ends

UFGS: Section 03 45 00 Precast Architectural Concrete

C07.2.17. Tree Grates

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Cast Iron**

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

Mfr: Neenah Enterprises, Inc. (US) or UK equivalent

Color: Natural cast iron

Finish: Cast

Model #: 2-Piece, round or square

Other: N/A

UFGS: N/A

C07.2.18. Other

○ Applicable ◉ N/A

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

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

Building Identification Sign


Pedestal Sign at Group 1 Medical

Wall Mounted Sign

Traffic Device

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, *Design: Sign Standards*. 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 by case basis.

7. Group 2 and 3 facilities will 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, must conform to the UK Highway Standards. Or, where relevant; US 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 will 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 The Traffic Signs Manual Chapters 1-8.

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. Follow the installation Sign Standard.

19. Manufacturers listed in sections C08.1.1. - C08.1.10. are provided only to establish a level of quality for use when designers write the salient characteristics of the brand-name item in project specifications following Federal Acquisition Regulations (FAR) or UK Building Regulations.

C08.1.1. Materials and Color Specifications

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

1. Fabricate “Typical Sign Face” panels from, aluminum flat sheet. “Typical Sign Post” components will be extruded aluminum with capped top ends set in a concrete base.

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

3. All signage will 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. Dark brown (hexadecimal colour code 664228 a medium dark shade of orange / brown tone)
   c. Standard Red
   d. Standard Black (non-reflective)
   e. Standard White
   f. Standard Brown

Materials and Color Specifications

◉ Applicable ○ N/A Number of base standards 3 Image Tool 250 x 188

Type: **Typical Sign Face**

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

Mfr: Base or local sign shop

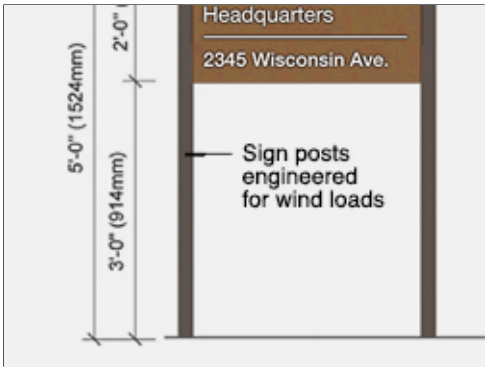
Color: Medium bronze

Finish: Matte vinyl

Model #: Aluminum flat sheet

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Typical Sign Post**

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

Mfr: Base or local sign shop

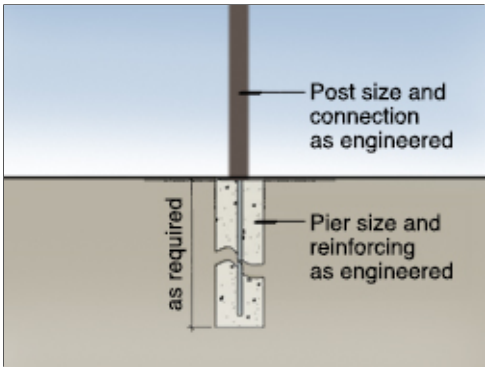
Color: Dark bronze, powder coat finish

Finish: Matte

Model #: Extruded aluminum with capped top ends

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Typical Sign Base**

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

Mfr: Base or local sign shop

Color: Natural Gray

Finish: Sonotube-formed

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

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

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

C08.1.2. Installation and Gate Identification Signs

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

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

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

Mfr: Base or local sign shop

Color: Dark bronze, brushed aluminum, accents per UFC

Finish: Powder coat or vinyl sign face

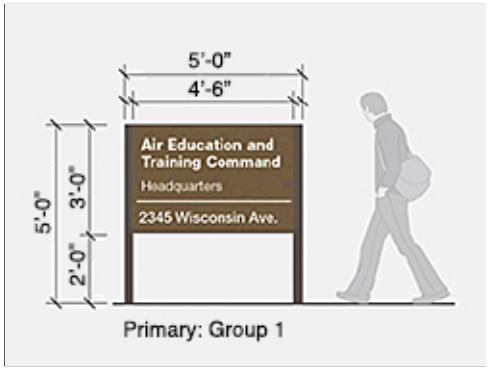
Model #: Metal frame and panels, buff stone base

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

C08.1.3. Building Identification Signs

◉ Applicable ○ N/A Number of base standards 5 Image Tool 250 x 188



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

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

Mfr: Base or local sign shop

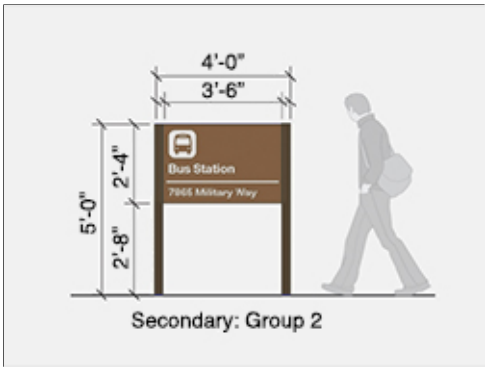
Color: Medium brown face, dark bronze posts, white vinyl lettering

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: Base or local sign shop

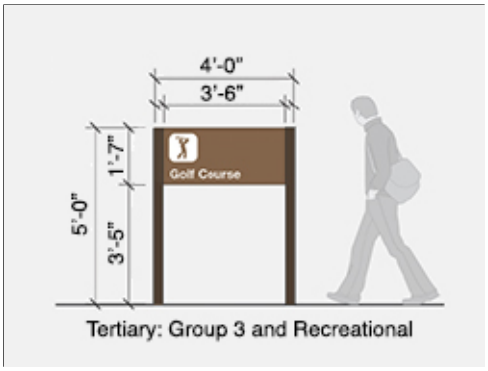
Color: Medium brown face, dark bronze posts, white vinyl lettering

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: Provide layout and sizes per UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



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

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

Mfr: Base or local sign shop

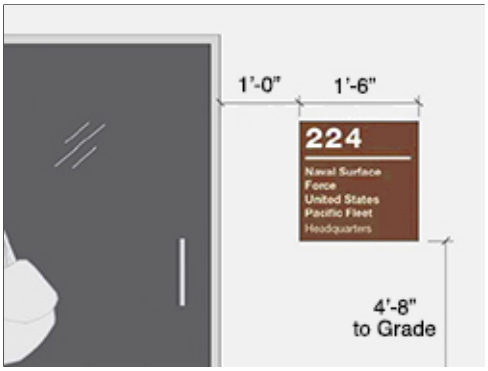
Color: Medium brown face, dark bronze posts, white vinyl lettering

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: Provide layout and sizes per UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Wall Mounted**

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

Mfr: Base or local sign shop

Color: Medium brown, white lettering

Finish: Satin vinyl applied to aluminum sheet

Model #: Aluminum sheet with vinyl face and vinyl lettering

Other: Provide layout and sizes following UFC.

UFGS: N/A

Type: **Glass Mounted**

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

Mfr: Base or local sign shop

Color: White vinyl lettering

Finish: Matte vinyl

Model #: Machine-cut sheet vinyl

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

UFGS: N/A

C08.1.4. Traffic Control Devices (Street Signs)

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Street Signs**

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

Mfr: Base or local sign shop

Color: White reflective lettering on a Standard Brown background

Finish: Powder coat or vinyl sign face

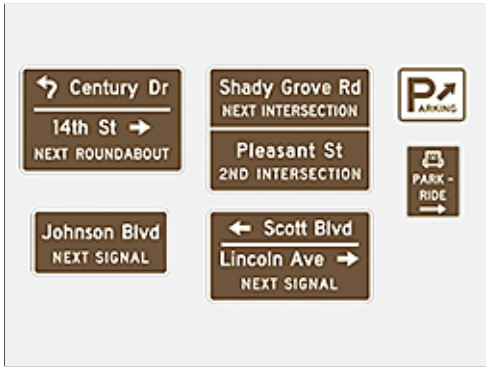
Model #: Aluminum sign face, control arm or pole mounted

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

◉ Applicable ○ N/A Number of base standards 2 Image Tool 250 x 188



Type: **Vehicular**

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

Mfr: Base or local sign shop

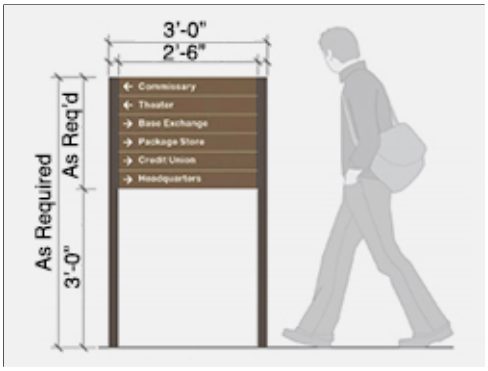
Color: Medium brown face, dark bronze posts, white reflective lettering

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: Base or local sign shop

Color: Medium brown face, dark bronze posts

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

C08.1.6. Informational Signs

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A 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 will have dark brown color hexadecimal colour code 664228 a medium dark shade of orange / brown tone).

3. Hours of operation signs will have a level of quality equivalent to the Facility Group number.

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

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

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

C08.1.8. Parking Lot Signs

○ Applicable ◉ N/A

1. Comply with AFCFS.

C08.1.9. Regulatory Signs

◯ Applicable ◉ N/A

1. Regulatory signage, which restricts, warns and advises, will 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

1. Not applicable.

End of Section

C09. LIGHTING

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

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

C09.1. Fixtures and Lamping

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

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

Street Lighting with Fixtures Spaced Uniformly

Standard Parking Lot Fixtures

Lighted Bollard

Ornamental Street Light Fixtures in Group 4

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 will 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 will have at-grade bases. Group 3 will 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 will 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 in sections C09.2.1. - C09.2.6. are provided only to establish a level of quality for use when designers write the salient characteristics of the brand-name item in project specifications following Federal Acquisition Regulations (FAR) or UK Building Regulations

End of Section

C09.2. Light Fixture Types

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

C09.2.1. Street Lighting

◉ Applicable ○ N/A Number of base standards 2 Image Tool 250 x 188

Type: **Street LED**

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

Mfr: Thorn Lighting https://www.thornlighting.com

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

Finish: Factory

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

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

UFGS: N/A

Type: **Ornamental Street LED**

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

Mfr: To be Determined (TBD)

Color: Black or as approved by BCE

Finish: Factory

Model #: Bell shaped round cutoff, single arm

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 Image Tool 250 x 188

Type: **Parking Lot LED**

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

Mfr: Thorn Lighting https://www.thornlighting.com

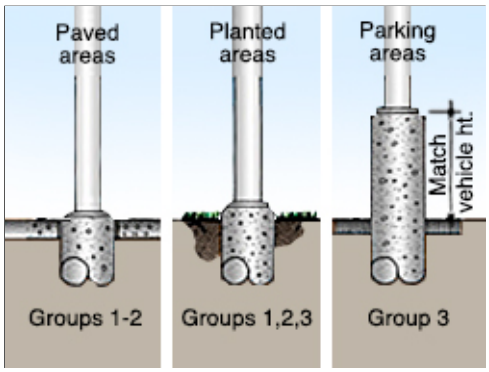
Color: Black or dark Brown (or clear anodized as approved by BCE)

Finish: Factory

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

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

UFGS: N/A



Type: **Parking Lot Fixture Base**

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

Mfr: TBD

Color: Natural gray

Finish: Trowel

Model #: Form-cast, round

Other: N/A

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

C09.2.3. Lighted Bollards

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Lighted Round Flat Top**

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

Mfr: Thorn Lighting https://www.thornlighting.com

Color: Black or dark brown

Finish: Anodized aluminum

Model #: Thor Bollard, medium or slim version

Other: Flared cone, 3000K LED Lamp. Follow manufacturer's recommendations for fixture base.

UFGS: N/A

C09.2.4. Sidewalk Lighting

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Pedestrian Scaled Rectilinear Cutoff**

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

Mfr: Thorn Lighting https://www.thornlighting.com

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

Finish: Anodized aluminum

Model #: Rectilinear Cutoff, Single Arm

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

UFGS: N/A

C09.2.5. Walls / Stairs Lighting

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Linear Louvered Wall Light**

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

Mfr: Vista Lighting (US) or UK equivalent

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

○ Applicable ◉ N/A

D. FACILITIES EXTERIORS

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

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

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

Facility Group 1 with Base Standard Materials and Colors

Group 2 with Standard Brick Color

Group 3 with Metal Panels and Brick Accent

Group 4 with Standard Brick and Red Accent

D01. SUPPORTING THE MISSION

Comply with AF Corporate Standards for Supporting the Mission:
http://afcfs.wbdg.org/facilities-exteriors/supporting-the-mission/index.html

D02. SUSTAINABILITY

Comply with Air Force Corporate Standards for Sustainability:
http://afcfs.wbdg.org/facilities-exteriors/supporting-the-mission/index.html

D03. ARCHITECTURAL FEATURES

Comply with AF Corporate Standards for Facilities Exteriors:
http://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, many windows and parking areas to the south, maximizing solar heat gain.

3. Provide orthogonal geometry for principal building form to minimize construction costs; 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.

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

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

Massing Used to Promote Daylighting and Efficiency and to Express Functions

Orientation to Optimize Operations

Simplified Rectilinear Massing

Articulated Massing and Residential Scale

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 will not be limited; however, building heights over 2 stories will be considered on a case by 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.

8. Group 1 facilities will allow for greater elevational aesthetics such as glazing expanse in moderation and a higher emphasis on brick banding creating a hierarchy or order of importance.

D03.2. Architectural Character

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

2. Respond to the local climate 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.

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

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

Materials, Roof Shape and Slope, and Colors Indicative of the Contemporary Vernacular Theme

Curtain Wall Glazing System Used to Define Main Entrance

Articulated Massing at North End

Group 1 Chapel

Transitional Space at Entrance

4. Design new facilities using either the traditional vernacular or the contemporary vernacular architecture of the Huntingdonshire district and to be compatible with adjacent buildings. Traditional designs may include monolithic building form, red brick or beige brick wall color with contrasting silver or dark brown windows frames, and articulated human-scaled main entrances. Contemporary designs may include two to three coordinated colors in facades, contrasting window system, and pronounced building bases in a contrasting color or material.

5. Projecting gabled entrances with structural masonry columns 16 to 24 inches in width are encouraged in entrance features. Refer to D08. Structural Systems.

6. All facilities will 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 materials with integral colored or factory finishes as the predominant exterior building material; do not use materials that require field painting and ongoing maintenance. Avoid detailing that causes staining, streaking and discoloration of materials due to the effects of weathering.

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

◉ Applicable ○ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 12 Image Tool 250 x 188

Clear Anodized Aluminum Fascia, Wall Panels, and Louver Grille Matching Curtain Wall Frame System, and Adjacent Golden Brick

Aluminum Door System

Continuous SIlver Mechanical Grille

Golden Brick Wall and Pilaster

Golden Brick and Dark Brown Roof Tile

Stepped Rake Flashing

Golden Precast Coping on Chimney

Dark Brown Vertical Siding

White Horizontal Lap Siding

Golden Brick Lintel and Precast Sill

Silver Stepped Fascia Cladding

Silver Gutter with Offset to Downspout

Recessed Silver Downspout

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 in sections D03.3.2. - D03.3.7. are provided only to establish a level of quality for use when designers write the salient characteristics of the brand-name item in project specifications following Federal Acquisition Regulations (FAR) or UK Building Regulations.

End of Section

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: Low levels of daylight during the winter months and high levels in summer months; consider the potential for corrosion

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 or cooling)

Doors: Projecting gabled roofs are required over entrances

Windows: Limit north-facing windows and appropriately locate windows on south facades to optimize solar heat gain

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

Structure: Do not expose ferrous metals; provide factory finished non-ferrous metals or concrete

MEP: Radiant heating and heat recovery following Life Cycle Cost Analysis (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 ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Style 1 Aluminum Windows**

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

Mfr: Kawneer (US) or UK equivalent

Color: Clear anodized

Finish: Anodized

Model #: 2x4, slider or awning type

Other: Provide thermally broken frames.

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

D03.3.3. Thermal Mass

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Style 1 Interior Wall Material**

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

Mfr: Local TBD

Color: Golden brick or natural stone to match exterior

Finish: Light texture

Model #: Coursed unit masonry

Other: Brick is preferred. Concrete masonry units (CMU) with ground face may only be used in Group 3 when approved by the BCE.

UFGS: Section 04 20 00 Unit Masonry

D03.3.4. Thermal Shading

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Style 1 Wall Devices**

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

Mfr: Kawneer (US) or UK equivalent

Color: Clear anodized aluminum

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

○ Applicable ◉ N/A

D03.3.6. Solar Photovoltaic System

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Ground or Roof Mount**

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

Mfr: TBD

Color: Factory

Finish: Factory

Model #: Flat panel

Other: Build to resist possible very strong winds; PV's are subject to BCE review and approval on a case by case basis

UFGS: Section 26 31 00 Solar Photovoltaic (PV) Components

D03.3.7. Solar Thermal System

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Wall-Mounted or Roof-Mounted Panels**

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

Mfr: TBD

Color: Factory

Finish: Factory

Model #: Flat Panel

Other: Build to resist possible very strong winds; roof / building mounted systems are subject to BCE review and approval on a case by case basis

UFGS: Section 48 14 13.00 20 Solar Liquid Flat Plate

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:
http://afcfs.wbdg.org/facilities-exteriors/building-entrances/index.html

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1



Group 2



Group 3



Group 4



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 AT, UFC 04-010-01, Appendix D and IFS.

8. Protect entrances from falling ice and snow. Develop roof form and slopes 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.

End of Section

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 Wall Systems:
http://afcfs.wbdg.org/facilities-exteriors/wall-systems/index.html

Comply with AFCFS Recommended Materials:
http://afcfs.wbdg.org/facilities-exteriors/wall-systems/materials/index.html

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1



Group 2



Group 3



Group 4



D05.1. Hierarchy of Materials

1. Group 1 facilities may have more refined detailing than Group 2 and Group 2 may have more definition than Group 3.

2. Group 1 facilities will be predominantly golden brick. Bands of golden brick in relief or in an alternative coursing may be used as an accent. Architectural precast accents in a golden or light beige color, or native Cotswold stone accents, may be used. Anodized aluminum (silver) insulated metal panels may be used as a secondary material.

3. Group 2 facilities will be predominantly golden brick. Bands of golden brick and / or architectural precast may be used as an accent. Anodized aluminum (silver), light beige or off-white insulated metal panels may be used as a secondary material.

4. Large-scale Group 3 facilities will be predominantly light beige or off-white insulated metal panel systems or ribbed siding, sometimes with a golden brick base. Factory finished metal sheeting or trim must match the wall color.

5. Group 4 will be predominantly golden brick with an accent contrasting color of brick or cementitious siding.

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. North exposures may be finished with materials and details that differ from other exposures to mitigate damp conditions and prevent mold.

8. Use high-performance building envelopes following UFC 1-200-02, *High Performance and Sustainable Building Requirements* and UFC 3-101-01, *Architecture*.

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

10. Use natural or integrally colored concrete with clear sealers when recommended. Do not paint concrete.

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

12. Manufacturers listed in sections D05.4.1. - D05.4.13. are provided only to establish a level of quality for use when designers write the salient characteristics of the brand-name item in project specifications following Federal Acquisition Regulations (FAR) or UK Building Regulations.

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 per UFGS 07 60 00 Flashing and Sheet Metal.

6. Avoid creating inside-corner conditions in walls which would invite bird nesting. Bird netting may be used when coordinated with material / system manufacturers for attachment.

7. All joint sealants will be slightly darker than adjacent surfaces.

8. Materials requiring regular maintenance are not permitted; do not use exposed structural steel, exposed glued laminated timber construction or other materials that require field painting.

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

10. 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 must match the wall color.

D05.4 Wall Systems Materials

Facility Group 1 wall materials will be as follows.

Primary:	Brick
Secondary:	Flat Metal Panels (Optional)
Accent:	Brick, Architectural Precast Concrete or Stone

Facility Group 2 wall materials will be as follows.

Primary:	Brick
Secondary:	Insulated Metal Panels (Optional)
Accent:	Brick, Architectural Precast Concrete or Stone

Facility Group 3 wall materials will be as follows.

Primary:	Insulated Metal Panels, Ribbed Metal Sheeting
Secondary:	Metal Panels and Trim in the Same Color
Accent:	Brick Wall Base, Concrete Foundation Wall

Facility Group 4 wall materials will be as follows.

Primary:	Brick
Secondary:	Fiber Cement Siding, Trim Boards
Accent:	Band of Contrasting Color Brick; Precast Sills

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

D05.4.1. Flat Metal Panels

◉ Applicable ○ N/A Number of base standards 3 Image Tool 250 x 188

Type: **Insulated Metal Panel System - Aluminum**

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

Mfr: 3A Composites (US) or UK equivalent

Model #: Alucobond Plus Anodized Collection

Color: Neutral colors, silver and warm gray as approved by CES

Finish: Clear anodized

Other: "V" route and return, vertical or horizontal expansion joints

UFGS: Section 07 42 13 Metal Wall Panels:
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 42 13.pdf
Section 07 42 63 Fabricated Wall Panel Assemblies:
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 42 63.pdf

Type: **Insulated Metal Panel System - Galvanized Steel or Aluminum**

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

Mfr: Metl-Span (US) or UK equivalent

Model #: Insulated Metal Wall System

Color: Silver, light beige or off-white

Finish: Factory embossed, course textured, fluoropolymer

Other: N/A

UFGS: Section 07 42 13 Metal Wall Panels:
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 42 13.pdf
Section 07 42 63 Fabricated Wall Panel Assemblies:
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 42 63.pdf

Type: **Insulated Metal Panel System - Galvanized Steel or Aluminum**

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

Mfr: Centria (US) or UK equivalent

Model #: Insulated Metal Wall System

Color: Dark brown or silver

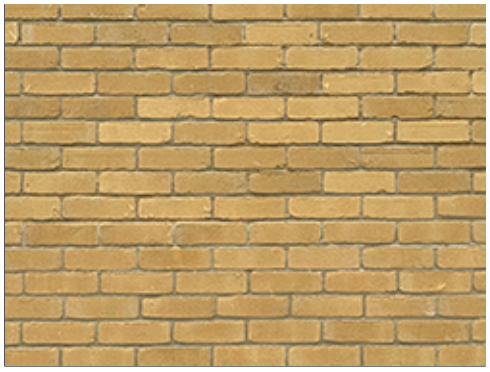
Finish: Smooth face, anodized or fluoropolymer

Other: N/A

UFGS: Section 07 42 13 Metal Wall Panels:
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 42 13.pdf
Section 07 42 63 Fabricated Wall Panel Assemblies:
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 42 63.pdf

D05.4.2. Brick Veneer

◉ Applicable ○ N/A Number of base standards 3 Image Tool 250 x 188



Type: **Modular Face Brick**

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

Mfr: Local, TBD

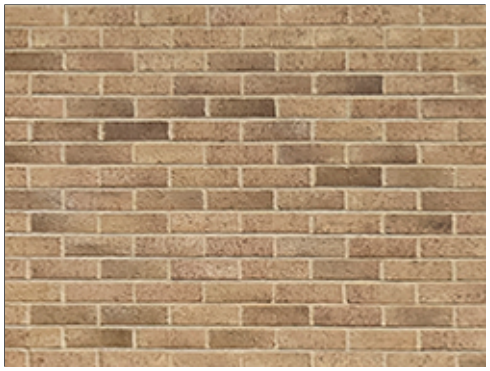
Model #: Face brick

Color: Golden brick

Finish: Smooth, slightly tumbled edges, and lightly pitted texture

Other: N/A

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



Type: **Modular Face Brick - Muted Golden with Flashed Color**

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

Mfr: Local, TBD

Model #: Face brick

Color: Muted golden brick with medium flashed brick

Finish: Moderate texture

Other: Use only when matching adjacent facilities

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

Type: **Modular Face Brick - Red Accent / Base Color**

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

Mfr: Local, TBD

Model #: Face brick

Color: Red

Finish: Minimal texture

Other: Integrate with primary wall system and flashing

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

D05.4.3. Architectural Precast

◉ Applicable ○ N/A Number of base standards 3 Image Tool 250 x 188

Type: **Coursed Architectural Precast**

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

Mfr: Local, TBD

Model #: Coursed precast units

Color: Golden, light beige or off-white as approved by CES

Finish: Very light texture

Other: Provide 6,000 psi density to reduce effects of weathering

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

Type: **Monolithic Precast Sill - Set in Masonry Walls**

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

Mfr: Local, TBD

Model #: Smooth casting with drip edge to prevent staining below surfaces

Color: Golden, light beige, or off-white as approved by CES

Finish: Very light texture

Other: Provide 6,000 psi density to reduce effects of weathering

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

Type: **Coursed Architectural Precast Door and Window Surrounds**

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

Mfr: Local, TBD

Model #: Smooth casting with drip edge to prevent staining below surfaces

Color: Golden, light beige, or off-white as approved by CES

Finish: Very light texture, sloped for positive drainage

Other: Provide 6,000 psi density to reduce effects of weathering

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

D05.4.4. Stucco Over Sheathing

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Cementitious Stucco with Synthetic Finish**

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

Mfr: Sto (US) or UK equivalent

Model #: StoQuik Silver Drain Sto Emerald Coat

Color: Light beige, off white or golden as approved by CES

Finish: Very light texture

Other: N/A

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

D05.4.5. Curtain Wall

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Pressure Equalized Rain Screen Design**

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

Mfr: Kawneer (US) or UK equivalent

Model #: 7500 Wall, double glazing

Color: Silver frames, solar gray glazing`

Finish: Anodized frames, trims and flashing

Other: High thermal performance only; Group 2 with BCE Approval

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

D05.4.6. Cast-In-Place Concrete

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Board-Formed or Sheet-Formed Bearing Walls**

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

Mfr: Local, TBD

Model #: Custom, rough-sawn dimensional lumber or liner forming

Color: Natural gray concrete

Finish: Board-formed or liner-formed texture exposed, with clear sealer

Other: Board-formed texture has no exposed form ties

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

D05.4.7. Tilt-Up Concrete

○ Applicable ◉ N/A

D05.4.8. Ribbed Metal Sheeting

◉ Applicable ○ N/A Number of base standards 2 Image Tool 250 x 188

Type: **Metal Panel System - Small Scale Rib or Louver Grille, Aluminum**

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

Mfr: Pac-Clad (US) or UK equivalent or Duco

Model #: Box Rib Wall Panel or Ducogrill Classic Ventilation Grille

Color: Silver to match clear anodize

Finish: Factory standard smooth, fluoropolymer

Other: 22' span, .040 aluminum, 3 ribs / fins per 12" with closures

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

Type: **Purlin Bearing Rib (PBR) Panel**

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

Mfr: Allied (US) or UK equivalent

Model #: Standard PBR panel with ribs at +/- 6 inches on center and all closures

Color: Medium brown, dark brown, light beige or off-white as CES approved

Finish: Factory standard smooth, fluoropolymer

Other: Closure trims must match wall color

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

D05.4.9. EIFS

○ Applicable ◉ N/A

D05.4.10. GFRC

○ Applicable ◉ N/A

D05.4.11. Concrete Block

○ Applicable ◉ N/A

D05.4.12. Fiber Cement Siding

◉ Applicable ○ N/A Number of base standards 2 Image Tool 250 x 188

Type: **Cementitious Vertical Lap Siding**

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

Mfr: James Hardie Building Products, Inc. (US) or UK equivalent

Model #: Shiplap, Tongue and Groove, or Clapboard Siding with trims / closures

Color: Dark brown, or Earth tones as approved by CES

Finish: Smooth or wood texture is permitted

Other: Contrasting trims and closures are not permitted

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

Type: **Cementitious Horizontal Lap Siding**

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

Mfr: James Hardie Building Products, Inc. (US) or UK equivalent

Model #: Shiplap, Tongue and Groove, or Clapboard Siding with trims / closures

Color: White, Off-white, or light Earth tones as approved by CES

Finish: Smooth or wood texture is permitted

Other: Contrasting trims and closures are not permitted

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

D05.4.13. Other

◉ Applicable ○ N/A Number of base standards 5 Image Tool 250 x 188

Type: **Natural Cotswold Stone - Coursed Ashlar Masonry**

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

Mfr: Local, TBD

Model #: Coursed Ashlar Stone Masonry

Color: Golden or light beige

Finish: Moderate to minimal face texture

Other: N/A

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

Type: **Natural Northamptonshire Stone - Coursed Ashlar Masonry**

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

Mfr: Local, TBD

Model #: Coursed Ashlar Stone Masonry

Color: Medium or light beige

Finish: Moderate to minimal face texture

Other: Limestone building stone

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

Type: **Thru-Wall Flashing with Weeps at Window Head**

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

Mfr: Masonpro (US) or UK equivalent

Model #: Concealed flashing, open weeps at 16" o.c.

Color: Silver or dark brown

Finish: Mill finish stainless steel or copper

Other: Provide corner and end dam flashing

UFGS: Section 07 60 00 Flashing and Sheet Metal; also refer to UFC 3-101-01, 2-7 Chapter 21 - Masonry, Section 2115

Type: **Thru-Wall Flashing with Weeps at Grade**

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

Mfr: Masonpro (US) or UK equivalent

Model #: Concealed flashing, open weeps at 16" o.c.

Color: Silver or dark brown

Finish: Mill finish stainless steel or copper

Other: Provide corner and end dam flashing

UFGS: Section 07 60 00 Flashing and Sheet Metal; also refer to UFC 3-101-01, 2-7 Chapter 21 - Masonry, Section 2115

Type: **Use Only Monolithic Cap Flashing / Coping**

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

Mfr: All

Model #: Custom break metal, use only solid coping / cap to prevent degradation

Color: Silver or match adjacent wall panels

Finish: Anodized or match adjacent wall panels

Other: Do not use transitions, which channel water, to prevent deterioration

UFGS: Section 07 60 00 Flashing and Sheet Metal; also refer to UFC 3-101-01, 2-7 Chapter 21 - Masonry, Section 2115

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:
http://afcfs.wbdg.org/facilities-exteriors/doors-and-windows/index.html

Comply with AFCFS Recommended Materials:
http://afcfs.wbdg.org/facilities-exteriors/doors-and-windows/materials/index.html

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1



Group 2



Group 3



Group 4



D06.1. Types

1. Silver anodized aluminum doors, windows and frames with insulation and thermal breaks are recommended for Groups 1, 2 and 3 due to low maintenance and reduced weathering and fading. Dark brown anodized aluminum doors, windows and frames with insulation and thermal breaks may be used for architectural compatibility.

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.

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

7. Windows must meet force protection requirements.

8. Adjacent joint sealants will be slightly darker than the frame color.

9. Manufacturers listed in sections D06.5.1. - D06.5.4. are provided only to establish a level of quality for use when designers write the salient characteristics of the brand-name item in project specifications following Federal Acquisition Regulations (FAR) or UK Building Regulations.

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 will 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 will 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

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

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

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

Mfr: Kawneer (US) or UK equivalent

Color: Dark brown or clear anodized

Finish: Matte

Model #: 2x4 frame, thermally broken

Other: Group 1 may use larger openings with larger framing sections

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

D06.5.2. Hollow Metal

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Hollow Metal Doors, Windows and Frames – e.g., Plant Rooms**

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

Mfr: Steelrite (US) or UK equivalent

Color: Silver, brown, or to match wall color

Finish: Powder coat, satin

Model #: 2x4 frame, thermally broken

Other: N/A

UFGS: Section 08 11 13 Steel Doors and Frames:
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 11 13.pdf

D06.5.3. Aluminum-clad Wood

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Aluminum-clad Residential**

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

Mfr: Marvin (US) or UK equivalent

Color: White

Finish: Powder coated, satin

Model #: Casement

Other: Thermally broken framing

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

D06.5.4. Other

○ Applicable ◉ N/A

D07. ROOF SYSTEMS

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

Comply with AF Corporate Standards for Roof Systems:
http://afcfs.wbdg.org/facilities-exteriors/roof-systems/index.html

Comply with AFCFS Recommended Materials:
http://afcfs.wbdg.org/facilities-exteriors/roof-systems/materials/index.html

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1



Group 2



Group 3



Group 4



D07.1. Roof Type and Form

1. Use proven, cost-effective roof systems with high durability, weather resistance, and low maintenance that are compatible with Installation Facilities Standards (IFS) and requirements for the designated Facility Group.

2. Generally, match the roof type and form of 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; Group 1 and 2 facilities may alternatively have concrete tile roofs. Larger facilities may use sloped-roof features in conjunction with predominantly minimal-sloped "flat" membrane roofs when approved by the BCE on a case by case basis.

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 only permitted in roofs when approved by the BCE on a case by case basis.

7. Group 4 facilities will have gabled or hipped concrete tile roofs.

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

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

10. The color, shape and slope of the eave and soffit will 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 will 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 in sections D07.9.1. - D07.9.10. are provided only to establish a level of quality for use when designers write the salient characteristics of the brand-name item in project specifications following Federal Acquisition Regulations (FAR) or UK Building Regulations.

D07.2. Roof Slope

1. Group 1 and 2 buildings with sloped roofs will 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 will use 6:12 to 10:12 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 dark brown or silver; 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 will be terra cotta color.
4. Comply with UFC 3-110-03 and ASHRAE 90.1 for Solar Reflectance Index (SRI) and thermal requirements.
5. All roof flashing will match the color of the predominant background material.

D07.5. Gutters, Downspouts, Scuppers, Drains

1. All sloped roofs will use gutters and downspouts. Gutters must be outside the fascia.
2. Internal roof drainage systems are allowed for minimal-slope applications.
3. All gutters and fascia will match adjacent buildings, generally dark brown.
4. Size the roof drainage system per UFC, DIN or British Standard.
5. Use scuppers as required in parapet walls. Arrange scuppers in an orderly manner consistent with other elements of the wall system.
6. When open scuppers are connected to downspouts, provide transitions consistent with adjacent facilities
7. Integrate downspouts with the architectural details of the wall system and arrange in an orderly, non-prominent appearance. Generally, blend downspouts with the color of the wall (not contrasting it).
8. Fabricate downspouts from non-corrosive materials such as aluminum or zinc-coated steel. Provide powder-coated finishes.
9. All downspouts will be solid.
10. Provide angled transitional pieces for downspouts to fit closely against the wall for their entire length.
11. Coordinate locations of downspouts to conceal control joints in masonry walls when possible.
12. Place downspouts away from building entries. Water discharged must not run across sidewalks. Provide concrete splash blocks or cast iron receivers at grade, connected to the storm drainage system where available.

D07.6. Roof Vents and Elements

1. Minimize and consolidate roof penetrations into a single, inconspicuous point whenever possible.
2. On sloped roofs clad pipe penetrations to match the roofing material.
3. Avoid the use of rooftop mechanical equipment, however for renovations and unavoidable configurations ensure units are screened.
4. Provide access points and service routes to equipment that protect the roof.
5. Screen all large vents.
6. Ensure attic spaces are properly vented at ridges and soffits.

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

8. Avoid roof-mounted antenna systems.

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

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

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

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

D07.7. Clerestories and Skylights

1. Clerestories are permitted in Group 1, 2 and 3 facilities only when serving passive systems and are justifiable by life-cycle cost 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. Skylights are allowed only with BCE approval.

D07.8. Vegetated Roof

1. Install vegetative roofs only following the life-cycle cost analysis for each project to ensure reduced impacts on stormwater infrastructure.

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 Image Tool 250 x 188

Type: **Style 1**

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

Mfr: Berridge (US) or UK equivalent

Color: Dark brown or silver as approved by CES

Finish: Factory matte

Model #: Tee-Panel

Other: Shed, gabled or hipped standing seam metal

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

D07.9.2. Membrane Single-ply

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Style 1**

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

Mfr: Carlisle (US) or UK equivalent

Color: Off-white or black

Finish: Smooth

Model #: EPDM, single ply, “flat” minimal slope

Other: N/A

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

D07.9.3. Built-up Multi-ply

○ Applicable ◉ N/A

D07.9.4. Concrete Tile

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Interlocking Tiles**

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

Mfr: Redland

Color: Tudor Brown or Slate Grey

Finish: Smooth

Model #: Double Roman Concrete Interlocking Roof Tiles, 330 mm x 417 mm

Other: Provide barrel tile at ridge

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

D07.9.5. Clay Tile

○ Applicable ◉ N/A

D07.9.6. Slate Shingles

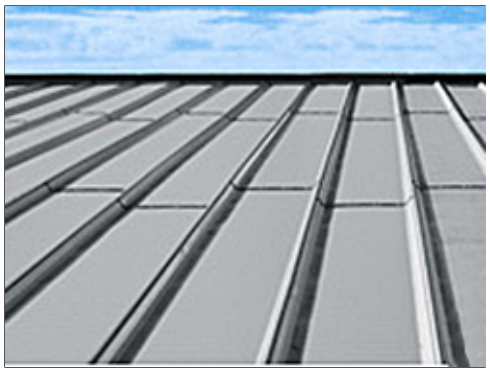
○ Applicable ◉ N/A

D07.9.7. Vegetated System

○ Applicable ◉ N/A

D07.9.8. Ribbed Metal Sheeting

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188



Type: **Style 1**

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

Mfr: Berridge (US) or UK equivalent

Color: Galvalume

Finish: Factory

Model #: High Seam Tee-Panel

Other: 24 gauge steel, Width: 16" Batten height: 1-3/4″

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

D07.9.9. Composite Shingles

○ Applicable ◉ N/A

D07.9.10. Other

○ Applicable ◉ N/A

D08. STRUCTURAL SYSTEMS

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

Comply with AF Corporate Standards for Structural Systems:
http://afcfs.wbdg.org/facilities-exteriors/structural-systems/index.html

Comply with AFCFS Recommended Materials:
http://afcfs.wbdg.org/facilities-exteriors/structural-systems/materials/index.html

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 must not be field painted. Heavy timber construction is only permitted in recreation areas.

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 in sections D08.2.1. - D08.2.9. are provided only to establish a level of quality for use when designers write the salient characteristics of the brand-name item in project specifications following Federal Acquisition Regulations (FAR) or UK Building Regulations.

D08.2. Structural Systems Materials

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

D08.2.1. Concrete

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Cast-In-Place**

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

Mfr: TBD

Color: Natural gray

Finish: Light texture

Model #: Post and beam and/or waffle slab

Other: Coordinate with mechanical for chilled beam technologies

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

D08.2.2. Insulated Concrete Forming (ICF)

○ Applicable ◉ N/A

D08.2.3. Steel

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Rigid Framing**

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

Mfr: US Steel (US) or UK equivalent

Color: Shop primed

Finish: Matte

Model #: Structural steel shapes

Other: N/A

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

D08.2.4. Pre-Engineered Steel

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Moment Frame**

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

Mfr: Behlen Building Systems (US) or UK equivalent

Color: Factory primed

Finish: Matte

Model #: Moment Frame

Other: Draped insulation may be used behind wall system;
Metal building manufacturer's standing seam roof system may be used for Group 3

UFGS: Section 13 12 00 Steel Building Systems
(Not Available on UFGS)
Section 13 34 19 Metal Building Systems
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 13 34 19.pdf

D08.2.5. Masonry

○ Applicable ◉ N/A

D08.2.6. Heavy Timber

○ Applicable ◉ N/A

D08.2.7. Light-gauge Steel

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Steel Framing**

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

Mfr: Steelrite (US) or UK equivalent

Color: Factory

Finish: Galvanized

Model #: Structural framing shapes

Other: N/A

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

D08.2.8. Lumber Framing

○ Applicable ◉ N/A

D08.2.9. Other

○ Applicable ◉ N/A

D09. MECHANICAL, ELECTRICAL AND PLUMBING

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

Comply with AF Corporate Standards for Mechanical, Electrical and Plumbing:
http://afcfs.wbdg.org/facilities-exteriors/mechanical-electrical-and-plumbing/index.html

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 to reduce the demand on mains utilities.

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 Life Cycle Cost Analysis (LCCA).

6. Integrate shading into building exteriors to reduce solar heat gain during hot seasons 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 AT following UFC 04-010-01, Appendix D requirements. External plant will be fully screened using timber fencing, metal fencing or chain link where required for visual sight / inspection. Group four will have services boxes for incoming supply meters.

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.

End of Section

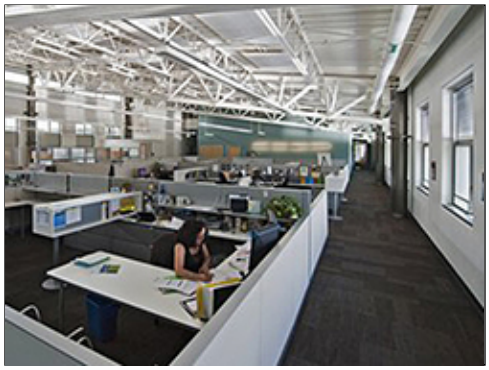
E. FACILITIES INTERIORS

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

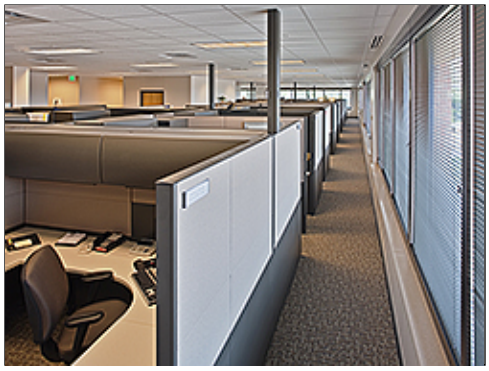
Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1



Group 2



Group 3



Group 4



E01. Building Configurations

Comply with Air Force Corporate Standards for Building Configurations:
http://afcfs.wbdg.org/facilities-interiors/buildings-configurations/index.html

1. Provide open-plan configurations for office, administrative, operational and related activities and spaces for maximum flexibility. Use a "core and shell" approach in which all building systems, infrastructure and permanent interior partitions anticipate two or more uses (operations) during a facility's lifespan.

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

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, *DoD Building Code* (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.

6. Meet security and force protection requirements in UFC 4-010-01, *DoD Minimum Antiterrorism Standards for Buildings*.

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 English Heritage for Listed Buildings and buildings of historic importance. Engage with the Local Planning Authority for more information.

12. Maintain architectural compatibility following AFCFS and this Installation Facilities Standards (IFS) document to create continuity while avoiding monotony.

13. Follow UK HSE (Health and Safety Executive) guidance for interior quality and UK Building Regulations / British Standards for interior health and safety requirements.

E01.1. Layout and Common Areas

Comply with Air Force Corporate Standards for Layout and Common Areas:
http://afcfs.wbdg.org/facilities-interiors/buildings-configurations/layout-and-common-areas/index.html

1. Create open-plan interior environments to accommodate changes.

2. Limit interior partitions, private offices and rooms; use furniture or modular systems to provide privacy and acoustic control.

3. When partitions are functionally justified such as for conference rooms, use systems furniture and moveable (demountable) floor-to-ceiling wall systems for acoustical or visual privacy.

4. Proportion lobbies and common spaces based on type of function, activity and facility group.

5. Allow no direct sight lines into restrooms.

6. Situate utility and core areas to minimize impact on daylighting and to maximize use as thermal buffers.

7. Ensure electrical, lighting and communications system can be adaptable to configuration changes.

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

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

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

E01.1.1. Interior Design Process

1. Comply with UFC 3-120-10, *Interior Design* 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 must follow UFC 3-120-10.

9. Base the FF&E package on the furniture footprint developed in the SID. Identify all new or existing equipment needed and its users within each facility or each area of the facility. Provide specific information on equipment sizes, electrical requirements, ventilation requirements, weight (if heavy), quantity, and security level if required. Presume all administrative spaces have computers and supporting equipment.

E01.1.2. Codes and Regulations

1. Refer to A. Overview, Item No. 8.

E01.2. Quality and Comfort

Comply with Air Force Corporate Standards for Quality and Comfort:
http://afcfs.wbdg.org/facilities-interiors/buildings-configurations/quality-and-comfort/index.html

1. Include durability in the life-cycle cost analysis for best-value material selections with long life expectancies that do not show excessive wearing.

2. Select long-lasting materials and finishes for permanent core areas such as lobbies, restrooms and stairs.

3. Select low-maintenance materials and products that reduce ongoing servicing and repair and that are easy to clean.

4. Relate the visual quality of finishes to the Facility Group number.

5. Building and interior configurations will address both operations and climatic responses.

6. Convey a professional image; avoid trendy patterns and textures.

7. Use materials and finishes that provide a healthy indoor environment.

8. Orient interior spaces toward views while maintaining cost-effective building performance and efficiency.

9. Promote air movement and daylighting for human health and wellbeing.

E02. Floors

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

E02.1. Floor Materials

Facility Group 1 floor materials will be as follows.

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

Facility Group 2 floor materials will be as follows.

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

Facility Group 3 floor materials will be as follows.

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

Facility Group 4 floor materials will 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 by case basis.

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

3. Manufacturers listed in sections E02.1.1. - E02.1.8. are provided only to establish a level of quality for use when designers write the salient characteristics of the brand-name item in project specifications following Federal Acquisition Regulations (FAR) or UK Building Regulations.

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

E02.1.1. Prepared Slabs

◉ Applicable ○ N/A Number of base standards 2 Image Tool 250 x 188

Type: **Ground and Polished**

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

Mfr: 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)

Type: **Ground and Medium Polished**

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

Mfr: 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)

E02.1.2. Natural Stone and Terrazzo

○ Applicable ◉ N/A

E02.1.3. Quarry Tile

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Style 1**

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

Mfr: Daltile (US) or UK Equivalent

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
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 30 10.pdf

E02.1.4. Ceramic Tile

◉ Applicable ○ N/A Number of base standards 2 Image Tool 250 x 188

Type: **Porcelain**

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

Mfr: Daltile (US) or UK Equivalent

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
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 30 10.pdf

Type: **Ceramic**

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

Mfr: Daltile (US) or UK Equivalent

Color: Earth tones

Finish: Matte, slip resistant

Model #: Ceramic tile

Other: Use in low traffic area toilet rooms.

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

E02.1.5. Resilient Floor

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Style 1 Stair Treads**

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

Mfr: Roppe

Color: Neutral tones

Finish: Factory

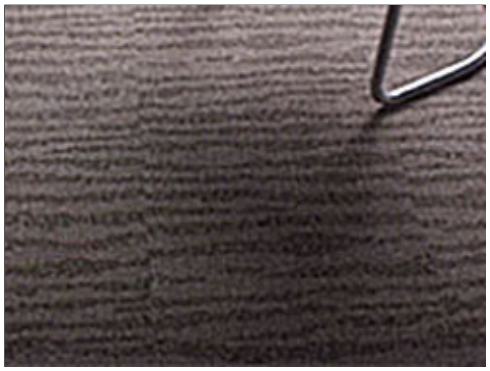
Model #: Raised design rubber tread

Other: Stair treads material

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

E02.1.6. Carpet

◉ Applicable ○ N/A Number of base standards 2 Image Tool 250 x 188



Type: **Style 1**

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

Mfr: Mohawk Group

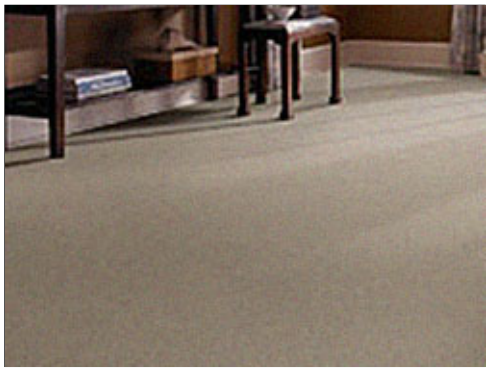
Color: Neutral multi-colored tones/patterned/solid

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

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

Other: N/A

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



Type: **Style 2**

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

Mfr: Mohawk Group

Color: Earth tones

Finish: Factory

Model #: Broadloom, residential loop, "Smartstrand"

Other: N/A

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

E02.1.7. Rapidly-Renewable Products

○ Applicable ◉ N/A

E02.1.8. Other

○ Applicable ◉ N/A

E03. Walls

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

E03.1. Wall Materials

Facility Group 1 wall materials will be as follows.

Primary:	Brick (or Other as Approved by the BCE)
Secondary:	Gypsum Board (Painted)
Tertiary:	Ceramic Tile (Restrooms)

Facility Group 2 wall materials will be as follows.

Primary:	Brick
Secondary:	Gypsum Board (Painted)
Tertiary:	Ceramic Tile (Restrooms)

Facility Group 3 wall materials will be as follows.

Primary:	Ground Face Block, Sealed (Do Not Paint)
Secondary:	N/A
Tertiary:	Ceramic Tile (Restrooms)

Facility Group 4 wall materials will 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 by 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 by 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 in sections E03.1.1. - E03.1.8. are provided only to establish a level of quality for use when designers write the salient characteristics of the brand-name item in project specifications following Federal Acquisition Regulations (FAR) or UK Building Regulations.

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

E03.1.1. Concrete

○ Applicable ◉ N/A

E03.1.2. Masonry

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Modular Face Brick**

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

Mfr: Local (TBD)

Color: Golden brick

Finish: Light texture

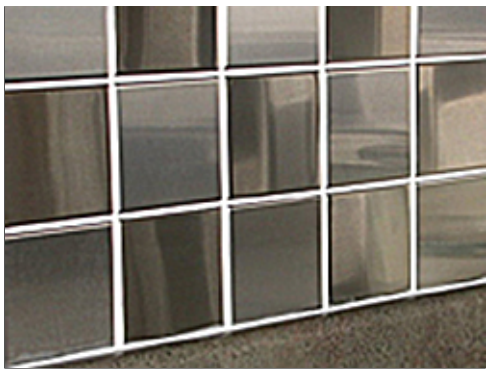
Model #: Coursed unit masonry

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

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

E03.1.3. Ceramic Tile

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188



Type: **Style 1**

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

Mfr: Daltile (US) or UK equivalent

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
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 30 10.pdf

E03.1.4. Gypsum Board

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Style 1**

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

Mfr: US Gypsum (US) or UK equivalent

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

E03.1.6. Wood Paneling

○ Applicable ◉ N/A

E03.1.7. Rapidly-Renewable Products

○ Applicable ◉ N/A

E03.1.8. Other

○ Applicable ◉ N/A

1. Not applicable.

End of Section

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 will be as follows.

Primary:	Exposed Framing (Roof / Floor Structure Above)
Secondary:	Grid and Acoustical Tile
Tertiary:	N/A

Facility Group 2 ceiling materials will be as follows.

Primary:	Exposed Framing (Roof / Floor Structure Above)
Secondary:	Grid and Acoustical Tile
Tertiary:	Gypsum Board (Painted)

Facility Group 3 ceiling materials will 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 will 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 by 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 in sections E04.1.1. - E04.1.8. are provided only to establish a level of quality for use when designers write the salient characteristics of the brand-name item in project specifications following Federal Acquisition Regulations (FAR) or UK Building Regulations.

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

E04.1.1. Exposed Framing (Roof / Floor Structure Above)

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Style 1**

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

Mfr: Vulcraft (US) or UK equivalent

Color: Neutral colors reviewed on a case basis

Finish: Field painted (Sheen per UFGS)

Model #: Formlok floor and roof decking

Other: N/A

UFGS: Section 05 30 00 Steel Decks
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 05 30 00.pdf

E04.1.2. Exposed Concrete

○ Applicable ◉ N/A

E04.1.3. Grid and Acoustical Tile

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Style 1**

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

Mfr: Armstrong (US) or UK equivalent

Color: White

Finish: Factory

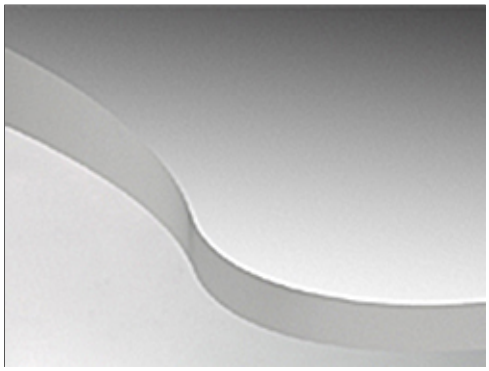
Model #: 2'x2' Tegular with reveal edge and fine texture, grid 15/16"

Other: Performance characteristics are Class A; NRC-0.70; CAC-40; LR-0.86; minimum recycled content 82%.

UFGS: Section 09 51 00 Acoustical Ceilings
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 51 00.pdf

E04.1.4. Gypsum Board

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188



Type: **Style 1**

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

Mfr: US Gypsum (US) or UK equivalent

Color: Solid neutral colors

Finish: Paint (sheen per UFGS)

Model #: Tapered edge

Other: N/A

UFGS: Section 09 29 00 Gypsum Board
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 29 00.pdf
Section 09 90 00 Paints and Coatings
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 90 00.pdf

E04.1.5. Metal Panels

○ Applicable ◉ N/A

E04.1.6. Wood

○ Applicable ◉ N/A

E04.1.7. Rapidly-Renewable Products

○ Applicable ◉ N/A

E04.1.8. Other

○ Applicable ◉ N/A

1. Not applicable.

End of Section

E05. Doors and Windows

Comply with Air Force Corporate Standards for Doors and Windows:
http://afcfs.wbdg.org/facilities-interiors/doors-and-windows/index.html

E05.1. Doors and Windows and Frames Materials

Facility Group 1
door (frame) and window frame materials will be as follows.

Primary:	Aluminum, Clear Anodized
Secondary:	Hollow Metal (Painted)
Tertiary:	N/A

Facility Group 1
door (leaf) materials will be as follows.

Primary:	Hardwood Veneer
Secondary:	Hollow Metal (Painted)
Tertiary:	N/A

Facility Group 2
door (frame) and window frame materials will be as follows.

Primary:	Aluminum, Clear Anodized
Secondary:	Hollow Metal (Painted)
Tertiary:	N/A

Facility Group 2
door (leaf) materials will be as follows.

Primary:	Hardwood Veneer
Secondary:	Hollow Metal (Painted)
Tertiary:	N/A

Facility Group 3
door (frame) and window frame materials will be as follows.

Primary:	Hollow Metal (Galvanized, Painted)
Secondary:	Hollow Metal (Galvanized, Painted)
Tertiary:	N/A

Facility Group 3
door (leaf) materials will be as follows.

Primary:	Hollow Metal (Galvanized, Painted)
Secondary:	Hollow Metal (Galvanized, Painted)
Tertiary:	N/A

Facility Group 4
door (frame) and window frame materials will be as follows.

Primary:	Wood
Secondary:	N/A
Tertiary:	N/A

Facility Group 4
door (leaf) materials will 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 by 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 in sections E05.1.1. - E05.1.4. are provided only to establish a level of quality for use when designers write the salient characteristics of the brand-name item in project specifications following Federal Acquisition Regulations (FAR) or UK Building Regulations.

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

E05.1.1. Aluminum

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Aluminum Doors and Frames**

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

Mfr: Kawneer (US) or UK equivalent

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
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 41 13.pdf
Section 08 71 00 Door Hardware
https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf

E05.1.2. Hollow Metal

◉ Applicable ○ N/A Number of base standards 2 Image Tool 250 x 188

Type: **Steel Doors**

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

Mfr: Steelcraft (US) or UK equivalent

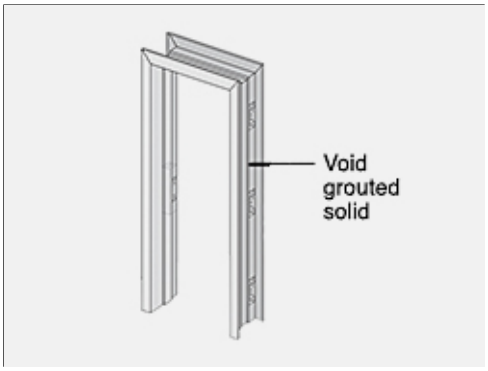
Color: Neutral colors

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 will have a factory applied primer finish. Provide satin stainless steel hardware.

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



Type: **Steel Frames**

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

Mfr: Steelcraft (US) or UK equivalent

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
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 11 13.pdf
Section 08 71 00 Door Hardware
https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf

E05.1.3. Wood

◉ Applicable ○ N/A Number of base standards 2 Image Tool 250 x 188

Type: **Style 1, Administrative**

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

Mfr: Simpson (US) or UK equivalent

Color: Natural hardwood veneer

Finish: Clear Sealer, satin (aqueous)

Model #: 3'x7'x 1 ¾", solid core

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

UFGS: Section 08 14 00 Wood Doors
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 14 00.pdf
Section 08 71 00 Door Hardware
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 (US) or UK equivalent

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
Section 08 71 00 Door Hardware
https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf

E05.1.4. Other

○ Applicable ◉ N/A

1. Not applicable.

End of Section

E06. Casework Systems

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

E06.1. Casework Materials

1. Select casework systems and materials considering durability, maintenance requirements and Life Cycle Cost Analysis (LCCA).

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

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

4. Refer to AFCFS for approved materials.

5. Manufacturers listed in sections E06.1.1. - E06.1.5. and E06.2.1. - E06.2.6. are provided only to establish a level of quality for use when designers write the salient characteristics of the brand-name item in project specifications following Federal Acquisition Regulations (FAR) or UK Building Regulations.

E06.1.1. Plastic Laminate

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

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

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

Mfr: Formica (US) or UK equivalent

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

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

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

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

Mfr: Corian (US) or UK equivalent

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

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Style 1 Moderate Use Areas**

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

Mfr: Plyboo (US) or UK equivalent

Color: Natural or amber

Finish: Satin

Model #: Flat grain bamboo plywood

Other: FSC® Certified 100%.

UFGS: Section 12 32 00 Manufactured Wood Casework
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 32 00.pdf

E06.1.4. Metal

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Style 1**

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

Mfr: Steel Sentry (US) or UK equivalent

Color: Natural stainless steel or neural colors (steel)

Finish: Mill (stainless) or Powder coated (steel)

Model #: Lab, workbench, computer workstation

Other: Provide highly durable fabrications and finishes in Group 3 which are subjected to heavy use.

UFGS: Section 12 31 00 Manufactured Metal Casework
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 31 00.pdf

E06.1.5. Other

○ Applicable ◉ N/A

E06.2. Countertop Materials

E06.2.1. Plastic Laminate

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

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

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

Mfr: Formica (US) or UK equivalent

Color: Medium Earth tones and neutral tones

Finish: Light textured

Model #: High pressure laminate

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

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

E06.2.2. Solid Polymer Surface

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

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

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

Mfr: Corian (US) or UK equivalent

Color: Medium Earth tones and neutral tones

Finish: Light textured

Model #: Solid Surface

Other: Faces and edges

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

E06.2.3. Natural Stone

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188

Type: **Style 1, Group 1 High Visibility, Heavy Use**

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

Mfr: Local (TBD)

Color: Neutral tones

Finish: High polish, sealer

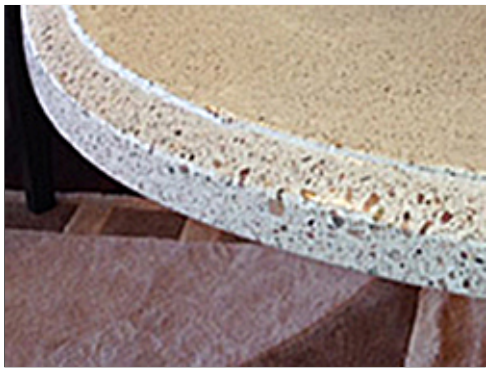
Model #: Custom cut slabs

Other: N/A

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

E06.2.4. Cast Stone

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188



Type: **Style 1, Group 1 High Visibility, Heavy Use**

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

Mfr: Local (TBD)

Color: Neutral tones

Finish: High polish, sealer

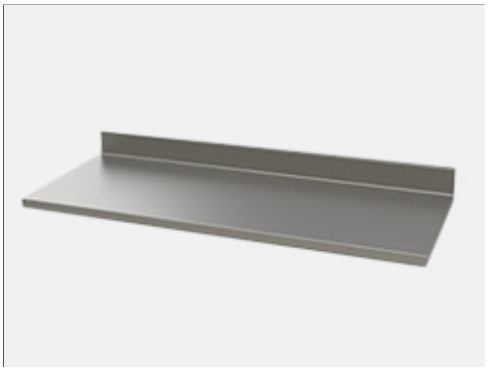
Model #: Custom cast or cut slabs

Other: N/A

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

E06.2.5. Metal

◉ Applicable ○ N/A Number of base standards 1 Image Tool 250 x 188



Type: **Heavy Use Countertop**

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

Mfr: Local (TBD)

Color: Natural stainless steel

Finish: Mill

Model #: Custom fabricated countertops

Other: Provide integral fronts, sides and backsplash

UFGS: Section 12 31 00 Manufactured Metal Casework
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 31 00.pdf

E06.2.6. Other

○ Applicable ◉ N/A

E07. Furnishings

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

E07.1. Durability and Serviceability

Comply with AF Corporate Standards for Durability and Serviceability:
http://afcfs.wbdg.org/facilities-interiors/furnishings/durability-and-serviceability/index.html

E07.2. Accessories

Comply with AF Corporate Standards for Accessories:
http://afcfs.wbdg.org/facilities-interiors/furnishings/accessories/index.html

1. No additional standards beyond AFCFS.

End of Section

E08. Interior Signs

Comply with Air Force Corporate Standards for Interior Signs:
http://afcfs.wbdg.org/facilities-interiors/interior-signs/index.html

E08.1 Types and Color

Comply with Air Force Corporate Standards for Types and Color:
http://afcfs.wbdg.org/facilities-interiors/interior-signs/types-and-color/index.html

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 by case basis.

E09. Lighting, Power and Communication

http://afcfs.wbdg.org/facilities-interiors/lighting-power-and-communication/index.html

E09.1. Functionality and Efficiency

Comply with Air Force Corporate Standards for Functionality and Efficiency:
http://afcfs.wbdg.org/facilities-interiors/lighting-power-and-communication/functionality-and-efficiency/index.html

E09.2. Types and Color

1. There are no additional standards beyond AFCFS at this time.

End of Section

F. APPENDIX - Facility Districts

- ○ Applicable
- ◉ N/A

G. APPENDIX - References

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

The below listed documents are provided as supplements to this IFS. If there are any discrepancies between the requirements of this IFS and the Supplemental Documents, the IFS will govern.

1. There are no supplemental documents at this time.

End of Section