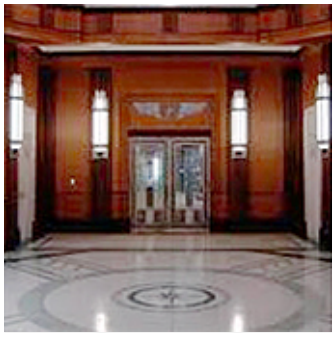
(PRE-FINAL)
WRIGHT-PATTERSON AFB
INSTALLATION FACILITIES STANDARDS (IFS)


Installation Elements


Site Development


Facilities Exteriors


Facilities Interiors

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Signature Field HAYES.ALISON.D.1231633940 Digitally signed by HAYES.ALISON.D.1231633940
Date: 2021.01.28 09:16:01 -06'00'

AIR FORCE INSTALLATION FACILITIES STANDARDS

2021

Wright-Patterson 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

◉ 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

Chidlaw Road Gate

Group 1 and 2 Materials Palette

Group 3 Hangars

Group 4 Historical Housing

A01. FACILITY HIERARCHY

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

A02. FACILITY QUALITY

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

A03. FACILITY DISTRICTS

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

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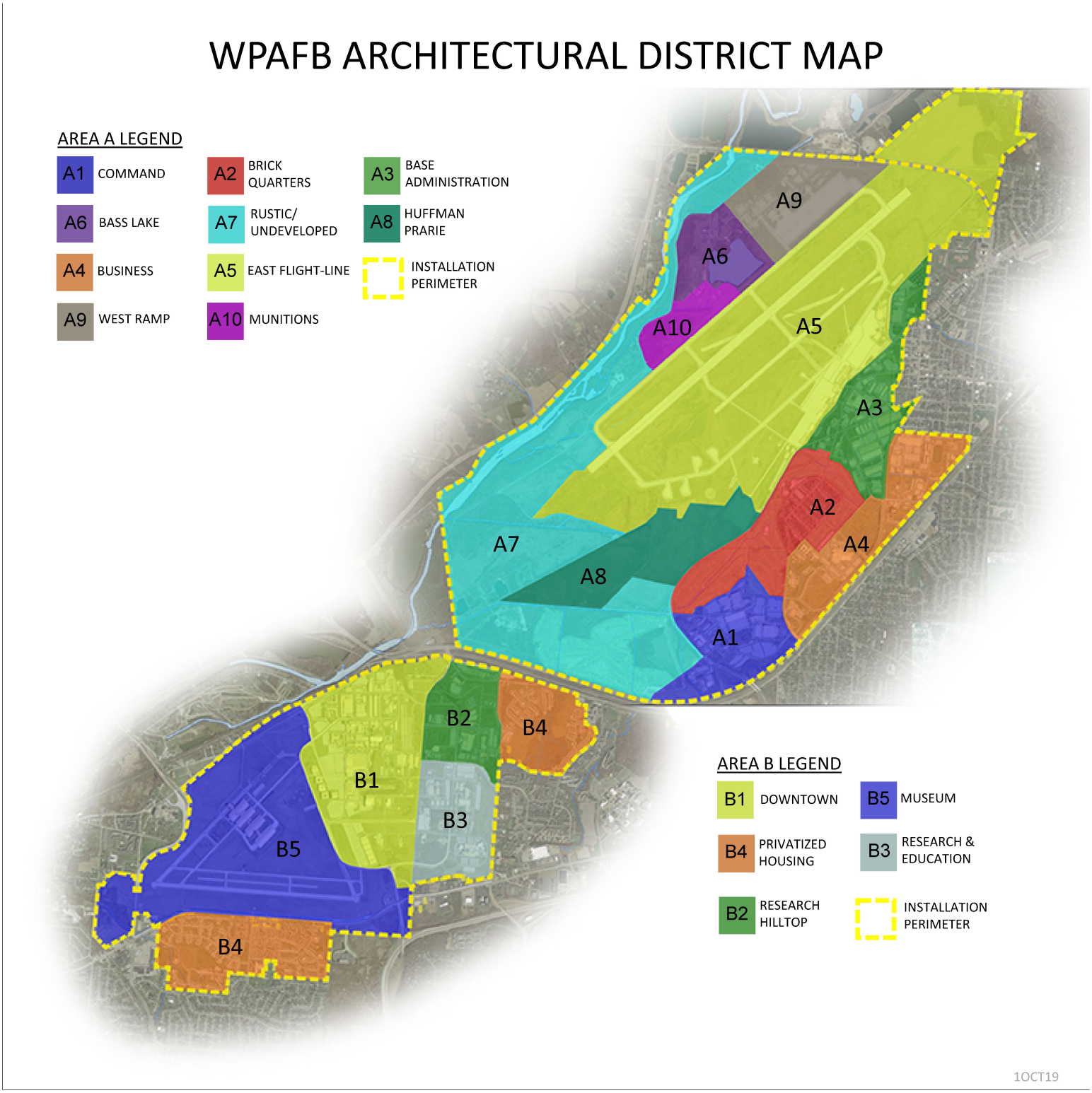


Note: *Apply the base-wide standards in this IFS for Installation Elements, Site Development, Facilities Exteriors and Facilities Interiors (products, materials, color, etc.). Following application of the base-wide standards, refer to the Appendix and apply any additional requirements specifically related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

B. INSTALLATION ELEMENTS

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

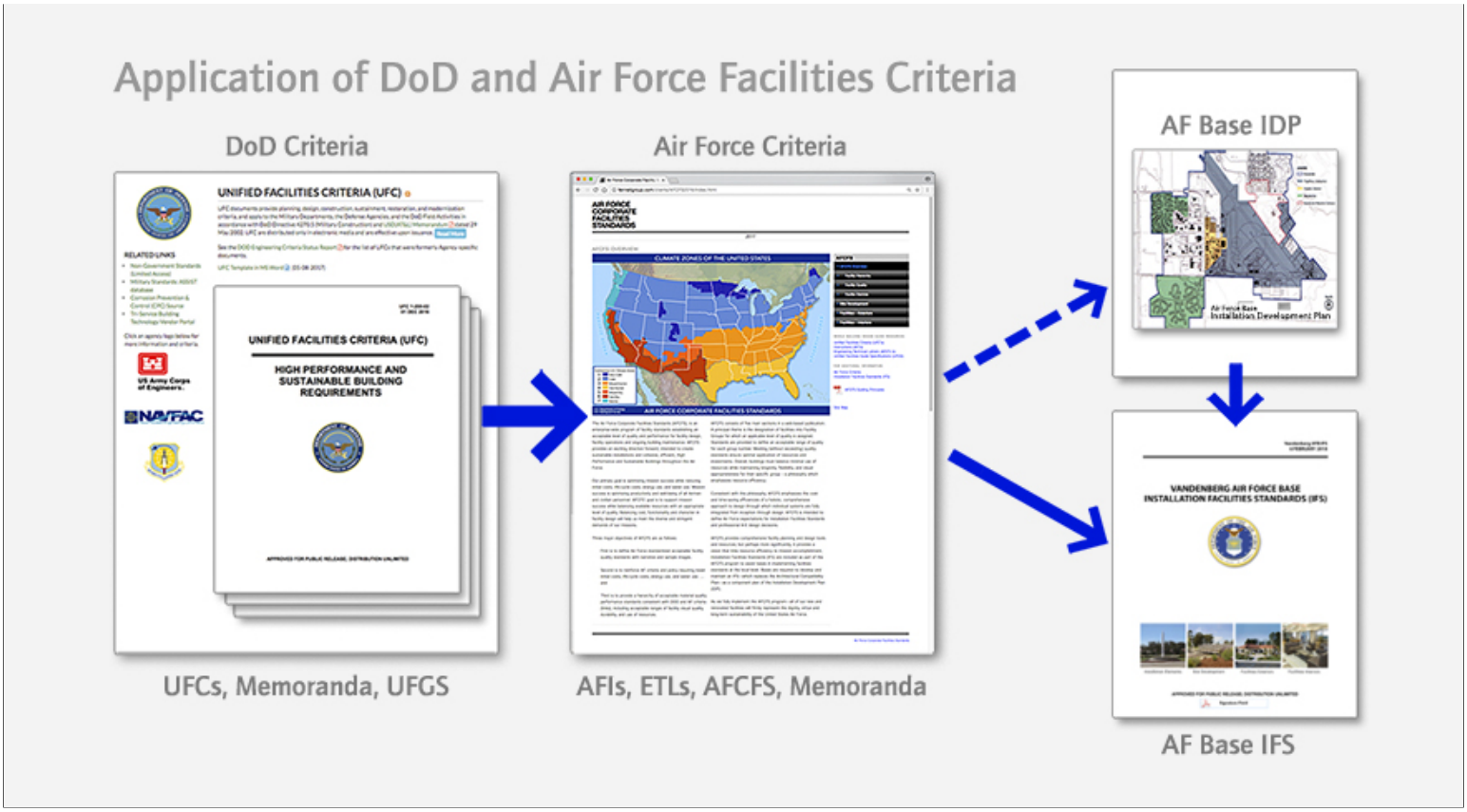
B01. COMPREHENSIVE PLANNING

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

B01.1. Installation Development Plan (IDP)

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

○ Applicable ◉ N/A Small graphics do not apply



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

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

B01.1.1. IFS Component Plan of IDP

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

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

B01.1.2. Brief History of Base

◉ Applicable ○ N/A 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

Wright Field Open House 1945

Wright Brothers at Huffman Prairie

Wilbur Wright Field 1917

Patterson Field 1942

Memphis Belle at Patterson Field 1943

Wright Field 1945

"Bockscar" at Wright-Paterson AFB 1961

WPAFB is located adjacent to the city of Dayton, Ohio, commonly known as "the birthplace of aviation." With over 700 facilities and 1,636 housing units (100 government-owned and 1,536 privatized), the 33 square kilometers (8,145 acre) Base has the character of a small city with its own residential, office, industrial, recreational, retail, health care, and educational uses. As diverse as its tenant organizations, the Base population of approximately 30,000 people is made up of civilian and military personnel, military dependents, contractors, students, and transient military personnel. The Base is divided into two distinct areas - Area A and Area B. Area B is separated from Area A by State Route 444: Area A, which primarily houses administrative functions, contains the Headquarters for the Air Force Materiel Command (HQ AFMC), National Air & Space Intelligence Center (NASIC), the Wright-Patterson Medical Center, and several military housing areas. Area A also encompasses the only active airfield on Base and houses the headquarters for the 88th Air Base Wing, the Kittyhawk Community Center, military family housing areas, and several morale, welfare, and recreation facilities. Area B, which is principally comprised of research, development and education functions, contains the Life Cycle Management Center (LCMC), Wright Laboratory, the Air Force Institute of Technology (AFIT), and the National Museum of the United States Air Force.

While Wright-Patterson traces its military origins to World War I, its aviation history began with the origins of manned, powered, controlled flight. Following their successful proof-of-concept flights at Kitty Hawk, North Carolina, in December 1903, Wilbur and Orville Wright returned home to Dayton, Ohio. They then selected an 84-acre plot of land near Dayton to serve as an experimental flying field while they transformed their invention into a real flying machine. The Huffman Prairie Flying Field, now a part of Wright-Patterson AFB and a National Park site, is where they developed the first practical airplane (the 1905 Flyer III). Over this prairie the brothers accomplished the first turn and circle in an airplane and solved the final mysteries of flight during 1904 and 1905. Here, too, they invented and used the first successful aircraft catapult launcher. The Huffman Prairie was also, as Orville wrote, where they “really learned to fly.”

The brothers returned to the Huffman Prairie Flying Field in 1910. This time the site served as home to the Wright Company School of Aviation, the Wright’s flight exhibition company, and a test field for their aircraft company. Their aviation school trained 119 pilots. For $250, they delivered a two-week course of instruction that included “four hours of actual practice in the air and such instruction in the principles of flying machines as is necessary to prepare the pupil to become a competent and expert operator.” The tuition fee also covered any incidental damage to the equipment. Among their graduates were Army Lieutenant Henry “Hap” Arnold, who was sent to the school in 1911 to earn his wings, and A. Roy Brown, the Canadian ace who would receive aerial credit for downing Baron von Richthofen, the Red Baron in 1918. By the time operations on the Huffman Prairie ended in 1916, the Wrights had used the field as a research and development facility, flight test center, logistics depot, and training center. These functions would define the future of the Huffman Prairie and its surroundings for the next century. Equally important, the “can-do” spirit of invention and innovation that Wilbur and Orville brought to their flying field would inspire their heirs to continue pushing aeronautical engineering to its technological limits.

For a comprehensive early history please refer to the History of Wright Patterson AFB in Appendix G of this IFS.WPAFB is located adjacent to the city of Dayton, Ohio, commonly known as "the birthplace of aviation." With over 700 facilities and 1,636 housing units (100 government-owned and 1,536 privatized), the 33 square kilometers (8,145 acre) Base has the character of a small city with its own residential, office, industrial, recreational, retail, health care, and educational uses. As diverse as its tenant organizations, the Base population of approximately 30,000 people is made up of civilian and military personnel, military dependents, contractors, students, and transient military personnel. The Base is divided into two distinct areas - Area A and Area B. Area B is separated from Area A by State Route 444: Area A, which primarily houses administrative functions, contains the Headquarters for the Air Force Materiel Command (HQ AFMC), National Air & Space Intelligence Center (NASIC), the Wright-Patterson Medical Center, and several military housing areas. Area A also encompasses the only active airfield on Base and houses the headquarters for the 88th Air Base Wing, the Kittyhawk Community Center, military family housing areas, and several morale, welfare, and recreation facilities. Area B, which is principally comprised of research, development and education functions,

contains the Life Cycle Management Center (LCMC), Wright Laboratory, the Air Force Institute of Technology (AFIT), and the National Museum of the United States Air Force.

B01.1.3. Future Development

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

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

Aerial Image of Wright-Patterson Air Force Base Main Cantonment

1. Follow AFI 32-7062 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

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

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

Coordinated Street Elements

Primary Arterial

Collector Street

Local Street in Group 4

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

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

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

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

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

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

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

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

9. Minimize and consolidate curb cuts along streets.

10. Ensure access for emergency and service vehicles.

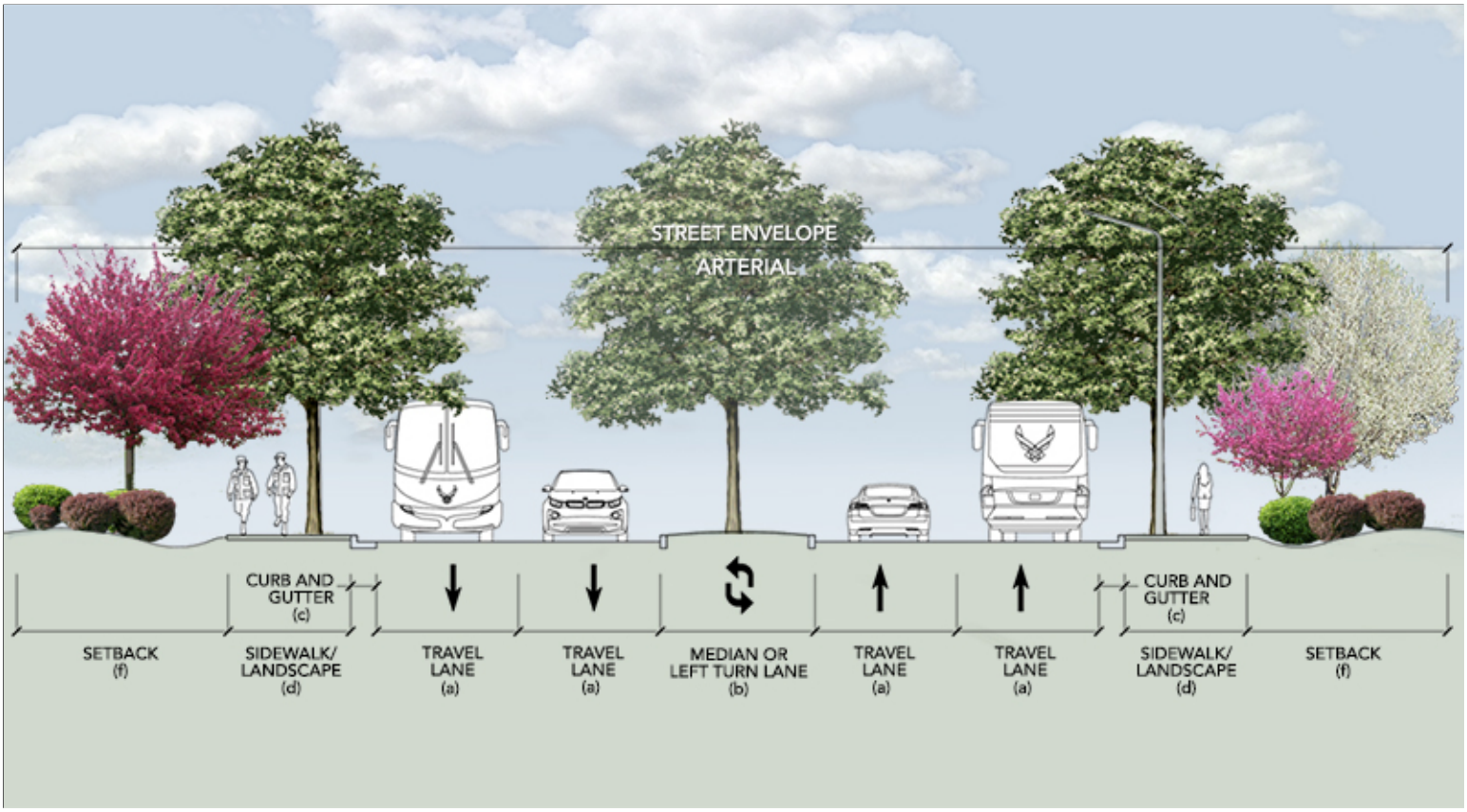
11. Define bicycle traffic routes in the Installation Development Plan or its applicable component plans.

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

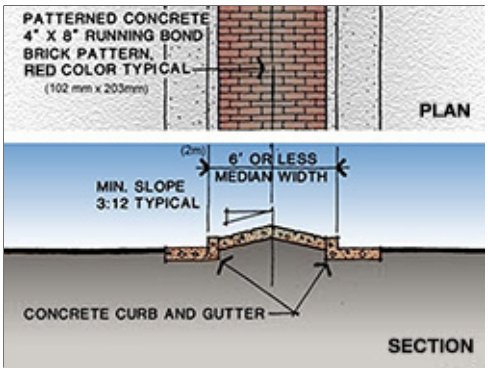
B02.1.1. Arterial Streets

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

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



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



Paved Median


Low Profile Wall


Striped Median

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

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

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

4. Reinforce the importance of arterial streets with appropriate signs, plantings and street lighting.

B02.1.2. Collector Streets

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

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

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

Collector in Low Pedestrian Density Setting

Collector at Group 2

Collector at Group 3

Typical Street Elements

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

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

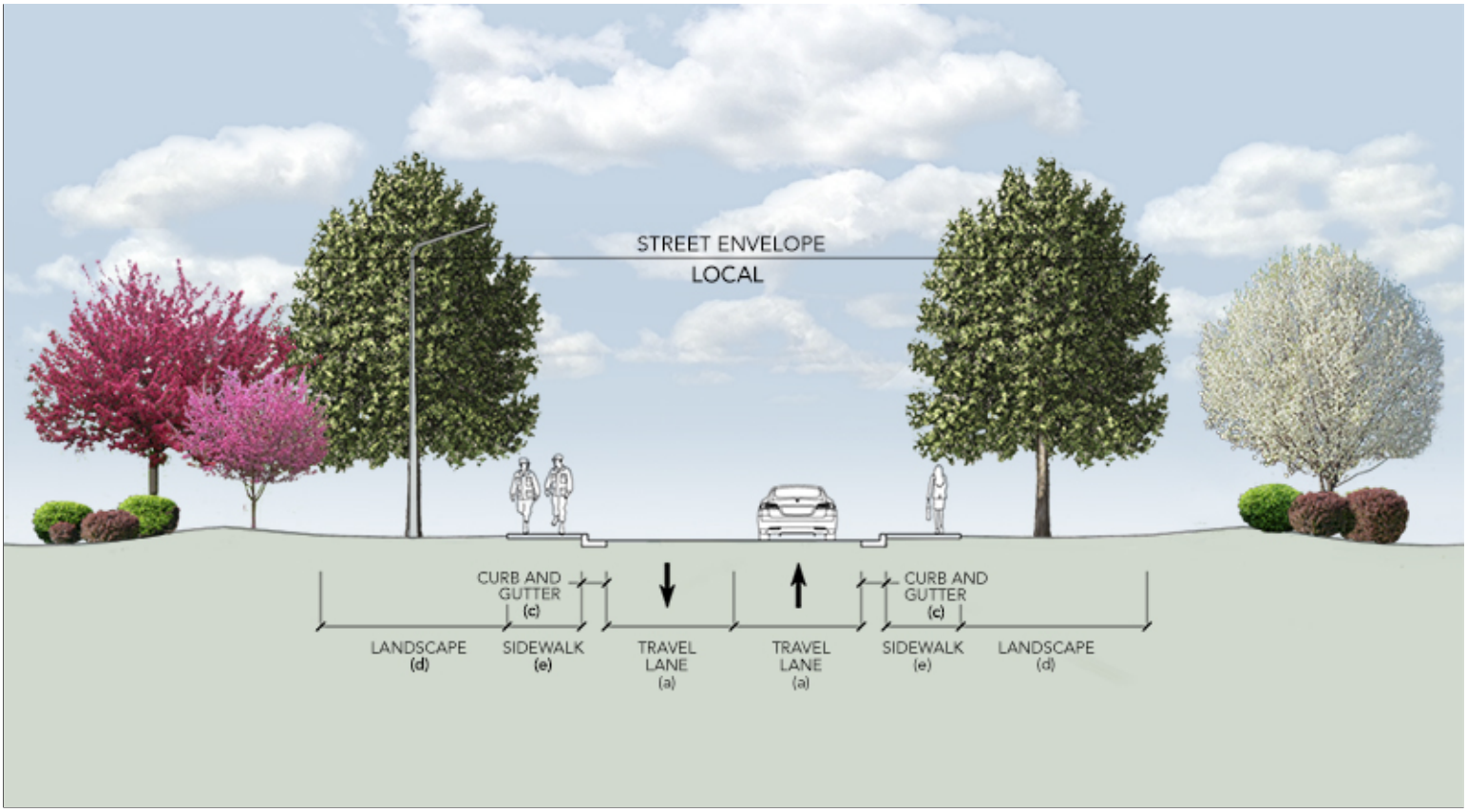
3. On-street parking may be allowed on one side where secondary roads are over 28 feet wide but not less than 34 feet wide. Parking shall not interfere with intersections or traffic flow.

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

B02.1.3. Local Streets

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

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



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

Local Street at Group 1

Local Street and Special Route

Group 4 Local Street

1. Frequent traffic stops and low speeds are permitted on local streets.
2. Provide sidewalks on at least one side of collector streets and both sides of local streets where functionally required. Buffers are preferred but not required on collector streets.
3. On-street parking may be allowed following UFC industry references.
4. Signs, plantings and street lighting should reinforce the designation of "local" street.

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

B02.1.4. Special Routes

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

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

Special Route along Centennial Boulevard

Approach Route to Chidlaw Gate

Special Route Adjacent to Group 1

Special Route at Main Gate

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

B02.2. Hierarchy of Intersections

○ Applicable ◉ N/A Large graphics do not apply

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


Signalized Intersection


Directional Sign

T Intersection

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

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

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

B02.2.1. Arterials

○ Applicable ◉ N/A 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 Elements


Traffic Access Markings


Standard Crosswalk Marking

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


Integrated Turn lane


Coordinated Signal Mounting


Electric Service Cabinet

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 3 Image Tool 250 x 188


T Intersection


Intersection at Group 3 Facilities


Roundabout

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

B02.2.4. Special Intersections

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

1. Develop all special intersections consistently with those adjacent to Group 1 facilities or along the designated special route.

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

Trees in Landscape Setback

Expanded Area of Sidewalk

Preserved Sight Lines

Detached Sidewalk at Group 4

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 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

Preserved Sight Lines at Gate Facility

Coordinated Placement of Landscape

Open Space at Intersection

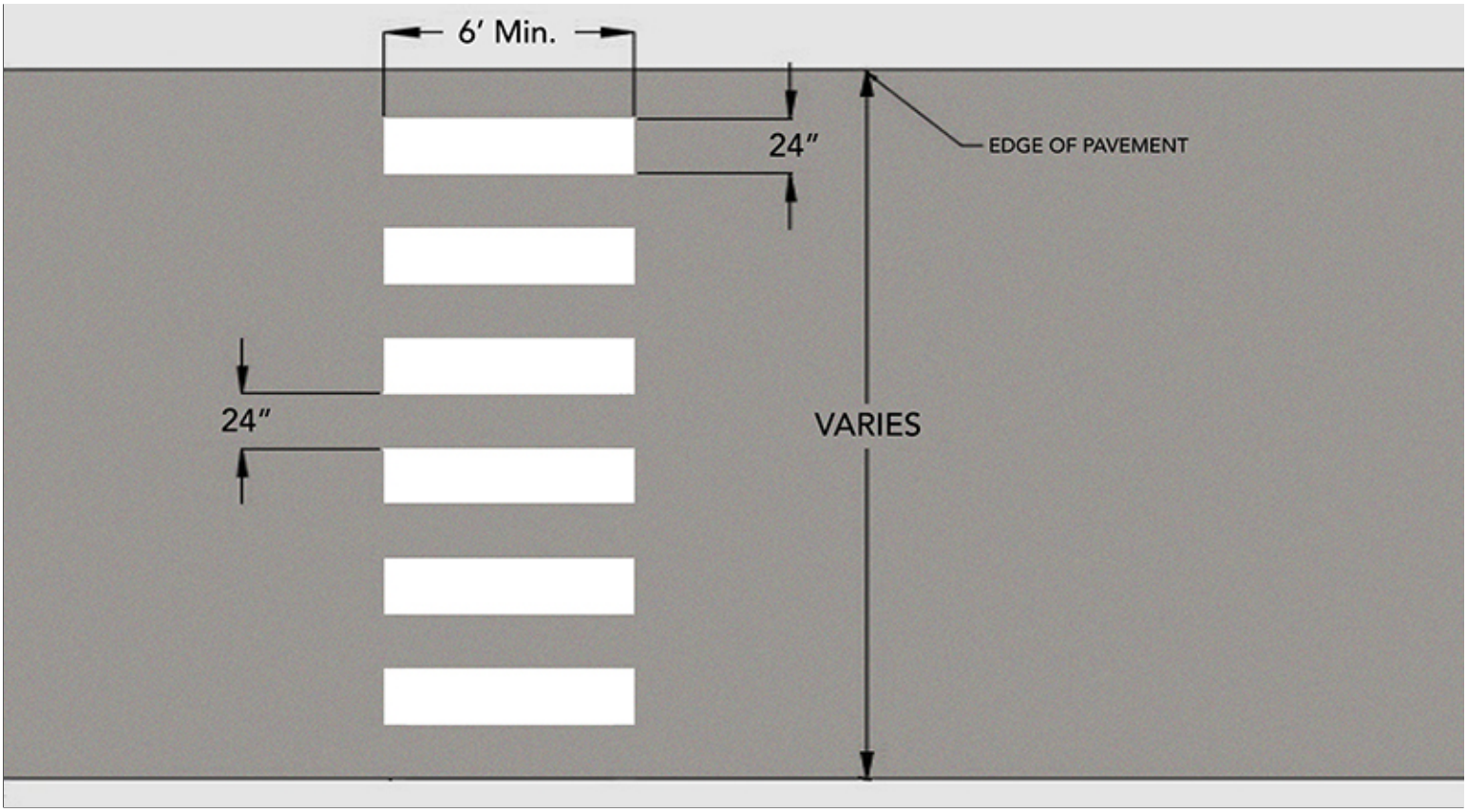
Clear Space at Merge Lane

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 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



Crosswalk Marking Detail

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

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

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

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

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

6. Crosswalk markings shall follow the MUTCD for Streets and Highways, current edition. Provide white markings that are parallel to direction of travel and line spacing placed to avoid wheel path.

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

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

B02.3.1. Paving

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

1. Further reference material are the Ohio Department of Transportation's (ODOT) Pavement Design Manual and the Construction and Materials Specifications (CMS), available on their Design Reference Resource Center website, http://www.dot.state.oh.us/drrc/Pages/default.aspx#. It contains information pertaining to paving materials available from ODOT certified suppliers. Note that the typical asphalt binder used by ODOT is PG 64-22, other binders are also readily available.

2. 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.

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

B02.3.2. Curb and Gutter

○ Applicable ◉ N/A Large graphics do not apply

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


Standard Integral Curb and Gutter


Standard Curb Ramp


Integrated Storm Drain Inlet

1. Base curb and gutter standard follows the Ohio Department of Transportation (ODOT) Concrete Curb and Combined Curb and gutter standards. Reference ODOT's Standard Construction Drawings for details for 6" Curbing.

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

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

4. 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


Base Standard Color and Placement


Insetersection Gear Cabinet


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

B02.3.4. Traffic Signs

○ Applicable ◉ N/A Large graphics do not apply

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

Standard Sign Type and Placement

Standard Traffic Control Device


Coordinated Placement

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

B02.3.5. Street Lighting

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

○ Applicable ◉ N/A Small graphics do not apply

Lighting Integrated with Traffic Signal Mast

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

B02.3.6. Other

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

B03. OPEN SPACE / PUBLIC SPACE

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

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

B03.1. Plazas, Monuments and Static Displays

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

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

Static Display of Aircraft with Dynamic Mounting

Group 1 Entrance Plaza

Memorial Plaza and Sculptures

Static Display with Coordinated Elements

1. Natural features and culturally or historically significant features or events may be recognized and acknowledged with physical elements such as plazas, monuments and static displays. However, limit these elements on the base to ensure judicious use of resources and to reduce ongoing maintenance requirements.

2. Design highly durable plazas, monuments and static displays with a level of quality comparable to Facility Group 1.

3. Link plazas, monuments and static displays to the pedestrian circulation system. Install landscaping, site furnishings and lighting appropriate for the application and local climate following Installation Facilities Standards (IFS).

4. Select systems, products and materials for paving, walls, and structures following IFS.

B03.1.1. Paved Plazas

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

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

Colored Concrete Unit Pavers at Group 1 Monument


Natural Stone Pavers at Group 1


Brick Pavers at Group 1


Concrete Paving at Group 2

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 pervious concrete in Groups 3 and 4. The designer shall incorporate appropriate expansion and construction joints.

2. Pavers shall match the color of pavers used on adjacent sidewalks using base standard range of red blend. Bricks used on plazas shall typically be 4" x 8" size.

B03.1.2. Sculptures, Markers and Statuary

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

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

Dynamic Aerial Mounting with Sculpture

Memorial with Bronze Plaque and Stone Pier

Cast Medallion

Bronze Plaque with Precast on Brick Pier

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

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

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

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

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

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

B03.1.3. Static Display of Aircraft

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

Static Display of Aircraft with Coordinated Site Elements

Scaled Model Aircraft Defining Space

MQ-9 Reaper Scaled Replica

Scaled Model of F-15 Eagle

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

Park Setting with Water Feature as an Amenity

Maintained Open Space

Preserved Native Grasses

Preserved Native Trees

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 that match those respective design elements present at adjacent buildings.

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

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

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

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

B03.2.1. Parade Grounds

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

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

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

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

B03.2.2. Parks

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

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

Coordinated Plazas, Landscape and Site Furnishings

Open Space with Water Feature

Coordinated Placement of Picnic Table

Park with Playground

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.

B03.2.3. Preserves

◉ 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

Preserve with Entrance Marker

Interpretive Sign

Preserved Open Space as Memorial

Preserved Water Feature

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

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

B03.2.4. Perimeter Fence

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

Group 1 Fencing at Main Gate

Low Profile Fence

Metal Posts and Railing

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

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


Efficient Circulation Patterns


Connectivity to Parking Area

1. Collect documentation to validate approvals and completion of the NEPA process.
2. Ensure site design compliance with the Installation Development Plan (IDP) and its component plans and Installation Facilities Standards (IFS).
3. Promote integrated design with on-site solutions such as engineered small-scale hydrologic controls verses base-wide infrastructure; consider open space, natural features, bioswales, building roofs, streets, and paved surfaces.
4. Limit the impact of development on land and water resources. All site elements and infrastructure shall reinforce an image of sustainability, with reduced energy demand, renewable-energy usage, and water conservation.
5. Consider energy conservation during site design for the following categories: building and site lighting, auxiliary systems and equipment (refrigerators, elevators, etc.), building envelope, electric power and distribution, HVAC systems and equipment, service hot water, and energy management (metering, EMCS).
6. Coordinate on-site renewable-energy systems and components to minimize area requirements and maximize efficiencies. Appropriately buffer and screen these and other mechanical systems and equipment.
7. New building projects should preserve open space and protect natural habitat.
8. Conform to existing topography to the greatest extent possible and use slopes to increase site and building efficiencies. Design sites to minimize irrigation and impacts to stormwater runoff.
9. Carefully study new project sites to identify the character of adjacent buildings, streets, landscaping, and site design elements. Reinforce the existing character in new site design.

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

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

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

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

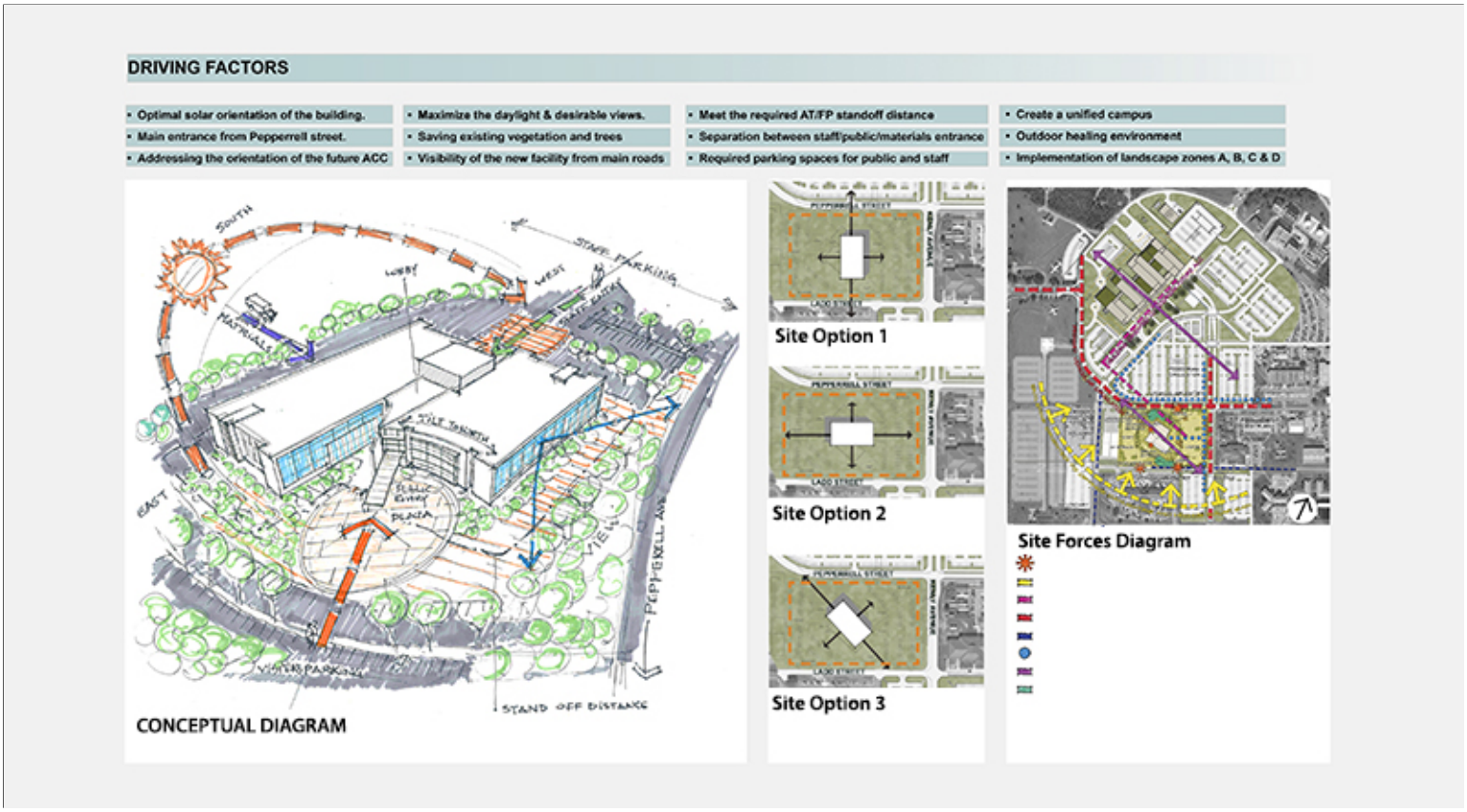
14. Applicably coordinate heat island mitigation in paving and roof designs when implementing an integrated approach to stormwater management.

15. Consider the location of "Designated Tobacco Areas."

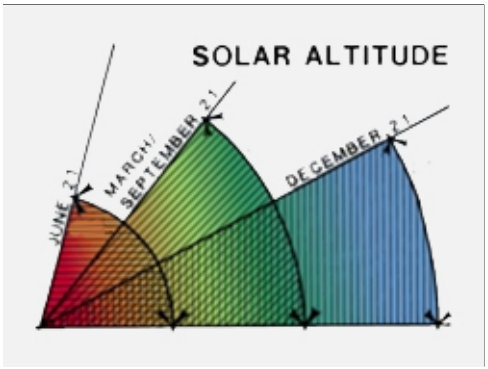
C01.2. Building Orientation

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

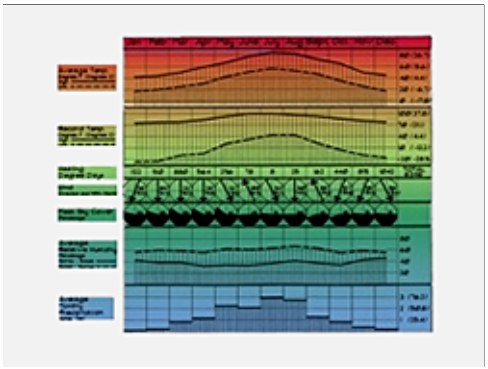
◉ Applicable ○ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 6 Image Tool 250 x 188



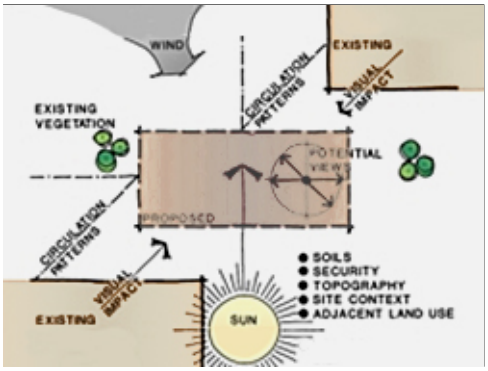
Conceptual Site Analysis and Site Design Diagram



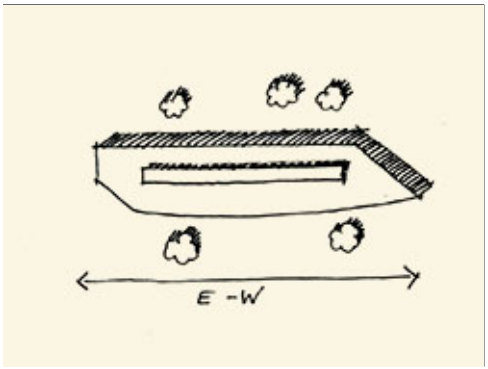
Local Solar Data



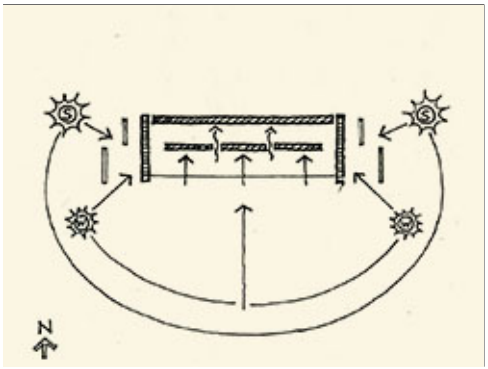
Local Climate Data



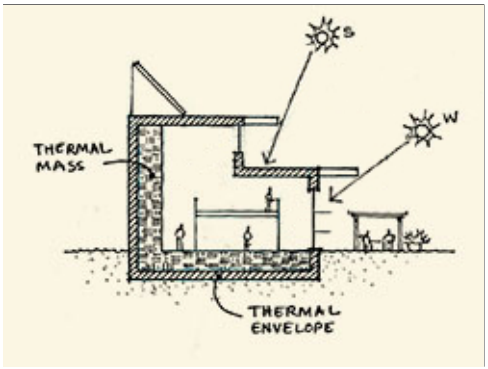
Site Data



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.

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 3 Image Tool 250 x 188

Pad Mounted Cabinets

Coordinated Placement

Integrated Generator

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. 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.

3. Include consideration of appropriate placement of meters in support of Advanced Meter Reading System (AMRS). See Appendix G09, Section G.

4. 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.

5. Direct roof drainage to underground collection when feasible, as determined by the design team based on facility specific drainage conditions, or provide splash blocks / paved channels to intercept roof drainage at grade.

6. WPAFB has privatized electric (DP&L), water & sanitary (American Water), and gas (Vectren). See appendix G04 for limits of demarcation and additional coordination details.

7. Utility Energy Metering, see Appendix G05, Section A04.

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

Facility and Adjacent Parking Area with 90-Degree Configuration of Spaces and Aisles

Typical 90-Degree Angles

Integrated Lansdscape

Landscape at Perimeter of Lot

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 AT requirements.

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

4. Define pedestrian access with approved hardscape and provide shading along the primary path from the parking area to the building's main entrance. Approved hardscape found in UFC 3-201-02.

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

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

7. Reserved parking is discouraged except for Facility Group 1.

8. On-street parking is discouraged except in multi-use areas. When used, provide approved on-street parking configurations following UFC 3-201-01.

9. Access and service drives should accommodate the largest vehicle serving the facility.

C03.1.1. Paving and Striping

○ Applicable ◉ N/A Large graphics do not apply

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

Typical White Striping on Asphalt Paving

Striping at Parallel Spaces

Striped Island

Facility Group 1 paving materials shall be as follows.

Primary:	Asphaltic concrete
Secondary:	Concrete
Accent:	Permeable pavers

Facility Group 2 paving materials shall be as follows.

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

Facility Group 3 paving materials shall be as follows.

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

Facility Group 4 paving materials shall be as follows.

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

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

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

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

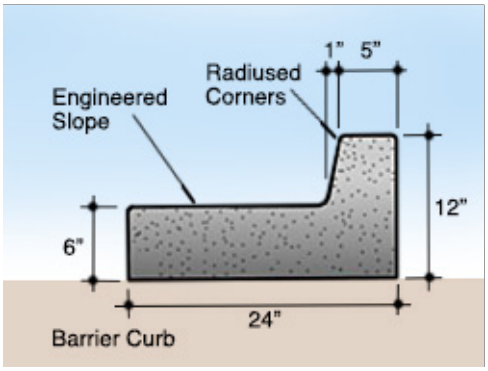
4. Use consistent striping, angles and stall sizes in all parking areas.

5. All parking shall be marked with white stripes of paint or applied vinyl coatings. Red or yellow markings shall only be used for safety purposes and must be kept to a minimum. All lines shall be four inches (4") wide.

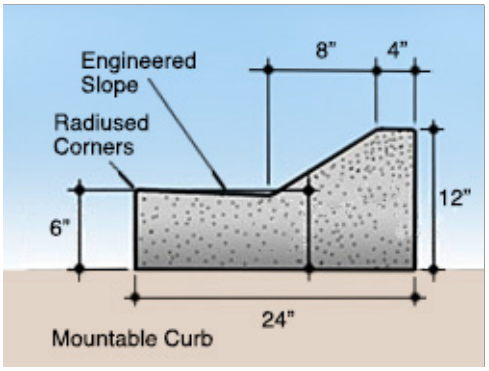
C03.1.2. Curbing

○ Applicable ◉ N/A Large graphics do not apply

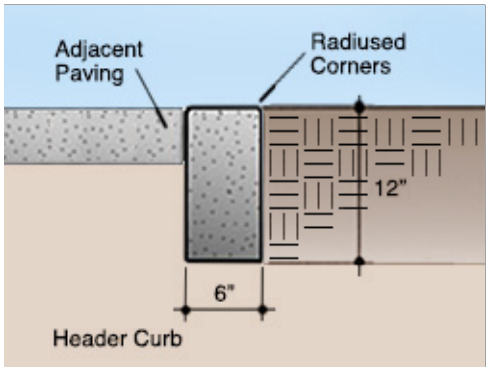
◉ Applicable ○ N/A Select number of graphics / images (small: 250 px x 188 px) to insert 3 Image Tool 250 x 188



Standard Curb and Gutter



Optional Group 4 Curbing



Header Curb

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

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

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

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

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

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

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

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

1. The Base standard is a 610mm (24 inch) curb and gutter unless existing site conditions require compatibility with existing curb and gutter. Handicapped accessible curbs shall conform to the Uniform Federal Accessibility Standards and comply with the Architectural Barriers Act Accessibility Standards (ABA).

2. Define all parking lots with either raised-profile or at-grade curbing to promote drainage and protect paving edges. All raised curbs shall be the rolled (mountable) type.

3. Integrate curbing to direct stormwater to bioswales and rain gardens as source water for regionally appropriate native vegetation.

4. Wheel stops are not permitted except at locations where vehicle bumpers could contact adjacent items such as poles, signs or pedestrians.

C03.1.3. Internal Islands and Medians

◉ 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

Landscaped Island at Group 2

Native Grasses in Island Planting

Rock Mulch Paving

Typical Curb Cut

1. Parking lot islands are permitted when required for storm water control. Parking lot islands shall only be filled with stone and approved trees, or concrete. Landscaped islands that include trees shall be of a sufficient size to accommodate healthy growth. No plants, flowers, or mulch are permitted. See Appendix G05.

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 opportunities for integrating parking structures into multi-use developments with pedestrian-oriented uses on the ground floor and parking on upper levels; ensure AT guidelines are fully addressed.
3. 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 from Parking to Main Entrance


Crosswalk to Connect Parking


Adjacent Reserved Parking at Group 1

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 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

Engineered Drainage Channel

Drainage Outlet

Storm Inlet Element

Area Drain

1. Refer to Environmental Appendix G03 on Water, Wastewater and Stormwater for stormwater infrastructure permitting requirements.

2. 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.

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

4. Consider rainwater harvesting and storage that is attached to the building's roof drain systems to support grey water irrigation; consider freeze protection for winter months.

5. When underground drainage systems are required establish a maintenance program to include removal of sediments and debris; inspect joints seasonally for alignment to prevent leakage and the development of voids and surface failures.

6. Cost-effectively integrate stormwater systems with AT measures.

7. Stormwater design should implement conditions to decrease Bird/Wildlife Aircraft Strike Hazard (BASH) potential within the runway lateral and approach zone, especially due to standing water from an infiltration basin near the flight line.

C05. SIDEWALKS, BIKEWAYS AND TRAILS

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

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

C05.1. Circulation and Paving

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

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

Concrete Paving with Decorative Pattern of Control Joints at Group 2

Concrete Paving at Group 1

Attached Sidewalk at Sreetscape

Asphalt Paving at Trail

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

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

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

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

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

Primary:	Permeable concrete
Secondary:	N/A
Accent:	N/A

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

Primary:	Permeable concrete
Secondary:	N/A
Accent:	N/A

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

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

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

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

5. 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 vehicles 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. Walks with a slope shall follow accessibility guidelines. All walks shall have a minimum cross slope of 2.1%.

10. Pavers shall conform to the following range of color: red blend. Pavers used on walks shall typically be 4x8 in nominal size.

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

C05.1.1. Ramps and Stairs

◯ Applicable ◉ N/A Large graphics do not apply

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

SIte Stair with Adjacent Ramp

Site Stair Connection to Parking

Decorative Stair at Marker

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 along Sidewalk

Parking Lot Fixture Illuminating Sidewalk

Pedestrian Scale Fixture at Trail

1. Provide lighting for all stairs and landings where traffic warrants. See Appendix G10.

2. Refer to the Lighting section, C09, for path lighting along sidewalks, bikeways and trails.

C06. LANDSCAPE

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

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

C06.1. Climate-based Materials

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

Low Maintenance Native Species with Perennial Flowers

Native Species at Group 1 Entrance

Deciduous Species for Shading

Native Shrubs Planting

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.

3. All trees must be planted in accordance with International Society of Aboriculture Specification.

4. Landscaping plans must comply with ANSI A300, Part 5.

C06.1.1. Landscape Design Concept

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

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

Low Maintenance Drought Tolerant Native Species

Deciduous Trees for Shading

Trees Shading Streetscape

Tree for Shading and Visual Buffer

1. Per Air Force Grounds Standards, landscaped beds are authorized only at installation main entrances and installation headquarters (i.e. Wing HQ and MAJCOM HQ). Only low maintenance, indigenous flowering plants are permitted.

2. 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. See Appendix G05.

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

4. 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.

5. Facility plantings shall follow the list of WPAFB recommended plantings. A list of the approved plantings are available from the Base Natural Resources Program Manager (NRPM), contact information is located in Appendix G03, Section J.

6. 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.

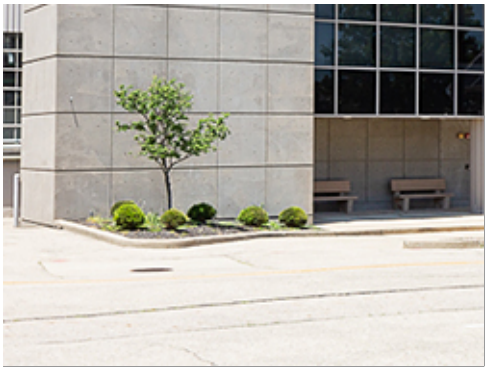
7. Return suitable areas to a natural state to minimize and, whenever possible, eliminate ground maintenance requirements; expand prairie areas where appropriate with native plants to eliminate mowing and maintenance requirements.

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

C06.1.2. Xeriscape Design Principles

○ Applicable ◉ N/A Large graphics do not apply

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



Xeric Planting

Drought Tolerant Species and Rock Mulch

Native Drought Tolerant Species

1. Apply xeriscape principles following UFC 3-201-02, Appendix B, and Air Force Corporate Facilities Standards.

C06.1.3. Minimizing Water Requirements

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

1. If feasible, 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 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

Form, Color and Scale of Species Coordinated with Space

Deciduous Trees for Shading

Native Grasses in Group 3

Shade Trees and Grasses in Group 4

1. A list of approved plants for WPAFB is available from the Base Natural Resources Program Manager (NRPM). Contact information and additional plant selection requirements are located in Appendix G03, Section J. Also see Appendix G05.

2. 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.

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 gray 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 at least a one-year warranty, which must include one growing season, 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


Planting Beds Coordinated with Roof Drainage


Planting Coordinated with Grades


Xeric PLanting

1. Comply with DoD and Air Force policy on potable-water irrigation systems. Comply with AFI 48-144.

2. Provide temporary 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.

C06.1.6. Base Entrance Landscaping

○ Applicable ◉ N/A Large graphics do not apply

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


Native Grasses and Clear Sight Lines


Street Trees Set Back from Curb


Grass Planting along Perimeter Fence

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

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

Street Trees Planting along Drainage Swale

Street Trees Also Serving Parking Area

Trees Providing Shade

Trees and Grasses in Median

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 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

Trees and Shrubs Defining Space

Coordinated Color, Form and Scale

Trees Defining Space

Trees for Definition and Shading

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 beneficial and not an AT risk. Wind breaks are created by properly placed landscaping in an attempt to reduce wind speed around a specific property.

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

Perimeter Trees Providing Shade

Trees for Definition and Shade

Native Trees and Grasses

1. Avoid trees that drop sap, fruit, or seeds, and use long-lived species.
2. Provide trees in islands within parking lots for shade and appeal following IFS and the base stormwater management plan.
3. Plants other than trees prohibited in islands and medians. See Section C03.1.3.

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 Condenser Unit

Screening Wall Mounted Device

Landscape Screen Combined with Screen Wall

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

C06.1.11. Other

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

C07. SITE FURNISHINGS

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

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

C07.1. Furnishings and Elements

○ Applicable ◉ N/A Large graphics do not apply

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

Site Furnishing in Shaded Portal

Picnic Table sin Plaza

Standard Bus Shelter

1. Consistency is the most critical factor in the selection of various site elements such as benches, trash receptacles, lighting fixtures, small shelters, and street furniture. Designers shall pay considerable attention to maintain compatibility with similar site elements within a particular architectural district on WPAFB. When no true compatibility exists, the designer shall coordinate material selection with the ARC.

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, and 3 site furnishings shall be dark bronze powder coated metal. 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 and parks shall be dark bronze powder coated metal. Recycled plastic benches may be provided in Group 2, 3 and parks.

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

7. Limit the use of bollards, but when necessary select the Base, Accent, or Trim Color that will contrast with the adjacent background color.

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.

10. The Installation Flagpole location shall comply with the guidance for the display of flags in AFI 34-1201. Waivers for non-authorized locations must be submitted in accordance with AFI 33-360 and approved waivers (AF Form 679) must be maintained by the installation protocol office.

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

12. Bus shelters shall be provided only where there is a documented need and when approved on a case basis. Generally emulate the designs of adjacent shelters using Dark bronze aluminum framed, domed roof structures.

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

14. When visual screening is necessary, consider landscaping as the first option; screen walls are permitted only in Group 1 finished with:
    a. Masonry
        - Selection of brick or concrete block must be compatible with the standards defined in D05 of this standard.
        - The only allowable exception to this standard is when compatibility must be maintained with an existing facility.
    b. Chain Link Fencing
        - This type of fencing is only acceptable in Group 3 as a screening device with adjacent shrubbery or integral slats approved by the ARC.
    c. Wood Fencing
        - Wood fencing and ongoing painting requirements are discouraged by AFCFS. Refer to section C07.2.9. Fencing for approved materials.

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

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

17. Wood fencing may be used only in Facility Group 4 and in recreation areas that are managed by the housing privatization contractor with confirmed periodic maintenance.

18. Provide trash dumpster enclosures for Group 1 with brick walls and metal gates to match adjacent facilities; Group 2 shall use brick piers and metal screen walls; and Group 3 shall use metal posts and screen walls; all metal screen walls and gates shall be metal factory finished dark bronze.

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

20. Group 1, 2, 3, and recreational area picnic tables and seating shall be vinyl clad or powder coated dark or medium bronze. Generally limit picnic tables, barbeque grills and drinking fountains to lodging, dormitories, housing areas, parks and recreation areas.

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

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

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

24. When practical, a dark bronze anodized finish shall be selected for site elements on Base.

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: Most Dependable Fountains, Inc.

Color: Natural stainless steel

Finish: Mill

Model #: Natural stainless steel

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: **Precast**

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

Mfr: Belson

Color: Natural gray or neutral stain

Finish: Standard Finish (Smooth)

Model #: TF5029

Other: Coordinate concrete paving with base architect

UFGS: N/A

Type: **Recycled Plastic**

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

Mfr: The Park Catalog

Color: Slats: cedar or brown; black or matching base

Finish: Factory

Model #: 133-1035, 6-Ft. Rock Island Recycled Plastic Bench

Other: N/A

UFGS: N/A

C07.2.3. Bike Racks

◉ 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: Brandir International Inc.

Color: Silver

Finish: Factory galvanized

Model #: The Ribbon Bike Rack, RB-07

Other: N/A

UFGS: N/A

Type: **Style 2**

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

Mfr: Belson Outdoor

Color: Silver or neutral

Finish: Factory galvanized, or powder coat

Model #: Grid Bike Rack Side Sided

Other: N.A

UFGS: N.A

C07.2.4. Bike Lockers

○ Applicable ◉ N/A

C07.2.5. Bollards

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

Type: **Lighted Round Flat Top**

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

Mfr: Lithonia Lighting Products

Color: Dark bronze

Finish: Powder coat

Model #: 6 inch round

Other: 3000K LED Lamp, 360° downlighting

UFGS: N/A

Type: **Lighted Round Dome Top**

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

Mfr: Lithonia Lighting Products

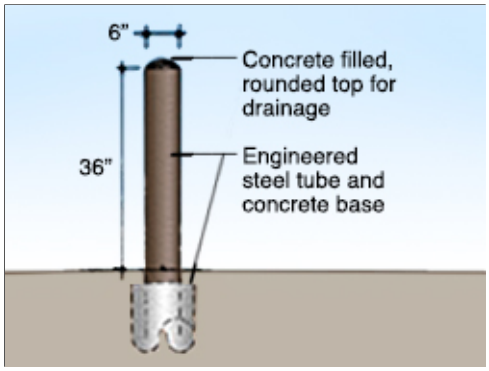
Color: Dark bronze

Finish: Powder coat

Model #: 6 inch round

Other: 3000K LED Lamp, 360° downlighting

UFGS: N/A



Type: **Building Protection, Steel**

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

Mfr: (Bollard Cover) Reliance Foundry

Color: Cover may be field painted dark bronze or neutral

Finish: Factory

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

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

UFGS: N/A

C07.2.6. Bus Shelters

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

Type: **Metal**

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

Mfr: Belson Outdoors

Color: Dark bronze

Finish: Powder coated

Model #: Dome Top, Double Opening

Other: Provide concrete slab and integral aluminum bench

UFGS: N/A

C07.2.7. Drinking Fountains

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

Type: **Pedestal**

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

Mfr: Most Dependable Fountains, Inc.

Color: Natural

Finish: Stainless steel, mill

Model #: MDF 440 SMSS

Other: Accessible

UFGS: N/A

C07.2.8. Dumpster Enclosures / Gates

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

Type: **1: Brick and Steel**

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

Mfr: Custom

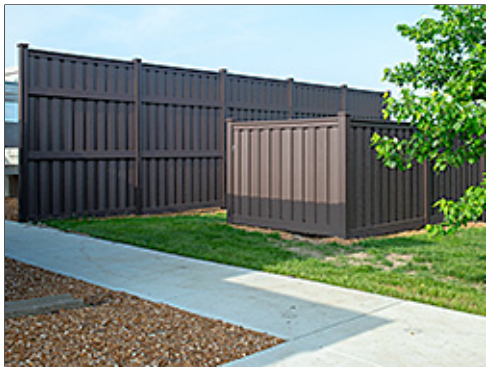
Color: Red brick blend, dark bronze doors

Finish: Face brick, powder coated doors

Model #: Match adjacent building

Other: Steel gates and hardware, dark bronze, dumpsters shall be painted dark brown, off white precast column cap and coping or to match facility

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



Type: **Metal Post, Rail and Slat**

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

Mfr: Custom

Color: Dark bronze

Finish: Factory

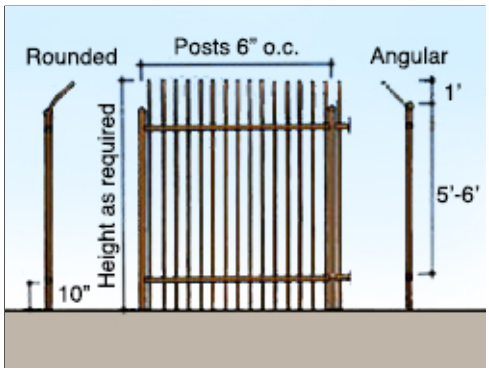
Model #: Post, rail and vertical slat

Other: Coordinate size and detailing with ARC

UFGS: Section 05 50 13 Misc. Metal

C07.2.9. Fencing

◉ Applicable ○ N/A Number of base standards 7 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: Black or dark bronze

Finish: Powder coat

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

Other: Posts, rails, and pickets in heights, lengths and gauges as required; provide engineered foundation and continuous concrete curb; brick piers to match adjacent buildings may be provided

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

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

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

Mfr: Custom

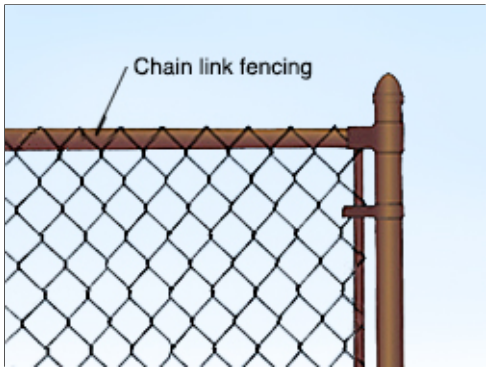
Color: Black or dark bronze

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, Medium Visibility**

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

Mfr: General Wire Company

Color: Dark bronze or black

Finish: Powder coated galvanized steel

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

Other: N/A

UFGS: Section 32 31 13 Chain Link Fences and Gates

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

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

Mfr: General Wire Company

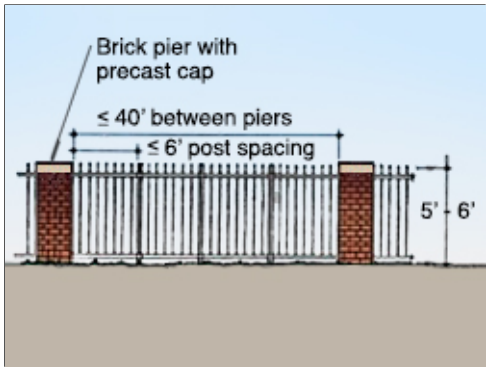
Color: Silver

Finish: Factory galvanized

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

Other: Coordinate the use of outriggers with the ARC

UFGS: Section 32 31 13 Chain Link Fences and Gates



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

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

Mfr: Custom

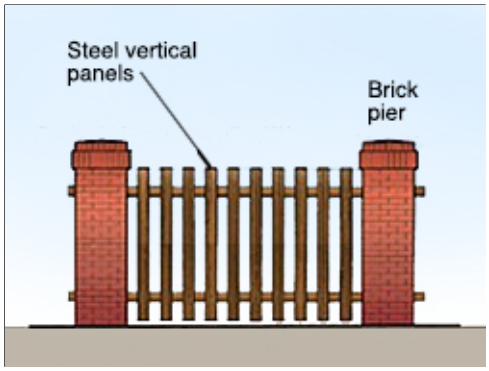
Color: Red brick blend, dark bronze or black fencing

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, precast caps may be used to match facility

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



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

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

Mfr: Custom

Color: Red brick blend to match adjacent, dark bronze fencing

Finish: Face brick, powder coated metal

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

Other: Piers: 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 G Barrier: Low Security, High Visibility**

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

Mfr: James Hardie Building Products, Inc.

Color: Off white and Earth tones

Finish: Factory

Model #: Post and rail with vertical boards

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

UFGS: Not Available (SECTION 074646 Fiber Cement Siding)

C07.2.10. Flagpoles

◉ Applicable ○ 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: Eder Flag

Color: Natural aluminum

Finish: Satin Lustre

Model #: ECL30 IH, Internal Halyard

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

UFGS: N/A

C07.2.11. Lighting – Landscape / Accent

Please refer to the Lighting section.

C07.2.12. Litter and Ash Receptacles

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

Type: **Style 1: Precast Concrete Litter Receptacle**

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

Mfr: Belson Outdoor

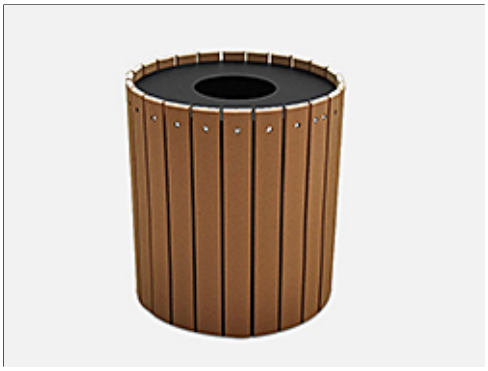
Color: Weatherstone, gray, black

Finish: Smooth

Model #: 30, 45 or 53 Gallon Square Concrete Trash Receptacle

Other: Exposed aggregate, rigid plastic internal liner

UFGS: N/A



Type: **Style 2: Recycled Plastic Round Trash Receptacle**

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

Mfr: Belson Outdoors

Color: Cedar slats, black lid

Finish: Factory

Model #: PB32R

Other: Provide black plastic liner PB32GLINER. Optional in-ground mount may be used.

UFGS: N/A

C07.2.13. Picnic Tables

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

Type: **Metal, Recycled Plastic, Rectangular**

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

Mfr: Belson Outdoors

Color: Silver base, wood tone top as approved by ARC

Finish: Factory galvanized base, factory slats

Model #: Rectangular Steel Picnic Table, Recycled Plastic Slats

Other: N/A

UFGS: N/A

Type: **Metal, Round or Square**

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

Mfr: Wabash Valley

Color: Bark bronze top and base, other colors as approved by the ARC

Finish: Factory vinyl coated

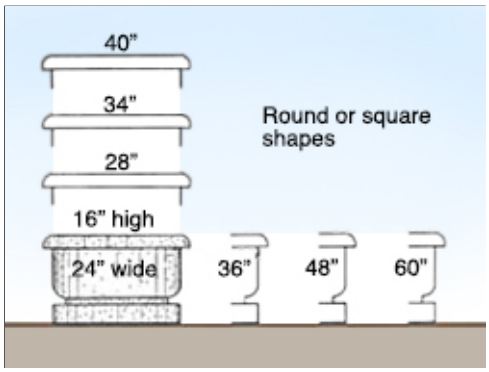
Model #: Signature Series, 46" Round or Square Pedestal Tables with 4 Seats

Other: Perforated Pattern, at grade or in-ground mount

UFGS: N/A

C07.2.14. Planters

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



Type: **Precast Concrete**

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

Mfr: Materials, Inc.

Color: Weatherstone Gray

Finish: Smooth

Model #: Santa Fe

Other: N/A

UFGS: N/A

C07.2.15. Play Equipment

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

Type: **Steel with Recycled Plastic**

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

Mfr: Little Tikes Commercial

Color: Varies

Finish: Powder coated Steel

Model #: N-R-G Freestyle

Other: Coordinate with the ARC

UFGS: N/A

C07.2.16. Screen Walls

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

Type: **Cast-In-Place Concrete**

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

Mfr: Custon

Color: Natural Concrete

Finish: Smooth texture

Model #: Panel formed or board formed

Other: No exposed form ties on board forming

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

Type: **Metal, Horizontal Louver, Aluminum**

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

Mfr: Industrial Louvers, Inc.

Color: Silver or neutral

Finish: Clear anodized or powder coat

Model #: Extruded Aluminum Inverted Blades

Other: N/A

UFGS: N/A

Type: **Metal Post, Rail and Slat**

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

Mfr: Custom

Color: Dark bronze

Finish: Factory

Model #: Post, rail and vertical slat

Other: Coordinate size and detailing with ARC

UFGS: Section 05 50 13 Misc. Metal

Type: **Masonry, Brick**

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

Mfr: Custom

Color: Red brick blend, dark bronze gates

Finish: Face brick, powder coat gates

Model #: Brick running bond

Other: Architectural precast may be used for coping and belt courses consistent with adjacent facility

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

Type: **Masonry, Concrete Masonry Unit (CMU)**

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

Mfr: Local TBD

Color: Neutral CMU, dark bronze doors

Finish: Ground face or polished face, powder coat doors

Model #: Custom

Other: Decorative CMU may be used with ARC approval; steel gates and hardware will be dark bronze; dumpsters will be painted dark brown; off white precast column cap and coping per ARC approval

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

C07.2.17. Tree Grates

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

Type: **Cast Iron**

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

Mfr: Neenah Enterprises, Inc.

Color: Natural cast iron

Finish: Cast

Model #: 2-Piece, round or square

Other: N/A

UFGS: N/A

C07.2.18. Other

○ Applicable ◉ N/A

C08. EXTERIOR SIGNS

Comply with AF Corporate Standards for Site Development:
http://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

Standout Letters

Freestanding Sign

Traffic Control Device

1. WPAFB Standard Sign design shall reference WPAFB Instruction 31-116 and WPAFB Instruction 32-1001. These instructions can be found on the e-publishing website at www.e-publishing.af.mil.

2. 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.

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

4. 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.

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

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

7. With the approval of the ARC, standardized lettering will be allowed on the exterior of Group 1 facilities. The standard is Helvetica Medium, anodized bronze, cast aluminum letters, mounted flush, and sized accordingly. Signs applied to the facilities such as building number signage shall be furnished and installed in the construction contract.

8. 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.

9. 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.

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

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

12. 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.

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

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

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

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

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

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

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

C08.1.1. Materials and Color Specifications

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

Reference WPAFB Sign Standards.

1. Fabricate sign panels from aluminum sheeting with vinyl sign faces per C08.1 above. Sign posts shall be quick-punch square post 2"x2" (14) gauge powder coated "brown" with capped ends in a concrete base per C08.1 above.

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

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

Materials and Color Specifications

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

Type: **Typical Sign Fce**

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

Mfr: Custom

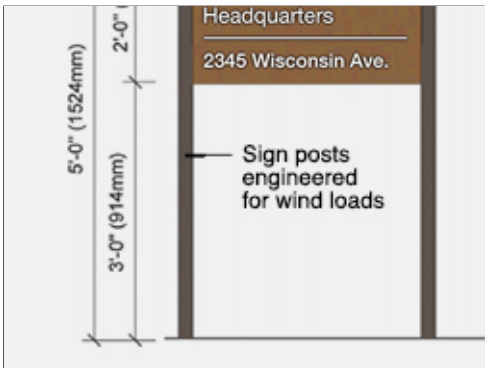
Color: Medium bronze

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

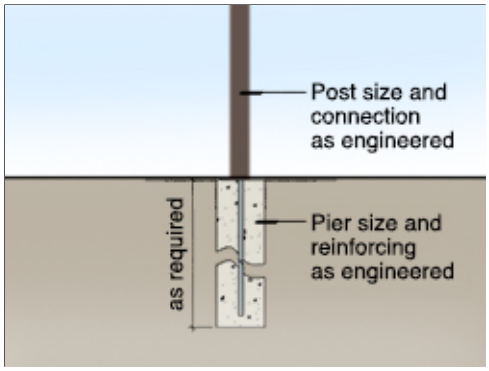
Color: Dark bronze, powder coat finish

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

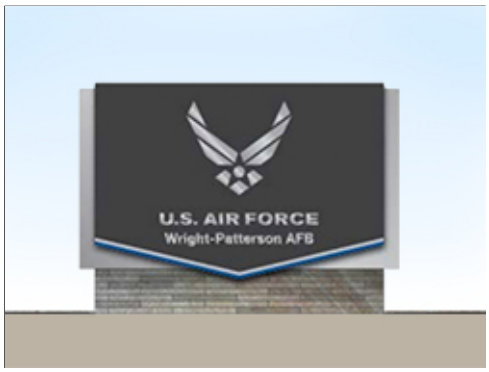
Model #: 24" height x 12" diameter, as engineered.

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: Dark bronze, brushed aluminum, accents per UFC

Finish: Powder coat or vinyl sign face

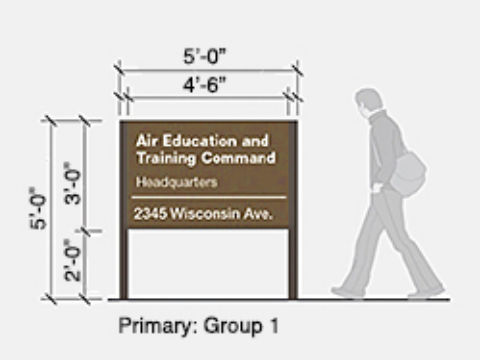
Model #: Metal frame and panels, buff stone base

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

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications

C08.1.3. Building Identification Signs

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



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

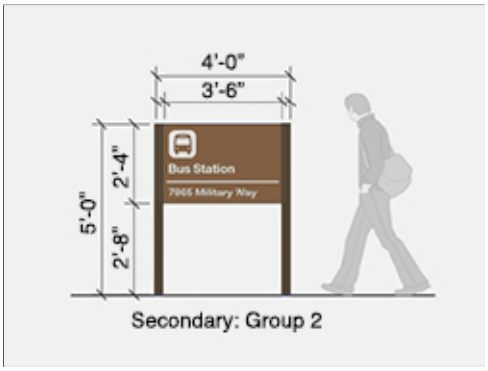
Color: Medium brown face, dark bronze posts, white vinyl lettering

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

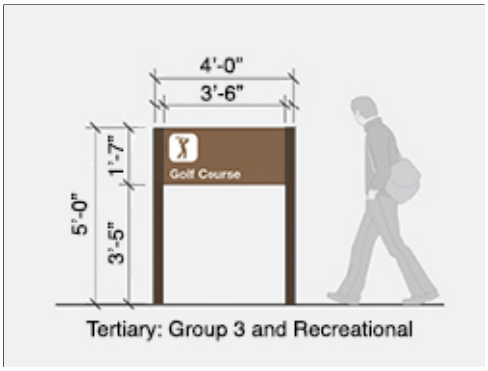
Color: Medium brown face, dark bronze posts, white vinyl lettering

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

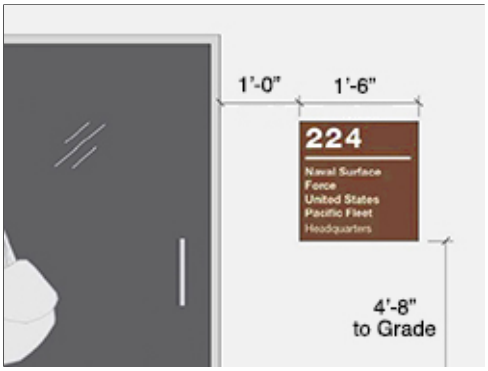
Color: Medium brown face, dark bronze posts, white vinyl lettering

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

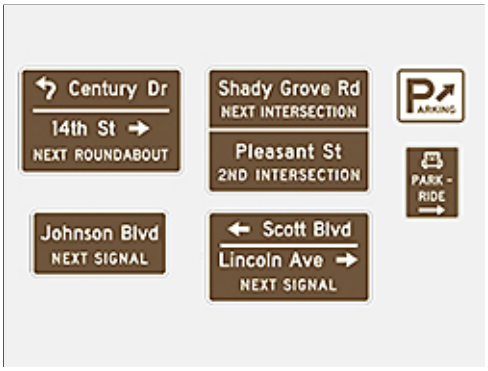
Model #: Aluminum sign face, control arm or pole mounted

Other: Mount 7' above grade minimum, pictographs and logos are prohibited on street name signs per UFC.

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

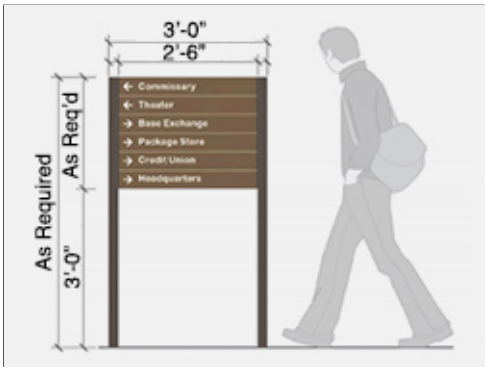
Color: Medium brown face, dark bronze posts, white reflective lettering

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 brown sign faces.
3. Hours of operation signs shall have a level of quality equivalent to the Facility Group number.

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

C08.1.7. Motivational Signage

○ Applicable ◉ N/A Large graphics do not apply

○ Applicable ◉ N/A Small graphics do not apply

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

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

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

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

C08.1.8. Parking Lot Signs

○ Applicable ◉ N/A

C08.1.9. Regulatory Signs

○ Applicable ◉ N/A

1. Regulatory signage, which restricts, warns and advises, shall be limited to those mandated under Highway/Traffic, Government Warning, and/or Parking Regulation. Follow UFC 3-120-01 and its industry references for color and layout.

2. Provide a comprehensive, systematic approach to regulatory signage to avoid clutter and confusion from “over signage.”

3. Maintain base warning signs for safety and security at the base perimeter and at specific secure areas. Use these to notify visitors of restrictions governing conduct on the base, as well as other security procedures.

C08.1.10. Other

○ Applicable ◉ N/A

C09. LIGHTING

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

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

C09.1. Fixtures and Lamping

◉ Applicable ○ N/A 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

Lighted Bollards Defining Space and Illuminating Sidewalk

Typical Street Light Fixture

Double Mast Parking Lot Fixture

Wall Mounted Fixture

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. Unitary Lighting Control systems for programmable Automatic Shutdown and Time Schedule functions shall not be installed. Those functions shall be incorporated into the HVAC DDC system design plan. Refer to Lighting Control section. Requirement does not include local occupancy sensing devices. Does not include local time clocks where no DDC system is available.

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

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

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

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

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

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

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

10. Comply with UFC 3-530-01 for light source technology and lamp types. High efficiency lamping such as LED is preferred for most applications.

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

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

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

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

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

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

C09.2. Light Fixture Types

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

C09.2.1. Street Lighting

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

Type: **LED Street**

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

Mfr: Hubbell, Beacon Viper luminaire

Color: Gray, dark bronze or clear anodized as approved by ARC

Finish: Factory

Model #: VPL/ 80NB-180/4K/T3/UNV/GYS

Other: Lamp LED. Roadway – Poles shall be 25' clear anodized, round tapered seamless aluminum with matching 8' up swept mounting arm, brushed aluminum finish. Pole shall be rated for 100 MPH wind with a 1.3 factor

UFGS: N/A

C09.2.2. Parking Lot Lighting

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

Type: **LED Parking Lot**

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

Mfr: Hubbell, Beacon Viper luminaire

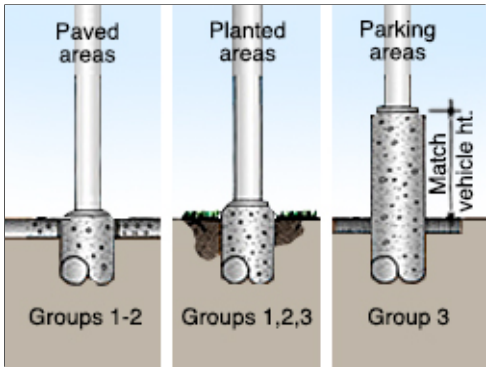
Color: Dark bronze or clear anodized as approved by ARC

Finish: Factory

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

Other: Lamp: LED. Parking Lot – Poles shall be 25' square straight extruded aluminum, 5" cross section, with 6" matching mounting arm, dark bronze anodized finish. Pole shall be rated for 100 MPH wind, 1.3 factor

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 2 Image Tool 250 x 188

Type: **Lighted Round Flat Top**

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

Mfr: Lithonia Lighting Products

Color: Dark bronze

Finish: Powder coat

Model #: 6 inch round

Other: 3000K LED Lamp, 360° downlighting

UFGS: N/A

Type: **Lighted Round Dome Top**

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

Mfr: Lithonia Lighting Products

Color: Dark bronze

Finish:

Model #:

Other:

UFGS: N/A

C09.2.4. Sidewalk Lighting

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

Type: **LED Sidewalk, Direct**

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

Mfr: Hubbell, Kim Lighting

Color: Gray, dark bronze anodized (or clear anodized as approved by ARC

Finish:

Model #:

Other:

UFGS:

C09.2.5. Walls / Stairs Lighting

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

Type: **LED Wall Pack**

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

Mfr: TBD

Color: Gray or dark bronze anodized

Finish: Factory

Model #: Standard Wall Pack

Other: Lamp: LED

UFGS: N/A

Type: **LED Low Wall and Step Light**

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

Mfr: Vista Lighting

Color: Clear anodized aluminum, or stainless steel

Finish: Satin

Model #: Aluminum step light, linear louvered

Other: Lamp: LED

UFGS: N/A

C09.2.6. Other

○ 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

Group 1 Materials and Detailing

Group 2 Facility

Group3 Hangar

Group 4 Family Housing

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 to minimize heat gain in the summer months and maximize heat gain in the winter months resulting in less overall energy usage.

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

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

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

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

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

D03.2. Architectural Character

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

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

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

4. Reinforce the themes exhibited in the architectural district.

5. All facilities shall express sustainability through their orientation, massing, shape, form, materials, and detailing. Provide louvers, fins and other shading devices to control heat gain and glare and to and improve energy efficiency.

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

7. Reduce or eliminate unnecessary or outdated exterior signs that provide visual clutter. Painted logos are not acceptable.

8. 88 CEG has established an Architectural Review Committee (ARC). The ARC shall provide design guidance, enforce the intent of this Installation Facility Standard (IFS) and insure architectural compatibility that will unify and strengthen the architectural fabric of WPAFB promoting a vision of design excellence.

9. There are a significant number of historic facilities on WPAFB. Coordinate with 88 CEG to coordinate with the base Cultural Recourses Management Office.

10. As a goal, WPAFB will strive to provide adequate accessibility to all facilities regardless of DoD exclusions to the ABA.

D03.3. Details and Color

1. Use of semi-gloss, eggshell and other enamelized paint finishes shall be maximized. Use of flat paints shall be minimized.
2. Avoid painting hand railings and guardrails.
3. Exterior wall colors shall conform to the following palette:
    a. Base Color - WP-B1: ±70% of surface area
    b. Accent Color - WP-A2: ±10% of surface area
    c. Trim Color - WP-T3: ±20% of surface area

4. Color Definitions: Contact CE for color samples.
    a. WP-B1: SW2009 (Sherwin Williams retired color reference).
    b. WP-A2: IM50D (Devoe retired color reference).
    c. WP-T3: 79-63 (Glidden retired color reference).

5. Metal Panel Colors
    a. Manufacturer to match paint colors

6. Specific surface requirements:
    a. Fire Hydrants WP-T3
    b. Tanks WP-B1
    c. Transformers, Switchgear, etc. WP-T3
    d. Louvers WP-A2 or WP-T3
    e. Recycle Bins/Dumpsters WP-T3
    f. Loading Dock Bollards, Safety Railings, & Other Safety Equipment not Regulated by OSHA or USAF Safety Regulations: Select the Base, Accent, or Trim Color that will contrast with the adjacent background color.
    g. Fire Hydrants: Per NFPA 291 Fire Flow and Marking of Hydrants. Colors should be of a reflective type paint.

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

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

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

10. Noncorrosive metals with factory applied color finishes are required.

11. Combine details and color with orientation, massing, scale and architectural character to maintain base compatibility.

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: North-facing exposure are preferred for main entrances.

Consider the potential for flooding and corrosion.

Other: Moderate to heavy annual rainfall.

Facility: Narrow buildings along E-W axis are preferred

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

Doors: Recessed are preferred

Windows: Limit not-shaded 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:

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

Other:

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

D03.3.2. Natural Ventilation System

◉ Applicable ○ N/A Number of base standards 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: Clear anodized or powder coated

Finish: Anodized of factory powder coat

Model #: 2x4, slider or awning type

Other: Provide thermally broken frames; use of lower durability dark bronze, or other color, must be approved by the ARC

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

D03.3.3. Thermal Mass

○ Applicable ◉ N/A

D03.3.4. Thermal Shading

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

Type: **Style 1 Window Frame Device**

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

Mfr: Kawneer (or equivalent)

Color: SIlver

Finish: Clear anodized

Model #: Horizontal Louver

Other: Shading devices may be attached to frames or structure

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

Type: **Style 1 Window Frame Device**

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

Mfr: Kawneer (or equivalent)

Color: SIlver

Finish: Clear anodized

Model #: Vertical and horizontal fins

Other: Ensure the configuration of shading devices is acceptable for the specific orientation of the facade

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

D03.3.5. Renewable Heating/Cooling

○ Applicable ◉ N/A

D03.3.6. Solar Photovoltaic System

◯ Applicable ◉ N/A

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 projecting or recessed covering for weather protection following Installation Facilities Standards (IFS) for Facility Group designations.

2. Provide vestibules at entries in Groups 1, 2 and 3 unless used infrequently or serving unconditioned space following ASHRAE 90.1.

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

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

5. Protect entrances and walkways from falling ice and snow.

6. 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 character of the primary entrance to a lesser extent with a smaller scale.

3. Include a recess or projection for weather protection and shading.

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

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

6. Canopies may be used for service and loading areas; weather protection beyond weatherstripping is not required at doors used only for life safety egress.

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

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

D05. WALL SYSTEMS

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

Comply with AF Corporate Standards for Doors and Windows:
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. Generally maintain compatibility with adjacent buildings and within a facility district. Integrate base-wide standard materials palettes as applicable to the facility group number.

2. Variations from the standard material types or colors require Architectural Review Committee approval.

3. Group 1 facilities may have more refined detailing than Group 2 and Group 2 may have more definition than Group 3. Group 4 general officer quarters may have greater definition than other Group 4 structures.

4. Group 1 facilities shall be predominantly cast-in-place concrete or architectural precast panel systems. Cast-in-place systems may be panel formed or board formed. Refer to D05.4.6 for additional guidance. Metal panels or brick may the used as accent materials. Refer to Appendix F for exceptions to the base-wide standards, if any, for Facility Districts.

5. Group 2 facilities may be predominantly architectural precast panel systems or brick to achieve the highest compatibility with adjacent facilities; both materials may be used with one being primary and the other secondary. Metal panel systems may be used as an accent material.

6. Group 3 facilities shall be predominantly insulated metal panels or ribbed metal sheeting. Provide a base of brick or CMU when adjacent to operations and subject to wearing or impacts. EIFS may be used only at wall surfaces that are 4 feet above grade.

7. Group 4 shall be predominantly brick or fiber cement siding; both materials may be used with one being primary and the other secondary. Coordinate trim colors with windows and doors.

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

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

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

11. 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 as at all exterior glazing exposed to summer UV heat gain as a passive design measure to reduce energy use. Ensure adequate shading at west entrances. Deciduous trees may be used for shading.

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

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

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

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

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

9. D05.4.1 Flat Metal Panels Durability Requirements: Coordinate all material connections, transitions and flashings to ensure proper detailing and prevent streaking, staining and severe weathering.

10. D05.4.2. Brick Veneer Durability Requirements: Use requires Architectural Review Committee approval.

10.1. A wide variety of color, sizes, shapes, bond elevations, and applications are used throughout the Base. Brick is the preferred material of choice due to its aesthetic qualities and life cycle costing as related to project size. The ARC must approve elevations and material selections.

10.2. Comply with the Brick Industry Association technote 7, technote 18A, and technote 21B for specific brick masonry recommendations and other topic-specific technotes as applicable.

10.3. Comply with Brick Institute of America technote 21B for brick cavity/veneer wall design and construction. Design components of the wall system to control moisture and to preclude water penetration of the barrier wall construction. Indicate required flashing on the drawings. In order to direct moisture out of a cavity through weep holes, provide continuous flashing at the bottom of the cavity and wherever the cavity is interrupted by elements such as shelf angles or lintels and above an intersecting roof plane. Extend flashing through the outer masonry face and turn down to form a drip. Do not terminate through-wall flashing behind the exterior face. Install through-wall flashing over openings, sills, spandrels, shelf angles and parapets.

10.4. Use of clear masonry sealer to prevent water penetration is prohibited.

10.5. Plastic flashings are not allowed. Specify only superior quality flashing materials since repair or replacement of cavity flashing is exceedingly expensive. Do not use asphalt impregnated felt flashing. Do not use aluminum flashing in brick construction. Through wall flashing shall be bituminous membrane coated copper flashing, copper or stainless steel. Antifreeze admixture compounds for cold weather freeze resistance are not allowed. Provide a tight (non-porous) face brick to reduce water absorption and to reduce freeze thaw damage.

10.6. Provide a 1-inch clear dimension from the face of cavity insulation board or sheathing material to the back of the exterior wythe of masonry.

10.7. Provide open head joint weeps at through-wall flashing for brick masonry. Locate weeps on the same course as the flashing. Space weep holes at 24 inches on center for brick masonry and 32 inches for concrete masonry. Use of clear masonry sealer to prevent water penetration is prohibited.

10.8. Brick which will be exposed to weathering shall be tested for efflorescence. Sampling and testing shall conform to the applicable provisions of ASTM C 67. Tests results shall be provided in the Design Analysis; units meeting the definition of “effloresced” will be subject to rejection. Masonry design must comply with UFC 3-301-01.

10.9. Mortar and Grout: Efflorescence testing of mortar shall be in accordance with ASTM C 67. Components causing efflorescence shall be rejected. The ARC must approve elevations, materials and color selections.

11. D05.4.3. Architectural Precast Durability Requirements: To comply with AFCFS precast concrete panel systems are only permitted when the material is of sufficient density, and the wall system is properly detailed at the coping, frieze, window sills and panel joints, to prevent excessive weathering. Expansion joints must be provided and properly detailed and treated. Architectural precast should not be painted. Painting contractors may be directed to power wash and apply sealers to surfaces following UFGS. Do not paint previously unpainted precast concrete.

12. D05.4.5. Curtain Wall Durability Requirements: Provide only structural silicone glazed systems that are rated for local wind speeds and seismic classification. Only clear anodized aluminum framing is approved for exterior frame systems due to its high durability and resistance to weathering.

13. D05.4.6. Cast-In-Place Concrete Durability Requirements: To meet AFCFS cast-in-place concrete is only permitted when the material is of sufficient density, and the wall system is properly detailed at the coping, frieze, window sills and panel joints, to prevent excessive weathering. Expansion joints must be provided and properly detailed to prevent cracking in the wall system. Cast-in-place concrete wall systems should never be painted. Painting contractors may be directed to power wash and apply sealers to surfaces following UFGS. Do not paint previously unpainted cast-in-place concrete.

14. D05.4.8. Ribbed Metal Sheeting Durability Requirements: Generally orient ribs vertically to direct water to grade. Horizontal ribs are only permitted in profiles, colors and finishes that facilitate drainage and do not promote streaking, staining or excessive weathering.

15. D05.4.9. EFIS Durability Requirements: Limit the use of EIFS to only when matching existing exterior facility finish or other special cases approved by the ARC. When used, the ARC may approve location, color and type.

15.1. Do not install EIFS within 4 feet of grade in areas adjacent to operations, sidewalks or landscaping. Provide a masonry wainscot used to reduce damage/deterioration caused by landscape and grounds maintenance.

15.2. Do not install EIFS in areas where it will be subject to abuse by moving vehicles or equipment, such as a loading dock. Do not use EIFS in areas of heavy pedestrian traffic, or if such use cannot be avoided, specify high-impact resistant system. Use high-impact systems a minimum of four feet above grade where subject to damage from pedestrian traffic or lawn maintenance equipment.

15.3. Only self-draining and mechanically fastened EIFS systems will be considered. Integral colors must match Base standards. The ARC must approve elevations, materials and color selections.

16. D05.4.11.Concrete Block Durability Requirements: The ARC must approve elevations, material and color selections.

16.1 Exterior architectural units shall be fabricated with integral water repellant and shall be integrally colored during manufacture. Water repellant primer and stain shall also be applied to exterior architectural CMU walls after completion of exterior work and when the masonry is not subject to damage by construction activities.

16.2 General purpose common, smooth face CMU is not acceptable for use as an exterior veneer or as facing units.

16.3 Architectural CMU which will be exposed to weathering shall be tested for efflorescence. Sampling and testing shall conform to the applicable provisions of ASTM C 67. Tests results shall be provided in the Design Analysis; units meeting the definition of “effloresced” will be subject to rejection.

16.4 Use ground or polished face CMU adjacent to grade and copings. Coordinate the use of split face block with the building's orientation and avoid its use on north exposures when subjected to streaking and weathering from mechanical grilles and roof drip lines. Avoid roof forms that require rake flashings on split face CMU. Consider the use of stack bond on north exposures to promote drainage along vertical grout joints rather than CMU surfaces. General purpose common, smooth face CMU is not acceptable for use as an exterior veneer or as facing units.

16.5 Mortar and Grout: Efflorescence testing of mortar shall be in accordance with ASTM C 67. Components causing efflorescence shall be rejected. The ARC must approve elevations, materials and color selections.

17. D05.4.12. Fiber Cement Siding Durability Requirements: Use cement board siding in areas not subjected to impacts or adjacent to sidewalks. Avoid application of cement board within 8" of grade. Coordinate all joints, transitions and flashings to avoid streaking and excessive weathering.

18. Refer to D07. Roofs for downspouts.

D05.3. Equipment, Vents and Devices

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

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

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

D05.4 Wall Systems Materials

Facility Group 1 wall materials shall be as follows.

Primary:	Cast-in Place or Architectural Precast concrete
Secondary:	Architectural Precast
Accent:	Alternate Coursing and Relief

Facility Group 2 wall materials shall be as follows.

Primary:	Brick or Architectural Precast Concrete
Secondary:	Architectural Precast or Brick
Accent:	Optional: Cast-In-Place Concrete

Facility Group 3 wall materials shall be as follows.

Primary:	Metal Panel or Ribbed Metal Sheeting
Secondary:	Ribbed Sheeting in Alternate Color or CMU/Brick
Accent:	Brick

Facility Group 4 wall materials shall be as follows.

Primary:	Fiber Cement Siding
Secondary:	Fiber Cement Siding, Trim Boards, Brick
Accent:	Concrete or Brick Foundation Cladding

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

D05.4.1. Flat Metal Panels

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

Type: **Aluminum Composite Material Panel System**

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

Mfr: 3A Composites

Model #: Alucobond Plus Anodized Collection

Color: Neutral colors, silver and warm gray

Finish: Clear anodized

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

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

Type: **Insulated Metal Panel System**

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

Mfr: Metl-Span

Model #: CF Architectural Vertical Wall Panel

Color: Off-white, silver or medium gray

Finish: Heavy stucco-embossed

Other: Horizontal wall panels may be used on Group 1 and 2

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: **Metal Panel System**

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

Mfr: Centria

Model #: Rainscreen Systems, IW Series, Concealed Fastener

Color: Neutral as approved by ARC

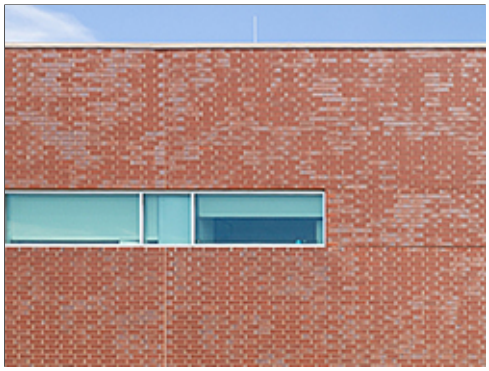
Finish: Fluropon over galvanized, or zinc

Other: N/A

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

D05.4.2. Brick Veneer

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



Type: **Modular Face Brick, Red Blend**

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

Mfr: Local, TBD

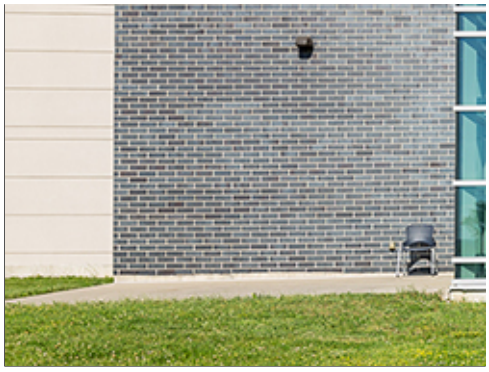
Model #: Modular face brick, nominal size: 4x8x2.6

Color: Red blend

Finish: Straight edges, smooth texture

Other: Refer to D05.2 for durability

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



Type: **Modular Face Brick, Neutral Blend**

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

Mfr: Local, TBD

Model #: Modular face brick, nominal size: 4x8x2.6

Color: Neutral and Earth tones as approved by the ARC

Finish: Straight edges, smooth texture

Other: Refer to D05.2 for durability

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

D05.4.4. Stucco Over Sheathing

○ Applicable ◉ N/A

D05.4.5. Curtain Wall

○ Applicable ◉ N/A

D05.4.6. Cast-In-Place Concrete

○ Applicable ◉ N/A

D05.4.7. Tilt-Up Concrete

○ Applicable ◉ N/A

D05.4.8. Ribbed Metal Sheeting

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

Type: **Lap Seam Metal Panel System**

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

Mfr: Allied or equivalent

Model #: Standard Purlin Bearing Rib (PBR) Panel will all Closures

Color: White, snow or tan as approved by ARC

Finish: Factory standard, smooth, refer to D05.2 for durability r

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

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: **Style 1 - Refer to D05.2-15 for EFIS Requirements**

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

Mfr: Dryvit or equivalent

Model #: Confirm class of system with the 88 CEG;

Color: Off white, neutral or biege as approved, must meet D03.3-4 rqmts.

Finish: Sandpebble

Other: High impact, self draining and mechanically fastened.

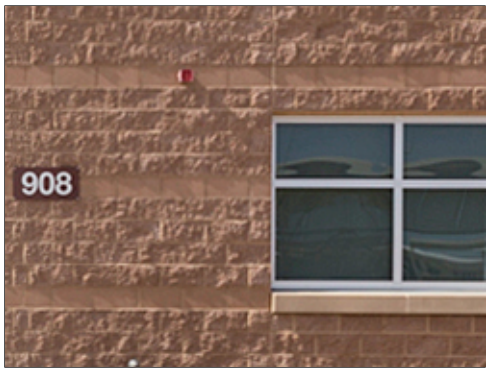
UFGS: Section 07 24 00 Exterior Insulation and Finish Systems:
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 24 00.pdf

D05.4.10. GFRC

◯ Applicable ◉ N/A

D05.4.11. Concrete Block

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



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

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

Mfr: Refer to D05.2 for durability rqmts.

Model #: TBD

Color: TBD

Finish: TBD

Other: Smooth face not permitted as veneer or facing.

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

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. Match the color of the door and frame. For renovation projects the color of new windows, doors and frames shall match the existing ones.

2. Facility Group 4 Brick Quarters Historic District: Wood windows and doors are required. Windows and doors should be replaced only if it is beyond repair. Windows and doors should be replaced in-kind with a unit similar in design, material, size, scale, texture, etc., as the original.

3. Standard-sized hinged doors are preferred. Use sliding, folding, overhead, sectional and other door configurations only to support mission operations. When overhead doors are required install sectional overhead doors to the maximum extent possible. Coordinate with the CE Project Manager where roll-up overhead doors may be required due to mission impact or limited overhead storage space.

4. Automatic doors are allowed only where functionally necessary.

5. Operable windows shall be provided for occupied facilities, unless not allowed by security considerations or specifically deleted by the customer and the project manager.

6. Windows must meet force protection requirements.

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

D06.2. Layout and Geometry

1. Visually and functionally compose openings in walls for the climate-specific exposure.

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

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

4. Design layout to deter vandalism and intrusion and coordinate sound ratings.

D06.3. Glazing and Shading

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

2. Glazing color shall follow Installation Facilities Standards (IFS). See Appendix G06.

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

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

5. Where appropriate, install window screens to take advantage of natural ventilation.

6. Do not use mirrored glazing.

D06.4. Hardware

1. Locks: cylinders shall be small-format interchangeable-core cylinders with seven-pin tumblers fully compatible with the Stanley Best Access Systems 1E series. Cores shall be of solid brass construction with individually capped barrels, in the Stanley Best Access Systems “TE” keyway, as manufactured by either Oak Security Group or Stanley Best Access Systems, and shipped uncombinated directly from the supplier to the Base Lock Shop (88 CES/CEOHS, 1450 Litrell Road, Bldg 30027 Door #4, Wright-Patterson AFB OH 45433). Furnish two blank keys for each core. Provide temporary cores as required for the protection of materials, equipment, and work area. The Government shall combinate and install the permanent cores.

2. All open office, private office, and conference room doors shall be securable and equipped with a secure side thumb turn or push button for quick activation of key lock mechanism.

3. 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.

4. Ensure hardware will perform throughout the facility's life span without showing extreme wear.

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

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

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

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

9. 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: Silver

Finish: Clear anodized

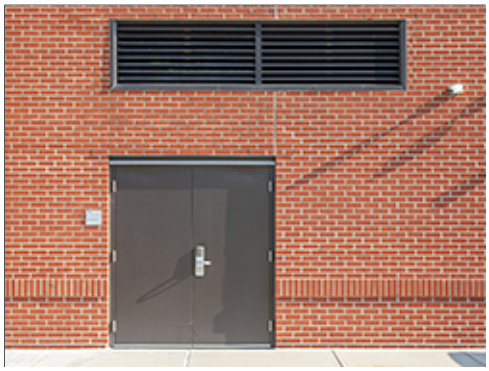
Model #: 2x4

Other: Provide thermally broken frames

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

D06.5.2. Hollow Metal

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



Type: **Hollow Metal Doors and Frames**

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

Mfr: Steelcraft or equivalent

Color: Dark brown or to match the adjacent wall

Finish: Powder coated, satin

Model #: 2x4 frame

Other: Provide thermally broken frames

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

D06.5.3. Aluminum-clad Wood

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

Type: **Aluminum-clad Residential**

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

Mfr: Marvin

Color: White or Earth tones

Finish: Powder coated, satin

Model #: Aluminum-clad wood windows

Other: Double hung

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

D06.5.4. Other

○ Applicable ◉ N/A

D07. ROOF SYSTEMS

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

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

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

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1



Group 2



Group 3



Group 4



D07.1. Roof Type and Form

1. WPAFB has over 1.5 million square meters (15 million square feet) of roof areas. Of this total, approximately 0.8 million square meters (8.7 million square feet) is low-slope built-up roofing, with remainder being a variety of steep-sloped roofing systems.

2. The majority of low-slope roofing systems consist of multi-ply felts with asphalt or coal tar bitumen, either gravel surfaced or coated on a variety of insulation types and structural decks. Other low-slope systems on Base include single ply rubber, modified bitumen and structural standing seam metal.

3. The remainder of steep-sloped roofing systems consists primarily of asphalt shingles plus a significant number of clay tile roofs, metal roofing systems and roll roofing. A small number of specialized systems are in use including floating tank cover roofs, geodesic domes, and earth-covered systems.

4. Roof Access: Control roof access in accordance with UFC 4-010-01, Minimum Antiterrorism Standards for Buildings. Where required by UFC, roof access shall be by an internal ladder through a manufactured roof access hatch or a stair tower. Arrange secure facilities so that roof access is from a mechanical room accessible only from the exterior, to limit uncleared personnel from passing through secured spaces.

5. A built in gutter system where drainage passes through interior spaces or is concealed in the exterior wall cavity is prohibited.

7. Concrete Roof Decks: Do not use mechanical fasteners on concrete decks due to spalling potential, engagement problems, labor expense and future tear off expense and damage to decking. Use of lightweight insulating concrete, gypsum fill or asphaltic perlite fill materials is not recommended. Incorporate lightweight cellular concrete where deck fill material is deemed necessary.

8. Environmental Considerations: Due to prevalence of asbestos fibers in certain roofing materials, re-roofing projects must be sampled at an appropriate time in the design phase. Items typically sampled include the membrane in the field of the roof, base flashing and roof coatings. Refer to Environmental Requirements appendices for more information. Certain WPAFB facilities have been identified as historically significant. Early in the design phase, the Cultural Resources Manager (88 CEG/ CEIEA) should review the project to evaluate the impact of the re-roofing on historic structures. This evaluation is most critical on slope conversion projects, when removal of historically significant elements is being proposed, or when alteration of the original roof color and texture is proposed. Refer to Environmental Requirements appendices for further guidance on historic preservation issues.

9. Roof Warranty: Roof warranty must be a minimum two year Contractor's warranty and extended roof covering manufacturer's warranty as outlined in UFC 3-110-03, Roofing.

10. 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.

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

12. Provide screens for roof-mounted appendages and equipment.

13. Group 4 Brick Quarters Housing facilities shall have a gabled red tile roof or copper roof over small sections of the building (porches, awnings, etc).

14. Roof eaves shall extend beyond the exterior wall for roof drainage and shading. Provide overhangs for shading in response to local climatic conditions; these should be sized and proportioned to the height of the facility and to the window openings being shaded.

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

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

17. Keep roofs uncluttered and minimize penetrations.

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

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

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

D07.2. Roof Slope

1. Low-sloped roofs are allowed for larger structures or to match existing conditions on renovation projects. Minimal-sloped roofs may also be used for Group 3 facilities in high-visibility areas

2. Ensure adequate drainage and connect to the subsurface rain collection system where available.

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

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

5. Slope conversion: Air Force policy promotes conversion of low-slope roofs to steep roof systems during the re-roofing process when economically feasible and aesthetically pleasing. The latest Air Force guidance for determining the feasibility of a particular roof for slope conversion is contained in the HQ USAF Policy Letter on Slope Conversions (Flat to Sloped) dated 13 May 1991.

   Slope conversions typically involve superimposing a wood truss, plywood and shingle system over an existing low-slope structural system (residential solutions) or the erection of a light-gage metal substructure covered with structural standing seam metal.

6. Low-Slope Roof Systems: Built-up roof systems shall be designed in accordance with UFC 3-110-03 "Roofing" and AFI 32-1051 “Roof Systems Management”, and should use the guide specification UFGS 07 51 13 “Built-up Asphalt Roofing”.

7. New low-slope roofs shall have the slope built in the roof deck. They shall not utilize lightweight fill or tapered board insulation.

8. Design snow guards on roof systems to preclude sudden falling of snow and ice.

D07.3. Parapets and Copings

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

D07.4. Color and Reflectivity

1. The ARC must approve color selections for shingles, standing seam metals, fascias, gutters, down spouts, flashing, and other exposed materials where a natural or manufactured color is applied. Refer to Appendix G06 - Architectural for color selection details.

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

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

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

D07.5. Gutters, Downspouts, Scuppers, Drains

1. All sloped roofs shall use gutters and downspouts. Gutters shall be outside the fascia.

2. A built in gutter system where drainage passes through interior spaces or is concealed in the exterior wall cavity is prohibited. Minimal-sloped roofs shall be sloped to drain to the building perimeter through scuppers into downspouts.

3. All gutters and fascias shall match the roof color.

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

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

6. When open scuppers are connected to downspouts, provide transitions consistent with adjacent facilities.

7. Integrate downspouts with the architectural details of the wall system and arrange in an orderly, non-prominent appearance. Generally blend downspouts with the color of the wall (not contrasting it).

8. Fabricate downspouts from non-corrosive materials such as aluminum or zinc-coated steel. Provide factor finishes in medium bronze.

9. All downspouts shall be solid.

10. Provide angled transitional pieces for downspouts to fit closely against the wall for their entire length.

11. Coordinate locations of downspouts to conceal control joints in masonry walls when possible.

12. Place downspouts away from building entries. Water discharged should not run across sidewalks.

D07.6. Roof Vents and Elements

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

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

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

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

5. Screen all large vents.

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

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

8. Avoid roof-mounted antenna systems.

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

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

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

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

13. Roof top equipment: If at all possible, placement of rooftop mechanical and utility equipment shall be avoided. However, if no other viable alternative exists, equipment must be curb mounted and secured against high winds. Do not use pitch pockets. Keep roof penetrations to an absolute minimum. Recommend use of sidewall louvers for air intake and exhaust. Mask equipment behind parapets, architecturally compatible screens/louvers, or set equipment in depressed center section of pitched roofs.

D07.7. Clerestories and Skylights

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

2. Clerestories are preferred to skylights to avoid roof penetrations. Skylights, when permitted, must be simple in shape and integrated with the roof system to eliminate leakage.

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

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

5. Clerestories and skylights must comply with UFC 4-10-01.

D07.8. Vegetated Roof

1. Not applicable.

D07.9. Roof Systems Materials

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

D07.9.1. Standing Seam Metal

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

Type: **Type 1**

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

Mfr: Berridge or equivalent

Color: Neutral or medium bronze, see Appendix G06 - Architectural

Finish: Factory, matte

Model #: Tee-Panel

Other: Shed, gabled or hipped standing seam metal

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

D07.9.2. Membrane Single-ply

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

Type: **Type 1**

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

Mfr: Carlisle Systems

Color: Off-white

Finish: Smooth

Model #: TPO single-ply, “flat” minimal slope

Other: N/A

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

D07.9.3. Built-up Multi-ply

○ Applicable ◉ N/A

D07.9.4. Concrete Tile

○ Applicable ◉ N/A

D07.9.5. Clay Tile

○ Applicable ◉ N/A

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: **Type 1**

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

Mfr: Berridge

Color: Neutral or medium bronze, see Appendix G06 - Architectural

Finish: Factory

Model #: High Seam Tee-Panel

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

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

D07.9.9. Composite Shingles

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

Type: **Type 1**

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

Mfr: Tamko

Color: Neutral Earth tones

Finish: Factory

Model #: Heritage

Other: Provide ridge shingles at gabled or hipped ridgelines

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

D07.9.10. Other

○ Applicable ◉ N/A

D08. STRUCTURAL SYSTEMS

Comply with AF Corporate Standards for Facilities Exteriors:
http://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. Every building, similar structure and portion thereof shall be designed and constructed to resist the effects of ground motions as prescribed by the IBC provisions of section 1613 through 1623 and section 9.0 of SEI /ASCE 7-02 of the ASCE Standard.

2. Earthquake hazard shall be moderate at WPAFB; the specified (design) ground motion for the installation shall be moderate destructive event.

3. The minimum performance level for all AFMC buildings is life safety with 10% probability of exceedance in 50 years. The specified ground motion shall be represented by a 5% damped acceleration response spectrum having a 500 year recurrence rate.

4. Seismic use group III includes:
   a. IIIE for mission essential, sensitive munitions, weapons storage, POL, gas, and CBA facilities.
   b. IIIH for hazardous facilities containing quantities of toxic or explosive substances considered to be dangerous to the general public.

5. Soil and Subsurface Investigation

   5.1 The Architect/Engineer (A/E) shall be responsible to perform all soil borings and investigations required to design the project properly. The designer shall obtain a Base Civil Engineering Work Clearance Request (AF Form 103), completed and signed, prior to beginning any and all digging, boring, trenching, etc. This form must be present at the job site during the work.

   To obtain an AF Form 103, the A/E shall clearly and completely mark all locations where borings are to be taken prior to requesting a clearance. These locations shall be clearly numbered or identified in some manner. The designer shall also submit a map to the Base Civil Engineering point of contact showing numbered locations of the borings. The map alone is not acceptable. At least a 14 calendar days' notice is required to obtain a completed AF Form 103.

   A representative of the A/E is encouraged to attend the clearance meeting. If a conflict occurs concerning boring locations, they can easily be moved by the representative, and cleared on site. Another meeting is required to clear relocated points if the A/E is not present.

5.2 Detailed soil investigations are important due to the following conditions:

· Rock, as shallow as one meter (4'), is common in the higher elevations of Area B.
· A shallow water table is present in several areas of Area A, especially the flight line area.

6. Soil Treatment

   Termite treatments shall be included in all new construction and major renovation projects. Ensure all projects are coordinated through the Base Entomologist for review during the design phase. Use only non-repellent termiticide in accordance with Unified Facilities Guide Specification (UFGS) 31 31 16, Soil Treatment for Subterranean Termite Control, applied at the highest EPA-labeled concentration and application rate, in accordance with AFI 32-1053 and DoDI 4150.07 Paragraph E4.6. All termite treatments shall be performed by properly licensed and current in category applicators. Base Entomology (257-3593) shall be notified when treatments begin for QAE (quality assurance evaluation). All records of applications shall be turned over to Base Entomology for recording chemical amounts and processes.

7. Refer to table 4-1 on UFC 3-310-03A for the performance objectives, Seismic Design Categories, and acceptance criteria of each Seismic Use Group (SUG).

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

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

10. 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.

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

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

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

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

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 or board formed

Model #: Post and beam and/or waffle slab

Other: N/A

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 system; manufacturer standing seam roof system may be used for Group 3

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

D08.2.5. Masonry

○ Applicable ◉ N/A

D08.2.6. Heavy Timber

○ Applicable ◉ N/A

D08.2.7. Light-gauge Steel

○ Applicable ◉ N/A

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. See appendices G04 - Utilities Privatization, G08 - Fire Protection, G09 - Mechanical, and G10 - Electrical.

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

3. Provide optimized passive and active systems; design active mechanical systems to supplement thermal mass walls and floors.

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

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

6. Solar domestic hot water systems are required when life-cycle cost effective for the climate.

D09.2. Functionality and Efficiency

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

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

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

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

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

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

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

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

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

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

11. Separate mechanical and electrical and communications rooms.

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

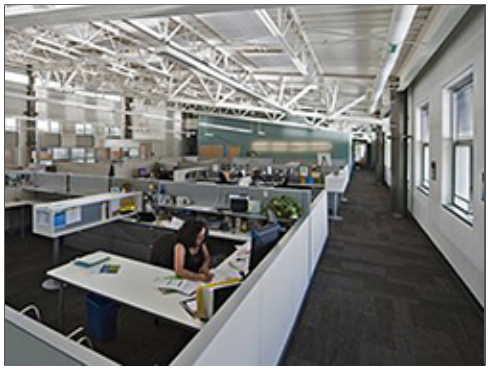
E. FACILITIES INTERIORS

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

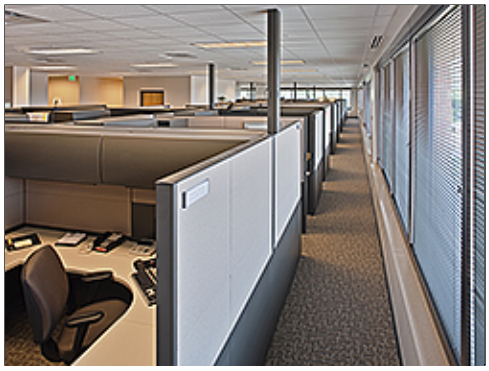
Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1



Group 2



Group 3



Group 4



E01. Building Configurations

Comply with Air Force Corporate Standards for Building Configurations:
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. Utilize AFMAN 32-1084 Facility Requirements Standards for planning, space utilization allowable area assignments.

2. Create flexible interior configurations using Furniture, Fixtures & Equipment (FF&E) and limit “hard wall” private offices and private rooms. To the greatest extent, limit permanent partitions to core areas such as toilet rooms, stairs, mechanical and utility rooms. Use 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.

3. Provide high-performance building configurations following UFC 1-200-02. Ensure passive design strategies are cost effectively incorporated before active mechanical systems are designed.

4. Comply with UFC 1-200-01 for general building requirements, model building codes and government unique criteria for typical design disciplines and building systems. UFC 1-200-01 also provides direction for accessibility, anti-terrorism, security, sustainability requirements, and safety.

5. Meet security and force protection requirements in UFC 4-010-01: DoD Minimum Antiterrorism Standards for Buildings.

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

7. Provide a level of quality for interior features, materials and finishes that is appropriate for the Facility Group number.

8. Design and review shall be accomplished by architects utilizing professional interior designers when appropriate. In-house design projects shall involve the base architect and interior designer.

9. Consultation with the State Historic Preservation Officer (SHPO) will be required for properties listed on the National Register of Historic Places and within the Historic District designated for the Base.

10. 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 and flexibility to support multiple missions over time. Provide distinct boundaries for waiting areas with a variety of comfortable and moveable furniture arranged in small flexible groupings to accommodate the widest range of persons and families.

5. Design common areas to accommodate and manage a sudden influx of people that rapidly reaches the maximum occupant load

6. Allow no direct sight lines into restrooms. Endeavor to swing restroom doors into adjacent corridor/ room.

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

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

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

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

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

E01.1.1. Interior Design Process

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

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

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

4. Base space planning on square foot allocations from AFM 32-1084. Identify special requirements if any, such as privacy separation, VIP areas, gathering spaces and storage. Note: The occupant's rank and position may create a request for additional square footage and selection of alternative materials. Such requests must be approved at the appropriate command level.

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 UFC 3-120-10.

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

E01.1.2. Codes and Regulations

1. Refer to UFC 1-200-01. This UFC provides general building requirements, establishes the use of consensus building codes and standards, identifies key core UFC's, and identifies unique military criteria. National Fire Protection Association (NFPA) 101 – Life Safety Code shall also be used as a companion document.

2. Fire Code requirements shall be identified in the International Building Code (IBC) and must be used where dictated by UFC 1-200-01 except where noted in UFC 3-600-01.

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. Select floor materials in response to the amount of foot traffic a floor receives and to Base conditions to provide the greatest long term value.

2. Floor treatments (patterns and layouts) should convey the designation of the Facility Groups (Group 1, 2, 3 or 4), type of use and type of space while considering a life cycle cost analysis. Facility Group 1 may receive higher quality treatments the Facility Groups 2 through 4, but should not consume an excessive amount of resources.

3. Installation cost, durability, maintenance and appearance shall be considered when selecting materials appropriate to the facility type.

4. Comply with Mandatory Use Policy for the Air Force Carpet Acquisitions within the contiguous U.S. (OMB Memoranda, Improving Acquisition through strategic resourcing 5 December 2012, and attachment 1). Roll carpet goods shall only be used in areas such as high profile major command suites and similar areas with BCE approval. Carpet tiles shall be used in all other spaces.

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

6. Building and interior configurations should address both operations and climatic responses.

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

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

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

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

11. Comply with Federal Government policy regarding protection and enhancement of the cultural environment.

12. Natural stone, terrazzo and ground/ polished concrete slab flooring shall be used in high traffic areas of Group 1.

13. Resilient flooring may be used in low traffic areas in Group 1, 2 and 4. Acceptable resilient flooring includes rubber, LVT, VCT and linoleum. Resilient flooring may be used for stairs, office break rooms, dining areas, fitness areas, and rubber floor base.

E02. Floors

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

E02.1. Floor Materials

Facility Group 1 floor materials shall be as follows.

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

Facility Group 2 floor materials shall be as follows.

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

Facility Group 3 floor materials shall be as follows.

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

Facility Group 4 floor materials shall be as follows.

Primary:	Carpet
Secondary:	Ceramic Tile
Tertiary:	N/A

1. Natural stone and terrazzo flooring may be used in high traffic areas of Group 1 as approved on a case basis.

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

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

4. See appendix G07 for supplementary information on floor materials.

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 aggregate (color to be selected)

Finish: Fine polished texture, slip resistant

Model #: Medium to small aggregate

Other: Conform to ABA requirements for coefficient of friction

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

Type: **Style 2, Ground, Polished and Stained**

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

Mfr: Local (TBD)

Color: Natural gray cement, light to dark aggregate (color to be selected

Finish: Medium polished texture, slip resistant

Model #: Medium to small aggregate

Other: Conform to ABA requirements for coefficient of friction

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

E02.1.2. Natural Stone and Terrazzo

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

Type: **Ground and Polished Terrazzo**

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

Mfr: Local (TBD)

Color: Natural gray cement, light to dark aggregate (color to be selected)

Finish: Fine to medium polished texture, slip resistant

Model #: Medium to small aggregate

Other: Conform to ABA requirements for coefficient of friction

UFGS: Section 09 63 40 Stone Flooring
(Not Available on UFGS)
Section 09 66 13 Portland Cement Terrazzo Flooring
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 66 13.pdf

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: American Olean and Daltile

Color: Earth tones

Finish: Matte, slip resistant

Model #: Commercial kitchen

Other: 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

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: American Olean and 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 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

E02.1.5. Resilient Floor

◉ Applicable ○ N/A Number of base standards 2 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 Rubber Flooring**

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

Mfr: Johnsonite

Color: Neutral field color with accent color as approved by BCE

Finish: Factory

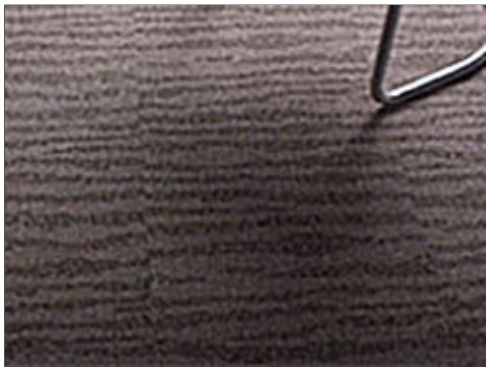
Model #: 24" x 24" Interlocking tile

Other: Roll goods may be considered with approval of the BCE

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

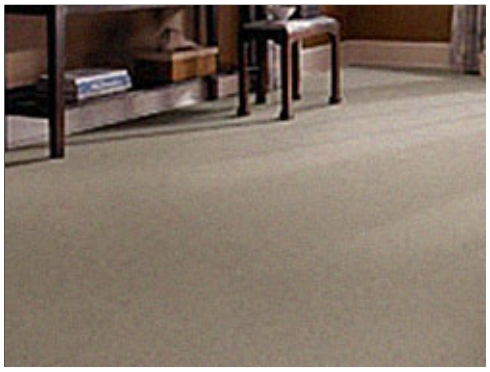
Color: Neutral or multi-colored flecks that yield a neutral tone

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

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

Other: N/A

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



Type: **Style 2**

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

Mfr: Mohawk Group

Color: Earth tones

Finish: Factory

Model #: Broadloom, residential loop, "Smartstrand"

Other: N/A

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

E02.1.7. Rapidly-Renewable Products

○ Applicable ◉ N/A

E02.1.8. Other

○ Applicable ◉ N/A

E03. Walls

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

E03.1. Wall Materials

Facility Group 1 wall materials shall be as follows.

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

Facility Group 2 wall materials shall be as follows.

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

Facility Group 3 wall materials shall be as follows.

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

Facility Group 4 wall materials shall be as follows.

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

1. Provide durable low-maintenance wall materials and finishes for a long life span with the possibility of one or more uses of spaces during that time. Apply wall finishes assuming a 10-year life span. Color Shall be cohesive and of consistent quality throughout the facility

2. Comply with Unified Facilities Criteria for Sound Transmission Loss (TL), Noise Reduction (NR) and Sound Transmission Class (STC) ratings.

3. Follow UFC 3-450-01 (Vibration and Noise Control) for acoustic design issues including speech privacy, sound isolation or sound masking.

4. Provide a level of finish following UFGS Section 09 29 00 Gypsum Board.

5. Select and apply paint with sheens (gloss levels) appropriate for the application following UFGS Section 09 90 00 Paints and Coatings.

6. Provide ceramic tile on wet walls of kitchens, toilet rooms, locker rooms, etc., in all facility groups. Provide a backer consisting of “mold-tough” gypsum backer board.

7. Neutral split-face or ground-face integrally colored block with a clear sealer may be used in Group 3. Do not paint block.

8. Provide rubber base on drywall partitions in Groups 1 and 2.

9. Hardwood base may only be used in Group 1 as approved on a case basis.

10. 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.

11. Decorative moldings may be used only in Group 1 when approved on a case basis.

12. 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.

13. Group 4 may use painted composite wood base.

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

15. See appendix G07 for supplementary information on wall materials.

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: **Cast in Place**

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

Mfr: Local (TBD)

Color: Natural gray cement, neutral aggregates

Finish: Board formed, panel formed, hand rubbed

Model #: Medium to small aggregate

Other: Section 03 35 00 Concrete Finishing
http://www.wdbg.org/FFC/DOD/UFGS/UFGS 03 35 00.pdf

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 1 Image Tool 250 x 188

Type: **Modular Face Brick**

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

Mfr: Local (TBD), Red Blend

Color: Red blend , or match exterior as approved by ARC

Finish: Light texture

Model #: Coursed unit masonry

Other: N/A

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

E03.1.3. Ceramic Tile

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

Type: **Style 1**

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

Mfr: American Olean, Daltile

Color: Neutral Earth tones

Finish: Gloss, Semi-Gloss, Matte (Determined by application/ location)

Model #: Ceramic wall tile

Other: Located on wet walls in restrooms, kitchens, break rooms, locker rooms and similar locations

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: Paint (Sheen per UFGS), Solid Earth tone colors

Finish: Level 1 – 5 to be determined by the BCE

Model #: Tapered edge

Other: Provide “mold-tough” gypsum backer board in wet locations

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

Facility Group 2 ceiling materials shall be as follows.

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

Facility Group 3 ceiling materials shall be as follows.

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

Facility Group 4 ceiling materials shall be as follows.

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

1. Accent ceiling materials such as metal, wood, and rapidly renewable may be used in Group 1 as approved on a case basis.

2. Follow UFC 3-450-01 (Vibration and Noise Control) for acoustic design issues including speech privacy, sound isolation or sound masking.

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

4. See appendix G06 and G07 for supplementary information on ceiling materials.

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%. 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

Type: **Style 2 Kitchen**

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

Mfr: Armstrong

Color: White

Finish: Factory

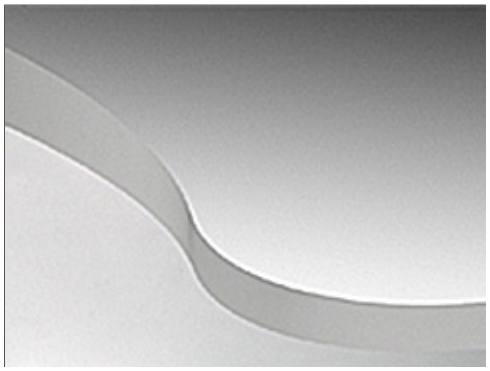
Model #: Kitchen – 2' x 2' Ceramaguard

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: Paint (sheen per UFGS), solid Earth tone colors

Finish: Gypsum board (painted), level 1 – 5 to be determined by the BCE

Model #: Thickness as required by Building Code

Other: Meet STC per requirements by UFC, provide Fire Rated assembly when required.

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:	Aluminum, clear anodized
Secondary:	Hollow metal (painted)
Tertiary:	N/A

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

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

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

Primary:	Aluminum, clear anodized
Secondary:	Hollow metal (painted)
Tertiary:	N/A

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

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

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

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

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

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

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

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

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

Primary:	Wood solid core
Secondary:	Composite solid core
Tertiary:	N/A

1. Provide doors and windows for a long facility life span and for maximum flexibility under adaptive use. Install durable doors, windows and frames made of low maintenance materials. Hardwood types and finishes shall not degrade or show excessive wear over their lifespan. Wood door veneer shall not have excessive grain pattern such as oak, consider birch or maple unless matching existing style.

2. Install glazing in doors and locate windows to preserve paths of sunlight. Create openings to enhance airflow and to facilitate passive ventilation. Balance building performance with occupant comfort, health, safety, security and productivity.

3. Visually integrate doors and windows with the overall facility design to create an organized appearance. These elements must convey an image of lasting quality and efficiency without extravagance. Ensure systems and materials are appropriate for the Facility Group.

4. Hardwood casings may be provided over metal frames in Group 1 as approved on a case basis.

5. Paneled textured doors are preferred in Group 4.

6. Do not use hollow-core wood doors.

7. Generally match original hardware in renovations associated with State Historic Preservation.

8. Hollow metal doors shall be full flush 1 3/4" (minimum 16 gauge) fabricated of two sheets of steel with completely smooth and unbroken surfaces both sides. All edge seams shall be fully welded and ground smooth, top and bottom rails shall be formed from steel channels. Reinforcing for hardware shall be 12 gauge. Mineral core shall be provided for rated doors.

9. Hollow metal frames shall be formed from a minimum 16 gauge. Fabricated as a one piece welded assembly with headers and jambs securely arc welded on the frame face and ground smooth to form a neat mitered corner assembly, provide plaster guards. Provide anchors compatible with the adjacent wall system. Coat inside of all frames with material to inhibit rust and grout all frames solid. Knock down frames shall only be used with the approval of the BCE.

10. Wood Doors shall be five ply with stiles and rails bonded to the core, entire unit abrasive planed before veneering. Provide fire resistive composite when required. Factory finish when possible. Quality standard shall be performance grade extra heavy duty. Veneer Grade A, Rotary cut, book match veneer leaves. Pair and set match doors hung in same opening. Satin stainless steel hardware is preferred per AFCFS to reduce signs of wearing.

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

12. Door hardware shall conform to UFC requirements for Normal, Secure and Collateral Secure locations.

13. See appendix G06 for supplementary information on interior doors and windows.

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

E05.1.1. Aluminum

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

Type: **Style 1**

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

Mfr: Kawneer

Color: Clear anodized

Finish: Factory

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

Other: Larger framing is permitted when required by loading requirements. Doors shall conform to ABA requirements. Satin stainless steel hardware is preferred to reduce signs of wearing

UFGS: Section 08 41 13 Aluminum-Framed Entrances and Storefronts
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 41 13.pdf
Section 08 71 00 Door Hardware
https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf

E05.1.2. Hollow Metal

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

Type: **Steel Doors**

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

Mfr: Steelcraft

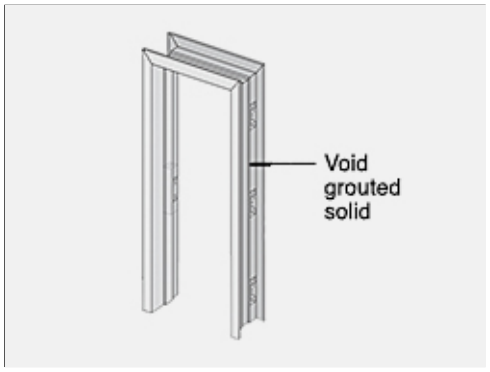
Color: Neutral colors

Finish: Paint (sheen per UFGS)

Model #: Full flush 1 3/4" leaf

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

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



Type: **Steel Frames**

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

Mfr: Steelcraft

Color: Neutral colors, coordinate with base color scheme

Finish: Paint (sheen per UFGS)

Model #: Welded frame assembly (Min.16 gauge), grouted solid where required

Other: Provide in Group 3 and utility areas of Group 1 and 2 A25 galvannealed coating. All frames shall be factory primed. Satin stainless steel hardware is preferred

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 Doors**

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

Mfr: Algoma, Eggers, Marshfield

Color: Natural hardwood veneer, Grade A

Finish: Clear sealer, satin (aqueous), stain when approved by the BCE

Model #: 1 3/4" structural solid core

Other: Refer to above standard E05.1. Item 10.

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 Doors**

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

Mfr: Simpson

Color: Natural hardwood or paint grade

Finish: Clear sealer or paint, satin (aqueous)

Model #: Full slab or panels

Other: Satin nickel hardware

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

E05.1.4. Other

○ Applicable ◉ N/A

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. Cabinets, countertops and hardware shall be appropriate to the Facility Group and for the particular application and frequency of use. Materials should be durable and not show excessive wear over their lifespan. Countertops should be neutral in color, smooth to light texture and compatible with adjacent cabinet surfaces and plumbing fixtures.

2. When used for storage, furniture systems are preferred rather than built-in cabinetry or casework in office, administrative and operational applications. Casework or architectural millwork may be provided in main lobbies in Groups 1 and 2, consolidated break areas, work areas and food service areas in Groups 1, 2 and 3.

3. Materials, shapes, and detailing should convey an image of long-lasting quality without extravagance; avoid trendy designs. Comply with Architectural Woodwork Institute (AWI) standards.

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

5. Provide countertops/ backsplashes in restrooms, kitchenettes and break rooms. Fabricate of a minimum 1/2" solid surface material. Provide continuous sealant joint/ bead to adjacent surfaces of clear silicone.

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

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

8. Refer to AFCFS for approved materials.

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

10. See appendix G07 for supplementary information on casework materials.

E06.1.1. Plastic Laminate

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

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

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

Mfr: Formica, Wilsonart

Color: Medium Earth tones and neutral tones

Finish: Light textured

Model #: High pressure laminate

Other: Combine with matching solid-surface banding on casework edges. Only for use as approved by the BCE in a Facility Group. Provide marine edge in areas with liquids.

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 (or equivalent)

Color: Neutral to compliment cabinet color/ texture as approved by the BCE

Finish: Light textured

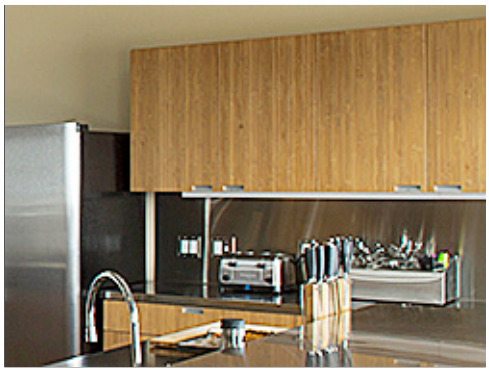
Model #: Solid Surface

Other: Faces and edge banding

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

E06.1.3. Rapidly-Renewable Products

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



Type: **Style 1 Moderate Use Areas**

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

Mfr: Plyboo

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

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 Only**

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

Mfr: Formica

Color: Medium Earth tones and neutral tones

Finish: Light textured

Model #: High pressure laminate

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

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

E06.2.2. Solid Polymer Surface

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

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

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

Mfr: Corian

Color: Medium Earth tones and neutral tones

Finish: Light textured

Model #: Solid Surface

Other: Provide marine edge in areas with liquids

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, dark tones with BCE approval

Finish: High polish with sealer

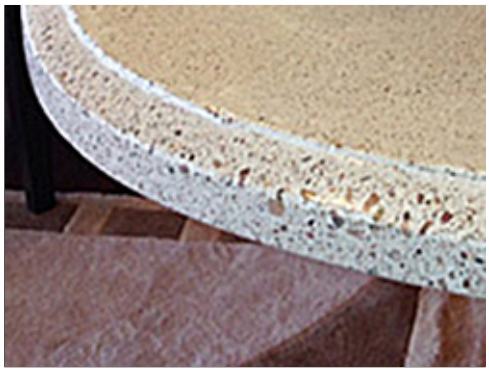
Model #: Custom cut and polished slabs

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, dark tones with BCE approval

Finish: High polish with sealer

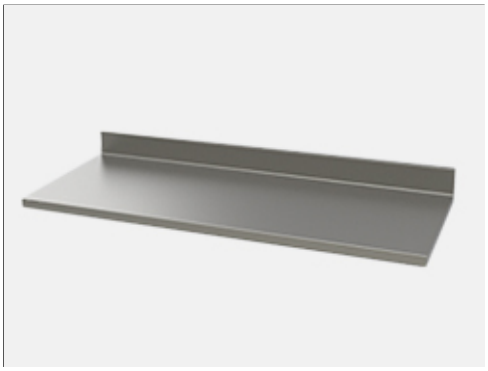
Model #: Custom cut and polished slabs

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: **Style 1**

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

Mfr: Local (TBD)

Color: Stainless steel

Finish: Mill finish

Model #: Type 304, 18-8 analysis, nickel bearing steel

Other: Provide integral fronts, sides and backsplash with rolled/ marine edge to capture liquids

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

E06.2.6. Other

○ Applicable ◉ N/A

E07. Furnishings

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

E07.1. Durability and Serviceability

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

E07.2. Accessories

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

1. Comply with AFCFS.

2. See appendix G07 for supplementary information on furnishings accessories.

E08. Interior Signs

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

E08.1 Types and Color

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. Interior signage must meet UFC standards and receive approval of BCE.

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

3. See appendix G07 for supplementary information on interior signs.

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

3. See appendix G07 for supplementary information on electrical and G11 for supplementary information on Telecommunications.

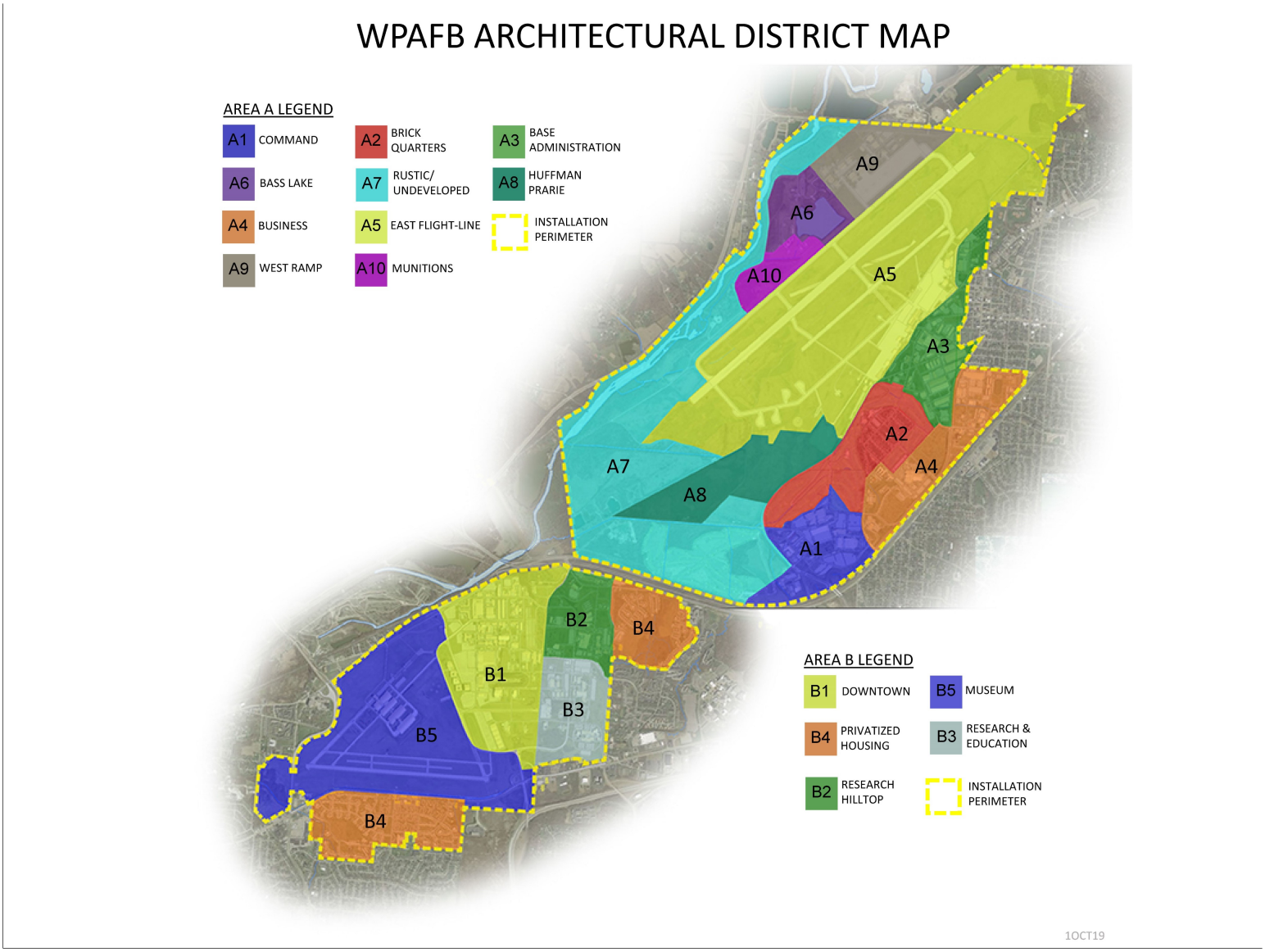
F. APPENDIX - Facility Districts

- (•) 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.*

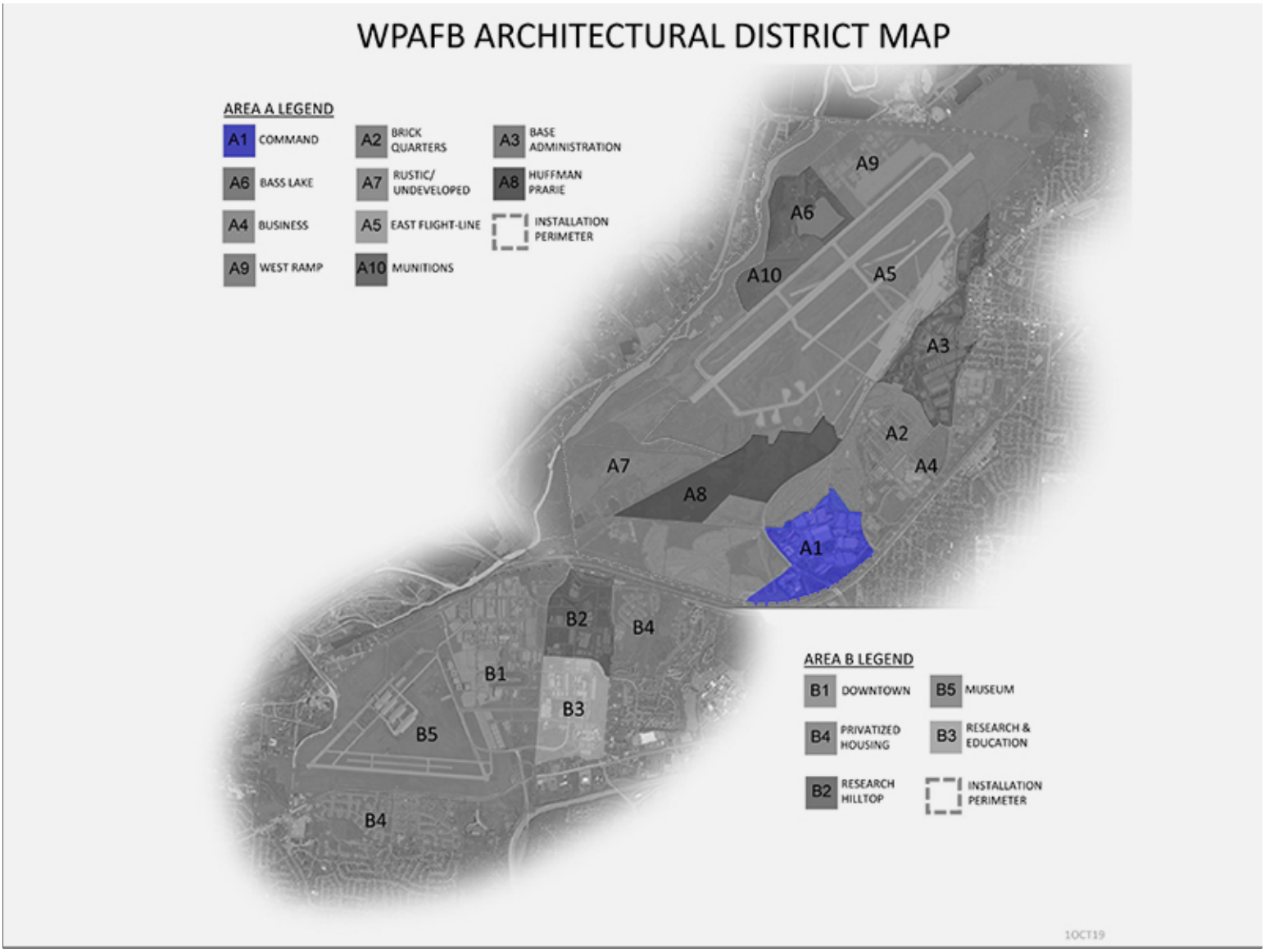
Enter No. of Facility Districts 15

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: A1 - Command

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

District A1 is bordered along the south by the Area A perimeter fence, the west by Battle Creek road and Communications Blvd., to the north by Hebble Creek Rd. and the Wright Patterson Club golf course fence, and to the east by Chidlaw Rd. and Gate 12a. The facilities in the command and administrative district includes the National Air and Space Intelligence Center (NASIC), the Air Force Material Command (AFMC), the 88th Security Forces Squadron, and various other communications and industrial facilities.

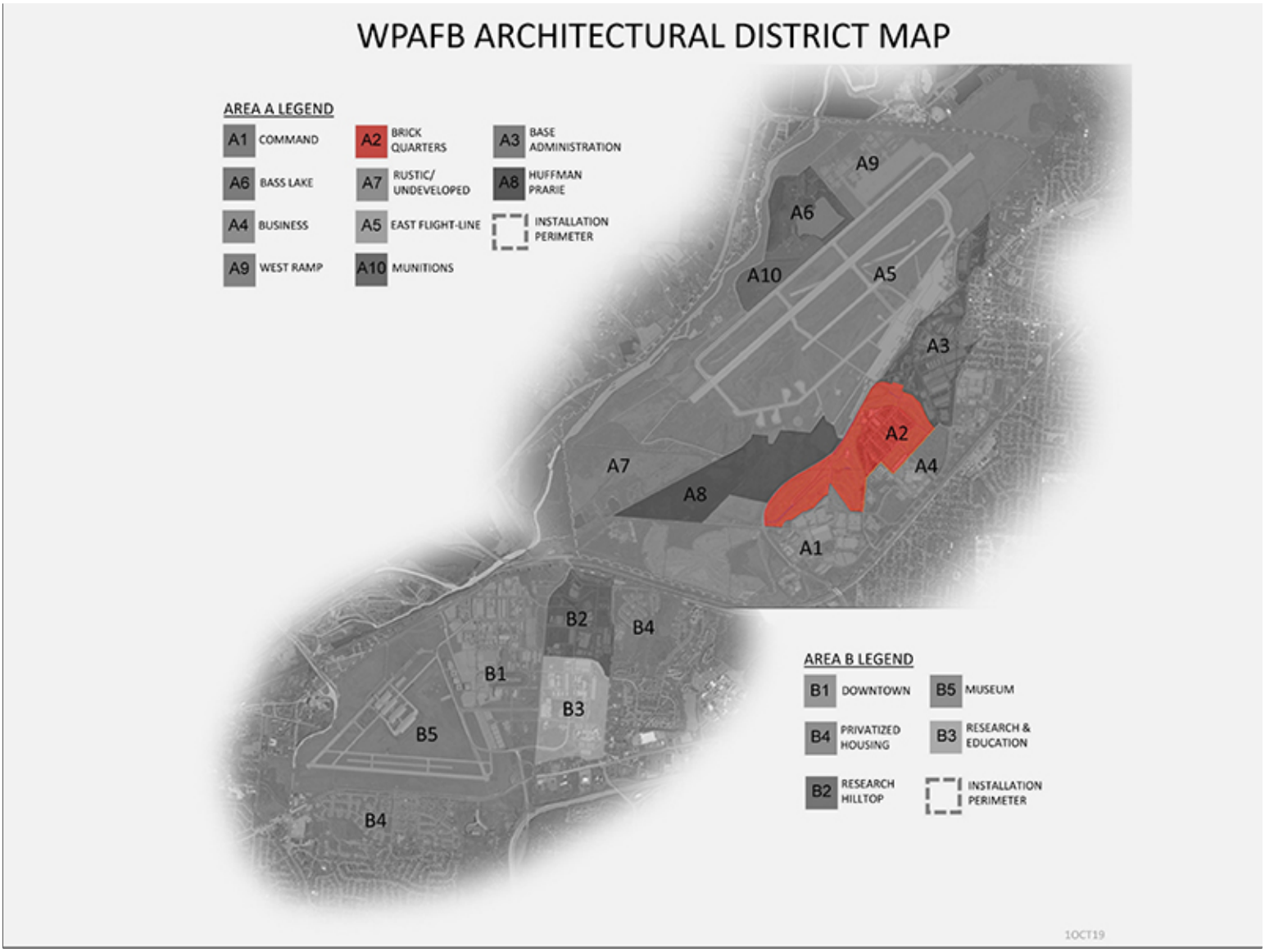
Large administration buildings dominate in this area of the base. The architectural style of the oldest office buildings are Art Deco. Later additions include the precast concrete modern style of the HQ Major Command building and contemporary style of the NASIC building.

The buildings in the district are primarily two stories in height and tend to be considerably wider than they are tall. Horizontal lines created by architectural elements such as reveals, concrete and metal panels, and windows are a common feature of many of the buildings. Precast concrete finishes dominate the exterior of the buildings in this district. The outlier is Building 280 a former industrial building with wood sided exterior and barrel vaulted roofs that has been renovated into office space.

Name of District: A2 – Brick Quarters

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

District A-2 is bordered to the north and west by Skeel Ave. to Hebble Creek Rd., and south and east by Talbott Rd., the intersection of Schlatter Rd. and Chidlaw Rd., the boundary of the Golf Course and Hebble Creek Rd. Facilities in the Brick Quarters District include the Historic Brick Quarters, the Prairie Trace Golf Club and course and Wright-Patterson Club.

The Tudor revival style of architecture with its decorative half-timbered and brick exteriors dominates in this facility district. The houses in this district are the last remaining built in this style on any military base. The style was chosen do to its uniqueness to the area and its upscale look.

Exceptions to base-wide standards:

D06. DOORS AND WINDOWS
1. Brick Quarters Historic District: Wood windows and doors are required. Windows and doors should be replaced only if it is beyond repair. Windows and doors should be replaced in-kind with a unit similar in design, material, size, scale, texture, etc., as the original

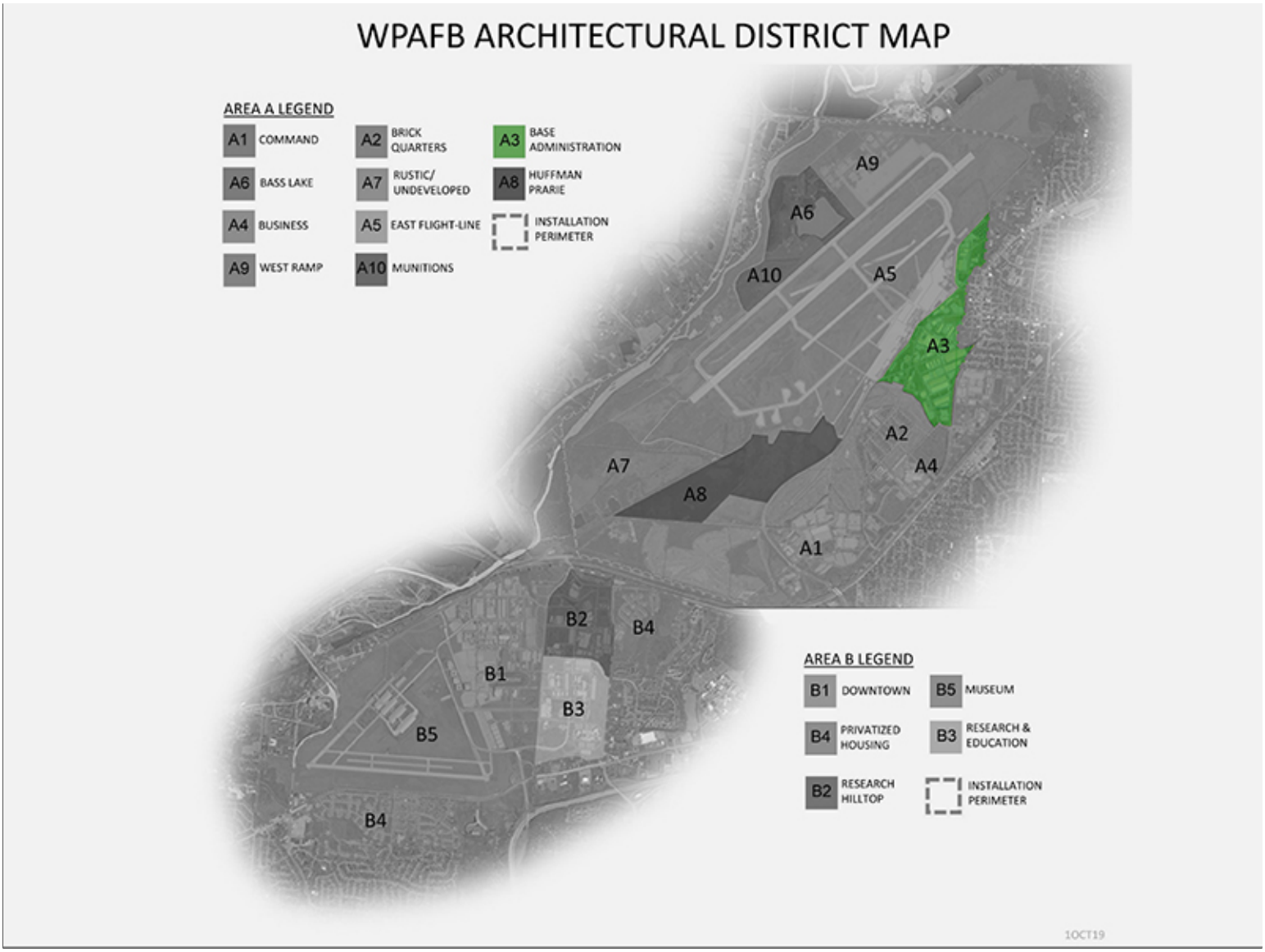
2. Use storm windows to accomplish energy savings in Facility Group 4 Brick Quarters Historic District.

D07. ROOF SYSTEMS
1. Group 4 Brick Quarters Housing facilities shall have a gabled red tile roof or copper roof over small sections of the building (porches, awnings, etc).

Name of District: A3 – Base Administration

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

District A-3 is bordered to the south by Fairchild Rd., Thomas St., the Twin Base Golf Course, Talbott Rd. and intersection of State Route 444 and Schuster Rd., to the east by State Route 444 and the Area A perimeter fence, and to the north and west by the flight line fence.

Facilities in the base administrative and industrial district include Base Headquarters, Civil Engineering Administration, Defense Contract Management Agency, the Legal Assistance Office, the WPAFB Honor Guard, the Civilian Personnel Office, the U.S. Post Office, and various other base administration facilities and warehouses. This district is also home to the Arnold House, the oldest structure on the property, predating the base.

This facility district includes buildings constructed in a range of styles and materials. Brick is the predominate material of the buildings in this district. The Base Headquarters and Civil Engineering Administration were constructed in brick as administration buildings. There are a number of single-story large industrial buildings constructed with brick and low sloping gable roofs. A number of the buildings have hanger doors or industrial style windows.

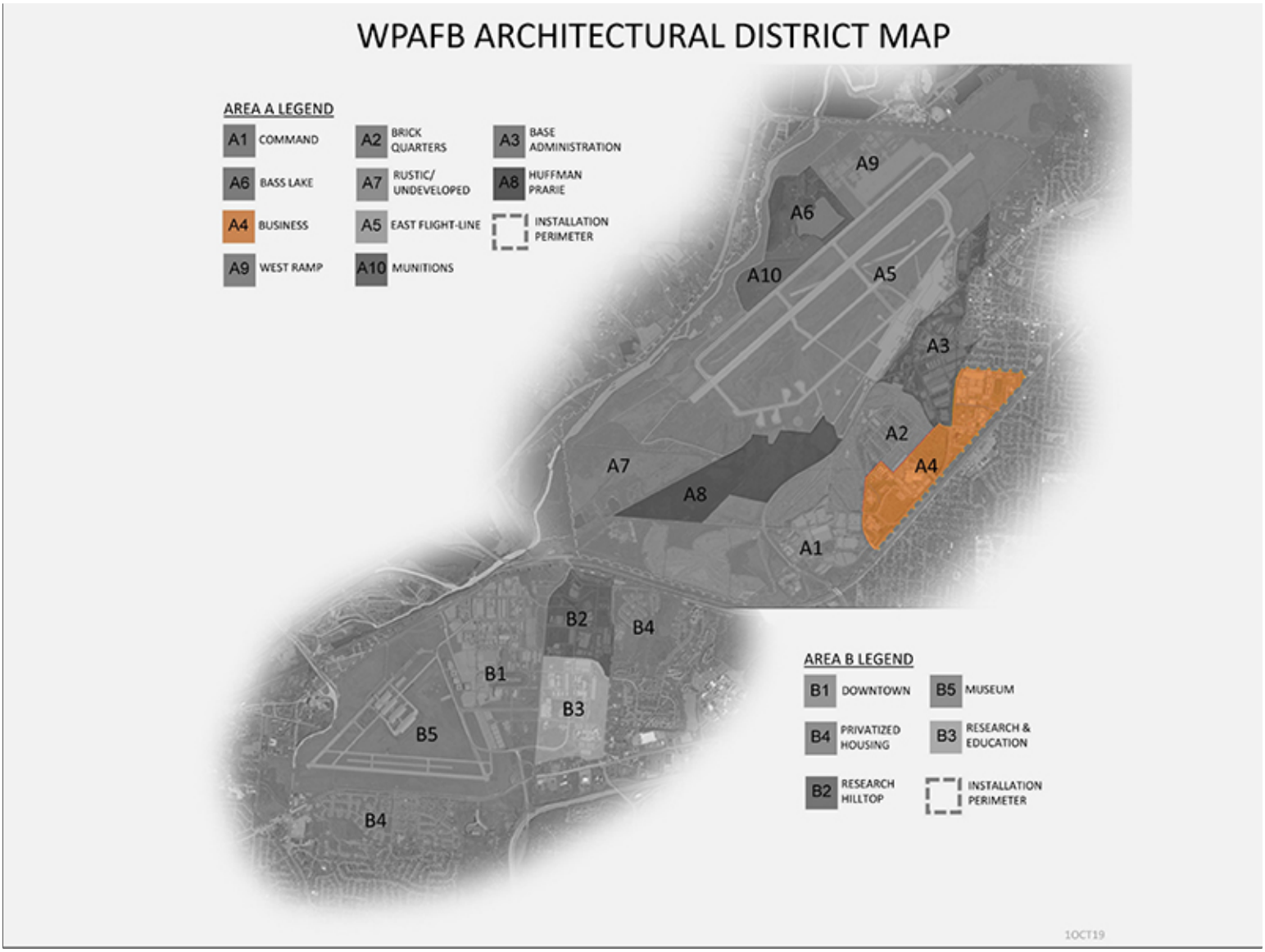
The other style of building that is found in the district is low single story precast concrete buildings 60 and 70 are examples of this. Building 1 another example, it is a very large low concrete structure with a distinct metal roofing detail on the façade.

The Arnold house is a brick nineteenth century farmhouse.

Name of District: A4 – Business

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

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Group 2	◉ Applicable	○ N/A


Group 3	○ Applicable	◉ N/A
Group 4	○ Applicable	◉ N/A
Other	○ Applicable	◉ N/A

District A-4 is bordered to the south by Gate 12a at the intersection of Chidlaw Rd. and State Route 444, to the east and north by the Area A perimeter fence and to the west by State Route 444 until it intersects with Schuster Rd. and along Talbott Rd. until its intersection with Schlatter Rd. and then Schlatter Rd. to its intersection with Chidlaw Rd.

Facilities in the business district include a variety of buildings that support the personnel of WPAFB. The Medical Center, Wright-Patt Inn, Hope Hotel, and dormitories are located here, as are The Base Exchange, Commissary, and Area A Chapel. Various recreational facilities such as The Wright-Patterson USO & Airman's Attic, the Bowling Alley are also part of this facility district. Privatized base housing is included in this area.

There is a range of styles that are present in the A-4 Facility District. The Hospital is a complex of connected buildings constructed primarily of precast concrete. It has large painted horizontal bands separated by textured pre-cast panels. The Hope Hotel has a similar look to the hospital with textured concrete block and a similar color scheme.

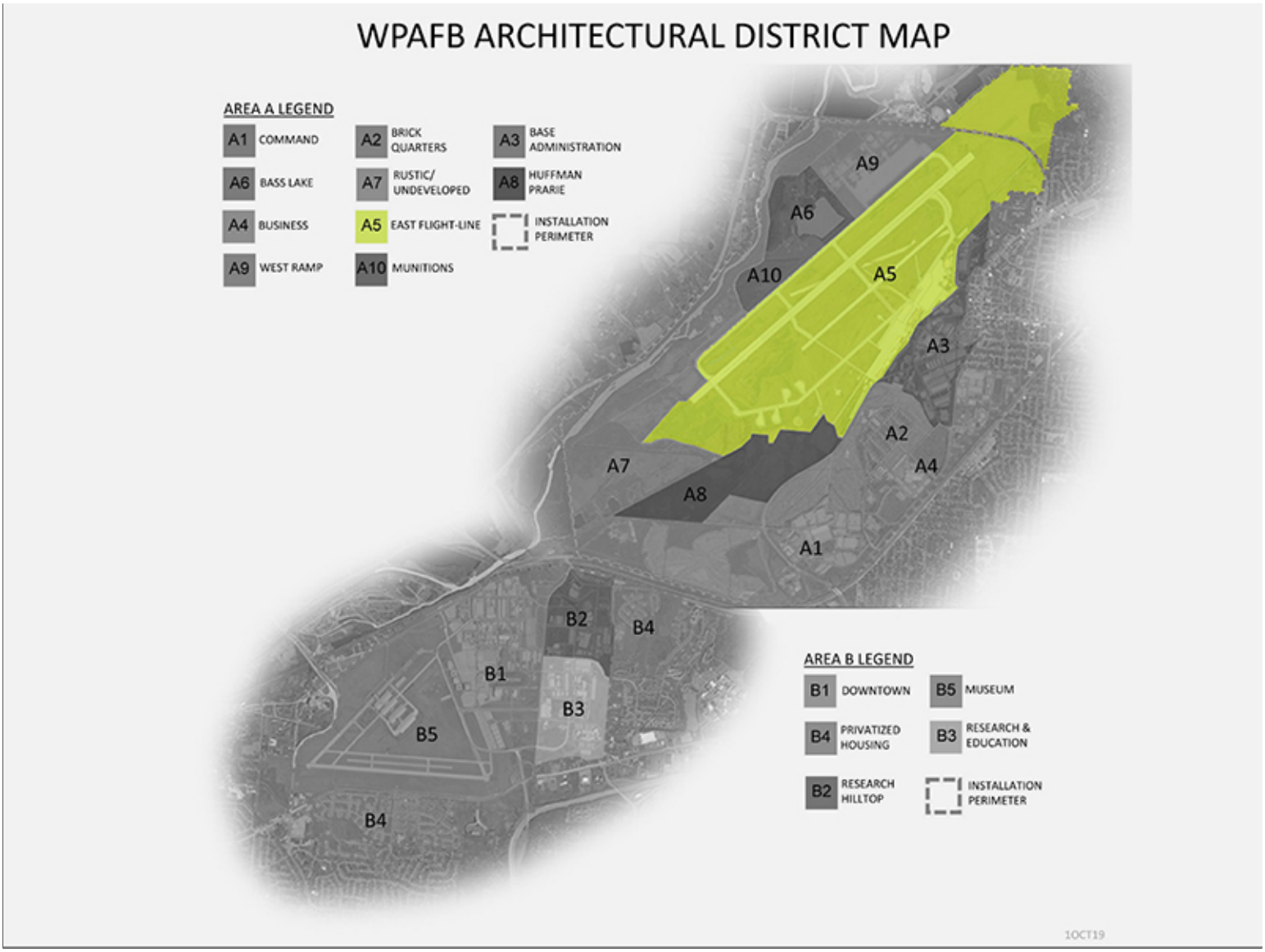
Many of the recreational buildings consist of brick with precast or limestone accents. The buildings in this area of the base have a mid-century modern feel to them. Some of the newer buildings such as the Commissary and the Base Exchange are large concrete block buildings that fit with typical suburban retail architecture. The gas station and convenience store were constructed in a contemporary retail style.

The Wright-Patt Inn which sits close to the brick quarters is a 4-story red brick building that most closely resembles mid-century modern style of architecture.

Name of District: A5 – East Flight Line

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

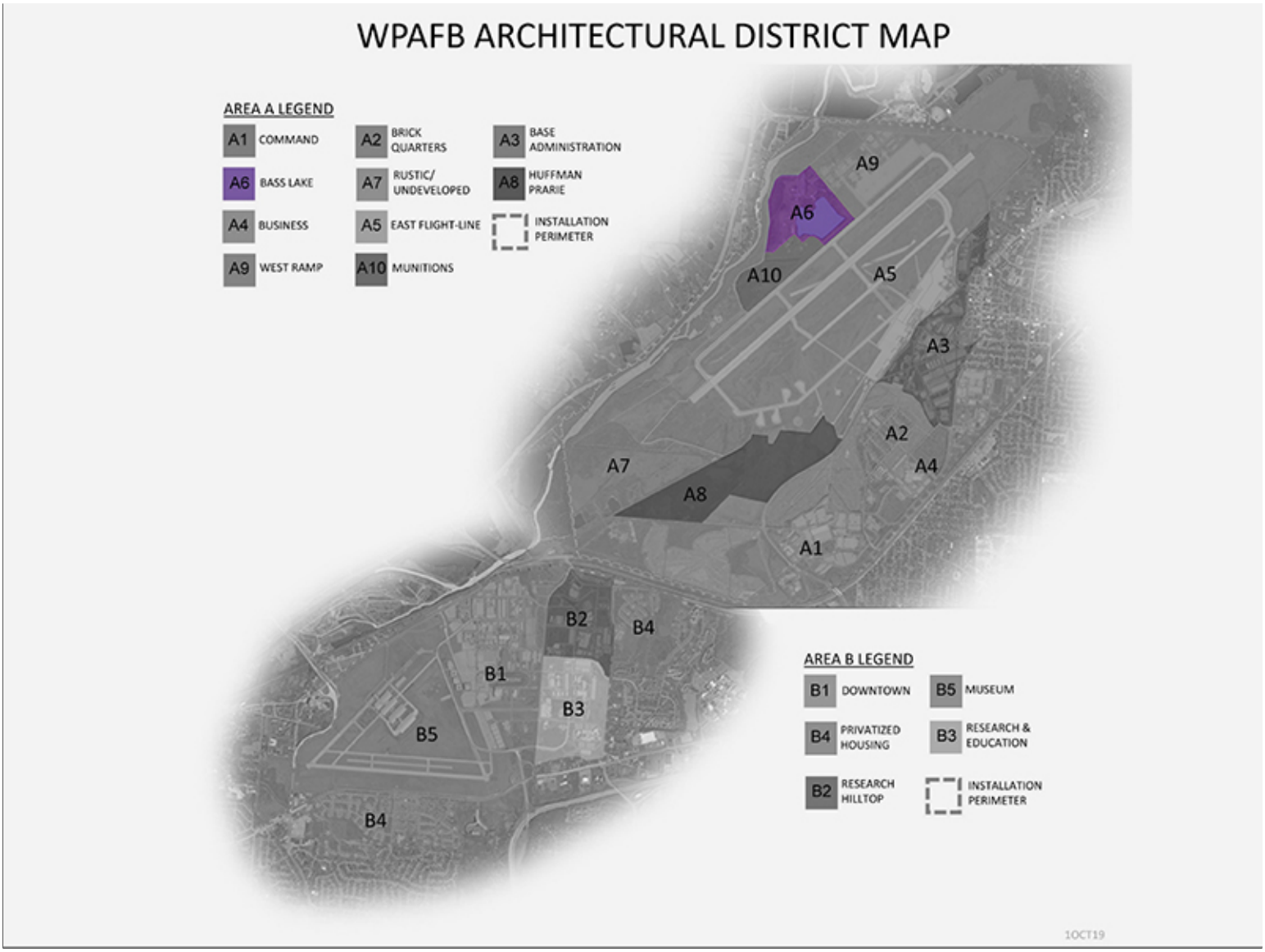
District A-5 is contained by the flight line perimeter fence and the edge of the east ramp taxi way. Cox cemetery, is located north of the west flight line inside the flight line fence. Included in District A-5, but partitioned off with perimeter fencing is the off-limits zone located north of the flight line.

The buildings in this district are primarily utilitarian in nature. The administrative building is a one-story structure and finished with EFIS. The various hangers and maintenance shops are finished with metal siding. The structures in this district are primarily beige.

Name of District: A6 – Bass Lake

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

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Group 3 ○ Applicable ◉ N/A

Group 4 ○ Applicable ◉ N/A

Other ○ Applicable ◉ N/A

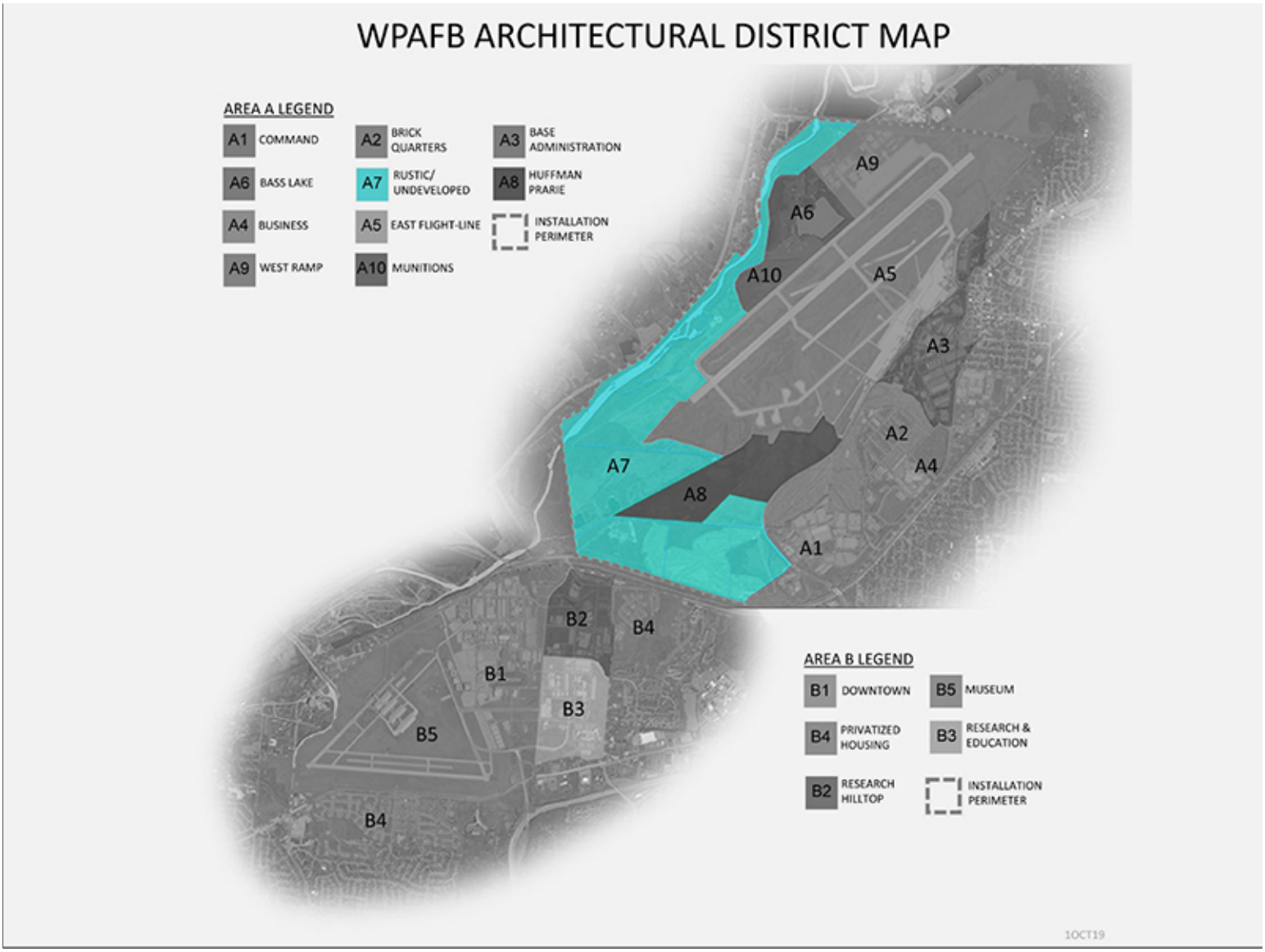
District A-6 is bordered to the northwest by Mitchell Drive and the munitions area fence, to the northeast by the east ramp perimeter fence, and to the south by the munitions area and flight line fencing. Facilities in the Bass Lake district include the Bass Lake Famcamp and Bass Lake Lodge. Bass Lake is a man-made lake created during the construction of the flight line to raise the land one-foot in elevation and reduce flooding.

The buildings at Bass Lake are done in a rustic style of architecture. The lodge is a log building with a wraparound porch, while the Camp Office is finished with a rough cut board and batten siding above a stone water table. Both buildings are reminiscent of building styles commonly found the western national parks.

Name of District: A7– Rustic/Undeveloped

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

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Group 3 ○ Applicable ◉ N/A

Group 4 ○ Applicable ◉ N/A

Other ○ Applicable ◉ N/A

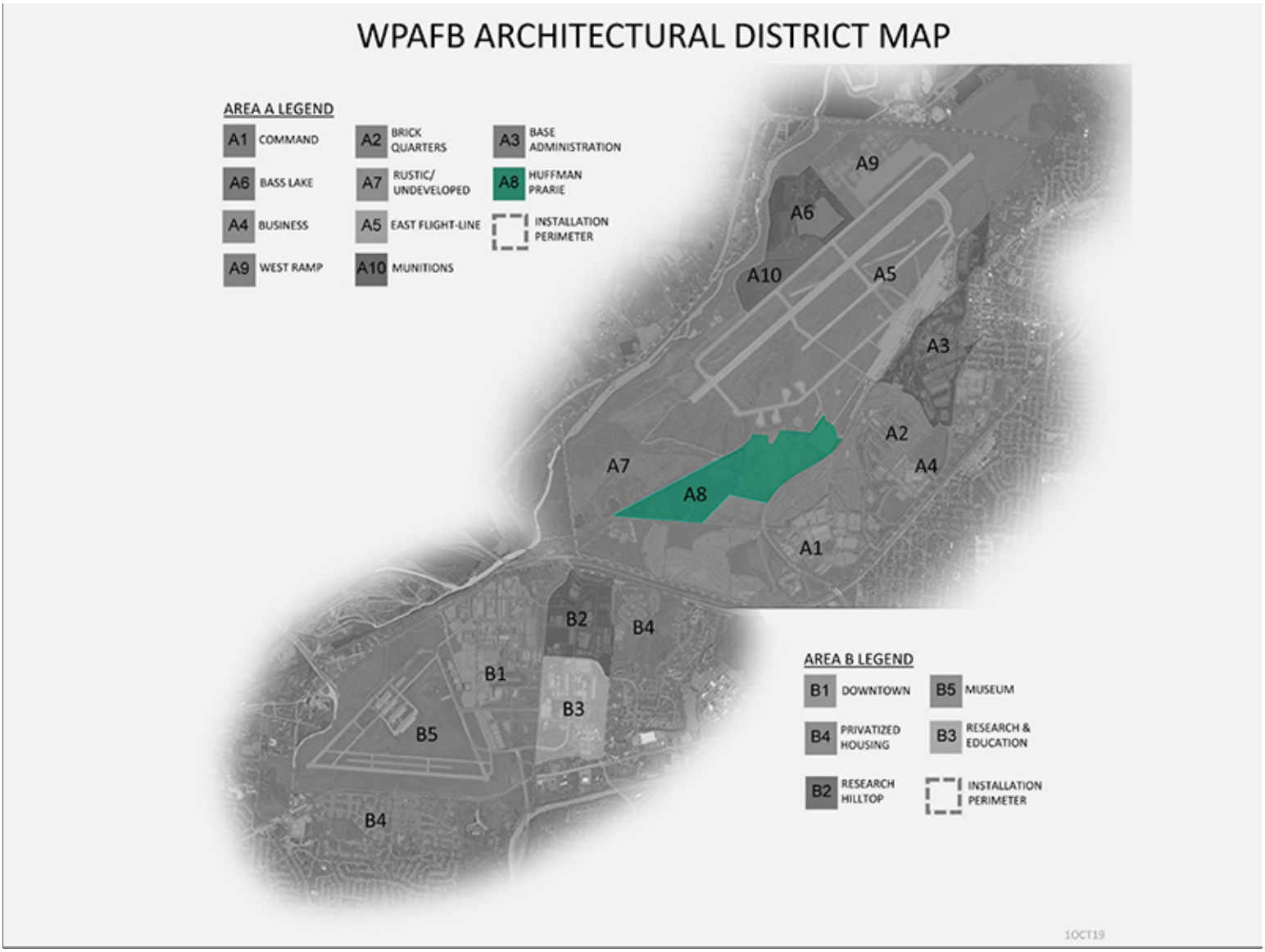
District A-7 is bordered to the north and west and south by the Area A perimeter fence, to the east by Communications Blvd., to Battle Creek Rd., Battle Creek Rd., Skeel Ave., the flight line fence and Riverview Rd. District A-8 is subtracted from this district's interior. Facilities include the Prairie Trace Golf Club, Base Rod and Gun Club, Wright-Patterson Scout Camp, and War Fighters Training Facility. Twin Lakes and Gravel Lake are also features in this area of the base.

Most of this area of the base remains undeveloped land. The majority of the structures that make up the Base Rod and Gun Club and War Fighter Training Facility are utilitarian in nature. The Prairie Trace Golf Club is a brick structure designed in the Prairie Style of Architecture with its deep eaves, ribbon windows and low sloped roof.

Name of District: A8 – Huffman Prairie

Image Tool 800 x 600

Map of District



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

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Group 3 ○ Applicable ◉ N/A

Group 4 ○ Applicable ◉ N/A

Other ○ Applicable ◉ N/A

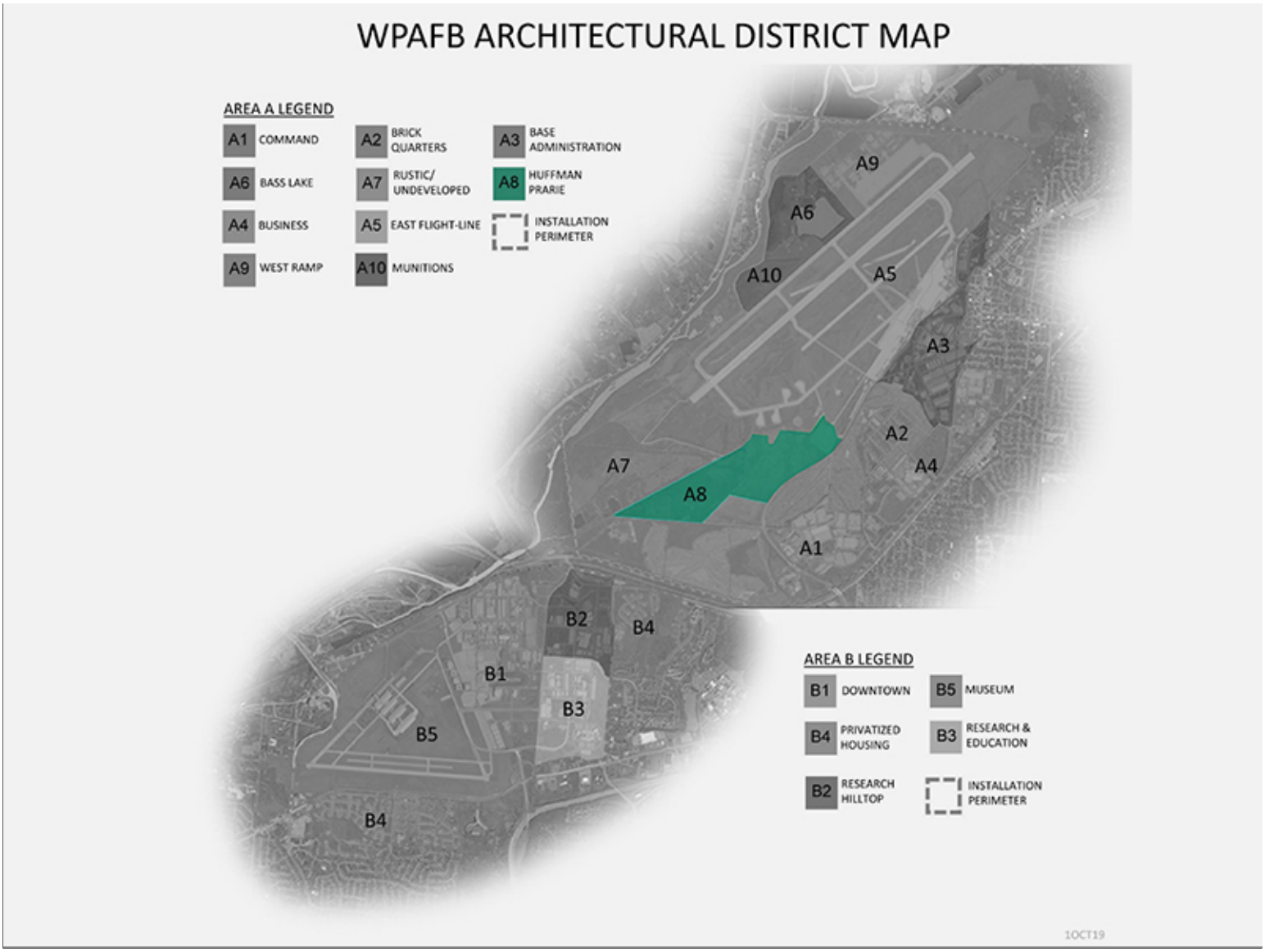
District A-8 is bordered to the north and west by Marl Rd. and the flight line fence, to the east by Pylon Rd. to the back of the shooting range and Skeel Ave., and to the south by the shooting range. It includes Huffman Prairie Flying Field, Huffman Prairie, and the first airport.

Huffman Prairie is a part of the Dayton Aviation National Historical Park. It is where the Wright Brothers developed and tested what became the world's first practical airplane. Today the only structures on the site are the replicated 1905 hangar used as an interpretive center and the starting device the Wright Brothers designed to help launch their aircrafts. The structures sit at the end of a large open field that is mowed regularly and surround by undisturbed prairie.

Name of District: A9 – West Ramp

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

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Group 4 ○ Applicable ◉ N/A

Other ○ Applicable ◉ N/A

District A-9 is bordered to the north by the perimeter fencing along State Route 235, on the West by Mitchell Rd., on the South by Mustang Drive, and on the East by the flight line. The facilities in the west ramp area are used by the 445th Reserve Squadron and include hangars, aircraft maintenance shops, and administrative areas for the squadron.

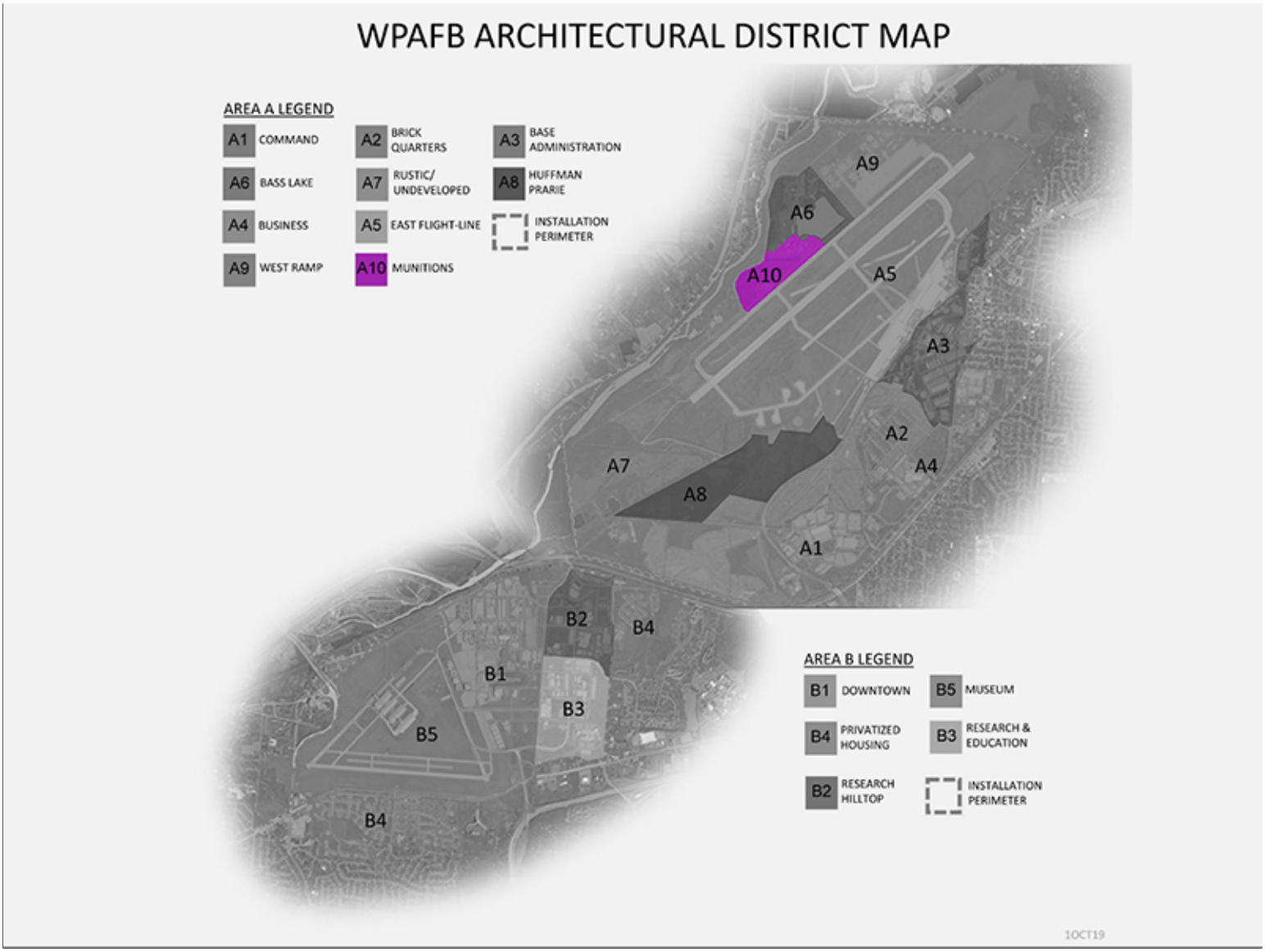
The buildings in this district are typically industrial in nature. The fire station and administration building are finished with beige precast concrete. The fire station has a low sloped gable roof while the administration building has a hipped roof over a small portion of the building and the remainder is a flat roof. A number of the buildings are hangars with low pitched gabled roofs and beige metal siding.

The Major LeRoy W. Homer Jr. Operations building distinguishes itself in this district with low arching roofs of varying heights.

Name of District: A10 – Munitions

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

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Group 4 ○ Applicable ◉ N/A

Other ○ Applicable ◉ N/A

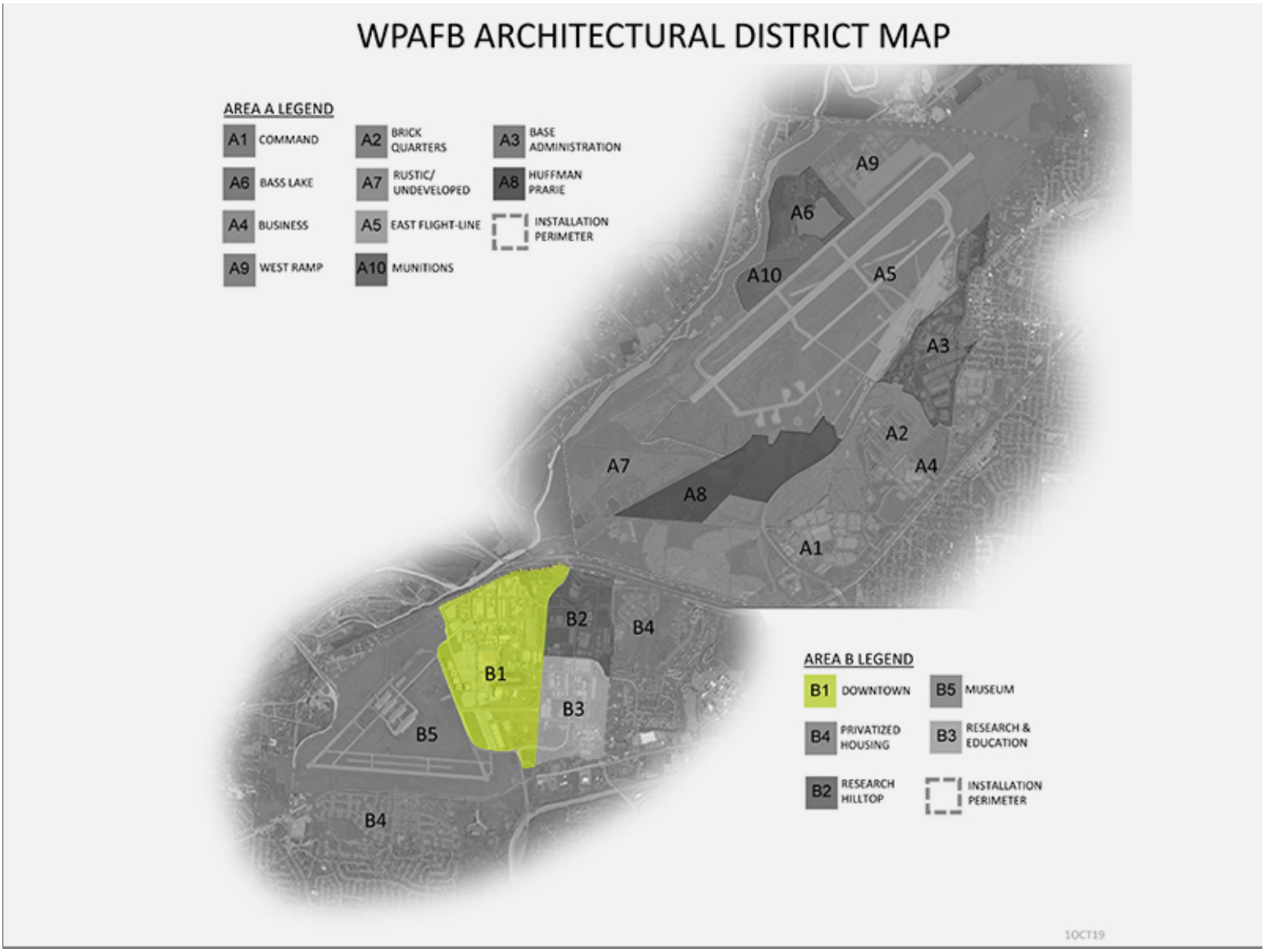
District A-10 is contained by the munitions perimeter fence. The fence line follows Riverview Rd. on the east and south, Lockheed, Boeing, and Curtis on the north, and the flight line on the west. The district contains the munitions storage igloos and k-9 training facility.

The style of the buildings in this district is strictly utilitarian. The munitions igloos are concrete and earth structures while the k-9 facility is a concrete block building with a simple gable roof.

Name of District: B1 – Downtown

Image Tool 800 x 600

Map of District



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

Image Tool 250 x 188

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Group 2 ◉ Applicable ○ N/A



Group 3 ○ Applicable ◉ N/A

Group 4 ○ Applicable ◉ N/A

Other ◉ Applicable ○ N/A



District B-1 is located east of the National Museum of the United States Air Force perimeter fence, and west of Skyline Dr., the north and south boundaries are the Area B perimeter fence. Facilities in B-3 are the Area B Downtown which includes the Historic Research Area, Air Force Research Lab Headquarters, the Wright Memorial, Building 18 Complex, the Historic WWII flight line, the Former Air Force Museum, and other research facilities.

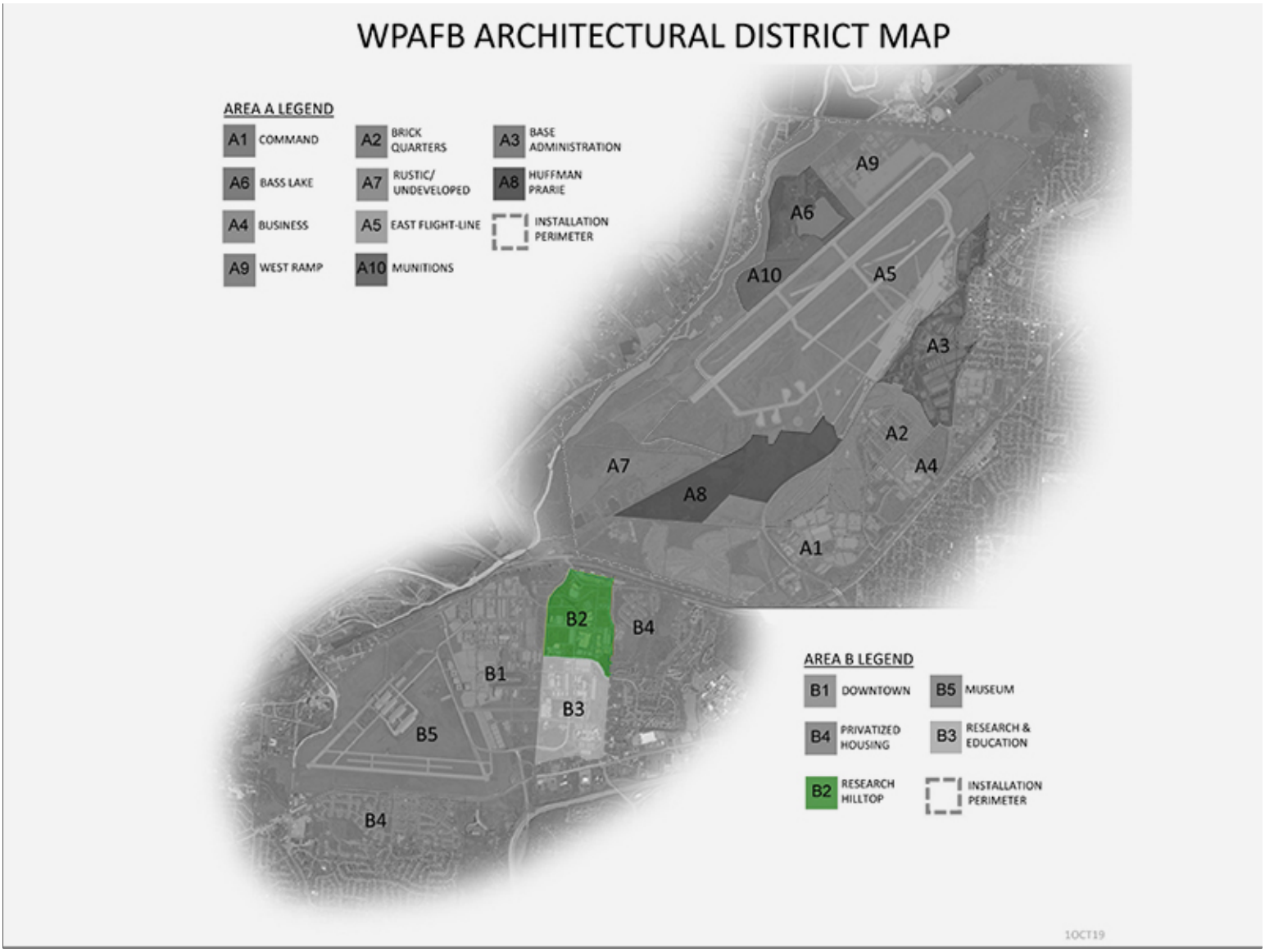
This area of the base has the highest density of structures of any district. The entirety of the district falls within the confines of the Wright Field Historic District and subject to guidelines established for that district. Many of the structures located here were constructed in the "Wright Field Style" which is defined by brick exteriors, large industrial steel multi-paned windows, and low-sloping gable roofs. The building that was constructed originally as the Army Aeronautical Museum is distinct with is rich Art Deco architectural features. The poured concrete buildings in the area around the original museum building feature simpler art deco detailing at entrances and windows.

A large number of the structures that were built during the WWII period were constructed of poured concrete with little attention to architectural detailing past some simple horizontal grooves and large banded windows.

Name of District: B2 – Research Hilltop

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

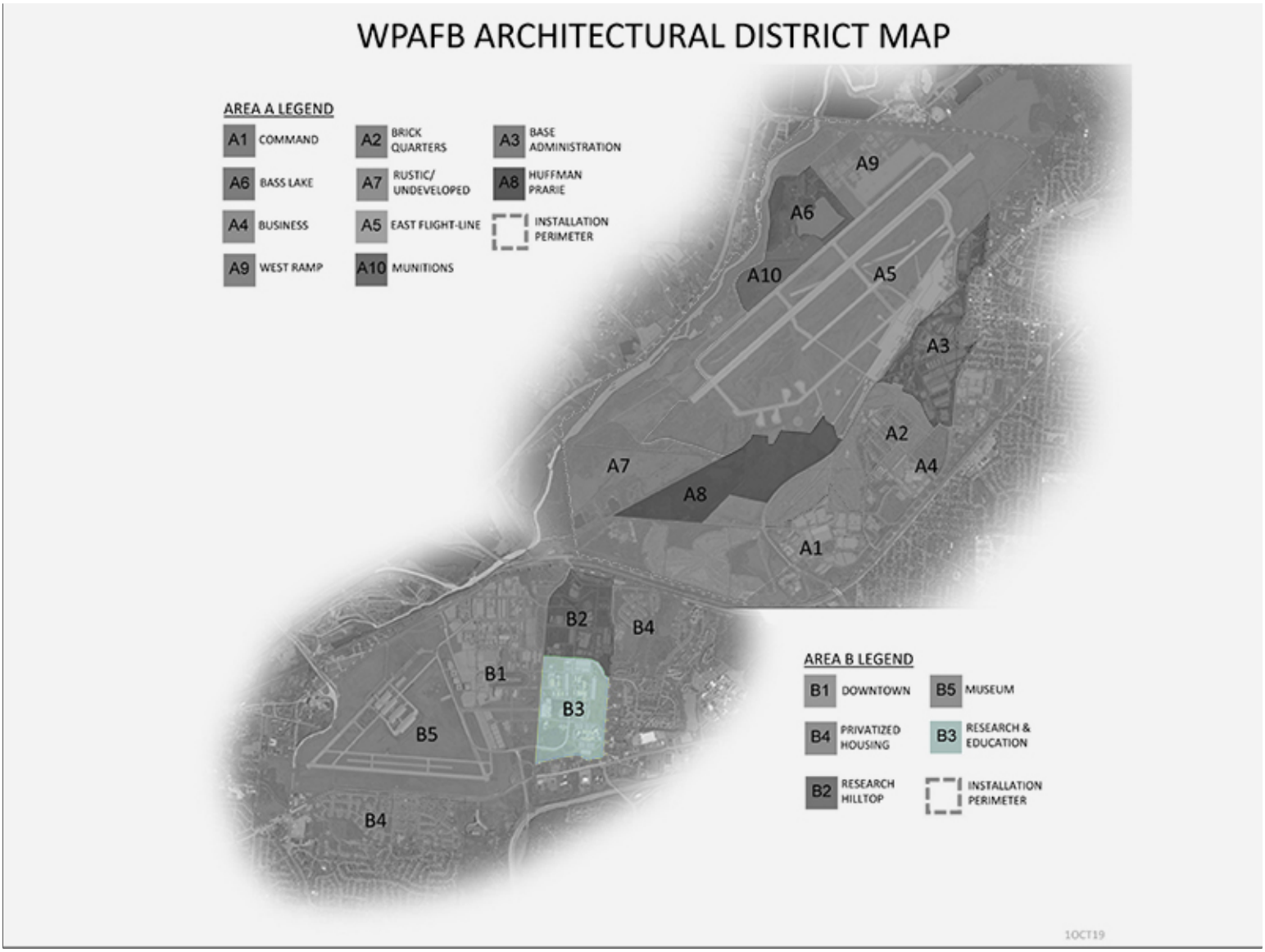
District B-2 is located east of Skyline Dr. and North of Ninth St. with its west and north boundaries being the Area B perimeter fence. Facilities in B-3 include those in includes research office buildings and utility facilities.

The buildings in this district are primarily research facilities. The new buildings are large office style buildings with brick, metal panels, beige precast and some aluminum ribbon windows.
Building 676 is a large brick building with wide horizontal precast concrete and some vertical precast concrete ribbing details at the windows.

Name of District: B3 – Research and Education

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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District B-3 is located east of Skyline Drive and south of Ninth St. with its east and south boundaries being the Area B perimeter fence. The educational facilities in B-2 include the Air Force Institute of Technology (AFIT) and the Child Care Center. The research component consists of both large lab complexes and freestanding lab buildings.

One lab complex that is made up of buildings 652 through 655 are a two story brick building with thin ribbon windows. The lab complex that is building 620 is a large concrete building that would fall under the brutalist style architecture. The 13-story tower on the building would be a defining feature and landmark in this district.

The educational buildings in this area which includes AFIT which was designed in a contemporary campus style. Brick with precast accents and glass are the defining material of the AFIT complex.

Name of District: B4 – Privatized Housing

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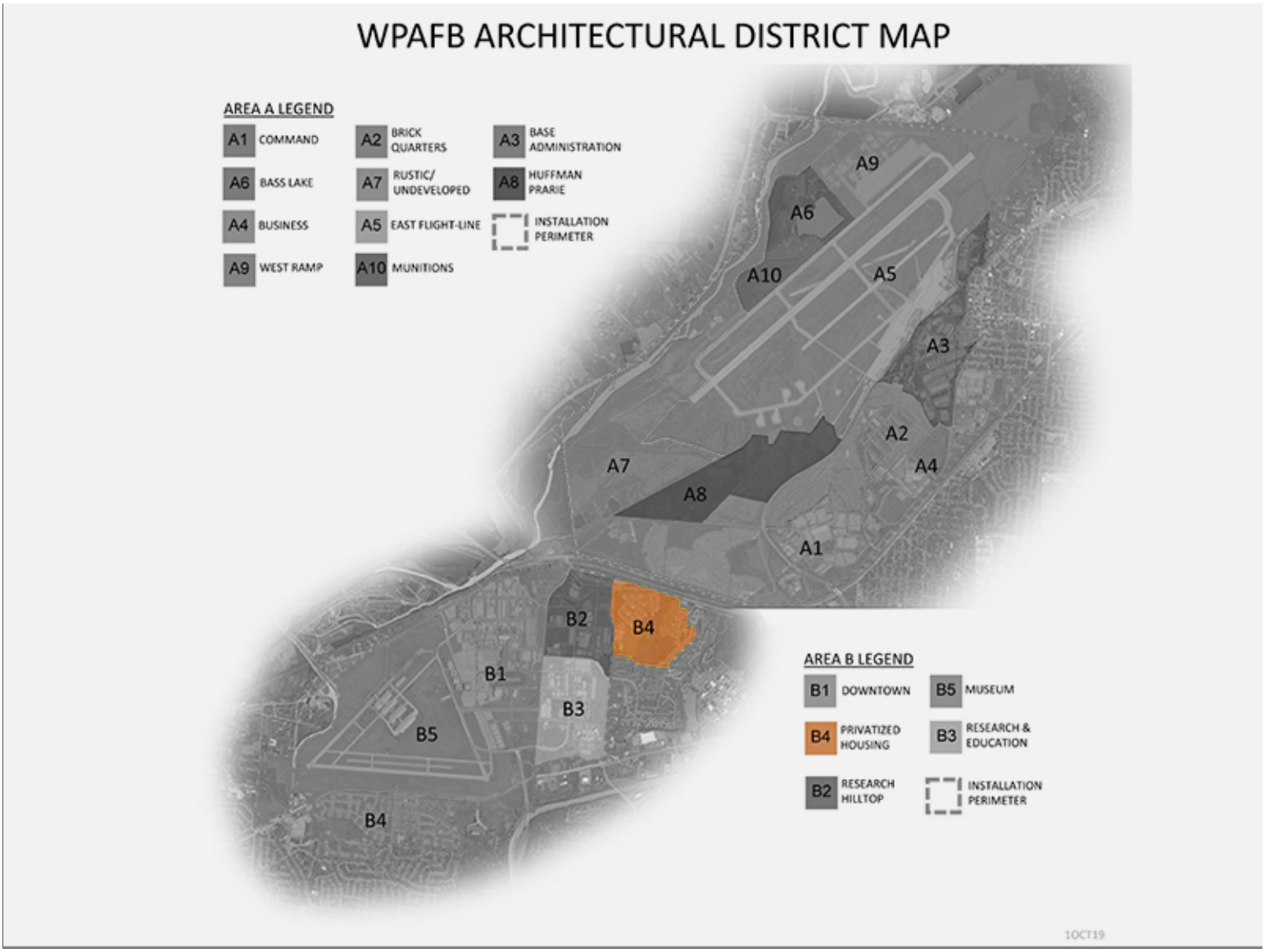
Map of District



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

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Group 4 ◉ Applicable ○ N/A

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Other ○ Applicable ◉ N/A

District B-4 is divided into two areas. One is located in the southwest corner of Area B outside the perimeter fence and the other is in the northwestern corner of Area B outside the perimeter fence. These facilities districts are predominately base housing. This district also includes the community facilities such as the Wright Patterson child development center and recreational facilities such as the Swim Club. The residential properties are currently under a fifty-year lease through base privatization efforts and any new construction must be in agreement with the lease holder. The base maintains the chapel, annex, pool, youth center, and security forces building.

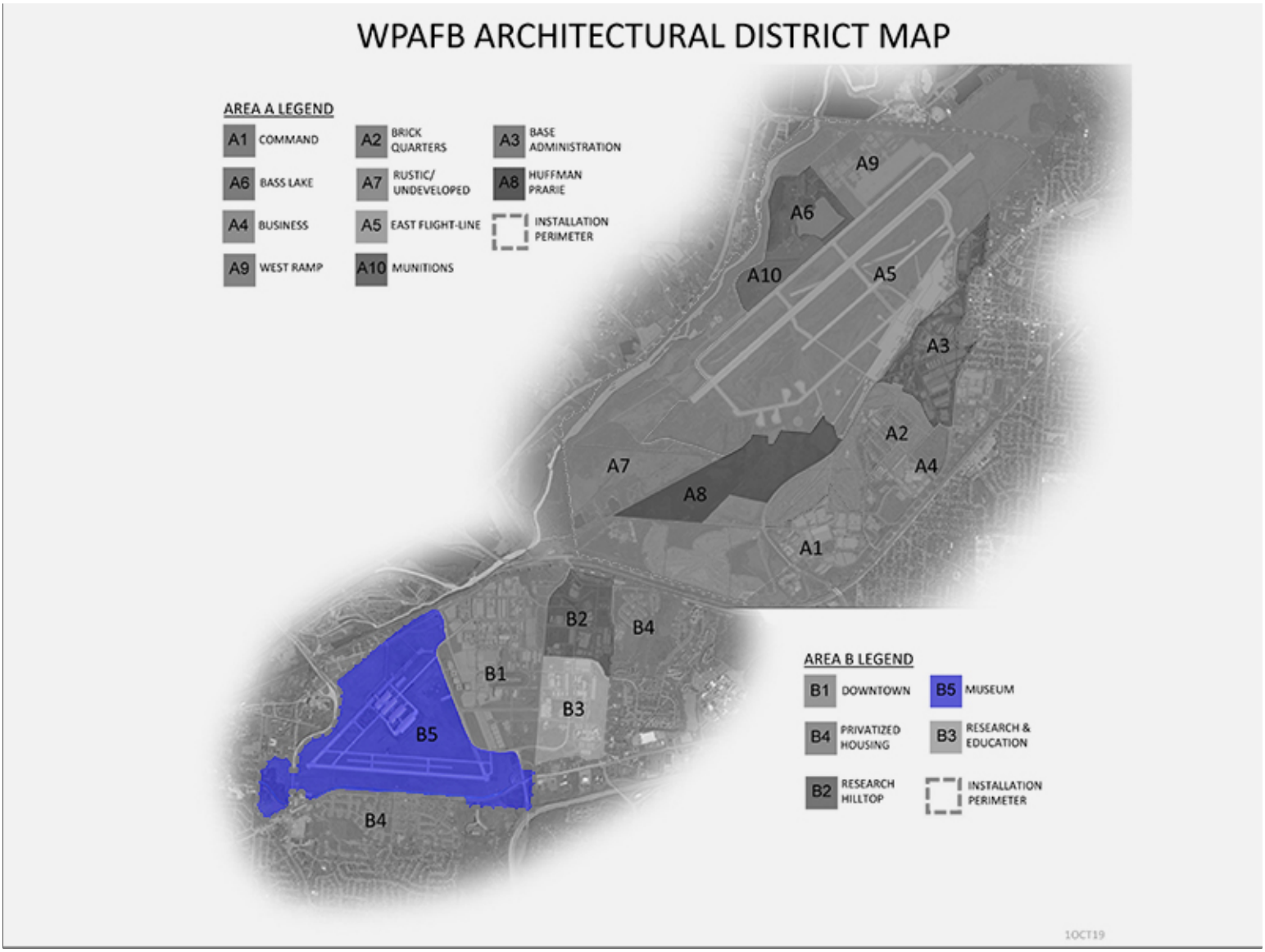
The housing in the base neighborhoods was done in a typical suburban style that in includes bi-levels, ranches, duplexes, and town-homes.

The non-residential construction in the southeast portion of the district, including the childcare center and chapel, were constructed primarily in a mid-century modern style.

Name of District: B5 – Museum

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

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Group 3 ○ Applicable ◉ N/A

Group 4 ○ Applicable ◉ N/A

Other ○ Applicable ◉ N/A

District B-5 is located inside the National Museum of the United States Air force perimeter fence. Facilities in B-5 district include the National Museum of the United States Air force, its runways, and the associated clearance areas. This area includes the Memorial Park and recreational facilities.

The museum consists of four large interconnected hangars. The hangars have arched roofs with metal siding and roofing. The areas surrounding the buildings are primarily large open grassy fields with runways that are associated with the museum. The recreation facilities within the district include baseball diamonds.

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.

88th CIVIL ENGINEER GROUP

G01 Wright-Patterson AFB IFS Points Of Contact.pdf
http://www.wbdg.org/FFC/AF/AFIFS/G01_Wright_Patterson_AFB_IFS_Points_of_Contact.pdf

G02 Wright-Patterson AFB IFS General Requirements.pdf
http://www.wbdg.org/FFC/AF/AFIFS/G02_Wright_Patterson_AFB_IFS_General_Requirements.pdf

G03 Wright-Patterson AFB IFS Environmental Requirements.pdf
http://www.wbdg.org/FFC/AF/AFIFS/G03_Wright_Patterson_AFB_IFS_Environmental_Requirements.pdf

G04 Wright-Patterson AFB IFS Utilities Privatization.pdf
http://www.wbdg.org/FFC/AF/AFIFS/G04_Wright_Patterson_AFB_IFS_Utilities_Privatization.pdf

G05 Wright-Patterson AFB IFS Civil-Landscape-Structural.pdf
http://www.wbdg.org/FFC/AF/AFIFS/G05_Wright_Patterson_AFB_IFS_Civil_Landscape_Structural.pdf

G06 Wright-Patterson AFB IFS Architectural.pdf
http://www.wbdg.org/FFC/AF/AFIFS/G06_Wright_Patterson_AFB_IFS_Architectural.pdf

G07 Wright-Patterson AFB IFS Interior Design.pdf
http://www.wbdg.org/FFC/AF/AFIFS/G07_Wright_Patterson_AFB_IFS_Interior_Design.pdf

G08 Wright-Patterson AFB IFS Fire Protection.pdf
http://www.wbdg.org/FFC/AF/AFIFS/G08_Wright_Patterson_AFB_IFS_Fire_Protection.pdf

G08.1 Wright-Patterson AFB IFS FPLS Code Review Form.xlsx
http://www.wbdg.org/FFC/AF/AFIFS/G08_1_Wright_Patterson_AFB_IFS_FPLS_Code_Review_Form.xlsx

G09 Wright-Patterson AFB IFS Mechanical.pdf
http://www.wbdg.org/FFC/AF/AFIFS/G09_Wright_Patterson_AFB_IFS_Mechanical.pdf

G10 Wright-Patterson AFB IFS Electrical.pdf
http://www.wbdg.org/FFC/AF/AFIFS/G10_Wright_Patterson_AFB_IFS_Electrical.pdf

G11 Wright-Patterson AFB IFS Telecommunications.pdf
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G12 Wright-Patterson AFB IFS UFGS Editing Notes.pdf
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