

# (PRE-FINAL) GRAND FORKS AIR FORCE BASE INSTALLATION FACILITIES STANDARDS (IFS)



Installation Elements



Site Development



Facilities Exteriors



Facilities Interiors

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Signature Field

**Grand Forks Air Force Base IFS**

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## A. OVERVIEW

Comply with Air Force Corporate Standards for Overview:

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

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

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

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

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

1. Conformance to Air Force Corporate Facilities Standards (AFCFS) and Installation Facilities Standards (IFS) are required by Air Force Instruction (AFI) 32-1023 and Air Force Memorandum. Please refer to the AFCFS website for links to documentation on current policy.
2. 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 shall be the governing version.
5. *Advanced Modeling Requirements:*  
*For all Air Force projects requiring advanced modeling, to include 3D visualization, Building Information Modeling (BIM), facility data, quantity take-off, geospatial, etc., follow the Army standards. Refer to USACE Minimum Model Matrix (M3) and Project Execution Plan (PxP) which outline required model uses. Refer to [CAD BIM Technology Center \(Contract Requirements\)](#) for more information on M3 and PxP.*
6. Joint Bases shall implement IFS under their Joint-Base designation with volume numbers for individual installations following the IFS Development Tool template. For example, for Joint Base Langley-Eustis, provide: Vol. 1 Langley AFB and Vol. 2 Fort Eustis.
7. References and Supplementary Documents listed in Appendix G are included in these Installation Facilities Standards by reference and are fully part of this document. Please refer to [Appendix G](#) for a listing of documents, which are available via hyperlink for viewing and downloading.
8. Installations outside the United States: Per UFC 1-200-01 DOD BUILDING CODE, 8 Oct 2019, "All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (HNFA), and in some instances, Bilateral Infrastructure Agreements (BIA). Therefore, the acquisition team must ensure compliance with the most stringent of the UFC, the SOFA, the HNFA, and the BIA, as applicable." Refer to [Appendix G](#) for applicable agreements. "Use UFC 1-202-01 for design of host nation facilities that support military operations."  
<https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc/ufc-1-202-01>

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

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Main Gate at Steen Boulevard



Static Display near Main Gate



Memorial Plaza with Bronze Sculpture



Group 3 Hangar Facilities

### **A01. FACILITY HIERARCHY**

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

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

### **A02. FACILITY QUALITY**

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

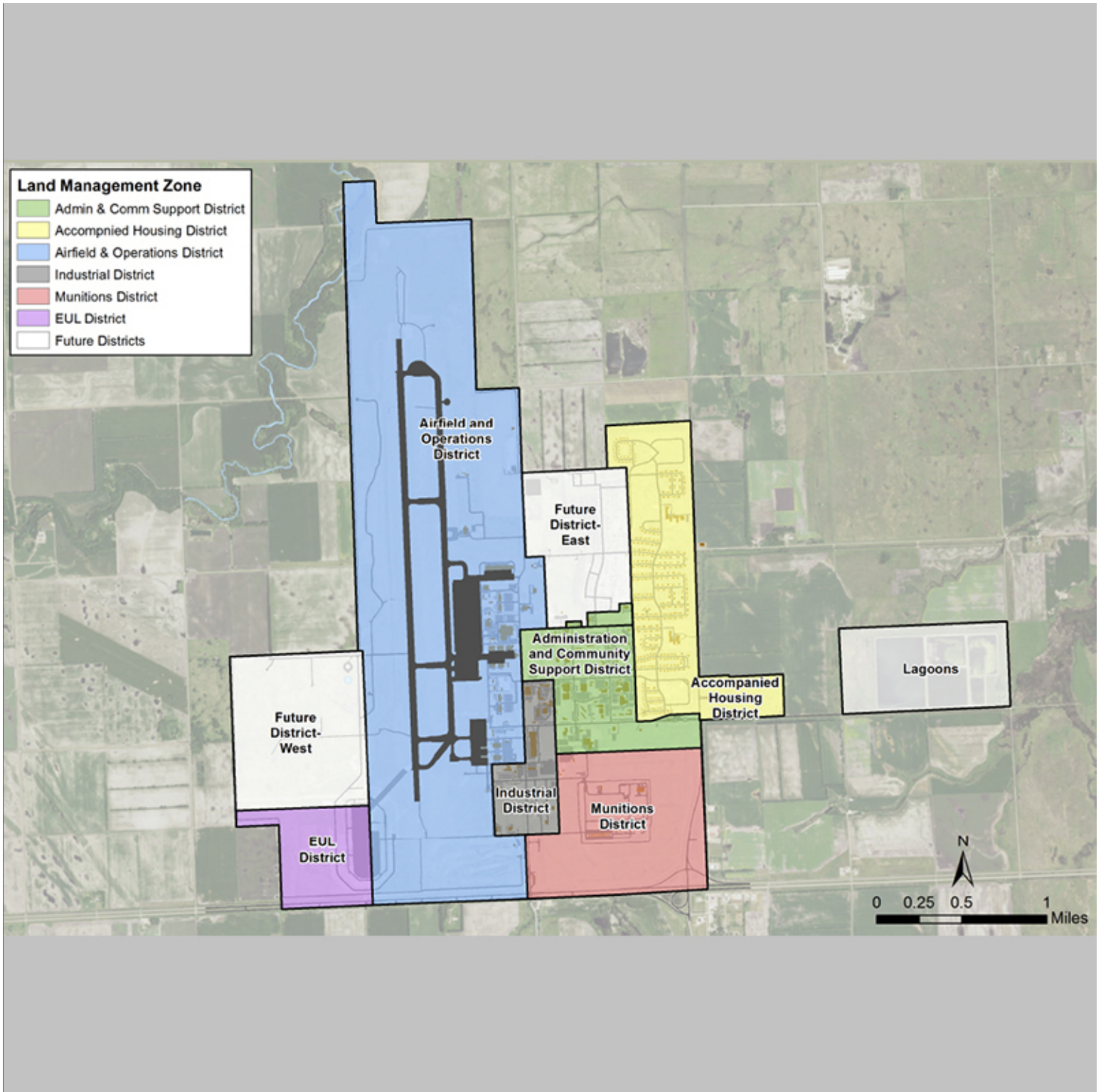
<http://afcs.wbdg.org/facility-quality/index.html>

### **A03. FACILITY DISTRICTS**

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

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

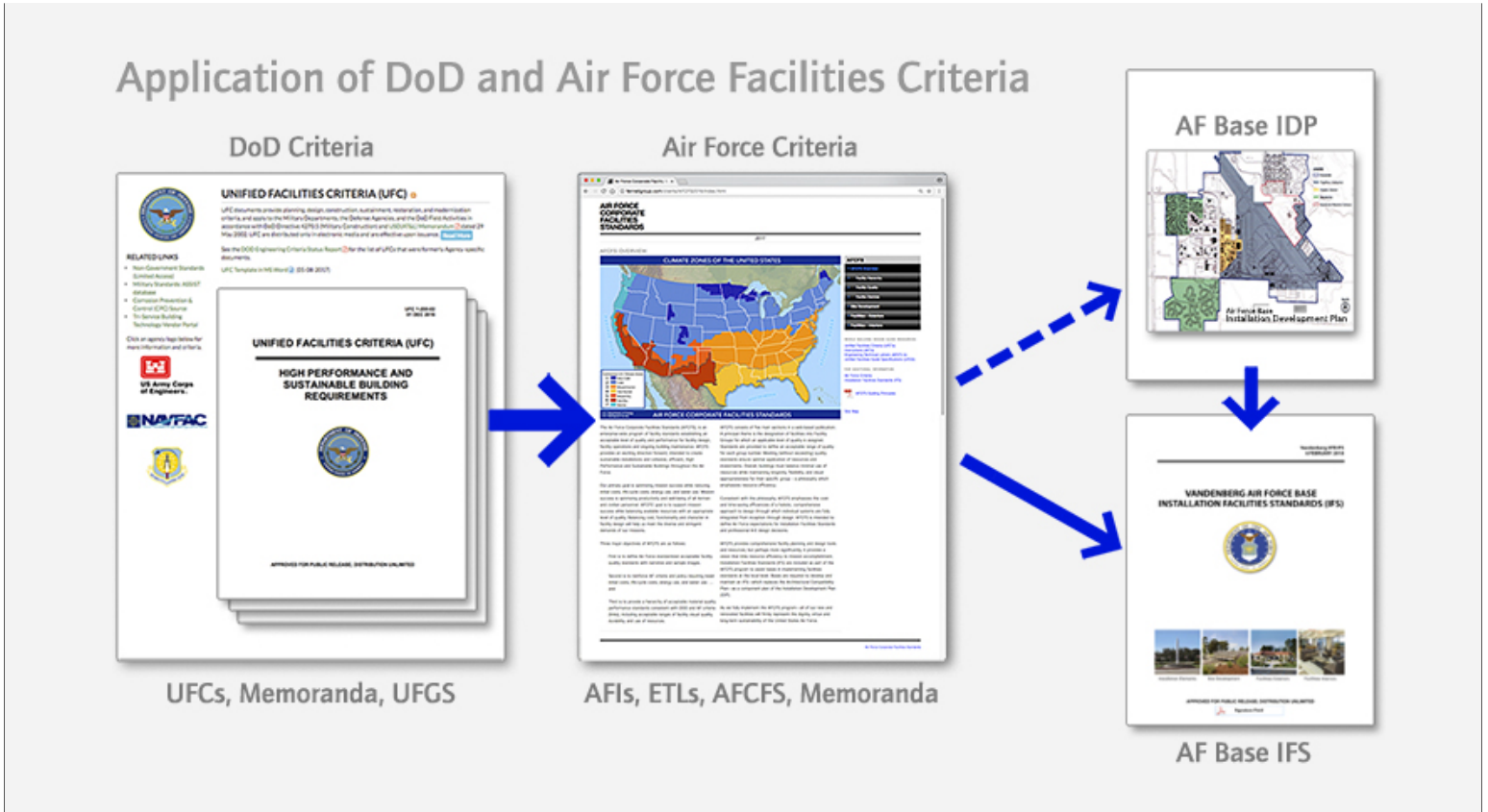
**B01. COMPREHENSIVE PLANNING**

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

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

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

1. The Base Civil Engineer is responsible for developing, maintaining and implementing the Installation 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 Component Plan of IDP**

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

1. Maintain this Installation Facilities Standards (IFS) as required under AFI 32-1023.



## B01.1.2. Brief History of Base

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B-52H (1963-1983) and B-52G (1983-1986) assigned to the 319th BWB during the Cold War



Launch Facility Grand Forks AFB c. 1965



Equipment Room Liner Installation



Grand Forks AFB Missile Alert Storage Facility

Construction on the runway at Grand Forks Air Force Base began 5 February 1956 to support Strategic Air Command bombers and tankers, as well as Air Defense Council fighter-interceptors. Citizens of nearby Grand Forks donated money toward the purchase of the 5,400 acres 15 miles west of the city that would eventually be home to the Grand Forks Air Force Base.

8 February 1957 marked the first of many units to be assigned to Grand Forks AFB with the activation of the 478th Fighter Group under Strategic Air Command. For over 30 years, Grand Forks AFB hosted SAC missions to include fighter aircraft, Minuteman III Intercontinental Ballistic Missiles, nuclear bombers and air refueling KC-135s. As the Air Force realigned its Major Commands in the early 1990's, Grand Forks was reassigned as an ACC base, and eventually an AMC base. The last KC-135 stationed at Grand Forks departed 4 December 2010, ending 50 years of air refueling operations at the AFB.

The first Global Hawk arrived May 2011, signaling the shift to Unmanned Aerial Systems at Grand Forks AFB. The base realigned once again under ACC in 2017. This realignment paved the way for the re-designation of the 319th ABW to the 319th Reconnaissance Wing.

For an expanded history, please refer to the Grand Forks Air Force Base website.

### B01.1.3. Future Development

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Applicable  N/A Small graphics do not apply



Future Development is Addressed in the IDP

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).

### B02. STREET ENVELOPE STANDARDS

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

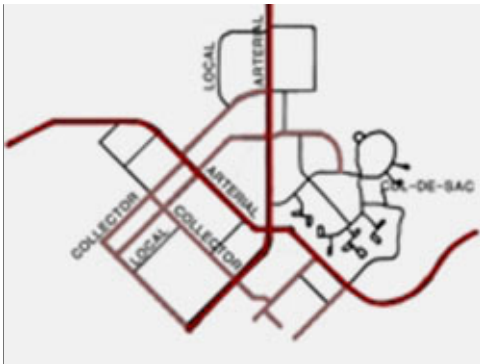
Comply with AF Corporate Standards for Street Envelope Standards:  
<http://afcs.wbdg.org/installation-elements/street-envelope-standards/index.html>

## B02.1. Hierarchy of Streets

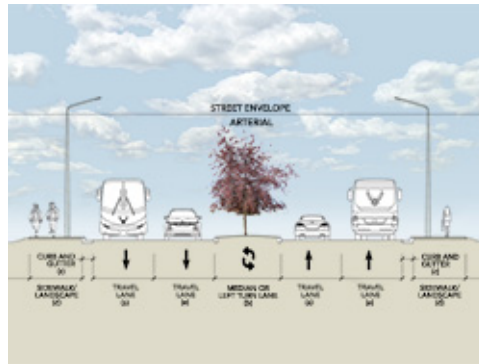
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Hierarchy of Streets



Street Envelope Section



Divided Arterial

1. Develop and evolve a hierarchical transportation network of arterial, collector and local streets following UFC 3-201-01 and its industry references.
2. Provide consistent functionality throughout the installation and a level of visual quality relating to the adjacent Facility Group number.
3. Routes along facilities in Group 1 may have materials, finishes and features with a higher visual quality than Groups 2, 3 and 4. Reduce maintenance requirements by installing highly durable materials and finishes in routes along Group 3 industrial facilities. Consider snow removal operations and snow storage areas in all designs.
4. Special routes may have a visual quality comparable to those along facilities in Group 1.
5. Create and maintain arterials with one lane of traffic in each direction. Landscaped or paved medians as applicable to the local climate and adjacent facility group designation / land use is allowed but not necessary due to local climate considerations.
6. Minimize stops and turns along arterials. Eliminate on-street parking along arterials and provide on collector streets only on lower speed roadways such as residential streets.
7. Connect arterials to local streets with appropriately scaled collector streets.
8. Provide appropriate landscape setbacks and pedestrian buffers along all streets.
9. Minimize and consolidate curb cuts along streets.
10. Ensure access for emergency and service vehicles.
11. Define bicycle traffic routes in the Installation Development Plan or its applicable component plans.
12. Remote service roads may be paved with a rock/clay mix that is suitable for the service vehicles. Appropriately size roads to accommodate service vehicle traffic.
13. Define appropriate force protection features, site furnishings, signs, lighting, utilities, and paving in the IFS.

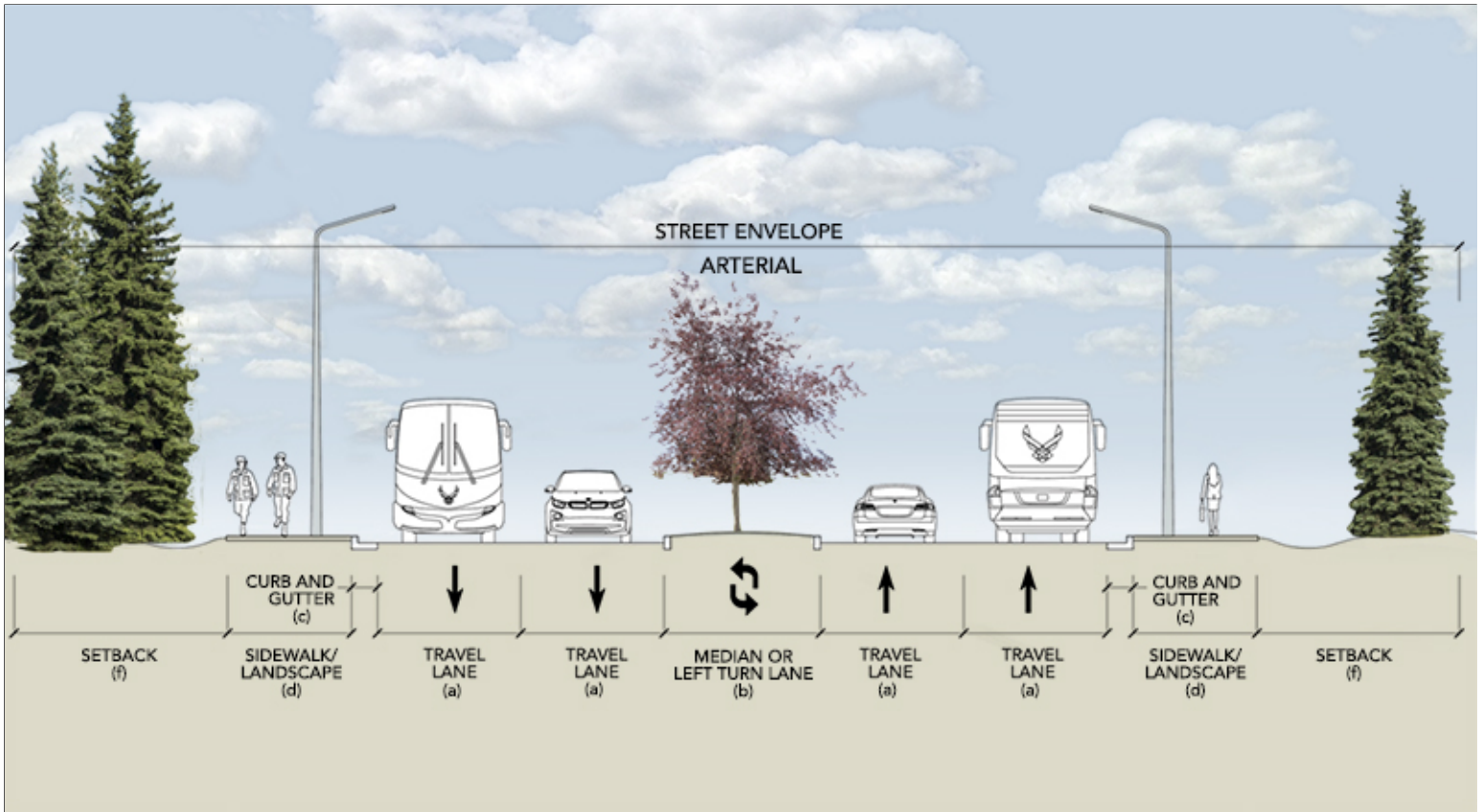
## B02.1.1. Arterial Streets

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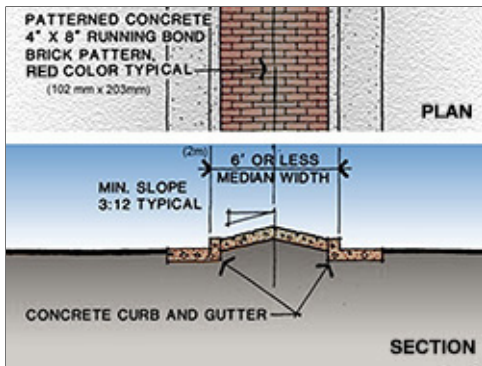
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Travel Lane (a): 12' Median (b): 12' Curb and Gutter (c): 2' Sidewalk / Landscape (d): 12' Setback (f): Min. 35' or per AT



Paved Median



Landscaped Median with Array of Flags



Landscape Setback with Native Grasses

1. Stops and turns should 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' 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. Reinforce the importance of arterial streets with appropriate signs, plantings and street lighting.

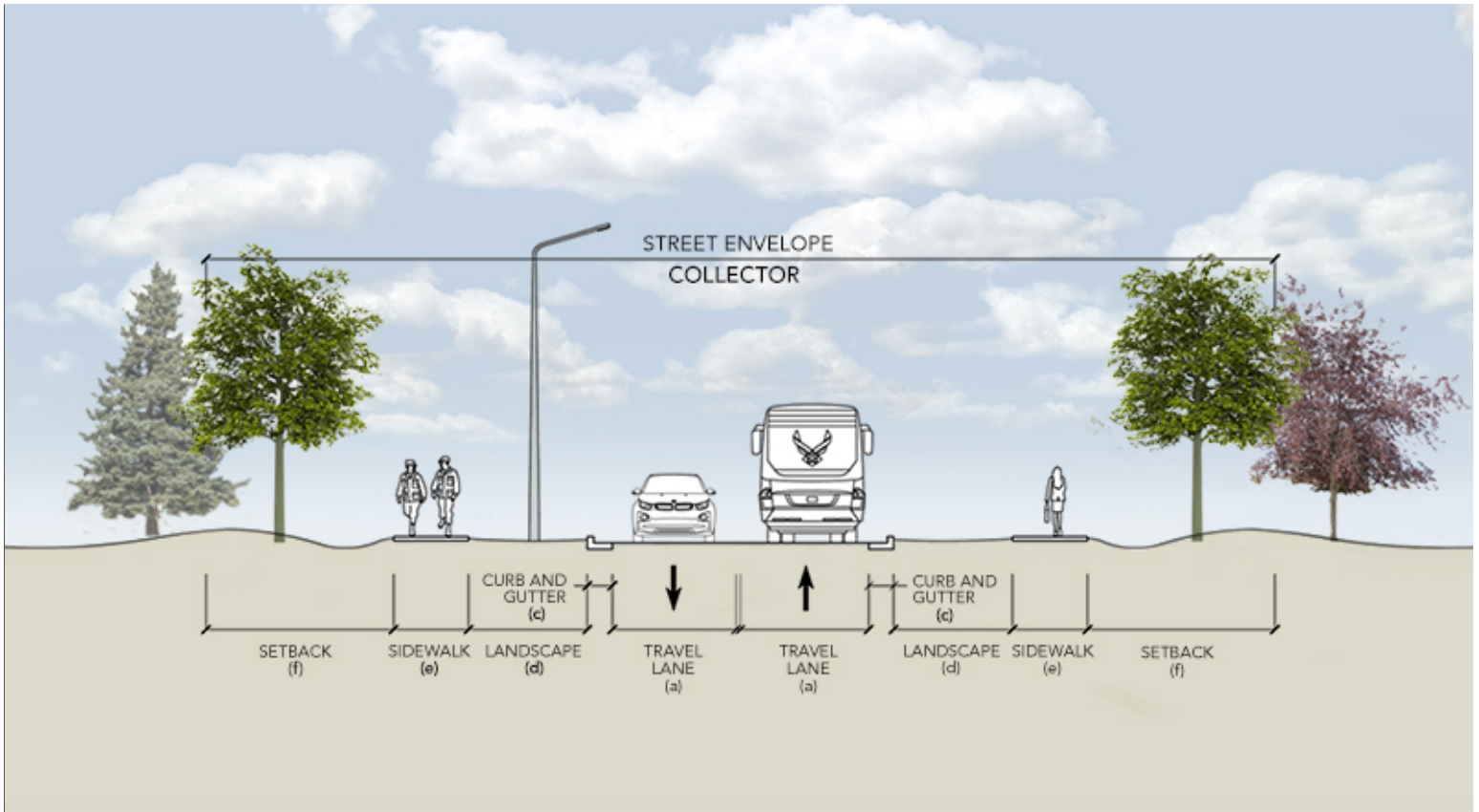
**B02.1.2. Collector Streets**

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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 Paving



Base Standard Lighting



Typical Setback at Group 2 Facility

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

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

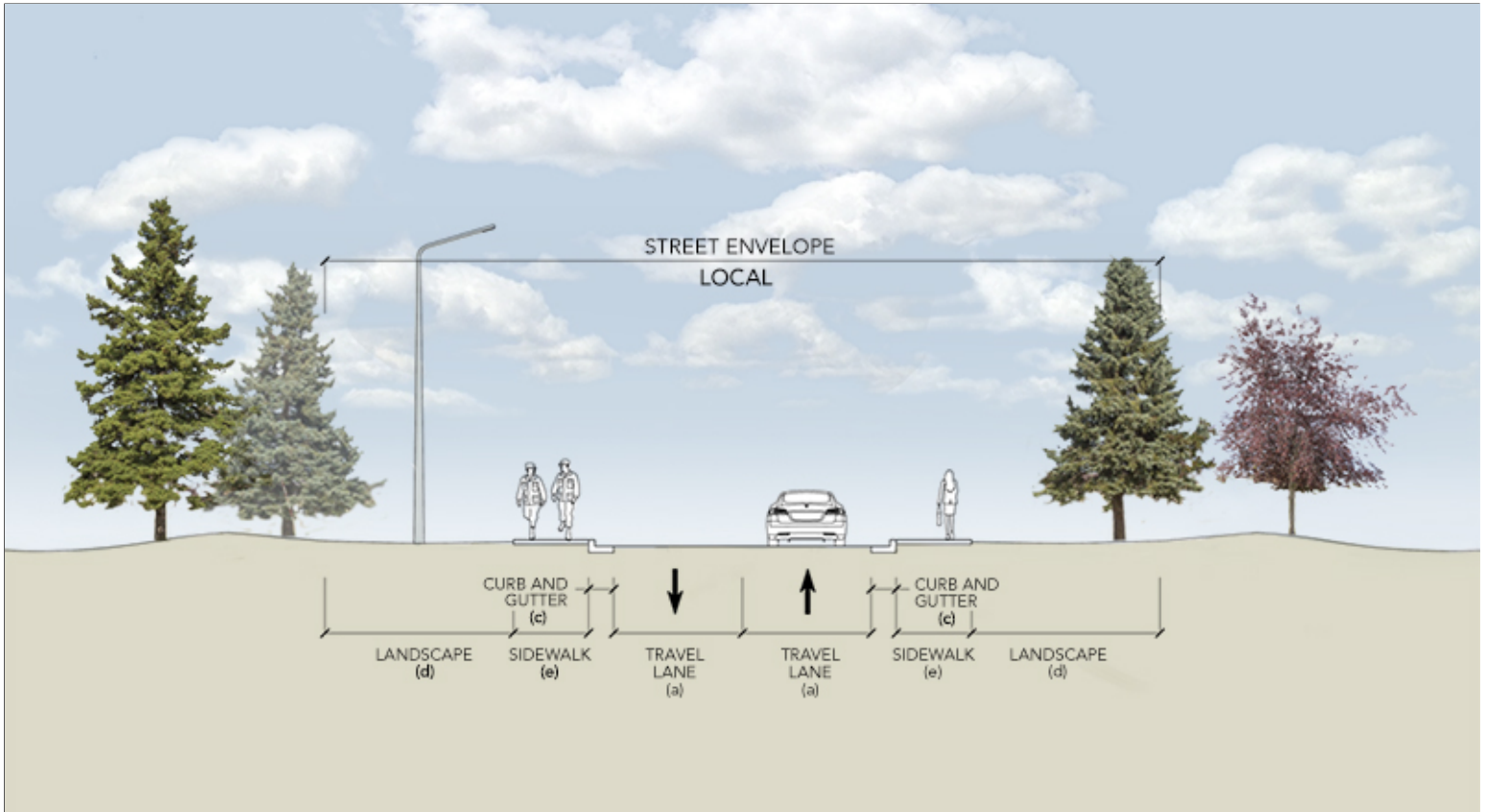
### B02.1.3. Local Streets

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

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



Local Access at Group 1



Group 2 Street Elements



Typical Local Street 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 and both sides of local streets where functionally required. Buffers are preferred but not required on local streets.
3. On-street parking may be allowed following UFC industry references.

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

5. Cul-de-sacs are only permitted in family housing areas. The minimum radius for cul-de-sacs shall 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 Select number of graphics / images (small: 250 px x 188 px) to insert 3

Image Tool 250 x 188



Special Route Adjacent to Group 1



Special Route at Main Gate



Group 1 Street Elements



Maintained Setback

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

2. Special routes shall include the following streets:

- a. Steen Boulevard from the ECP to Eielson Street.
- b. Holzapple Street from Steen Boulevard to Tuskegee Airmen Boulevard.

3. Maintain the landscape beds and associated static displays at the main ECP. Trees and other landscape beds along Steen Boulevard and Holzapple Street shall be maintained.

**B02.2. Hierarchy of Intersections**

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



Coordinated Alignments



Intersection at Group 2



Standard Markings



Group 4 Intersection

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 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



Typical Setbacks at Intersection

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 Large graphics do not apply

Applicable  N/A Small graphics do not apply

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

### B02.2.3. Collectors

Applicable  N/A 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



Access to Parking



T Intersection



Integrated Apron

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

### B02.2.6. Sight Lines

Applicable  N/A Large graphics do not apply

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

Image Tool 250 x 188



Coordinated Location of Light Fixture



Preserved Sight Line



Unobstructed Setback

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

### B02.3. Street Elements

Applicable  N/A Large graphics do not apply

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

Image Tool 250 x 188



Uniform Place of Street Trees



Integrated AT Systems



Standard

1. Emulate the streetscape area's pre-development hydrology using passive and active design features to help sustain the adjacent regionally appropriate landscape. Coordinate with the base Stormwater Management Plan.
2. Employ systems, materials and techniques to maximize streetscape sustainability. Consider pervious paving and high reflectivity of surfaces, which are appropriate for the local climate.
3. Install at-grade curbing and/or raised-profile curb and gutter as applicable to direct stormwater to bioswales and rain gardens as source water for vegetation. Do not paint concrete curbing.

4. Provide all on-site utility service lines and equipment below grade when adjacent to Facility Group 1. In routes along Group 2, 3 and 4, when mounting elements such as utility cabinets, communications equipment and water valves above grade is unavoidable, paint these consistently and provide visual screening following Installation Facilities Standards (IFS).
5. Provide traffic control devices including access control point/entry control facility signs, speed limit signs and street name signs following the current edition of the Manual on Uniform Traffic Control Devices (MUTCD) per UFC 3-120-01.
6. Crosswalk markings will follow the MUTCD for Streets and Highways, current edition. Provide white markings that define the edges of the crosswalk or a tone of lines defining the area of the crosswalk consistent with common practices found in the adjacent municipality.
7. Follow UFC 3-120-01 for directional and wayfinding signs and address both vehicular and pedestrian traffic.
8. Reduce energy consumption and reduce maintenance requirements by providing street lighting only when functionally required to ensure safety and to address antiterrorism following UFC 4-010-01. Ensure the quality and quantities of lighting and fixtures are appropriate for the adjacent Facility Group number.

### B02.3.1. Paving

Applicable  N/A Large graphics do not apply

Applicable  N/A Small graphics do not apply

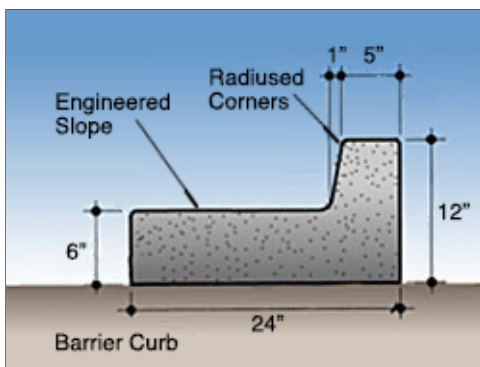
1. Pavement design will comply with UFC 3-250-01. Ensure appropriate analysis and design of subgrade conditions to promote low maintenance, high performance pavements. Apply all applicable best practices from Appendix B of the UFC.
2. Materials will be specified in accordance with UFC 3-250-01 and must conform to requirements set forth in the Unified Facility Guide Specifications (UFGS) for concrete and bituminous pavement.

### B02.3.2. Curb and Gutter

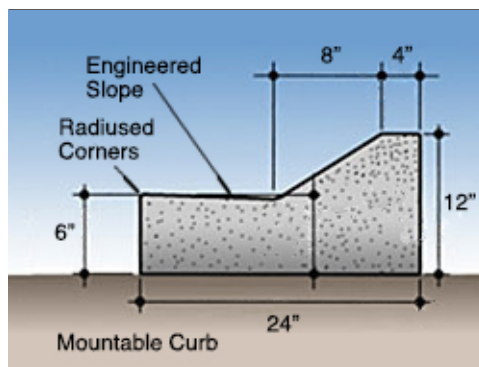
Applicable  N/A Large graphics do not apply

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

Image Tool 250 x 188



Barrier Curb



Mountable Curb



Drainage Inlet

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

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

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

### B02.3.3. Utility Service Elements

Applicable  N/A Large graphics do not apply

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

Image Tool 250 x 188



Hydrant with Locator Mast



Coordinated Placement



Standard Color

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

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

### B02.3.4. Traffic Signs

Applicable  N/A Large graphics do not apply

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

Image Tool 250 x 188



Standard Traffic Control Device



Standard Layout and Color



Standard Sign Back Color

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

### B02.3.5. Street Lighting

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

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

Image Tool 250 x 188



Double Fixture at Group 1



Single Fixture at Group 1



Decorative Acorn Fixture



Concrete Base near Group 3

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

### B02.3.6. Other

Applicable  N/A Large graphics do not apply

Applicable  N/A Small graphics do not apply

## B03. OPEN SPACE / PUBLIC SPACE

Comply with Air Force Corporate Standards for Installation Elements:

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

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

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

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

Applicable  N/A 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



Memorial and Interpretive Plaza with Statuary and Markers

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 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



Concrete Paving at Masonry Low Wall



Brick Pavers



Concrete Base



Concrete Paving and Rock Mulch

1. Mitigate heat island effect by providing high-albedo, shaded plazas. Pervious pavers will be used on all plazas and courtyards in Facility Groups 1 and 2; use pervious concrete 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 red. Bricks used on plazas will typically be 4" x 8" size. Avoid the use of pavers that effloresce or corrode when exposed to snow-melt chemicals. Dyed and stamped concrete may be used in lieu of pavers.

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

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 Interpretive Signs and Statuary

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.

### B03.1.3. Static Display of Aircraft

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

Image Tool 800 x 440

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

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Ground Mounted Display with Coordinated Lighting and Landscaping



Static Display Aircraft Park



Display with Pedestal Marker



Drought Tolerant Accent Landscape

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.

## B03.2. Grounds and Perimeters

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



Preserved open Space



Native Plant Species



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

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

12. Bury the following exposed above-grade items in future projects when economically feasible:

- Electrical power grid and service lines
- Telephone lines
- Cable TV lines
- Communications lines
- Exterior lighting service lines
- Any similar system of above-ground lines serving the base

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

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

### B03.2.1. Parade Grounds

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



Multi-purpose Maintained Grounds

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

### B03.2.2. Parks

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

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

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Park Facility



Native Trees for Shading



Shaded Picnic Area



Pavilion

1. Bleachers may be installed only when there is a documented requirement at parks and fields for recreational events. Follow guidance under Parade Grounds.
2. Picnic pavilions may be provided in parks where there is a documented need.
3. Prohibited picnic pavilion materials include wood, concrete masonry units (CMU) or metal pre-manufactured storage sheds. Use only materials and detailing that are low maintenance and endure with minimal weathering.

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

### B03.2.3. Preserves

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

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

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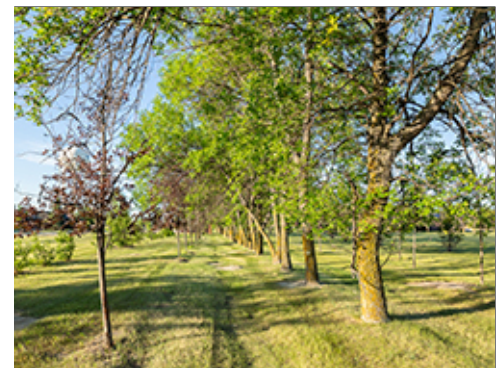
Native Trees and Grasses



Preserved Open Space



Maintained Open Space Buffer



Trees Defining Space

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

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

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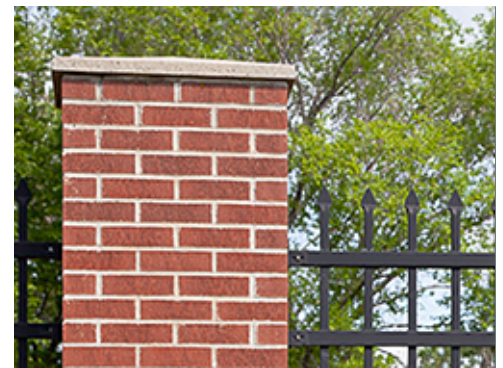
Masonry Piers and Metal Post, Rail and Picket Fencing at Group 1



Coordinated Gate Access



Chain Link Fencing at Group 3



Precast Cap at Brick Pier

1. Design, install and maintain the base's perimeter fence following UFC 4-022-03. Stringently comply with AT requirements following UFC 04-010-01 for all spaces adjacent to the base's perimeter fence and all gates.
2. Fencing, gates and other elements that are associated with the main gates will be a level of quality equivalent to Facility Group 1.
3. Maintain a positive visual quality along the traffic corridor on both sides of the main gates. Specifically address pedestrian access, circulation and common areas.



## C. SITE DEVELOPMENT

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

### C01. SITE DESIGN

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

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

#### C01.1. Site Design Considerations

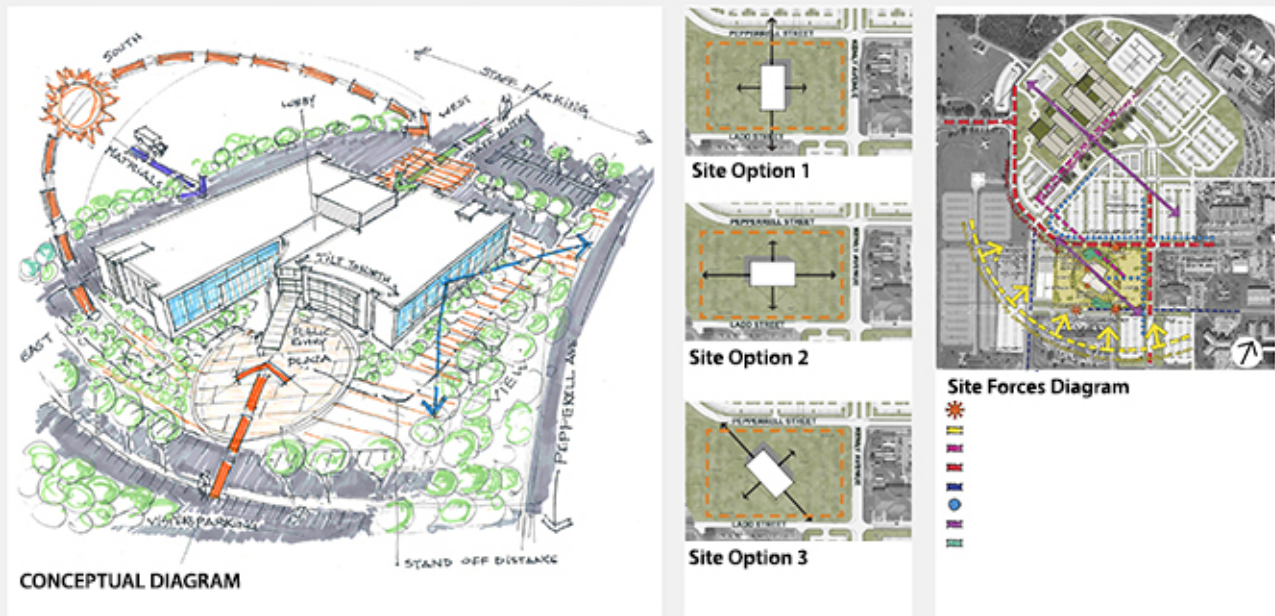
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Image Tool 800 x 440

Applicable  N/A Small graphics do not apply

#### DRIVING FACTORS

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



Site Analysis Diagram with Considerations and Opportunities Indicated

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

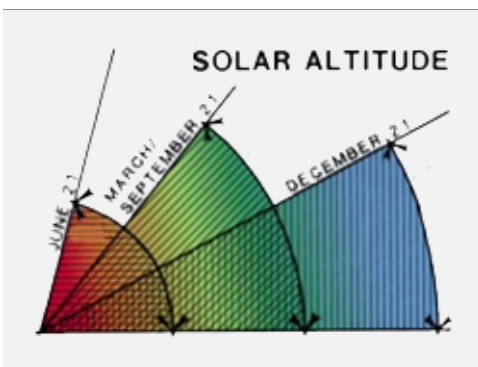
5. Limit the impact of development on land and water resources. All site elements and infrastructure will reinforce an image of sustainability, with reduced energy demand, renewable-energy usage, and water conservation.
6. Consider energy conservation during site design for the following categories: building and site lighting, auxiliary systems and equipment (refrigerators, elevators, etc.), building envelope, electric power and distribution, HVAC systems and equipment, service hot water, and energy management (metering, EMCS).
7. Coordinate on-site renewable-energy systems and components to minimize area requirements and maximize efficiencies. Appropriately buffer and screen these and other mechanical systems and equipment.
8. New building projects should preserve open space and protect natural habitat.
9. Conform to existing topography to the greatest extent possible and use slopes to increase site and building efficiencies. Design sites to minimize irrigation and impacts to stormwater runoff.
10. Carefully study new project sites to identify the character of adjacent buildings, streets, landscaping, and site design elements. Reinforce the existing character in new site design.
11. Consider relationships to adjacent facilities and district and cost effectively connect building systems to harvest heat, grey water or other beneficial byproducts.
12. Minimize existing and planned obstructions from landscaping, structures, topography, and adjacent developments to preserve solar access and natural ventilation.
13. Purposefully integrate service access, receiving and storage areas to eliminate the need for visual screening.
14. Appropriately connect to the base network of streets, sidewalks and trails using drive aisles, parking areas, walkways, paths, and bicycle routes addressing both vehicles and pedestrians.
15. Applicably coordinate heat island mitigation in paving and roof designs when implementing an integrated approach to stormwater management.
16. Consider the location of "Designated Tobacco Areas (DTAs)." Co-locate DTAs to reduce number across the base. All locations will comply with AFI 40-102.

## C01.2. Building Orientation

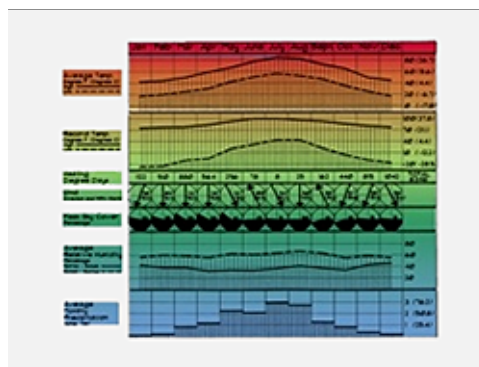
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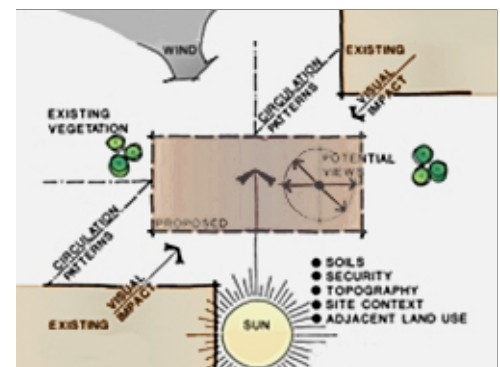
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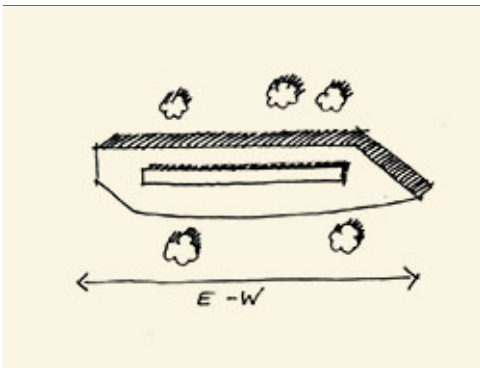
Local Solar Data



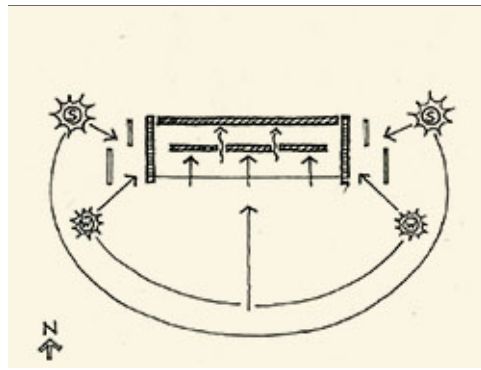
Local Climate Data



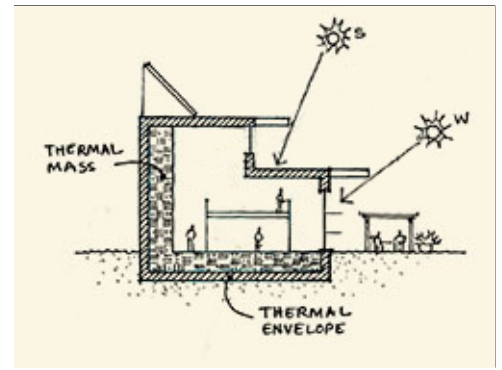
Site Data



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 CONUS 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.

## C02. UTILITIES

Comply with AF Corporate Standards for Site Development:

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

Comply with AF Corporate Standards for Utilities:

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

### C02.1. Utility Components

Applicable  N/A Large graphics do not apply

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

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Underground Utility Service Lines



Inconspicuous Utility Cabinet



Cabinet Behind Evergreen Screening

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, finish 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. Include vertical markers to locate components when buried in deep snow.
3. Provide installation of utility infrastructure to support near term and future electric vehicle charging stations.
4. Define all service entry points into the building and route distribution below grade into an interior space within the facility; exposed conduits, cables and wires on exterior walls are not permitted for Facility Group 1.
5. Include consideration of appropriate placement of meters in support of Automated Revenue Management Services (ARMS).
6. Limit exterior mechanical distribution systems such as exterior steam, chilled water, and hot water distribution to Group 3 facilities; when required for Group 1 and 2 facilities integrate with the architecture and provide visual screens following IFS.
7. Direct roof drainage to bioswales or underground collection when feasible or provide splash blocks / paved channels to intercept roof drainage at grade.

### C03. PARKING AREAS

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

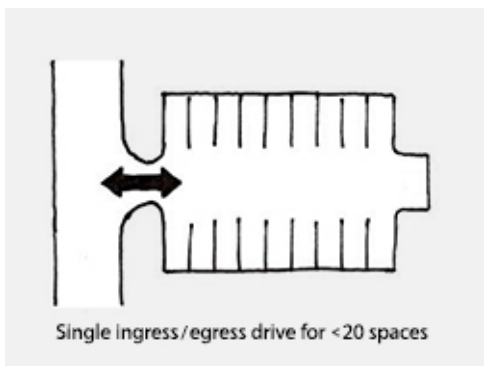
Comply with AF Corporate Standards for Parking Areas:  
<http://afcs.wbdg.org/site-development/parking-areas/index.html>

#### C03.1. Configurations and Design

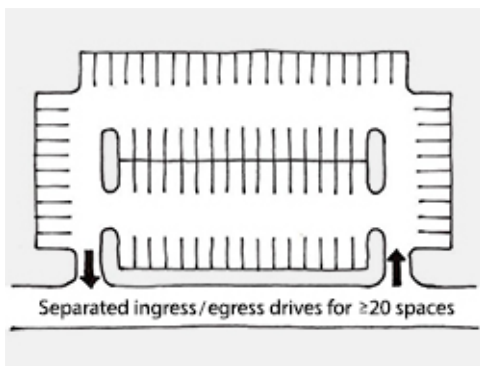
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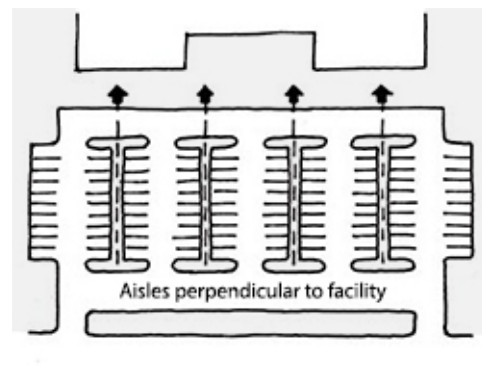
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Small Lot Configuration



Large Lot Configuration



Facility Group 1 Configuration

1. Evaluate adjacent sites and cost-effectively consolidate parking areas to maximize efficient use; ensure that all areas meet accessibility guidelines.
2. Generally envision on-site parking as a series of small connected singular areas selectively placed around the facility served, rather than a single large area; buffer parking areas from the facility main entrance with a transition space. Comply with IFS standards while meeting AT requirements.

3. Integrate at-grade and raised-profile curbing, permeable paved areas, and parking islands with the stormwater system and direct stormwater to bioswales and rain gardens as source water for regionally appropriate native vegetation. Configure curbing to facilitate snow removal. Ensure snow storage areas are coordinated with the stormwater plan.
4. Define pedestrian access with approved hardscape 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 and the MUTCD.
7. Consider locations and requirements of near term and future electric vehicle charging stations.
8. Designate preferred parking spaces for electric vehicles and carpools near the main entrance.
9. Consider cost-effectively integrating solar photovoltaic arrays into covered parking structures.
10. Reserved parking is discouraged except for Facility Group 1.
11. On-street parking is discouraged except in multi-use areas. When used, provide approved on-street parking configurations following UFC 3-201-01.
12. Access and service drives should accommodate the largest vehicle serving the facility.

### C03.1.1. Paving and Striping

Applicable  N/A 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



Bituminous Paving with Standard White Striping

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

Primary: Bituminous Paving

Secondary: Concrete

Accent: Optional: Colored Pavers or Stamped Concrete

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

Primary: Bituminous Paving / Concrete

Secondary: Concrete

Accent: N/A

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

Primary: Bituminous Paving

Secondary: Concrete

Accent: N/A

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

Primary: Concrete Driveways

Secondary: N/A

Accent: N/A

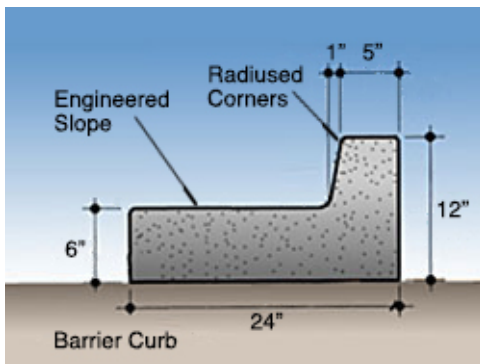
1. All new parking lots in Groups 1 and 2 will be constructed of bituminous pavement, or concrete pavement where functionally required, following UFC 3-250-01.
2. Porous paving may be considered on a case basis.
3. Cost-effectively provide light-colored concrete to reduce heat island effect; otherwise install bituminous pavement. Dirt, gravel, and grass lots are not allowed.
4. Use consistent striping, angles and stall sizes in all parking areas.
5. All parking will be marked with white stripes of paint or applied vinyl coatings. Red or yellow markings will only be used for safety purposes and must be kept to a minimum. All lines will be four inches (4") wide.

### C03.1.2. Curbing

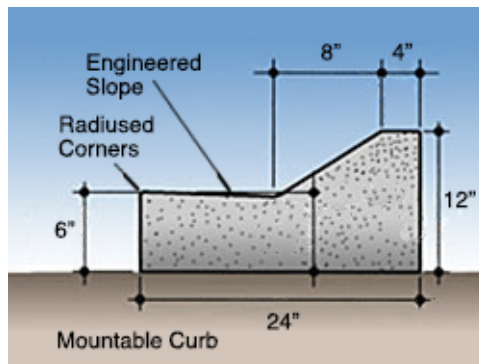
Applicable  N/A Large graphics do not apply

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

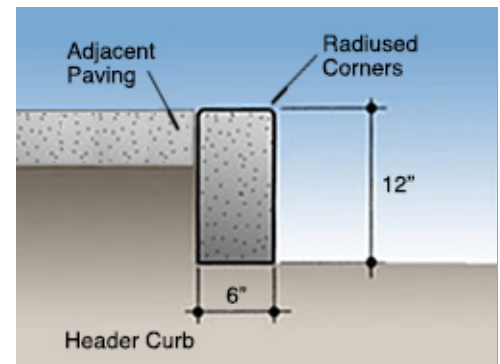
Image Tool 250 x 188



"Barrier" Curb



"Mountable" Curb



Header Curb

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

Primary: Concrete

Secondary: N/A

Accent: N/A

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

Primary: Concrete

Secondary: N/A

Accent: N/A

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

Primary: Concrete

Secondary: N/A

Accent: N/A

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

Primary: Concrete

Secondary: N/A

Accent: N/A

1. Define all parking lots with either raised-profile or at-grade curbing to promote drainage and protect paving edges. All raised curbs will be the rolled (mountable) type.
2. Integrate curbing to direct stormwater to bioswales and rain gardens as source water for regionally appropriate native vegetation.
3. Wheel stops are not permitted except at locations where car bumpers could contact adjacent items such as poles, signs or pedestrians.

### C03.1.3. Internal Islands and Medians

Applicable  N/A Large graphics do not apply

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

Image Tool 250 x 188



Landscape Island



Coordinated Plantings



Landscape Buffer

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

### C03.2. Parking Structures

Applicable  N/A Large graphics do not apply

Applicable  N/A Small graphics do not apply

1. Parking structures are encouraged in land-constrained locations when economically feasible.
2. Consider near- term and future electric vehicle charging stations and renewable energy generation development during the analysis and design.
3. Consider opportunities for integrating parking structures into multi-use developments with pedestrian-oriented uses located on the ground floor and parking on upper levels; ensure AT guidelines are fully addressed.
4. Structures may be constructed below grade with roofs serving as vegetated areas or plazas.

### C03.3. Connectivity

Applicable  N/A Large graphics do not apply

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

Image Tool 250 x 188



Connection to Parking Area



Adjacent Sidewalk and Access to Entrance



Link to Main Entrance

1. Refer to the Installation Development Plan (IDP) for locations of transit stops and pedestrian and cycling networks; provide appropriately sized sidewalks and bike paths to connect facilities and users to these networks.
2. Provide amenities such as rain and shade shelters, trees, and benches to encourage and facilitate use of public transportation.
3. Evaluate the IDP for the current and planned network of roads and optimally develop vehicular access to and from the site.

### C04. STORMWATER MANAGEMENT

Comply with AF Corporate Standards for Site Development:

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

Comply with AF Corporate Standards for Stormwater Management:

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



## C04.1. Stormwater Requirements

Applicable  N/A 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



Vegetated Detention Basin

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 roadways, 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. Consider 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 measures.

## C05. SIDEWALKS, BIKEWAYS AND TRAILS

Comply with AF Corporate Standards for Site Development:

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

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

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

### C05.1. Circulation and Paving

Applicable  N/A 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



Concrete Paving with Inset Brick Pavers at Group 2



Concrete Paving along Special Route



Decorative Paving at Memorial Plaza



Bituminous Paving at Trail

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

Primary: Pervious Pavers with Concrete Edging

Secondary: Concrete

Accent: Optional: Accent Color of Pavers

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

Primary: Pervious Pavers with Concrete Edging

Secondary: Concrete

Accent: N/A

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

Primary: Concrete Paving

Secondary: N/A

Accent: N/A

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

Primary: Concrete Paving

Secondary: N/A

Accent: N/A

1. Maintain efficient geometry and accessibility to connect building entrances to adjacent parking areas and activity areas and to the base transportation system following AT. Efficiently use materials to optimize life-cycle costs and to minimize maintenance.
2. Generally conform horizontal layouts of sidewalks to the geometric configuration of adjacent buildings, streets, parking lots, and other adjacent related site amenities. Occasional meanders and/or jogs may be included to capture views, to coordinate with landscaping or accommodate site constraints.
3. Walks in parking areas 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. Mitigate heat island effect by providing high-albedo, shaded sidewalks. Pervious pavers will be considered on all sidewalks, plazas and courtyards in Facility Groups 1 and 2; use pervious concrete in Groups 3 and 4. 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 should be at least 5' in width to allow for comfortable side-by-side walking.
8. Sidewalks leading to a building main entrance and at the interior of parking lots 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 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: reds and crimsons. Pavers used on walks will typically be 4"x8" nominal in size.
12. Connect to the bicycle circulation system and provide bicycle parking with a suitable means for securing bicycles following IFS. Consider changing/shower facilities for use by cyclists.
13. Refer to the Installation Development Plan for future trails, bicycle paths, and sidewalks.

### C05.1.1. Ramps and Stairs

Applicable  N/A Large graphics do not apply

Applicable  N/A Small graphics do not apply

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

### C05.1.2. Lighting

Applicable  N/A 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



Pedestrian Scaled Fixtures near Entrance Parking Scaled Fixture near Access Drive

1. Provide lighting for all stairs and landings where traffic warrants.
2. Refer to the Lighting section for path lighting along sidewalks, bikeways and trails.

## C06. LANDSCAPE

Comply with AF Corporate Standards for Site Development:

<http://afcs.wbdg.org/site-development/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



Native Coniferous and Deciduous Species



Native Trees, Shrubs and Grasses



Deciduous Trees for Shading



Xeric Species

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. Follow details and specifications of the American Standard for Nursery Stock, current edition.

### 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



Deciduous Trees for Shading and to Define Space



Vegetation for Detention Basins



Pedestrian Scaled Planting



Low Water Usage

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 be landscaped at their entire perimeter; limit formal planting arrangements to formal spaces typically associated with Group 1. Landscape public spaces near the main entrances of Group 1 facilities.
5. Facility Group 2 and 3 sites may have a native undisturbed landscape except at the main entrances of Group 2, which should be newly landscaped.
6. Facility plantings 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 Select number of graphics / images (small: 250 px x 188 px) to insert 3

Image Tool 250 x 188



Native Grasses in Rock Mulch



Xeric Groundcover



Ornamental Planting and Wood Mulch

1. Apply xeriscape principles following UFC 3-201-02, Appendix B, and Air Force Corporate Facilities Standards.
2. Facility plantings are encouraged to use native plant species and to consider specific microclimates created by the adjacent building: shadow areas, protected areas, zones adjacent to thermal mass, and availability of rainwater and/or grey water.

### C06.1.3. Minimizing Water Requirements

Applicable  N/A Large graphics do not apply

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

Image Tool 250 x 188



Drought Tolerant Planting



Native and Adaptive Ornamental Species



Xeric Groundcover and Rock Mulch

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

### C06.1.4. Plant Material Selection

Applicable  N/A Large graphics do not apply

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

Image Tool 250 x 188



Native Evergreen Species



Native Trees, Shrubs and Groundcover



Xeric Varieties

1. Use only native, naturally occurring plant materials including grasses or turf suited for the local climatic conditions in the landscape design; potable-water irrigation systems are discouraged beyond the establishment period.
2. New facilities are encouraged to use native plant species as indicated on the current Plant List available from the Base Civil Engineer.
3. Trees should be the focus of landscape plantings and, where possible, should be a mix of deciduous and evergreen species for variety; provide tree grates when appropriate and use tree guards and guy wires on smaller trees until roots are established.
4. Ground covers are only recommended when minimal maintenance is required.



- 5. Turf areas should be limited to those that can be sustained by natural rainfall or grey water (non-potable) irrigation systems; turf may be defined by at-grade concrete mow strips to lessen maintenance.
- 6. Analyze soils and provide organic amendments as needed to improve plant growth and conserve water.
- 7. All plant material will have one-year warranty and is subject to approval by the Base Landscape Architect.

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

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



Xeric Planting Bed along Sidewalk



Limited Turf Area



Rock Mulch Bed with Edging



Foundation Planting

- 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 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



Landscape Materials, Location and Placement at Group 1

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

### C06.1.7. Streetscape Landscaping

Applicable  N/A Large graphics do not apply

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

Image Tool 250 x 188



Street Trees with Uniform Spacing



Street Trees Defining Space



Predominant Use of Grasses

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

### C06.1.8. Pedestrian Circulation Landscaping

Applicable  N/A 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



Trees Defining Space



Pedestrian Scaled Trees and Shrubs



Trees Providing Shade

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 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



Coordinated Placement of Landscape Features and Elements



Landscaped Island



Native Trees and Grasses



Trees Defining Space

1. Integrate appropriate landscaping elements into parking areas to visually soften the appearance at a minimum rate of 5 percent of the total area. Landscaping within islands will be a minimum of 200sf or one parking stall to provide adequate space for viability of trees and vegetation.
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 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



Vegetative Screening



Accent Planting



Flowering Ornamental Species

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

### C06.1.11. Other

Applicable  N/A Large graphics do not apply

Applicable  N/A Small graphics do not apply

## C07. SITE FURNISHINGS

Comply with AF Corporate Standards for Site Development:

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

Comply with AF Corporate Standards for Site Furnishings:

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

### C07.1. Furnishings and Elements

Applicable  N/A 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



Fully Enclosed Bus Shelter



Coordinated Site Furnishings



Standard Bike Rack

1. Provide a coordinated consistent inventory of site furnishings to positively contribute to the visual environment, image, and identity of the base; ensure durability, low maintenance, reduced visual clutter, and compatibility with the adjacent architecture.
2. Remove poorly located or redundant litter / ash receptacles, newspaper and bicycle racks, telephone booths, vending machines, walls and fences to reduce visual clutter and to lessen the requirements for maintenance.
3. Group 1, 2, 3 and 4 site furnishings will be non-ferrous metals such as aluminum or stainless steel. Group 2, 3 and 4 may be powder coated dark bronze. Generally match the site furniture of adjacent facilities and the facility district.
4. Install needed outdoor seating (benches and low walls) in public gathering spaces near main and secondary building entrances. Low walls will match facility architecture.
5. Benches in Groups 1, 2 and 3 will be non-ferrous metals such as aluminum or stainless steel. Group 2, 3 and 4 may be powder coated dark bronze. Recreational areas may use wood benches when protected by a roof structure.
6. Integrate functional bicycle racks with the design of the building's main entrance grounds in Facility Groups 1 and 2 while meeting AT requirements.
7. Limit the use of bollards, but when necessary for force protection use powder coated steel in Groups 1, 2 and 3; bollards in Group 4 and recreational areas may be heavy timber. Illuminated bollards may be used as approved on a case basis.
8. Locate architecturally coordinated containers for recycling, litter, ash, vending, etc., to minimize visual clutter and not 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. Small, freestanding shelters will be provided only where there is a documented need and when approved on a case basis. Provide dark bronze enclosure using an aluminum storefront framing and glazing system and standing seam metal roof.
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. To prevent frost-heave, fencing line posts will be pushed into the ground a minimum eight feet deep with no concrete. Where concrete foundations are required for corner, tension, and gate posts, concrete will extend a minimum six feet deep. In areas prone to wet soil conditions, a poly wrap will be applied to concrete foundations to reduce friction with frost-heaving soil.
18. Wood fencing may be used in Facility Group 4 and in recreation areas following IFS for material and finish when there is sustained periodic maintenance.
19. Provide trash dumpster enclosures for Group 1, 2 and 3 with screen walls; apply the standards for "Products, Materials and Color" in the following section.
20. Specify screen wall materials and finishes that do not require painting or maintenance beyond periodic cleaning.
21. Group 1, 2, 3 and 4 picnic tables and seating will be non-ferrous metals such as thermoplastic coated aluminum or stainless steel. Group 2, 3 and 4 may be powder coated dark bronze. Generally match the site furniture of adjacent facilities and the facility district. Generally limit barbeque grills and drinking fountains to lodging, dormitories, housing areas, parks and recreation areas.
22. Limit the use of freestanding planters to areas with ongoing maintenance.
23. Provide kiosks only where there is a documented need for visual communication of posted messages. When used, match adjacent facilities in materials and detailing and consolidate kiosks with other site furnishings within 30 feet of major pedestrian paths. Limit kiosks to facility Groups 1 and 2 and parks.
24. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

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

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

### C07.2.1. Barbeque Grills

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.

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

Color: Natural stainless steel

Finish: Mill

Model #: 32" 4-Burner

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

UFGS: N/A



### C07.2.2. Benches

Applicable  N/A

Number of base standards 1

Image Tool 250 x 188



Type: \_\_\_\_\_

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

Mfr: Materials, Inc. \_\_\_\_\_

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: **Style 1** \_\_\_\_\_

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

Mfr: Brandir International Inc. \_\_\_\_\_

Color: Galvanized or Medium Bronze \_\_\_\_\_

Finish: Factory \_\_\_\_\_

Model #: The Ribbon Bike Rack, RB-07 \_\_\_\_\_

Other: N/A \_\_\_\_\_

UFGS: N/A \_\_\_\_\_

### C07.2.4. Bike Lockers

Applicable  N/A

**C07.2.5. Bollards**

Applicable  N/A

Number of base standards 3

Image Tool 250 x 188



Type: **Lighted Round Dome Top**

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

Mfr: Lithonia Lighting Products

Color: Dark bronze

Finish: Anodized aluminum

Model #: KBA

Other: Flared cone, 3000K LED Lamp

UFGS: N/A



Type: **Force Protection, Building Protection**

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

Mfr: Custom

Color: Dark Bronze

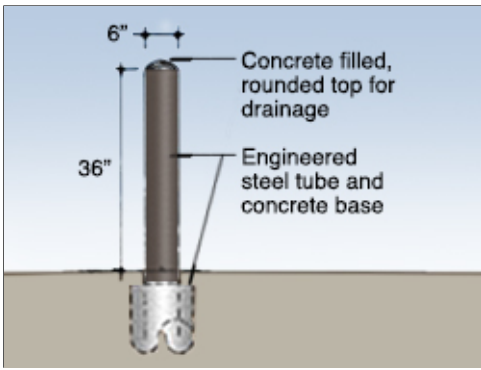
Finish: Powder coat

Model #: 6" steel, flat top

Other: For Group 3, use only in high visibility areas

UFGS: N/A

Type: **Building Protection, steel**



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

Mfr: (Bollard Cover) Reliance Foundry

Color: Brown cover may be field painted dark bronze

Finish: Factory

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

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

UFGS: N/A

### C07.2.6. Bus Shelters

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: Handi-hut Inc.

Color: Dark Bronze

Finish: Anodized, Kynar

Model #: 3-2R, no requirement for power, may include bench.

Other: Minimum 1/4" clear tempered glass. Sized between 4'x6' and 6'x10'. Provide gap between ground and bottom of enclosure to prevent accumulation of leaves and debris. No operable door or window.

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.

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 2

Image Tool 250 x 188



Type: **1: Brick and Steel**

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

Mfr: Custom

Color: Red brick blend, dark brown doors

Finish: Face brick, powder coated doors

Model #: Match adjacent building

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

UFGS: Section 04 20 00 Unit Masonry

Type: **2: CMU and Steel**



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

Mfr: Custom

Color: Buff CMU, Medium bronze doors

Finish: CMU to match adjacent building, powder coated doors

Model #: Match adjacent building

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

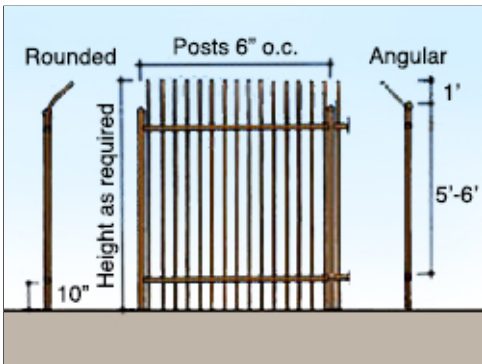
UFGS:

### C07.2.9. Fencing

Applicable  N/A

Number of base standards 6

Image Tool 250 x 188



Type: **Style A: Metal Picket**

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

Mfr: Custom

Color: Dark Bronze

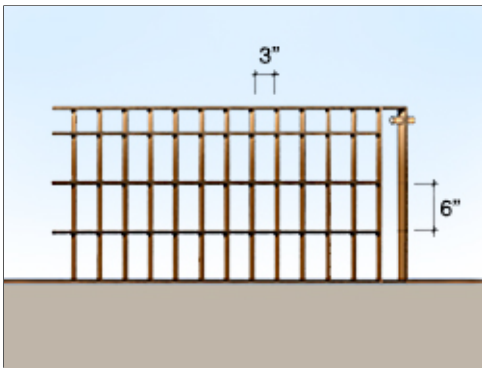
Finish: Powder coated

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

Other: Use at high visibility areas of Main and Commercial gates. May include brick piers and base in key areas. Generally match existing.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

Type: **Style B: Vinyl Coated, Curved Top**



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

Mfr: Custom

Color: Dark Bronze

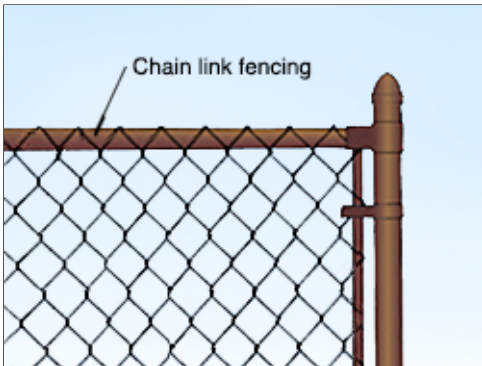
Finish: Vinyl

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

Other: Use at perimeter fence along Highway 2 and County Road 3.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

Type: **Style C: High security**



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

Mfr: General WireCompany

Color: Black or dark bronze

Finish: Galvanized steel

Model #: As required per AFI 31-101

Other: Use for flightline, base perimeter, and other fences that require high security and do not have aesthetic requirements. Line posts will be pushed into ground instead of in concrete due to frost-heave.

UFGS: Section 32 31 13 Chain Link Fences and Gates



Type: **Style D: Wood 3-rail**

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

Mfr: Custom

Color: Integral mixed Davis Colors: dark warm gray

Finish: Factory

Model #: Post and rail

Other: Concrete 3-rail, wood-grain textured (4,000 psi at 28 days); Posts: 39" height, 8' spacing, set 30" deep below grade with footing, typical

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



Type: **Style E: 3-Strand Barbed Wire**

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

Mfr: Hutchison

Color: Factory

Finish: Factory

Model #: HW Brand Barbed Wire - ASTM Class 1

Other: N/A

UFGS: NA



Type: **Style F: Housing**

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

Mfr: James Hardie Building Products, Inc.

Color: Off white and Earth tones

Finish: Factory

Model #: Post and rail with vertical boards

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

UFGS: Not Available (SECTION 074646 Fiber Cement Siding)

### C07.2.10. Flagpoles

Applicable  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

Color: Natural aluminum

Finish: Satin Lustre

Model #: ECL30 IH, Internal Halyard

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

UFGS: N/A

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

Please refer to the Lighting section.



## C07.2.12. Litter and Ash Receptacles

Applicable  N/A

Number of base standards 2

Image Tool 250 x 188



Type: **Style 1: Precast concrete**

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

Mfr: Materials, Inc.

Color: Weatherstone Gray

Finish: Smooth

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

Other: Rigid plastic internal liner,  
[http://materialsinc.com/wp-content/uploads/2014/10/TR-3225\\_SANTA\\_FE.pdf](http://materialsinc.com/wp-content/uploads/2014/10/TR-3225_SANTA_FE.pdf)

UFGS: N/A

Type: **Style 2: Metal**

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

Mfr: Wabash Valley

Color: Black or as approved

Finish: Perforated Pattern

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

Other: With dome top, without side door

UFGS: N/A



### C07.2.13. Picnic Tables

Applicable  N/A

Number of base standards 3

Image Tool 250 x 188



Type: **Precast concrete**

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

Mfr: Materials, Inc.

Color: Weatherstone Gray

Finish: Standard Finish (Smooth)

Model #: TS-3490 New Mexican

Other: (303) 458-9595

UFGS: N/A

Type: **Metal, vinyl coated**

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

Mfr: Wabash Valley

Color: Brown or as approved

Finish: Factory vinyl coated

Model #: Signature Series, 46" Square Pedestal Tables with 4 Seats

Other: Perforated Pattern, In-ground mount

UFGS: N/A



Type: **Metal Base Recycled Content Top and Seats**



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

Mfr: Belson Outdoors

Color: Wood tone top, factory galvanized base

Finish: Factory

Model #: Park Chief Recycled Plastic Picnic Table

Other: 8' Length, 30-1/2"H x 62"W

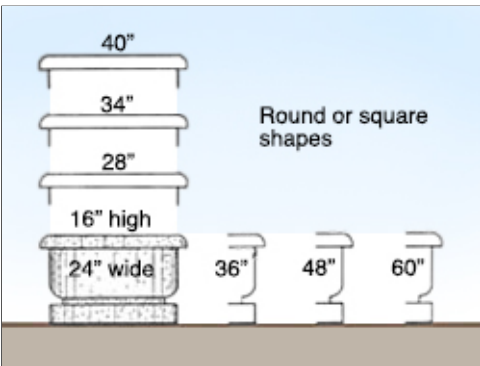
UFGS: N/A

### 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: Local Precast Company TBD

Color: Gray

Finish: Smooth Casting

Model #: Round

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

Color: Varies

Finish: Powdercoated Steel

Model #: N-R-G Freestyle

Other: Coordinate with Base Architect

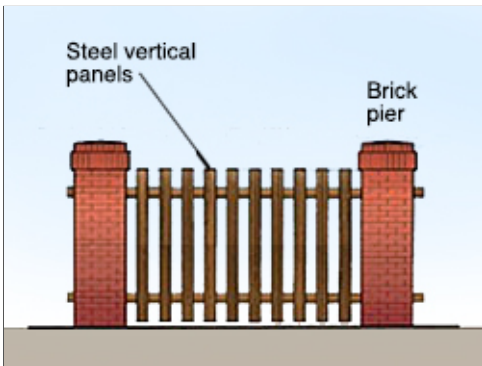
UFGS: N/A

### C07.2.16. Screen Walls

Applicable  N/A

Number of base standards 1

Image Tool 250 x 188



Type: **Brick / Steel**

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

Mfr: Custom

Color: Tan brick or CMU blend, dark brown fencing

Finish: Powder coated metal

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

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

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

**C07.2.17. Tree Grates**

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.

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

Comply with AF Corporate Standards for Exterior Signs:

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

## C08.1. Colors and Types

Applicable  N/A 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



Approved Wall Mounted Letters



Building Identification Sign



Traffic Control 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. Remove non-conforming signs as a stand-alone effort or during other work that provides opportunity.
4. Use clear concise terms for content consistent with UFC 3-120-01.
5. Display of emblems on building exterior walls or other permanent structures is prohibited by UFC.
6. Raised "standout" letters and numbers may be used for Group 1 with approval on a case basis.
7. 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, will conform to the standards in the Manual of Uniform Traffic Control Devices (MUTCD) published by the Federal Highway Administration. Coordinate street signs with this IFS.
10. Provide Directional and Wayfinding Signs and address both pedestrian and vehicular traffic following UFC 3-120-01 for size, layout and content.
11. Reserved parking signs should be kept to a minimum. When approved, provide post-mounted sign faces in base standard materials and colors. Consider "bracketing" a designated area with a single sign at each end.
12. Parking lot identification signs may be used to identify areas or rows within large lots.
13. Follow the guidelines and requirements in ABAAS and the MUTCD for accessible parking signs.
14. Follow UFC 3-120-01 for Informational and Motivational Signs for size, layout and content.

15. Symbols or pictographs (graphic expressions of actual objects) may be used to indicate service, mandatory / prohibitory, sports, and recreation when rapid communication is necessary.
16. Force Protection signage may be applied to glass doors using white vinyl lettering.
17. Refer to UFC 3-120-01 for prohibited signs, which include those with animated, blinking, chasing, flashing, or moving effects.
18. Facility Groups:
  - a. Group 1 - Provide Primary freestanding sign. These signs identify high-level organizations such as Wing Headquarters, Group Headquarters, Chapels, and Hospitals.
  - b. Group 2 - Provide Secondary freestanding signs. These signs identify lower-profile buildings such as dormitories and administrative type facilities.
  - c. Group 3 - Provide Building Entrance Signs. Provide Tertiary freestanding sign only when required and approved for wayfinding. These signs identify buildings or other facilities that do not require a street address or building number, such as recreational facilities, training areas, and aircraft/vehicle/facility maintenance facilities.
  - d. Unoccupied - Provide Building Number Sign on primary entrance. Typically unoccupied storage buildings and mechanical/electrical sheds.
19. Only one building identification sign per facility is authorized except when approved for unique and challenging conditions by the Work Request Review Board (WRRB). In facilities with multiple functions or tenants, the signage strategy is to identify the primary common entrance and guide visitors to the desired location using an interior building directory and signage. This reduces clutter on individual signs and follows directives in UFC 3-120-01 and AFCFS to provide "the absolute minimum" number of signs.
20. Freestanding **Building Identification Signs**: Signs will be designed and located per UFC 3-120-01 except as modified below. Location will be coordinated and approved by Architectural Compatibility Review Board (ACRB), and Traffic Safety Coordination Group (TSCG).
  - a. Place signs between 5 feet and 8 feet from the curb face. Where sufficient space is not available, or where unique conditions exist, setback will be coordinated with TSCG.
  - b. Height will be 40-inches to the bottom of the sign.
  - c. Layout will be building number on top separated by a line from the unit name with any secondary information to identify the unit component (such as headquarters) and the street address on the bottom. Building number format will be "Bldg. 123". Unit mottos or mascots and names or titles of individuals are prohibited.
21. Building Entrance Signs: Building entrance signs are only authorized for facilities without freestanding signs or, a) where a facility requires entrance signs to identify multiple primary tenants accessible from separate entries, b) where a facility has multiple primary entrances that are not clearly identifiable, or c) to confirm information on a freestanding sign when the facility is not clearly visible from the road. Only one identification sign is permitted at an entrance. Signs will be designed and located per UFC 3-120-01 except as modified below.
  - a. Layout will be building number on top separated by a line from the unit name with any secondary information to identify the unit component (such as headquarters). Building number format will be "Bldg. 123". Unit mottos or mascots and names or titles of individuals are prohibited.
22. Building Entrance Signs on Glass: Entrance signs may be placed on glazing incorporated into entries. In most cases, this method is preferred instead of wall mounted signs to prevent damage to facilities caused by sign attachments. General guidance for Building Entrance Signs applies to signs on glass except the letters/graphics will be white.
  - a. Reasonable additional information may be included as allowed by UFC 3-120-01 and approved by ACRB.
  - b. The sign will not extend beyond a single pane of glass except as approved by ACRB where limited space is available. The top of the sign will be 74-inches above floor level.
  - c. With ACRB approval, Group 1 and 2 facilities with multiple high profile tenants requiring signs at multiple entries are authorized unit shields, logos, emblems, or badges for squadron level and above units to aid in identification. The graphic will not exceed 8 inches high for color graphics or 12 inches high for white line graphics. A unit is allowed only one for a facility.
23. Building-Mounted Identification: Building mounted identification is strongly discouraged. If provided, only the facility function, i.e., Wing Headquarters or facility name if named/dedicated to an individual, i.e., Barnes Hall, will be used. Trees and landscaping will not be trimmed or removed for the purpose of building-mounted identification visibility. ACRB approval is required for all design and work associated with building-mounted identification, both new and existing. Signs will not be altered for minor changes in facility function title. Any alteration to an existing sign requires full re-

approval and the standard policy is complete removal of building-mounted identification and replacement with a freestanding sign.

24. Building Number Signs: Building numbers will be provided on the door to the primary or most visible mechanical room for all occupied facilities. For facilities that are normally unoccupied, the building number will be located on the primary entrance door and will be the only form of building identification.
  - a. Numbers will be centered 2-inch-high white vinyl on a 3 inch by 14 inch aluminum plate screwed to the door and colored to match. The format will be "BLDG 123". Sign will be centered on a door leaf 64 inches above sill level.
25. Facility address numbers will not be placed on buildings.
26. All directional and wayfinding signs should form part of a logical system that directs each visitor and new base personnel from the base main point of entry through every intersection to a final destination. Directional and wayfinding signs will be used for highly frequented or specific interest base facilities. It is not the intent to clutter the base with proliferate sign usage, but simply to ensure the basic needs of visitors are met. Care should be taken in placement, taking into consideration safety, visibility, and practicality. Directional and wayfinding signs will be placed at traffic intersections. The sign should be placed on the right side of the street and at a distance of approximately 200' prior to the intersection.
27. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

### C08.1.1. Materials and Color Specifications

Applicable  N/A Large graphics do not apply

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

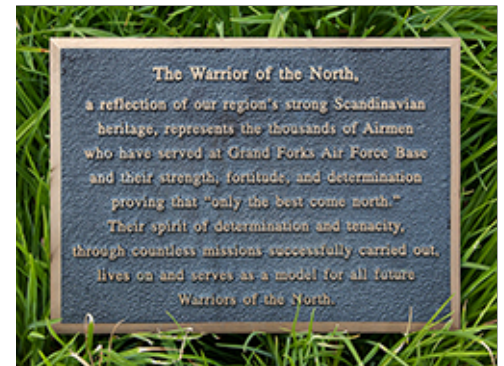
Image Tool 250 x 188



Wall Mounted Metal Letters



Metal Frame with Color Graphics



Bronze Plaque

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. Do not field paint surfaces. Provide factory coatings and materials only.
2. Fence mounted sign panels may be attached with exposed fasteners.
3. Except as noted below, 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 Bronze: AMS-STD-24091
  - c. Standard Red
  - d. Standard Black (non-reflective)
  - e. Standard White
  - f. Dark Brown: AMS-STD-20045
  - g. Standard Green



## Materials and Color Specifications

Applicable  N/A

Number of base standards 3

Image Tool 250 x 188



Type: **Typical Sign Fce**

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

Mfr: Custom

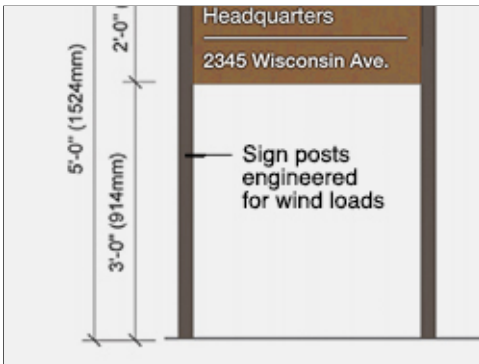
Color: Dark brown with white letters

Finish: Matte vinyl

Model #: 1/8" thick aluminum sheet

Other: Supported by cross members made up of 1/8 inch thick 2-inch galvanized steel square tubing. Hardware will be stainless steel or galvanized fasteners.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Typical Sign Post**

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

Mfr: Telespar

Color: Dark brown

Finish: Semi-gloss, sleeved in vinyl covering

Model #: 3" x 3", 1/8" thick galvanized steel tube

Other: Hardware will be stainless steel or galvanized fasteners

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

Type: **Typical Sign Base**

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

Mfr: Snap n Safe

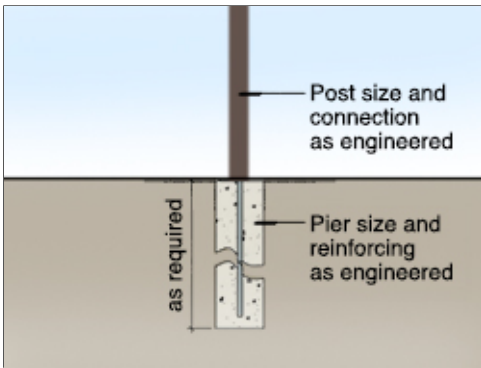
Color: Natural gray

Finish: Sonotube-formed

Model #: Breakaway Coupler

Other: Galvanized steel base with breakaway feet

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



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

Applicable  N/A Number of base standards 1

Image Tool 250 x 188

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

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

Mfr: Custom

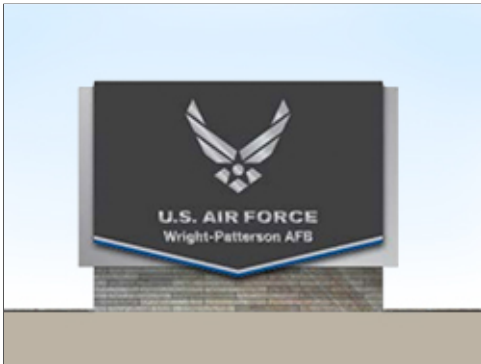
Color: Dark bronze, brushed aluminum, accents per UFC

Finish: Powder coat or vinyl sign face

Model #: Metal frame and panels, buff stone base

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

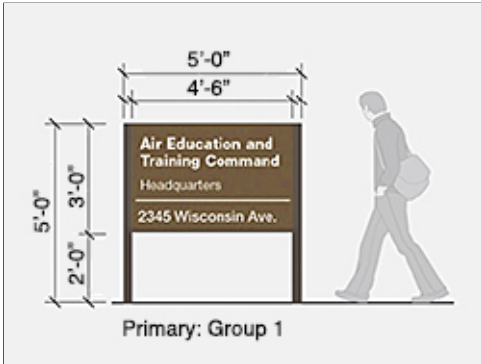


### C08.1.3. Building Identification Signs

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: Custom

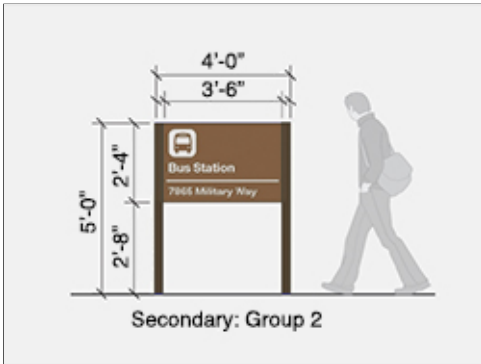
Color: Medium brown face, dark bronze posts, white vinyl lettering

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: Provide layout and sizes per UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



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

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

Mfr: Custom

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

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: Provide layout and sizes per UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

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

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

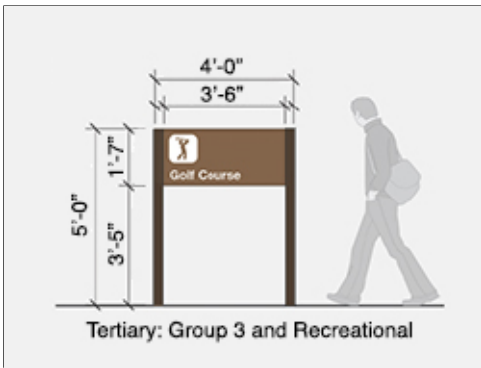
Mfr: Custom

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

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: Provide layout and sizes per UFC.



UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

Type: **Wall Mounted**

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

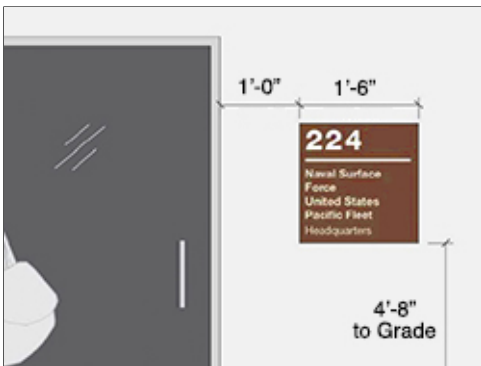
Mfr: Custom

Color: Medium brown, white lettering

Finish: Satin vinyl applied to aluminum sheet

Model #: Aluminum sheet with vinyl face and vinyl lettering

Other: Mounting method will limit wall damage. Hardware will be stainless steel or galvanized fasteners. Provide layout and sizes per UFC.



UFGS: N/A

Type: **Glass Mounted**



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

Mfr: Custom

Color: White vinyl lettering

Finish: Matte vinyl

Model #: Machine-cut sheet vinyl

Other: Apply vinyl lettering to glass. Provide layout and 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: Custom

Color: Green background, retroreflective white letters

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

1. All traffic 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.
2. Slats: 1/8-inch-thick aluminum sheet, height will be 8 - 9-inches, smallest length will be 18 - 24-inches, and largest length will be name dependent but will not exceed 36 inches. The corners will have a 1.5-inch radius.
3. Sign Posts. 3-inch x 3-inch Telespar 1/8-inch galvanized steel square tubing sign posts, 3-inch x 3-inch, by 7-feet high (sleeved with brown plastic downspout) using a galvanized steel base with breakaway feet. Hardware will be stainless steel or galvanized fasteners.
4. Letters and borders will be reflective white on a green background. The border will be 3/8-inch. Capital letters will be 4-inches high. The words will use a capital first letter and lower-case letters for the remainder. The font of the letters will be Helvetica.

### 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: Custom

Color: Dark brown background, reflective white letters

Finish: Powder coat or vinyl sign face

Model #: 1/8-inch-thick aluminum sheet 30 - 48-inches wide x 8-inches high

Other: Conform to the requirements of the MUTCD and its DoD Supplement. Provide types and sizes where required by UFC. Words will use a 6" capital first letter and lower-case letters for the remainder, in Helvetica.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

Type: **Pedestrian**

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

Mfr: Custom

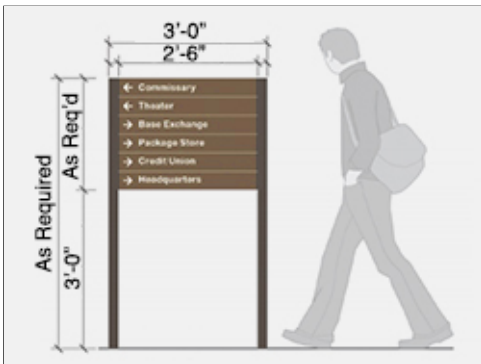
Color: Dark brown background, reflective white letters

Finish: Powder coat or vinyl sign face

Model #: 1/8-inch-thick aluminum sheet 30-inches wide x 8-inches high

Other: The words will use a 6" capital first letter and lower-case letters for the remainder. The font of the letters will be Helvetica. Construct per Freestanding Sign requirements.

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 standard dark brown or dark bronze color.
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 masonry bases using standard materials for facilities.

### **C08.1.8. Parking Lot Signs**

- Applicable  N/A

1. The requirements for reserved parking do not apply to accessible parking. The guidelines and requirements for accessible parking and signs are detailed in ABAAS and the MUTCD.
2. Parking lot signs will be permanently installed at a clear height of between 60-inches and 84 inches above grade and will not interfere with an accessible route from an access aisle.
3. Grand Forks Air Force base is a small installation with ample parking spaces. Therefore, reserved parking is for Organizational Leaders who are frequently moving around base and need a reserved location close to their primary facility for efficiency and effectiveness.
4. Authorized permanent reserved parking spaces are provided in the appendix. Any reserved parking additions to the Authorized Reserved Parking list must be coordinated through 319 SFS (based on GFAFBI 31-204) and approved by the base WRBB.
5. Reserved parking signs will be a 1/8-inch-thick aluminum sheet 12-inches high x 12-inch wide. Hardware will be stainless steel or galvanized fasteners.
6. Signs may be wall-mounted if the parking stall is close enough to an existing wall to permit clear identification. If a post mounted sign is used, the sign and post will be placed at the perimeter of the lot and never in the middle of a lot as this type of placement is detrimental to efficient snow removal.
7. Each post mounted sign will be secured using a galvanized steel base with breakaway feet and 1/8-inch galvanized steel square tubing sign posts, 3-inch x 3-inch, at a height such that the bottom of the sign is 60-inches above ground (sleeved with brown plastic downspout). Hardware will be stainless steel or galvanized fasteners.
8. Letters, numbers and lines and will be white, using retroreflective sheeting. The sheeting will include a pre-coated pressure sensitive adhesive backing (Class 1) or a tack free heat activated adhesive backing (Class 2). The sheeting will be of such quality and type that it can be applied without additional adhesive coats on either the backing or the application surface.
9. Reserved parking signs with unit indicators will only use the numerical text, such as "123 ABC/DEF".

- 10. Timed Parking Signs will also indicate the allowed time by multiple of 15 (e.g., 30 min), by multiple of 1 hour (e.g., 2 hours) or by multiple of 1 day (e.g., 30 days).
- 11. Accessible Parking Spaces will be marked IAW ABAAG. Spaces will be marked, wherever possible, with one curb mounted parking sign and will be painted on the ground with the symbol, using white letters and symbol on blue background.
- 12. Provide standard MUTCD colors.
- 13. Reserved parking signs will be dark brown.

**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      Number of base standards 1

Image Tool 250 x 188



Type: **Building Number - Wall Mount or Door Mount**

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

Mfr: Base sign shop

Color: Medium bronze numbers on white background

Finish: Vinyl on aluminum sheet

Model #: Wall mount: Standard

Other: Door mount: 3-inch-high x 14-inch wide. Sign will be centered on a door leaf 64 inches above sill level. Screw or rivet to metal Mechanical room door. Hardware will be stainless steel or galvanized fasteners.

UFGS: N/A

**SIGN REQUESTS**

- 1. All Base exterior sign requests (temporary or permanent) must be submitted on an AF Form 332, Base Civil Engineer Work Request, by the designated Facility Manager to the 319th Civil Engineer Squadron Customer Service (319 CES/CEOER) at least 60 days prior to installation date to allow for required review and approval.
- 2. Freestanding signs require an additional 15 days to allow for processing of the AF Form 103, Base Civil Engineer Work Clearance Request.



3. 319 CES/CEOER will forward sign requests to TSCG and ACRB for review and comments. TSCG and ACRB will coordinate with 319th Security Forces Squadron (319 SFS), 319th CES Fire Department (319 CES/CEF), 319th Wing Ground Safety Office (319 RW/SEG), and other organizations as required.
4. Changes or alterations to the requested signage may be required to comply with standards. TSCG or ACRB will coordinate with requestor prior to final approval/disapproval.
5. Final approval, disapproval, or approval as modified will be provided from the Work Request Review Board (WRRB) back to the customer through 319 CES/CEOER. The Base Civil Engineer (BCE) or designated representative, is the approval authority. No signage will be fabricated and erected unless it is approved by the WRRB.
6. Commercial Agencies (e.g., Banks, Army Air Force Exchange Services (AAFES), Defense Commissary Agency (DeCA), Department of Homeland Security (DHS), etc., may purchase, fabricate, and install exterior signage at their facilities, but only after they have obtained approval through the AF Form 332 process. Furthermore, description, size, color, verbiage, and location must be provided and approved by the TSCG and ACRB.

## 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 Small graphics do not apply



Decorative Pedestrian Fixtures

1. Provide, coordinate and efficiently install street, parking lot, sidewalk and facility lighting with appropriate luminaires, lamping, placement and spacing following UFC 3-530-01 and Installation Facilities Standards (IFS); ensure the level of quality is consistent with the adjacent facility group number. Pole-mounted, wall-mounted and bollard fixtures are permitted.
2. Integrate controls to automatically reduce lighting power during periods of non-activity; automatically turn off power when sufficient daylight is available.
3. Ensure continuity and consistency of lighting elements. In new construction generally match post types, fixture types, styles, heights, sizes, materials, colors, and lamp types of adjacent facilities and the facility district.
4. Economically provide renewable-energy power sources such as solar photovoltaic when feasible.
5. Use appropriately designed or shielded luminaires to direct light downward to minimize light pollution and intrusion onto adjacent sites and to facilitate night training.
6. Calculate illuminant levels for all lighting applications following UFC 3-530-01 and ensure compliance with pre-curfew maximum brightness level requirements.
7. Sufficiently address environmental factors to prevent corrosion and weathering of fixtures, plinths and other components.
8. Wall mounted fixtures should respond to the architectural character of the facility.
9. Efficient accent lighting of architectural and landscape features may be provided for Group 1, lodging and historical applications. Accent lights in ground-mounted locations may be provided for static displays and signs when these do not conflict or cause hazards with overhead aircraft.
10. Comply with UFC 3-530-01 for light source technology and lamp types. High efficiency lamping such as LED is preferred for most applications.
11. Provide round tapered, square non-tapered, or round non-tapered aluminum poles and aluminum fixtures with square, rectangular or circular housings in colors and shapes to match adjacent facilities and the facility district.
12. Install lighted bollards only at Group 1 and high-traffic Group 2 facilities. Generally match materials, colors and shapes of adjacent facilities and the facility district.
13. Install natural warm gray color, smooth finished concrete bases for all poles in heights appropriate for the facility group and application. Generally Groups 1, 2 and 4 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 should be contained within an internal landscape median or island.
15. Consistently install lighting for sidewalks, bikeways and trails to match adjacent facilities.
16. Landscape accent lighting may be used in public gathering spaces and in Group 1 facilities. Coordinate the design, luminaire selection, and placement with the location of trees, shrubs, and site furnishings.
17. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

## **C09.2. Light Fixture Types**

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

### C09.2.1. Street Lighting

Applicable  N/A

Number of base standards 2

Image Tool 250 x 188



Type: **Style 1**

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

Mfr: Hubbell, Kim Lighting

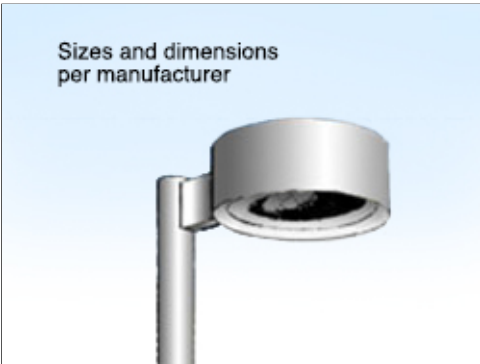
Color: Dark Bronze Anodized (or Clear Anodized as approved by BCE)

Finish: Factory

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

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

UFGS: N/A



Type: **Style 2**

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

Mfr: Hubbell, Kim Lighting

Color: Clear Anodized as approved by BCE

Finish: Factory

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

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

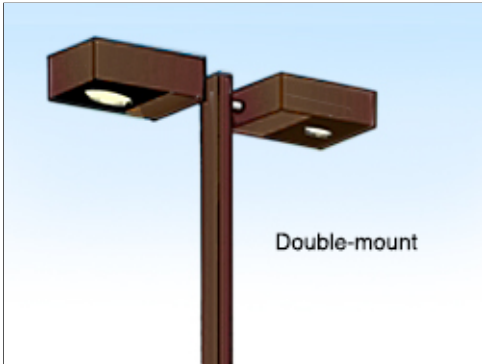
UFGS: N/A

## C09.2.2. Parking Lot Lighting

Applicable  N/A

Number of base standards 2

Image Tool 250 x 188



Type: **Parking Lot Style 1**

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

Mfr: Hubbell, Kim Lighting

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

Finish: Factory

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

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

UFGS: N/A

Type: **Parking Lot Fixture Base**

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

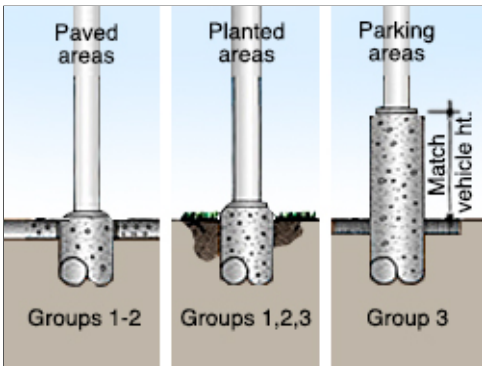
Mfr: Custom

Color: Natural gray

Finish: Trowel

Model #: Form-cast, round

Other: N/A



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

### C09.2.3. Lighted Bollards

Applicable  N/A

Number of base standards 1

Image Tool 250 x 188



Type: **Lighted Round Dome Top**

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

Mfr: Lithonia Lighting Products

Color: Dark Bronze

Finish: Anodized aluminum

Model #: KBA

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

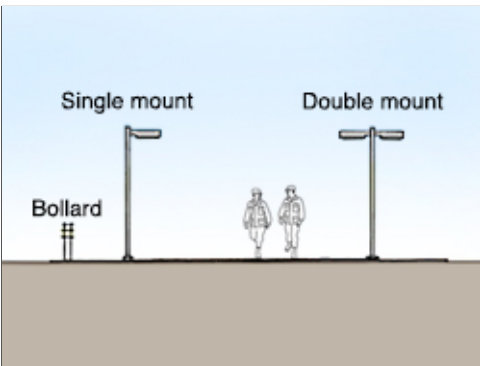
UFGS: N/A

### C09.2.4. Sidewalk Lighting

Applicable  N/A

Number of base standards 1

Image Tool 250 x 188



Type: **Rectilinear Cutoff**

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

Mfr: Hubbell, Kim Lighting

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

Finish: Anodized aluminum

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

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

UFGS: N/A

### C09.2.5. Walls / Stairs Lighting

Applicable  N/A

Number of base standards 1

Image Tool 250 x 188



Type: **Style 1**

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

Mfr: Vista Lighting

Color: Dark bronze anodized

Finish: Smooth

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

Other: Lamp: LED

UFGS: N/A

### C09.2.6. Other

Applicable  N/A

## D. FACILITIES EXTERIORS

Comply with Air Force Corporate Standards for Facilities Exteriors:

<http://afcs.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



Group 3 Hangars



Group 1 Materials and Detailing



Group 2 Dormitory



Family Housing Group 4

### D01. SUPPORTING THE MISSION

Comply with AF Corporate Standards for Supporting the Mission:

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

### D02. SUSTAINABILITY

Comply with Air Force Corporate Standards for Sustainability:

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

### D03. ARCHITECTURAL FEATURES

Comply with AF Corporate Standards for Facilities Exteriors:

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

Comply with AF Corporate Standards for Architectural Features:

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

*Insert 3 photos for each facility group.*

Image Tool 250 x 188

Group 1



Group 2



Group 3



Group 4





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

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

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



Overhangs Providing Shading near Summer

## 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 and regional influences with environmentally functional architectural features.

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 3 Hangar



Group 1 Features



Group 2 Materials and Detailing



Group 4 Residential Features

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

4. Reinforce the prairie/plains theme, which is generally characterized by strong geometry and massing emphasizing horizontal proportions, shallow hipped or flat roofs, red brick, and neutral earth-tone accent bands.
5. All facilities will express sustainability through their orientation, massing, shape, form, materials, and detailing. Provide roof overhangs, louvers, fins and other shading devices to control heat gain and glare and to and improve energy efficiency. Use only low-maintenance and highly durable materials.
6. 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 metals. Refer to D05. Wall Systems for detailed material listings.
2. Relate the level of architectural detailing to the Facility Group number.
3. Use only integrally colored materials as the predominant exterior building material; do not use materials that require field painting and ongoing maintenance.
4. Provide consistent and compatible colors for every exterior building feature, including walls, roofs, doors, windows, gutters, downspouts, utility and mechanical elements, and other visible elements.
5. Noncorrosive metals with factory applied color finishes are required.
6. Combine details and color with orientation, massing, scale and architectural character to maintain base compatibility.
7. Articulate building facades to create areas of shade and shadow.
8. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

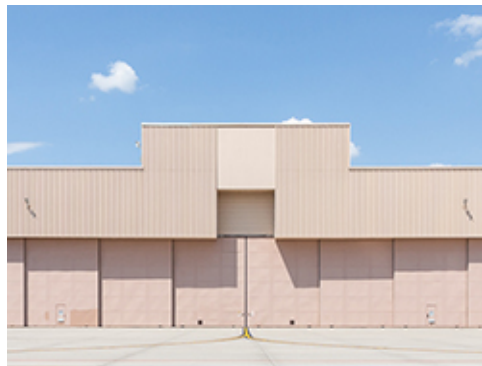
Applicable  N/A Large graphics do not apply

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

Image Tool 250 x 188



Historical Reference to Flank Wall



Pronounced Shadow Line



Terra Cotta and Buff Color Palette

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

- Climate dominated by mechanical cooling
- Climate dominated by mechanical heating
- Climate with similar mechanical cooling / heating needs
- Climate with minimal mechanical cooling / heating needs
  
- Climate with high humidity
- Climate with moderate humidity
- Climate with low humidity
  
- High Solar Insolation
- Moderate Solar Insolation
- Low Solar Insolation
  
- Soils with High Thermal Conductivity
- Soils with Average Thermal Conductivity
- Soils with Low Thermal Conductivity

Other: Extremely low levels of daylight during the winter months and high levels in summer months

Other: Proximity to medium wind power class

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

*Wall:* Integral shading features and devices / interior masonry thermal mass walls

*Doors:* Projecting gabled roofs are required over entrances

*Windows:* Limit north-facing windows/maximize windows on south façades with shading

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

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

*MEP:* Systems as supported by LCCA

*Other:* Internal thermal mass walls to complement heat systems following LCCA

*Other:*

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

### D03.3.2. Natural Ventilation System

Applicable  N/A

Number of base standards 3

Image Tool 250 x 188



Type: **Style 1 Aluminum Windows**

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

Mfr: Kawneer (or equivalent)

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

Finish: Anodized

Model #: 2x4, slider or awning type

Other: Provide thermally broken frames.

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

Type: **Style 2 Steel Windows**

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

Mfr: Steelcraft (or equivalent)

Color: Dark bronze or match adjacent facilities

Finish: Powder coated

Model #: 2x4 frame, awning type

Other: Provide thermally broken frames

UGFS: Section 08 11 13 Steel Doors and Frames



Type: **Style 3 Aluminum-clad Wood Windows**



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

Mfr: Marvin (or equivalent)

Color: Earth tones

Finish: Factory

Model #: 4" depth, double-hung type

Other: N/A

UFGS: Section 08 52 00 Wood Windows

### 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: Custom, TBD

Color: Red brick blend

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



### 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 (or equivalent) or custom

Color: Dark bronze

Finish: Factory, to match frames

Model #: Louver

Other: Shading devices may be attached to frames or structure

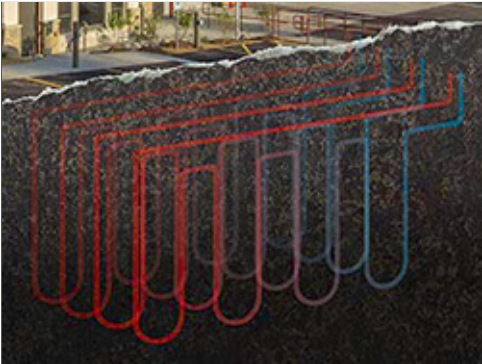
UFGS: Section 08 41 13 Aluminum-Framed Entrances and Storefronts

### D03.3.5. Renewable Heating/Cooling

Applicable  N/A

Number of base standards 1

Image Tool 250 x 188



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

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

Mfr: Climate Master

Color: N/A

Finish: N/A

Model #: N/A

Other: Vertical ground loop well field

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

### D03.3.6. Solar Photovoltaic System

Applicable  N/A

Number of base standards 2

Image Tool 250 x 188



Type: **Ground-Mounted PV Panels**

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

Mfr: TBD

Color: Factory

Finish: Matte

Model #: Flat plate collector, fixed or tracking

Other: Coordinate with local utility provider

UFGS: Section 48 14 00 Solar Photovoltaic Systems

Type: **Roof-Mounted PV Array**

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

Mfr: TBD

Color: Factory

Finish: Matte

Model #: Flat plate collector

Other: Coordinate with local utility provider

UFGS: Section 48 14 00 Solar Photovoltaic Systems





### 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: Matte

Model #: Flat plate collector

Other: N/A

UFGS: Section 48 14 13 Solar Liquid Flat Plate and Evacuated Tube Collectors

## D04. BUILDING ENTRANCES

Comply with AF Corporate Standards for Facilities Exteriors:

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

Comply with AF Corporate Standards for Building Entrances:

<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 projecting and/or recessed covering for weather protection following Installation Facilities Standards (IFS) for Facility Group designations.
2. Generally, provide gabled metal roofs to shed snow and ice away from pedestrians. Support by masonry/masonry-clad structure. Exposed metal and/or concrete structure with zero to very low maintenance requirements may be used for Group 3. Well designed and attractive metal structure may be exposed on Group 1 facilities as approved on a case basis.
3. Covered arcade elements may be used for Facility Group 1 as approved on a case basis. Where provided, integrate arcades with the building's form, materials and detailing.
4. 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.
5. Fully integrate all elements, including the design of ramps for accessibility, in the overall design of the primary entrance in an organized uncluttered appearance. Finish handrails to match other building elements with a powder-coat or other low maintenance finish.
6. Install paved transitional spaces sized for the building function and occupancy. Use colored, stamped concrete or pavers as accents in approach walkways or at entry plazas for Groups 1 and 2.
7. Snow-melt systems may be provided on roofing or in paving as required to ensure efficient mission-critical operations.
8. Install appropriate lighting and site furniture following AT and IFS.
9. Avoid downspouts discharging onto sidewalks.
10. Protect entrances from heavy rains and falling ice and snow.
11. Provide porte cocheres or covered drop-offs when justified for lodging and medical facilities; do not use for prestige or architectural accents.
12. Locate newspaper boxes, vending machines and similar elements out of view to avoid visual clutter. Fire Dept lock boxes may be mounted discretely where required.

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

1. Provide vestibules at entries in Groups 1, 2 and 3 unless used infrequently or serving unconditioned space following ASHRAE 90.1; use of stair towers as vestibules for multi-story buildings is encouraged when building and / or energy codes are satisfied.
2. Reflect the character of the primary entrance to a lesser extent with a smaller scale.
3. Include a recess or projection for weather protection and shading. Support roofs by masonry/masonry-clad structure. Exposed metal and/or concrete structure with zero to very low maintenance requirements may be used for Groups 2 and 3.
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. Overhead weather protection is not required at doors used only for life safety egress.
7. Canopies may be used for service and loading areas; weather protection beyond weatherstripping is not required at doors used only for life safety egress.

8. Develop building massing and orientation to minimize the appearance of service and loading areas; physically and visually separate these from primary entrances.
9. 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-exterior/index.html>

Comply with AF Corporate Standards for Wall Systems:

<http://afcfs.wbdg.org/facilities-exterior/wall-systems/index.html>

Comply with AFCFS Recommended Materials:

<http://afcfs.wbdg.org/facilities-exterior/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 shall be predominantly red brick in a running bond pattern. Light brown or linen precast concrete or burnished concrete masonry units (CMU) are typically used as a wainscot/base with sill transition treatment. Metal panel systems may be used as a secondary wall material with ACRB approval. Accents of architectural precast concrete, burnished CMU, travertine-esque CMU, or dark bronze or light brown metal panel accents shall be used to provide visual interest and balance. Brick pattern and coursing accents, including subtle variations on color/finish, may be used with ACRB approval. Non-standard metal panel colors may be used with ACRB approval.
3. Group 2 facilities shall be predominantly red brick in a running bond pattern. Light brown burnished concrete masonry units (CMU) are typically used as a wainscot/base with sill transition treatment. Metal panel systems may be used as a secondary wall material with ACRB approval. Accents of burnished CMU, travertine-esque CMU, or dark bronze or light brown metal panel accents are encouraged. Brick pattern and coursing accents may be used with ACRB approval.
4. Group 3 facilities shall be predominantly light brown metal panel systems with dark medium brown burnished CMU wainscots or integrally colored/finished tilt-up concrete panels. Dark brown factory finished metal panels may be used as accents. Linen or light brown EFIS may be used at upper levels and otherwise where protected from impacts.
5. Utility buildings shall be constructed of masonry with SSM roof. Match Facility Group level of design for adjacent facilities. Small utility buildings less than 200sf may be approved with a wall base of several courses of burnished CMU with metal wall panels and SSM roof compatible with the Facility Group level of design for adjacent facilities.
6. Group 4 shall be predominantly cementitious horizontal lap siding in medium Earth tones and neutral color; white cementitious trim boards and muted warm-colored shingles or vertical siding may be used as accents.
7. 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.
8. Architectural precast concrete or metal panels may be used for lintels, sills, belt courses, wall caps, and friezes with ACRB approval.
9. Careful and judicious application of curtain wall systems may be used to distinguish key interior areas or to provide visual interest and balance the façade of Group 1 facilities and to a limited extent on key Group 2 facilities with ACRB approval. Considerations must be made to AT/FP standards for application to interior spaces exposed to curtain wall systems.
10. Use high-performance building envelopes following UFC 1-200-02.
11. Use detailing that is not subject to excessive weathering. Generally provide wall accents consistently throughout the base for each facility group.
12. Use integrally colored concrete and masonry with clear sealers when recommended by the manufacturer. Do not paint concrete or concrete masonry units (CMU).
13. Translucent wall panels may be used in Facility Groups 1, 2 and 3 with appropriate insulation.
14. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

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

1. Organize wall components including doors, windows, accents, shading devices, control joints, etc., to provide an ordered, professional appearance.
2. Integrate shading devices into the overall composition of the wall.
3. Integrate fixed shading devices at all exterior glazing exposed to summer UV heat gain as a passive design measure to reduce energy use. Ensure adequate shading at west entrances. Deciduous trees may be used for shading.

4. Shading systems may be included as part of a manufacturer's window system or may be custom systems integrated into the wall.
5. Provide appropriate transitions between dissimilar materials to mitigate effects of thermal expansion and galvanic action per UFGS 07 60 00 Flashing and Sheet Metal.
6. All joint sealants will be slightly darker than adjacent surfaces.
7. Materials requiring regular maintenance are not permitted; do not use exposed structural steel or other materials that require painting.
8. Refer to C07.2.16. Screen Walls for materials and colors of freestanding walls.
9. Refer to D07. Roofs for downspouts.

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

1. Arrange all mechanical, electrical, fire alarm, lightning protection and other system components to create an orderly appearance that integrates with the wall system. Eliminate, reduce, and consolidate system components to keep wall penetrations and equipment anchors to a minimum. Items shall be dark bronze when on brick surfaces and colored to match the adjacent wall or trim color on other materials.
2. Do not expose conduits, cables, piping, lightning protection components, etc. on exterior walls; if unavoidable in renovations, finish these elements to match the color of the adjacent wall or trim surface.
3. Avoid visual clutter and where surface-mounted elements are required they will match the wall color or trim color on which they are mounted.

**D05.4 Wall Systems Materials**

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

- Primary: Brick
- Secondary: CMU, Arch. Precast, Metal Panel, Curtain Wall
- Accent: CMU, Arch. Precast, Metal Panel

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

- Primary: Brick
- Secondary: CMU, Metal Panel, Curtain Wall
- Accent: CMU, Metal Panel, Arch. Precast

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

- Primary: Metal Panels, CMU, Tilt-Up Concrete
- Secondary: Metal Panels, CMU
- Accent: Optional: Metal Panels

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

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

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

### D05.4.1. Flat Metal Panels

Applicable  N/A

Number of base standards 3

Image Tool 250 x 188



Type: **Insulated Metal Panel System - Kynar or Anodize Finish**

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

Mfr: 3A Composites

Model #: Alucobond Plus Anodized Collection

Color: Beige or dark bronze. Clear anodized on Group 1 as approved.

Finish: Smooth, kynar or anodized

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: **Composite Metal Panel System**

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

Mfr: Alpolic

Model #: Alpolic/HD or PE

Color: Beige or dark bronze. Clear anodized on Group 1 as approved.

Finish: Smooth, kynar or anodized

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 - Kynar Finish**

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

Mfr: Nucor

Model #: Sedona or Flat Insulated Metal Wall Panel

Color: Beige or dark bronze. Clear anodized on Group 1 as approved.

Finish: Stucco-embossed or smooth, kynar or anodized

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 2

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: Red blend

Finish: Straight Edges, smooth texture

Other: Nominal size: 4x8x2.6

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



Type: **Modular Face Brick**

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

Mfr: Sioux City Brick

Model #: \_\_\_\_\_

Color: \_\_\_\_\_

Finish: \_\_\_\_\_

Other: \_\_\_\_\_

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 4



Type: **Precast Panels**

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

Mfr: Local, TBD

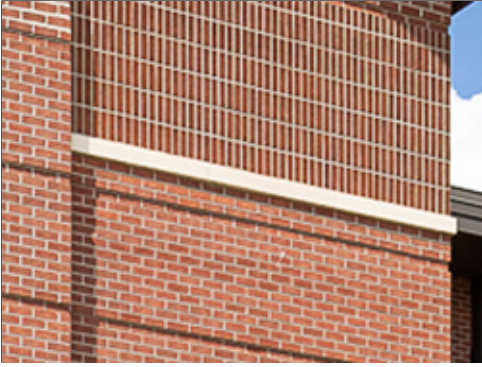
Model #: Smooth casting

Color: Light beige or terra cotta

Finish: Very light texture

Other: N/A

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



Type: **Coursed Precast**

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

Mfr: Local, TBD

Model #: Smooth casting

Color: Light beige, or off-white

Finish: Very light texture

Other: N/A

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



Type: **Coursed Precast Water Table and Sill**

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

Mfr: Local, TBD

Model #: Smooth casting

Color: Light beige, or off-white

Finish: Very light texture

Other: Provide drip edge to prevent staining below surfaces

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



Type: **Monolithic Precast Sill**

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

Mfr: Local, TBD

Model #: Smooth casting

Color: Light beige, or off-white

Finish: Very light texture

Other: Provide drip edge to prevent staining below surfaces

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

#### 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

Model #: 7500 Wall, double glazing

Color: Dark bronze

Finish: Kynar or anodized

Other: High thermal performance only; Group 2 with ACRB 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

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

Applicable  N/A Number of base standards 1

Image Tool 250 x 188



Type: **Wall Panels**

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

Mfr: Wells Concrete

Model #: Site-cast concrete wall panels

Color: Light brown

Finish: Light texture

Other: Integral color

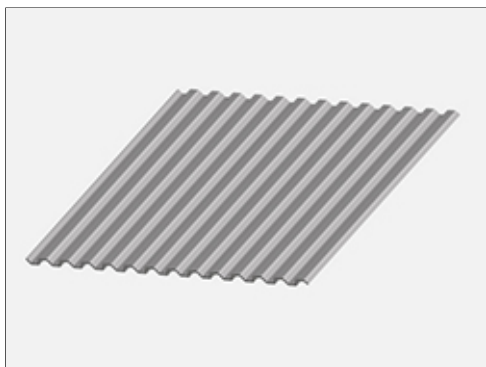
UFGS: Section 03 47 13 Tilt-Up Concrete:  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 47 13.pdf>

## D05.4.8. Ribbed Metal Sheeting

Applicable  N/A

Number of base standards 4

Image Tool 250 x 188



Type: **Exposed Fastener – Small Scale**

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

Mfr: MBCI

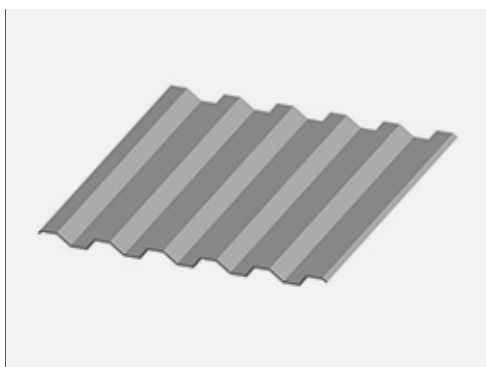
Model #: PBD

Color: Dark bronze or almond

Finish: Signature 300

Other: Minimum 24 gauge steel

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



Type: **Type: Exposed Fastener – Large Scale**

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

Mfr: MBCI

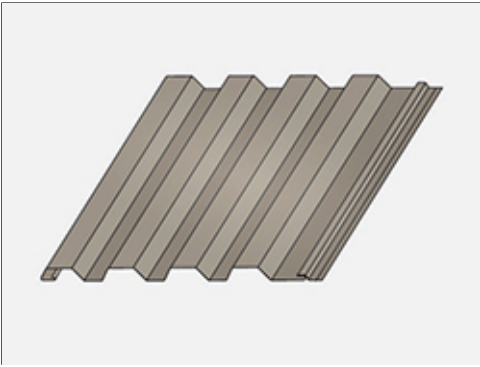
Model #: 7.2 Panel

Color: Dark bronze or almond

Finish: Signature 300

Other: Minimum 24 gauge steel

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



Type: **Concealed Faster – Horizontal Ribs**

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

Mfr: MBCI

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Model #: Masterline 16

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Color: Dark bronze or almond

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Finish: Signature 300

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Other: Minimum 24 gauge steel

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



Type: **Lap Seam Metal Panel System**

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

Mfr: Allied or equivalent

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Model #: Standard Purlin Bearing Rib (PBR) panel with all closures

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Color: Off-white, almond or tan as approved by ACRB

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Finish: Factory standard, smooth

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Other: 24 gauge steel; 36" wide, 12" o.c. rib spacing; exposed fastening system

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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

Number of base standards 1

Image Tool 250 x 188



Type: **Continuous Insulation and Finish System**

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

Mfr: BASF, Dryvit

Model #: Mechanically Fastened

Color: Light brown or linen; or other with ACRB approval

Finish: Sand

Other: Confirm class of system with ACRB

UFGS: Section 07 24 00 Exterior Insulation and Finish Systems:  
[http://www.wbdg.org/FFC/DOD/UFGS/UFGS\\_07\\_24\\_00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_07_24_00.pdf)

### D05.4.10. GFRC

Applicable  N/A

### D05.4.11. Concrete Block

Applicable  N/A

Number of base standards 3

Image Tool 250 x 188



Type: **Concrete Masonry Unit (CMU) Ground Face**

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

Mfr: Amcon Concrete Products

Model #: 8x8x16 Nominal, face and corner units

Color: Light brown or dark brown; or other color with ACRB approval

Finish: Ground, burnished and sealed with exposed aggregate

Other: Light brown or dark brown; or other color with ACRB approval

UFGS: Section 04 20 00 Unit Masonry:  
[http://www.wbdg.org/FFC/DOD/UFGS/UFGS\\_04\\_20\\_00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_04_20_00.pdf)



Type: **Concrete Masonry Unit (CMU) Travertine Face**

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

Mfr: Local TBD

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Model #: 8x8x16 nominal, face and corner units

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Color: Light or medium beige

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Finish: Ground with exposed aggregate

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Other: Confirm class of system with the BCE

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



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

---

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

Mfr: Amcon Concrete Products

---

Model #: 8x8x16 nominal, face and corner units

---

Color: Light brown or dark brown; or other color with ACRB approval

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Finish: Heavy texture

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Other: N/A

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



### D05.4.12. Fiber Cement Siding

Applicable  N/A      Number of base standards 1

Image Tool 250 x 188



Type: **Style 1**

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

Mfr: James Hardie Building Products, Inc.

Model #: Horizontal Lap Siding, Shingle Siding

Color: Earth tones

Finish: Wood texture

Other: Hardie Plank, Hardie Shingle

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

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### D05.4.13. Other

Applicable  N/A

## D06. DOORS AND WINDOWS

Comply with AF Corporate Standards for Facilities Exteriors:

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

Comply with AF Corporate Standards for Doors and Windows:

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

Comply with AFCFS Recommended Materials:

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

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1



Group 2



Group 3



Group 4



## **D06.1. Types**

1. Dark bronze anodized aluminum doors and frames with insulation and thermal breaks are used for primary and some secondary entrances on Facility Groups 1 and 2. Clear anodized finish may be used on Group 1 in select areas as approved on a case basis; match the color of the door and frame. For renovation projects the color of new doors and frames should match existing.
2. Limit hollow metal doors and frames to security doors, utility rooms and mechanical rooms in Groups 1 and 2, but these may be used in any application in Group 3 facilities.
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. Ensure entrances with automatic doors meet all ABAAG requirements.
5. Utility and emergency egress doors not in masonry walls may match the wall color and for an inconspicuous appearance.
6. Windows shall be dark bronze anodized aluminum with insulation and thermal breaks on Facility Groups 1, 2 and 3. Clear anodized finish may be used on Group 1 in select areas as approved on a case basis; match the color of the door and frame. For renovation projects the color of new windows should match existing.
7. Aluminum clad wood windows are preferred for Facility Group 4.
8. Passive thermal comfort methods of ventilation are encouraged where life cycle cost justified.
9. Windows must meet force protection requirements.
10. Adjacent joint sealants should be slightly darker than the frame color.
11. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

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

1. Visually and functionally compose openings in walls for the climate-specific exposure.
2. Consistently use opening type, size, placement, mullion pattern, and color to reinforce the overall architectural design.
3. Openings will augment interior lighting and space conditioning needs.
4. Protect against vandalism and intrusion and coordinate sound ratings where required.

## **D06.3. Glazing and Shading**

1. Tinted, energy-efficient, low-e, double-pane glazing is required; 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, install window screens to take advantage of natural ventilation.

## D06.4. Hardware

1. Provide hardware appropriate for the Facility Group while considering activity and frequency of use and local climate; hardware may be of higher visual quality for Facility Group 1.
2. Ensure hardware will perform throughout the facility's lifespan without showing extreme wear.
3. Select finishes that will not degrade by intensity of operation or exposure to the elements.
4. Use consistent finishes and color on window and door systems throughout a facility. For renovation projects the color of new hardware may match the existing hardware.
5. Locksets shall be compatible with Best interchangeable core system. Typical cores use a five pin key system.
6. Egress hardware on exterior doors shall have no or minimal plastic parts due to failure when exposed to extreme cold. Base standard is Stanley PHI Apex 2000 series.
7. 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: **Aluminum Doors, Windows and Frames**

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

Mfr: Kawneer (or equivalent)

Color: Dark brown anodize or powder coat

Finish: Anodized or powder coated

Model #: 2x4, thermally broken framing

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**

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

Mfr: Steelcraft (or equivalent)

Color: Medium Bronze

Finish: Powder Coated, Satin

Model #: 2x4, thermally broken framing

Other: Group 1 use only for secondary entrances or emergency egress

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

Color: White or light Earth tones

Finish: Powder coated, satin

Model #: Aluminum-clad wood doors and windows

Other: Double hung windows

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

Number of base standards 2

Image Tool 250 x 188



Type: **Insulated Translucent Wall Panels**

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

Mfr: Kalwall

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Color: Off-white

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Finish: Factory

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Model #: 4" Wall Panel Unit System

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Other: N/A

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UFGS: Section 08 45 23  
(Not Available on UFGS)



Type: **Glass Masonry Units**

---

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

Mfr: Pittsburg Corning

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Color: Translucent glass

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Finish: Factory

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Model #: 12x12, Decora or Clear

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Other: Stack bond pattern

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UFGS: Section 04 23 00 Glass Unit Masonry  
<https://www.wbdg.org/FFC/DOD/UFGS/UFGS%2004>

## D07. ROOF SYSTEMS

Comply with AF Corporate Standards for Facilities Exteriors:

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

Comply with AF Corporate Standards for Roof Systems:

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

Comply with AFCFS Recommended Materials:

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

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1



Group 2



Group 3



Group 4



## **D07.1. Roof Type and Form**

1. Use proven, cost-effective roof systems with high durability, weather resistance, and low maintenance that are compatible with Installation Facilities Standards (IFS) and requirements for the designated Facility Group.
2. Generally match the roof type and form of existing adjacent facilities in new construction.
3. Group 1, 2 and 3 facilities under a 5,000 sf footprint and/or narrow in plan geometry, shall use hipped, gabled or shed form standing seam metal roofs. Curved or barrel forms may be used with ACRB approval. Larger facilities may use sloped-roof features in conjunction with predominantly minimal-sloped "flat" membrane roofs. Carefully consider aesthetic proportions when selecting roof forms to avoid roofs that dominate the visual elevation.
4. Provide screens for roof-mounted appendages and equipment of the same materials, which are used predominantly in the building's roof systems.
5. 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.
6. Provide screens for roof-mounted appendages and equipment, which are clad to match standing seam roofs or parapet walls.
7. Roof translucent panels, skylights, and light tubes are permitted in Group 1 and 2 facilities. Light tubes are permitted in Group 3 facilities only to bring natural light into normally occupied spaces without access to natural light with ACRB approval.
8. Group 4 facilities will have gabled or hipped composite shingle roofs.
9. Roof eaves will extend beyond the exterior wall for roof drainage and shading. Provide overhangs for shading in response to local climatic conditions; these should be sized and proportioned to the height of the facility and to the window openings being shaded.
10. South-facing eaves will coordinate with adjacent wall-mounted shading devices.
11. The color, shape and slope of the eave and soffit will be compatible with adjacent facilities.
12. Keep roofs uncluttered and minimize penetrations.
13. Diminish massive roofs into coordinated smaller components consistent with adjacent facilities; avoid random, arbitrary changes.
14. Increase the insulation value of existing roofing systems during renovations if supported by life-cycle cost and structural analysis.
15. 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.
16. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

## **D07.2. Roof Slope**

1. The typical, and minimum, slope for water-shedding roofs is 3:12. Other slopes require ACRB approval.
2. Low-sloped roofs are allowed for larger structures or to match existing conditions on renovations and additions.
3. Group 4 facilities will use 4:12 to 6:12 roof slopes.
4. Ensure adequate drainage and connect to the subsurface rain collection system where available.



5. Provide roof slopes to accommodate solar photovoltaic, solar thermal, passive systems and daylighting when applicable following UFC 1-200-02.
6. Provide underlayments as required for the roofing type as directed by the UFC.

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

1. 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 bronze or brown depending on the district; generally match the color of any immediately adjacent facilities.
2. All minimal-slope membrane roofs will use only use high-albedo, high-reflectivity color to help decrease the temperature around the buildings and minimize damage to human and wildlife habitat.
3. Sloped roofs in Group 4 shall be natural medium to dark wood tones.
4. Comply with UFC 3-110-03 and ASHRAE 90.1 for Solar Reflectance Index (SRI) and thermal requirements.
5. All roof flashing will match the color of the predominant background material.

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

1. All sloped roofs will use gutters and downspouts. Locate gutters outside the fascia.
2. Where practical, minimal-sloped roofs should be sloped to drain to the building perimeter through scuppers into downspouts. Internal roof drainage systems are not permitted in new construction. Minimal-sloped roofs will be sloped to drain to the building perimeter through scuppers into downspouts.
3. All gutters and fascias will match the roof color.
4. Size the roof drainage system per IBC and SMACNA for the region.
5. Use scuppers as required in parapet walls. Arrange scuppers in an orderly manner consistent with other elements of the wall system.
6. When open scuppers are connected to downspouts, provide transitions consistent with adjacent facilities.
7. Integrate downspouts with the architectural details of the wall system and arrange in an orderly, non-prominent appearance. Generally blend downspouts with the color of the wall (not contrasting it).
8. Fabricate downspouts from non-corrosive materials such as aluminum or zinc-coated steel. Provide powder-coated finishes in medium bronze.
9. Downspouts shall be open face finished inside and out with powder-coat finishes to match roof or wall color.
10. Provide concrete splashblocks at the bottom of downspouts draining onto surfaces susceptible to erosion. Splashblocks shall be a minimum 10" by 30" and formed to contain and direct water away from the facility.
11. Provide angled transitional pieces for downspouts to fit closely against the wall for their entire length.
12. Coordinate locations of downspouts to conceal control joints in masonry walls when possible.

13. Place downspouts away from building entries. Water discharged should not run across walking surfaces. Provide drainage systems to prevent ice buildup on walking surfaces.

#### **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. Rooftop mechanical equipment is prohibited on sloped roofs.
4. Provide access points and service routes to equipment that protect the roof. Service routes on sloped roofs shall be metal powder coated to match roof color.
5. Mounting systems approved by the roof manufacturer shall be used rooftop items and maintain the roof system warranty.
6. Hoods, goosenecks and mushroom caps must be avoided. Wherever possible, consolidate vent, intake and exhaust requirements and provide dormer or gable louvers. Small requirements should use soffit and eave louvers where practical.
7. Screen all large items from view.
8. Ensure attic spaces are properly vented at ridges and soffits.
9. Match roof color for all exposed equipment and vents.
10. Avoid roof-mounted antenna systems.
11. Arrange Lightning Protection Systems (LPS) components in an ordered, uncluttered and inconspicuous appearance; integrate components into the organization of the roof and wall systems.
12. Ensure that LPS roof mounting systems are approved by the roofing manufacturer.
13. Additions to a roof will not interfere with LPS or other rooftop systems that may be required. Include required modifications and additions to LPS with roof work scope.
14. Include permanent fall protection with any addition to a roof with a slope above 3:12 per UFC 3-110-03.

#### **D07.7. Clerestories and Skylights**

1. Clerestories, skylights and light tubes are permitted in Group 1 and 2 facilities. Clerestories and light tubes are allowed in Group 3 facilities only when serving passive systems and are justifiable by life-cycle analysis.
2. Clerestories are preferred to skylights and light tubes to avoid roof penetrations. Skylights, when permitted, must be simple in shape and integrated with the roof system to eliminate leakage.
3. Design clerestories using the same principles for seasonal shading that are required for walls and roof overhangs unless translucent panels are used.
4. Translucent panel systems are preferred in clerestory applications due to lack of window cleaning.
5. Clerestories must comply with UFC 4-10-01.

## D07.8. Vegetated Roof

1. Not applicable.

## D07.9. Roof Systems Materials

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

### D07.9.1. Standing Seam Metal

Applicable  N/A      Number of base standards 3

Image Tool 250 x 188



Type: **Roof Panel, Seam and Closures**

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

Mfr: Berridge

Color: Medium bronze

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>

Type: **Soffit Panel**

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

Mfr: Berridge

Color: Medium bronze

Finish: Factory matte

Model #: FW-1025 Soffit Panel System

Other: Provide matching trim and closures

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





Type: **Flat Cladding Fascia and Flashing**

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

Mfr: Berridge

Color: Medium bronze

Finish: Factory matte

Model #: Custom shapes

Other: Provide details per SMACNA

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 Systems

Color: Off-white

Finish: Smooth

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

Other: N/A

UFGS: Section 07 53 23 Ethylene-Propylene-Diene-Monomer Roofing  
<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

### D07.9.5. Clay Tile

Applicable  N/A

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### D07.9.6. Slate Shingles

Applicable  N/A

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### D07.9.7. Vegetated System

Applicable  N/A

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### 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

Color: Dark Bronze or galvalume

Finish: Factory, matte

Model #: High Seam Tee-Panel

Other: Mechanically seamed system, 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)

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### D07.9.9. Composite Shingles

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: Tamko

Color: Earth Tones

Finish: Factory

Model #: Heritage

Other: Gabled or hipped with transverse gable or hipped features

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

### D07.9.10. Other

Applicable  N/A

## D08. STRUCTURAL SYSTEMS

Comply with AF Corporate Standards for Facilities Exteriors:

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

Comply with AF Corporate Standards for Structural Systems:

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

Comply with AFCFS Recommended Materials:

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

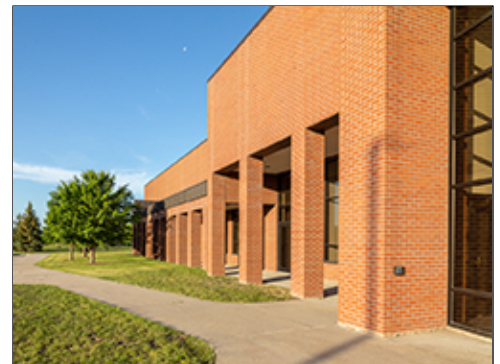
*Insert 3 photos for each facility group.*

Image 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. Select economical structural systems that integrate roof and wall systems.
3. Narrow buildings 60' or less in width with column-free interiors are preferred for office, administrative and personnel spaces; when interior columns are required optimize the structural grid layout for open-plan arrangements.
4. Fully coordinate structural grids with exterior window systems to align columns with window frames or wall systems.
5. When structure is exposed on building exteriors, it must be made of concrete or non-ferrous metals such as aluminum or stainless steel. Exposed non-ferrous metals are only permitted with weatherproof non-ferrous metal cladding or precast concrete cladding. Metal cladding must be factory finished and shall not be field painted. Heavy timber or log construction is only permitted in additions when matching existing conditions, or in the Otter Lake Recreation Area.
6. Limit the use of specialty systems (such as space frames, vaults or domes) and of structure as a visual feature.
7. Cost-effectively design interior bearing walls as thermal mass.
8. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

## D08.2. Structural Systems Materials

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

### D08.2.1. Concrete

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: Custom

Color: Natural gray

Finish: Light texture

Model #: Post and beam and/or waffle slab

Other: Coordinate with mechanical for chilled beam technologies

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

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

Color: Factory primed

Finish: Matte

Model #: Moment Frame

Other: Draped insulation may be used behind wall finish system;  
Behlen standing seam roof system may be used for Group 3

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

Number of base standards 1

Image Tool 250 x 188



Type: **Load-Bearing Masonry**

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

Mfr: Custom, TBD

Color: Natural concrete, beige masonry or brown masonry

Finish: Ground face or split face

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

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

UFGS: Section 04 20 00 Unit Masonry

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

### D08.2.6. Heavy Timber

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

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

Number of base standards 1

Image Tool 250 x 188



Type: **Lumber Framing**

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

Mfr: Boise Cascade Wood Products

Color: N/A

Finish: S4S

Model #: Structural dimensional lumber

Other: N/A

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

### D08.2.9. Other

Applicable  N/A

## D09. MECHANICAL, ELECTRICAL AND PLUMBING

Comply with AF Corporate Standards for Facilities Exteriors:

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

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

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

Insert 3 photos for each facility group.

Image Tool 250 x 188

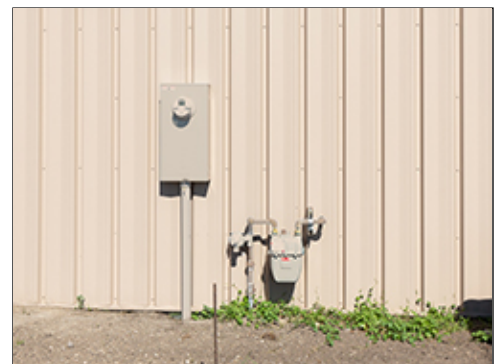
Group 1



Group 2



Group 3



Group 4



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

1. Fully integrate passive heating and cooling systems into facility designs whenever practical for the local climate prior to the design of active mechanical systems.
2. Provide optimized passive and active systems; design active mechanical systems to supplement thermal mass walls and floors.
3. Develop renewable-energy systems when life cycle cost effective.
4. Experience has shown that ground source heat pump systems do not perform adequately in the conditions at Grand Fork AFB. Ground source heat pump systems for HVAC are discouraged and only allowed on a case basis for facilities with high cooling requirements.
5. Performance display screens, which report energy performance and utility savings, are encouraged, when provided locate these in building lobbies or common areas.
6. Solar domestic hot water systems are permitted following a LCCA.
7. Integrate shading into building exteriors to reduce solar heat gain during as applicable for the exposure.

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

1. Fully coordinate mechanical, electrical, plumbing (MEP) and fire protection systems with each other and with the building structure, enclosure, thermal envelope and interior design.
2. Ensure direct exterior access is provided (for CE) to main mechanical and electrical rooms.
3. Screen exterior equipment from primary views (landscape, building masses, screen walls) and comply with AT requirements.
4. Keep equipment away from main building entrances; locate service area/yard on least visible side of a building.
5. Coordinate the location of all exterior meters, equipment and devices to provide convenient access and an overall coordinated and orderly appearance.
6. Surface mounting of conduit, pipes and equipment on exteriors will be minimized. All exposed items will be painted. See section D05.3 for further information.
7. 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.
8. When structure is exposed as a finished ceiling, fully integrate MEP and fire protection systems to provide an organized, uncluttered appearance.
9. Conceal ducts, piping, conduits, devices, etc., when permanent walls, suspended ceilings or raised floors are provided; locate sprinkler heads in orderly configuration.
10. Surface mounting of conduit, pipes, equipment and devices is prohibited in finished interior spaces except where a finished ceiling is not provided.
11. 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.
12. Separate mechanical and electrical and communications rooms.
13. Integrate recessed and wall-mounted fixtures such as fire standpipe cabinets and drinking fountains within permanent walls.

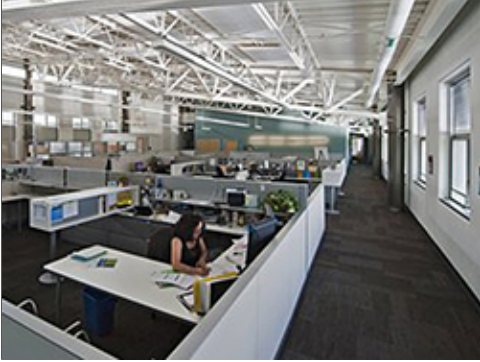
## E. FACILITIES INTERIORS

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

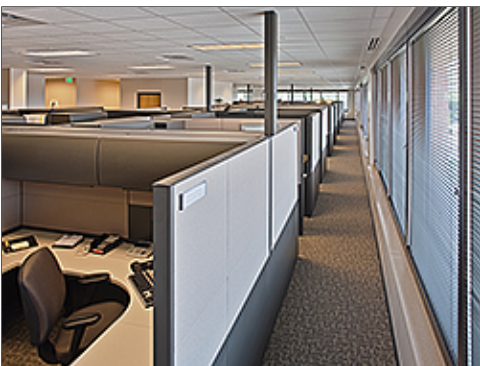
*Insert 3 photos for each facility group.*

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 life span.
2. Create flexible interior configurations using Furniture, Fixtures & Equipment (FF&E) and limit private offices and private rooms. Refer to AFMAN 32-1084 for space requirements. To the greatest extent, limit permanent partitions to core areas such as toilet rooms, stairs, mechanical and utility rooms.
3. Use more durable long-lasting finishes in core areas for walls, ceilings, floor coverings and built-in casework. Coordinate interior FF&E layouts with structural grids during space planning.
4. Provide high-performance building configurations following UFC 1-200-02. Ensure passive design strategies are cost effectively incorporated before active mechanical systems are designed.
5. Comply with UFC 1-200-01, general building requirements. UFC 1-200-01 provides applicability of model building codes and government unique criteria for typical design disciplines and building systems, as well as for accessibility, antiterrorism, security, high performance and sustainability requirements, and safety.
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 wellbeing, 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. Administrative and similar functions within Group 3 facilities may be designed to Group 2 standards with a higher emphasis on durability.
10. Through open-plan configurations, preserve all passive and natural design strategies and fully integrate facility interiors with overall building systems.
11. Professional interior designers, or architects with significant interior design experience, must accomplish the design and review of applicable new construction, renovations and maintenance projects.
12. Consult with the State Historic Preservation Officer (SHPO) and base-level Historic Preservation offices regarding proposed changes to properties listed on or eligible for listing on the National Register of Historic Places. Follow requirements of The National Historic Preservation Act and Secretary of the Interior Standards for the Treatment of Historic Properties.
13. Maintain architectural compatibility following AFCFS and this Installation Facilities Standards (IFS) document to create continuity while avoiding monotony.

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

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

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

1. Create open-plan interior environments to accommodate changes.
2. Limit interior partitions, private offices and rooms; use furniture or modular systems to provide privacy and acoustic control.

3. When partitions are functionally justified such as for conference rooms, use systems furniture and moveable (demountable) floor-to-ceiling wall systems for acoustical or visual privacy.
4. Layout and design of furniture must be coordinated with power, data, lighting, fire protection and HVAC systems. An AF 332, *Base Civil Engineer Work Request* will be submitted for systems including demountable partitions. Approval of demountable partition layout is required **before** solicitation for the furniture purchase. Due to limited in-house workforce and funding, electrical and communications work related to the furniture installation must be included in the furniture installation contract whenever possible.
5. Proportion lobbies and common spaces based on type of function, activity and facility group.
6. Allow no direct sight lines into restrooms.
7. Situate utility and core areas to minimize impact on daylighting and to maximize use as thermal buffers.
8. Ensure electrical, lighting and communications system can be adaptable to configuration changes.
9. Avoid power poles to the maximum extent; when poles are necessary minimize the number and coordinate locations with furniture placement and other elements.
10. Avoid sloping floors to maintain flexibility and eliminate future structural changes.
11. Special consideration may apply to Sensitive Compartmented Information Facilities (SCIFs).

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

1. Comply with UFC 3-120-10 for the Comprehensive Interior Design (CID,) which includes both Structural Interior Design (SID) and Furniture, Fixtures & Equipment (FF&E) design services.
2. Use a collaborative, integrated planning and design team, composed of user, government support staff, and appropriate professionals. Integrate architectural features using simple detailing to create a professional appearance; avoid extravagant or excessive detailing.
3. Ensure interior designs satisfy the functional requirements within the context of flexibility, sustainability and the building's energy performance.
4. Base space planning on square foot allocations from AFM 32-1084. Identify special requirements if any, such as privacy separation, VIP areas, gathering spaces and storage. Note: The occupant's rank and position will influence the square footage and selection of materials.
5. Provide clear circulation and pathway finding for both horizontal and vertical directions that accommodate the number of personnel in the facility.
6. Maximize efficiencies in the space plan for functional relationships and adjacencies for all facility users. Efficiently create and situate rooms and support rooms such as conference / meeting rooms and break rooms.
7. Provide interior design building-related illustrations, drawings, schedules, materials selections, specifications and cost estimates as listed in UFC 3-120-10. Refer to Furnishings in this IFS also.
8. SID Format will follow UFC 3-120-10.
9. Base the FF&E package on the furniture footprint developed in the SID. Identify all new or existing equipment needed and its users within each facility or each area of the facility. Provide specific information on equipment sizes, electrical requirements, ventilation requirements, weight (if heavy), quantity, and security level if required. Presume all administrative spaces have computers and supporting equipment.



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

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

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

Comply with Air Force Corporate Standards for Quality and Comfort:

<http://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 should address both operations and climatic responses.
6. Convey a professional image; avoid trendy patterns and textures.
7. Use materials and finishes that provide a healthy indoor environment.
8. Orient interior spaces toward views while maintaining cost-effective building performance and efficiency.
9. Promote air movement and daylighting for human health and wellbeing.

### **E02. Floors**

Comply with Air Force Corporate Standards for Floors:

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

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

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

Primary: Prepared Slabs (Ground, Polished)

Secondary: Porcelain tile

Tertiary: Carpet, Rubber Stair Treads

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

Primary: Prepared Slabs (Ground, Polished)

Secondary: Ceramic tile

Tertiary: Carpet, Rubber Stair Treads

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

Primary: Prepared Slabs (Ground)

Secondary: Prepared Slabs (Sealer)

Tertiary: N/A

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

Primary: Carpet

Secondary: Ceramic tile

Tertiary: N/A

1. Floor treatments (materials, patterns and layouts) should convey the designation of the Facility Group, type of use and type of space while considering a life cycle cost analysis. Facility Group 1 may receive higher quality treatments but should not consume an excessive amount of resources.
2. Natural stone and terrazzo flooring may be used in high traffic areas of Group 1 as approved on a case basis.
3. Resilient and rapidly renewable flooring may be used in low traffic areas in Group 1, 2 and 4.
4. The use of VCT is discouraged due to high maintenance requirements.
5. Walk-off carpet will be used at all entries to remove debris and moisture. Recessed floor mats should be considered at high traffic entries.
6. Raised access floor (sized for the specific function) may be used in open bay administrative areas and in computer areas and operations centers.
7. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

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

### E02.1.1. Prepared Slabs

Applicable  N/A

Number of base standards 2

Image Tool 250 x 188



Type: **Style 1, Ground and Polished**

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

Mfr: Local (TBD)

Color: Natural gray cement, light to dark beige aggregates

Finish: Fine polished texture

Model #: Medium to small aggregate

Other: N/A

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

Type:

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

Mfr: Local (TBD)

Color: Natural gray cement, light to dark beige aggregates

Finish: Medium polished texture, slip resistant

Model #: Medium to small aggregate

Other: N/A

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



### E02.1.2. 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: Daltille

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: **Style 1 Porcelain**

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

Mfr: Daltille

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: **Style 2 Ceramic**

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

Mfr: Daltile

Color: Earth tones

Finish: Matte, slip resistant

Model #: Ceramic tile

Other: Use in low traffic area toilet rooms.

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

### 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://afcs.wbdg.org/facilities-interiors/walls/index.html>

#### E03.1. Wall Materials

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

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

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

Primary: Brick  
Secondary: Gypsum board (painted)  
Tertiary: Ceramic tile (restrooms)

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

Primary: Ground face block, sealed (do not paint)  
Secondary: N/A  
Tertiary: Ceramic tile (restrooms)

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

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

1. Follow UFC 3-450-01 (Vibration and Noise Control) for acoustic design issues including speech privacy, sound isolation or sound masking.
2. Select and apply paint with sheens (gloss levels) appropriate for the application following UFGS Section 09 90 00 Paints and Coatings.
3. Provide ceramic tile on wet walls of kitchens, toilet rooms, locker rooms, etc., in all facility groups.
4. Neutral ground-face integrally colored block with a clear sealer may be used in Groups 2 and 3. Do not paint block.
5. Provide vinyl or rubber base on GWB partitions.
6. Hardwood base may only be used in Group 1 as approved on a case basis.
7. Hardwood chair rails / bumper rails may be used in high-use areas of Groups 1 and 2; aqueous clear finishes are preferred to reduce maintenance. Plastic or vinyl chair rails are permitted in Groups 2 and 3 and in medical applications.
8. Decorative moldings may be used only in Group 1 when approved on a case basis.
9. Corner guards are permitted only in high traffic spaces with wheeled or cart use such as private service areas in Groups 1 and 2; stainless steel corners guards with a brushed finish may be judiciously used in Group 3.
10. Vinyl wallcovering may be used on a limited basis for accents in Group 1 facilities as approved on a case basis.
11. Group 4 may use painted composite wood base.
12. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

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

### E03.1.1. Concrete

Applicable  N/A

Number of base standards 1

Image Tool 250 x 188



Type: **Formed Concrete**

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

Mfr: Custom, TBD

Color: Natural concrete

Finish: Medium texture

Model #: Board-formed or sheet-formed concrete

Other: Vertical or horizontal forming is permitted

UFGS: Section 03 33 00 Cast-In-Place Architectural Concrete  
[http://www.wbdg.org/FFC/DOD/UFGS/UFGS\\_03\\_33\\_00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_03_33_00.pdf)

### E03.1.2. 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: Tan blend

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](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_04_20_00.pdf)

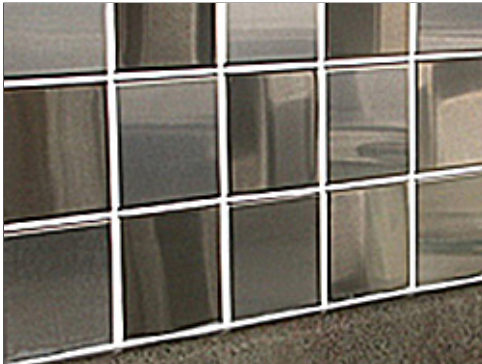


### E03.1.3. Ceramic Tile

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: Daltille

Color: Earth tones

Finish: Gloss, Semi-gloss

Model #: Ceramic wall tile

Other: Located on wet walls in restrooms

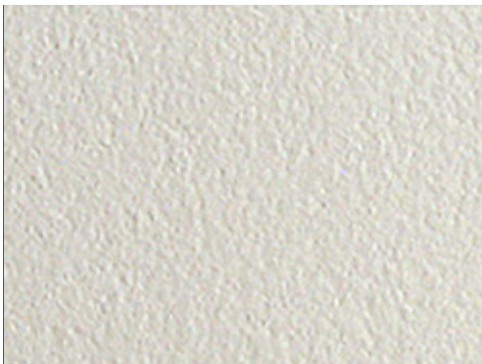
UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling  
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 30 10.pdf>

### 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

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

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### E03.1.7. Rapidly-Renewable Products

Applicable  N/A

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### E03.1.8. Other

Applicable  N/A

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## E04. Ceilings

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

### E04.1. Ceiling Materials

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

Primary: Exposed Framing (Roof / Floor Structure Above)

Secondary: Grid and Acoustical Tile

Tertiary:

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

Primary: Exposed Framing (Roof / Floor Structure Above)

Secondary: Grid and Acoustical Tile

Tertiary: Gypsum board (painted)

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

Primary: Exposed Framing (Roof / Floor Structure Above)

Secondary: Exposed Framing (Roof / Floor Structure Above)

Tertiary: Gypsum board (painted)

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

Primary: Gypsum board (painted)

Secondary: N/A

Tertiary: N/A

1. Accent ceiling materials such as metal, wood, and rapidly renewable may be used in Group 1 as approved on a case basis.
2. Follow UFC 3-450-01 (Vibration and Noise Control) for acoustic design issues including speech privacy, sound isolation or sound masking.
3. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

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

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

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

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 2

Image Tool 250 x 188



Type: **Style 1 All Purpose**

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

Mfr: Armstrong

Color: White

Finish: Factory

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

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

UFGS: Section 09 51 00 Acoustical Ceilings

<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 51 00.pdf>



Type: **Style 2 Kitchen**

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

Mfr: Armstrong

Color: White

Finish: Factory

Model #: Kitchen – 2' x 2' Ceramaguard

Other: Grid 15/16" Prelude (Ceiling and grid: Fire rated when applicable)

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

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

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### E04.1.8. Other

Applicable  N/A

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## 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 shall be as follows.

Primary: Aluminum, clear anodized

Secondary: Hollow metal (painted)

Tertiary: N/A

#### Facility Group 1

door (leaf) materials shall be as follows.

Primary: Hardwood veneer

Secondary: Hollow metal (painted)

Tertiary: N/A

#### Facility Group 2

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

Primary: Aluminum, clear anodized

Secondary: Hollow metal (painted)

Tertiary: N/A

#### Facility Group 2

door (leaf) materials shall be as follows.

Primary: Hardwood veneer

Secondary: Hollow metal (painted)

Tertiary: N/A

#### Facility Group 3

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

Primary: Hollow metal (galvanized, painted)

Secondary: Hollow metal (galvanized, painted)

Tertiary: N/A

#### Facility Group 3

door (leaf) materials shall be as follows.

Primary: Hollow metal (galvanized, painted)

Secondary: Hollow metal (galvanized, painted)

Tertiary: N/A

#### Facility Group 4

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

Primary: Wood

Secondary: N/A

Tertiary: N/A

#### Facility Group 4

door (leaf) materials shall be as follows.

Primary: Wood solid core

Secondary: Composite solid core

Tertiary: N/A

1. Hardwood casings may be provided over metal frames in Group 1 as approved on a case basis.
2. Paneled textured doors are preferred in Group 4.
3. Do not use hollow-core wood doors.
4. Generally match original hardware in renovations.
5. Placement of anything on doors including signs, coat hooks, name plates, and file holders is strictly prohibited except where regulations require items to be located on the door face.
6. Locksets will be compatible with Best interchangeable core system. Typical cores use a six pin key system.
7. Provide hardware appropriate for the Facility Group while considering activity and frequency of use. Coordinate hardware finishes. Typical finish in Groups 1, 2 and 3 is satin stainless steel. Other finishes approved on a case basis.
8. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

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

**E05.1.1. Aluminum**

Applicable    N/A

Number of base standards 1



Type: **Style 1**

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

Mfr: Kawneer

Color: Clear anodized

Finish: Factory

Model #: InFrame Interior Framing, (2x4 nominal framing)

Other: Satin stainless steel hardware

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

Color: Neutral colors

Finish: Paint (Sheen per UFGS)

Model #: Hollow metal, 2" w. frames, 16 gauge (welded corners) grouted solid

Other: Provide in Group 3 and in utility areas of Group 1 and 2. Provide A25 "galvannealed" coating. All interior steel doors shall have a factory applied primer finish. Provide satin stainless steel hardware.

UFGS: Section 08 11 13 Steel Doors and Frames

<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 11 13.pdf>

Section 08 71 00 Door Hardware

<https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf>

Type: **Steel Frames**

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

Mfr: Steelcraft

Color: Neutral colors

Finish: Paint (Sheen per UFGS)

Model #: Hollow metal, frame grouted solid

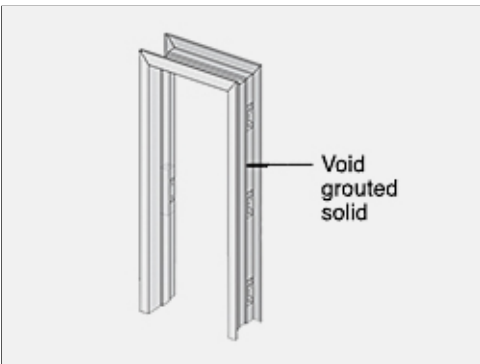
Other: Satin stainless steel hardware

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

Color: Natural hardwood veneer

Finish: Clear Sealer, satin (aqueous)

Model #: 3'x7'x 1 3/4", solid core

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

UGFS: Section 08 14 00 Wood Doors

<http://www.wbdg.org/FFC/DOD/UGFS/UGFS 08 14 00.pdf>

Section 08 71 00 Door Hardware

<https://www.wbdg.org/FFC/DOD/UGFS/UGFS 08 71 00.pdf>

Type: **Style 2, Residential**

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

Mfr: Simpson

Color: Natural hardwood veneer or paint grade

Finish: Clear Sealer or paint, satin (aqueous)

Model #: Full slab or panels

Other: Satin nickel hardware

UGFS: Section 08 14 00 Wood Doors

<http://www.wbdg.org/FFC/DOD/UGFS/UGFS 08 14 00.pdf>

Section 08 71 00 Door Hardware

<https://www.wbdg.org/FFC/DOD/UGFS/UGFS 08 71 00.pdf>

### E05.1.4. Other

Applicable  N/A





## E06. Casework Systems

Comply with Air Force Corporate Standards for Casework Systems:

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

### E06.1. Casework Materials

1. Select casework systems and materials considering durability, maintenance requirements and LCCA.
2. Natural stone and cast stone countertops may only be used in Group 1 with approval on a case basis.
3. Metal cabinets and countertops will be provided in heavy-use operations and in Group 3.
4. Refer to AFCFS for approved materials.
5. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

#### E06.1.1. Plastic Laminate

Applicable  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

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

Color: Medium Earth tones and neutral tones

Finish: Light textured

Model #: Solid Surface

Other: Faces and edge banding

UFGS: Section 12 36 00 Countertops

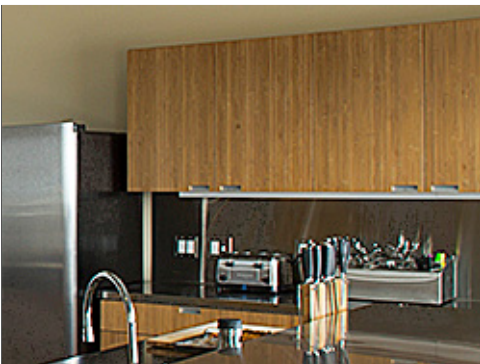
[http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_12_36_00.pdf)

### 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

Color: Natural or amber

Finish: Satin

Model #: Flat grain bamboo plywood

Other: FSC® Certified 100%.

UFGS: Section 12 32 00 Manufactured Wood Casework

[http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 32 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS_12_32_00.pdf)

### 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

Color: Natural stainless steel or neutral 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

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](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

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](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

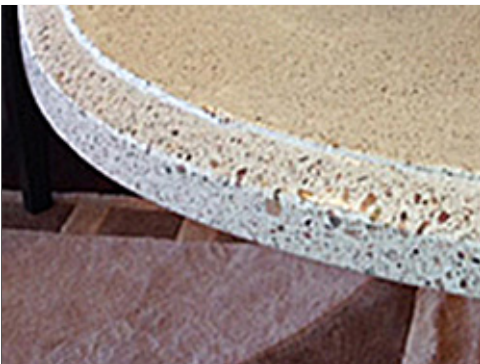
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf>

### 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

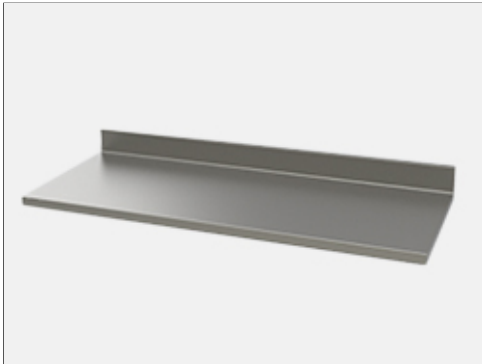
<http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf>

### E06.2.5. Metal

Applicable  N/A

Number of base standards 1

Image Tool 250 x 188



Type: \_\_\_\_\_

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>

## 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 basis.
2. Signs intended for long-term use will be professional quality with metal, plastic or similar solid backing construction. Self-adhesive vinyl signs are prohibited except in unique, limited situation as approved on a case basis.
3. See Appendix for GFAFB Shelter-In-Place and Severe Weather Shelter Sign Standard.
4. Comply with AFCFS.

## **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. Cover plates for outlets, switches and other devices will be brushed stainless steel. Devices with stainless steel covers will be gray.
2. Items such as speakers and notification devices will match ceiling color.
3. Comply with AFCFS.

## F. APPENDIX - Facility Districts

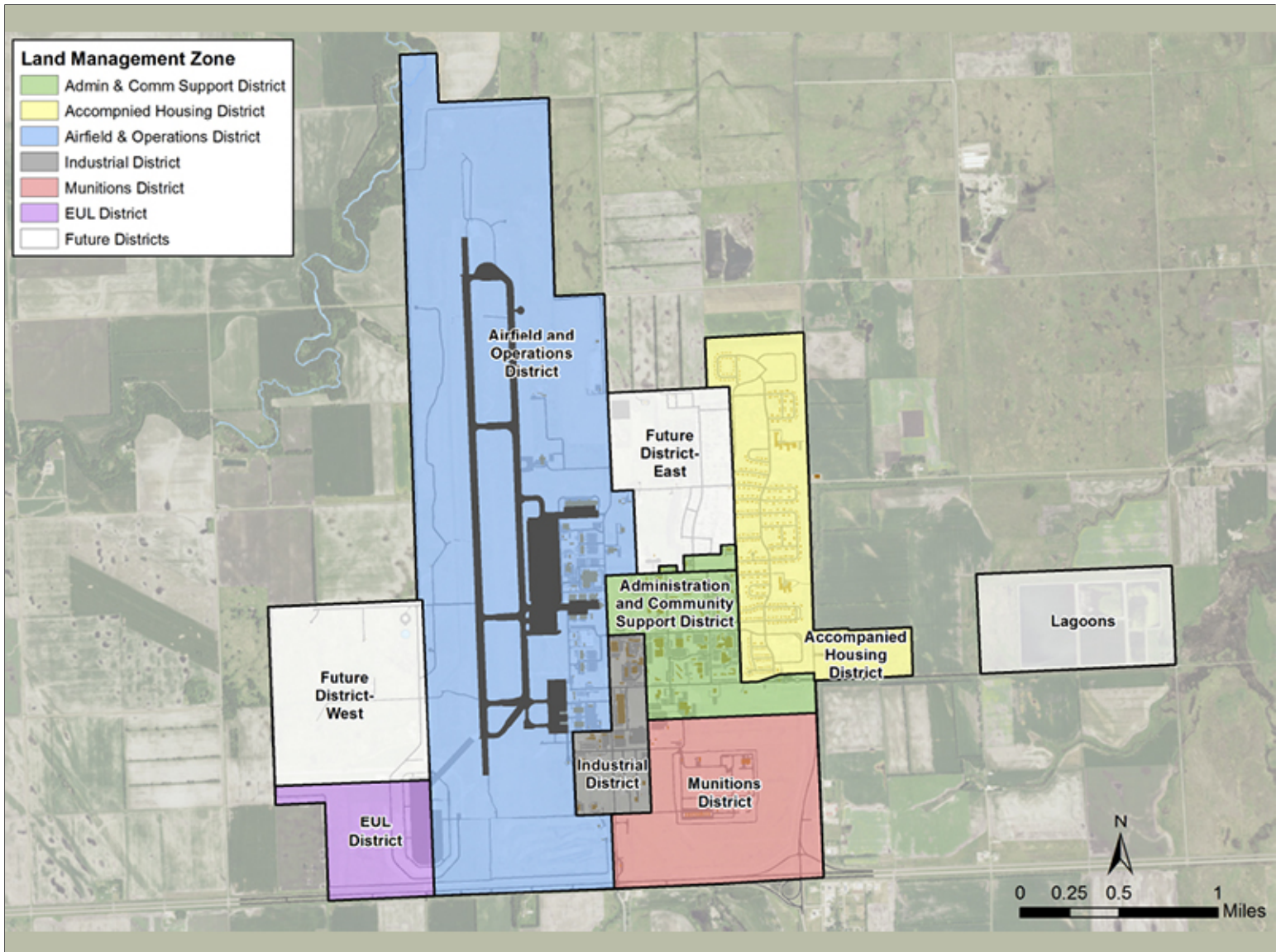
- Applicable
- N/A

Comply with Air Force Corporate Standards for Facility Districts:

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

Facilities Districts Overview Map:

Image Tool 800 x 600



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

Enter No. of Facility Districts 1

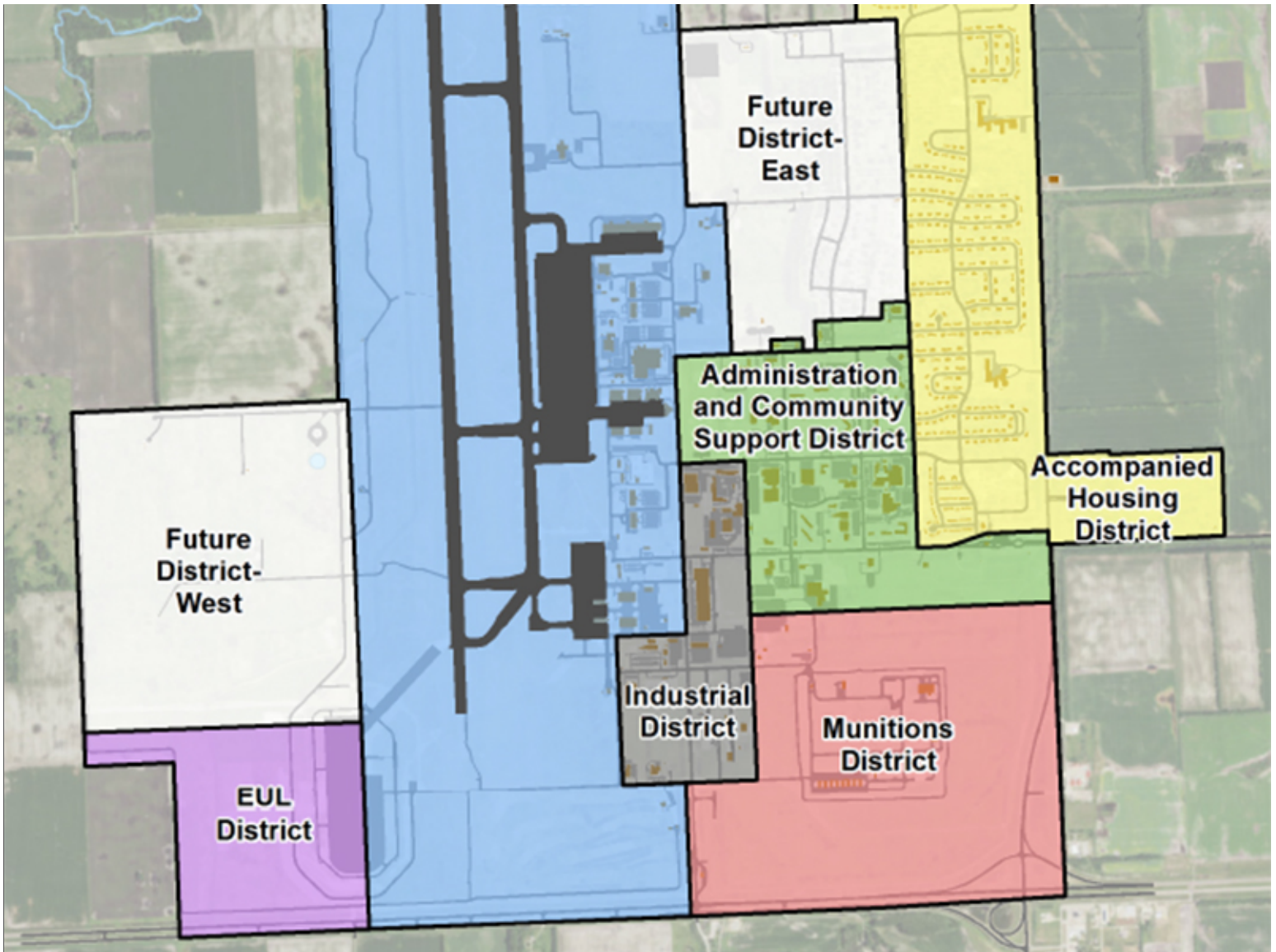
The following Facility Districts list exceptions to the base standards that are unique to each district. Please refer to the Site Development, Facilities Exteriors, and Facilities Interiors sections of this IFS for base standards.



Name of District: **Basewide Standards**

Image Tool 800 x 600

Map of District



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

Image Tool 250 x 188

Group 1     Applicable     N/A

Group 2     Applicable     N/A

Group 3     Applicable     N/A

Group 4     Applicable     N/A

Other       Applicable     N/A

## **FACILITY DISTRICTS**

Grand Forks Air Force Base is divided into districts that align with the planning districts defined in the Installation Development Plan. Each district has designated uses that support the base's operations. Generally match adjacent facilities in new construction to promote architectural compatibility throughout the installation. Please refer to Section D03.2. and contact the Base Civil Engineer for additional information. A brief description of each district follows.

### **1. Administration and Community Support**

Facilities in the Administration and Community Support district should continue to be pedestrian in scale. Application of the installation prevailing architectural theme, contemporary prairie plains theme, should be implemented during major renovations or new construction as appropriate. Facilities in this district are primarily office or service in nature, should generally match adjacent buildings to ensure architectural compatibility, and will follow standards for Facility Groups 1 and 2 as defined in this IFS.

### **2. Accompanied Housing**

The Accompanied Housing district should be pedestrian in scale. This district consists of detached single family and multi-family residential units occupied by enlisted and officer families. While this area is currently under a housing privatization contract, it will follow standards for Facility Group 4 as defined in this IFS.

### **3. Airfield and Operations**

The Airfield and Operations district includes facilities that are industrial in nature and may support flightline operations. Alternative uses include warehouses for various base activities including maintenance, storage, utility functions, industrial services, transportation storage, communications, civil engineering, supply and equipment, fuel storage, vehicle maintenance/motor pool complex, open storage, emergency/disaster response facilities, ordnance and weapons storage areas, and other industrial uses. Facilities in this district are industrial in nature, should generally match adjacent buildings to ensure architectural compatibility and follow standards for Facility Group 2 or 3 as defined in this IFS.

### **4. Industrial**

The Industrial district includes facilities that are industrial in nature. Generally match adjacent buildings to ensure architectural compatibility and follow standards for Facility Group 2 or 3 as defined in this IFS.

### **5. Munitions**

The Munitions district includes facilities that are industrial in nature. Generally match adjacent buildings to ensure architectural compatibility and follow standards for Facility Group 2 or 3 as defined in this IFS.

### **6. EUL (Grand Sky)**

The EUL (Grand Sky) district is anticipated to accommodate office and commercial uses. Ensure architectural compatibility with Grand Forks Air Force Base and follow standards for Facility Group 1 and 2 as defined in this IFS.

### **7. Future - West Airfield**

The Future - West Airfield district is anticipated to accommodate office, commercial and light industrial uses. Ensure architectural compatibility with Grand Forks Air Force Base and follow standards for Facility Group 1, 2 and 3 as defined in this IFS.

### **8. Future - East**

The Future - East district is anticipated to accommodate office and commercial uses. Ensure architectural compatibility with Grand Forks Air Force Base and follow standards for Facility Group 1, 2 and 3 as defined in this IFS.

### **Open Space and Preserves**

Open space includes undeveloped land both inside and outside of the immediate cantonment area. It both separates and defines the various sections of the base and creates a natural setting for the cantonment area. Areas classified as open space may be undeveloped to act as a buffer space between incompatible uses or for safety or security clearances or there may be other constraints that are not readily visible. All development in this district requires prior coordination and approval from the Base Civil Engineer.

## G. APPENDIX - References

Comply with Air Force Corporate Standards:

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

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

1. There are no supplementary documents at this time.

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