

Tinker Air Force Base
Installation Facilities Standards (IFS)

G01. TINKER AFB PROJECT PROCEDURES

Comply with Air Force Corporate Standards:

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

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G01.1. Introduction

1. The Air Force Corporate Facilities Standards (AFCFS), is an enterprise-wide program of facility standards establishing an acceptable level of quality and performance for facility design, facility operations and ongoing building maintenance.
2. Comply with Air Force Corporate Standards for Overview: <http://afcs.wbdg.org/index.html>
3. Comply with the "A. Overview" section of the Tinker AFB Installation Facilities Standards (IFS).

G01.2. BCE Project Submittal Requirements

1. The Air Force Corporate Facilities Standards (AFCFS), is an enterprise-wide program of facility standards establishing an acceptable level of quality and performance for facility design, facility operations and ongoing building maintenance.
2. Comply with Air Force Corporate Standards for Overview: <http://afcs.wbdg.org/index.html>
3. Comply with the "A. Overview" section of the Tinker AFB Installation Facilities Standards (IFS).

G01.3. TAFB Civil Engineering Records

1. Base Maps: TAFB maps in paper format (scale 1 inch to 100 feet are available from the following office:
Engineering Support Division

72 ABW/CE
Second Floor, Building 400
7535 5th Street
TAFB, OK 73145-9010

2. Electronic media records of base infrastructure and facility improvements are also available upon written request to the Office of 72 ABW/CE, also at the above street address.

G01.4. CE Engineering Vault in B400

1. The CE Vault is the repository for hardcopy "as-built" drawings for all constructed improvements on base. The Vault, being at full capacity, does not contain all as-built record drawings, since many are in digital format. The archived "Vault" data is the starting point from which 72 ABW/CE personnel plan the continuing program of base maintenance and improvement projects. Construction contractors use the Vault to find information about utilities and their locations, whereas design consultants use the vault at the beginning of project's development for determining project proximities to airfield zoning, site constraints, and utility rights-of-way.
2. Currently, the vault houses approximately 50,000 drawings. Some 30,000 of those are associated with specific facilities while approximately 20,000 are associated with groups of facilities and the overall grounds of Tinker. This inventory includes the runways, aprons, taxiways, and utility services such as electrical, liquid fuel, natural gas, industrial waste, water, and waste water. All Vault drawings have been scanned and are stored on a secure fileserver. Available file formats include a mix of AutoCAD, MicroStation, and TIF or PDF files. Customers must present a request to Engineering Support for copies of these files.
3. Located on the Second Floor in the northwest corner of Building 400, the Vault is open business days 0715-1600 hours to all TAFB personnel and their visitors.

G01.5. Vault Research Procedures

1. First-time visitors please check in at the Customer Support Desk located near the Vault entrance. Customers must present their requests to Engineering Support, and then allow support personnel time to research the desired information. Typically, Engineering Support provides files to the customer on CD. Hardcopies may be printed upon request. Before entering the Vault, sign-in on the Logbook located just outside the door. This maintains security and accountability for Vault drawings.
2. After drawings have been selected for copying or scanning to digital files, please ask assistance of Engineering Support personnel on the use of scanner/copier equipment. In most cases this step will not be needed since all drawings have already been scanned. The designer shall be responsible to field verify as-built drawings as the Government does not guarantee their accuracy.

G01.6. Construction Documents - Signed/Sealed Requirement

1. All Contractors shall be required to have final construction documents signed/sealed by a Registered Architect, registered in the State of Oklahoma, unless the Code Use Group by size/stories/capacity is specifically exempt from the provisions of the State Architectural and Registered Interior Designers Act. Reference the July 1, 2010 Oklahoma State Architectural and Interior Designers Act (OS 59-46 .1, Paragraph 46 .21b) which requires final construction documents to be signed/sealed by a Registered Architect.

G01.7. Model Building Codes and Construction Regulations

1. Comply with Air Force Corporate Standards: <http://afcfs.wbdg.org/index.html>

G01.8. Occupational Safety and Health Act / OSHA Regulations

1. OSHA Safety and Health Standards, as published in the CFR, USACE EM 385-1-1 Safety and Health Requirements Manual, and the Air Force Policy on Ozone Depleting Chemicals (ODC) regulate all construction practices, systems operation, and maintenance on base.

G01.9. National Fire Protection Association

1. Comply with DoD, AFCFS and IFS which refer to the current National Fire Code, including NFPA 101 Life Safety Code, as published by the National Fire Protection Association (NFPA), apply to base projects. Refer to IFS section E01.1.2. Codes and Regulations.

G01.10. Accessibility

1. Comply with DoD, AFCFS and IFS which refer to the Architectural Barriers Act (ABA).

G01.11. Sources of Technical and Procedural Requirements

1. The United States Government has many agencies of technical support. The following list directs the project designers and engineers to access design and construction publications which may be incorporated-by- reference to the standard.

DOD
United States Department of Defense
<http://www.dtic.mil/whs/directives/index.html>

USAF
United States Air Force
<http://www.e-publishing.af.mil/>

AFCEC
Air Force Civil Engineer Center
<http://www.afcec.af.mil>

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

IFS
<https://www.wbdg.org/ffc/af-afcec/installation-facilities-standards-ifs>

USACE
United States Army Corps of Engineers
<http://www.usace.army.mil>

USGPO
United States Government Printing Office
<http://www.access.gpo.gov>

NAVFAC
US Naval Facilities Engineering Command
<http://www.navfac.navy.mil>

Whole Building Design Guide
<http://www.wbdg.org/>

G01.12. Responsibilities of the Contractor

1. The contractor shall be responsible for accessing or obtaining all required publications referenced above that are recommended, mandatory, or applicable to the project's design and engineering.

G01.13. Model Variance from the Standard

1. Refer to section "A. Overview" of the IFS for references to waivers and exemptions. During the design and construction phases of TAFB projects, the contractor(s) shall each be responsible, during their respective phases, to notify the project's Contracting Office (CO) immediately of all project deficiencies relative to compliance with the TAFB Facility Standard and all other publications incorporated by reference hereto. The CO shall review the impact of all deficiencies to the original project scope and determine if a change in scope is warranted. Should a change in requirements be desirable on the part of the Government due to project limitations, written permission from the Office of the BCE is required.

G01.14. Cost Estimating

1. All cost estimates submitted in support of design and/or construction contracts for TAFB shall be based on costs of materials, equipment, and labor rates appropriate to the Oklahoma City area and shall be in full compliance with the current rule of the Federal Acquisition Regulations. All cost estimates shall be developed IAW UFC-3-740.
2. All estimates for change orders and the 8A Small Business Set Aside Program shall be prepared on AF Form 3052, and shall include labor hours, material, and bonding costs. The cost estimates for change orders and the 8A Program shall be presented in considerable detail.

G01.15. Design Documentation Format and GIS

1. GIS (Geographical information system) files shall be included for full design contracts which substantially change a facility footprint or install/replace substantial portions of utilities. GIS System files shall include either data tags or geo-spatial databases.
2. For contract deliverables that also require/include Geographical information System (GIS) data and printed materials as part of the product, the Tri-Services Spatial Data Standards for Facilities, Infrastructure and Environment SDSFIE (release 2.0 or later) shall be the minimum standard to which the delivered product must comply.
 - a. GIS products must include a hardcopy and an electric copy using the following format: ESRI ArcGIS (release 9.1 or later), ESRI Arc View (release 9.1 or later).
 - b. Any file structure and naming convention that falls outside the current SDSFIE specifications must be in accordance with, and be defined by, the requesting organization. This information should be provided by the Technical Representative of the Contracting Officer/TRCO. Geographic Datum, Projection System, and Working Units should also be provided by the TRCO.
 - c. If not otherwise indicated in the contract, any database material should be done in MS Access 2003 or later version. All products should be done in accordance with the current Operating System of Tinker AFB, i.e. MS Windows XP.
 - d. Data dictionary(s) shall follow the current version of the Tri-Services GIS Standard. Preferred Datum is North American Datum 1983, Grid Oklahoma North #3501. Units shall be measured in International Feet. If other data is used, the contractor shall furnish a "read-me" file indicating datum, grid and working units. Utilities information shall include, at a minimum, the installation date, pipe sizes and pipe materials.

3. The Contractor shall furnish digital design files and image files of final drawings along with the hard copy final design plans. When the contractor requirement calls for as-constructed drawings, all hard copies, design sheet files and image files shall so state "AS-BUILT" and date(s) of revision. Additionally, an electronic listing of drawings which detail Sheet Number, Sheet Sequence Number, Sheet Title, CADD file name, and Image File Name shall be provided in both hardcopy and electronic copy.
4. Complete copies of all CADD data and files developed shall be delivered to the Government on electronic digital media at both construction-issue and as-built phases of the project. For projects with electronic digital files the electronic digital data and files shall be provided on either Read/Write optical disk (CDRW), or compact disc read-only memory (CD-ROM). CDRW and CD-ROM are the preferred media. The electronic digital media shall be in a format which can be read and processed by the Government's target CADD system. The external label for each electronic digital media shall contain, at a minimum, the following information:
 - a. AF Project Number, Contract Number, Delivery Order Number (if applicable), and date of submission;
 - b. Type of submission (i.e. preliminary design, final design, or as-built);
 - c. Format and version of operating system software; i.e. WIN XP.
 - d. Name and version of utility software used for preparation (e.g. compression/decompression) and copying files to the media; i.e. WIN ZIP.
 - e. Sequence number of the digital media;
 - f. Schedule of filenames (to be contained in a "text" file on CD).

G01.16. CADD File Formats and Standards

1. CADD File Formats must follow these procedures prior to submission to 72 ABW/CE:
 - a. Remove all extraneous graphics outside the border area and set the active parameters to a standard setting or to those in the government-furnished seed file.
 - b. Make sure all reference files are attached without device or directory specifications.
 - c. Where compression is required, compress and reduce all design files using "PKZip" or other compatible file compression/decompression software approved by the Contracting Officer. If the file compression/decompression software is different from that specified above, then electronic digital media copy of the file compression/decompression software shall be purchased for 72 ABW/CE by the submitting consultant/contractor and provided with the submitted media.
 - d. Include all files, both graphic and non-graphic, required for the project (i.e. color tables, pen tables, font libraries, line style files, cell libraries, user command files, plot files, etc.).
 - e. Make sure that all support files such as those listed above are in the same directory and that reference to those files does not include device or directory specifications.
 - f. Include all standard sheets (i.e., abbreviation sheets, standard symbol sheets, etc.) that are necessary to completely describe the project.
2. Document any fonts, tables, etc. developed by the A-E or not provided among the Government-furnished materials. The contractor shall obtain Government approval before using anything other than the Government's standard fonts, line-types, tables or cells/blocks.
3. Each finished drawing (sheet) shall have its own separate image file. The image file for each finished drawing (sheet) shall have its own separate image file. The image file for each finished drawing shall be provided to the Government in Portable Document File (PDF).

4. Due to the fact many file formats are proprietary and not completely interchangeable; flexibility is required for file formats used. The following CAD file types may be furnished with the idea that context of information is maintained. The electronic format of all shall be in Autodesk AutoCAD 2004 or later.
 - a. AUTOCAD (DWG): Files in AutoCAD format shall NOT include XREFs or shape files as separate files, but rather be included in the drawing furnished. Specific font files (shx) used by any add-on software shall be included with the text file mentioning their inclusion.
5. When submitting drawings, designers shall follow the Tri-Services A/E/C CADD Standards (Release 3.0 or later) as published in the National CADD Standard. Also, the standards can be found at the web site: <https://cadbim.usace.army.mil>. The Tri-Services standard is an implementation of the National CADD Standard and thus, the National CADD Standard is also satisfactory. File structure, nomenclature, and assignment of layers, levels, and/or entities shall conform to those of the requesting organization. This information is to be provided by the Technical Representative of the Contracting Officer/TRCO.
 - a. Text index must be included on the media of the drawings as well as a description of the method of composition (attachment information).
 - b. Standard borders and cover sheets are provided to firms upon request. Border sheets are available in ANSI Standard A through D. D size borders are the preferred size.
6. Project designers shall submit all technical specifications to the 72 ABW/CE for review and compliance with project requirements. All specifications shall be formatted for desktop publishing in MS Word for Windows electronic format using the Unified Facilities Guide Specifications (UFGS) or SPECSINTACT.
7. Standard Specifications Section 00 70 00 (General Requirements) and Section 00 72 00 (Environmental Requirements) shall be incorporated without amendment to all minor Construction and all Repair Projects' construction specifications. Military Construction Projects shall also incorporate Sections 00 70 00 and 00 72 00 with amendments as approved by 72 ABW/CE.
8. Standard Specifications Section 00 70 00 (General Requirements) and Section 00 72 00 (Environmental Requirements) shall be incorporated without amendment to all minor Construction and all Repair Projects' construction specifications. Military Construction Projects shall also incorporate Sections 00 70 00 and 00 72 00 with amendments as approved by 72 ABW/CE.