Beale Air Force Base IFS

Table of Contents

A. OVERVIEW .............................................................. 5
   A01. Facility Hierarchy ............................................................. 6
   A02. Facility Quality ............................................................. 6
   A03. Facility Districts ............................................................. 6

B. INSTALLATION ELEMENTS ........................................... 8
   B01. Comprehensive Planning ............................................. 8
      B01.1. Installation Development Plan (IDP) ................ 8
         B01.1.1. IFS Component Plan of IDP
         B01.1.2. Brief History of Base
         B01.1.3. Future Development
   B02. Street Envelope Standards ........................................... 11
      B02.1. Hierarchy of Streets ................................................. 11
         B02.1.1. Arterial Streets
         B02.1.2. Collector Streets
         B02.1.3. Local Streets
         B02.1.4. Special Routes
      B02.2. Hierarchy of Intersections ..................................... 17
         B02.2.1. Arterials
         B02.2.2. Arterial/Collector
         B02.2.3. Collectors
         B02.2.4. Special Intersections
         B02.2.5. Street Frontage Requirements
         B02.2.6. Sight Lines
      B02.3. Street Elements ......................................................... 22
         B02.3.1. Paving
         B02.3.2. Curb and Gutter
         B02.3.3. Utility Service Elements
         B02.3.4. Traffic Signs
         B02.3.5. Street Lighting
         B02.3.6. Other
   B03. Open Space / Public Space ........................................... 25
      B03.1. Plazas, Monuments and Static Displays ............... 25
         B03.1.1. Paved Plazas
         B03.1.2. Sculptures, Markers and Statuary
         B03.1.3. Static Display of Aircraft
      B03.2. Grounds and Perimeters ........................................... 29
         B03.2.1. Parade Grounds
         B03.2.2. Parks

B03.2.3. Preserves
B03.2.4. Perimeter Fence

C. SITE DEVELOPMENT ................................................... 33
   C01. Site Design ............................................................. 33
      C01.1. Site Design Considerations .................................. 33
      C01.2. Building Orientation ............................................ 35
   C02. Utilities ................................................................. 36
      C02.1. Utility Components .............................................. 36
   C03. Parking Areas ........................................................... 37
      C03.1. Configurations and Design .................................. 37
         C03.1.1. Paving and Striping
         C03.1.2. Curbing
         C03.1.3. Internal Islands and Medians
      C03.2. Parking Structures .............................................. 40
      C03.3. Connectivity ....................................................... 41
   C04. Stormwater Management ............................................ 41
      C04.1. Stormwater Requirements ................................... 42
   C05. Sidewalks, Bikeways and Trails .................................... 43
      C05.1. Circulation and Paving ........................................ 44
         C05.1.1. Ramps and Stairs
         C05.1.2. Lighting
   C06. Landscape ............................................................. 47
      C06.1. Climate-based Materials ...................................... 47
         C06.1.1. Landscape Design Concept
         C06.1.2. Xeriscape Design Principles
         C06.1.3. Minimizing Water Requirements
         C06.1.4. Plant Material Selection
         C06.1.5. Water Budgeting (Hydrozones)
         C06.1.6. Base Entrance Landscaping
         C06.1.7. Streetscape Landscaping
         C06.1.8. Pedestrian Circulation Landscaping
         C06.1.9. Parking Lot Landscaping
         C06.1.10. Screen/Accent Landscaping
         C06.1.11. Other
   C07. Site Furnishings ..................................................... 57
      C07.1. Furnishings and Elements ................................... 57

Table of contents continued on next page
Table of contents continued

C07.2. Site Furnishings Products, Materials / Color .......................... 58
C07.2.1. Barbeque Grills
C07.2.2. Benches
C07.2.3. Bike Racks
C07.2.4. Bike Lockers
C07.2.5. Bollards
C07.2.6. Bus Shelters
C07.2.7. Drinking Fountains
C07.2.8. Dumpster Enclosures / Gates
C07.2.9. Fencing
C07.2.10. Flagpoles
C07.2.11. Lighting – Landscape / Accent
C07.2.12. Litter and Ash Receptacles
C07.2.13. Picnic Tables
C07.2.14. Planters – Free Standing
C07.2.15. Play Equipment
C07.2.16. Screen Walls
C07.2.17. Tree Grates
C07.2.18. Other

C08. Exterior Signs ........................................................................ 71
C08.1. Colors and Types .......................................................... 71
C08.1.1. Materials and Color Specifications
C08.1.2. Installation and Gate Identification Signs
C08.1.3. Building Identification Signs
C08.1.4. Traffic Control Devices (Street Signs)
C08.1.5. Directional and Wayfinding Signs
C08.1.6. Informational Signs
C08.1.7. Motivational Signs
C08.1.8. Parking Lot Signs
C08.1.9. Regulatory Signs
C08.1.10. Other

C09. Lighting ............................................................................... 80
C09.1. Fixtures and Lamping ......................................................... 80
C09.2. Light Fixture Types ............................................................ 81
C09.2.1. Street Lighting
C09.2.2. Parking Lot Lighting
C09.2.3. Lighted Bollards
C09.2.4. Sidewalk Lighting
C09.2.5. Walls / Stairs Lighting
C09.2.6. Other

D. FACILITIES EXTERIORS ....................................................... 86
D01. Supporting the Mission .......................................................... 86
D02. Sustainability ...................................................................... 86
D03. Architectural Features .......................................................... 87
D03.1. Orientation, Massing and Scale ......................................... 88
D03.2. Architectural Character ...................................................... 88
D03.3. Details and Color ............................................................... 88
D03.3.1. Climate-based Data
D03.3.2. Natural Ventilation System
D03.3.3. Thermal Mass
D03.3.4. Thermal Shading
D03.3.5. Renewable Heating/Cooling
D03.3.6. Solar Photovoltaic System
D03.3.7. Solar Thermal System

D04. Building Entrances ............................................................... 94
D04.1. Primary Entrances ............................................................ 95
D04.2. Secondary Entrances ....................................................... 95

D05. Wall Systems ................................................................. 96
D05.1. Hierarchy of Materials ...................................................... 97
D05.2. Layout, Organization and Durability ................................... 97
D05.3. Equipment, Vents and Devices .......................................... 98
D05.4 Wall Systems Materials ..................................................... 98
D05.4.1. Flat Metal Panels
D05.4.2. Brick Veneer
D05.4.3. Architectural Precast
D05.4.4. Stucco Over Sheathing
D05.4.5. Curtain Wall
D05.4.6. Cast-in Place Concrete
D05.4.7. Tilt-up Concrete
D05.4.8. Ribbed Metal Sheeting
D05.4.9. EIFS
D05.4.10. GFRC
D05.4.11. Concrete Block
D05.4.12. Fiber Cement Siding
D05.4.13. Other

D06. Doors and Windows ............................................................ 104
D06.1. Types ............................................................................ 105
D06.2. Layout and Geometry .................................................... 105
D06.3. Glazing and Shading ....................................................... 105
D06.4. Hardware ..................................................................... 105
D06.5. Doors and Windows Materials ........................................ 106
D06.5.1. Anodized Aluminum
D06.5.2. Hollow Metal
D06.5.3. Aluminum-clad Wood
D06.5.4. Other

D07. Roof Systems ............................................................... 108
D07.1. Roof Type and Form ......................................................... 109
D07.2. Roof Slope .................................................................. 109
D07.3. Parapets and Copings ...................................................... 109
D07.4. Color and Reflectivity ....................................................... 110
D07.5. Gutters, Downspouts, Scuppers, Drains ............................ 110
D07.6. Roof Vents and Elements ............................................... 110
D07.7. Clerestories and Skylights ............................................... 111
D07.8. Vegetated Roof .............................................................. 111

Table of contents continued on next page
Table of contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>D07.9</td>
<td>Roof Systems Materials</td>
<td>111</td>
</tr>
<tr>
<td>D07.9.1</td>
<td>Standing Seam Metal</td>
<td>111</td>
</tr>
<tr>
<td>D07.9.2</td>
<td>Membrane Single-ply</td>
<td>111</td>
</tr>
<tr>
<td>D07.9.3</td>
<td>Built-up Multi-ply</td>
<td>111</td>
</tr>
<tr>
<td>D07.9.4</td>
<td>Concrete Tile</td>
<td>111</td>
</tr>
<tr>
<td>D07.9.5</td>
<td>Clay Tile</td>
<td>111</td>
</tr>
<tr>
<td>D07.9.6</td>
<td>Slate Shingles</td>
<td>111</td>
</tr>
<tr>
<td>D07.9.7</td>
<td>Vegetated System</td>
<td>111</td>
</tr>
<tr>
<td>D07.9.8</td>
<td>Ribbed Metal Sheeting</td>
<td>111</td>
</tr>
<tr>
<td>D07.9.9</td>
<td>Composite Shingles</td>
<td>111</td>
</tr>
<tr>
<td>D07.9.10</td>
<td>Other</td>
<td>111</td>
</tr>
<tr>
<td>D08</td>
<td>Structural Systems</td>
<td>114</td>
</tr>
<tr>
<td>D08.1</td>
<td>Systems and Layouts</td>
<td>115</td>
</tr>
<tr>
<td>D08.2</td>
<td>Structural Systems Materials</td>
<td>115</td>
</tr>
<tr>
<td>D08.2.1</td>
<td>Concrete</td>
<td>115</td>
</tr>
<tr>
<td>D08.2.2</td>
<td>Insulated Concrete Forming (ICF)</td>
<td>115</td>
</tr>
<tr>
<td>D08.2.3</td>
<td>Steel</td>
<td>115</td>
</tr>
<tr>
<td>D08.2.4</td>
<td>Pre-Engineered Steel</td>
<td>115</td>
</tr>
<tr>
<td>D08.2.5</td>
<td>Masonry</td>
<td>115</td>
</tr>
<tr>
<td>D08.2.6</td>
<td>Heavy Timber</td>
<td>115</td>
</tr>
<tr>
<td>D08.2.7</td>
<td>Light-gauge Steel</td>
<td>115</td>
</tr>
<tr>
<td>D08.2.8</td>
<td>Lumber Framing</td>
<td>115</td>
</tr>
<tr>
<td>D08.2.9</td>
<td>Other</td>
<td>115</td>
</tr>
<tr>
<td>D09</td>
<td>Mechanical, Electrical and Plumbing</td>
<td>118</td>
</tr>
<tr>
<td>D09.1</td>
<td>Passive and Active Systems</td>
<td>119</td>
</tr>
<tr>
<td>D09.2</td>
<td>Functionality and Efficiency</td>
<td>119</td>
</tr>
<tr>
<td>E. FACILITIES INTERIORS</td>
<td></td>
<td>120</td>
</tr>
<tr>
<td>E01</td>
<td>Building Configurations</td>
<td>121</td>
</tr>
<tr>
<td>E01.1</td>
<td>Layout and Common Areas</td>
<td>121</td>
</tr>
<tr>
<td>E01.1.1</td>
<td>Interior Design Process</td>
<td>121</td>
</tr>
<tr>
<td>E01.1.2</td>
<td>Codes and Regulations</td>
<td>121</td>
</tr>
<tr>
<td>E01.2</td>
<td>Quality and Comfort</td>
<td>122</td>
</tr>
<tr>
<td>E02</td>
<td>Floors</td>
<td>123</td>
</tr>
<tr>
<td>E02.1</td>
<td>Floor Materials</td>
<td>123</td>
</tr>
<tr>
<td>E02.1.1</td>
<td>Prepared Slabs</td>
<td>123</td>
</tr>
<tr>
<td>E02.1.2</td>
<td>Natural Stone and Terrazzo</td>
<td>123</td>
</tr>
<tr>
<td>E02.1.3</td>
<td>Quarry Tile</td>
<td>123</td>
</tr>
<tr>
<td>E02.1.4</td>
<td>Ceramic Tile</td>
<td>123</td>
</tr>
<tr>
<td>E02.1.5</td>
<td>Resilient Floor</td>
<td>123</td>
</tr>
<tr>
<td>E02.1.6</td>
<td>Carpet</td>
<td>123</td>
</tr>
<tr>
<td>E02.1.7</td>
<td>Rapidly-Renewable Products</td>
<td>123</td>
</tr>
<tr>
<td>E02.1.8</td>
<td>Other</td>
<td>123</td>
</tr>
<tr>
<td>E03</td>
<td>Walls</td>
<td>128</td>
</tr>
<tr>
<td>E03.1</td>
<td>Wall Materials</td>
<td>128</td>
</tr>
<tr>
<td>E03.1.1</td>
<td>Concrete</td>
<td>128</td>
</tr>
<tr>
<td>E03.1.2</td>
<td>Masonry</td>
<td>128</td>
</tr>
<tr>
<td>E03.1.3</td>
<td>Ceramic Tile</td>
<td>128</td>
</tr>
<tr>
<td>E03.1.4</td>
<td>Gypsum Board</td>
<td>128</td>
</tr>
<tr>
<td>E03.1.5</td>
<td>Metal Panels</td>
<td>128</td>
</tr>
<tr>
<td>E03.1.6</td>
<td>Wood Paneling</td>
<td>128</td>
</tr>
<tr>
<td>E03.1.7</td>
<td>Rapidly-Renewable Products</td>
<td>128</td>
</tr>
<tr>
<td>E03.1.8</td>
<td>Other</td>
<td>128</td>
</tr>
<tr>
<td>E04</td>
<td>Ceilings</td>
<td>130</td>
</tr>
<tr>
<td>E04.1</td>
<td>Ceiling Materials</td>
<td>130</td>
</tr>
<tr>
<td>E04.1.1</td>
<td>Exposed Framing (Roof / Floor Structure Above)</td>
<td>130</td>
</tr>
<tr>
<td>E04.1.2</td>
<td>Exposed Concrete</td>
<td>130</td>
</tr>
<tr>
<td>E04.1.3</td>
<td>Grid and Acoustical Tile</td>
<td>130</td>
</tr>
<tr>
<td>E04.1.4</td>
<td>Gypsum Board</td>
<td>130</td>
</tr>
<tr>
<td>E04.1.5</td>
<td>Metal Panels</td>
<td>130</td>
</tr>
<tr>
<td>E04.1.6</td>
<td>Wood</td>
<td>130</td>
</tr>
<tr>
<td>E04.1.7</td>
<td>Rapidly-Renewable Products</td>
<td>130</td>
</tr>
<tr>
<td>E04.1.8</td>
<td>Other</td>
<td>130</td>
</tr>
<tr>
<td>E05</td>
<td>Doors and Windows</td>
<td>133</td>
</tr>
<tr>
<td>E05.1</td>
<td>Doors and Windows and Frames Materials</td>
<td>133</td>
</tr>
<tr>
<td>E05.1.1</td>
<td>Aluminum</td>
<td>133</td>
</tr>
<tr>
<td>E05.1.2</td>
<td>Hollow Metal</td>
<td>133</td>
</tr>
<tr>
<td>E05.1.3</td>
<td>Wood</td>
<td>133</td>
</tr>
<tr>
<td>E05.1.4</td>
<td>Other</td>
<td>133</td>
</tr>
<tr>
<td>E06</td>
<td>Casework Systems</td>
<td>137</td>
</tr>
<tr>
<td>E06.1</td>
<td>Casework Materials</td>
<td>137</td>
</tr>
<tr>
<td>E06.1.1</td>
<td>Plastic Laminate</td>
<td>137</td>
</tr>
<tr>
<td>E06.1.2</td>
<td>Solid Polymer Surface</td>
<td>137</td>
</tr>
<tr>
<td>E06.1.3</td>
<td>Rapidly-Renewable Products</td>
<td>137</td>
</tr>
<tr>
<td>E06.1.4</td>
<td>Metal</td>
<td>137</td>
</tr>
<tr>
<td>E06.1.5</td>
<td>Other</td>
<td>137</td>
</tr>
<tr>
<td>E06.2</td>
<td>Countertop Materials</td>
<td>140</td>
</tr>
<tr>
<td>E06.2.1</td>
<td>Plastic Laminate</td>
<td>140</td>
</tr>
<tr>
<td>E06.2.2</td>
<td>Solid Polymer Surface</td>
<td>140</td>
</tr>
<tr>
<td>E06.2.3</td>
<td>Natural Stone</td>
<td>140</td>
</tr>
<tr>
<td>E06.2.4</td>
<td>Cast Stone</td>
<td>140</td>
</tr>
<tr>
<td>E06.2.5</td>
<td>Metal</td>
<td>140</td>
</tr>
<tr>
<td>E06.2.6</td>
<td>Other</td>
<td>140</td>
</tr>
<tr>
<td>E07</td>
<td>Furnishings</td>
<td>142</td>
</tr>
<tr>
<td>E07.1</td>
<td>Durability and Serviceability</td>
<td>142</td>
</tr>
<tr>
<td>E07.2</td>
<td>Accessories</td>
<td>142</td>
</tr>
<tr>
<td>E08</td>
<td>Interior Signs</td>
<td>142</td>
</tr>
<tr>
<td>E08.1</td>
<td>Types and Color</td>
<td>142</td>
</tr>
<tr>
<td>E08.2</td>
<td>Interior Signs Materials</td>
<td>143</td>
</tr>
<tr>
<td>E09</td>
<td>Lighting, Power and Communication</td>
<td>143</td>
</tr>
<tr>
<td>E09.1</td>
<td>Functionality and Efficiency</td>
<td>143</td>
</tr>
<tr>
<td>E09.2</td>
<td>Types and Color</td>
<td>143</td>
</tr>
<tr>
<td>F. Appendices</td>
<td></td>
<td>144</td>
</tr>
<tr>
<td>G. Appendices</td>
<td></td>
<td>144</td>
</tr>
</tbody>
</table>
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.
A01. FACILITY HIERARCHY
Comply with AF Corporate Standards for Facility Hierarchy (and subsections):
http://afcfs.wbdg.org/facility-hierarchy/index.html

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

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

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

B01.1. Installation Development Plan (IDP)

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

Applicable  N/A  Small graphics do not apply

Application of DoD and Air Force Facilities Criteria

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

1. The Base Civil Engineer is responsible for developing, maintaining and implementing the installation’s Comprehensive Planning documents and to ensure that the Installation Development Plan (IDP) is prepared, maintained, and implemented following AFI 32-7062.
1. Maintain this Installation Facilities Standards (IFS) as a Component Plan of the base’s Installation Development Plan (IDP).

**B01.1.2. Brief History of Base**

Beale Air Force Base not only has a unique mission, but it was named for an unique individual. Unlike most other bases that were named for aviators, Beale was named for Edward Fitzgerald Beale (1822-1893), the nineteenth-century pioneer. Beale graduated from the Naval Academy, served in the California militia and led the experiment to replace Army mules with camels.

Camp Beale opened in October 1942, as a training site for the 13th Armored and the 81st and 96th Infantry Divisions. During World War II, Camp Beale’s 86,000 acres were home for more than 60,000 soldiers, a prisoner-of-war encampment, and a 1,000-bed hospital. In 1948, the camp transferred from the Army to the Air Force. The Air Force conducted bombardier and navigator training at Beale and in 1951 reactivated the Beale Bombing and Gunnery Range for aviation engineer training. The base has been under several commands, including Air Training Command, Continental Air Command, Aviation Engineer Force, the Strategic Air Command, and since June 1, 1992, Air Combat Command.

In May 1959, Colonel Paul K. Carlton assumed command of the recently activated 4126th Strategic Wing. The first two KC-135s arrived two months later on July 7, 1959. On January 18, 1960, the 31st Bombardment Squadron with its B-52s arrived at Beale to become part of the wing. The 14th Air Division moved to Beale from Travis AFB, one week later. On February 1, 1963, SAC
redesignated the 4126th as the 456th Strategic Aerospace Wing. On September 30, 1975, the 456th Bombardment Wing deactivated and the 17th Bombardment Wing activated in its place. On September 30, 1976, the 17th deactivated and the 100th Strategic Reconnaissance Wing at Davis Monthan AFB, Ariz., became the 100th Air Refueling Wing and moved to Beale. Many of the people and the tankers that had been part of the 17th now became members of the 100th. The 17th Wing's B-52s moved to other bases. The 100th ARW stayed at Beale until March 15, 1983, when the Air Force deactivated the wing and consolidated its refueling mission and assets into the 9th Strategic Reconnaissance Wing. From 1959 until 1965, Beale was support base for three Titan I missile sites near Lincoln, Chico, and the Sutter Buttes. On July 1, 1979, the 7th Missile Warning Squadron brought the Phased Array Warning System (PAVE PAWS) Radar site to Beale. This 10-story structure can detect possible attack by sea-launched ballistic missiles or track a global satellite.

On October 15, 1964, the Department of Defense announced that Beale would be the home of the new, supersonic reconnaissance aircraft, the SR-71 "Blackbird." The 4200th Strategic Reconnaissance Wing activated on January 1, 1965. The new wing received its first aircraft, a T-38 Talon, on July 8, 1965. The first SR-71 did not arrive until January 7, 1966.

On June 25, 1966, the 9th Strategic Reconnaissance Wing, that began as the 9th Observation Group in 1922 and its 1st Strategic Reconnaissance Squadron activated as the 1st Aero Squadron in 1913, replaced the 4200th. The first U-2 arrived from Davis Monthan on July 12, 1976. Until January 26, 1990, when budget restrictions forced the retirement of the SR-71, Beale AFB was the home of two of the world's most unique aircraft.

In July 1994, the 350th Air Refueling Squadron transferred from Beale to McConnell AFB, Kansas, taking the last of the KC-135Q tankers with it. Tankers returned in 1998 when the 940th Air Refueling Wing, an Air Force Reserve unit, transferred to Beale. In 2001, the 12th Reconnaissance Squadron activated at Beale as the parent organization for the GLOBAL HAWK, the Air Force's newest high-altitude reconnaissance platform.

B01.1.3. Future Development

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

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

Beale AFB Is Located along Dry Creek Near the Sierra Nevada Mountain Range and the Confluence of the Yuba River and Feather River

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

**B02. STREET ENVELOPE STANDARDS**

Comply with Air Force Corporate Standards for Installation Elements:

Comply with AF Corporate Standards for Street Envelope Standards:

**B02.1. Hierarchy of Streets**

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

1. 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**

- Select number of graphics / images (large: 800 px x 440 px) to insert 1
- Select number of graphics / images (small: 250 px x 188 px) to insert 3

Travel Lane (a): 12’  Median (b): 12’  Curb and Gutter (c): 2’  Sidewalk / Landscape (d): 12’  Setback (f): Min. 35’ or per ATFP
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 foot buffer between the road and sidewalk where space allows.

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

4. 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
- Applicable  N/A  Select number of graphics / images (small: 250 px x 188 px) to insert  2

![Collector Streets Diagram](image-url)

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 ATFP
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

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

- 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.

- On street parking may be allowed following UFC industry references.

- 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

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

1. Develop all special routes consistently with those adjacent to Group 1 facilities.
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.
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**: Yes, **N/A**: No

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

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

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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

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

- Applicable
- N/A

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

- Applicable
- N/A

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

1. Develop all special intersections consistently with those adjacent to Group 1 facilities.
B02.2.5. Street Frontage Requirements

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

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

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 is appropriate for the local climate.

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

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

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

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

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

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

**B02.3.1. Paving**

☐ Applicable ☐ N/A Large graphics do not apply

☐ Applicable ☐ N/A Small graphics do not apply

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

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

**B02.3.2. Curb and Gutter**

☐ Applicable ☐ N/A Large graphics do not apply

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

1. Curb all streets except remote/isolated roads and rock-paved service roads.
2. All streets should have integral concrete curbs and gutters. Painted curbs are prohibited because they are very difficult to maintain.

3. Use concrete for sidewalks and curbs. Do no use asphalt curbs.

**B02.3.3. Utility Service Elements**

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

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

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

**B02.3.4. Traffic Signs**

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

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

**B02.3.5. Street Lighting**

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

1. Refer to the Lighting section for appropriate applications along streets.
B02.3.6. Other

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

B03. OPEN SPACE / PUBLIC SPACE

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

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

B03.1. Plazas, Monuments and Static Displays

- Applicable  □ N/A  Select number of graphics / images (large: 800 px x 440 px) to insert 1  
- Applicable  □ N/A  Select number of graphics / images (small: 250 px x 188 px) to insert 3

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

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

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

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

**B03.1.1. Paved Plazas**

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

1. Mitigate heat island 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. Bricks used on plazas shall typically be 4” x 8” size.
B03.1.2. Sculptures, Markers and Statuary

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

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

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

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

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

6. Ensure that all sculpture, markers and statuary are honorable and inspiring, provide a sense of place, positively contribute to the base’s visual quality, and encourage pride for the community and the US Air Force.
B03.1.3. Static Display of Aircraft

- Applicable  N/A  Select number of graphics / images (large: 800 px x 440 px) to insert  1
- Applicable  N/A  Select number of graphics / images (small: 250 px x 188 px) to insert  2

Insert Static Display of Aircraft
Size image to:
- 800 pixels width x 440 pixels in height
- 250 pixels width x 188 pixels height

Click here to insert image
(jpg or png format)

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

2. Maintain preservation areas following the IDP and IFS.

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

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

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

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

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

8. Reduce visual clutter and visual impact of the following items through a combination of careful placement, screen walls, landscaping and painting:
   - Electrical switch-stations
   - Sewage lift stations
   - Water well pumps, storage tanks and/or related structures
   - Gas piping, meters and similar incidental items
   - Above ground fuel storage tanks
   - Any ground-mounted freestanding utility item exposed to view

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

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

11. Maintain currently buried utility service lines as a visual asset.
12. Bury the following exposed above-grade items in future projects when economically feasible:
   • Electrical power grid and service lines
   • Telephone lines
   • Cable TV lines
   • Communications lines
   • Exterior lighting service lines
   • Any similar system of above-ground lines serving the base

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

B03.2.1. Parade Grounds

☐ Applicable ☐ N/A Large graphics do not apply

☐ Applicable ☐ N/A Small graphics do not apply

1. 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.
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  Large graphics do not apply

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

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

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

B03.2.4. Perimeter Fence

☐ Applicable  ☑ N/A  Large graphics do not apply

☐ Applicable  ☑ N/A  Small graphics do not apply

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

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

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

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

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

C01. SITE DESIGN

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

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

C01.1. Site Design Considerations

- Applicable  N/A  Select number of graphics / images (large: 800 px x 440 px) to insert  1
- Applicable  N/A  Small graphics do not apply

Site Design Near Intersection of Warren Shingle Road and C Street

1. Collect documentation to validate approvals and completion of the NEPA process.

2. Ensure site design compliance with the Installation Development Plan (IDP) and its component plans and Installation Facilities Standards (IFS).

3. Promote integrated design with on-site solutions such as engineered small-scale hydrologic controls versus base-wide infrastructure; consider open space, natural features, bioswales, building roofs, streets, and paved surfaces.

4. Limit the impact of development on land and water resources. All site elements and infrastructure 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, 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 from 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. 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**  
  Select number of graphics / images (large: 800 px x 440 px) to insert 1

- **Applicable**  
  Select number of graphics / images (small: 250 px x 188 px) to insert 6

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**DRIVING FACTORS**

- Optimal solar orientation of the building
- Main entrance from Pepperell street
- Addressing the orientation of the future ADC
- Maximum the daylight & desirable views
- Aligning existing vegetation and trees
- Visibility of the new facility from main roads
- Meet the required ASFP standoff distance
- Separation between staff/plants/materials entrance
- Required parking spaces for public and staff
- Create a unified campus
- Outdoor healing environment
- Implementation of landscape zones A, B, C & D

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**CONCEPTUAL DIAGRAM**

Conceptual Site Analysis and Site Design Diagram

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**SOLAR ALTITUDE**

Local Solar Data  
Local Climate Data  
Site Data
1. Ensure the site will accommodate optimum requirements for building orientation, which is with the long axis 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 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

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

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

5. 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.

6. Direct roof drainage to underground collection when feasible or provide splash blocks / paved channels to intercept roof drainage at grade.

C03. PARKING AREAS
Comply with AF Corporate Standards for Site Development:
http://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

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

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

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

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

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

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

7. Consider locations and requirements of near term and future electric vehicle charging stations.
8. Designate preferred parking spaces for electric vehicles and carpools near the main entrance.

9. Consider cost-effectively integrating solar photovoltaic arrays into covered parking structures.

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

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

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

**C03.1.1. Paving and Striping**

- 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 concrete where economical on a life-cycle basis following UFC 3-250-01.

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

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

4. Use consistent striping, angles and stall sizes in all parking areas.
5. All parking shall be marked with white stripes of paint or applied vinyl coatings. Red or yellow markings shall only be used for safety purposes and must be kept to a minimum. All lines shall be four inches (4") wide.

**C03.1.2. Curbing**

- **Facility Group 1** curbing / edging materials shall be as follows.
  - Primary: Concrete
  - Secondary: N/A
  - Accent: N/A

- **Facility Group 2** curbing / edging materials shall be as follows.
  - Primary: Concrete
  - Secondary: N/A
  - Accent: N/A

- **Facility Group 3** curbing / edging materials shall be as follows.
  - Primary: Concrete
  - Secondary: N/A
  - Accent: N/A

- **Facility Group 4** curbing / edging materials shall be as follows.
  - Primary: Concrete
  - Secondary: N/A
  - Accent: N/A

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

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

3. Wheel stops are not permitted except at locations where car bumpers could contact adjacent items such as poles, signs or pedestrians.
C03.1.3. Internal Islands and Medians

☐ Applicable  ☑ N/A  Large graphics do not apply

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

1. Install landscape islands and medians as visual breaks, to reduce heat island effects and to accommodate bioswales and rain gardens. Coordinate suitable landscape or barriers integrated with walls and fences to ensure adequate force protection.

2. When lighting is necessary, contain fixture bases within medians or internal landscape islands.

C03.2. Parking Structures

☐ Applicable  ☑ N/A  Large graphics do not apply

☐ Applicable  ☑ N/A  Small graphics do not apply

1. Parking structures are encouraged in land-constrained locations when economically feasible.

2. Consider near term and future electric vehicle charging stations and renewable energy generation development during the analysis and design.

3. Consider opportunities for integrating parking structures into multi-use developments with pedestrian-oriented uses located on the ground floor and parking on upper levels; ensure ATFP guidelines are fully addressed.

4. Structures may be constructed below grade with roofs serving as vegetated areas or plazas.
**C03.3. Connectivity**

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

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](http://afcfs.wbdg.org/site-development/index.html)

C04.1. Stormwater Requirements

- On Site Stormwater System
- Drainage Swale with Rock Mulch
- Rock Mulch Retention Area
- Vegetated Bioswale
1. Design all stormwater systems including retention ponds, detention areas, channels, etc. as on-site amenities that are consistent with natural systems and drainage patterns, that help sustain the base landscape with beneficial functionality and that provide aesthetic appeal; coordinate with the base Stormwater Management Plan.

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

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

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

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


**C05. SIDEWALKS, BIKEWAYS AND TRAILS**

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

Comply with AF Corporate Standards for Sidewalks, Bikeways and Trails:
http://afcfs.wbdg.org/site-development/sidewalks-bikeways-trails/index.html
C05.1. Circulation and Paving

- Applicable  N/A  Select number of graphics / images (large: 800 px x 440 px) to insert  1
- Applicable  N/A  Select number of graphics / images (small: 250 px x 188 px) to insert  6

Allee of Trees and Coordinated Storm Drainage

- Sidewalk and Entrance Plaza at Group 1
- Standard Concrete Sidewalk
- Concrete and Unit Pavers at Group 2
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 ATFP. Efficiently use materials to optimize life-cycle costs and to minimize maintenance.

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

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

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

5. Only experienced contractors will install pervious pavements.

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

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

8. Sidewalks leading to a building main entrance and at the interior of parking lots shall be a minimum width of 6’. Walks greater than 10’ wide may be used at high-density pedestrian areas where volumes of traffic justify added material.
9. Where cars park adjacent and head-in to the sidewalk and wheel stops are not used, such perimeter walks shall be increased to a minimum width of 8' to accommodate overhangs of the parked vehicles.

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

11. Pavers shall conform to the following range of color: Red. Pavers used on walks shall typically be 4" x 8" in size.

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

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

**C05.1.1. Ramps and Stairs**

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

![Typical Site Stair](image-url)

![Standard Ramp](image-url)

![Curb Ramp](image-url)

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

![Lighted Bollards along Sidewalk](image-url)

![Bollards with Protective Bases](image-url)

![Dome Top Lighted Bollards](image-url)

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

**C06. LANDSCAPE**

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

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

**C06.1. Climate-based Materials**

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

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

Indigenous and Adapted Species
1. Use only native, naturally occurring, drought tolerant indigenous plant species (including grasses) appropriate for the locale to promote energy efficiency and water conservation, preserve drainage patterns, inhibit erosion, improve air quality, lower maintenance, and add beauty.


**C06.1.1. Landscape Design Concept**

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

- **Applicable**
- **N/A**
- Select number of graphics / images (small: 250 px x 188 px) to insert 6

1. Develop, maintain and implement a climate-based plant list with landscape features using a regionally appropriate palette of materials to promote energy efficiency, preserve drainage patterns, inhibit erosion, improve air quality, lower maintenance and add beauty. Follow UFC 3-201-02 Landscape Architecture.
2. Landscaping is required for all newly developed sites and facilities; preserve existing native landscape where possible and avoid overplanting.

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

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

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

6. Facility plantings shall follow the Installation Facilities Standards (IFS) plant list, which is based on the specific microclimates created by the adjacent building: shadow areas, protected areas, zones adjacent to thermal mass, and availability of rainwater and/or grey water.

7. Provide open spaces as transitions between developed and native areas that promote quality of life and provide visual relief and allow walkable connections to the transportation system.

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

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

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

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

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

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

**C06.1.2. Xeriscape Design Principles**

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

- Applicable  N/A  Image Tool 250 x 188

- Use of Native Drought Tolerant Species
- Plantings Sustained by Rainfall
- Planting Bed with Xeric Species
1. Apply xeriscape principles following UFC 3-201-02, Appendix B, and Air Force Corporate Facilities Standards.

2. Facility plantings are encouraged to use native plant species and to consider specific microclimates created by the adjacent building: shadow areas, protected areas, zones adjacent to thermal mass, and availability of rainwater and/or grey water.

**C06.1.3. Minimizing Water Requirements**

- **Applicable** ☑ N/A Large graphics do not apply

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

1. Reasonably reduce demand on potable water while seeking opportunities to increase alternative water sources for irrigation. Reduce or eliminate the use of potable/domestic water for purposes of landscape architecture maintenance, consistent with existing legal or contractual obligations, and prohibit potable-water irrigation in new construction beyond establishment following current DoD and Air Force policy.
C06.1.4. Plant Material Selection

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

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

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

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

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

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

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

C06.1.5. Water Budgeting (Hydrozones)

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

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

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

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

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

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

7. All plant material shall have one-year warranty and is subject to approval by the Base Landscape Architect.
1. Comply with DoD and Air Force policy on potable-water irrigation systems.


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

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

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

**C06.1.6. Base Entrance Landscaping**

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

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

![Native Trees](image1.png) ![Evergreen Species](image2.png) ![Trees and Grasses](image3.png)

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

- Native Drought Tolerant Trees and Grasses
- Street Trees Defining Roadway
- Ornamental Tree Planting
- Xeric Tree and Shrub Planting

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

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

☐ Applicable  ☑ N/A  Large graphics do not apply

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

1. Define walkways with landscaping where appropriate.

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

3. Provide wind breaks where required.
1. Integrate appropriate landscaping elements into parking areas to visually soften the appearance at a minimum rate approved by the Base Civil Engineer.

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

3. Provide planting in islands within parking lots for shade and appeal following IFS and the base stormwater management plan.
4. Rain garden islands shall be landscaped to receive rainwater runoff from adjacent impervious parking areas to be absorbed into the ground/planting bed. Native plants and groundcovers are recommended within the rain garden areas, which can survive without supplemental irrigation once established.

**C06.1.10. Screen/Accent Landscaping**

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

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

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

Coordinated Furnishings
Low Maintenance Finishes
Lighted Bollards

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

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

3. Group 1 and 2 site furnishings shall be powder-coated metal. Group 3 and 4 site furnishings shall be 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 shall be powder coated metal to match the site furniture of adjacent facilities and the facility district. Provide the same in Group 4 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 ATFP requirements.

7. Limit the use of bollards, but when necessary for force protection use pre-cast concrete non-illuminated bollards in Groups 1 and 2; steel pipe bollards in Group 3; and anodized aluminum bollards in Group 4 and parks and trails. Illuminated bollards may be used as approved on a case basis.

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

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

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

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

12. Bus shelters shall be provided only where there is a documented need and when approved on a case basis. Generally emulate the designs of adjacent shelters using factory finished metal structure.

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 material to match the adjacent building.

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

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

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

18. Provide trash dumpster enclosures for Group 1 with split-face concrete block to match adjacent facilities and for Groups 2 and 3 with metal screen walls; all gates shall be metal factory finished metal to match local standards.

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

20. Group 1, 2 and 3 picnic tables and seating shall be concrete round or steel rectangular. Group 4 and recreational areas shall have rectangular steel picnic tables and seating. 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.

**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
Number of base standards 2

Charcoal

Applies to: Group 1 Group 2 Group 3 Group 4 Other
Mfr: Most Dependable Fountains, Inc.
Color: Natural stainless steel
Finish: Mill
Model #: SS BBQ Grill
Other: Concrete foundation, coordinate with Base Architect

UFGS: N/A

Natural Gas

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

UFGS: N/A
### C07.2.2. Benches

<table>
<thead>
<tr>
<th>Applicable</th>
<th>N/A</th>
<th>Number of base standards</th>
<th>1</th>
<th>Image Tool 250 x 188</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tbody>
</table>

**Type:**  

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

**Mfr:** TBD

**Color:** Black or dark bronze

**Finish:** Powder coat

**Model #:** 3-Seat steel mesh with arms

**Other:** In ground mount

**UFGS:** N/A

---

### C07.2.3. Bike Racks

<table>
<thead>
<tr>
<th>Applicable</th>
<th>N/A</th>
<th>Number of base standards</th>
<th>1</th>
<th>Image Tool 250 x 188</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Type:** **Style 1**

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

**Mfr:** Brandir International Inc.

**Color:** Black or dark bronze

**Finish:** Factory

**Model #:** The Ribbon Bike Rack, RB-07

**Other:** N/A

**UFGS:** N/A

---

### C07.2.4. Bike Lockers

<table>
<thead>
<tr>
<th>Applicable</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Mfr:**  

**Color:**  

**Finish:**  

**Model #:**  

**Other:**  

**UFGS:**  

---

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C07.2.5. Bollards

Applicable  ☑ N/A  Number of base standards 3

Image Tool 250 x 188

<table>
<thead>
<tr>
<th>Type: Lighted Round Dome Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:  ☑ Group 1  ☑ Group 2  ☑ Group 3  ☐ Group 4  ☐ Other</td>
</tr>
<tr>
<td>Mfr: Lithonia Lighting Products</td>
</tr>
<tr>
<td>Color: Black or dark bronze</td>
</tr>
<tr>
<td>Finish: Anodized aluminum</td>
</tr>
<tr>
<td>Model #: KBA</td>
</tr>
<tr>
<td>Other: Flared cone, 3000K LED Lamp</td>
</tr>
<tr>
<td>UFGS: N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type: Force Protection, Building Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:  ☑ Group 1  ☑ Group 2  ☑ Group 3  ☐ Group 4  ☐ Other</td>
</tr>
<tr>
<td>Mfr: Custom</td>
</tr>
<tr>
<td>Color: Black or dark bronze</td>
</tr>
<tr>
<td>Finish: Powder coat</td>
</tr>
<tr>
<td>Model #: 6” steel, flat top</td>
</tr>
<tr>
<td>Other: For Group 3, use only in high visibility areas</td>
</tr>
<tr>
<td>UFGS: N/A</td>
</tr>
</tbody>
</table>
### Building Protection, steel

- **Type:** Building Protection, steel
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** (Bollard Cover) Reliance Foundry
- **Color:** Brown cover may be field painted dark bronze
- **Finish:** Factory
- **Model #:** 6” Steel pipe, concrete filled, Cover: R-7173
- **Other:** A 1” (25.4 mm) rigid conduit and box with shroud may be provided at top of bollard with a receiver/key switch application

### C07.2.6. Bus Shelters

- **Applicable:** ✓
- **N/A:** ☐
- **Number of base standards:** 1
- **Recommended Image:** Example of Bus Shelter Type
- **Size image to:** 250 pixels width x 188 pixels height

#### Bus Shelters

- **Type:** 1
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** Custom
- **Color:** Dark bronze
- **Finish:** Powder coated
- **Model #:** Dome roof
- **Other:** Provide concrete slab and aluminum bench

### UFGS

- **N/A**
C07.2.7. Drinking Fountains

Applicable  ☑ N/A  Number of base standards 1  

Type: **Pedestal**

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

Mfr: Most Dependable Fountains, Inc.

Color: Natural

Finish: Stainless Steel

Model #: MDF 440 SMSS

Other: Accessible

UFGS: N/A

---

C07.2.8. Dumpster Enclosures / Gates

Applicable  ☑ N/A  Number of base standards 1  

Type: **1: Brick and Steel**

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

Mfr: Custom

Color: Red brick blend, dark brown doors

Finish: Face brick, powder coated doors

Model #: Match adjacent building

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

UFGS: Section 04 20 00 Unit Masonry
### C07.2.9. Fencing

<table>
<thead>
<tr>
<th>Type: Style A Barrier: High security, high visibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to: ☐ Group 1 ☐ Group 2 ☐ Group 3 ☐ Group 4 ☐ Other</td>
</tr>
<tr>
<td>Mfr: Custom</td>
</tr>
<tr>
<td>Color: Black or dark bronze</td>
</tr>
<tr>
<td>Finish: Powder coated</td>
</tr>
<tr>
<td>Model #: Steel posts, rails and pickets (vertical, bent outward at top)</td>
</tr>
<tr>
<td>Other: Split Face, beige CMU piers may be used</td>
</tr>
<tr>
<td>UFGS: Section 05 50 13 Miscellaneous Metal Fabrications</td>
</tr>
</tbody>
</table>

![Fencing Type A Diagram](image-url)

### Style B Barrier: High security, medium visibility

<table>
<thead>
<tr>
<th>Type: Style B Barrier: High security, medium visibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to: ☐ Group 1 ☐ Group 2 ☐ Group 3 ☐ Group 4 ☐ Other</td>
</tr>
<tr>
<td>Mfr: Custom</td>
</tr>
<tr>
<td>Color: Dark brown</td>
</tr>
<tr>
<td>Finish: Powder coat</td>
</tr>
<tr>
<td>Model #: Steel grid: flat bar stock verticals, round rod horizontals</td>
</tr>
<tr>
<td>Other: Steel posts, horizontal bars, braces, and accessories, in heights, lengths, and gauges as required; Close all ends of tubing</td>
</tr>
<tr>
<td>UFGS: Section 05 50 13 Miscellaneous Metal Fabrications</td>
</tr>
</tbody>
</table>

![Fencing Type B Diagram](image-url)
**Type:** **Style C Barrier: High security, low visibility**

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

- **Mfr:** Custom

- **Color:** Black or dark bronze

- **Finish:** Powder coated galvanized steel

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

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

- **UFGS:** Section 32 31 13 Chain Link Fences and Gates

---

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

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

- **Mfr:** Custom

- **Color:** CMU blend, dark brown fencing

- **Finish:** Split face CMU, powder coated metal

- **Model #:** CMU Piers with steel posts, rails and pickets

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

- **UFGS:** Section 04 20 00 Unit Masonry, Section 05 50 13 Misc. Metal
**Style E Barrier: Low security, High visibility**

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

Mfr: Custom

Color: Tan CMU blend, dark brown fencing

Finish: Powder coated metal

Model #: CMU piers with steel posts, rails and alternating panels

Other: CMU: 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

---

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

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

Mfr: Custom

Color: Integral mixed Davis Colors: dark warm gray

Finish: Factory

Model #: Post and rail

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

UFGS: SECTION 03 33 00 Cast-In-Place Architectural Concrete
### Style G Barrier (Alternate): Very low security, high visibility

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

**Mfr:** James Hardie Building Products, Inc.

**Color:** Off white and Earth tones

**Finish:** Factory

**Model #:** Post and rail with vertical boards

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

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

---

#### C07.2.10. Flagpoles

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

**Type:** 1

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

**Mfr:** Eder Flag

**Color:** Natural aluminum

**Finish:** Satin Lustre

**Model #:** ECL30 IH, Internal Halyard

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

**UFGS:** N/A

---

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

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

Type: **Style 1: Metal**

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

Mfr: TBD

Color: Black or dark bronze

Finish: Powder coat

Model #: Round flat top, steel mesh

Other: Coordinate with bench design, provide rigid plastic internal liner

UFGS: N/A

C07.2.13. Picnic Tables

Type: **Metal Powder Coated**

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

Mfr: TBD

Color: Black or dark bronze

Finish: Powder coat

Model #: Round top, 6 seat steel mesh

Other: Coordinate with bench design

UFGS: N/A
C07.2.14. Planters

- **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

- **Type:** Steel
- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr.:** Little Tikes Commercial
- **Color:** Varies
- **Finish:** Powdercoated Steel
- **Model #:** N-R-G Freestyle
- **Other:** Coordinate with Base Architect
- **UFGS:** N/A
C07.2.16. Screen Walls

- **Type:** CMU / Steel
- **Applies to:** Group 1, Group 2
- **Mfr.:** Custom
- **Color:** Tan CMU blend, dark brown fencing
- **Finish:** Powder coated metal
- **Model #:** CMU piers with steel posts, rails and alternating panels
- **Other:** CMU: 2’x2’ (Height as required, equally spaced 8’ to 40’), Steel posts: 4”x4” (equally spaced), Rails: 1-1/4”x1-1/2”, vertical steel panels spaced alternately on each side of the rails; matching gates; close all ends
- **UFGS:** Section 04 20 00 Unit Masonry, Section 05 50 13 Misc. Metal

C07.2.17. Tree Grates

- **Type:** Cast Iron
- **Applies to:** Group 1, Group 2
- **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

- **Applies to:** 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

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

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

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

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

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

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

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

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

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

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

11. Reserved parking signs should be kept to a minimum. When approved, provide post-mounted sign faces in base standard materials and colors. Consider “bracketing” a designated area with a single sign at each end.
12. Parking lot identification signs may be used to identify areas or rows within large lots.

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

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

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

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

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

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

**C08.1.1. Materials and Color Specifications**

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

1. Fabricate sign panels from aluminum sheet, minimum 12 gauge for durability. Sign posts shall be powder coated steel with capped ends in a concrete base.

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

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

Applicable

Number of base standards 3

<table>
<thead>
<tr>
<th>Type</th>
<th>Mfr.</th>
<th>Color</th>
<th>Finish</th>
<th>Model #</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Typical Sign Fce</td>
<td>Custom</td>
<td>Medium bronze</td>
<td>Matte vinyl</td>
<td>Aluminum flat sheet</td>
<td>Mount to square posts. Provide sizes following UFC.</td>
</tr>
<tr>
<td>Typical Sign Post</td>
<td>Custom</td>
<td>Dark bronze, powder coat finish</td>
<td>Matte</td>
<td>Extruded aluminum with capped top ends</td>
<td>Square posts and squared ends. Provide engineered sizes.</td>
</tr>
</tbody>
</table>

UFGS: Section 05 50 13 Miscellaneous Metal Fabrications
**Typical Sign Base**

**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**

**Number of base standards:** 1

**Recommended Image:**

**Example of Materials and Color Specifications**

**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

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

- **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

---

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

- **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
- [x] 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**

**Number of base standards**: 2

**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**

- **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 color.

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

### C08.1.7. Motivational Signage

- **Applicable**: ☐ N/A Large graphics do not apply
- **Applicable**: ☐ N/A Small graphics do not apply

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

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

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

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

### C08.1.8. Parking Lot Signs

- **Applicable**: ☐ N/A

### C08.1.9. Regulatory Signs

- **Applicable**: ☐ N/A

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

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

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

### C08.1.10. Other

- **Applicable**: ☐ N/A
C09. LIGHTING

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

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

C09.1. Fixtures and Lamping

☐ Applicable ☐ N/A Large graphics do not apply

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

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

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

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

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

5. Use appropriately designed or shielded luminaires to direct light downward to minimize light pollution and intrusion onto adjacent sites and to facilitate night training.
6. Calculate illuminant levels for all lighting applications following UFC 3-530-01 and ensure compliance with pre-curfew maximum brightness level requirements.

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

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

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

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

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

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

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

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

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

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

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

**C09.2. Light Fixture Types**

**Note:** Apply the below base-wide standards for Light Fixtures (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.
C09.2.1. Street Lighting

Type: **Style 1**

- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr.:** Hubbell, Kim Lighting
- **Color:** Dark Bronze Anodized (or Clear Anodized as approved by BCE)
- **Finish:** Factory
- **Model #:** Rectilinear Cutoff, Single Arm or Dual Arm Mount
- **Other:** Lamp: LED. Follow manufacturer’s recommendations for fixture base.

**UFGS:** N/A

Type: **Style 2**

- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr.:** Hubbell, Kim Lighting
- **Color:** Clear Anodized as approved by BCE
- **Finish:** Factory
- **Model #:** Round Cutoff, Single Arm or Dual Arm Mount
- **Other:** Lamp: LED. Follow manufacturer’s recommendations for fixture base.

**UFGS:** N/A
C09.2.2. Parking Lot Lighting

Type: Parking Lot Style 1

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

Mfr: Hubbell, Kim Lighting

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

Finish: Factory

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

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

UFGS: N/A

Type: Parking Lot Fixture Base

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

Mfr: Custom

Color: Natural gray

Finish: Trowel

Model #: Form-cast, round

Other: N/A

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

<table>
<thead>
<tr>
<th>Type: Lighted Round Dome Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to: Group 1, Group 2, Group 3</td>
</tr>
<tr>
<td>Mfr: Lithonia Lighting Products</td>
</tr>
<tr>
<td>Color: Dark bronze</td>
</tr>
<tr>
<td>Finish: Anodized aluminum</td>
</tr>
<tr>
<td>Model #: KBA</td>
</tr>
<tr>
<td>Other: Flared cone, 3000K LED Lamp. Follow manufacturer’s recommendations for fixture base.</td>
</tr>
<tr>
<td>UFGS: N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type: Lighted Square Flat Top</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to: Group 1, Group 2, Group 3</td>
</tr>
<tr>
<td>Mfr: Lithonia Lighting Products</td>
</tr>
<tr>
<td>Color: Dark bronze</td>
</tr>
<tr>
<td>Finish: Anodized aluminum</td>
</tr>
<tr>
<td>Model #: KBS</td>
</tr>
<tr>
<td>Other: Flared cone, 3000K LED Lamp. Follow manufacturer’s recommendations for fixture base.</td>
</tr>
<tr>
<td>UFGS: N/A</td>
</tr>
</tbody>
</table>
C09.2.4. Sidewalk Lighting

Type: Rectilinear Cutoff

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

Mfr: Hubbell, Kim Lighting

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

Finish: Anodized aluminum

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

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

UFGS: N/A

C09.2.5. Walls / Stairs Lighting

Type: Style 1

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

Mfr: Vista Lighting

Color: Dark bronze anodized

Finish: Smooth

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

Other: Lamp: LED

UFGS: N/A

C09.2.6. Other

□ Applicable  □ N/A
D. FACILITIES EXTERIORS
Comply with Air Force Corporate Standards for Facilities Exteriors:
http://afcfs.wbdg.org/facilities-exteriors/index.html

- Applicable  N/A  Select number of graphics / images (large: 800 px x 440 px) to insert  1
- Applicable  N/A  Select number of graphics / images (small: 250 px x 188 px) to insert  3

Group 1 Facility Materials Palette

Group 2 Facility
Group 3 Typical Materials
Group 4 Family Housing

D01. SUPPORTING THE MISSION
Comply with AF Corporate Standards for Supporting the Mission:

D02. SUSTAINABILITY
Comply with Air Force Corporate Standards for Sustainability:
D03. ARCHITECTURAL FEATURES

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

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

Insert 3 photos for each facility group.

Image Tool 250 x 188

Group 1

Group 2

Group 3

Group 4
D03.1. Orientation, Massing and Scale

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


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 a theme of efficiency and permanence in new construction, and develop a human scale using building openings and massing.

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. Break up multi-story buildings with horizontal relief when appropriate to relate the facility to human scale.

8. Articulate walls with horizontal/vertical elements to diminish mass of large-scale buildings.

9. Design facades and the pattern, visual rhythm, and arrangement of openings to reflect a human scale. Relate materials and detailing to adjacent structures.
   a) Ensure the scale of fenestration is appropriate to the use of the building.
   b) Relate window placement to the “core and shell” concept described in section E01; window and mullion spacing shall provide flexibility for evolving interior configurations.
   c) Design building fenestration for user comfort and energy efficiency. Reduction of cooling loads is critical during Beale’s hot summer months.
   d) Provide operable windows in all occupied spaces. Specify insect screens and accessible hardware.
   e) Orient windows toward mountain views where possible.

10. Incorporate architectural features such as overhangs, porches, colonnades, and other strategies to block direct summer solar gain. Use north-facing clear-story windows and other natural lighting methods to reduce lighting demand and associated cooling load.

D03.3. Details and Color

1. Provide a palette of earth-tone colors related to the native landscape in block, stucco and powder-coated metals. Refer to wall systems for detailed material listings.
2. Relate the level of architectural detailing to the Facility Group number.

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

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

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

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

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

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

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

Other: Consider the potential for passive solar heat gain

Other:

---

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

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

**Doors:** Recessed are preferred

**Windows:** Provide insulating glazing on north-facing windows / maximize shading functionally for each exposure
Roof: High to medium albedo, moderate slope for all buildings except hangars / large industrial facilities

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

MEP: Ground-source following LCCA

Other: Internal thermal mass walls may be used for cooling following LCCA.

Other:

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

D03.3.2. Natural Ventilation System

Type: **Style 1 Aluminum Windows**

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

Mfr: Kawneer (or equivalent)

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

Finish: Anodized

Model #: 2x4, slider or awning type

Other: Provide thermally broken frames.

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

Type: **Style 1 Interior Wall Material**

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

Mfr: Custom, TBD

Color: Medium or dark tan

Finish: Light texture

Model #: Coursed unit masonry

Other: N/A

UFGS: Section 04 20 00 Unit Masonry

---

D03.3.4. Thermal Shading

Type: **Style 1 Wall Devices**

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

Mfr: Kawneer (or equivalent) or custom

Color: Dark bronze

Finish: Factory, to match frames

Model #: Louver

Other: Shading devices may be attached to frames or structure

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

<table>
<thead>
<tr>
<th>Type:</th>
<th><strong>Style 1 Geothermal (Ground Source)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
<td>☐ Group 1 ☑ Group 2 ☑ Group 3 ☑ Group 4 ☐ Other</td>
</tr>
<tr>
<td>Mfr:</td>
<td>Climate Master</td>
</tr>
<tr>
<td>Color:</td>
<td>N/A</td>
</tr>
<tr>
<td>Finish:</td>
<td>N/A</td>
</tr>
<tr>
<td>Model #:</td>
<td>N/A</td>
</tr>
<tr>
<td>Other:</td>
<td>Vertical ground loop well field</td>
</tr>
<tr>
<td>UFGS:</td>
<td>Section 23 81 47 Water-Loop and Ground-Loop Heat Pump Systems</td>
</tr>
</tbody>
</table>

---

## D03.3.6. Solar Photovoltaic System

<table>
<thead>
<tr>
<th>Type:</th>
<th><strong>Ground-Mounted PV Panels</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
<td>☐ Group 1 ☐ Group 2 ☐ Group 3 ☐ Group 4 ☑ Other</td>
</tr>
<tr>
<td>Mfr:</td>
<td>TBD</td>
</tr>
<tr>
<td>Color:</td>
<td>Factory</td>
</tr>
<tr>
<td>Finish:</td>
<td>Matte</td>
</tr>
<tr>
<td>Model #:</td>
<td>Flat plate collector, fixed or tracking</td>
</tr>
<tr>
<td>Other:</td>
<td>Coordinate with local utility provider</td>
</tr>
<tr>
<td>UFGS:</td>
<td>Section 48 14 00 Solar Photovoltaic Systems</td>
</tr>
</tbody>
</table>
**Roof-Mounted PV Array**

- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** TBD
- **Color:** Factory
- **Finish:** Matte
- **Model #:** Flat plate collector
- **Other:** Coordinate with local utility provider

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

---

**D03.3.7. Solar Thermal System**

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

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

- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** TBD
- **Color:** Factory
- **Finish:** Matte
- **Model #:** Flat plate collector
- **Other:** N/A

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

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

Comply with AF Corporate Standards for Building Entrances:

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

6. Protect entrances from direct sun. North-facing entrances are preferred.

7. 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:

Comply with AFCFS Recommended Materials:

*Insert 3 photos for each facility group.*

**Recommended Images:**
- Overall facility showing materials
- Wall showing primary material
- Wall showing secondary material

Size images to:
- 250 pixels width x 188 pixels height

Click here to insert image
D05.1. Hierarchy of Materials

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

2. Group 1 and 2 facilities shall be primarily integrally colored, textured concrete masonry units (CMU). Ground face block and architectural precast can be used as an accent. Window sills of Group 1 and 2 buildings shall be precast. Stucco may be used at upper walls. Refer to the Appendix for special requirements of Facility Districts.

3. Brushed, honed or sand blasted concrete is not acceptable for wall materials.

4. Group 3 facilities shall be insulated metal panels and/or metal sheeting. Provide an integrally colored, textured concrete masonry base below metal wall panels to provide durability and impact resistance. The height of the CMU base shall be proportional to the building but should not be less than 6-feet. Window sills of Group 3 buildings should be constructed of CMU or metal to match the adjacent wall material.

5. Group 4 shall be a traditional 3-coat stucco system. CMU construction is preferred to wood frame construction due to possible termite exposure.

6. Multi-story Group 1 facilities may include a transition in material, color or detailing to create a visual base. Generally limit CMU to a single accent color on Group 2, 3 and 4 facilities to complement the predominant color.

7. Use primary and secondary facade materials consistently and on all sides of the building.

8. Provide cornices and reveals to create interest and scale.

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

10. Use detailing not subject to excessive weathering. Recess windows to provide visual relief and to promote shedding of water. Group 1 buildings may use a 1” relief in the field of the wall material for window definition.

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

12. Translucent wall panels may be used in Facility Group 1 and recreational uses in Group 2 when protected from direct solar gain. Provide insulating panels and shading appropriate for the orientation and exposure.

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

D05.2. Layout, Organization and Durability

1. Organize wall components including doors, windows, accents, shading devices, control joints, etc., to provide an ordered, professional appearance.

2. Integrate shading devices into the overall composition of the wall.

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

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

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

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. 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:** Split face CMU
- **Secondary:** Ground face CMU in alternate color, or stucco
- **Accent:** Architectural precast (optional)

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

- **Primary:** Split face CMU
- **Secondary:** Stucco, metal panels or metal sheeting
- **Accent:** Architectural precast, ground face CMU

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

- **Primary:** Insulated metal panels or sheeting
- **Secondary:** Split face CMU
- **Accent:** Alternate color of metal and/or CMU

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

- **Primary:** Stucco over CMU
- **Secondary:** Stucco in alternate color
- **Accent:** N/A

**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: Yes  N/A  Number of base standards 3

Image Tool 250 x 188

Type: Insulated Metal Panel System - Kynar Finish, Light

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

Mfr: Metl-Span

Model #: CF Santa Fe Insulated Metal Wall System

Color: Off-white

Finish: Heavy stucco-embossed

Other: N/A

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

Type: Insulated Metal Panel System - Kynar Finish, Dark

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

Mfr: Metl-Span

Model #: CF Santa Fe Insulated Metal Wall System

Color: Medium Bronze

Finish: Heavy stucco-embossed

Other: N/A

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

Beale Air Force Base IFS
### Type: Flat Seam Panel - Weathering Steel

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

- **Mfr:** US Steel

- **Model #:** Flat-seam cladding

- **Color:** Natural weathered steel

- **Finish:** Natural

- **Other:** N/A

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

### D05.4.2. Brick Veneer

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

### D05.4.3. Architectural Precast

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

- **Number of base standards:** 1

- **Type:** Coursed precast

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

- **Mfr:** Local, TBD

- **Model #:** Smooth Casting

- **Color:** Light Beige

- **Finish:** Very Light texture

- **Other:** N/A

- **UFGS:**
  - Section 03 45 00 Precast Architectural Concrete: [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 45 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 45 00.pdf)
D05.4.4. Stucco Over Sheathing

Type: 3-Coat Cementitious Stucco

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

Mfr: La Habra

Model #: Traditional 3-coat system

Color: Beige

Finish: Sand

Other: Accent color may be used

UFGS: Section 09 24 23 Cement Stucco:

D05.4.5. Curtain Wall

D05.4.6. Cast-In-Place Concrete

D05.4.7. Tilt-Up Concrete
D05.4.8. Ribbed Metal Sheeting

- **Type:** Lap Seam
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** TBD
- **Model #:** Lap Seam Panel
- **Color:** Light beige or off-white
- **Finish:** Embossed Texture, factory finished
- **Other:** 24 Gauge Steel
- **UFGS:** Section 07 42 13 Metal Wall Panels:

D05.4.9. EIFS

- **Applicable:** N/A

D05.4.10. GFRC

- **Applicable:** N/A

D05.4.11. Concrete Block

- **Applicable:** N/A
- **Number of base standards:** 2
- **Type:** Concrete Masonry Unit (CMU) Split Face
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** Local TBD
- **Model #:** 8x8x16 Nominal, face and corner units
- **Color:** Medium or dark tan
- **Finish:** Heavy Texture
- **Other:** N/A
- **UFGS:** Section 04 20 00 Unit Masonry:
  - [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 04 20 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 04 20 00.pdf)
<table>
<thead>
<tr>
<th>Type: Concrete Masonry Unit (CMU) Ground Face</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:  □ Group 1  □ Group 2  □ Group 3  □ Group 4  □ Other</td>
</tr>
<tr>
<td>Mfr: Local TBD</td>
</tr>
<tr>
<td>Model #: 8x8x16 nominal, face and corner units</td>
</tr>
<tr>
<td>Color: Light or medium beige</td>
</tr>
<tr>
<td>Finish: Ground with exposed aggregate</td>
</tr>
<tr>
<td>Other: Confirm class of system with the BCE</td>
</tr>
<tr>
<td>UFGS: Section 04 20 00 Unit Masonry: [<a href="http://www.wbdg.org/FFC/DOD/UFGS/UFGS">http://www.wbdg.org/FFC/DOD/UFGS/UFGS</a> 04 20 00.pdf](<a href="http://www.wbdg.org/FFC/DOD/UFGS/UFGS">http://www.wbdg.org/FFC/DOD/UFGS/UFGS</a> 04 20 00.pdf)</td>
</tr>
</tbody>
</table>

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**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:

Comply with AFCFS Recommended Materials:

Insert 3 photos for each facility group.

Group 1

Group 2

Group 3

Group 4
D06.1. Types

1. Dark bronze anodized may be used to match adjacent structures. Clear anodized aluminum doors, windows and frames with thermal breaks are preferred for Facility Groups 1-3 because they show less wear and weathering than dark anodized finishes; match the color of the door and frame. For renovation projects the color of new windows, doors and frames may match the existing ones.

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

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

4. Automatic doors are allowed only where functionally necessary.

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

6. Utility and emergency egress doors shall match the wall color.

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

8. Windows must meet force protection requirements.

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

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

D06.2. Layout and Geometry

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

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

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

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

D06.3. Glazing and Shading

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

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

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

4. Do not use mirrored glazing.

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

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

D06.4. Hardware

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

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

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

5. 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**

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

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

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

**Mfr:** Kawneer (or equivalent)

**Color:** Dark bronze or clear anodized as approved by the BCE

**Finish:** Anodized aluminum

**Model #:** 2x4, thermally broken framing

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

**UFGS:** Section 08 41 13 Aluminum-Framed Entrances and Storefronts: [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 41 13.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 41 13.pdf)
D06.5.2. Hollow Metal
- Type: Hollow Metal Doors, Windows and Frames
- Applies to: [ ] Group 1 [ ] Group 2 [ ] Group 3 [ ] Group 4 [ ] Other
- Mfr: Steelcraft
- Color: Medium beige or off-white to match adjacent wall
- Finish: Powder coated, satin
- Model #: 2x4, thermally broken framing
- Other: Group 1 use only for secondary entrances or emergency egress

UFGS: Section 08 11 13 Steel Doors and Frames:

D06.5.3. Aluminum-clad Wood
- Type: Aluminum-clad Residential
- Applies to: [ ] Group 1 [ ] Group 2 [ ] Group 3 [ ] Group 4 [ ] Other
- Mfr: Marvin
- Color: White or light Earth tones
- Finish: Powder coated, satin
- Model #: Aluminum-clad wood doors and windows
- Other: Double hung windows

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

D06.5.4. Other
- Applicable: [ ] N/A
D07. ROOF SYSTEMS

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

Comply with AF Corporate Standards for Roof Systems:

Comply with AFCFS Recommended Materials:

Insert 3 photos for each facility group.

Image Tool 250 x 188
D07.1. Roof Type and Form

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

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

3. Group 1, 2 and 3 buildings shall use sloped, standing seam metal roofs or single-ply membrane roofing. Minimal-slope roofs may be used as approved on a case basis.

4. Provide screens for roof-mounted appendages and equipment of the same materials, which are used predominantly in the building’s roof systems.

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

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

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

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

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

10. Keep roofs uncluttered and minimize penetrations.

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

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

13. 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.

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

D07.2. Roof Slope

1. Group 1 and 2 buildings shall use sloped roofs, min. 3:12. Minimal-sloped roofs may be used for smaller sub-massing components.

2. 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.

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

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

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

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

D07.3. Parapets and Copings

1. Extend wall materials vertically above the roof line and provide metal copings to match the wall. Ensure copings are properly flashed and detailed to avoid roof leaks. Use of parapets shall be approved by the Base Civil Engineer.
**D07.4. Color and Reflectivity**

1. Standing seam metal roofs in Groups 1 and 2 and smaller facilities in Group 3 shall be medium bronze to match adjacent facilities and follow requirements of IFS.

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. Sloped roofs in Group 4 shall be earth tones.

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

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

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

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

2. Internal roof drainage systems are not permitted in new construction. 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 powder-coated finishes.

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, inconspicuous appearance and integrated into the organization of the roof and wall systems.

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

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

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

D07.7. Clerestories and Skylights

1. Clerestories 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 are not permitted.

3. Design clerestories 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 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

Type:  Style 1 - Dark Roofs

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

Mfr:  Berridge

Color:  Dark bronze

Finish:  Matte

Model #:  Tee-Panel

Other:  Shed, gabled or hipped standing seam metal

UFGS:  Section 07 61 14 Steel Standing Seam Roofing

**D07.9.2. Membrane Single-ply**

- **Type:** Style 1
- **Applies to:** Group 1, Group 2, Group 3, Group 4
- **Mfr.:** Carlisle Systems
- **Color:** Off-white
- **Finish:** Smooth
- **Model #:** TPO single-ply, “flat” minimal slope
- **Other:** N/A

**UFGS:**
- Section 07 53 23 Ethylene-Propylene-Diene-Monomer Roofing
- Section 07 54 50 TPO Thermoplastic Single-Ply Roofing
  (Not Available on UFGS)

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**D07.9.3. Built-up Multi-ply**

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

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**D07.9.4. Concrete Tile**

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

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**D07.9.5. Clay Tile**

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

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**D07.9.6. Slate Shingles**

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

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**D07.9.7. Vegetated System**

- **Applicable:**
- **N/A:**
D07.9.8. Ribbed Metal Sheeting

Applicable: Yes  N/A  Number of base standards: 1

**Type:** Style 1

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

**Mfr.:** Berridge

**Color:** Dark bronze or galvalume as approved by the BCE

**Finish:** Factory, matte

**Model #:** High Seam Tee-Panel

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

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

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D07.9.9. Composite Shingles

Applicable: Yes  N/A  Number of base standards: 1

**Type:** Style 1

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

**Mfr.:** Tamko

**Color:** Earth Tones

**Finish:** Factory

**Model #:** Heritage

**Other:** Gabled or hipped with transverse gable or hipped features

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

[Link](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 07 31 13.pdf)

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D07.9.10. Other

Applicable: Yes  N/A  Number of base standards: 1

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D08. STRUCTURAL SYSTEMS

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

Comply with AF Corporate Standards for Structural Systems:

Comply with AFCFS Recommended Materials:

Insert 3 photos for each facility group.

Group 1

Group 2

Group 3

Group 4
D08.1. Systems and Layouts

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

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

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

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

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

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

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

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

D08.2. Structural Systems Materials

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

D08.2.1. Concrete

Applicable N/A Number of base standards 1

Type: Cast-In-Place

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

Mfr: Custom

Color: Natural gray

Finish: Light texture

Model #: Post and beam and/or waffle slab

Other: Coordinate with mechanical for chilled beam technologies

UFGS: Section 03 30 53 Miscellaneous Cast-In-Place Concrete
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 30 53.pdf
Section 03 33 00 Cast-In-Place Architectural Concrete
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 33 00.pdf
Section 03 47 13 Tilt-Up Concrete
D08.2.2. Insulated Concrete Forming (ICF)

- Applicable
- N/A

D08.2.3. Steel

- Applicable
- N/A

Type: **Rigid Framing**

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

- **Mfr:** US Steel

- **Color:** Shop primed

- **Finish:** Matte

- **Model #:** Structural steel shapes

- **Other:** N/A

- **UFGS:** Section 05 12 00 Structural Steel
  
  [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 05 12 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 05 12 00.pdf)

D08.2.4. Pre-Engineered Steel

- Applicable
- N/A

Type: **Moment Frame**

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

- **Mfr:** Behlen Building Systems

- **Color:** Factory primed

- **Finish:** Matte

- **Model #:** Moment Frame

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

- **UFGS:**
  - Section 13 12 00 Steel Building Systems
  - (Not Available on UFGS)
  - Section 13 34 19 Metal Building Systems

D08.2.5. Masonry
☐ Applicable  ☒ N/A

D08.2.6. Heavy Timber
☐ Applicable  ☒ N/A

D08.2.7. Light-gauge Steel
☐ Applicable  ☒ N/A  Number of base standards 1

Type: Steel Framing

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

Mfr: Steelrite

Color: Factory

Finish: Galvanized

Model #: Structural framing shapes

Other: N/A

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

D08.2.8. Lumber Framing
☐ Applicable  ☒ N/A

D08.2.9. Other
☐ Applicable  ☒ N/A
Comply with AF Corporate Standards for Facilities Exteriors:
http://afcfs.wbdg.org/facilities-exteriors/index.html
Comply with AF Corporate Standards for Mechanical, Electrical and Plumbing:

Insert 3 photos for each facility group.
D09.1. Passive and Active Systems
1. Fully integrate passive heating and cooling systems into facility designs whenever practical for the local climate prior to the design of active mechanical systems.

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

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

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

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

6. Integrate shading into building exteriors to reduce solar heat gain during hot seasons.

D09.2. Functionality and Efficiency
1. Fully coordinate mechanical, electrical, plumbing (MEP) and fire protection systems with each other and with the building structure, enclosure, thermal envelope and interior design.

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

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

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

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

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

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

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

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

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

11. Separate mechanical, 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:

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

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

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

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

5. Comply with UFC 1-200-01, general building requirements. UFC 1-200-01 provides applicability of model building codes and government unique criteria for typical design disciplines and building systems, as well as for accessibility, antiterrorism, security, high performance and sustainability requirements, and safety.


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

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

9. Through open-plan configurations, preserve all passive and natural design strategies and fully integrate facility interiors with overall building systems.

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

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

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

E01.1. Layout and Common Areas
Comply with Air Force Corporate Standards for Layout and Common Areas:

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

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

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

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

5. Allow no direct sight lines into restrooms.

6. Situate utility and core areas to minimize impact on daylighting and to maximize use as thermal buffers.
7. Ensure electrical, lighting and communications system can be adaptable to configuration changes.

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

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

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

**E01.1.1. Interior Design Process**

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

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

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

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

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

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

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

8. SID Format shall follow UFC 3-120-10.

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

**E01.1.2. Codes and Regulations**

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

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

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

**E01.2. Quality and Comfort**


1. Include durability in the life cycle cost analysis for best-value material selections with long life expectancies that do not show excessive wearing.
2. Select long-lasting materials and finishes for permanent core areas such as lobbies, restrooms and stairs.

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

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

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

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

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

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


**E02. Floors**

Comply with Air Force Corporate Standards for Floors:
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.

**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

Number of base standards: 2

Image Tool: 250 x 188

- **Type:** Style 1, Ground and Polished
- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr.:** Local (TBD)
- **Color:** Natural gray cement, light to dark beige aggregates
- **Finish:** Fine polished texture
- **Model #:** Medium to small aggregate
- **Other:** N/A

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

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E02.1.2. Natural Stone and Terrazzo

Applicable

- **Type:**
- **Applies to:** Group 1, Group 2, Group 3, Group 4, Other
- **Mfr.:** Local (TBD)
- **Color:** Natural gray cement, light to dark beige aggregates
- **Finish:** Medium polished texture, slip resistant
- **Model #:** Medium to small aggregate
- **Other:** N/A

UFGS: Section 03 35 45 Polished Concrete Finishing (Not Available on UFGS)
E02.1.3. Quarry Tile

- **Type:** Style 1
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** Daltile
- **Color:** Earth tones
- **Finish:** Matte, slip resistant
- **Model #:** N/A
- **Other:** Use in commercial kitchen flooring.

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

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E02.1.4. Ceramic Tile

- **Type:** Style 1 Porcelain
- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** Daltile
- **Color:** Earth tones
- **Finish:** Matte, slip resistant
- **Model #:** Porcelain tile
- **Other:** Use in high traffic areas. Epoxy grout is recommended.

UFGS: Section 09 30 10 Ceramic, Quarry, and Glass Tiling
Type: **Style 2 Ceramic**

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

Mfr: Daltile

Color: Earth tones

Finish: Matte, slip resistant

Model #: Ceramic tile

Other: Use in low traffic area toilet rooms.

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

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**E02.1.5. Resilient Floor**

Applicable N/A Number of base standards 1

Type: **Style 1 Stair Treads**

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

Mfr: Roppe

Color: Neutral tones

Finish: Factory

Model #: Raised design rubber tread

Other: Stair treads material

UFGS: Section 09 65 00 Resilient Flooring
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 65 00.pdf
E02.1.6. Carpet

Type: **Style 1**

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

Mfr: Mohawk Group

Color: Neutral multi-colored tones/patterned/solid

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

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

Other: N/A

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

Type: **Style 2**

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

Mfr: Mohawk Group

Color: Earth tones

Finish: Factory

Model #: Broadloom, residential loop, “Smartstrand”

Other: N/A

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

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E02.1.7. Rapidly-Renewable Products

- Applicable

- N/A

E02.1.8. Other

- Applicable

- N/A
E03. Walls

E03.1. Wall Materials

Facility Group 1 wall materials shall be as follows.

Primary: Ground face CMU (or as approved by the BCE)
Secondary: Gypsum board (painted)
Tertiary: Ceramic tile (restrooms)

Facility Group 2 wall materials shall be as follows.

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

Facility Group 3 wall materials shall be as follows.

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

Facility Group 4 wall materials shall be as follows.

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

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

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

3. Provide ceramic tile on wet walls of kitchens, toilet rooms, locker rooms, etc., in all facility groups.

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

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

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

7. Hardwood chair rails / bumper rails may be used in high-use areas of Groups 1 and 2; aqueous clear finishes are preferred to reduce maintenance; plastic chair rails are permitted only in medical applications.

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

9. Corner guards are permitted only in high traffic spaces with wheeled or cart use such as private service areas in Groups 1 and 2; stainless steel corners guards with a brushed finish may be judiciously used in Group 3.

10. Group 4 may use painted composite wood base.

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

Note: Apply the below base-wide standards for Walls (products, materials and color). Then refer to the Appendix and apply any additional requirements specifically related to the Facility District in which the project is located.
### E03.1.1. Concrete

- Applicable: Yes
- N/A: No

### E03.1.2. Masonry

- Applicable: Yes
- N/A: No

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

- **Applies to:**
  - Group 1
  - Group 2
  - Group 3
  - Group 4
  - Other
- **Mfr:** Custom, TBD
- **Color:** Medium or dark tan
- **Finish:** Light texture
- **Model #:** Coursed unit masonry
- **Other:** N/A

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

[http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 33 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 03 33 00.pdf)

### E03.1.3. Ceramic Tile

- Applicable: Yes
- N/A: No

**Type:** Style 1

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

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

### E03.1.4. Gypsum Board

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

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

### E03.1.5. Metal Panels

- **Applicable:** N/A

### E03.1.6. Wood Paneling

- **Applicable:** N/A

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

### E04.1. Ceiling Materials
Facility Group 1 ceiling materials shall be as follows.

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

Facility Group 2 ceiling materials shall be as follows.

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

Facility Group 3 ceiling materials shall be as follows.

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

Facility Group 4 ceiling materials shall be as follows.

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

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

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

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

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

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

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

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](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

Type: **Style 1 All Purpose**

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

Mfr: Armstrong

Color: White

Finish: Factory

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

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

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

Type: **Style 2 Kitchen**

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

Mfr: Armstrong

Color: White

Finish: Factory

Model #: Kitchen – 2’ x 2’ Ceramaguard

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

UFGS: Section 09 51 00 Acoustical Ceilings
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 09 51 00.pdf
### E04.1.4. Gypsum Board

<table>
<thead>
<tr>
<th>Type:</th>
<th><strong>Style 1</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to:</td>
<td>Group 1, Group 2, Group 3, Group 4</td>
</tr>
<tr>
<td>Mfr:</td>
<td>US Gypsum</td>
</tr>
<tr>
<td>Color:</td>
<td>Solid neutral colors</td>
</tr>
<tr>
<td>Finish:</td>
<td>Paint (sheen per UFGS)</td>
</tr>
<tr>
<td>Model #:</td>
<td>Tapered edge</td>
</tr>
<tr>
<td>Other:</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**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

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### E04.1.5. Metal Panels

| Applicable | N/A |

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### E04.1.6. Wood

| Applicable | N/A |

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### E04.1.7. Rapidly-Renewable Products

| Applicable | N/A |

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### E04.1.8. Other

| Applicable | N/A |

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### E05. Doors and Windows

Comply with Air Force Corporate Standards for Doors and Windows:  

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### E05.1. Doors and Windows and Frames Materials
Facility Group 1
do (frame) and window frame materials shall be as follows.
Primary: Aluminum, clear anodized
Secondary: Hollow metal (painted)
Tertiary: N/A

Facility Group 1
do (leaf) materials shall be as follows.
Primary: Hardwood veneer
Secondary: Hollow metal (painted)
Tertiary: N/A

Facility Group 2
do (frame) and window frame materials shall be as follows.
Primary: Aluminum, clear anodized
Secondary: Hollow metal (painted)
Tertiary: N/A

Facility Group 2
do (leaf) materials shall be as follows.
Primary: Hardwood veneer
Secondary: Hollow metal (painted)
Tertiary: N/A

Facility Group 3
do (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
do (leaf) materials shall be as follows.
Primary: Hollow metal (galvanized, painted)
Secondary: Hollow metal (galvanized, painted)
Tertiary: N/A

Facility Group 4
do (frame) and window frame materials shall be as follows.
Primary: Wood
Secondary: N/A
Tertiary: N/A

Facility Group 4
do (leaf) materials shall be as follows.
Primary: Wood solid core
Secondary: Composite solid core
Tertiary: N/A

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

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

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

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

### E05.1.2. Hollow Metal

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

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

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

Mfr: Steelcraft

Color: Neutral colors

Finish: Paint (Sheen per UFGS)

Model #: Hollow metal, frame grouted solid

Other: Satin stainless steel hardware

UFGS: Section 08 11 13 Steel Doors and Frames
Section 08 71 00 Door Hardware
https://www.wbdg.org/FFC/DOD/UFGS/UFGS_08_71_00.pdf

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**E05.1.3. Wood**

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

Type: **Style 1, Administrative**

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

Mfr: Simpson

Color: Natural hardwood veneer

Finish: Clear Sealer, satin (aqueous)

Model #: 3'x7'x 1 ¾", solid core

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

UFGS: Section 08 14 00 Wood Doors
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
### Style 2, Residential

<table>
<thead>
<tr>
<th>Type</th>
<th>Style 2, Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applies to</td>
<td>Group 1  Group 2  Group 3  Group 4  Other</td>
</tr>
<tr>
<td>Mfr</td>
<td>Simpson</td>
</tr>
<tr>
<td>Color</td>
<td>Natural hardwood veneer or paint grade</td>
</tr>
<tr>
<td>Finish</td>
<td>Clear Sealer or paint, satin (aqueous)</td>
</tr>
<tr>
<td>Model #</td>
<td>Full slab or panels</td>
</tr>
<tr>
<td>Other</td>
<td>Satin nickel hardware</td>
</tr>
</tbody>
</table>

**UFGS:**
- Section 08 14 00 Wood Doors
  - [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 14 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 14 00.pdf)
- Section 08 71 00 Door Hardware
  - [https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf](https://www.wbdg.org/FFC/DOD/UFGS/UFGS 08 71 00.pdf)

#### E05.1.4. Other

- Applicable: ○ N/A

#### E06. Casework Systems

Comply with Air Force Corporate Standards for Casework Systems:

#### E06.1. Casework Materials

1. Select casework systems and materials considering durability, maintenance requirements and LCCA.
2. Natural stone and cast stone countertops may only be used in Group 1 with approval on a case basis.
3. Metal cabinets and countertops shall be provided in heavy-use operations and in Group 3.
4. Refer to AFCFS for approved materials.
5. Manufacturers listed below are only provided to establish a baseline of equivalency among all applicable manufacturers.
E06.1.1. Plastic Laminate

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

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

- **Mfr:** Formica

- **Color:** Medium Earth tones and neutral tones

- **Finish:** Light textured

- **Model #:** High pressure laminate

- **Other:** Combine with matching solid-surface banding on casework edges.

- **UFGS:** Section 06 41 16.00 10 Plastic-Laminate-Clad Architectural Cabinets

---

E06.1.2. Solid Polymer Surface

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

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

- **Mfr:** Corian

- **Color:** Medium Earth tones and neutral tones

- **Finish:** Light textured

- **Model #:** Solid Surface

- **Other:** Faces and edge banding

- **UFGS:** Section 12 36 00 Countertops
  - [http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf](http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf)
E06.1.3. Rapidly-Renewable Products

Applicable: Yes  N/A  Number of base standards 1

**Type:** **Style 1** Moderate Use Areas

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

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E06.1.4. Metal

Applicable: Yes  N/A  Number of base standards 1

**Type:** **Style 1**

**Applies to:** [ ] Group 1  [ ] Group 2  [x] 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

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E06.1.5. Other

Applicable: No  N/A
E06.2. Countertop Materials

E06.2.1. Plastic Laminate

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

- Applies to: ☐ Group 1 ☐ Group 2 ☐ Group 3 ☐ Group 4 ☐ Other
- Mfr: Formica
- Color: Medium Earth tones and neutral tones
- Finish: Light textured
- Model #: High pressure laminate
- Other: Only use rounded half or full bullnose and integral backsplash. Do not use plastic laminate edge banding on front edges.

UFGS: Section 06 41 16.00 10 Plastic-Laminate-Clad Architectural Cabinets

http://www.wbdg.org/FFC/DOD/UFGS/UFGS 06 41 16.00 10.pdf

E06.2.2. Solid Polymer Surface

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

- Applies to: ☐ Group 1 ☐ Group 2 ☐ Group 3 ☐ Group 4 ☐ Other
- Mfr: Corian
- Color: Medium Earth tones and neutral tones
- Finish: Light textured
- Model #: Solid Surface
- Other: Faces and edges

UFGS: Section 12 36 00 Countertops

http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf
E06.2.3. Natural Stone

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

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

Mfr: Local (TBD)

Color: Neutral tones

Finish: High polish, sealer

Model #: Custom cut slabs

Other: N/A

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

---

E06.2.4. Cast Stone

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

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

Mfr: Local (TBD)

Color: Neutral tones

Finish: High polish, sealer

Model #: Custom cast or cut slabs

Other: N/A

UFGS: Section 12 36 00 Countertops
http://www.wbdg.org/FFC/DOD/UFGS/UFGS 12 36 00.pdf
E06.2.5. Metal

Applicable □ N/A

Number of base standards 1

- Type:
- Applies to: □ Group 1 □ Group 2 □ Group 3 □ Group 4 □ Other
- Mfr: Local (TBD)
- Color: Natural stainless steel
- Finish: Mill
- Model #: Custom fabricated countertops
- Other: Provide integral fronts, sides and backsplash

UFGS: Section 12 31 00 Manufactured Metal Casework
http://www.wbdg.org/FFC/DOD/UFGS/UFGS_12_31_00.pdf

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:

E07.2. Accessories

Comply with AF Corporate Standards for 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:

E08.2. Interior Signs Materials
1. Natural stone, masonry and cast stone signs may only be used in Group 1 with approval on a case basis.

E09. Lighting, Power and Communication

E09.1. Functionality and Efficiency
Comply with Air Force Corporate Standards for Functionality and Efficiency:

E09.2. Types and Color
F. APPENDIX - Facility Districts

- Applicable
- N/A

Comply with Air Force Corporate Standards for Facility Districts:
http://afcfs.wbdg.org/facility-districts/index.html

Facilities Districts Overview Map:

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

Enter No. of Facility Districts  1

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

Map of District

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

<table>
<thead>
<tr>
<th>Group</th>
<th>Applicable</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 2</td>
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<tr>
<td>Group 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 4</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
FACILITY DISTRICTS

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

1. Main Base
Maintain the Main Base district as Beale AFB’s central business district. Facilities in this district include Unaccompanied Enlisted Personnel Housing (UEPH) housing recreation, administrative, industrial, worship, and commercial. These shall follow standards for Facility Groups 1, 2 and 3 as defined in this IFS.

2. Flightline
Flightline district facilities serve operational functions and include aircraft maintenance hangars, fire station and fire training, squad operations, and warehouses. Facilities in this district are typically monumental in scale and industrial in nature. Generally match adjacent buildings to ensure architectural compatibility and shall follow standards for Facility Group 3 as defined in this IFS.

3. Housing
The Housing district accommodates military family housing and support functions including the Base Clinic, the Lone Tree School, Shoppette, Foothills Chapel, Youth and Child Care Centers, outdoor recreational facilities and housing for bachelor/visiting officers. Maintain the distinct character of the site and locale, in the oak-covered foothills of the Sierras, and preserve natural amenities. Buildings in this district shall follow standards for Facility Groups 2 and 4 as defined in this IFS.

4. Open Space
The Main Base, Flightline and Housing districts at Beale AFB are separated by large expanses of open space. Preserve the flat grasslands which dominate the landscape, providing a strong sense of identity for the base. Maintain the appearance of the Main Base and Flightline districts as “towns or oases in the plains.” Appropriately design facilities in response to the transition in ecoregions from the California Central Valley to the hilly oak savanna on the east side of the base. Preserve view corridors to landmarks such as the PAVE PAWS.

Facilities in the open space area are limited to industrial support functions including the waste water treatment plant, fuel storage, munitions storage, firing ranges and radar installations. Follow standards for Facility Group 3 as defined in this IFS.

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

The following “Beale AFB IFS Supplementary Documents” were extracted from the 2017 Beale AFB Design Compatibility Guide (DCG). These documents represent individual sections from the earlier DCG except Sections 1.0 thru 6.0, which are superseded by this IFS. Any references to Sections 1.0 thru 6.0 of the DCG are addressed under applicable sections of this IFS. In the event information in a supplementary document conflicts with this IFS, the IFS shall govern.

Beale AFB IFS Supplementary Documents
1.0 Superseded by IFS
2.0 Superseded by IFS
3.0 Superseded by IFS
4.0 Superseded by IFS
5.0 Superseded by IFS
6.0 Superseded by IFS
7.0 Beale AFB Fire Protection 2017.pdf
http://www.wbdg.org/FFC/AF/AFIFS/7.0_Beale_AFB_Fire_Protection_2017.pdf

8.0 Beale AFB Civil Design 2017.pdf

9.0 Beale AFB Structural Design 2017.pdf

10.0 Beale AFB Mechanical (and Plumbing) Design 2017.pdf