Minot AFB IFS
24 February 2020

(PRE-FINAL)
MINOT AIR FORCE BASE
INSTALLATION FACILITIES STANDARDS (IFS)


Installation Elements


Site Development


Facilities Exteriors


Facilities Interiors

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AIR FORCE INSTALLATION FACILITIES STANDARDS

2020

Minot 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. The IFS is a component plan of the Installation Development Plan (IDP) per Air Force Instruction (AFI) 32-7062 (replacing the Architectural Compatibility Plan). All military construction projects and Non-Appropriated Funds (NAF) facilities are required to comply with the IDP and its IFS component plan by AFI 32-1023. The Base Civil Engineer (BCE) maintains and implements the IDP and its component plans, to include the IFS.

4. Please refer to the AFCFS website as a portal to reference materials and requirements documents for design and construction projects (via links). Specific references to current DoD memoranda and Air Force criteria are updated periodically to provide the most current guidance and requirements. Programming, design and contract documents should list "current edition" for all reference and requirements documents. The documents in force at the date of execution of the design and/or construction contract shall be the governing version.

5. *Advanced Modeling Requirements:*
   For all Air Force projects requiring advanced modeling, to include 3D visualization, Building Information Modeling (BIM), facility data, quantity take-off, geospatial, etc., follow the Army standards. Refer to USACE Minimum Model Matrix (M3) and Project Execution Plan (PxP) which outline required model uses. Refer to CAD BIM Technology Center (Contract Requirements) *for more information on M3 and PxP.*

6. Joint Bases shall implement IFS under their Joint-Base designation with volume numbers for individual installations following the IFS Development Tool template. For example, for Joint Base Langley-Eustis, provide: Vol. 1 Langley AFB and Vol. 2 Fort Eustis.

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

8. Installations outside the United States: Per UFC 1-200-01 DOD BUILDING CODE, 8 Oct 2019, "All construction outside of the United States is also governed by Status of Forces Agreements (SOFA), Host Nation Funded Construction Agreements (HNFA), and in some instances, Bilateral Infrastructure Agreements (BIA). Therefore, the acquisition team must ensure compliance with the most stringent of the UFC, the SOFA, the HNFA, and the BIA, as applicable." Refer to Appendix G for applicable agreements. "Use UFC 1-202-01 for design of host nation facilities that support military operations." 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 Image Tool 250 x 188



B-52 at Sunrise



B-52 and Weapons in Front of Base Operations



Launch Facility



Single Airmen Housing Commons

A01. FACILITY HIERARCHY

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

A02. FACILITY QUALITY

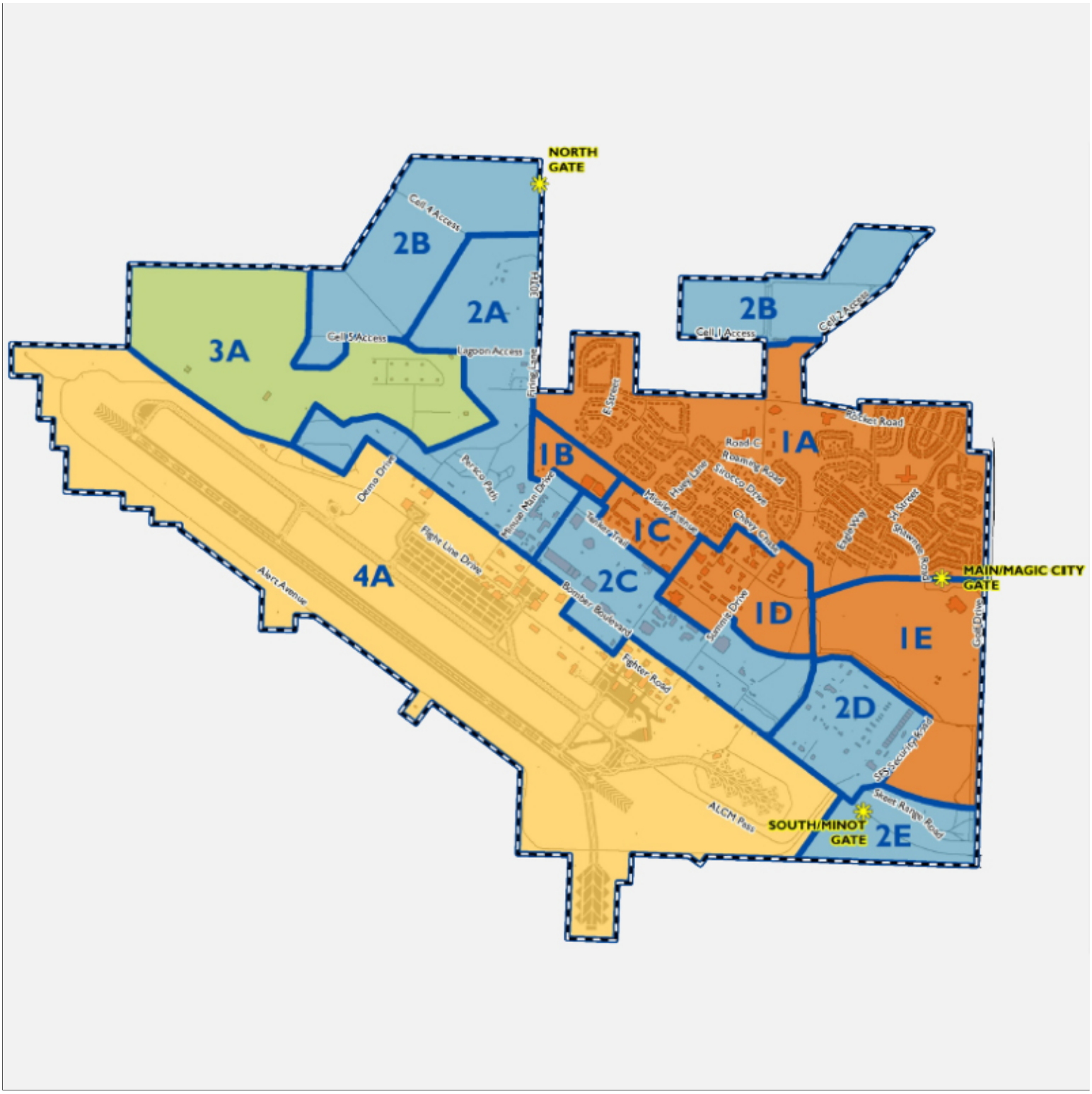
Comply with AF Corporate Standards for Facility Quality (and subsections):
http://afcfs.wbdg.org/facility-quality/index.html

A03. FACILITY DISTRICTS

Comply with AF Corporate Standards for Facility Districts (and subsections):
http://afcfs.wbdg.org/facility-districts/index.html

Minot Air Force Base IFS Overview Map:

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

B. INSTALLATION ELEMENTS

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

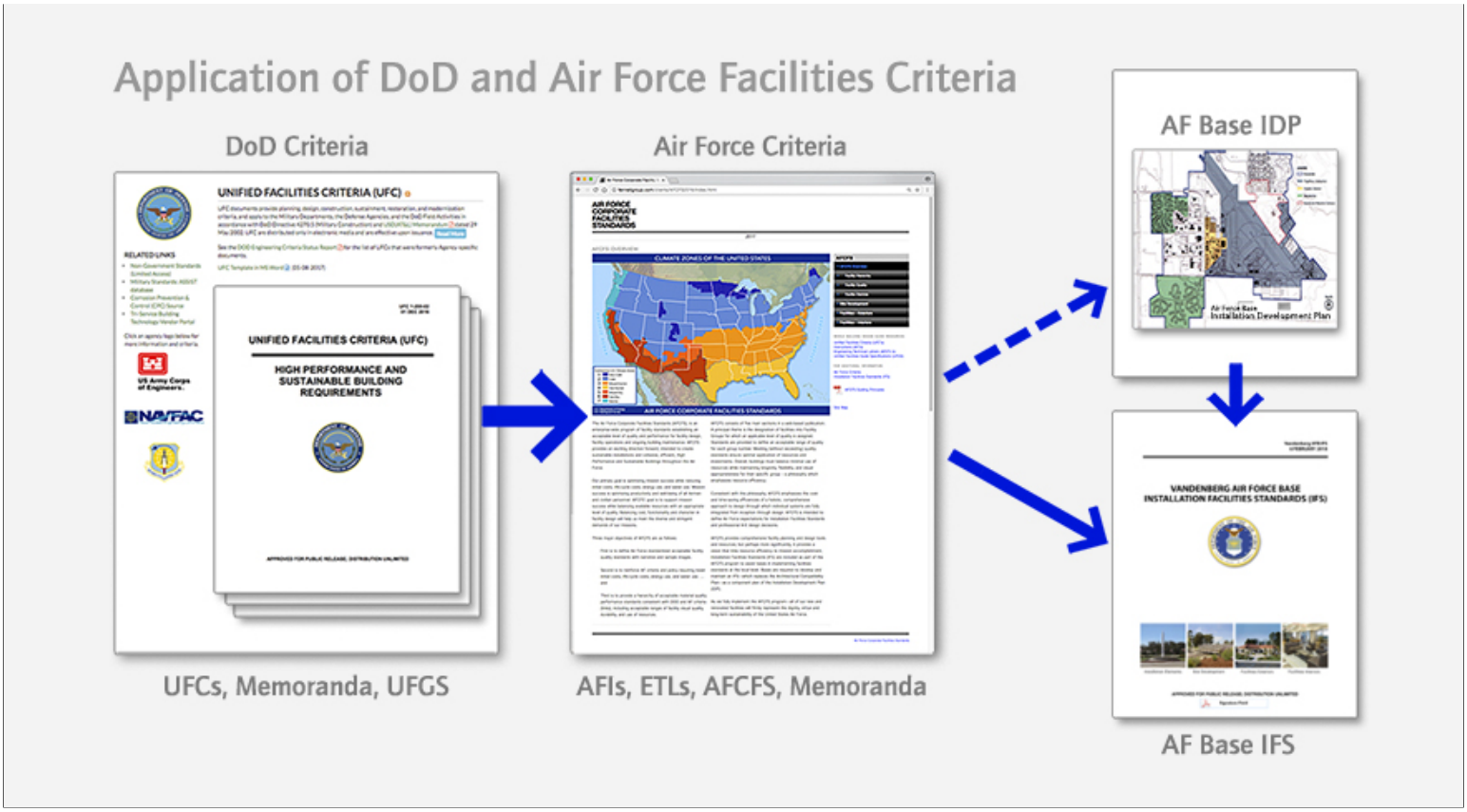
B01. COMPREHENSIVE PLANNING

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

B01.1. Installation Development Plan (IDP)

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

○ Applicable ◉ N/A Small graphics do not apply



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

1. The Base Civil Engineer is responsible for developing, maintaining and implementing the installation's Comprehensive Planning documents and to ensure that the Installation Development Plan (IDP) is prepared, maintained, and implemented following AFI 32-1015 Integrated Installation Planning.

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 a Component Plan of the base's Installation Development Plan (IDP).

B01.1.2. Brief History of Base

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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



Magic City (Main) Gate Circa 1968


PRIDE Building


B-52s Taxi for Take-off


Base Housing

The initial groundbreaking ceremony at Minot Air Force Base was held over 60 years ago, on July 12, 1955. The decision to create a new Air Force Base north of Minot had been made the previous year. Minot citizens and area businessmen made nearly $50,000 in donations to buy the first parcels of land for the Air Base (adjusted for inflation, $50,000 in 1954 is equivalent to $444,000 in today's dollars).

The actual construction of the Air Base didn't get underway until May of 1956 and it was officially opened in January of 1957 as an Air Defense Command base. In 1958 the first Strategic Air Command unit was assigned to Minot Air Force Base and in 1959 the first refueling tanker aircraft arrived. About the same time, a Lockheed U-2 reconnaissance aircraft, capable of flying at altitudes of over 70,000 feet, was also stationed at MAFB.

In January 1960, the first Convair F-106 Delta Dart interceptor aircraft was brought to Minot. This aircraft was designed to intercept and destroy Soviet bombers coming in from the north. This F-106 could be rolling down the runway in less than three minutes after initial alert. It could travel at Mach 2.31 (1,656 miles per hour) at an altitude of eight miles above the surface of the earth and carried nuclear rockets and guided missiles. Theoretically, the F-106 could be flown from takeoff, directed to the target, have its armaments deployed, return and land, all by remote control from the SAGE ground control center.

The Semi-Automatic Ground Environment (SAGE) building was constructed at Minot Air Force Base in 1958. It was an enormous, heavily reinforced concrete bunker. For redundancy, two 275-ton IBM computers were to be installed in the basement. The AN/FSQ-7 computers were the largest computers ever built. Development of the SAGE system exceeded the cost of the Manhattan Project and was the predecessor to the FAA's air traffic control systems. The SAGE would collect and process data from numerous radar sites. Real time tracking data on incoming targets could be sent directly to the airborne F-106 Delta Darts with a programmed vector for intercepting the target. The SAGE program at MAFB was deactivated in 1963 and the building was converted to military offices. It is now known as the Professional Results In Daily Endeavors Building (PRIDE).

In 1961, the Minot Air Force Base region was chosen as the site for a new intercontinental ballistic missile complex. Under the direction of the US Army Corps of Engineers, construction began in January of 1962. The construction contractor, Peter Kiewit & Sons, brought in 6,000 men, 1,100 vehicles and 115 cranes to complete construction on schedule. The last of 150 Minuteman I missiles was placed in its silo three years after construction began, in February of 1965.

Changes and upgrades in military systems and hardware have regularly occurred at Minot Air Force Base. About the same time as the decision was made to build the missile complex, in 1961 the first B-52 Stratofortress nuclear bomber aircraft arrived at MAFB. In the 1970s, the 150 ICBMs were upgraded to Minuteman III nuclear missiles. During the mid-1980s, the F-106 Delta Darts were replaced with the F-15 Eagles, but only for a few years. In 1988 that Fighter
Interceptor Squadron was deactivated. In 1989 the Air Launched Cruise Missile was added to MAFB's armaments and in 1993 the Advanced Cruise Missiles were added to the B-52's arsenal.

On September 3, 2009, the 69th Bomb Squadron (69 BS) was reactivated at MAFB, becoming the fourth operational B-52H Stratofortress squadron in the USAF and joining the 23rd Bomb Squadron (23 BS) as the second squadron at MAFB. The new squadron was established to provide the wing with two active-duty, combat-coded squadrons, which gave the USAF bench depth to rotate the squadrons across the mission sets as recommended in the Defense Science Board Report. MAFB is one of two remaining bases hosting the B-52H Stratofortress bombers. The 5 BW operates 27 bombers and claims extensive combat honors and a long history as “Guardians of the Upper Realm.”

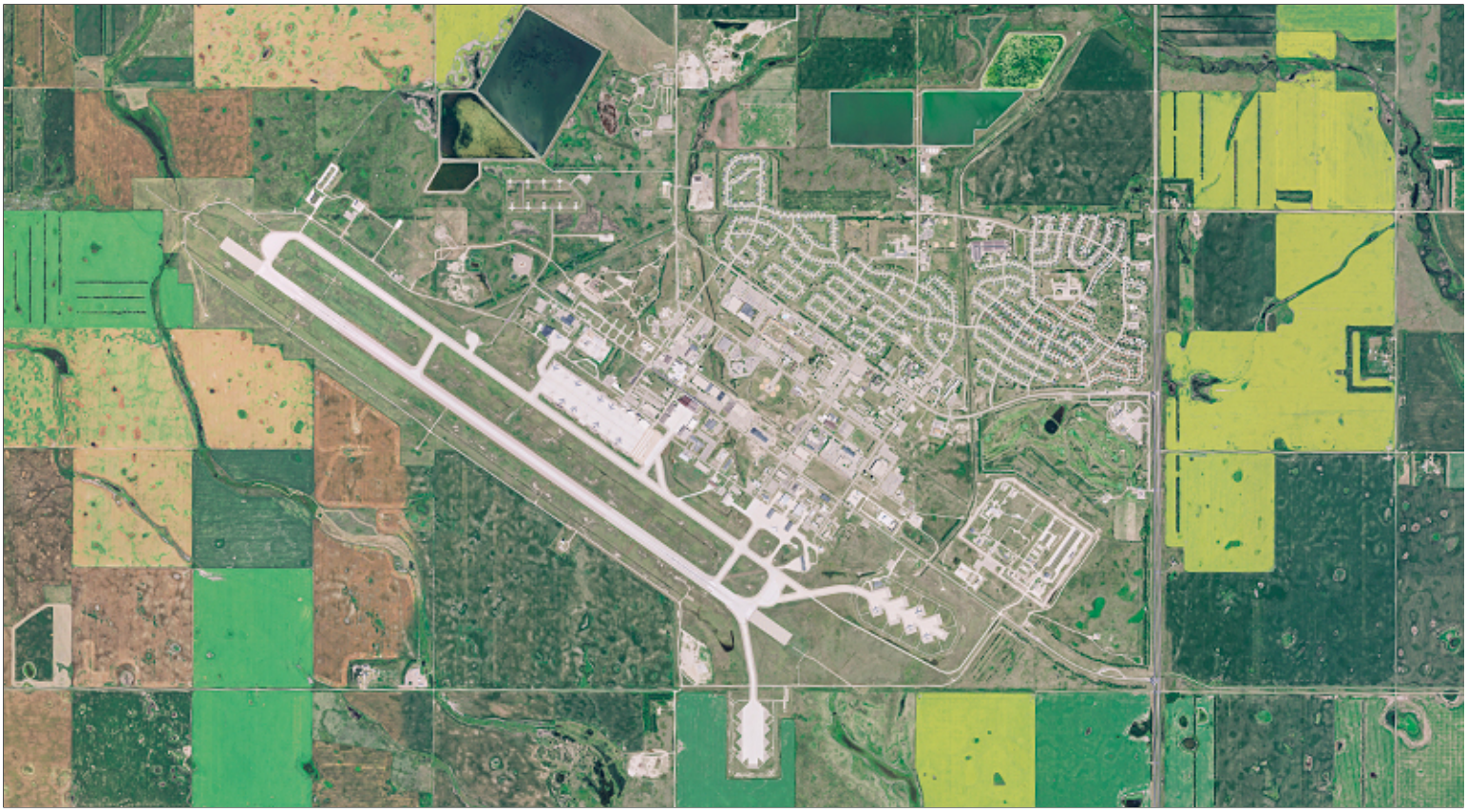
MAFB occupies 5,342 acres (approximately 8 square miles) of federally owned land. The installation is located along U.S. Highway 83, which parallels the eastern boundary of the Base. MAFB has the largest approach control-designated airspace in the continental United States consisting of 4,800 square miles from the ground surface to an altitude of 23,000 feet. The availability of open airspace presents unique opportunities to conduct aerial training that are not available at many other installations.

The installation is composed of administrative offices, maintenance facilities, hangars and other flightline facilities, an active airfield with more than one million square yards of pavement, as well as specialized structures built to support the functions and operations of the 5 BW and 91 MW. In total, there are 339 buildings on the installation, 1,192 dormitory rooms and 1,720 privatized housing units. Including the MAFs and LFs, MAFB operates and maintains 8,134,055 square feet of building space with a total replacement cost of $3.15 billion. Many of these facilities were constructed during the Cold War era and are subject to increased operations and maintenance (O&M) costs due to their aging mechanical, electrical, and plumbing systems.

B01.1.3. Future Development

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

○ Applicable ◉ N/A Small graphics do not apply



Aerial View of Minot AFB

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

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

B02.1. Hierarchy of Streets

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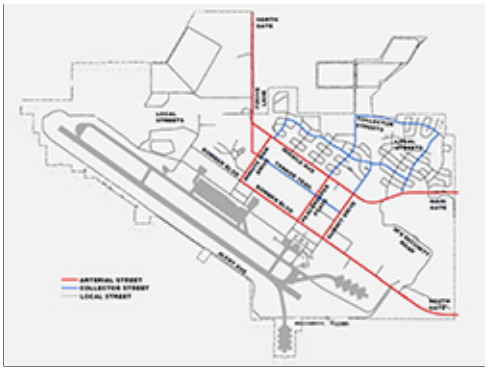


Diagram of Street Hierarchy



Arterial with Integrated Crosswalk



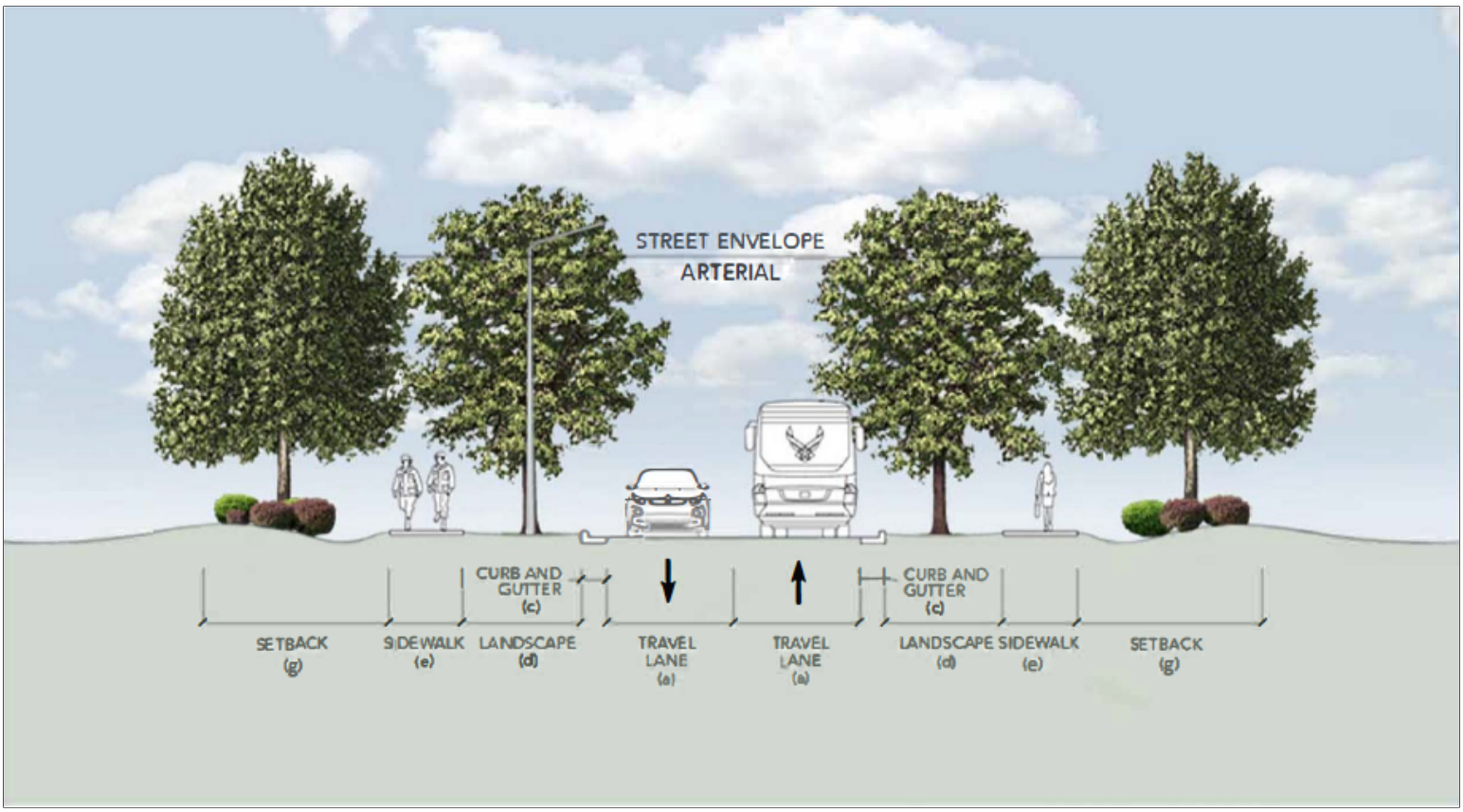
Missile Avenue

1. Develop and evolve a hierarchical transportation network of arterial, collector and local streets following UFC 3-201-01 and its industry references.
2. Provide consistent functionality throughout the installation and a level of visual quality relating to the adjacent Facility Group number.
3. Routes along facilities in Group 1 may have materials, finishes and features with a higher visual quality than Groups 2, 3 and 4. Reduce maintenance requirements by installing highly durable materials and finishes in routes along Group 3 industrial facilities. Consider snow removal operations and snow storage areas in all designs.
4. Special routes may have a visual quality comparable to those along facilities in Group 1.
5. Create and maintain arterials with two lanes of traffic in each direction with landscaped or paved medians as applicable to the local climate and adjacent facility group designation / land use.
6. Minimize stops and turns along arterials. Eliminate on-street parking along arterials and collector streets.
7. Connect arterials to local streets with appropriately scaled collector streets.
8. Provide appropriate landscape setbacks and pedestrian buffers along all streets.
9. Minimize and consolidate curb cuts along streets.
10. Ensure access for emergency and service vehicles.
11. Define bicycle traffic routes in the Installation Development Plan or its applicable component plans.
12. Define appropriate force protection features, site furnishings, signs, lighting, utilities, and paving in the IFS.
13. Remote service roads may be paved with a rock/clay mix that is suitable for the service vehicles. Appropriately size roads to accommodate service vehicle traffic.

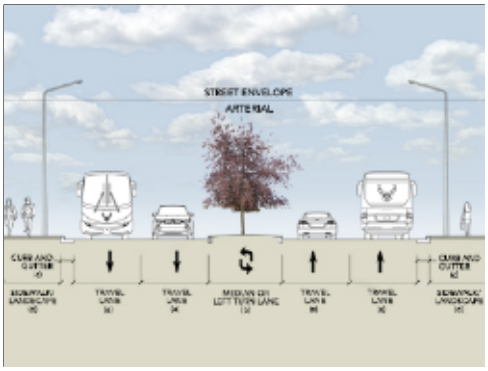
B02.1.1. Arterial Streets

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Arterial Street - Dimensions Follow Below



Arterial with Paved Median



Paved Median



Missile Avenue (Arterial) Looking East.

1. Minimum arterial street dimensions shall be as follows:
   a. Travel Lane (a). 13'
   b. Median (if used) (b). 12'
   c. Curb and Gutter (c). 2'
   d. Landscape (d). 6'
   e. Sidewalk (e). 6'
   f. Parking (g). 12' setback or per ATFP
   g. Buildings (g). 35' setback or per ATFP
   h. Obstructions (g). 6' setback or per ATFP

2. Stops and turns should be minimized and on-street parking shall not be allowed at any point along arterial streets.

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

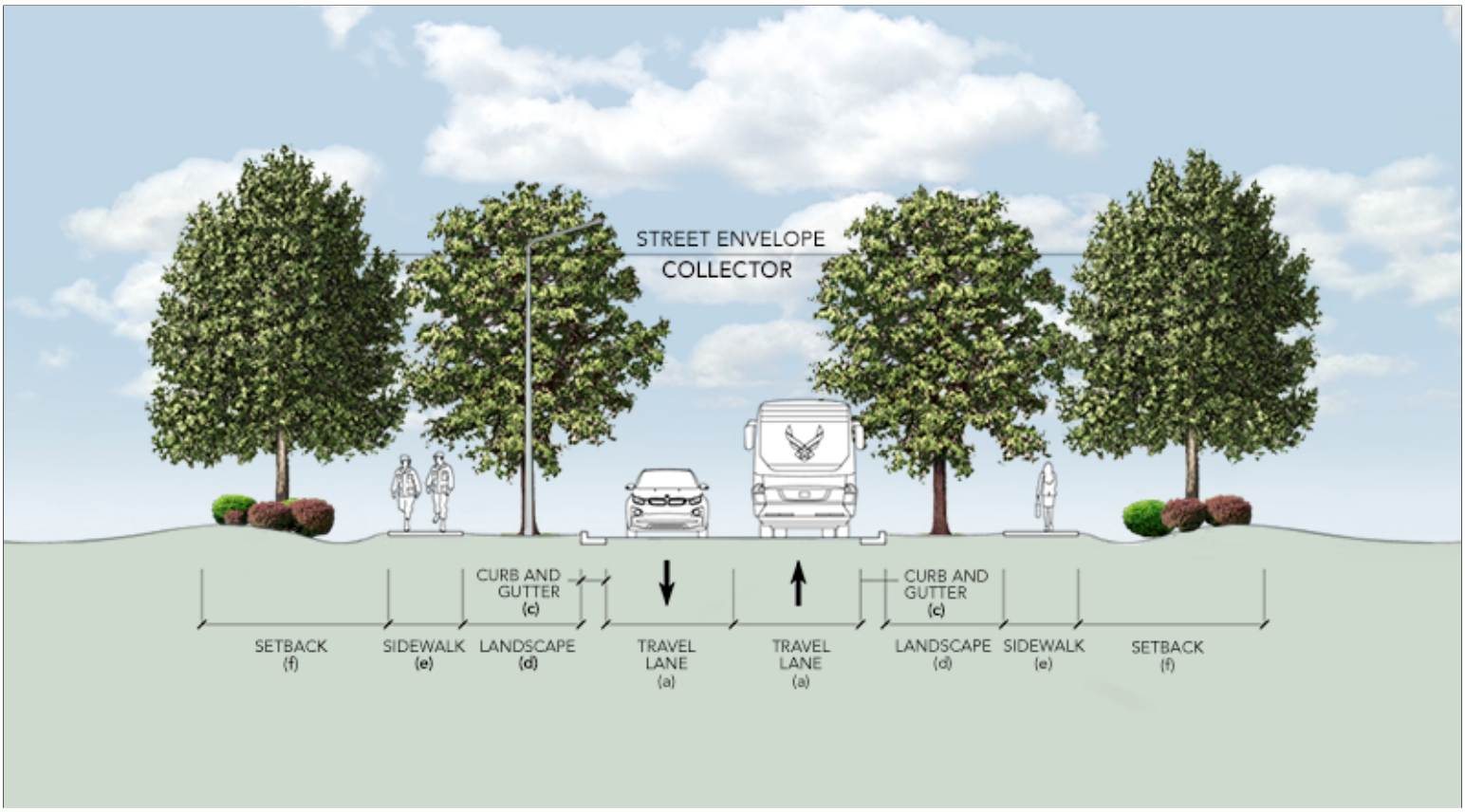
4. Limit curb cuts on arterial streets to entries into major facilities, building groups and major parking areas.

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

B02.1.2. Collector Streets

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



Collector Street - Dimensions Follow Below



Landscape Screening Residential Area



Collector to Collector Intersection



Collector to Arterial Intersection

1. Minimum collector street dimensions shall be as follows:
   a. Travel Lane (a). 15'
   b. Curb and Gutter (c). 2'
   c. Landscape (d). 6' (where space allows)
   d. Sidewalk (e). 6'
   e. Parking (f). 12' setback or per ATFP
   f. Buildings (f). 35' setback or per ATFP
   g. Obstructions (f). 3' setback or per ATFP

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

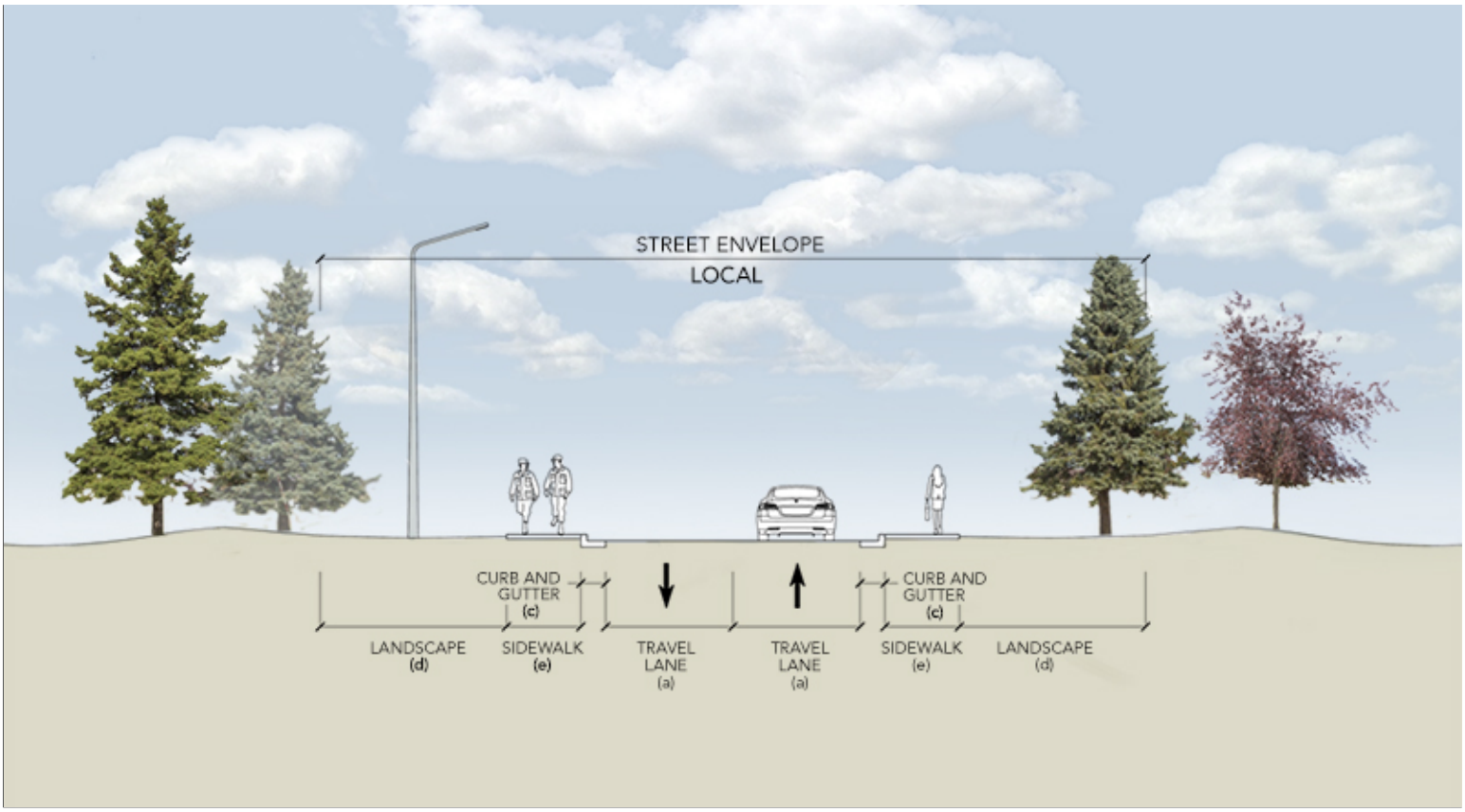
3. Provide sidewalks on at least one side of collector streets. Buffers are preferred but not required on collector streets.

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

B02.1.3. Local Streets

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

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



Local Street - Dimensions Follow Below



Local Street in group 4 Housing


Local Street with Landscape and Setback


Setback from Local Intersection in Group 4

1. Minimum local street dimensions shall be as follows:
   a. Travel Lane (a). 12'
   b. Curb and Gutter (c). 1.5'
   c. Sidewalk (e). 6'
   d. Landscape (d). 15' setback or per ATFP
   e. Buildings (d). 35' setback or per ATFP
   f. Obstructions (d). 3' setback or per ATFP

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

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

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

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

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

B02.1.4. Special Routes

○ Applicable ◉ N/A Large graphics do not apply

◉ Applicable ○ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 1 Image Tool 250 x 188


Missile Avenue at Main Gate

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

B02.2. Hierarchy of Intersections

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

○ Applicable ◉ N/A Small graphics do not apply



Intersection of Missile and Summit with 5 BW HQ in Background

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.

4. When required, ensure that any active system utilizes most robust sensor system available to reduce maintenance costs. When possible, utilize renewable energy generation, such as solar panels, to power active systems.

B02.2.1. Arterials

◯ Applicable ◉ N/A Large graphics do not apply

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


Arterial Signalized Intersection


Arterial-Arterial Intersection


Collector/Arterial Non-Signalized 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 Select number of graphics / images (small: 250 px x 188 px) to insert 3 Image Tool 250 x 188


Arterial-Collector Intersection


Sight Lines for Tanker Trl. and Peacekeeper Pl.


Missile and Eagle Way Arterial-Collector

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

B02.2.3. Collectors

○ Applicable ◉ N/A Large graphics do not apply

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



Collector-Non-Signalized Intersection


Collector-Local Intersection

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

B02.2.4. Special Intersections

○ Applicable ◉ N/A Large graphics do not apply

◉ Applicable ○ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 1 Image Tool 250 x 188


Intersection at Missile and Shawnee

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



Main Arterial with Open Space Buffer and Screening Adjacent to Housing and MDG Clinic



Coordinated Building Identification Sign



Integrated Landscaping



Landscape Screening

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 4 Image Tool 250 x 188



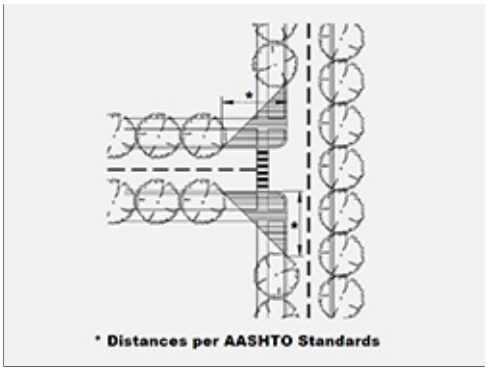
Arterial-Arterial



Arterial-Collector



Collector-Collector



AASHTO Sight Triangle

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



Incorporated Street Elements



Concrete Median



Base Standard Crosswalk Striping

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. Paint concrete curbing to delineate fire lanes or zones for fire trucks and emergency responders only.

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

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

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

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

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

B02.3.1. Paving

◯ Applicable ◉ N/A Large graphics do not apply

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



Coordinated Street Markings



Base Standard Bituminous Pavement



Integral Curb and Gutter

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

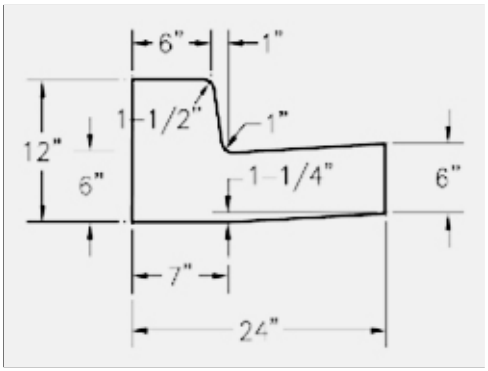
2. Materials shall be specified in accordance with UFC 3-250-01 and must conform to requirements set forth in the Unified Facility Guide Specifications (UFGS) for concrete and bituminous pavement.

3. Avoid trenching in paved areas. Utilize directional boring or other approved trenchless methods for utilities crossing paved areas.

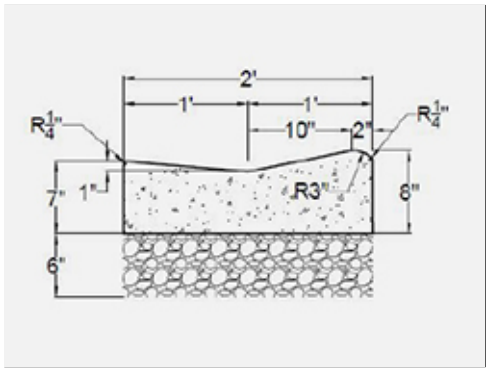
B02.3.2. Curb and Gutter

◯ 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



Integral Curb and Gutter



Mountable Curb



Integral Curb with Attached Sidewalk

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

2. All streets should have integral concrete curbs and gutters. Painted curbs are allowed to delineate fire lanes or zones for firetrucks and emergency responders only.

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



Electrical Cabinet



Coordinated Utility Cabinets



Fire Hydrant

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. Install underground service utilities in all areas within 500 feet of Facility Groups 2, 3 and 4. Replace overhead service lines with underground equivalent during major renovations or upgrades to the electrical system.

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



Typical Hazard Signs



Typical Traffic Signs



Street Sign

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

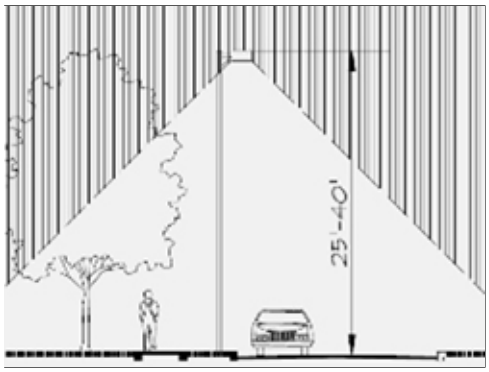
B02.3.5. Street Lighting

○ Applicable ◉ N/A Large graphics do not apply

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


Incorporated Street Lights and Traffic Signal


Standard Street Lighting



Standard Street Lighting

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

B02.3.6. Other

○ Applicable ◉ N/A Large graphics do not apply

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


Coordinated Bus Shelters


Integrated ATFP measures


Base Standard Crosswalk Striping

1. Refer to sections C07.1 and C07.2.6 for information on bus shelters.
2. Refer to sections C07.1 and C07.2.5 for information on bollards.
3. Refer to section B02.3 bullet number 6 information on crosswalk striping.

B03. OPEN SPACE / PUBLIC SPACE

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

Comply with AF Corporate Standards for Open Space / Public Space:
http://afcfs.wbdg.org/installation-elements/open-space-public-space/index.html

B03.1. Plazas, Monuments and Static Displays

○ Applicable ◉ N/A Large graphics do not apply

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



Missile Training Ops Plaza



Static Display Historic Jet

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 all Plazas, Monuments, and Displays so that they are compliant with this IFS.

B03.1.1. Paved Plazas

○ Applicable ◉ N/A Large graphics do not apply

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



Group 1 Paved Plaza



Group 2 Entrance Plaza



Group 2 Access

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

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

B03.1.2. Sculptures, Markers and Statuary

○ Applicable ◉ N/A Large graphics do not apply

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



Marker at Scaled B-52 at 5th BW Headquarters



Plaque at 5th BW Headquarters



Monument at Static Jet Display

1. Relate new sculpture, markers and statuary to the base's architectural design theme. Generally limit these elements to frequently used locations adjacent to Facility Group 1 and highly traveled community pedestrian spaces.

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

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

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

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

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

B03.1.3. Static Display of Aircraft

○ Applicable ◉ N/A 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



Entrance Signage and Static Display



Minuteman II Static Display at Base Entrance



Historic Aircraft Static Display

1. Follow IFS base-wide standards for all elements of the display area with specific attention to traffic sight lines, pedestrian circulation, site furnishings, signs, and lighting. Address requirements for the Facility District as well.

2. Generally locate concrete base/foundation structures for static displays below grade.

3. At static displays where pedestrian paths are provided, a minimum of one trash receptacle and one bench shall be provided. Receptacle and bench design must conform to IFS requirements.

B03.2. Grounds and Perimeters

◉ Applicable ○ 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



Dorm Commons used as Social and Recreational Center



Open Space Buffer between Differing Uses



Tree Buffer Between Arterial and Residential



Drainage Swale

1. Provide formal spaces for parade and review functions, recreational areas and parks following the base's Installation Development Plan (IDP) and Installation Facilities Standards (IFS). Refer to the Site Furnishings topic for additional information.

2. Maintain preservation areas following the IDP and IFS.

3. Comply with UFC 4-010-01 DoD Minimum Antiterrorism Standards for Buildings and UFC 4-022-03 Security Fences and Gates for all elements associated with the base's gates and perimeter fence.

4. Identify and describe base-wide utility corridors in the IDP.

5. Base-wide utility infrastructure shall be inconspicuous. Bury utility service lines below grade when adjacent to Facility Group 1 and when economically feasible for Facility Groups 2, 3 and 4. When service lines are located above grade, create an ordered, coordinated appearance.

6. Follow the requirements of this IFS regarding all utility structures and service lines located above grade that visually impact the installation.

7. Where screening of utility equipment and structures is provided, allow adequate and proper clearance for safety and maintenance.

8. Reduce visual clutter and visual impact of the following items through a combination of careful placement, screen walls, landscaping and painting:

- Electrical switch-stations
- Sewage lift stations
- Water well pumps, storage tanks and/or related structures
- Gas piping, meters and similar incidental items
- Above ground fuel storage tanks
- Any ground-mounted freestanding utility item exposed to view

9. Larger structures such as electrical switch-stations, sewage lift stations, fuel storage tanks and mechanical/electrical equipment shall be screened from view, using materials, forms, and colors in the screen walls which match those respective design elements present at adjacent buildings.

10. Maintain currently buried utility service lines as a visual asset.

11. 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

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

B03.2.1. Parade Grounds

◉ Applicable ○ N/A 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



Parade Grounds Adjacent to 5 BW Headquarters

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

2. Provide maintenance with mowing and seeding as necessary to control bird and fire hazard, and prevent erosion of local topsoil.

B03.2.2. Parks

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

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



Bud Ebert Park



Park Pavillion



Park Equipment



Picnic Area

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

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

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

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

B03.2.3. Preserves

○ Applicable ◉ 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 for Storm Drainage


Preserved Open Space for Residential Buffer


Preserved Open Space at Utilities

1. Preserve areas adjacent to runways, taxiways, aprons, golf course roughs, storage areas, antenna facilities, and ammunition storage areas, as open space.
2. Provide maintenance with mowing and seeding as necessary to control bird and fire hazard, and prevent erosion of local topsoil
3. Areas with mature vegetation should be preserved.
4. Development should not be located in natural drainage ways or where adverse environmental impacts will result from development.

B03.2.4. Perimeter Fence

○ Applicable ◉ N/A Large graphics do not apply

◉ Applicable ○ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 5 Image Tool 250 x 188


Typical Perimeter Fence


Group 1 Fencing at Magic City Entry


Perimeter Fence with Privacy Fence Beyond



Fencing for Controlled Entry



Entrance Gate

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

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

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

4. Maintain a positive visual quality along the traffic corridor on both sides of the main gates. Specifically address pedestrian access, circulation and common areas.

C. SITE DEVELOPMENT

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

C01. SITE DESIGN

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

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

C01.1. Site Design Considerations

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

○ Applicable ◉ N/A Small graphics do not apply



New Building Reinforcing Relation to Existing Building and Street Network

1. Collect documentation to validate approvals and completion of the NEPA process.
2. Ensure site design compliance with the Installation Development Plan (IDP) and its component plans and Installation Facilities Standards (IFS).
3. Promote integrated design with on-site solutions such as engineered small-scale hydrologic controls verses base-wide infrastructure; consider open space, natural features, bioswales, building roofs, streets, paved surfaces, and snow storage areas.
4. Integrate snow storage areas with adjacent streets and parking areas; coordinate snow storage with the base stormwater plan.

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

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

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

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

9. Conform to existing topography to the greatest extent possible and use slopes to increase site and building efficiencies. Design sites to eliminate irrigation requirements and minimize damage from storm water runoff.

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

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

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

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

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

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

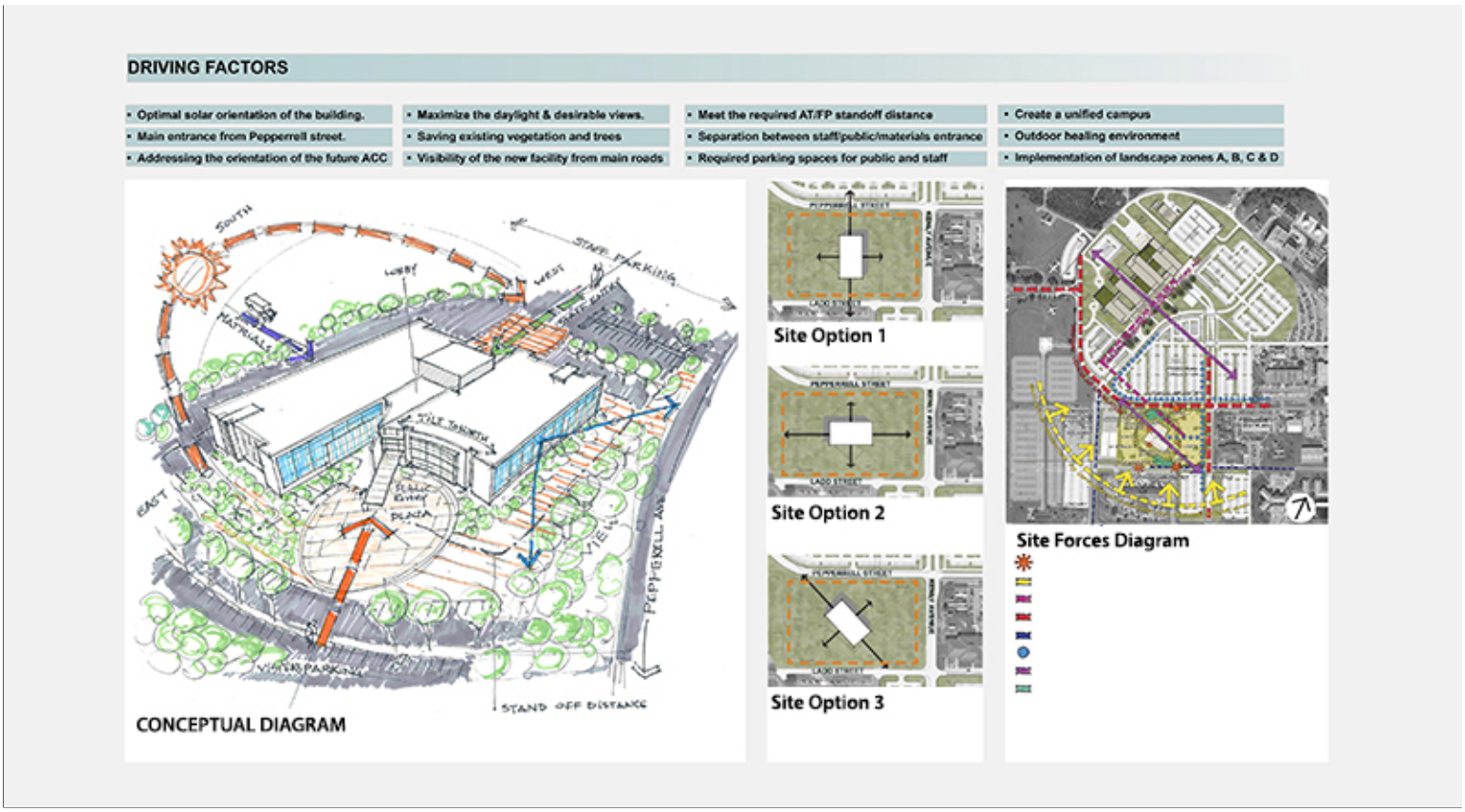
16. Ensure locations of Designated Tobacco Areas are of sufficient distance from entrances to meet North Dakota law, and placed and oriented for appropriate sheltering for effective use.

17. Consider prevailing wind direction to ensure the design layout avoids "wind tunnel" effects.

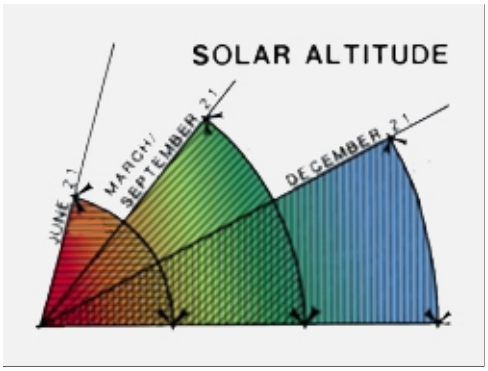
C01.2. Building Orientation

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

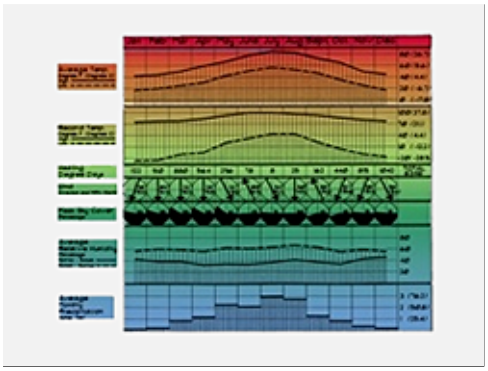
◉ Applicable ○ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 6 Image Tool 250 x 188



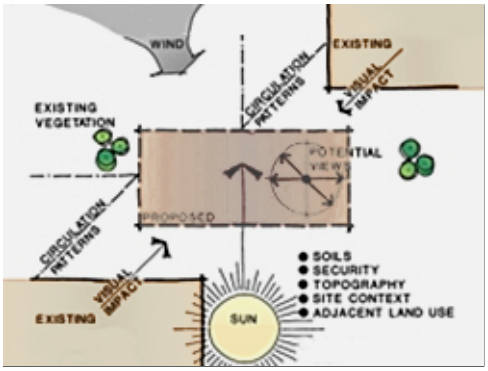
Conceptual Site Analysis and Site Design Diagram



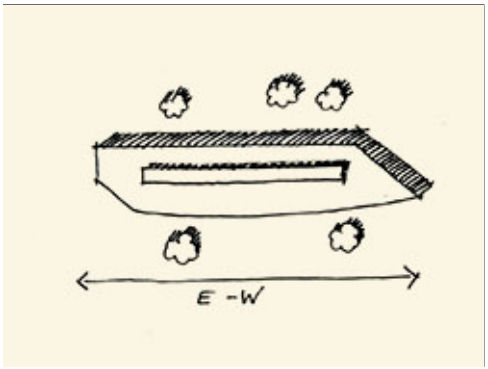
Local Solar Data



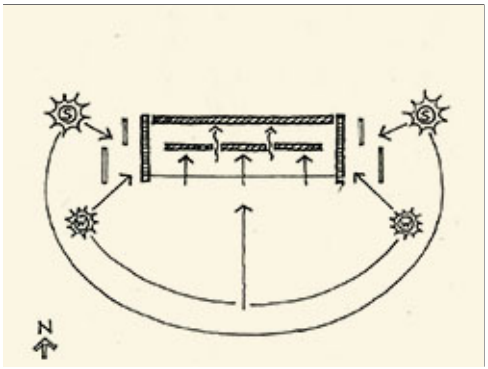
Local Climate Data



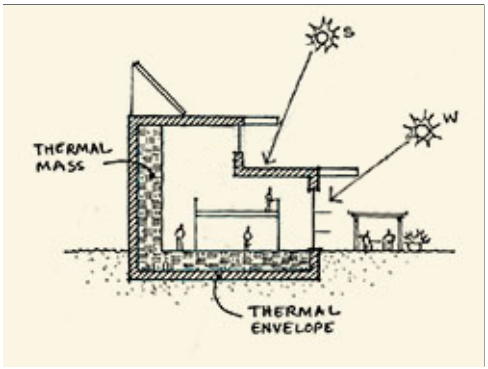
Site Data



East-West Axis



Optimum Solar Control



Maximized Shading

1. Ensure the site will accommodate optimum requirements for building orientation, which is with the long axis parallel to the east/west direction for rectilinear CONUS buildings. Main Entrance should be on the south or east side.

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

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

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

5. Consider the “public side” of the building, its views and the location of the main entrance.

C02. UTILITIES

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

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

C02.1. Utility Components

◯ Applicable ◉ N/A Large graphics do not apply

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



Group 1 - Concrete Pad Mounted Transformer



Group 1 Utility Screening



Group 2 Utility Cabinet and Vehicle Bollards



Group 2 - Small Concrete-mounted Utility Box



Group 2 - Utility Screening



Electrical Access for Vehicle Block Heater

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

2. All ground mounted utility components such as electrical cabinets, electrical panels. telephone cabinets, telephone boxes, cable boxes, vehicle block heaters and similar site utility devices shall be painted medium bronze. Include vertical markers to locate components when buried in deep snow.

3. Fire hydrants shall be painted beige to match Federal Standard 595B 33578. Do not paint tag that indicates water pressure. Include vertical markers to locate hydrants when buried in deep snow.

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

5. 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 or 2. Minimize exposed conduits, cables, and wires on Facility Groups 3 and 4.

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

7. 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.

8. Direct roof drainage to underground collection when feasible or provide splash blocks / paved channels to intercept roof drainage at grade. Ensure roof drainage directs away from foot traffic areas.

C03. PARKING AREAS

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

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

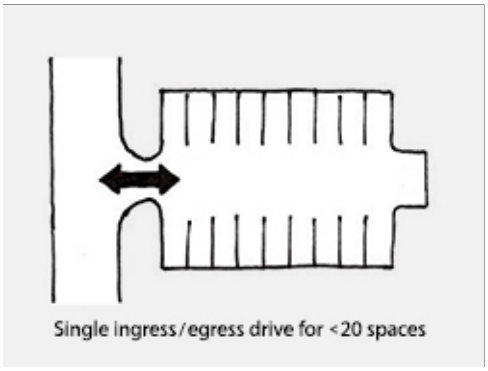
C03.1. Configurations and Design

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

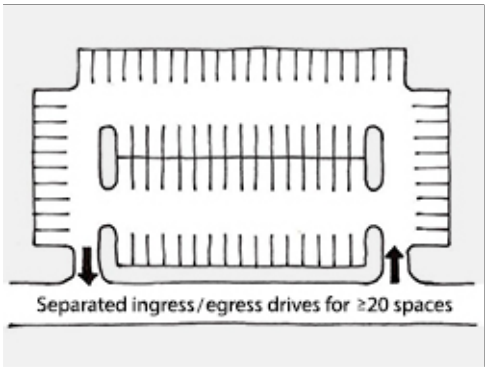
◉ Applicable ○ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 3 Image Tool 250 x 188



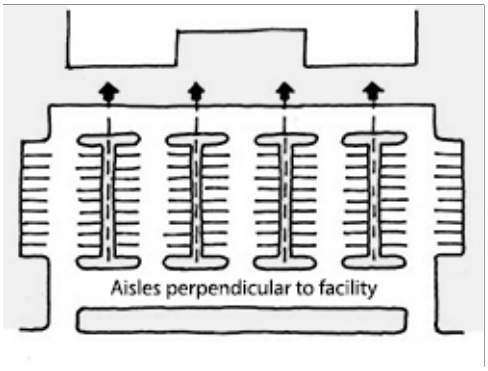
Group 1 - McAdoo Fitness Center Parking



Small Lot Configuration



Large Lot Configuration



Facility Group 1 Configuration

1. Evaluate adjacent sites and cost-effectively consolidate parking areas to maximize efficient use; ensure that all areas meet accessibility guidelines.

2. Generally envision on-site parking as a series of small connected singular areas selectively placed around the facility served, rather than a single large area; buffer parking areas from the facility main entrance with a transition space and provide drop-offs to decrease close-in parking. Comply with IFS while meeting ATFP requirements.

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

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

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

6. Accessible parking spaces shall be provided and marked in accordance with 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.

13. Consider snow removal/clearing in parking lot design

C03.1.1. Paving and Striping

○ Applicable ◉ N/A Large graphics do not apply

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


Standard Crosswalk Markings and Coloring


Base Standard Accessible Parking


Standard 4-Inch Striping

Facility Group 1 paving materials shall be as follows.

Primary:	Asphaltic concrete
Secondary:	Concrete
Accent:	Brick pavers

Facility Group 2 paving materials shall be as follows.

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

Facility Group 3 paving materials shall be as follows.

Primary:	Concrete where operationally required
Secondary:	Asphaltic Concrete
Accent:	N/A

Facility Group 4 paving materials shall be as follows.

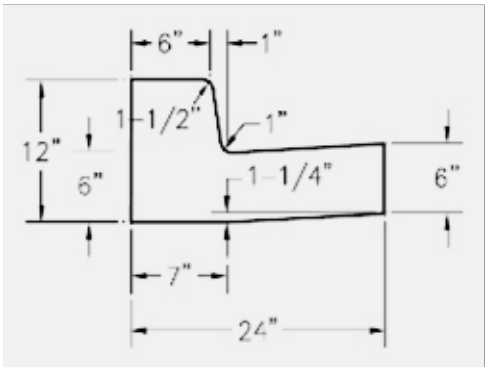
Primary:	Asphaltic Concrete
Secondary:	N/A
Accent:	N/A

1. All new parking lots in Groups 1 and 2 shall be constructed of bituminous pavement 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 asphaltic concrete paving. Dirt, gravel, and grass lots are not allowed.
4. Use consistent striping, angles and stall sizes in all parking areas.
5. All parking shall be marked with white stripes of paint or applied vinyl coatings. Red or yellow markings shall only be used for safety purposes and must be kept to a minimum. All lines shall be four inches (4") wide.

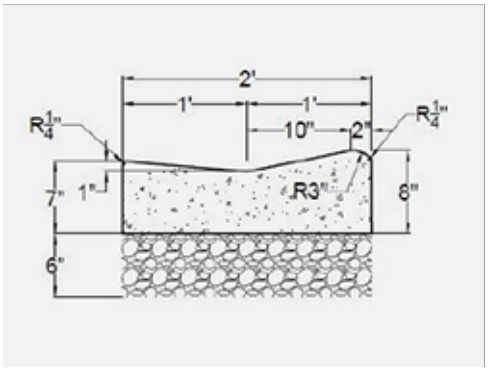
C03.1.2. Curbing

○ Applicable ◉ N/A Large graphics do not apply

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



"Barrier" Curb



"Mountable" 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 barrier type curbing. Provide curb cuts as required to promote drainage. Provide mountable curbs at snow storage areas for snow removal.
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 buildings, 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



Group 1 Median with Walkways for Access



Group 2 Median with Access



Group 3 - Concrete Median

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

C03.2. Parking Structures

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

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

C03.3. Connectivity

○ Applicable ◉ N/A Large graphics do not apply

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


Connection to Adjacent Facilities


Direct Link to Main Entrance


Connection to Accessible Parking

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

C04. STORMWATER MANAGEMENT

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

Comply with AF Corporate Standards for Stormwater Management:
http://afcfs.wbdg.org/site-development/stormwater-management/index.html

C04.1. Stormwater Requirements

○ Applicable ◉ N/A Large graphics do not apply

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


Berm and Swale to Direct Stormwater


Storm Sewer Inlets with Accessible


Group 1 Storm water Integrated Systems


Group 2 Downspout w/Grey Water Irrigation


Group 2 with Impermeable Paving


Stormwater Outlet to Detention Area

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

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

3. Provide rainwater harvesting and storage that is attached to the building's roof drain systems to support gray water irrigation; consider winter temperatures in the design.

4. 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.

5. Cost-effectively integrate stormwater systems with ATFP measures.

C05. SIDEWALKS, BIKEWAYS AND TRAILS

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

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

C05.1. Circulation and Paving

○ Applicable ◉ N/A Large graphics do not apply

◉ Applicable ○ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 8 Image Tool 250 x 188


Group 1 Paved Plaza with Flagpole


Connection to Main entrance at Group 2


Paved Plaza at Group 2


Standard Flared Curb Cut for Walkway


Connection between Entrances


Group 2 - Paved Plaza


Attached Sidewalk


Group 1 Contrasting Paving

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

Primary:	Concrete
Secondary:	Stamped Concrete with Integral color
Accent:	N/A

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

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

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

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

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

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

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

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

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

4. Mitigate heat island by providing high-albedo, shaded sidewalks. Sidewalks for Groups 1, 2, 3 and 4 shall be concrete. The designer shall incorporate appropriate expansion and construction joints.

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

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

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

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

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

10. Pavers shall conform to the following range of color: medium to dark beiges and tans. Pavers used on walks shall typically be 4”x8” nominal in size.

11. 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.

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

13. Sidewalks shall be 5'-0" wide unless otherwise noted. Side walks shall be 6" minimum thickness.

C05.1.1. Ramps and Stairs

○ Applicable ◉ N/A Large graphics do not apply

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


Group 1 - Ramp to Access Main Entrance


Group 1 - Stairs


Group 2 - Integrated Access to Main Entrance


G2 - Integrated Landscaping, Ramp, and Stairs


Entrance Plaza at Group 2


Separated Sidewalk

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

C05.1.2. Lighting

○ Applicable ◉ N/A Large graphics do not apply

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


Lighted Bollards


Pedestrian Scaled Fixture


Parking Lot and High Trafficked Area

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

C06. LANDSCAPE

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

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

C06.1. Climate-based Materials

○ Applicable ◉ N/A 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


Cold Weather Hardy Plantings


Coniferous Planting along Building


Mixture of Plant Types

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 Large graphics do not apply

◉ Applicable ○ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 5 Image Tool 250 x 188


Native Grasses at Drainage


Xeriscape Drainage Swale


Native Wetland Plant at Drainage


Trees Framing Building Entrance


Trees as Golf Course Screening/Windbreak

1. Develop, maintain and implement a climate-based plant list with landscape features using a regionally appropriate palette of materials to promote energy efficiency, preserve drainage patterns, inhibit erosion, improve air quality, lower maintenance and add beauty. Follow UFC 3-201-02 Landscape Architecture.

2. Landscaping is required for all newly developed sites and facilities; preserve existing native landscape where possible and avoid overplanting.

3. Concentrate landscaping in Facility Group 1 and along major thoroughfares and integrate these landscaped areas into the base's stormwater management plan. Refer to the Streetscape Envelope Standards in this IFS.

4. All Facility Group 1 and 4 sites shall be landscaped at their entire perimeter; limit formal planting arrangements to formal spaces typically associated with Group 1. Landscape public spaces near the main entrances of Group 1 facilities.

5. Facility Group 2 and 3 sites may have a native undisturbed landscape except at the main entrances of Group 2, which should be newly landscaped.

6. Facility plantings shall follow the Installation Facilities Standards (IFS) plant list, which is based on the specific microclimates created by the adjacent building: shadow areas, protected areas, zones adjacent to thermal mass, and availability of rainwater and/or grey water.
7. Provide open spaces as transitions between developed and native areas that promote quality of life and provide visual relief and allow walkable connections to the transportation system.

8. Return suitable areas to a natural state to minimize and, whenever possible, eliminate ground maintenance requirements; expand prairie areas where appropriate with native plants to eliminate mowing and maintenance requirements.

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

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

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

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

13. Berms may be used as an integral part of the overall landscape strategy for screening, security and/or visual interest.

C06.1.2. Xeriscape Design Principles

○ Applicable ◉ N/A Large graphics do not apply

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



Xeriscape Drainage Swale



Native Grasses inside Fence Line

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 2 Image Tool 250 x 188



Rock Mulch at Foundation



Rock Mulch Landscaping with Xeric Species

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

C06.1.4. Plant Material Selection

○ Applicable ◉ N/A Large graphics do not apply

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



Native Shrub Species



Native Tree Species

1. Use only native, naturally occurring plant materials including grasses or turf suited for the local climatic conditions in the landscape design; potable-water irrigation systems are discouraged beyond the establishment period.

2. New facilities are encouraged to use native plant species as indicated on the plant lists available from the Base Civil Engineer.

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

4. Ground covers are only recommended when minimal maintenance is required.

5. Turf areas should be limited to those that can be sustained by natural rainfall or grey water (non-potable) irrigation systems; turf may be defined by at-grade concrete mow strips to lessen maintenance.

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

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

C06.1.5. Water Budgeting (Hydrozones)

◯ Applicable ◉ N/A Large graphics do not apply

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



Group 2 Entrance Landscaping



Rainwater Irrigation



Drought Tolerant Species

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

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

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

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

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

C06.1.6. Base Entrance Landscaping

◉ 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



View of Entrance to Minot AFB from Hwy 83



5 BW and 91st MW Sign with Landscaping



Lit Base Entrance Sign



Base Entry Lanes with Static Display

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

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

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

C06.1.7. Streetscape Landscaping

○ Applicable ◉ N/A Large graphics do not apply

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


Group 4 Native Trees for Color


Native Evergreens for Screening


Trees on Peacekeeper Place

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


Retaining Wall and Landscaping Define Edge


Native Grasses and Trees at Walking Path


Hardy Shrubs Defining Pedestrian Walk

1. Define walkways with landscaping where appropriate.

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

3. Provide wind breaks where required.

C06.1.9. Parking Lot Landscaping

○ Applicable ◉ N/A Large graphics do not apply

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


Robust Landscaping for Minimal Upkeep


Minimal Median Landscaping


Parking Lot Screening from Park/Playground

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

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

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

4. Rain garden islands shall be landscaped to receive rainwater runoff from adjacent impervious parking areas to be absorbed into the ground/planting bed. Native plants and groundcovers are recommended within the rain garden areas, which can survive without supplemental irrigation once established.

C06.1.10. Screen/Accent Landscaping

○ Applicable ◉ N/A 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


Screening Landscape for Warehouse


Landscaping to Soften Brick Screening


Planting at Flag Pole

1. Provide complimentary accent landscaping at monuments and static displays.

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

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

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

5. Due to high maintenance requirements, sheared hedges and annual/perennial flowerbeds shall be used sparingly and limited to Facility Group 1.

C06.1.11. Other

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

C07. SITE FURNISHINGS

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

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

C07.1. Furnishings and Elements

○ Applicable ◉ N/A Large graphics do not apply

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


Bus Shelter


Coordinated Site Furnishings


Picnic Pavilion

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 and 2 site furnishings shall be oxidation resistant metals such as aluminum or stainless steel. Group 3 and 4 site furnishings may be powder coated to match adjacent structures' color scheme. Generally match the site furniture of adjacent facilities and the facility district.

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

5. Benches in Groups 1, 2 and 3 shall be made up of oxidation resistant materials and plastic composite lumber. Group 4 and parks may have thermoplastic coated steel benches.

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

7. Limit the use of bollards, but when necessary for force protection use weather resistant FS 595 #X0040 colored, concrete filled, steel tube for Groups 1, 2, 3, and 4. 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 shall comply with the guidance for the display of flags in AFI 34-1201. Each Air Force installation is authorized to fly one United States Flag, normally in front of the installation headquarters. Waivers for non-authorized locations must be submitted in accordance with AFI 33-360 and approved waivers (AF Form 679) must be maintained by the installation protocol office.

11. Bus shelters shall be provided only where there is a documented need and when approved on a case basis. Generally emulate the designs of adjacent shelters using concrete slab on grade base and foundations, non-ferrous metal structure and standing seam metal hipped roof.

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

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

14. 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.

15. 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.

16. 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.

17. Provide trash dumpster enclosures for Group 1, 2, and 3 with exterior to match adjacent facilities; all gates shall be metal factory finished FS 595 X0040 color.

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

19. Group 1, 2 and 3 picnic tables and seating shall be non-ferrous metals and plastic, composite lumber which is matching with surrounding facilities. Group 4 and recreational areas shall have thermoplastic coated steel benches picnic tables and seating. Generally limit picnic tables, barbeque grills and drinking fountains to lodging, dormitories, housing areas, parks and recreation areas.

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

21. 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.

22. Pavilion Construction will have no logos, emblems or other markings. No Utilities will be constructed in conjunction with Pavilions. Pavilions will be placed on asphalt or concrete surface not to exceed 700 sq. FT. For deviation from approved

Dark Bronze standing seam metal hip roof and beams, requests will be reviewed and approved on a case by case basis by BCE.

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

24. Manufacturers listed below are only provided to establish a baseline of equivalence 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 1 Image Tool 250 x 188



Type: **Charcoal**

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

Mfr: The Park

Color: Black

Finish: Nontoxic Black enamel

Model #: 136-1025

Other: Concrete foundation, coordinate with Base Architect

UFGS: N/A

C07.2.2. Benches

◉ Applicable ○ N/A Number of base standards 2 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



Type: **Recycled Plastic Hoop Bench**

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

Mfr: Bright Idea Shops

Color: Varies to match surrounding Facilities

Finish: Recycled Plastic/Powdercoat

Model #: BIFP2201 or similar

Other:

UFGS:

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 4 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

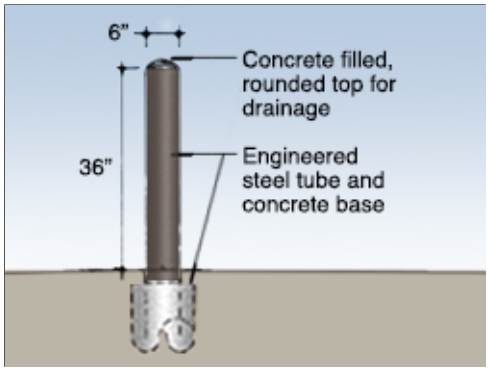
Color: Dark Bronze

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



Type: **Force Protection, Installation**

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

Mfr: ULINE

Color: Yellow

Finish: Smooth

Model #: H-3007

Other: Dark bronze sleeves may be used when facilities are in a high-visibility location

UFGS:

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

Color: Dark Bronze Aluminum Framing, Black Kynar Roofing

Finish: Anodized frames

Model #: S6-2R

Other: Provide concrete slab on grade. Manufacturer's standard 7' -0" aluminum bench

UFGS: N/A

C07.2.7. Drinking Fountains

○ Applicable ◉ N/A

C07.2.8. Dumpster Enclosures / Gates

◉ Applicable ○ N/A Number of base standards 1 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

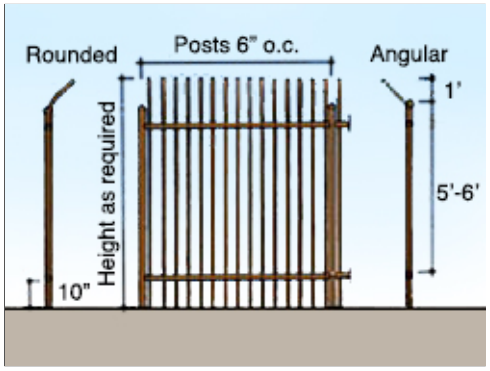
Model #: Match adjacent building

Other: Steel gates and hardware, dark brown

UFGS: Section 04 20 00 Unit Masonry

C07.2.9. Fencing

◉ Applicable ○ N/A Number of base standards 8 Image Tool 250 x 188



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

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

Mfr: Custom

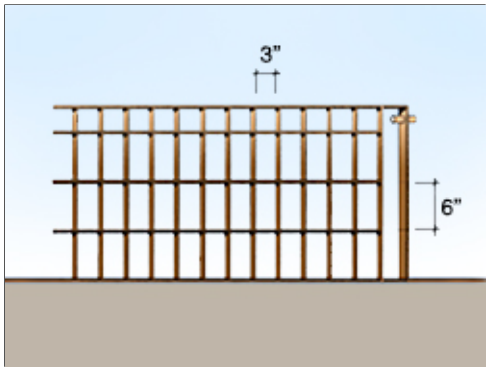
Color: Dark bronze

Finish: Powder coated

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

Other: Split Face, beige CMU, beige brick or red blend brick piers may be used

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Style B Barrier: High security, medium visibility**

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

Mfr: Custom

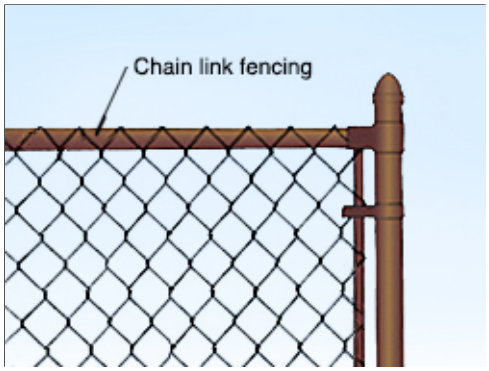
Color: Dark bronze

Finish: Powder coat

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

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Style C Barrier: High security, low visibility**

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

Mfr: General WireCompany

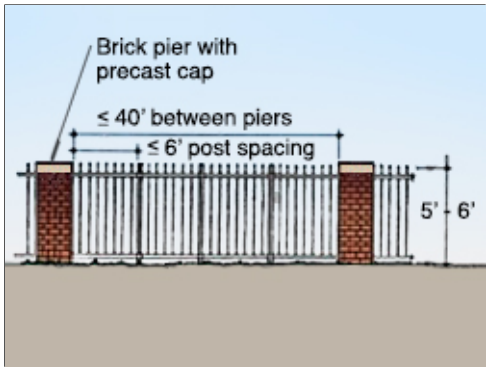
Color: Dark bronze

Finish: Powder coated galvanized steel

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

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

UFGS: Section 32 31 13 Chain Link Fences and Gates



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

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

Mfr: Custom

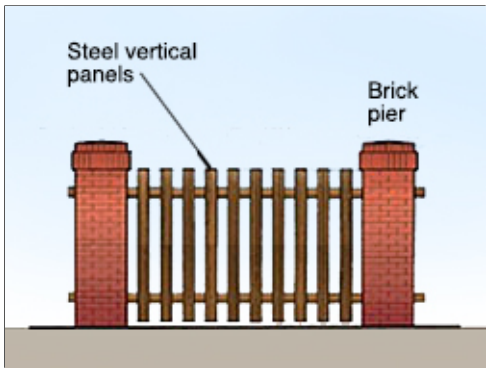
Color: Brick or CMU blend, dark bronze fencing

Finish: Face brick, powder coated metal

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

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

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



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

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

Mfr: Custom

Color: Brick or CMU blend, dark bronze 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



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

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

Mfr: Custom

Color: Integral mixed Davis Colors: dark warm gray

Finish: Factory

Model #: Post and rail

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

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



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

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

Mfr: James Hardie Building Products, Inc.

Color: Off white and Earth tones

Finish: Factory

Model #: Post and rail with vertical boards

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

UFGS: Not Available (SECTION 074646 Fiber Cement Siding)



Type: **Style H Barrier: Low security, low visibility**

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

Mfr: General Wire Company

Color: Galvanized

Finish: Galvanized

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

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

UFGS: Section 32 31 13 Chain Link Fences and Gates

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 3 Image Tool 250 x 188



Type: **Style 1: Precast concrete**

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

Mfr: Belson Outdoors

Color: Exposed Aggregate

Finish: Sand

Model #: TR1005/TR1006

Other:

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



Type: **Style 3: Plastic Cigarette Receptacle**

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

Mfr: Smokers Outpost

Color: Black or as authorized

Finish: Matte

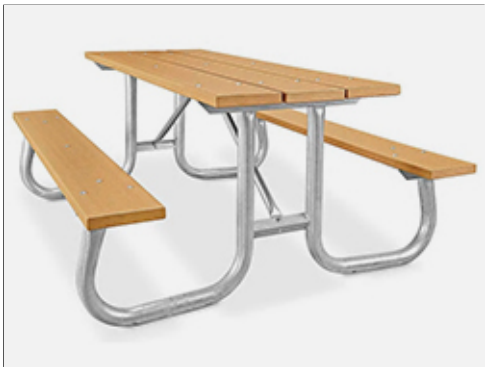
Model #: DC-711301

Other: Will need sand ballast

UFGS: N/A

C07.2.13. Picnic Tables

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



Type: **Aluminum/Recycled Plastic**

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

Mfr: Uline

Color: Manufacturer's Standard Brown

Finish: Manufacturer's Standard Finish (Smooth)

Model #: H-5870

Other:

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 authorized

Finish: Factory vinyl coated

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

Other: Perforated Pattern, In-ground mount

UFGS: N/A



Type: **Recycled Plastic**

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

Mfr: Belson Outdoors

Color: Brown Top/Seat and Brown Frame or as authorized

Finish: Smooth as Manufactured

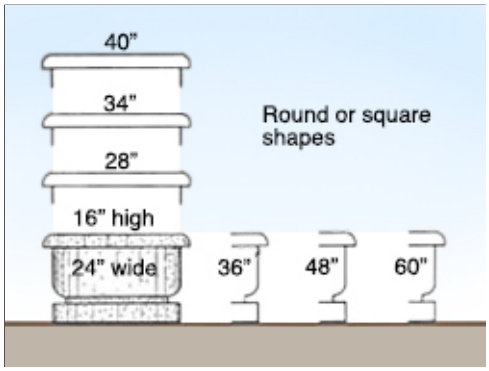
Model #: RPD6

Other:

UFGS:

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 or Equivalent

Color: Varies

Finish: Powdercoated Steel

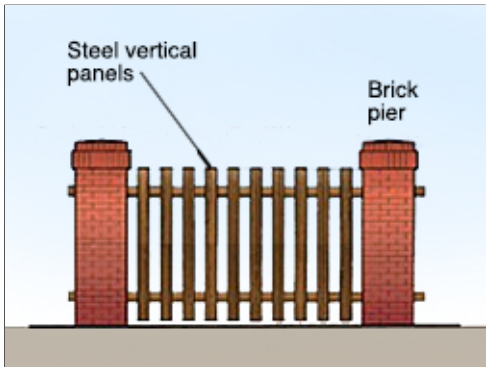
Model #: N-R-G Freestyle

Other: Coordinate with Base Architect

UFGS: N/A

C07.2.16. Screen Walls

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



Type: **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

C07.2.18. Other

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



Type: **Pavilion**

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

Mfr: Classic Recreation Systems

Color: Dark Bronze (Roof and structural components)

Finish: Manufacturer's Standard

Model #: "Mesa"

Other: Dark bronze metal beams, columns and joists. dark bronze standing seam metal roof. 3/12 minimum roof pitch. 72 MPH roof wind warranty. 700 SF maximum (roof area).

UFGS:



Type: **Storage Shed**

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

Mfr: Conexwest

Color: Beige (match Federal Standard 595B 33578)

Finish: Manufacturer's standard

Model #: Storage

Other: Siting must be approved by Facilities Board.

UFGS:

Pavilions:
Shall be placed on an asphalt or concrete surface.
No utilities will be connected. No logos, emblems or other markings are allowed.

Storage Sheds:
Existing sheds are grandfathered as acceptable. Storage sheds will be allowed only south of Tanker Trail and in Industrial Areas No logos, emblems or other markings are allowed. No utilities will be connected. Placed on concrete/asphalt surface. Not to exceed 8' x40'. Units shall not have more than 500 SF of storage shed space.

C08. EXTERIOR SIGNS

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

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

C08.1. Colors and Types

○ Applicable ◉ N/A Large graphics do not apply

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



Traffic Signs IAW MUTCD



UFC Standard Signs



Building Identification Sign

1. Provide concise functional signs as a visually unifying element with consistent colors and types for all Installation and Gate Identification Signs; Building Identification Signs; Traffic Control Devices; Directional and Wayfinding Signs; and Informational and Motivational Signs.

2. Provide signs with the lowest overall life cycle costs considering initial cost, ongoing maintenance and lifespan while meeting quality standards. Follow IFS for specifications appropriate for the local climate to withstand weathering.

3. Reduce the number of signs, reduce visual clutter and provide only essential signs required for identification, directions, instructions, and customer service following UFC 3-120-01. Remove non-conforming signs during renovation projects.

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

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

6. Raised "standout" letters and numbers may be used for Group 1 with approval on a case basis.

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

8. Only one identification sign is permitted at each building entrance. Include a building address consistent with US Postal Service protocols following UFC 3-120-01.

9. Traffic Control Devices, which regulate vehicular traffic on the installation, shall conform to the standards in the Manual of Uniform Traffic Control Devices (MUTCD) published by the Federal Highway Administration. Coordinate street signs with this IFS.

10. Provide Directional and Wayfinding Signs and address both pedestrian and vehicular traffic following UFC 3-120-01 for size, layout and content.

11. Reserved parking signs should be kept to a minimum. When approved, provide post-mounted sign faces in base standard materials and colors. Consider "bracketing" a designated area with a single sign at each end.

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

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

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

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

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

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

C08.1.1. Materials and Color Specifications

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

1. Fabricate sign panels from 6061 Aluminum. Sign posts shall be boxed steel with capped ends in a concrete base.

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

3. All signage shall follow Federal Highway Administration (FHWA) Manual on Uniform Traffic Control Devices (MUTCD) using standard colors. Refer to MUTCD color specifications, which provide cross-referenced Pantone Matching System (PMS) numbers.

a. Standard Blue

b. Standard Dark Bronze (Federal Standard Color 595B 20040)
c. Standard Red
d. Standard Black (non-reflective)
e. Standard White
f. Standard Brown

Materials and Color Specifications

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



Type: **Typical Sign Face**

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

Mfr: Custom

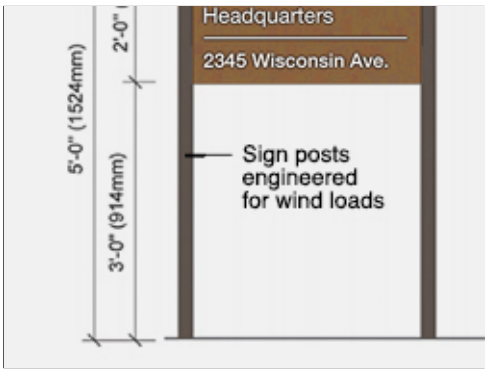
Color: Medium bronze

Finish: Matte vinyl

Model #: Aluminum flat sheet

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Typical Sign Post**

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

Mfr: Custom

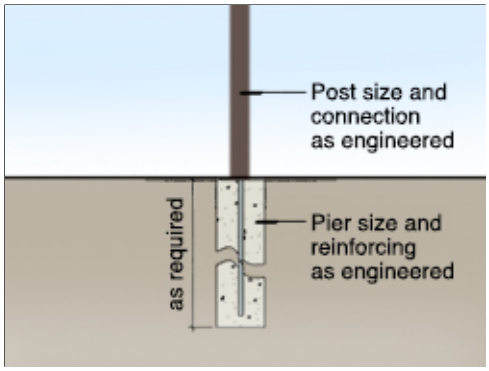
Color: Dark bronze, powder coat finish

Finish: Matte

Model #: Extruded aluminum with capped top ends

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Typical Sign Base**

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

Mfr: Custom

Color: Natural Gray

Finish: Sonotube-formed

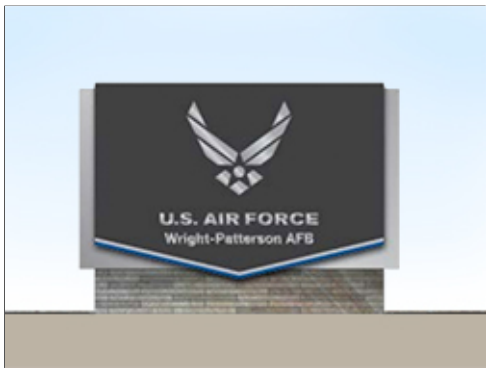
Model #: 24" height x 12" diameter, as engineered.

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

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

C08.1.2. Installation and Gate Identification Signs

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



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

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

Mfr: Custom

Color: Standard blue, brushed aluminum, accents per UFC

Finish: Powder coat or vinyl sign face

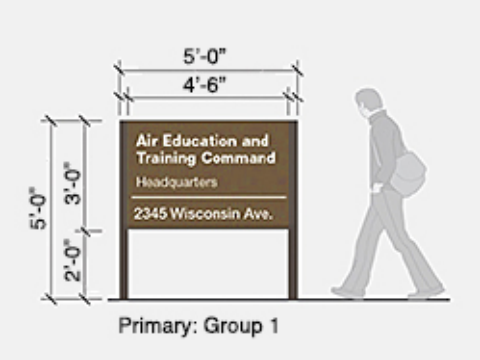
Model #: Metal frame and panels, Hebron Brick base (2/3 Red, 1/3 Maroon)

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



Primary: Group 1

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

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

Mfr: Custom

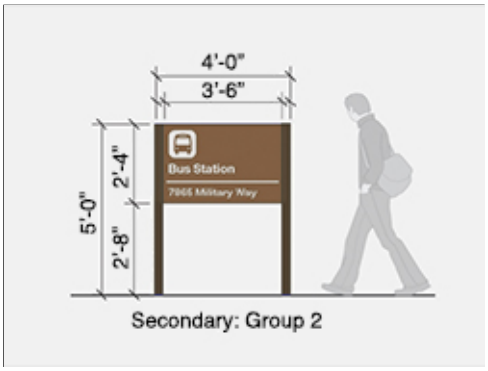
Color: Medium brown face, dark bronze posts, white vinyl lettering

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



Secondary: Group 2

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

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

Mfr: Custom

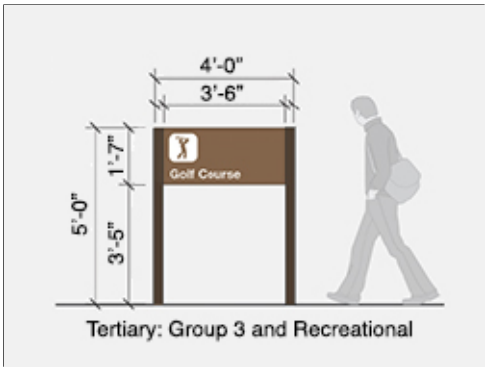
Color: Medium brown face, dark bronze posts, white vinyl lettering

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: Provide layout and sizes per UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



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

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

Mfr: Custom

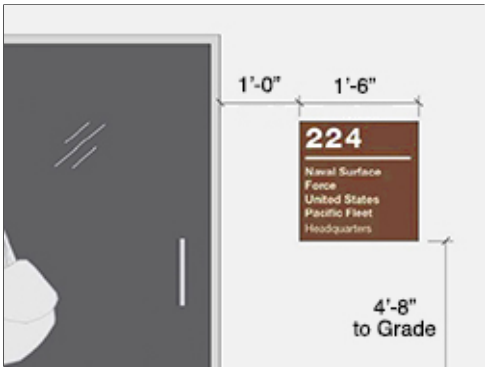
Color: Medium brown face, dark bronze posts, white vinyl lettering

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

Other: Provide layout and sizes per UFC.

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Wall Mounted**

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

Mfr: Custom

Color: Medium brown, white lettering

Finish: Satin vinyl applied to aluminum sheet

Model #: Aluminum sheet with vinyl face and vinyl lettering

Other: Provide layout and sizes following UFC.

UFGS: N/A



Type: **Glass Mounted**

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

Mfr: Custom

Color: White vinyl lettering

Finish: Matte vinyl

Model #: Machine-cut sheet vinyl

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

UFGS: N/A

C08.1.4. Traffic Control Devices (Street Signs)

◉ 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: White reflective lettering on a Standard Brown background

Finish: Powder coat or vinyl sign face

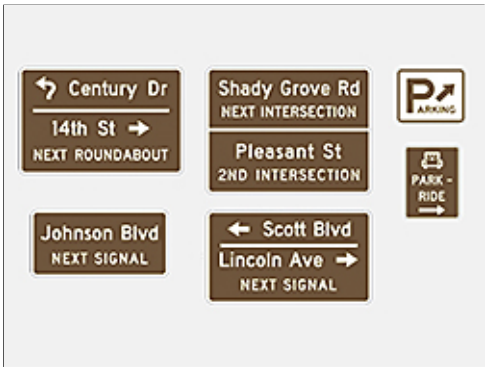
Model #: Aluminum sign face, control arm or pole mounted

Other: Mount 7' above grade minimum, pictographs and logos are prohibited on street name signs per UFC. Square galvanized steel pole painted Dark Bronze (FS 595B 20040)

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

C08.1.5. Directional and Wayfinding Signs

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



Type: **Vehicular**

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

Mfr: Custom

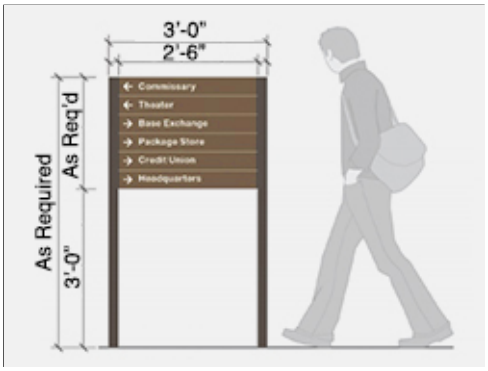
Color: Medium brown face, dark bronze posts, white reflective lettering

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications



Type: **Pedestrian**

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

Mfr: Custom

Color: Medium brown face, dark bronze posts

Finish: Powder coat or vinyl sign face

Model #: Aluminum sheet face, extruded aluminum posts

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

C08.1.6. Informational Signs

○ Applicable ◉ N/A Large graphics do not apply

○ 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 shall have standard bronze color.
3. Hours of operation signs shall have a level of quality equivalent to the Facility Group number.

4. Temporary / Project Signage shall be judiciously placed to avoid visual clutter. Schedule and arrange for the removal of these signs prior to installation.

C08.1.7. Motivational Signage

◯ Applicable ◉ N/A Large graphics do not apply

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



Back Lighted "Only the Best Come North"



Date, Time, and Temperature Welcome Sign

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

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

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

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

C08.1.8. Parking Lot Signs

◯ Applicable ◉ N/A

C08.1.9. Regulatory Signs

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



Type: **Regulatory Signs**

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

Mfr: Custom

Color: UFC 3-120-01

Finish: Face: as mfd, back face - painted

Model #: N/A

Other: Paint sign back face: FS20040 'Dark Bronze'. Paint post: FS 595B 20040 'Dark Bronze'.

UFGS: Paints and Coatings 09 90 00

1. Regulatory signage, which restricts, warns and advises, shall be limited to those mandated under Highway/Traffic, Government Warning, and/or Parking Regulation. Follow UFC 3-120-01 and its industry references for color and layout.
2. Provide a comprehensive, systematic approach to regulatory signage to avoid clutter and confusion from "over signage."
3. Maintain base warning signs for safety and security at the base perimeter and at specific secure areas. Use these to notify visitors of restrictions governing conduct on the base, as well as other security procedures.

C08.1.10. Other

○ Applicable ◉ N/A

C09. LIGHTING

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

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

C09.1. Fixtures and Lamping

○ Applicable ◉ N/A Large graphics do not apply

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



Group 2 Ground Mounted Fixtures



Lighted Bollard



Parking Lot Light Double Mount



Group 3 Wall Mounted Apron Lighting



Group 3 Wall Mounted Lighting



Group 1 Entrance Ramp Lighting

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

2. Integrate controls to automatically reduce lighting power during periods of non-activity; automatically turn off power when sufficient daylight is available.

3. Ensure continuity and consistency of lighting elements. In new construction generally match post types, fixture types, styles, heights, sizes, materials, colors, and lamp types of adjacent facilities and the facility district.

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

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

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

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

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

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

10. Comply with UFC 3-530-01 for light source technology and lamp types. Utilize LED lights in all scenarios not explicitly prohibited by UFC 3-530-01, or where it is not economically viable.

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

12. Install lighted bollards only at Group 1 and high-traffic Group 2 facilities. Generally match materials, colors and shapes of adjacent facilities and the facility district.

13. Install natural warm gray color, smooth finished concrete bases for all poles in heights appropriate for the facility group and application. Generally Groups 1, 2 and 4 shall have at-grade bases. Group 3 shall have taller bases for added durability.

14. When parking lot lighting is necessary, provide an illuminated path to the building's main entrance. Pole bases should be contained within an internal landscape median or island.

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

16. Landscape accent lighting may be used in public gathering spaces and in Group 1 facilities. Coordinate the design, luminaire selection, and placement with the location of trees, shrubs, and site furnishings.

17. Ensure replacement lights approximate lumen, color, and style of surrounding lights, as manufacturing permits.

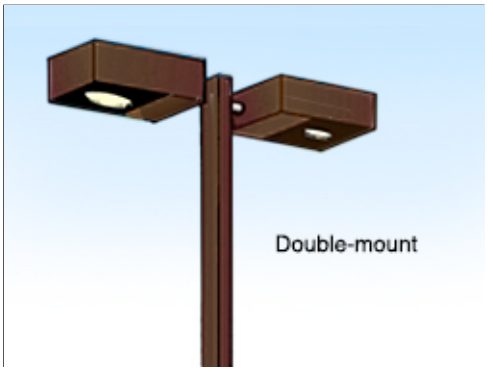
18. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

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

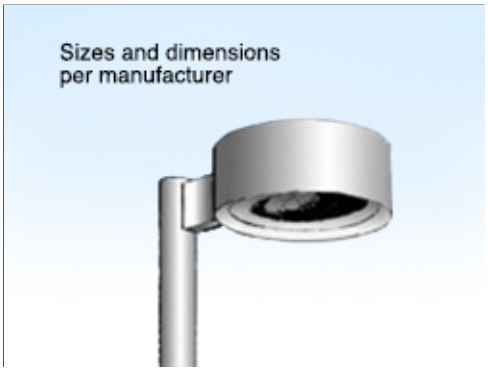
Color: Dark Bronze Anodized (or Clear Anodized as approved by BCE)

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

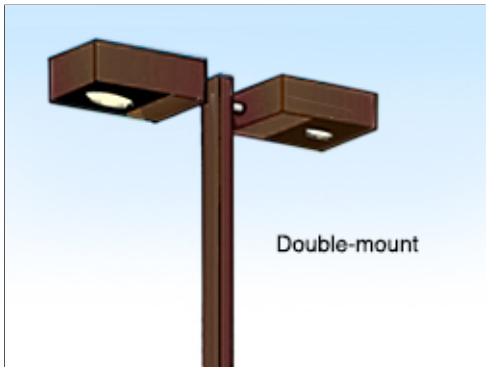
Model #: Round Cutoff, Single Arm or Dual Arm Mount

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

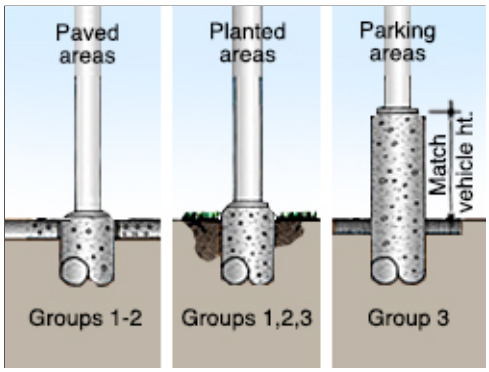
Color: Dark Bronze Anodized (or Clear Anodized as approved by BCE)

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

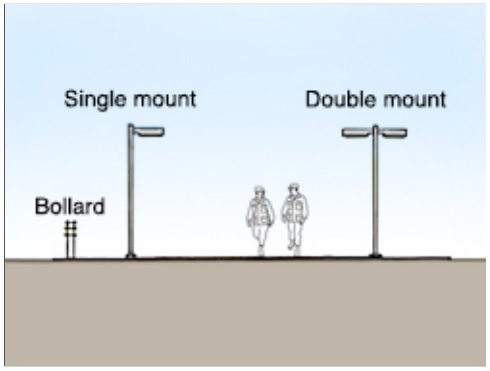
Model #: KBA

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://afcfs.wbdg.org/facilities-exteriors/index.html

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

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



Standard Materials Palette for Group 3 Facilities



Group 2 Operations Material Palette



Group 2 Dormitory Material Palette



Group 2 and Group 3 Combined Palette

D01. SUPPORTING THE MISSION

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

D02. SUSTAINABILITY

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

D03. ARCHITECTURAL FEATURES

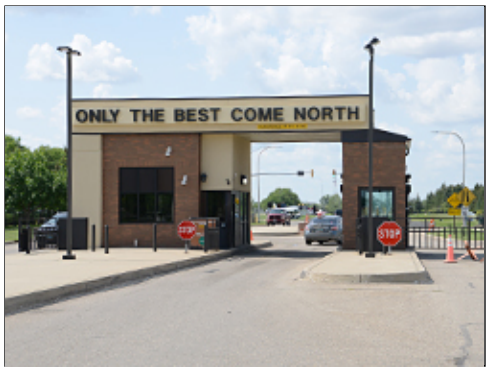
Comply with AF Corporate Standards for Facilities Exteriors:
http://afcfs.wbdg.org/facilities-exteriors/index.html

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

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1



Group 2





Group 3





Group 4





D03.1. Orientation, Massing and Scale

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

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

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

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

5. Building heights shall not be limited; however, building heights over 2 stories shall be considered on a case basis. Refer to Installation Development Plan for form-based planning guidelines by district.

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

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

D03.2. Architectural Character

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

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

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

4. Reinforce the campus atmosphere while maintaining the projection of a corporate image. Generally speaking, mitigate the negative impact of the automobile by separating parking from building entrances and linking buildings with shaded pedestrian paths while incorporating building materials and fenestration patterns that provide human scale on all buildings. Successfully implemented, campus buildings should have clearly defined entrances and can include courtyards and gathering places for recreation and socialization.

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

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

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

D03.3. Details and Color

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

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

3. Use only integrally colored or factory finished materials as the predominant exterior building material; do not use materials that require field painting and ongoing maintenance.

4. Provide consistent and compatible colors for every exterior building feature, including walls, roofs, doors, windows, utility and mechanical elements, and other visible elements.

5. Noncorrosive metals with factory applied color finishes are required.
6. Combine details and color with orientation, massing, scale and architectural character to maintain base compatibility.
7. Manufacturers listed below are only provided to establish a baseline of equivalence among all applicable manufacturers.

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

- ○ Climate dominated by mechanical cooling
- ◉ Climate dominated by mechanical heating
- ○ Climate with similar mechanical cooling / heating needs
- ○ Climate with minimal mechanical cooling / heating needs

- ○ Climate with high humidity
- ○ Climate with moderate humidity
- ◉ Climate with low humidity

- ○ High Solar Insolation
- ○ Moderate Solar Insolation
- ◉ Low Solar Insolation

- ○ Soils with High Thermal Conductivity
- ◉ Soils with Average Thermal Conductivity
- ○ Soils with Low Thermal Conductivity

Other: Consider the potential for flooding and corrosion.

Other: Proximity to medium-high wind power class

Facility: Narrow buildings along E-W axis are preferred

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

Doors: Recessed are preferred

Windows: Provide insulating glazing on north-facing windows / maximize shading for windows on south façades

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

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

MEP: Ground-source following LCCA

Other: Provide Solar Photovoltaic arrays following LCCA.

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

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

D03.3.2. Natural Ventilation System

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



Type: **Style 1 Aluminum Windows**

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

Mfr: Kawneer (or equivalent)

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

Finish: Anodized

Model #: 2x4, slider or awning type

Other: Provide thermally broken frames.

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

D03.3.3. Thermal Mass

◉ Applicable ○ N/A Number of base standards 1 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 (or clear anodized as approved by BCE)

Finish: Factory, to match frames

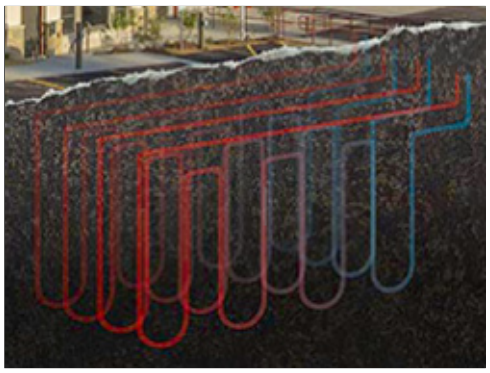
Model #: Louver

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: Custom

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

D03.3.7. Solar Thermal System

◯ Applicable ◉ N/A

D04. BUILDING ENTRANCES

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

Comply with AF Corporate Standards for Building Entrances:
http://afcfs.wbdg.org/facilities-exteriors/building-entrances/index.html

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1







Group 2







Group 3







Group 4







D04.1. Primary Entrances

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

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

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

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

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

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

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

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

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

D04.2. Secondary Entrances

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

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

3. Include a recess or projection for weather protection.

4. Integrate service and egress doors and loading areas with the building design by matching the materials and detailing and reflect the overall quality of the facility.

5. Incorporate egress structures such as stair towers into the facility design.

6. Canopies may be used for service and loading areas where there is a documented need; provide weatherstripping and appropriate insulation for all doors including those used only for life safety egress.

7. Develop building massing and orientation to minimize the appearance of service and loading areas; physically and visually separate these from primary entrances.

8. Loading areas must be organized, orderly and have an uncluttered appearance.

D05. WALL SYSTEMS

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

Comply with AF Corporate Standards for Doors and Windows:
http://afcfs.wbdg.org/facilities-exteriors/wall-systems/index.html

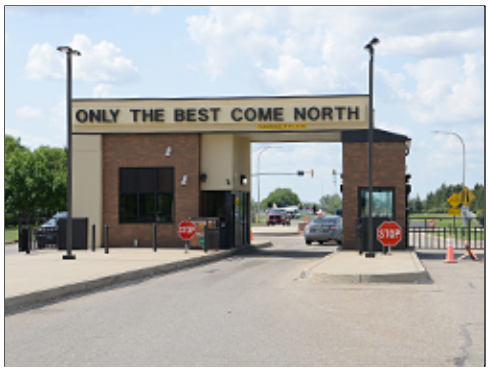
Comply with AFCFS Recommended Materials:
http://afcfs.wbdg.org/facilities-exteriors/wall-systems/materials/index.html

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1





Group 2






Group 3





Group 4





D05.1. Hierarchy of Materials

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

2. Group 1 and 2 facilities shall be a combination of brick masonry or, alternatively, integrally colored split face or ground face concrete masonry units (CMU). Buildings should be limited to one primary type of masonry, with an option to include an accent feature of a complementary type and/or color.

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

4. Brick masonry walls may be accented with precast concrete bases, string courses and/or cornices. In addition, patterning of the brick is encouraged to provide a sense of scale to the buildings.

5. Patterning of CMU walls, such as the insertion of half-height course, is encouraged for achieving a human scale. Provide patterning in CMU to articulate building entrances.

6. All CMU and mortar should be manufactured and installed with additives to discourage efflorescence.

7. Group 2 facilities shall be predominantly light beige monolithic concrete panels, insulated metal panel systems, or beige CMU. Brown CMU may be used as a visual base and for accent walls. Dark brown factory finished metal sheeting may be used as accents. EFIS may be used at upper levels and otherwise where protected from impacts, with the approval of the Base Civil Engineer.

8. Large-scale Group 3 facilities shall be predominantly light beige insulated metal panel systems with brown integrally colored split faced or ground faced CMU wainscots. Contrasting dark brown factory finished metal sheeting may be used as accents. Beige EFIS may be used at upper levels and otherwise where protected from impacts, with approval of the Base Civil Engineer.

9. Metal wall panels shall be factory finished galvanized steel. Ribbed metal sheeting is acceptable for Group 3 facilities and inconspicuous areas of Group 2 facilities. Refer to appendix F for special requirements of Facility Districts.

10. Group 4 shall be predominantly prefinished horizontal steel lap siding in medium Earth tones and neutral colors; white prefinished metal clad trim boards and muted warm-colored shingles. Prefinished steel shakes and scallops may be used as accents.

11. 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.

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

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

14. Use integrally colored concrete and masonry with clear sealers when recommended by the manufacturer.

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

16. 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 to reduce glare and promote daylighting in interiors. Generally promote solar gain into interiors as a passive design measure to reduce energy use.

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

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

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

7. Materials requiring regular maintenance are not permitted; do not use exposed glued laminated construction or other materials that require field painting. Painted galvanized steel may be used in limited applications.

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

9. Refer to D07. Roofs for parapets.

D05.3. Equipment, Vents and Devices

1. Arrange all mechanical, electrical, fire alarm, lightning protection and other system components to create an orderly appearance that integrates with the wall system.

2. Do not expose conduits, cables, piping, lightning protection components, etc. on exterior walls; if unavoidable in renovations, finish these elements to match the adjacent wall surface.

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

D05.4 Wall Systems Materials

Facility Group 1 wall materials shall be as follows.

Primary:	Brick
Secondary:	Integrally Colored CMU or Architectural precast
Accent:	Alternate coursing and relief, cast stone accents

Facility Group 2 wall materials shall be as follows.

Primary:	Brick or Decorative Concrete Masonry Units
Secondary:	Integrally Colored Architectural precast, EIFS
Accent:	Alternate coursing and relief

Facility Group 3 wall materials shall be as follows.

Primary:	Insulated Ribbed Metal Panels, or decorative CMU
Secondary:	Optional: brick (in high visibility areas), EIFS
Accent:	Decorative CMU Wainscot

Facility Group 4 wall materials shall be as follows.

Primary:	Pre-finished Steel Lap Siding
Secondary:	Brick
Accent:	Brick or Decorative CMU veneer

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 Finish, Light**

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

Mfr: Metl-Span

Model #: CF Santa Fe Insulated Metal Wall System

Color: Match Beige (FS 595B - 33578)

Finish: Heavy stucco-embossed

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, Dark**

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

Mfr: Metl-Span

Model #: CF Santa Fe Insulated Metal Wall System

Color: Match Dark Bronze (FS 595B - 20040)

Finish: Heavy stucco-embossed

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**

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

Mfr: Peterson Pac-Clad

Model #: PAC-3000 RS Composite Wall Panel

Color: Dark Bronze, Beige, clear anod. alum. or as approved by the BCE

Finish: Manufacturer's standard.

Other: PAC-3000 CS Composite Wall Panel is acceptable as an alternate.

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

D05.4.2. Brick Veneer

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



Type: **Modular Face Brick**

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

Mfr: Hebron Brick

Model #: Brick veneer

Color: 2/3 Red and 1/3 Maroon

Finish: Velour

Other: Nominal size: 4x8x2.6 (Modular) ASTM 216 SW FBX

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: Hebron Brick

Model #: Brick Veneer

Color: Sea Gray #6

Finish: Velour

Other: Nominal size: 4x8x2.6 (Modular) ASTM 216 SW FBX

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



Type: **Cast Stone**

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

Mfr: TBD

Model #: As detailed

Color: Complementary to building color, as approved by the BCE

Finish: Smooth as cast

Other: Suitable for climate that experiences freeze/thaw cycles

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 1 Image Tool 250 x 188



Type: **Precast Concrete**

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

Mfr: Wells Concrete

Model #: Smooth Casting

Color: #258 SB-L mix-(see "Other" below for mix) or as approved by the BCE

Finish: Very Light texture

Other: Crushed grey limestone 60%, Agazziz sand 40% & dark buff conc. dye

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

D05.4.4. Stucco Over Sheathing

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



Type: **3-Coat Cementitious Stucco**

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

Mfr: La Habra

Model #: Traditional 3-coat system

Color: Beige (FS 595B - 33578)

Finish: Sand

Other: Accent color may be used

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

D05.4.5. Curtain Wall

○ Applicable ◉ N/A

D05.4.6. Cast-In-Place Concrete

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



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

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

Mfr: Custom

Model #: Rough-sawn dimensional lumber or liner forming

Color: Custom colored to match Beige (FS 595B - 33578)

Finish: Board-formed or liner-formed texture exposed

Other: No exposed form ties. Color add: "or as approved by the BCE"

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

D05.4.7. Tilt-Up Concrete

○ Applicable ◉ N/A

D05.4.8. Ribbed Metal Sheeting

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



Type: **Lap Seam**

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

Mfr: TBD

Model #: Lap Seam Panel

Color: Match Beige (FS 595B - 33578)

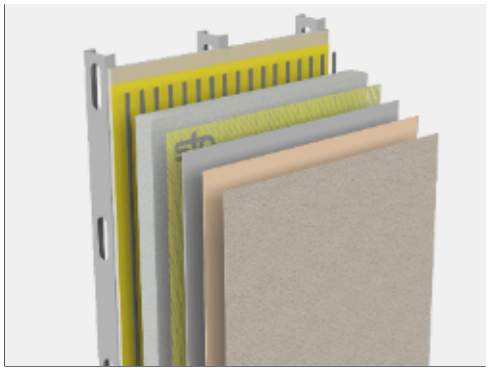
Finish: Embossed Texture, factory finished, Kynar 500

Other: 24 Gauge Steel

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: **Exterior Finish and Insulation System**

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

Mfr: Sto Corporation

Model #: StoTherm ci XPS Lotusan

Color: Match Beige (FS 595B - 33578) or as approved by the BCE

Finish: Medium Texture Finish

Other:

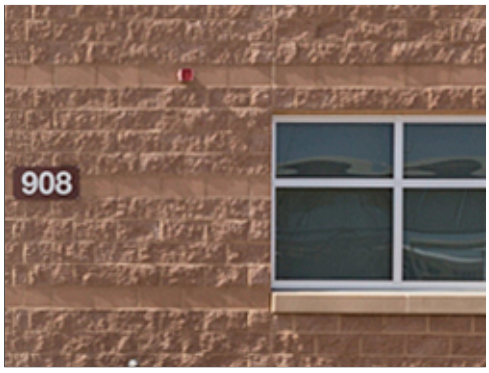
UFGS: Section 07 24 00 Exterior Insulation and Finish Systems:
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 24 00.pdf

D05.4.10. GFRC

○ Applicable ◉ N/A

D05.4.11. Concrete Block

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



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

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

Mfr: Local TBD

Model #: 8x8x16 Nominal, face and corner units

Color: Medium brown or dark tan

Finish: Heavy Texture (rock faced)

Other: Contrasting CMU (in size, texture or coursing) accents may be used

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



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

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

Mfr: Local TBD

Model #: 8x8x16 nominal, face and corner units

Color: Light or medium beige

Finish: Ground Face (Burnished Block)

Other: Contrasting CMU (in size, texture or coursing) accents may be used

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

D05.4.13. Other

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



Type: **Steel Lap Siding**

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

Mfr: Revere Building Products

Model #: PermaFinish Steel

Color: Colors shall be approved by the Base Civil Engineer.

Finish: Kynar PVDF

Other: Prefinished steel Shakes and Scallops may be used as accents.

UFGS: Section 07 42 13

D06. DOORS AND WINDOWS

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

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

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

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1





Group 2





Group 3





Group 4





D06.1. Types

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

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

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

4. Automatic doors are allowed only where functionally necessary.

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

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

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

8. Windows must meet force protection requirements.

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

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

D06.2. Layout and Geometry

1. Visually and functionally compose openings in walls for the climate-specific exposure; generally minimize glazing on north- facing facades.

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

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

4. Protect against vandalism, intrusion and coordinate sound ratings.

D06.3. Glazing and Shading

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

2. Translucent wall panels may be integrated into wall systems and door systems.

3. Do not use reflective/mirrored glazing.

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

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

D06.4. Hardware

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

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

3. Keying shall be compatible with the existing Minot AFB interchangeable core master keying system.

4. Select finishes that will not degrade by intensity of operation or exposure to the elements.

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

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

D06.5. Doors and Windows Materials

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

D06.5.1. Anodized Aluminum

(•) Applicable ( ) N/A Number of base standards 1 Image Tool 250 x 188



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

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

Mfr: Kawneer (or equivalent)

Color: Dark Bronze Anodized or Clear Anodized

Finish: Matte

Model #: 451T - 2x4 1/2 (size as required by spans), 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: DARK BRONZE (FS 595B - 20040)

Finish: Acrylic Enamel, Gloss Finish

Model #: 2" face x depth as required, hollow metal 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 2 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: PVFD fluoropolymer paint exterior

Model #: Signature Clad Ultimate Series

Other: Double hung windows, aluminum exterior with wood interior, screen

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



Type: **Steel Clad Residential Door**

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

Mfr: Pella Corporation

Color: White or Light Earth Tones

Finish: Powder coated, satin

Model #: Encompass

Other: Door style, sidelights to be determined. Insulated core. Energy Star rated. Frame: aluminum exterior with wood interior.

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 1 Image Tool 250 x 188



Type: **Translucent Panel**

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

Mfr: KalWall

Color: Bronze #85 frame, Crystal Ext. FRP White Int. FRP

Finish: Mfr's standard

Model #: 4" Wall System

Other: Thermally broken grid, aerogel insulation.

UFGS: 08 60 45

D07. ROOF SYSTEMS

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

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

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

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1







Group 2







Group 3







Group 4







D07.1. Roof Type and Form

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

2. Provide a 20 year warranty for Groups 1, 2 and 3 roofs with a FM 1-90 wind warranty using a 72 MPH wind warranty at Main Base and Missile Field, use a 120 MPH wind warranty on Flight Line facilities.

3. Generally match the roof type and form of existing adjacent facilities in new construction.

4. Refer to Section D07.2 Roof Slope for specifications on slope. Minimally sloped “flat” roofs for Groups 1, 2 and 3 new facilities shall use EPDM single ply membrane roofing. Built-up roofing (BUR) is only permitted in repair and maintenance and repair projects. For renovations, replace BUR with EPDM membrane roofing.

5. Standing seam metal roofing is preferred for narrow buildings in Groups 1, 2 and 3. Composite shingle roofs may be used in the Missile Field as approved by the BCE.

6. EPDM on low-slope and sloped roof applications: provide fully adhered black EPDM SPM. Installation shall follow UFC 3-110-03. Note that mechanically fastened EPDM systems are prohibited by UFC.

7. Refer to Section D07.7. Clerestories and Skylights regarding prohibitions on roof top skylights or translucent panels.

8. Group 2 and 3 facilities under 5,000 sf and narrow in plan geometry, shall use EPDM roofing or Standing Seam Metal roofs. Larger facilities may use steep-sloped roof features in conjunction with predominantly low-sloped membrane roofs.

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

10. Group 4 facility composite shingle roofs shall have a 25 year warranty with a 110 MPH wind warranty.

11. Roof eaves shall extend beyond the exterior wall for roof drainage and shading. Eave extensions shall be IAW UFC 3-110-03 (minimum of 8" with a drip edge). Provide overhangs for shading in response to local climatic conditions, sized and proportioned to the height of the facility and to the window openings being shaded.

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

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

14. Keep roofs uncluttered, minimize penetrations and group penetrations.

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

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

17. Roofs shall be maintained for the life of the system and replaced in accordance with UFC 3-110-04 and AFI 32-1051. A warranty (see items 2 and 10 above) is required on all new roofs.

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

D07.2. Roof Slope

1. Group 1, 2 and 3 buildings with steep-sloped roofs shall use a minimum of 3" per 1'-0" minimum slope.

2. Group 1, 2 and 3 buildings with low-sloped roofs shall use a minimum of 1/4" per 1'-0" minimum slope.

3. Group 4 facilities shall use 4" per 1'-0" or greater roof slopes.

4. All water drainage control for groups 1, 2 and 3 with low-sloped roofs shall be handled on the roof. Slope roofs to parapet walls at facility perimeter, provide tapered crickets (to divert water to suppers) and provide scuppers through the parapet walls. Use downspouts only where necessary.

5. It is preferred to drain all water to roof perimeters and drain off of roof from there. Interior roof drains may be used if perimeter drainage becomes impracticable. See D07.5.

6. Internal roof drainage systems are allowed only for low-slope roof applications.

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

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

D07.3. Parapets and Copings

1. At parapet walls run waterproof flashings vertically on the inside face of the parapet walls, over the top and down the front face and mechanically fasten the edge. Install the metal coping IAW ANSI/SPRI ES-1 as per UFC 3-110-03. Ensure copings are properly flashed and detailed to avoid roof leaks.

2. Roof edges: carry roof flashing material over the top of the edge blocking, down the front face of the blocking and mechanically fasten the edge of the flashing. Install the metal coping IAW ANSI/SPRI ES-1 as per UFC 3-110-03. Ensure copings are properly flashed and detailed to avoid roof leaks.

3. At sidewalls: roof flashing shall extend a minimum of 16" up the sidewall, the top edge shall be mechanically fastened and be flashed watertight.

D07.4. Color and Reflectivity

1. Steep-sloped roofs in Groups 1, 2 and 3 shall be dark bronze, generally match the color of any immediately adjacent facilities.

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

3. Sloped roofs in Group 4 shall be natural medium to dark wood tones.

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

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

D07.5. Gutters, Downspouts, Scuppers, Drains

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

2. Groups 1, 2 and 3 buildings with low-sloped roofs use scuppers in parapet walls (number and size per IBC and SMACNA). Arrange scuppers in an orderly manner consistent with other elements of the wall system.

3. It is preferred to drain all water to roof perimeters and drain off of roof from there. Interior roof drains may be used only for low sloped roofs if perimeter drainage becomes impracticable.

4. Locate downspouts away from building entries. Discharged water shall not surface drain across sidewalks.

5. Provide gutters and downspouts for all Group 4 roofs.

6. Provide splash blocks at all downspout outlets.

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. Rooftop mechanical equipment is not allowed for new construction. All abandoned roof top equipment shall be removed and the opening(s) capped.

4. It is preferable that any roof that is greater than 16'-0" above grade have an interior access hatch with an approved ladder. If an interior access hatch is not possible provide an exterior ladder complying with OSHA requirements. Provide roof manufactures walkway pads at the top of the exterior ladder or at all sides of the access hatch.

5. Where changes in roof levels of over 2'-0" occur provide a ladder to access the other roof levels. Provide roof manufactures walkway pads at the top and bottom of the ladder(s).

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

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

8. Avoid roof-mounted antenna systems.

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

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

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

12. Permanent fall protection shall be provided in accordance with UFC 3-110-03. Fall protection shall be included with any addition to an existing roof or a new roof with a slope above 3" per 1'-0", where maintenance work is required per UFC 3-110-03.

D07.7. Clerestories and Skylights

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

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

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

4. Clerestories must comply with UFC 4-010-01.

5. No roof top skylights or translucent panels shall be allowed on any new roofs unless approved by the BCE, except as noted: solar tube type skylights are allowed at Facility Group 1.

D07.8. Vegetated Roof

1. Not applicable.

D07.9. Roof Systems Materials

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

D07.9.1. Standing Seam Metal

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



Type: **Style 1 - Dark**

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

Mfr: Berridge

Color: Dark Bronze

Finish: Matte

Model #: Tee-Panel

Other: Shed, gabled or hipped standing seam metal

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

D07.9.2. Membrane Single-ply

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



Type: **Style 1**

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

Mfr: Carlisle Systems

Color: Black

Finish: Smooth

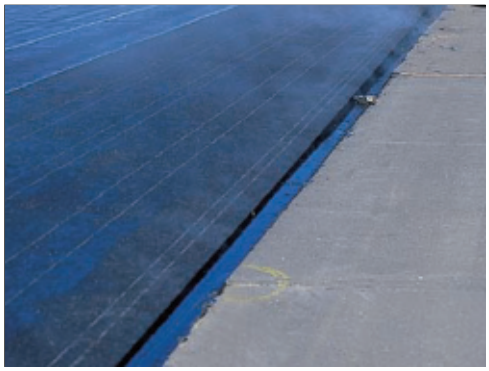
Model #: EPDM single-ply, “flat” low-sloped

Other: fully adhered

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 Number of base standards 1 Image Tool 250 x 188



Type: **johns Manville**

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

Mfr: Johns Manville

Color: N/A

Finish: Gravel

Model #: 4GIS-HA-G

Other: Use 4GNS-HA-G for nailable decks.

UFGS: Section 07 51 13 Built-Up Asphalt Roofing
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 51 13.pdf

D07.9.4. Concrete Tile

○ Applicable ◉ N/A

D07.9.5. Clay Tile

○ Applicable ◉ N/A

D07.9.6. Slate Shingles

○ Applicable ◉ N/A

D07.9.7. Vegetated System

○ Applicable ◉ N/A

D07.9.8. Ribbed Metal Sheeting

◉ Applicable ○ 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: Beige or Dark Bronze

Finish: Factory - Kynar 500/fluoropolymer coating

Model #: High Seam Tee-Panel

Other: Mechanically seamed system, 24 ga. steel, width 16", batten height 1 3/4"

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

D07.9.9. Composite Shingles

◉ Applicable ○ N/A 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: GAF

Color: Brown blend on non-family housing facilities

Finish: Factory

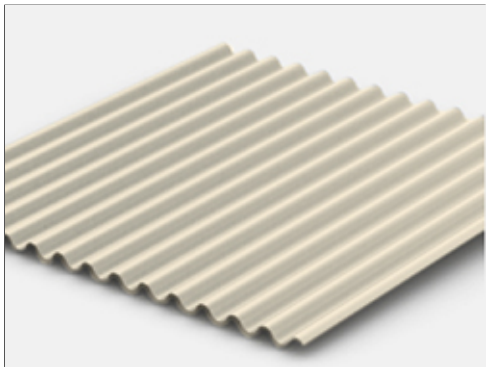
Model #: Timberline HD

Other: Shingle colors on family housing facilities shall be selected from manufacturer's standard colors and approved by Base Civil Engineer representative. Install for 130 MPH warranty.

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 Number of base standards 1 Image Tool 250 x 188



Type: **Ribbed Metal Roofing**

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

Mfr: Berridge

Color: Beige or Dark Bronze

Finish: Factory - Kynar 500/fluoropolymer coating

Model #: S-deck Panel

Other: 22 ga. galv. steel, exposed fasteners.

UFGS: Section 07 41 13 Metal Roof Panels

D08. STRUCTURAL SYSTEMS

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

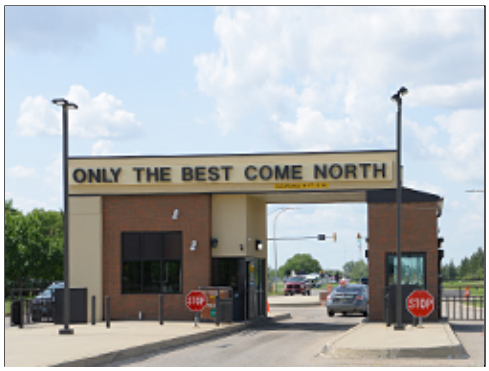
Comply with AF Corporate Standards for Structural Systems:
http://afcfs.wbdg.org/facilities-exteriors/structural-systems/index.html

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

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1



Group 2





Group 3





Group 4





D08.1. Systems and Layouts

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

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

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

4. Narrow buildings 60' or less in width with column-free interiors are preferred for office, administrative and personnel spaces; when interior columns are required optimize the structural grid layout for open-plan arrangements.

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

6. If structure is exposed on building exteriors, it may be made of concrete, non-ferrous metals such as aluminum or stainless steel or steel. Ferrous metal structures are permitted with weatherproof non-ferrous metal cladding, pre-cast concrete cladding or galvanized and painted. 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.

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

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

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

10. Manufacturers listed below are only provided to establish a baseline of equivalence 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: Integral color concrete, beige masonry or brown masonry

Finish: As cast concrete, Ground face or split face CMU

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

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

UFGS: Section 04 20 00 Unit Masonry
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: ClarkDietrich Building Systems

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-exteriors/index.html

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

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1





Group 2





Group 3





Group 4





D09.1. Passive and Active Systems

1. Fully integrate passive heating systems into facility designs whenever practical for the local climate prior to the design of active mechanical systems.

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

3. Develop renewable energy systems including geo-exchange (ground source heat pumps) when life cycle cost effective.

4. Performance display screens, which report energy performance and utility savings, are encouraged; when provided locate these in building lobbies or common areas.

5. Solar domestic hot water systems are permitted following a LCCA.

6. Integrate shading into building exteriors to reduce solar heat gain 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. Separate mechanical and electrical and communications rooms.

3. 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.

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

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

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

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

8. 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.

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

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

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

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

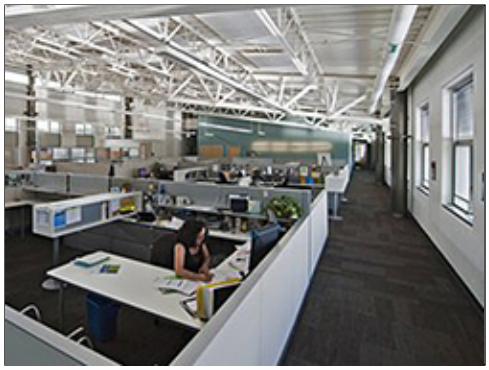
E. FACILITIES INTERIORS

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

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1





Group 2





Group 3





Group 4





E01. Building Configurations

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

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

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

3. Use more durable long-lasting finishes in core areas for walls, ceilings, floor coverings and built-in casework. Coordinate interior FF&E layouts with structural grids during space planning.

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

5. Comply with UFC 1-200-01, 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, anti-terrorism, security, high performance and sustainability requirements, and safety.

6. Meet security and force protection requirements in UFC 4-010-01: DoD Minimum Anti-terrorism Standards for Buildings.

7. Comply with AFCFS for supporting mission requirements, addressing human comfort and well-being, and creating highly flexible interiors while satisfying metrics for high performance and sustainable buildings.

8. Provide a level of quality for interior features, materials and finishes that is appropriate for the Facility Group number. Group 1 may receive higher quality than Groups 2 thru 4. Refer to Facility Hierarchy.

9. Through open-plan configurations, preserve all passive and natural design strategies and fully integrate facility interiors with overall building systems. Identify all heat-recovery systems and ensure their efficient operation.

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

11. Consult with the State Historic Preservation Officer (SHPO) and base-level Historic Preservation offices regarding proposed changes to properties listed on or eligible for listing on the National Register of Historic Places. Follow requirements of The National Historic Preservation Act and Secretary of the Interior Standards for the Treatment of Historic Properties.

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

E01.1. Layout and Common Areas

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

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

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

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

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

5. Allow no direct sight lines into restrooms.

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

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

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

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

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

E01.1.1. Interior Design Process

1. Comply with UFC 3-120-10 for the Comprehensive Interior Design (CID,) which includes both Structural Interior Design (SID) and Furniture, Fixtures & Equipment (FF&E) design services.

2. Use a collaborative, integrated planning and design team, composed of user, government support staff, and appropriate professionals. Integrate architectural features using simple detailing to create a professional appearance; avoid extravagant or excessive detailing.

3. Ensure interior designs satisfy the functional requirements within the context of flexibility, sustainability and the building's energy performance.

4. Base space planning on square foot allocations from AFM 32-1084. Identify special requirements if any, such as privacy separation, VIP areas, gathering spaces and storage. Note: The occupant's rank and position will influence the square footage and selection of materials.

5. Provide clear circulation and pathway finding for both horizontal and vertical directions that accommodate the number of personnel in the facility.

6. Maximize efficiencies in the space plan for functional relationships and adjacencies for all facility users. Efficiently create and situate rooms and support rooms such as conference / meeting rooms and break rooms.

7. Provide interior design building-related illustrations, drawings, schedules, materials selections, specifications and cost estimates as listed in UFC 3-120-10. Refer to Furnishings in this IFS also.

8. SID Format shall follow HQ AFCEC standards.

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

E01.1.2. Codes and Regulations

1. Refer to UFC 1-200-01 for modifications to the International Building Code (IBC) to determine applicable sections of the IBC. Both the IBC Chapter 3 and UFC 3-600-01 govern “Use and Occupancy Classification” for example.

2. Fire code requirements shall be as defined in the International Building Code (IBC) and must be used where dictated by UFC 1-200-01 DoD Building Code (General Building Requirements) except where noted in UFC 3-600-01 (Fire Protection Engineering For Facilities).

3. National Fire Protection Association (NFPA) 101 must be utilized to determine the occupancy classification as it relates to fire/ smoke resistance rating of interior non-load bearing partitions (other than occupancy separation), means of egress, interior finish, features of fire protection (including vertical openings) and associated requirements.

E01.2. Quality and Comfort

Comply with Air Force Corporate Standards for Quality and Comfort:
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:	Carpet/Porcelain Tile (at entry, core area)
Secondary:	Porcelain Tile
Tertiary:	Concrete Sealed/Rubber Stair Treads

Facility Group 2 floor materials shall be as follows.

Primary:	Carpet/Porcelain Tile (at entry, core area)
Secondary:	Porcelain tile
Tertiary:	Concrete Sealed, Rubber Stair Treads

Facility Group 3 floor materials shall be as follows.

Primary:	Concrete Sealed
Secondary:	Resinous flooring
Tertiary:	Ceramic tile

Facility Group 4 floor materials shall be as follows.

Primary:	Carpet/LVT
Secondary:	Sheet Vinyl
Tertiary:	N/A

1. Natural stone and terrazzo flooring may be used in high traffic areas of Group 1 as approved on a case basis.
2. Resilient and rapidly renewable flooring may be used in low traffic areas in Group 1, 2 and 4.
3. Manufacturers listed below are only provided to establish a baseline of equivalence 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: **Style 2, Medium Polished**

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

Mfr: Local (TBD)

Color: Natural gray cement, light to dark beige aggregates

Finish: Medium polished texture, slip resistant

Model #: Medium to small aggregate

Other: N/A

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

E02.1.2. Natural Stone and Terrazzo

○ Applicable ◉ N/A

E02.1.3. Quarry Tile

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



Type: **Style 1**

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

Mfr: Daltile

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: Daltile

Color: Earth tones

Finish: Matte, slip resistant

Model #: Porcelain tile

Other: Use in high traffic areas. Epoxy grout is recommended.

UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling
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 3 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



Type: **Style 2 Luxury Vinyl Tile**

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

Mfr: Armstrong

Color: Manufacturer's Standard

Finish: Factory

Model #: Vivero Best U2010

Other:

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



Type: **Sheet Vinyl**

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

Mfr: Armstrong Flooring

Color: Neutrals

Finish: Low Gloss

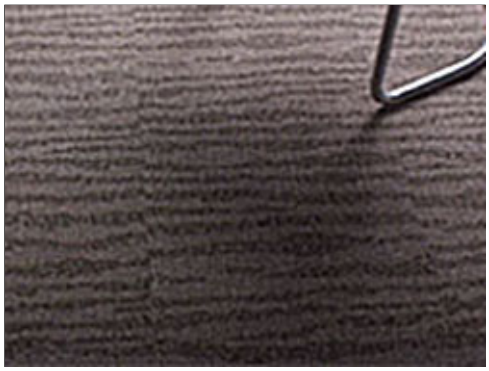
Model #: Duality Premium

Other:

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

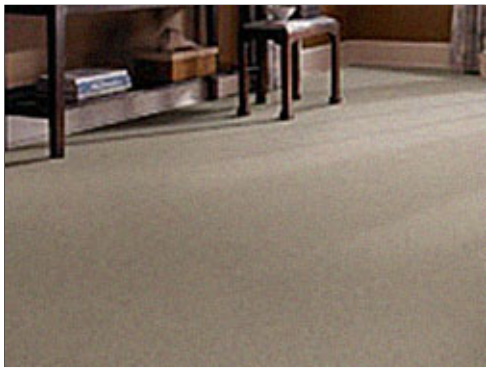
Color: Neutral multi-colored tones/patterned/solid

Finish: Nylon. Level loop, textured loop, level cut pile, or level cut/uncut pile

Model #: Carpet tiles

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 Number of base standards 2 Image Tool 250 x 188



Type: **Style 1, Epoxy Flooring**

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

Mfr: Sika USA

Color: Light Gray

Finish: Slip Resistant

Model #: SIKAFLOOR MORRITEX SELF LEVELING BROADCAST SYSTEM

Other:

UFGS: UFGS 09 67 23.16 5-Coat System



Type: **Style 2, Resinous Flooring**

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

Mfr: Sika USA

Color: Manufacturer's Standard

Finish: Manufacturer's Standard

Model #: SIKAFLOOR QUARTZITE BROADCAST SYSTEM

Other:

UFGS: UFGS 09 67 23.13 Standard Resinous Flooring

E03. Walls

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

E03.1. Wall Materials

Facility Group 1 wall materials shall be as follows.

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

Facility Group 2 wall materials shall be as follows.

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

Facility Group 3 wall materials shall be as follows.

Primary:	Ground or Rock face block, sealed (do not paint)
Secondary:	Gypsum board (painted)
Tertiary:	Porcelain 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 porcelain tile on wet walls of kitchens, toilet rooms, locker rooms, etc., in facility groups 1, 2 and 3.
4. Neutral split-face or ground-face integrally colored block with a clear sealer may be used in Group 3. Do not paint block.
5. Provide rubber base on drywall partitions in Groups 1, 2 and 3.
6. Hardwood base may only be used in Group 1 as approved on a case basis.
7. Hardwood chair rails / bumper rails may be used in high-use areas of Groups 1 and 2; aqueous clear finishes are preferred to reduce maintenance; plastic chair rails are permitted only in medical applications.
8. Decorative moldings may be used only in Group 1 when approved on a case basis.
9. Corner guards are permitted only in high traffic spaces with wheeled or cart use such as private service areas in Groups 1 and 2; stainless steel corners guards with a brushed finish may be judiciously used in Group 3.
10. Group 4 may use painted composite wood base or wood base with clear finish.
11. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.

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

E03.1.1. Concrete

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



Type: **Formed Concrete**

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

Mfr: Custom, TBD

Color: Integral color concrete, color as approved by the BCE

Finish: As cast

Model #: Board-formed or sheet-formed concrete

Other: Vertical or horizontal forming is permitted, no visible ties
UFGS below is incorrect use:
Section 03 33 00 Cast-In-Place Architectural Concrete

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

E03.1.2. Masonry

◉ 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: Hebron Brick

Color: 2/3 red with 1/3 maroon or Sea Gray #6

Finish: Velour finish

Model #: Modular brick

Other: Brick is preferred. Concrete block may only be used in Group 3 when approved by the BCE. UFGS below is incorrect use:
Section 04 20 00 Unit Masonry

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



Type: **Decorative CMU - Burnished**

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

Mfr: Anchor Block

Color: Cream to Dark Brown, color as approved by the BCE

Finish: Burnished

Model #: 16" x 8" x depth as required

Other: Corners, ends and special shapes required by design.
UFGS below is incorrect use:
Section 04 20 00 Unit Masonry

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

E03.1.3. Ceramic Tile

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



Type: **Style 1**

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

Mfr: Daltile

Color: Earth tones

Finish: Gloss, Semi-gloss

Model #: Ceramic wall tile

Other: Located on wet walls in restrooms, provide shapes (bullnose, coves and etc.) as required for application

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**

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

Mfr: Datile

Color: Earth tones

Finish: Matte

Model #: Porcelain wall tile

Other:

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: Use water-resistant in wet areas, fire-resistant in rated assemblies, moisture resistant in humid areas and abuse resistant in high traffic areas.

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

E03.1.5. Metal Panels

○ Applicable ◉ N/A

E03.1.6. Wood Paneling

○ Applicable ◉ N/A

E03.1.7. Rapidly-Renewable Products

○ Applicable ◉ N/A

E03.1.8. Other

○ Applicable ◉ N/A

E04. Ceilings

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

E04.1. Ceiling Materials

Facility Group 1 ceiling materials shall be as follows.

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

Facility Group 2 ceiling materials shall be as follows.

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

Facility Group 3 ceiling materials shall be as follows.

Primary:	Exposed Framing (Roof / Floor Structure Above)
Secondary:	Grid and Acoustical Tile
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. Painted gypsum board ceilings must be approved by the Base Civil Engineer. Painted gypsum board ceilings should be avoided.
4. Manufacturers listed below are only provided to establish a baseline of equivalence 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

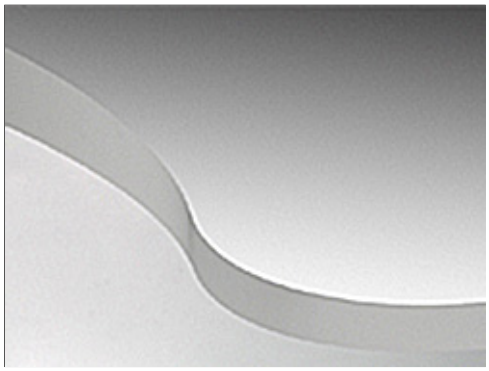
Model #: Kitchen – 2' x 2' Ceramaguard

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: Smooth, Painted (sheen per UFGS)

Model #: Tapered edge

Other: N/A

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

E04.1.5. Metal Panels

○ Applicable ◉ N/A

E04.1.6. Wood

○ Applicable ◉ N/A

E04.1.7. Rapidly-Renewable Products

○ Applicable ◉ N/A

E04.1.8. Other

○ Applicable ◉ N/A

E05. Doors and Windows

Comply with Air Force Corporate Standards for Doors and Windows:
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:	Hollow Metal (painted)
Secondary:	Hollow metal (painted)
Tertiary:	N/A

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

Primary:	Hardwood veneer solid core
Secondary:	Hollow metal (painted)
Tertiary:	N/A

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

Primary:	Hollow Metal, (painted)
Secondary:	Hollow metal (painted)
Tertiary:	N/A

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

Primary:	Hardwood veneer solid core
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:	Alum clad ext., wood int. frame - at Entry Doors
Secondary:	Wood frame - Interior doors
Tertiary:	N/A

Facility Group 4
door (leaf) materials shall be as follows.

Primary:	Insulated metal door - Entry doors
Secondary:	Wood veneer solid core - Interior doors
Tertiary:	N/A

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

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

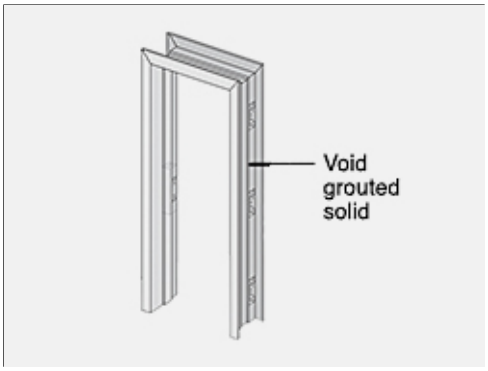
Color: Neutral colors

Finish: Paint (Sheen per UFGS)

Model #: Hollow metal, 1 3/4" thick, 16 gauge, L series, seamless edges

Other: Provide in Group 3 and in utility areas of Group 1 and 2. Provide A25 "galvannealed" coating. All other interior steel doors shall have a factory applied primer finish. Use T series where required by code.

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, 2" face, 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 other interior steel frames shall have a factory applied primer finish.

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 ¾", solid core

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

UFGS: Section 08 14 00 Wood Doors
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 14 00.pdf
Section 08 71 00 Door Hardware
https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf



Type: **Style 2, Residential**

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

Mfr: Simpson

Color: Natural hardwood veneer or paint grade

Finish: Clear Sealer or paint, satin (aqueous)

Model #: Full slab or panels

Other:

UFGS: Section 08 14 00 Wood Doors
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 14 00.pdf
Section 08 71 00 Door Hardware
https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf

E05.1.4. Other

○ Applicable ◉ N/A

E06. Casework Systems

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

E06.1. Casework Materials

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

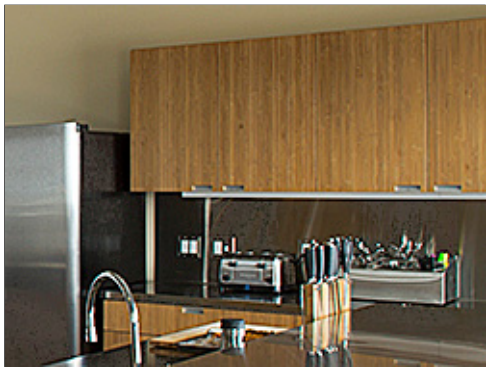
Model #: Solid Surface

Other: Finish faces and edges in accordance with design details.

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

E06.1.3. Rapidly-Renewable Products

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



Type: **Style 1 Moderate Use Areas**

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

Mfr: Plyboo

Color: Natural or amber

Finish: Satin

Model #: Flat grain bamboo plywood

Other: FSC® Certified 100%.

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

E06.1.4. Metal

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



Type: **Style 1**

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

Mfr: Steel Sentry

Color: Natural stainless steel or neural colors (steel)

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

Model #: Lab, workbench, computer workstation

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

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

E06.1.5. Other

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



Type: **Wood Casework - Custom**

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

Mfr: Custom

Color: Natural hardwood with stain.

Finish: Transparent Finish

Model #: N//A

Other: Stain: as selected by designer and approved by BCE; premium grade cabinets at Group 1.

UFGS: 06 20 00 Finish Carpentry



Type: **Wood Casework - Pre-manufactured**

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

Mfr: Merillat

Color: Natural hardwood with stain.

Finish: Transparent Finish

Model #: As selected

Other: Stain: as selected by designer and approved by BCE.

UFGS: 12 32 00 Manufactured Wood Casework

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: Combine with matching plastic laminate banding on casework edges. Provide backsplash and end returns in accordance with design drawings.

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

E06.2.2. Solid Polymer Surface

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



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

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

Mfr: Corian

Color: Medium Earth tones and neutral tones

Finish: Smooth

Model #: Solid Surface

Other: Finish faces and edges in accordance with design details. Provide backsplash and end returns in accordance with design drawings.

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

E06.2.3. Natural Stone

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



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

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

Mfr: Local (TBD)

Color: Neutral tones

Finish: High polish, sealer

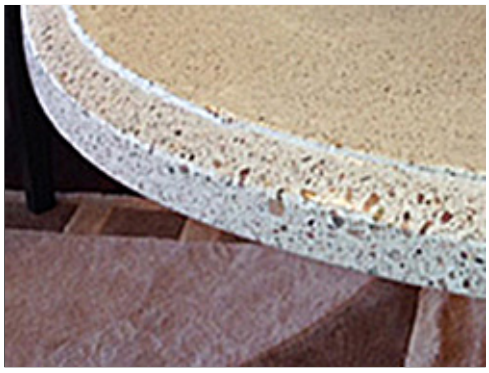
Model #: Custom cut slabs

Other: N/A

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

E06.2.4. Cast Stone

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



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

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

Mfr: Local (TBD)

Color: Neutral tones

Finish: High polish, sealer

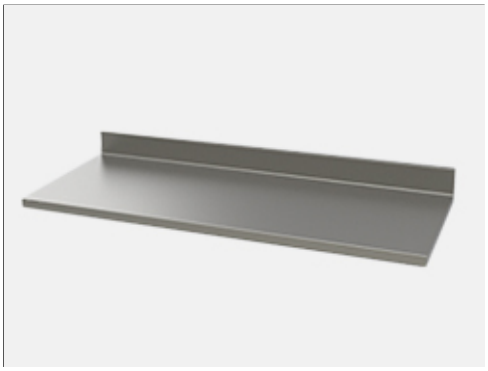
Model #: Custom cast or cut slabs

Other: N/A

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

E06.2.5. Metal

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



Type: **Stainless Steel Countertop**

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

Mfr: Local (TBD)

Color: Natural stainless steel

Finish: Mill

Model #: Custom fabricated countertops

Other: Provide integral fronts, sides and backsplash

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

E06.2.6. Other

○ Applicable ◉ N/A

E07. Furnishings

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

E07.1. Durability and Serviceability

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

E07.2. Accessories

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

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.

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

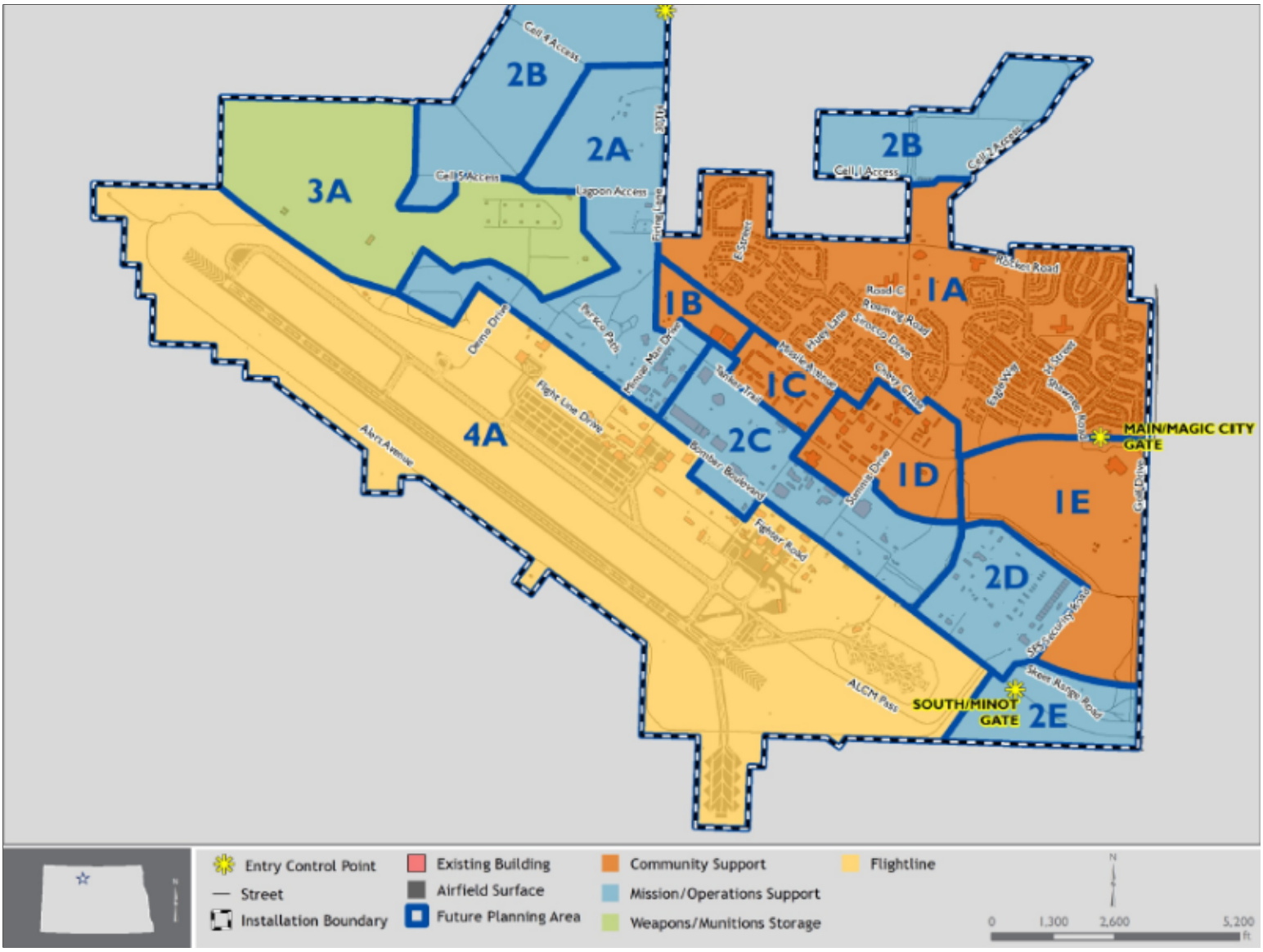
F. APPENDIX - Facility Districts

- (•) Applicable
- ( ) N/A

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

Facilities Districts Overview Map:

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.*

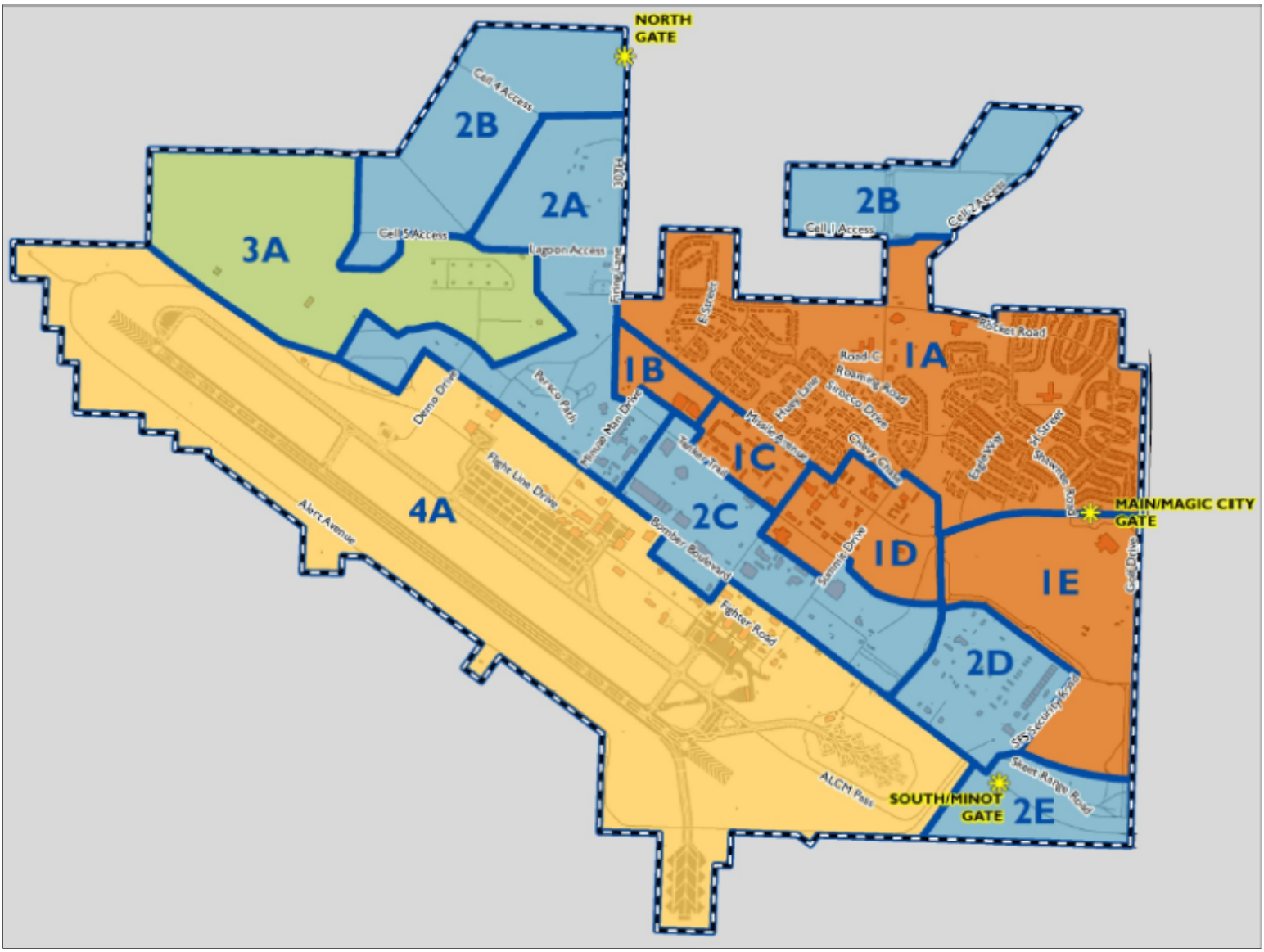
Enter No. of Facility Districts 1

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: Minot AFB Base-wide 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

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

1. **Community Support District**
   Facilities in the Community Support District should continue to be pedestrian in scale. Thee North Plains Area 1A consists of detached single family residential units occupied by enlisted and officer families. This area is currently under a housing privatization contract, but shall follow standards for Facility Group 4 as defined in this IFS. Area 1B is the Commercial Center containing the Commissary and Base Exchange. Area 1B shall follow standards for Group 2. The Airman's Campus is Area 1C and should follow standards for Group 2. Area 1D is mixed use combining Airman Campus, Headquarter facilities, Learning Center, Fitness Center and Community support functions. Headquarter facilities should follow Group 1 standards while other uses should follow Group 2 standards.

2. **Mission and Operations Support District**
   The Missions and Operations Support District includes facilities that are industrial in nature, while other facilities are administrative in nature. Industrial uses may include warehouses for various base activities including maintenance, storage, utility functions, industrial services, transportation storage, communications, civil engineering, supply and equipment, vehicle maintenance/motor pool complex, open storage, ordnance and weapons storage areas, and other industrial uses. Administrative facilities include Wing Headquarters, Squadron Headquarters and general office space. Facilities in this district should generally match adjacent buildings to ensure architectural compatibility and shall follow standards for Facility Groups 2 and 3 as defined in this IFS, except that Wing Headquarters shall follow Group 1 standards.

3. **Weapons/Munitions Storage District**
   Facilities in this district are industrial in nature, should generally match adjacent buildings to ensure architectural compatibility and shall follow standards for Facility Group 3 as defined in this IFS.

4. **Flight line District**
   The Flight line District includes facilities that are industrial in nature and may support flight line operations. Alternative uses may include warehouses for various base activities including maintenance, storage, utility functions, industrial services, supply and equipment, fuel storage, open storage, emergency/disaster response facilities, and other industrial uses. Facilities in this district are industrial in nature, should generally match adjacent buildings to ensure architectural compatibility and shall follow standards for Facility Group 3 as defined in this IFS.

G. APPENDIX - References

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

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

1. There are no supplementary documents at this time.