



**DEPARTMENT OF THE ARMY**  
**ASSISTANT CHIEF OF STAFF FOR INSTALLATION MANAGEMENT**  
**600 ARMY PENTAGON**  
**WASHINGTON, DC 20310-0600**

DAIM-ZA

MAR 13 2012

**MEMORANDUM FOR**

Commander, United States Army Corps of Engineers (CEMP), 441 G St NW,  
Washington, DC 20314  
Director, Installation Management Command, 2405 Gun Shed Road, Fort Sam  
Houston, TX 78234

**SUBJECT: Army Standard for USAF Battlefield Weather Facility**

1. The enclosed, new Army Standard for the USAF Battlefield Weather Facility is approved for implementation. Only the Assistant Chief of Staff for Installation Management has authority to approve exceptions to this standard. Waivers from the Army Standard must be approved in accordance with AR 420-1.
2. The Army Standard is effective for Military Construction, Army design and mandatory, where possible within statutory limitations, for Sustainment, Restoration and Modernization projects in FY2013 and beyond. Designs based on the Army Standard and the Army Standard Design criteria will be developed consistent with MILCON Transformation methodologies.
3. The points of contact for the Facilities Design Team are LTC Russell Reiter, DAMO-FMI, [russell.reiter@conus.army.mil](mailto:russell.reiter@conus.army.mil), (703) 693-3138; Mr. William Spendley, DAMI-OPO, [william.spendley@us.army.mil](mailto:william.spendley@us.army.mil), (703) 695-1915; Ms. Elizabeth Troeder, DAIM-ODO, [elizabeth.g.troeder.civ@mail.mil](mailto:elizabeth.g.troeder.civ@mail.mil), (571) 256-8148; and Mr. Eric Garcia, USACE SAS, [eric.p.garcia@usace.army.mil](mailto:eric.p.garcia@usace.army.mil), (912) 652-5158.

Encl

**MICHAEL FERRITER**  
Lieutenant General, GS  
Assistant Chief of Staff  
for Installation Management



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## **Army Standard for United States Air Force Battlefield Weather Support Facilities for Squadrons and Detachments**

**21 February 2012**

### **Description:**

The United States Air Force Battlefield Weather Support Facility (BWF) for Squadrons (SQDNs) and Detachments (DETs) on Army Installations provides a consolidated Support Facility on Army Installations to house, train, and sustain USAF Battlefield Weather units in direct support to Army units IAW AR 115-10. Includes administrative, personnel support, and maintenance space allowances typically provided in Army Battalion Headquarters (SQDN BWF) or Company Admin & Supply (DET BWF) facilities configured for USAF organizational structure (composition), functions, and operations IAW AR 115-10. The BWF requires both administrative and readiness modules.

### **Applicability:**

- The Army Standard (AS) applies to the planning, programming, design, construction, assignment of, and reuse for BWF on Army Installations under the provision of AR 115-10.
- All USACE geographic districts shall incorporate the mandatory design criteria described herein in close coordination with the USACE designated Center of Standardization (COS) for BWF (Savannah District (CESAS)) on Army Installations. All BWF projects must be reviewed by the COS to ensure conformance with the AS.
- This AS incorporates space allowances, standards, and or criteria, which may be in conflict with criteria contained in AR 405-70, with the exception of administrative space. Where such conflicts exist, other than administrative space, this AS shall serve as the primary authority for BWF on Army installations.

### **Waivers:**

- Only the Assistant Chief of Staff for Installation Management (ACSIM) has authority to approve exceptions to the AS.
- Waivers from the AS must be requested in accordance with the AR 420-1 and the Army Facilities Standardization Program Charter, latest edition.

The Guidance Section, following the Mandatory Criteria table, provides instructions and definitions necessary for the application of the mandatory requirements contained in the tabular section of the AS. As such, use the guidance in conjunction with the AS Mandatory Criteria to ensure the intent and embedded functionality contained herein will meet the Army's mandatory requirements set forth by this Standard.

ITEM	ARMY STANDARD MANDATORY CRITERIA
	<p>This table provides the mandatory spatial and functional allowances for the BWF. Planners shall use these mandatory criteria to develop space allowances for modules of a BWF before considering development of unique or specialized space allowances apart from those set forth in this AS.</p> <p>All design agents shall incorporate the key mandatory design features described herein in close coordination with the US Army Corps of Engineers (USACE) designated Centers of Standardization (COS) for BWF (Savannah District (CESAS)). All BWF projects must be reviewed by CESAS.</p> <p>Provide all functional areas and functionality to both SQDN BWF and DET BWF, unless otherwise indicated.</p>
Facility Concept	<p>The BWF is similar to the Company Operations Facility (COF) in that the BWF provides an Admin Module for offices and admin support functions, and a Readiness Module consisting of the Personnel Support Bay and the Equipment Support Bay. The BWF has a larger Admin Module for the weather analysis functions that the flights perform, as well as differences in the Readiness Module. The command group offices for the BWF for SQDNs are similar to the command group offices for the Battalion Headquarters (BN HQ) as they are commanded by officers of the same rank.</p>
Sizes	<p>There are two standard buildings, each with two standard sizes:</p> <ul style="list-style-type: none"> <li>• USAF <i>Squadron</i> Battlefield Weather Facility (SQDN BWF): The large accommodates 60-85 personnel (PN) with SQDN staff overhead, four (4) flights and a support flight. The small accommodates 30-50 (PN) with SQDN staff overhead, two (2) flights and a support flight.</li> <li>• USAF <i>Detachment</i> Battlefield Weather Facility (DET BWF): The large accommodates 45 to 60 PN with three (3) flights and a support flight. The small accommodates 20-40 PN with two flights and a support flight. DETs do not have the staff overhead, thus have a smaller footprint overall.</li> </ul>
<b>SITE PLANNING</b>	
Site Planning	<p>The optimal site provides proximity to the senior supported tactical commander and the Installation Air Complex. Line of site to a stationary satellite is a required operational condition.</p>

<b>GROSS AREA of FACILITIES</b>																	
Gross Area of Facilities (FCC 141XX)	<p>BWF gross area of facilities applies to new construction only, apply net areas for each functional area when repurposing facilities:</p> <table style="margin-left: 40px;"> <tr> <td>Large SQDN</td> <td>19,800 GSF</td> </tr> <tr> <td>Small SQDN</td> <td>13,300 GSF</td> </tr> <tr> <td>Large DET</td> <td>13,900 GSF</td> </tr> <tr> <td>Small DET</td> <td>11,700 GSF</td> </tr> </table> <p>Secure Tactical Vehicle Area:</p> <table style="margin-left: 40px;"> <tr> <td>Large SQDN</td> <td>5,400 SY</td> </tr> <tr> <td>Small SQDN</td> <td>3,400 SY</td> </tr> <tr> <td>Large DET</td> <td>4,400 SY</td> </tr> <tr> <td>Small DET</td> <td>2,800 SY</td> </tr> </table> <p style="text-align: center;">NOTES:</p> <ol style="list-style-type: none"> <li>1. Gross Area of Facilities Gross Square Feet (GSF) Deviation: Facility constructed gross area shall not exceed 105% of space allocation set forth in this document to accommodate site, construction, or environmental factors.</li> <li>2. Design projects will fully comply with the Sustainable Design &amp; Development (SDD) policy as stated in Memorandum, ASA (IE&amp;E), 27 Oct 10, subject: Sustainable Design and Development Update (Environmental and Energy Performance). The programmed amount and square footage will be adjusted by the Department of Army after the 3086 review to incorporate energy enhancements to fully comply with the SDD policy.</li> </ol>	Large SQDN	19,800 GSF	Small SQDN	13,300 GSF	Large DET	13,900 GSF	Small DET	11,700 GSF	Large SQDN	5,400 SY	Small SQDN	3,400 SY	Large DET	4,400 SY	Small DET	2,800 SY
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<b>ADMIN MODULE</b>																	
Admin Module	The Admin Module consists of two areas, the Command Group Offices area and the office and admin Special Purpose Space area.																
Command Group Offices	<p>Provide a Command Group of offices for each SQDN.</p> <ol style="list-style-type: none"> <li>1. The Command Group shall consist of Private Offices for the SQDN Commander (200 net square feet (NSF)), the Superintendent (150 NSF), and the First Sergeant (110 NSF).</li> <li>2. Provide two (2) Open Office Workstations for executive support personnel within the Command Group, NMT six (6) feet x eight (8) (48 NSF) each, with executive file space of 88 NSF.</li> <li>3. Provide a Command Group Reception Area NMT 60 NSF.</li> <li>4. Provide a Command Group File Storage area NMT (88 NSF)</li> <li>5. Provide a Private Restroom for the Command Group (54 NSF).</li> <li>6. Provide a Command Conference Room with a conference table seating of NMT 12 seats and 12 side seats for the large SQDN and NMT 8 seats and 8 side seats for the small SQDN.</li> </ol> <p>The basis of allowance is one (1) Command Group per SQDN BWF. The DET BWF does not have a Command Group.</p>																

Private Offices	<p>SQDN: Provide two (2) Private Offices for the SQDN BWF: Director of Operations (150 NSF) and the Assistant Director of Operations (110 NSF).</p> <p>DET: Provide three (3) Private Offices for the DET BWF: DET Commander (150 NSF), DET Operations Officer (150 NSF), and Senior Enlisted NCOIC (110 NSF).</p>
Semi-Private Offices	<p>Provide Semi-Private Offices of 150 NSF each as follows:</p> <p>Large SQDN BWF: Provide for each pair (four (4) pairs) of Flight Commanders and NCOICs, and one (1) for the Support Flight Commander and NCOIC pair.</p> <p>Small SQDN BWF: Provide for each pair (two (2) pairs) of Flight Commanders and NCOICs, and one (1) for the Support Flight Commander and NCOIC pair.</p> <p>Large DET BWF: Provide for each pair (three (3) pairs) of OIC-NCOIC team leaders.</p> <p>Small DET BWF: Provide for each pair (two (2) pairs) of OIC and NCOIC team leaders.</p>
Open Office, General Purpose (GP) Workstation	<p>Provide Open Office space for all personnel not in Private or Semi-Private Offices. Provide 48 (NSF) for each Open Office GP Workstation. The allowance of GP Workstation size (six (6) feet by eight (8) feet) may not be reconfigured without waiver.</p>
Organizational Classrooms	<p>Provide an Organizational Classroom, NTE 800 NSF for large SQDNs and DETs, and NTE 600 NSF for small SQDNs and DETs. The Organizational Classroom requires 15 Secret Internet Protocol Router (SIPR) drops to train an entire flight at one time. Provide the room with a movable divider and access control.</p>
SIPR Café with COMSEC Storage and Secure File Storage	<p>Provide a SIPR Café as a separate room with 200 NSF and four (4) SIPR drop stations. Provide space for a container for Communications Security (COMSEC) / Controlled Cryptographic Item (CCI) storage IAW AR 380-40. Provide space for a container for Secure File Storage for classified files IAW AR 380-5. Provide access control.</p>
File Storage	<p>Provide File Storage space (88 NSF) in the Open Office space for the flights.</p>
General Purpose (GP) Storage	<p>Provide GP Storage space (96 NSF) in the Open Office space for the flights.</p>
Break Room	<p>Provide a Break Room (NTE 108 NSF).</p>
Printer / Copier	<p>Provide Printer / Copier space (96 NSF) in the Open Office area.</p>

<b>READINESS MODULE</b>	
Readiness Module	The Readiness Module consists of two bays, the Personnel Support Bay and the Equipment Support Bay.
<b>Personnel Support Bay</b>	
Shower Rooms	Provide showers for 100 % of the military strength to shower after daily unit PT. Provide showers at a ratio of 75:25 for the ratio of men to women at the SQDNs and 75:25 for the DETs. Provide half-length shower lockers for at a ratio of 3:1 lockers to showers. See guidance section for throughput criteria.
Battlefield Airman Management System (BAMS) lockers	The Personnel Support Bay provides space for Battlefield Airman Management System (BAMS) lockers / cages (18 NSF per PN) for the <i>authorized military strength</i> of the SQDN or DET.
<b>Equipment Support Bay</b>	
Arms Vault	Provide an Arms Vault of 400 NSF for SQDNs and DETs. The Arms Vault accommodates arms, ammunition, and explosives. The design includes the option for use of prefabricated, modular vaults.  (Note: Basis of weapons issue is 1 M-9 (or replacement) and 1 M-4/M-16 per service member for each of the SQDN and DET staffs.)
Multi-Purpose Room	Non-Waiverable (NW). Within the Equipment Support Bay, provide required Multi-Purpose Space. Provide an area with no ceiling and no ceiling obstructions (no duct work, no electrical work, or other obstructions) four feet by four feet to set up the Tactical Meteorological Observing System – 53s (TMQ-53s) for maintenance. Provide this space with no obstruction for maintenance for NLT two (2) TMQ-53s with a radius of eight (8) feet for each TMQ-53 for large SQDNs and large DETs. Provide this space for maintenance with no obstructions for NLT one (1) TMQ-53 with a radius of eight (8) feet for small SQDNs and small DETs.
Radio Maintenance	Provide bench maintenance space for radio repair in Multi-Purpose Room.
Communications Equipment Storage	Provide Communications Equipment Storage space for unit radios and communications equipment (94 NSF).
Non-Sensitive Secure Storage	Provide Non-Sensitive Secure Storage (NSSS) space 166 NSF, plus 24 NSF (six (6) feet by four (4) feet) for each TMQ-53 set on the unit's authorized equipment list.  Large SQDN 525 NSF (based on 14 TMQ-53s) Small SQDN 400 NSF (based on eight (8) TMQ-53s) Large DET 400 NSF (based on eight (8) TMQ-53s) Small DET 325 NSF (based on six (6) TMQ-53s)
NBC Storage	Provide NBC Storage space (94 NSF).

Unit Equipment Storage	<p>Provide Unit Equipment Storage (organizational storage) for other unit equipment with climate control to prevent dry heat and humid heat from producing dry rot and mold of canvas and cloth equipages, as well as allow the same equipages to dry in either humid or cold climates.</p> <p>Large SQDN 500 NSF  Small SQDN 250 NSF  Large DET 300 NSF  Small DET 200 NSF</p>
<b>BUILDING FUNCTIONALITY</b>	
Accessibility	BWF shall comply with Architectural Barriers Act (ABA) Accessibility Standard for Department of Defense Facilities.
Telecommunications	Provide Telecommunications infrastructure to meet Installation Information Infrastructure Architecture (I3A) and American National Standards Institute/Telecommunications Industry Association/Electronic Industries Alliance (ANSI/TIA/EIA) 568 and 569 requirements. Provide NIPR and SIPR communications infrastructure per ISEC.
<b>SITE FUNCTIONAL ELEMENTS</b>	
Exterior Training Area	(NW) Provide a 10 ft X 10 ft covered hardstand with three electrical power outlets (120 Volt), and lighting. Provide a grass or dirt training area immediately adjacent to the hardstand for setting up at least three (3) TMQ-53s, one tactical weather radar, and one tactical satellite communication system for training. Each TMQ-53 and the tactical weather radar requires the area of an eight (8) foot radius when set up, plus circulation area, for weather personnel to train around them. The tactical satellite communications system footprint is negligible. The grass or dirt training area requires line-of-sight to geostationary equatorial satellites.
Privately Operated Vehicle (POV) Parking	Provide POV parking for 90% of authorized strength in the BWF on the facility site.
Organizational Vehicle Parking	<p>Provide a secured organizational vehicle parking area for Trucks, Utility: Cargo / Troop Carrier 1-1/4 Ton 4x4 W/E (HMMWV) with Light Tactical Trailers, ¾ Ton:</p> <p>SQDNs have:  15-20 each for a large SQDN  10-15 each for a small SQDN</p> <p>DETs have:  15-20 each for a large DET  5-10 each for a small DET</p>
Helium Storage	Provide Helium Storage space (48 NSF) (SQDNs only).

## **GUIDANCE**

1. General. The following guidance for application of the BWF AS is provided for design agent use in coordination with the Garrison Department of Public Works or equivalent.
2. COMPLIANCE THRESHOLD. The AS may identify an Army regulation, technical guide or other written guidance as mandatory criteria. The Corps of Engineers Center of Standardization (COS) provides the first line technical compliance review. The FDT, in conjunction with the COS, will resolve any issues where there may be conflicting, unclear, or no compliance measurement threshold. Resolution may require senior leadership guidance or amendment of the AS. Only the ACSIM may approve adjustments or changes to the requirements in an AS. The AS is not intended to provide compliance criteria detailed in references, regulations, industry standards, or standard design.
3. The BWF AS simultaneously addresses past issues, current needs, and future requirements. It provides the capability to accommodate requirements without the need for new construction by providing an objective basis for evaluating existing facilities at the functional area level. There is a band of acceptability in the application and implementation of these standards. However, the range of acceptability is determined through a Functional Review process and deviation from this standard will equally consider implications on future requirements embedded herein and the potential impact of follow-on or retrofit construction activities on readiness as well as current situation.

### **Design Philosophy**

1. In some cases, the functional and spatial relationships are NW under the Army Facilities Standardization Program and outside the purview of the ACSIM. These NW relationships or mandatory requirements are governed either by Army Regulations or by doctrine. Any deviation from these requirements must be coordinated through the operational chain of command to HQDA and approved by the Deputy Chief of Staff, G-2, HQDA, ICW the Air Staff prior to programming or designing BWF. Waiver of NW requirements will be completed BEFORE any adjudication of deviation from this AS will be authorized. When a building is to be renovated or modernized, they must meet the NW functional requirements contained in this AS.
2. There are two configurations, dependent on whether the BWF is for a SQDN or a DET. Spatial relationships and allowances normally provided in Army facilities that are relative equivalents to USAF Weather units (battalion to squadron; company to detachment) are also provided in this AS. These functional elements, as incorporated, do not conflict with facilities consolidation mandatory criteria. When USAF functions, tasks, or operational considerations warrant, this Standard incorporated modifications to Army Standards (e.g., battalion or company administration, training, maintenance, etc). The BWF has notable differences in administrative space requirements and readiness requirements from the Company Operations Facility (COF).

### **Application Guidance**

This guidance is for design agent use for application of the AS mandatory criteria to meet the intent of the spatial and functional allowances in the Mandatory Criteria. Coordinate application herein with the Garrison DPW or equivalent (Installation Management Command Regional Office for Army units on non-Army installations).

When space standards and criteria for modules or components are not used, the Functional Proponent, in conjunction with the Facilities FDT and COS, will review and validate functional or operational requirements prior to the development of any unique or specialized space allowance(s) and before incorporating into a project programming document or facility design.

1. Site Planning. A site close to the supported Army unit helps the SQDNs or DETs work to align closely and keep in regular communications with the units they support, attending the supported Army unit's operations meetings regularly. The site must support line-of-site to a stationary satellite. See guidance on antennas below.
2. Gross area of Facilities. Calculate Gross Area per AR 405-70 and DA PAM 405-45.
3. Command Group Offices. Provide secure video teleconferencing in the Command Conference Room. Provide overhead projection, NIPR / SIPR / secure voice connectivity and audio / visual control console constructed to meet SECRET requirements.
4. Private Offices. Additional private offices are acceptable without waiver based on unit specific mission, provided GSF does not exceed Programmed Amount (PA).
5. Semi-Private Offices. Semi-private offices are shared offices designed for two personnel and that provide acoustic isolation from other offices. Locate the Flight Commander / NCOIC semi-private offices directly adjacent to their reporting flight's Open Office area.
6. Open Office, General Purpose Workstation. The Open Office Work Area is composed of GP Workstations. Do not program office space for those positions in the SQDNs and DETs permanently allocated to support operations at the airfield.
7. Organizational Classrooms. Fifteen SIPR drops allow an entire flight or team to train together before deployment. Provide appropriate lock for SIPR use on Training Room door.
8. SIPR Café with COMSEC Storage and Secure File Storage. Locate COMSEC Storage in the SIPR Café. Locate Secure File Storage in the SIPR Café. The COMSEC Storage and Secure File Storage NSF are additive to the SIPR Café NSF.
9. File Storage. File storage is an added allocation to the workstations in the open areas. It does not need to be enclosed or specifically delineated.
10. GP Storage. This room may be lockable with GP locking devices but will not be used as a substitute classified storage area.
11. Break Room. The break room requires close proximity to admin spaces.
12. Printer / Copier Space. Provide a printer / copier area for each 25 people in Open Office areas.
13. Shower Rooms. USAF weather units require sufficient showers for 100% of SQDN or DET personnel to shower after physical training within a period of 45 minutes.
14. Battlefield Airman Management System (BAMS) Lockers. The lockers support the equipment issued to each Airman. BAMS is analogous to TA-50.
15. Multi-Purpose Area. The multi-purpose space for the TMQ-53 requires swing space above the ten (10) foot height of the TMQ-53 for setup and maintenance procedures. Multi-purpose space is used also as meeting / training space when the SQDN or DET requires an 'all hands' meeting, and other SQDN or DET missions.
16. Non-Sensitive Secure Storage. There are five (5) equipment containers per TMQ-53 set.

SQDNs have up to 14 TMQ-53s. DETs have up to eight (8) TMQ-53s. Provide appropriate level of security for command-accountable equipment.

17. Unit Equipment Storage. Unit Equipment Storage includes Modified Table of Organization & Equipment (MTOE) items plus CTA items such as tentage and other field equipment.
18. Telecommunications. Locate telecommunications lines underground from the installation's telecommunications system to the main distribution equipment located in the telecommunications equipment room.
  - Provide telecommunications outlets in accordance with I3A technical guide.
  - Provide data outlets per the I3A technical guide based on functional purpose of the various spaces with the facility as modified by user special operational requirements.
  - Provide Secret Internet Protocol Routing Network (SIPRNET) access, installed in accordance with provisions of Technical Guide for the Integration of SIPRNET.
19. Exterior Training Area. The Anti-Terrorism / Force Protection (ATFP) setback area in front of the building is a possible TMQ-53 training area. Provide the space within 200 feet of the organizational classroom for operational purposes.
20. Antennae Platform. Verify positioning with unit based on satellite direction. No roof mounting of antennae.
21. Tactical Vehicle Secure Parking. Field maintenance support is the responsibility of the supported Army unit. Provide parking space for vehicles on long-term dispatch.
22. Helium Storage. This is a SQDN-level requirement. The requirement is for an outdoor, securable cage adjacent to the BWF.

#### **REFERENCE CRITERIA**

REFERENCES: Use latest editions of the following criteria for the design of the BWF:

- Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines
- AR 405-70, Utilization of Real Property
- AR 420-1, Army Facilities Management
- ASHRAE 189.1, Standard for the Design of High-Performance Green Buildings
- ER 1110-3-113, Engineering and Design, Department of the Army Facilities Standardization Program
- ETL 1110-3-491, Sustainable Design for Military Facilities
- UFC 1-200-01, General Building Requirements
- UFC 3-600-01, Design: Fire Protection Engineering for Facilities
- UFC 4-010-01, DoD Minimum Antiterrorism Standards for Buildings
- UFC4-023-03, Security Engineering: Design to Resist Progressive Collapse
- USAISEC Technical Guide for Installation Information Infrastructure Architecture (I3A)
- USAISEC Technical Guide for the Integration of SECRET Internet Protocol (IP) Router Network (SIPRNET)

- ANSI/TIA/EIA-568-B Commercial Building Telecommunications Cabling Standard
- ANSI/TIA/EIA-568-B Commercial Building Standard for Telecommunications Pathways and Spaces
- Memorandum, ASA (IE&E), 27 Oct 10, Subject: Sustainable Design and Development Update (Environmental and Energy Performance)