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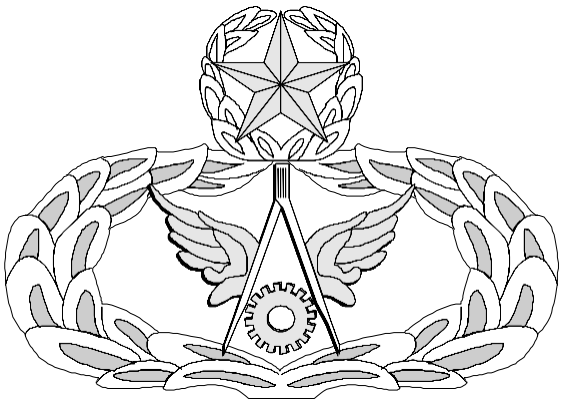
ENGINEERING



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CAREER FIELD EDUCATION AND TRAINING PLAN

CAREER FIELD EDUCATION AND TRAINING PLAN

ENGINEERING (AFSC 3E5X1)

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PREFACE

This Career Field Education and Training Plan (CFETP) is a comprehensive education and training document that identifies life-cycle education/training requirements and training support resources for the Engineering specialty. The CFETP will provide our personnel with a clear career path to success and instill rigor in all aspects of our career field training.

Note: Civilian occupying associated positions may use Part II as a guide to support duty position qualification training.

The CFETP consists of two parts used by the supervisor to plan, manage, and control training within the career field.

Part I provides information necessary for overall management of the specialty.

- Section A provides general information on how to use the CFETP.
- Section B identifies information on career field progression, duties and responsibilities, training strategies, and the career field path.
- Section C associates each skill level with specialty qualifications (knowledge, education, and training).
- Section D indicates resource constraints.
- Section E identifies transition/training guidance requirements for SSgt through MSgt.

Part II includes the following:

- Section A identifies the Specialty Training Standard (STS) to include duties, tasks, and technical references to support Air Education and Training Command (AETC) conducted training, contingency courses, and correspondence course requirements.
- Section B contains the course objective list and training standards supervisors will use to determine if an Airman has satisfied training requirements.
- Section C identifies available support materials.
- Section D identifies a training course index that supervisors can use to determine resources available to support training. Included here are the exportable courseware, mandatory, and supplemental courses.
- Section E identifies MAJCOM-unique training requirements supervisors can use to determine additional training required for the associated qualification needs.
- Section F identifies home station training references and course materials required for this specialty to support of contingency/wartime training.

Using guidance provided in the CFETP will ensure individuals in this specialty receive effective and efficient training at the appropriate point in their careers. This plan will enable us to train today's work force for tomorrow's jobs. At the unit level, supervisors and trainers will use Part II to identify, plan, and conduct training commensurate with the overall goals of this guide.

ACRONYMS/KEY TERMS EXPLAINED

Advanced Training (AT). Formal course that provides individuals who are qualified in one or more positions of their AF Specialty with additional skills and knowledge to enhance their expertise. Training is for selected career Airmen in advanced levels of the AF Specialty. Graduates do not receive a new AFSC upon completion.

Air Force Civil Engineer Center (AFCEC). The focal point for all Civil Engineer (CE) training development. Assigned to AFCEC are all the CE AFSC Force Development Managers (FDMs).

Air Force Career Field Manager (AFCFM). An individual on the Air Staff charged with the responsibility for overseeing all training and career field management aspects of an Air Force specialty or group of specialties.

Air Force Enlisted Classification Directory (AFECD). The official directory for all military enlisted classification descriptions, codes, and identifiers. The specialty descriptions and codes used to identify each Air Force job; the AFECD describes the minimum mandatory qualifications for personnel to fill these jobs. The updated AFECD is available at the AF Personnel Center's website located at **myFSS** under the military classification menu.

Air Force Credentialing Opportunities Online (AF COOL) Program. AF COOL replaced the CCAF Credentialing and Education Research Tool (CERT). Access the AF COOL Program through the **Air Force Virtual Education Center (AFVEC).** The site provides a research tool designed to increase an Airman's awareness of national professional credentialing and CCAF education opportunities available for all Air Force occupational specialties.

Air Force Institute of Technology (AFIT). Provides vital, relevant, and connected education that enables Airmen to be ready engineers and great leaders who know how to build sustainable installations to last while leading the change for the Civil Engineer career field. Access the AFIT course list in the **AFIT Civil Engineer School Course Catalog**.

Air Force Job Qualification Standard/Command Job Qualification Standard (AFJQS/CJQS). An AFJQS is a comprehensive task list that describes a particular job type or duty position; supervisors use it to document task qualifications. The tasks on the AFJQS/CJQS are common to all persons serving in the described duty position.

Air Force Qualification Training Package (AFQTP). A required instructional package designed for use at the unit to qualify, or aid qualification, in a duty position, program, or on a piece of equipment. AFQTPs identify the Air Force's standardized method for performing the task. The AFQTP are paper-based, computer-based, in other audiovisual media formats, or all three. Each Airman must use AFQTPs to satisfy a particular training requirement. AFQTPs for the 3E5X1 AFSC are located on **myLearning** and in **CE DASH**.

Career Field Education and Training Plan (CFETP). A comprehensive, multipurpose document encapsulating the entire spectrum of education and training for a career field. It outlines a logical growth plan that includes training resources designed to make career field training identifiable, eliminate duplication, and ensure this training is budget defensible.

Chief, Civil Engineer Force Development (CCEFD). This individual is at AFCEC and responsible for force development education and training within the 3E0 to 3E6 AFSCs.

Commercial Off The Shelf (COTS). Commercially procured training products.

Core Tasks (5^ or 7^). Mandatory tasks, which the AFCFM has identified as a minimum qualification requirement within an Air Force specialty or duty position. These tasks exemplify the essence of the career field.

Critical Tasks. Tasks the work center supervisor identifies as detrimental to mission accomplishment if not performed correctly. Critical tasks may or may not be the same as core tasks but are mandatory if identified as 'critical' to the position by the supervisor or work center.

Diamond Tasks (♦). Diamond tasks are extremely important to the career field. Diamond tasks are the same as core tasks with one exception: equipment shortfalls at most locations have created problems with the actual **hands-on** training/certification of these tasks. In instances where required equipment is not available for instruction, completing the AFQTP is required for upgrade and qualification training. Airmen must accomplish hands-on certification at the first opportunity when equipment is available.

Distance Learning (DL). Includes Video Tele-seminar (VTS), Video Tele-training (VTT), and CBT. Formal courses that a training wing or a contractor develops for export to a field location (in place of resident training) for trainees to complete without the on-site support of the formal school instructor. For instance, the Air Force Institute of Technology, Air University, and Air Education Training Command offer online courses.

Duty Position Tasks. The tasks assigned to an individual for the position currently held. These include as a minimum all core tasks, critical tasks and any other tasks assigned by the supervisor.

Enlisted Professional Military Education (EPME). Introduces Airmen to appropriate institutional competencies at specific milestones throughout their career and includes two phases: Basic and Resident. Basic EPME requirements are via distance learning courses to establish a foundation for continued development. Resident attendance is not duplicative of the basic EPME requirements but builds upon the competencies obtained to achieve higher proficiency levels.

Enlisted Promotions Requirements Course Catalog (EPRRC). The EPRRC lists all enlisted promotion tests authorized for administration and the study references associated with these tests. Every question on a promotion test comes from one of the publications listed in the catalog. The site only lists publications that support questions on a given promotion test. The catalog also contains administrative and special instructions for test control officers. The EPRRC is available at the **Airman Promotion Tools Testing** website.

Education and Training Course Announcement (ETCA). Contains specific MAJCOM procedures, fund cite instructions, reporting instructions, and listings for those formal courses conducted or managed by the MAJCOMs or field operating agencies (FOAs).

Expeditionary Combat Support-Training Certification Center (ECS-TCC). The Air Force Reserve Command manages this training center.

Force Development Manager (FDM). An individual assigned to the Air Force Civil Engineer Center (AFCEC) who serves as the HAF/A4C execution agent for all training and some career field management aspects of a specific Air Force Civil Engineer specialty.

Interservice Training Review Organization (ITRO). Apprentice level training that is provided in a Joint Service setting.

Initial Skills Training. Air Force Specialty (AFS) specific training an individual receives upon entry into the Air Force or upon retraining into this specialty for the award of the 3-skill level. For our career field, the 368 TRS at Fort Leonard Wood, MO provides the training.

Just-in-Time (JIT) Training. Training is required just before a selected deployment or tasking that delivers training necessary for mission accomplishment. Training focuses on hard-to-obtain contingency skills.

MAJCOM Functional Managers (MFMs). Senior leaders designated by the appropriate functional authority provide day-to-day management and responsibility over specific functional communities at the MAJCOM, Field Operating Agency (FOA), Direct Reporting Unit (DRU), or Air Reserve Component (ARC) level. While they should maintain an institutional focus regarding resource deployment and distribution, MFMs are responsible for ensuring their specialties are equipped, developed, and sustained to meet the future needs of the total Air Force mission.

myLearning. Anytime, anywhere, learning for the Civil Engineer Community consisting of instructional and skill-level awarding course material specific to an AFSC.

myTraining. The Total Force Training Record for Airmen that provides the capability through 21st-century learning tools to manage the training lifecycle for Total Force personnel

Occupational Analysis Report (OAR). A detailed report showing the results of an occupational survey of tasks performed within a particular AFS. The CFM uses the information collected from this survey to make changes to upgrade training and Weighted Airman Promotion Exams.

Qualification Training (QT). Hands-on task performance training designed to qualify an Airman in a specific duty position. This training occurs during and after upgrade training. Qualification training provides the performance skills and knowledge training required to do the job.

On-the-Job Training (OJT). Hands-on, over-the-shoulder training conducted to certify personnel in both upgrade (skill-level award) and job qualification (duty position certification) training.

Regional Training Site (RTS). The Air National Guard manages these Total Force training centers.

Resource Constraints. Resource deficiencies, such as money, facilities, time, manpower, or equipment that precludes desired delivery of training.

Specialty Training Requirements Team (STRT). Specialty Training Requirements Team (STRT). Before a Utilization and Training Workshop (U&TW), the AFCFM and a team of Subject Matter Experts from each MAJCOM meet to determine education and training requirements (formal and on-the-job training) for an Air Force Specialty. They use the STRT to create or revise training

standards for all types of training. The team finalizes the CFETP and specialty description and develops a course standard.

Specialty Training Standard (STS). Describes skills and knowledge that Airmen in a particular AFS need on the job. It further serves as a contract between AETC and the user to show the overall training course requirements for an AFS taught in resident or non-resident.

Subject Matter Expert (SME). An individual with expertise in a particular subject matter tasked to represent the subject matter to an individual or group for technical accuracy.

Supplemental Training. A formal course that provides individuals qualified in one or more positions of their Air Force Specialty (AFS) with additional skills/knowledge to enhance their expertise in the career field. Training is for selected career airmen at the advanced level of the AFS.

Task Qualification Training (TQT). Training conducted after Chemical, Biological, Radiological, and Nuclear Defense classroom training in which individuals perform wartime mission essential tasks in a simulated wartime environment while wearing full ground crew individual protective equipment or aircrew individual protective equipment.

Total Force. Organizations, units, and individuals that comprise the Air Forces' resources for meeting its mission. This includes civilian personnel, Active Duty, Air National Guard, and Air Force Reserve Command military personnel.

Upgrade Training (UGT). The CFETP identifies the mandatory courses, task qualification requirements, and correspondence course completion requirements for awarding the 5-, 7-, and 9-skill levels.

Utilization and Training Workshop (U&TW). An executive decision meeting to vote on funding (Course Resource Estimates) for instructor authorizations, equipment, and facilities needed to support any new or revised training coming from the STRT. They will also determine which organizations will furnish resources, establish commitment and delivery dates in writing, document equipment availability dates, identify any problems and establish training delivery dates.

Vectored Positions. Key SNCO positions in your career field. To learn more about vectored positions, go to **MyVECTOR**.

Web-Based Training (WBT). A self-paced stand-alone computer product used to deliver interactive subject and task knowledge.

PART 1

SECTION A - GENERAL INFORMATION

A1. Purpose. This CFETP provides the necessary information for the AFCFM, MFMs, commanders, Unit Training Managers (UTMs), supervisors, trainers, and certifiers to plan, develop, manage, and conduct an effective career field training program. This plan outlines the training personnel in an AFS require to develop and progress throughout their careers. It identifies, initial skills, upgrade, qualification, and advanced proficiency training.

A1.1. This CFETP has several purposes.

A1.1.1. Serves as a management tool to plan, manage, conduct, and evaluate a career field training program. Supervisors use the CFETP to identify training at the appropriate point in an individual's career.

A1.1.2. Identifies task and knowledge training requirements for each skill level in this specialty and recommends education/training throughout each phase of an individual's career.

A1.1.3. Lists training courses available in this specialty and identifies sources of training and delivery methods.

A1.1.4. Identifies major resource constraints that impact the full implementation of the desired career field training process.

A2. Uses. MFMs and supervisors will use the plan at all levels to ensure comprehensive and cohesive training programs are available for everyone in the specialty.

A2.1. AETC training personnel will develop and revise formal resident, non-resident, field, and exportable training based on requirements established by the users and documented in Part II of the CFETP. They will also work with the AFCFM and AFCEC Force Development Division (AFCEC/COF) to develop acquisition strategies for obtaining the resources needed to provide the identified training.

A2.2. MFMs ensure their training programs complement the CFETP mandatory initial, upgrade, qualification, and proficiency. OJT, resident training, contract training, or exportable courses can satisfy identified requirements. MAJCOM developed training to support this AFS; the AFCFM ensures the training is in the plan.

A2.3. UTMs and supervisors must ensure everyone completes this plan's mandatory upgrade training requirements (including MAJCOM supplemental requirements).

A2.4. Everyone will complete the mandatory training requirements specified in this plan. The list of courses in Part II of this CFETP is a reference to support training.

A3. Coordination and Approval. The AFCFM is the approval authority. Also, the AFCFM will initiate an annual review of this document to ensure currency and accuracy. Major Command representatives and AETC training personnel will identify and coordinate the career field training requirements. They will eliminate duplicate training using the list of courses in Part II.

PART 1

SECTION B - CAREER FIELD PROGRESSION AND INFORMATION

B1. Specialty Descriptions. Engineering Apprentice, Journeyman, Craftsman, and Superintendent.

B1.1. Specialty Summary. Directs and performs civil engineering design, drafting, surveying, and contract surveillance to support Air Force installations and missions. Prepares Computer Aided Design (CAD) drawings, construction contract specifications, and project cost estimates. Manages construction activities through project oversight, cost negotiations, and adherence to applicable building code and law. Supports Geographic Information Systems (GIS) programs. Utilizes surveying technology to include Global Positioning System (GPS). Evaluates potential construction sites and performs field tests on soils, asphalt, and concrete. Related DoD Occupational Subgroup: 141200.

B1.1.1. Duties and Responsibilities for Apprentice, Journeyman, Craftsman and Superintendent.

B1.1.2. Perform drafting duties. Interpret rough engineering sketches to produce working drawings using CAD techniques. Produce architectural, structural, civil, mechanical, and electrical drawings. Update Base Comprehensive Plans (BCP) and maintain record drawings. Plot and reproduce drawings.

B1.1.3. Perform surveying duties. Conduct reconnaissance, site location, construction, and mapping surveys. Utilize auto-levels, electronic total stations, resource and survey grade GPS equipment and related instruments to complete surveys. Collect, convert, and present field survey data for civil engineering projects.

B1.1.4. Perform GIS data collection duties. Collect geospatial data in accordance with industry standard practices and Air Force regulations. Upload and manipulate survey data, using a GIS interface, to support the production of installation master plans. Work with local asset managers, engineers, and the installation geospatial integration officer to develop plans and programs to support asset management and real property programs, using a GIS interface.

B1.1.5. Perform contract management duties. Manage and inspect construction and maintenance contracts. Interpret plans, specifications, and other contract documents. Coordinate, evaluate, monitor, and document contract activities and progress. Prepare recommendations for contract modifications. Review material submittals and evaluate procedures for compliance with contract specifications. Conduct pre-final, acceptance, and post acceptance inspections.

B1.1.6. Develop preliminary engineering designs. Prepare cost estimates, performance work statements and specifications for existing and proposed facilities. Can understand simple load calculations and applications for horizontal and vertical construction. Act as liaison between design, review, construction and using agencies.

B1.1.7. Perform standardized and expedient tests on soils, asphalt, and concrete. Collect, record, and interpret test data. Prepare reports for engineering evaluation.

B1.1.8. Support contingency operations. Develop plans to bed-down personnel, aircraft, and associated support functions during contingency operations. Evaluate existing airfield pavements, lighting, navigational aids, markings, and arresting systems. Perform recovery operations to include explosive ordinance reconnaissance, airfield damage assessment, minimum operating strip selection, repair calculations, and airfield marking procedures.

B1.1.9. Reviews and advises on problems associated with civil engineering design, drafting, surveying, and contract surveillance and facility construction and maintenance programs. Manages, inspects, and evaluates work center activities. Ensures compliance with commercial and military publications. Submits and reviews supply and equipment requisitions. Discusses inspection findings and recommends corrective actions. Solves complex problems by studying lay out drawings, wiring and schematic drawings, and by analyzing construction and operating characteristics. Develops and establishes operation and maintenance procedures to ensure maximum efficiency. Plans and organizes all Engineering Airmen's activities, training, and work. Performs work center planning activities. Coordinates plans with other civil engineering and base activities. Directs all daily activities and supervisory functions in assigned sections. Analyzes productivity and work quality.

B2. Skill and Career Progression. Adequate training and timely progression from the apprentice to the superintendent level play an important role in the Air Force's ability to accomplish its mission. Everyone involved in training must do their part to plan, manage, and conduct an effective training program. The guidance provided in this part of the CFETP will ensure everyone receives viable training at appropriate points in their career.

B2.1. Apprentice (AFSC 3E531 – AB, AMN, A1C).

B2.1.1. Upon completion of initial skills training, a trainee will work with a trainer to enhance their knowledge and skills to progress to the 5-level.

B2.1.2. Utilize Career Development Course (CDC), Air Force Qualification Training Packages (AFQTPs), and web-based courses for subject and task fundamentals progress in the career field.

B2.1.3. Once trained and task certified, a trainee can perform the task unsupervised.

B2.1.4. After completing all upgrade training requirements, supervisors and UTMs coordinate upgrade procedures.

B2.2. Journeyman (AFSC 3E551 – SrA, SSgt).

B2.2.1. A journeyman may be assigned job positions such as team leader, shift supervisor, and task trainer.

B2.2.2. Completing the 5-level CDC and all 5-level core and diamond tasks are basic prerequisites for the five-skill level award.

B2.2.3. Complete the CE 5-Level Core Concepts Course on **myLearning** before ordering their CDC.

B2.2.4. Must complete the appropriate Basic Enlisted Professional Military Education (EPME) and Resident EPME as outlined in Department of the Air Force Instruction (DAFI) 36-2670, *Total Force Development.*

B2.2.5. Enter continuation training to broaden technical experience base.

B2.2.6. Use CDC and other reference materials to prepare for Weighted Airman Performance System (WAPS) testing. Review the **EPRRC** for the complete list of testing materials.

B2.2.7. Pursue academic education through CCAF, nationally or regionally accredited institutions, or other degree-awarding institutions.

B2.2.8. Complete Air Force Institute of Technology (AFIT) WMGT 301, Introduction to Asset Management course. This course is mandatory for Active Duty and highly encouraged for the Air Reserve Component.

B2.2.9. After completing all upgrade training requirements, supervisors and UTMs coordinate upgrade procedures.

B2.3. Craftsman (AFSC 3E571 – SSgt, TSgt, and MSgt).

B2.3.1. Craftsman can expect to fill various supervisory and management positions such as shift leader, team chief, supervisor, or task certifier.

B2.3.2. Completion of CE 7-Level Core Concepts Course located on **myLearning** and all core and diamond tasks are basic prerequisites for the seven-skill level award.

B2.3.3. Must complete the appropriate Basic EPME and Resident EPME as outlined in DAFI 36-2670, *Total Force Development.*

B2.3.4. Should take additional training courses to broaden technical knowledge or management of resources and personnel.

B2.3.5. Use CDC and other reference materials to prepare for WAPS testing. Review the **EPRRC**.

B2.3.6. Continue academic education through CCAF and higher degree programs is encouraged.

B2.3.7. Completing AFIT WENG 200, Scoping and Estimating and WMGT 322, Intro to Project Management courses is mandatory for Active Duty and highly encouraged for the Air Reserve Component.

B2.3.8. Completing the Troop Construction Project Management Course (AFIT WMGT 437) is mandatory for Active-Duty personnel and required for promotion to MSgt. This course is highly encouraged for Air Reserve Component MSgts. **Note**: This is not a skill level-awarding course.

B2.3.9. Airmen must complete the Engineering Craftsman Course (JCACP3E571 01AD) for 7-skill level award. Members attending this course must have completed all OJT requirements for upgrade to the 7-skill level prior to attending this course.

B2.3.10. When training requirements are completed; supervisors and UTMs coordinate upgrade procedures.

B2.4. Superintendent (AFSC 3E591 - SMSgt).

B2.4.1. A superintendent can fill positions such as Flight Chief, Section Chief, Superintendent, and various staff positions.

B2.4.2. Completing the Civil Engineer Superintendent Course (AFIT WMGT 570) is mandatory for Active Duty. This course is highly encouraged for Air National Guard and Air Force Reserve SMSgts and mandatory for promotion to CMSgt.
Note: This is not a skill-level-awarding course.

B2.4.3. Must complete the appropriate Basic EPME and Resident EPME as outlined in DAFI 36-2670, *Total Force Development.*

B2.4.4. Should take continuation training course to increase knowledge of budget, manpower, resources, and personnel management.

B2.4.5. Continue academic development through higher education is recommended.

B2.4.6. Must be a SMSgt for award of the 9-skill level.

B2.5. Senior Enlisted Leader (SEL) (3E000 - CMSgt).

B2.5.1. SELs work in multiple leadership positions and functional areas that challenge them and effectively use their general managerial and supervisory abilities.

B2.5.2. Must be selected for CMSgt and possess qualifications in a feeder specialty (3E591).

B2.5.3. Must complete the appropriate Basic EPME and Resident EPME as outlined in (DAFI) 36-2670, *Total Force Development.*

B3. Training Decisions. The CFETP uses a building block approach (simple to complex) to encompass the entire spectrum of training requirements for the Engineering career field. The spectrum includes a strategy for when, where, and how to meet the training requirements. The strategy must be apparent and affordable to reduce duplication of training and eliminate a disjointed approach to training. The career field Specialty Training Requirements Team (STRT) meeting held at Fort Leonard Wood, MO from 15 - 19 Aug 2022 made the following decisions.

B3.1. **Initials Skills Training.** The STRT members reviewed and updated the initial skills course content. See the STS for the additions, deletions, and modifications made to the course. They identified and validated the Wartime training tasks.

B3.2. **Five Level Upgrade Training Requirements.** Existing CDCs were reviewed and updated to ensure only current material remained and new technology information was added. The STS was reviewed, added, and validated. Additions and deletions of core tasks as well as modifications to proficiency codes were made.

B3.3. **Seven Level Upgrade Training Requirements.** The STRT members reviewed, validated, and updated STS line items for the 7-level Craftsman Course.

B3.4. **Proficiency Training.** Any additional knowledge and skill requirements that were not taught through initial skills or upgrade training are assigned as continuation training. Purpose of continuation training is to provide training exceeding minimum upgrade training requirements with emphasis on present and future duty positions. MAJCOMs must develop a continuation-training program that ensures personnel in the Engineering career field receive the necessary training at the appropriate point in their careers. The training program will identify both mandatory and optional training requirements.

B3.5. **Supplemental Training.** SMEs and the STRT reviewed supplemental training courses for technical accuracy and identified training that was no longer required or otherwise outdated. They revalidated the remaining courses as necessary to fully support doctrine, the War Mobilization Plan (WMP), the AF Enlisted Classification Directory (AFECD), and an Airman's individual career progression within the AFS.

B4. Community College of the Air Force (CCAF) Academic Programs. Enrollment in the Community College of the Air Force occurs upon completion of Basic Military Training. Community College of the Air Force provides the opportunity to obtain an Associate of Applied Sciences Degree. In addition to its associate degree program, CCAF offers the following:

B4.1. **Occupational Instructor Certification.** Upon completion of instructor qualification training, consisting of the instructor methods course and supervised practice teaching, Community College of the Air Force instructors who possess an associate degree or higher may be nominated by their school commander and commandant for certification as an occupational instructor.

B4.2. **Trade Skill Certification.** When a CCAF student separates or retires, CCAF awards a trade skill certification for the primary occupational specialty. The college uses a competency-based assessment process for trade skill certification at one of four proficiency levels: Apprentice, Journeyman, Craftsman, or Master Craftsman.

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B5. CCAF Degree Completion Requirements (60 Semester Hours). The Construction Technology Associate Degree (4VEB) applies to the 3E5X1 AFSC. Before receiving a CCAF degree, the individual must have a 5-level and meet the following requirements:

Course	Semester Hours
Technical Education	24
Program Electives	15
Leadership, Management, and Military Studies (PME)	6
General Education (Civilian)	15
- Oral / Written Communication (6)	
- Mathematics (3)	
- Social Science (3)	
- Humanities (3)	
Total	**60**

B5.1. **Technical Education (24 semester hours).** Apply a minimum of nine semester hours of CCAF institutional credit awarded from specialty-related formal training towards Technical Core subject requirements. Satisfy Technical Electives CCAF credit from other sources in-transfer.

Technical Core Requirements	Semester Hours
Building Construction Design	20
Carpentry/Cabinetry	12
CCAF Internship	18
College Algebra/Trigonometry	3
Computer Aided Drafting	3
Construction Inspection/Building Codes	9
Drafting/Engineering Drawing	6
Engineering Assistant	20
Heavy Equipment Operations	20
Metals Fabrication/Characteristics	15
Pavement Construction	12
Project Management/Planning	4
Surveying	12
Welding	9

B5.2. **Technical Electives.**

Technical Electives	Semester Hours
Blueprint Reading	3
Computer Science	6
Construction Material Estimating	3
Enlisted Professional Military Education	6
General Physics	3
Hazardous Materials	3
Industrial/Construction Safety	3
Properties and Strength of Materials	6
Soil and Foundations	3
Technical Writing	3

B5.3. **Leadership, Management, and Military Studies (6 Semester Hours).** Professional military education, civilian management courses accepted in transfer and/or by testing credit.

B5.4. **General Education (15 Semester Hours).** Applicable courses must meet the General Education Requirement (GER) subject criteria and in-transfer requirements.

General Education Subjects/Courses	Semester Hours
Communications:	
Written Communication (English Composition)	3
Oral Communication (Speech)	3
Mathematics	3
Social Science	3
Humanities	3

B5.5. **Program Elective (15 semester hours).** Courses applying to technical education, Leadership, Management, and Military Studies or General Education requirements; natural science courses meeting General Education requirement application criteria; foreign language credit earned at Defense Language Institute; maximum nine semester hours of CCAF degree-applicable technical course credit otherwise not applicable to the program.

B5.6. Additional off-duty education is a personal choice encouraged for all. Individuals desiring to become an AETC Instructor should actively pursue an associate degree. A degreed faculty is required to maintain accreditation through the Southern Association of Colleges and Schools.

B5.7. **Instructional Systems Development (ISD) Certification.** CCAF offers the ISD Certification for qualified course/curriculum developers, writers, and managers formally assigned to an off-campus instructional site to develop/write and manage CCAF collegiate-level credit awarding courses. The ISD Certification is a professional credential recognizing the course/curriculum developer/writer's or manager's extensive training, education, qualifications, and experience required to develop/write and manage CCAF courses.

B5.8. **Air Force Credentialing Opportunities Online (AF COOL) Program.** CCAF manages the AF COOL Program, which provides a research tool designed to increase an enlisted Airman and Guardian's awareness of national professional credentialing and funding opportunities available for all Air Force enlisted occupational specialties. AF COOL also provides information on specific occupational specialties, civilian occupational equivalencies, specialty-related national professional credentials, credentialing agencies, and professional organizations. AF COOL includes information such as:

B5.8.1. Get background information about civilian credentials, including eligibility requirements and resources to prepare for an exam.

B5.8.2. Identify credentials relevant to an AFSC, Special Duty Identifier (SDI), and Reporting Identifier (RI).

B5.8.3. Learn how to fill gaps between Air Force training and experience and civilian credentialing requirements.

B5.8.4. Information on AF COOL funding opportunities to pay for credentialing coursework, textbooks, exams, associated fees, and recertification.

B5.8.5. Resources available to enlisted Airmen and Guardians that can help them gain civilian job credentials.

B5.8.6. Credentialing requirements information on AF COOL includes information specific to enlisted AFSCs. Individuals seeking credentialing information for civilian occupations can reference the U.S. Department of Labor Website, **CareerOneStop.**

B5.9. **Air University Associate to Baccalaureate Cooperative (AU-ABC).** The AU-ABC program connects CCAF graduates with online 4-year programs. The AU-ABC program includes postsecondary institutions with institutional accreditation.

B5.9.1. CAT I: For CCAF Graduates. Guarantees CCAF AAS graduates need no more than 64 semester hours to complete an AU-ABC degree program.

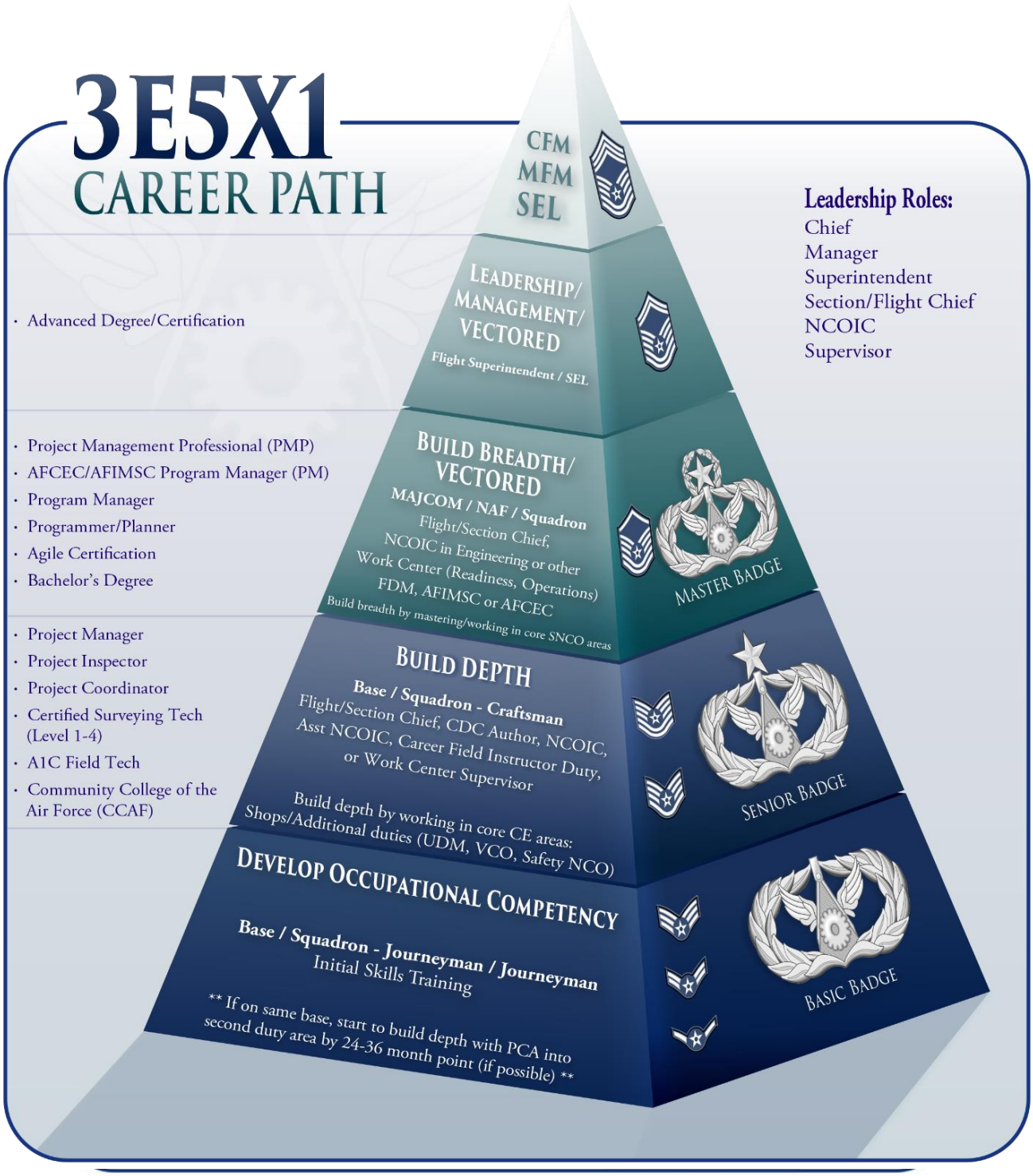
B5.9.2. CAT II: For CCAF AAS Students. Students complete up to nine semester hours with a partner school to complete the CCAF AAS degree through dual tracking, simultaneously fulfilling the CCAF AAS degree requirements and some of the AU-ABC degree program requirements.

B5.9.3. CAT III: For CCAF AAS Graduates. Must complete over 60 semester hours of credit beyond the CCAF AAS and meet all other AU-ABC degree program requirements.

B5.9.4. CCAF students and graduates can search for degree programs from a list of military-friendly civilian institutions via the Air Force Virtual Education Center (AFVEC). From there, students can view their education record and CCAF credits earned, apply for Military TA, and shop for baccalaureate degree programs. For more information, refer to the AU-ABC **fact page**.

PART 1

B6. Civil Engineer Career Field Path. The following chart depicts the 3E5X1 specialty career path:



PART 1

B7. Enlisted Training Path.

ENLISTED CAREER PATH				
Education and Training Requirements	**GRADE REQUIREMENTS**			
	Rank	Average Sew-On	Earliest Sew-On	High Year Of Tenure (HYT) (Regular Air Force)
Basic Military Training School				
Apprentice Technical School (3-Skill Level) – Complete Technical School	Amn A1C	6 months 16 months		
Upgrade To Journeyman (5-Skill Level) – Complete CDC – Complete CE 5-Level Core Concepts WBT – Complete all core/diamond/duty related tasks – Complete AFIT WMGT 301 Course. Mandatory for Active Duty and highly encouraged for the ARC – In-residence ALS for SSgt sew-on (AD only)	SrA	3 years	28 months Below-the-Zone (BTZ) (22 months)	10 years
Trainer – Must be task qualified and certified to train task(s) – Attend AF Training Course – Recommended by the supervisor				
Upgrade To Craftsman (7-Skill Level) – Minimum rank of SSgt – Complete CE 7-Level Core Concepts WBT – Complete in-resident craftsman course – Complete all core/diamond/duty related tasks – Complete AFIT WENG 200, Scoping and Estimating and WMGT 322, Intro to Project Management courses for Active Duty and highly encouraged for the ARC	SSgt TSgt MSgt	5 years 9 years 16 Years	3 years 5 years 8 years	20 years 22 years 26 years
Certifier – SSgt with 5-skill level or civilian equivalent – Attend AF Training Course – Appointed by commander – Be someone other than the trainer (for core and critical tasks only)				
MSGT – Completion of Troop Construction Project Management Course (AFIT WMGT 437) is mandatory for Active Duty and required for promotion to MSgt. This course is highly encouraged for Air Reserve Component MSgts. **Note**: this is not a skill level-awarding course.				
Upgrade To Superintendent (9-Skill Level) – Minimum rank of SMSgt – Complete AFIT WMGT 570, CE Superintendents Course (AD Only) – In-residence USAF SNCOA, or sister service equivalent, graduation is required for SMSgt sew-on (AD only)	SMSgt	20 years	11 years	28 years
Senior Enlisted Leader – Chief Orientation Course (AFR Only) – CE Superintendents Course (WMGT 570) (ANG and AFRC only) – In-residence Chief Leadership Course is required for all CMSgt selects and CMSgts prior to 1-year time in grade	CMSgt	22 years	14 years	30 years

PART 1

B7.1. 3E5X1 Supplemental Course Career Path

Supplemental Courses	Timeline	
	Rank	**Desired timeframe years of service**
Engineering Craftsman	SSgt	4 – 7 years
Construction Surveying	SSgt - TSgt	4 – 10 years (5-level SrA may attend JIT for contingency requirements)
Contract Construction Inspector	SrA and above	3– 14 years (A1C may attend JIT for contingency requirements)

B7.2. 3E5X1 Recommended Certification Programs

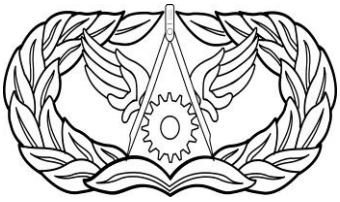
Course Titles
Project Management Professional (PMP)
Certified Associate in Project Management (CAPM)
PMI Agile Certified Practitioner (PMI-ACP)
Certified Survey Technician, National Society of Professional Surveyors (NSPS)
Certified Construction Manager, Construction Management Association of America (CMAA)
Construction Manager Certification, The American Institute of Constructors (AIC)
Construction and Building Inspector Certification (Commercial/Residential), Plans Examiner Certification, International Code Council (ICC)
Concrete/Aggregate Field/Laboratory Technician, American Concrete Institute (ACI)
Construction Materials Testing Certification, National Institute for Certification in Engineering Technologies (NICET)
Geographic Information System Professional (GISP), Geographic Information System Certification Institute (GISCI)
Autodesk Certification (Autodesk University)

PART 1

B7.3. **CE Occupational Badge.** The Civil Engineer badge reflects a great history and tradition. When worn, Airmen will recognize you as having achieved an expected level of competence. The multitude of engineers before you established this expectation through excellent service in both peace and war. Eligibility criteria for the award and wear of AF occupational badges are in AFMAN 36-2100, *Military Utilization and Classification*, and DAFI 36-2903, *Dress and Personal Appearance of Air Force Personnel.*

B7.4. **CE Badge Heraldry.** The gear wheel and compass represent the engineering profession in the military and private sectors. The gear represents the essence of engineering: applying scientific principles and technology to practical ends. To AF Engineers, the gear symbolizes an element (representing the built environment) that meshes with others (weapon systems and trained personnel) to enable the AF to perform its mission. The compass is a precision tool historically used by engineers in designing and constructing facilities and equipment. The gear and compass symbolize all the diverse specialties of Air Force Civil Engineers. Finally, the wings help portray the fundamental linkage between the engineering and aviation components, and the built environment is the foundation supporting the Air Force mission and people. Finally, the wings help to portray the fundamental linkage between the engineering and aviation components, and that the built environment is the foundation supporting Air Force mission and people.

B7.4.1. **Basic Badge.** Awarded upon completion of the apprentice course.



B7.4.2. **Senior Badge.** Adds a star to the top of the badge. Wear the senior badge after award of the 7-skill level.

B7.4.3. **Master Badge.** Adds a wreath around the star. Awarded to master sergeant or above with 5 years in the specialty from award of the 7-skill level.

PART 1

B8. Enlisted Professional Military Education (EPME).

B8.1. Basic EPME (Distance Learning). Basic EPME requirements are completed via distance learning (DL) courses to establish a foundation for continued development and include the Noncommissioned Officer (NCO) DL and Senior Noncommissioned Officer (SNCO) DL courses. NCO DL and SNCO DL courses are no longer prerequisites to attending resident NCO Academy and SNCO Academy.

B8.2. Resident EPME (In-residence). Resident EPME requirements include Airman Leadership School (ALS), NCOA, SNCOA, and the Chief Leadership (CL) course. Resident EPME completion is required for promotion to SSgt, MSgt, and CMSgt grades.

B8.2.1. **Resident EPME Eligibility Chart.**

EPME Course	Selection Priority
ALS	1. SSgts 2. SSgt-selects 3. SrA
NCOA	1. MSgts 2. MSgt selects 3. TSgts 4. TSgt-selects
SNCOA	1. SMSgts 2. SMSgt-selects 3. Non-selects to SMSgt based on promotion board score (highest to lowest)
CLC	1. CMSgts 2. CMSgt-selects

PART 1

SECTION C - SKILL LEVEL TRAINING REQUIREMENTS

C1. Purpose. This section outlines the 3E5X1 specialty qualification requirements for each skill level and establishes the mandatory requirements for each skill level's entry, award, and retention. The STS in Attachment 2 identifies the core tasks, diamond tasks, knowledge items, and skill level requirements.

C2. Specialty Qualification Requirements. Refer to **myFSS** for the most current minimum requirements for entry into the Engineering career field. See AFECD Attachment 4 for additional entry physical requirements.

C2.1. **Apprentice (3-Level) Training Requirements. (3E531)**

KNOWLEDGE	Knowledge of computer operations (literacy) and mathematics including algebra, geometry, and trigonometry. Completion of the technical training apprentice course satisfies this requirement.
EDUCATION	Completion of high school or general educational development equivalency is mandatory. Completion of courses such as algebra, geometry, trigonometry, and computer operations are desirable. Completion of high school courses in drafting and software applications is desirable.
TRAINING	Completion of the Engineering Apprentice Course is mandatory for award of this skill level at Ft Leonard Wood, MO.
EXPERIENCE	None required.
OTHER	For entry, award, and retention of AFSC 3E531, must possess a valid state drivers' license to operate government motor vehicles (GMV) in accordance with AFI 24-301, *Vehicle Operations.* Normal color vision as defined in DAFMAN 48-123, *Medical Examinations and Standards.* Maintain local network access IAW AFI 17-130, *Cybersecurity Program Management* and AFMAN 17-1301, *Computer Security (COMPUSEC).*
IMPLEMENTATION	The 3-skill level is awarded upon graduating the apprentice course and submission by the Unit Training Manager at the members unit of assignment.

PART 1

C2.2. **Journeyman (5-Level) Training Qualifications. (3E551)**

KNOWLEDGE	All 3E531 Knowledge Qualification apply to the 3E551 requirements.
EDUCATION	Completion of AFIT WMGT 301, Introduction to Project Management. This course is mandatory for Active Duty and highly encouraged for the ARC The following education is desirable and strongly encouraged: CCAF Construction Technology Associate Degree (4VEB).
TRAINING	Completion of 5-level CDC course. Completion of all the paper-based AFQTPs and their associated web-based courses on **myLearning** on all core (5^) and diamond (♦) tasks with a passing score of 80%. Completion of the CE 5-Level Core Concepts web-based course located on **myLearning** is mandatory for award of this skill level. Certification of all 5-skill level core tasks identified with an asterisk (5^) in the 5-skill level column of the STS. Certification of all 5-skill level diamond tasks identified with a diamond (♦) in the task column of the STS if the equipment is available. The minimum requirement is the signing off tasks on the AFQTP Documentation Record. Certification of duty position requirements as identified by the supervisor. Complete certification of all CBRN TQT requirements identified with (TQT) after the line item in the STS in MOPP 4. Annotate the training on the DAF Form 623A or DAF Form 797. Certification of duty position requirements identified by the supervisor.
Experience	Qualification in and possession of AFSC 3E531. Have experience in CAD, GIS data collection, construction surveying, and contingency beddown operations, and can support full-spectrum engineering contingency operations.
OTHER	For entry, award, and retention of AFSC 3E551, must possess a valid state driver's license to operate government motor vehicles (GMV) in accordance with AFI 24-301, *Vehicle Operations*. Normal color vision as defined in DAFMAN 48-123, *Medical Examinations and Standards.* Maintain local network access IAW AFI 17-130, *Cybersecurity Program Management* and AFMAN 17-1301, *Computer Security (COMPUSEC).*
IMPLEMENTATION	Initiate entry into 5-level upgrade training after the individual has completed all 3-level requirements. Initiate qualification training any time individuals are assigned duties they are not certified to perform. Use OJT, CDCs, AFJQSs, and AFQTPs concurrently to obtain the necessary qualifications.

PART 1

C2.3. **Craftsman (7-Level) Training Requirements. (3E571)**

KNOWLEDGE	All 3E551 knowledge requirements apply to the 3E571 requirements.
EDUCATION	Completion of AFIT 322, Introduction to Project Management and WENG 200, Scoping and Estimating courses. These courses are mandatory for Active Duty and highly encouraged for ARC. The following education is desirable and strongly encouraged: CCAF Construction Technology Associate Degree (4VEB).
TRAINING	Completion of all the paper-based AFQTPs and their associated web-based courses on myLearning for all 7- skill level core (7^) and diamond (♦) tasks with a minimum passing score of 80%. Completion of the CE 7-Level Core Concepts web-based course located on myLearning is mandatory for award of this skill level. Certification of all 7- skill level core tasks identified with an (7^) in the core task column of the STS. Certification of all 7-skill level diamond tasks identified with a diamond (♦) in the task column of the STS if the equipment is available. Minimum requirement is the signing off tasks on the AFQTP Documentation Record. Completion of 3E571 Craftsman Course. Advanced Surveying course instructed at Fort Leonard Wood, MO. Recommended attendance is between 5-14 years in service. Contract Construction Inspector (MTT) course if assigned (or pending assignment) to construction management. Recommended attendance is between 3-14 years in service. Certification of duty position requirements identified by the supervisor.
EXPERIENCE	Qualified 3E551. Have significant experience in supervising CAD, GIS data collection, construction surveying, material testing, contract inspection, and can lead full-spectrum engineering contingency operations.
OTHER	For entry, award, and retention of AFSC 3E551, must possess a valid state driver's license to operate government motor vehicles (GMV) in accordance with AFI 24-301, *Vehicle Operations*. Maintain local network access IAW AFI 17-130, *Cybersecurity Program Management* and AFMAN 17-1301, *Computer Security (COMPUSEC).* Normal color vision as defined in DAFMAN 48-123, *Medical Examinations and Standards.*
MSGT	Completing the Troop Construction Project Management Course (AFIT WMGT 437) is mandatory for Active Duty and required for promotion to MSgt. This course is highly encouraged for Air Reserve Component MSgts. Note: this is not a skill-level-awarding course.

IMPLEMENTATION	Initiate entry into 7-level upgrade training after the individual has completed all 5-level requirements and selected for SSgt. Initiate qualification training any time individuals cannot perform their new duties. Use OJT, CDCs, AFJQSs, and AFQTPs concurrently to obtain the necessary qualifications.

C2.4. **Superintendent (9-Level) Training Requirements. (3E591)**

KNOWLEDGE	Mandatory knowledge of Air Force training programs. CE policies, practices, and procedures of base maintenance and operations, crafts, facilities, equipment, and systems. Interpretations and applications of maintenance and work force management. General construction, and repair methods and procedures, including use and capacity of construction equipment.
EDUCATION	Completion of the grade appropriate EPME is mandatory. The following education is desirable and strongly encouraged: CCAF Construction Technology Associate Degree (4VEB) Higher education through a civilian institution.
TRAINING	Completing Civil Engineer Superintendent Course AFIT WMGT 570 is mandatory for Active Duty SMSgts. This course is highly recommended for Air National Guard and Air Force Reserve SMSgts and mandatory for promotion to CMSgt. Note: This is not a skill-level awarding course.
EXPERIENCE	For award of AFSC 3E591, qualification in and possession of AFSC 3E571. Must be a SMSgt. Expertise in directing functions such as CAD, GIS data collection, construction surveying, materials testing, drafting, contract management, and can manage full-spectrum engineering contingency operations.
OTHER	For entry, award, and retention of AFSC 3E531, must possess a valid state drivers' license to operate government motor vehicles (GMV) in accordance with AFI 24-301, *Vehicle Operations.* Normal color vision as defined in DAFMAN 48-123, *Medical Examinations and Standards.* Maintain local network access IAW AFI 17-130, *Cybersecurity Program Management* and AFMAN 17-1301, *Computer Security (COMPUSEC).*
IMPLEMENTATION	Entry into 9-level training is initiated when an individual is selected for SMSgt and is a fully qualified 7-Level. Qualification training is initiated any time an individual is assigned duties they are not certified to perform.

C2.5. **Senior Enlisted Leader. (3E000)**

KNOWLEDGE	Knowledge is mandatory of managing and directing personnel resource activities, interpreting, and enforcing policy and applicable directives, establishing control procedures to meet work goals and standards, recommending, or initiating actions to improve operational efficiency, planning and programming work commitments and schedules, developing plans regarding facilities, supplies, and equipment procurement and maintenance.
TRAINING	Reserve Component Chief Orientation Course (AFRC only).
EXPERIENCE	Possess qualifications in feeder specialty (3E591) prior to award of Civil Engineer Manger code 3E000. Managerial ability to plan, direct, coordinate, implement, and control a wide range of work activity.
EDUCATION	Completion of the grade appropriate EPME is mandatory.
OTHER	N/A.
IMPLEMENTATION	Selection to CMSgt enters an individual into the Civil Engineer Manager Code 3E000. They must possess the qualifications from the feeder specialty (3E591).

PART 1

SECTION D - RESOURCE CONSTRAINTS

D1. Purpose. This section identifies known resource constraints that preclude optimal training at the schoolhouse, including information such as cost and manpower. Narrative explanations of each resource constraint and an impact statement describing what effect each constraint has on training are included. Also included in this section are actions required, Office of Primary Responsibility (OPR) and target completion dates. If applicable, resource constraints will be, at a minimum, reviewed and updated annually.

D2. **Apprentice (3-Level) Training:**

D2.1. Constraints. None.

D2.1.1 Impact.

D2.1.2. Resources Required.

D2.1.3. Action Required.

D2.2. OPR/Target Completion Date.

D3. **Journeyman (5-Level) Training:** Apprentice course graduates will use the current paper-based CDC for upgrade training until the new web-based CDC is on-line.

D3.1. Constraints. None.

D3.1.1. Impact.

D3.1.2. Resources Required.

D3.1.3. Action Required.

D3.2. OPR/Target Completion Date.

D4. Craftsman (7-Level) Training:

D4.1. Constraints. None.

D4.1.1. Impact.

D4.1.2. Equipment Constraints.

D4.2. OPR/Target Completion Date.

D5. Superintendent (9-Level) Training: Not Applicable.

PART 1

SECTION E - TRANSITIONAL TRAINING GUIDE

There are no transition training requirements for the Engineering Specialty. This section is reserved.

PART II

SECTION A - SPECIALTY TRAINING STANDARD

A1. Implementation. This STS will be used for technical training provided by AETC Army ITRO Engineering Apprentice and Air Force Unique Training Courses with class beginning 8 April 2024 and graduating on or after 11 July 2024, and for the Craftsman course with classes beginning on 18 March 2024.

A2. Purpose. As prescribed in DAFMAN 36-2689, *Training Program* and in collaboration with the Air Force CFM, it is mandatory for all civil engineers, regardless of duty assignment, to use the paper-based STS or an automated training record, when available.

A2.1. **Column 1 (*Tasks, Knowledge, and Technical References*).** Lists the most common tasks, knowledge, and supporting technical references (TRs) necessary for Airmen to perform duties in the 3-, 5-, and 7-skill level.

A2.1.1. **Task Qualification Tasks (TQT).** In accordance with DAFI 10-2503, *Chemical, Biological, Radiological, Nuclear (CBRN) Defense Program*. TQT requirements identified by (TQT) after the line item of the STS are mandatory wartime skills that Airmen will perform while wearing Individual Protective Equipment.

A2.2. **Column 2 (*Core Tasks*).** Column 2 identifies core tasks (specialty-wide training requirements) by a number (5^ or 7^) in the skill level column. **As a minimum, trainees must complete all core and critical tasks for skill-level upgrades.**

A2.2.1. **Wartime Tasks.** All tasks in the 3-level course column are considered wartime tasks. These tasks will be taught in a streamlined training environment in response to a wartime scenario.

A2.2.2. **Diamond Tasks.** Tasks (column 1) identified by a diamond (♦) after the task item are considered contingency/war tasks and are critical to the career field. Equipment shortfalls at most locations have created problems with the actual hands-on certification of these tasks. When required equipment is unavailable for instruction, completion of the corresponding task AFQTP is required for upgrade/qualification training.

A2.3. **Column 3 (*Certification for OJT*).** Used to record completion of tasks and knowledge training requirements. Use paper or automated training management applications to document technician qualifications. **Task certification of core and critical tasks** requires a training completion date and the initials of the trainee, trainer, and certifier. All non-core tasks require the training completion date and initials of the trainee and trainer only.

A2.4. **Column 4 (*Proficiency Codes Used to Indicate Training/Information Provided*).** Indicates formal training and correspondence course requirements. It shows the proficiency to be demonstrated on the job by the graduate because of training on the task, knowledge, and career knowledge provided by formal courses and correspondence courses. See CADRE/AFSC/CDC listing maintained by the UTM for current CDC listings.

A2.5. **Qualitative Requirements.** This CFETP contains a proficiency code key used to indicate the level of training and knowledge provided by resident training, and career development courses.

PART II

A2.6. **Job Qualification Standard (JQS).** The STS becomes an AFJQS for OJT in an automated training application and used according to DAFMAN 36-2689, *Training Program*. Supervisors and trainers use AFQTPs to ensure Air Force-wide standardized procedures for training core tasks. When used as a JQS, the following requirements apply:

A2.6.1. **Documentation.** Document and certify completion of training:

A2.6.1.1. **Duty position.** Duty position requirements will be developed and identified by the work center supervisor, maintained in the shop, or loaded into the automated training management application when available. Completing core, critical, and diamond tasks is mandatory for all duty positions. Work center supervisors assign Airmen to the correct duty position.

A2.6.1.2. **AFQTP Training and Documentation.** AFQTPs or AFQTP assessments for all core (5^ or 7^) tasks and their completion are mandatory to fulfill task knowledge requirements for upgrade/qualification training. Each AFQTP provides the step–by–step procedures for the trainee, trainer, and certifier in completing each core or diamond task and instructions on how to document the training in the individual automated training record.

A2.6.1.2.1. **Training.** Required documentation of the start and completion of the AFQTP in the QTP tracker (Attachment 3) or the automated training record for all core tasks. Diamond tasks require the completion of the web-based course (with the review and post-test located in the program) or completing the AFQTP assessment on **myLearning** to determine if the trainee has attained the required knowledge level. Once the trainee has completed the web-based course or AFQTP assessment, Airmen provide the course completion certificate to the trainer/supervisor for annotation of the QTP tracker or into the automated training record.

A2.6.1.2.2. **Hands-On Training.** *DO NOT sign off the tasks in the JQS until the trainee has completed hands-on/certification training.* For diamond tasks, if the equipment is not available at home station, completing the AFQTP or AFQTP assessment is the ONLY requirement for upgrade. Sign off the paper JQS or in the automated training record when the trainee receives training on the equipment at home station or at a TDY location.

A2.6.2. **Transcribing from previous versions to new CFETP.** Transcribing documentation to a new CFETP is an administrative function, not a re-evaluation of training. Therefore, supervisor and trainer are considered synonymous with documentation. Transcribe within 120 calendar days (240 calendar days for ARC) of the CFETP revision date or from the date revision is posted to the automated training records system.

A2.6.2.1. **Previous training certification not listed.** Place an entry into the trainee DAF Form 623A; the transcriber and trainee must acknowledge entry.

A2.6.2.2. **Transcribing external training certification.** If a trainee attended a formal training course and received appropriate accreditation, place an entry into the trainee's DAF Form 623A.

A2.6.3. **Documenting Career Knowledge.** When a CDC course is not available, the supervisor identifies STS training references that the trainee requires for career knowledge IAW DAFMAN 36-2689, *Training Program* and ensures, as a minimum, that trainees cover all mandatory items specified in AFM 36-2100, *Military Utilization and Classification*. For two-time CDC course exam

failures, the unit commander will take appropriate action IAW DAFMAN 36-2689, *Training Program*. Document career knowledge to submit a CDC course waiver.

A2.6.4. **Decertification.** When a supervisor determines an Airman is unqualified on a task previously certified for their duty position, the supervisor erases the previous certification or deletes the certification when using an automated system. Enter appropriate remarks pertaining to the reason for decertification on the DAF Form 623A or the automated version. Once an Airman has shown proficiency, the trainer and certifier can sign off the task(s).

A2.6.5. **Recertification.** Supervisors use the DAF Form 1098 to document tasks requiring recurring training or evaluation. Air Force directives may identify tasks in the CFETP requiring special certification or evaluation. This form may be printed and filed in the DAF Form 623. This form will remain in the training record for tasks requiring certification until superseded or no longer required.

A2.6.6. **Training Standard.** Train and certify Airman to the "go" level. Go means the individual can perform the task without assistance and meets the local requirements for accuracy, timeliness, and correct use of procedures. This standard of training equates to a 3c in the proficiency code key. Use available AFQTPs to train tasks.

A2.7. **Specialty Training Standard.** The STS is a guide for developing promotion tests used in the Weighted Airman Promotion System (WAPS). Senior NCOs with extensive practical experience in their career fields develop Specialty Knowledge Tests (SKTs) at the AETC Airman Advancement Division. Subject matter experts authenticate WAPS material and reference AF Specialty-specific occupational analysis data to develop SKTs. They develop questions based on the study references listed in the Enlisted Promotions References and Requirements catalog. Individual responsibilities are in AFM 36-2664, *Personnel Assessment Program*. WAPS does not apply to the Air National Guard or Air Reserve Forces.

A3. Recommendations. Report unsatisfactory performance of individual course graduates to 782 TRG/TGE, 917 Missile Road, Rm 1A300, Sheppard AFB TX 76311-2368 or E-mail **782csil@us.af.mil.** Reference specific STS line item and/or paragraphs. For a quicker response, call the Customer Service Information Line (CSIL) at DSN 736-2574 anytime day or night.

PART II

SECTION B - COURSE OBJECTIVE LIST (COL)

B1. Measurement. Measurement of each objective is indicated as follows:

B1.1. Written Test (W). Used to sample each knowledge objective and the knowledge components of performance objectives.

B1.2. Performance Test (P). Used under specified conditions in a formal testing mode to measure student accomplishment of performance objectives after completing the teaching-learning activity.

B1.3. Progress Check (PC). Administered by the instructor during classroom or laboratory instruction time to assess the student's accomplishment of knowledge or performance objectives.

B2. Standard. Standards for measurement indicate the course objectives and delineate the individual progress checklist and rubrics. The minimum standard is 70% on knowledge progress checks. Instructors assist students as the standard for performance progress checks and as warranted during the progress check. Students may be required to repeat all or parts of the learning outcomes until the student attains satisfactory performance.

B3. Proficiency Level. Most task performance is taught to the "2b" proficiency level, meaning the student can do most parts of the task but needs assistance on the hardest parts (partially proficient). The student can also determine step-by-step procedures for doing the task.

B4. Course Objective List. The COL lists the objectives in the sequence taught by Blocks of Instruction. Per AETCI 36 - 2651, *Basic Military and Technical Training*, Supervisors can request a detailed listing of the initial skills course objectives by written request through the requesting organizations MAJCOM to the 368th Training Squadron, 3E5X1 Training Manager, 6007 Cooley Ave Fort Leonard Wood, MO 65473.

PART II

SECTION C - SUPPORT MATERIAL

C1. Air Force Qualification Training Packages.

C1.1. The 3E5X1 AFQTP Tracker identifies the **mandatory *AF*QTPs** for each skill level.

C1.2. For a complete list of up-to-date AFQTPs applicable to the 3E5X1 AFSC, go to **myLearning** or **CE DASH** under the documents tab in the AFSC AFQTP folder.

C1.2.1. In addition to the paper-based AFQTPs there are web-based courses or assessments developed, for specific tasks available on **myLearning** under Civil Engineering in their specialty topic area.

C2. Career Development Course (CDC) Assessment for Civil Engineer CDC/DL Course.

C2.1. FDMs have developed CDC assessments for their career field, and they are located on the **myLearning** under Civil Engineering in their specialty Career Development Courses Assessments.

C2.2. The sole purpose of CDC assessments is to provide the Unit Commander, UTM, and the supervisor, a predictive indicator of whether the trainee has studied sufficiently to successfully pass their CDC end of course (EOC) exam(s).

PART II

SECTION D – EDUCATION AND TRAINING COURSE INDEX

D1. Purpose. This section of the CFETP identifies training courses available for the Engineering specialty. Refer to Education and Training Course Announcements **(ETCA)** web site for information on the Air Force in-residence courses.

D2. Air Force In-Residence Courses/Mobile Training Team (MTT) Courses.

Course Number	Title	Developer
J9AQA3E531 00RF	Engineering Apprentice (ITRO)	ARMY
JCAQP3E531 00AB	Survey Apprentice	368 TRS
JCABP3E531 00AG	Engineering Apprentice AF Unique	368 TRS
JCACP3E571 01AD	Engineering Craftsman	368 TRS
JCAZP3E571 01AB	Advanced Surveying	368 TRS
J7AZT3E571 01AB	Contract Construction Inspector (MTT)	368 TRS
WMSGT 570	Civil Engineer Superintendent Course	AFIT

D3. Air Force Career Development Academy (AFCDA).

Course Number	Title	Edit Code (EC)
CDC 3E551	Engineering Journeyman	03

D4. Exportable/Web-based Courses/Information.

Course Number	Title	Developer
Web based	BEAR Base Planning and Lay out	AFCEC
Web based	Construction Safety and Health Requirements	AFCEC
Web based	Engineering Contingency Responsibilities	AFCEC
Web based	GeoExPT	AFCEC
Web based	Mishap Survey	AFCEC
Web based	Optical Surveying Qualification Training	AFCEC
Web based	Repair Quality Criteria	AFCEC
Web based	Soil Testing Under Field Condition	AFCEC
Web based	Wartime Construction Management	AFCEC
WENG 200	Scoping and Estimating	AFIT
WMGT 301	Intro to Asset Management	AFIT
WMGT 322	Introduction to Project Management	AFIT
WENG 400	Life-Cycle Cost Estimating	AFIT
WGMT 422	Project Management Course	AFIT
WMGT 423	Project Programming Course	AFIT
WMGT 437	Troop Construction Project Management Course	AFIT
WENG 519	Air Force Installation Planning Principles	AFIT
WENG 520	Comprehensive Planning & Development	AFIT
WENG 555	Airfield Pavement Construction Inspection	AFIT

PART II

D5. Courses/CDCs under Development/Revision.

Course Number	Title	ECD
3E551 CDC M-01	Engineering Journeyman	June 2024

PART II

SECTION E – MAJCOM UNIQUE REQUIREMENTS

There are currently no MAJCOM unique requirements. This area is reserved.

PART II

SECTION F - HOME STATION TRAINING

F1. Purpose. This section aims to identify the tasks, training references, and sources available in support of contingency/wartime training. Civil Engineer forces will train to meet the full range of tasks expected in the contingency environment. Training ranges from knowledge-type training conducted in a classroom to task-oriented hands-on training conducted in the field.

F2. Foundational Training (FT). FT is knowledge-based and hands-on training conducted at the individual's home station for contingency operations. The CE Commander ensures training is provided, documented, and appoints subject matter experts to conduct training as required.

F3. Combat Skills Training (CST). CST is an integral part of any FT program. Lessons learned from past and current contingency operations have taught us the importance of maintaining a higher level of combat readiness. Although the inclusion of combat skills-focused training into FT does not fully prepare CE personnel to work in a high-threat combat environment, the steps taken to enhance training will help elevate units to a readiness level capable of supporting safe and effective operations in low to medium-risk combat environments.

F4. Skills And Knowledge Training (SKT). Wartime or contingency environments often involve specialized and unique mission-essential equipment that civil engineers do not use daily. Mission essential contingency equipment and trainer expertise are unavailable at most CONUS installations due to the cost and complexity. Personnel must be hands-on certified, and the certification must be documented in their CFETP. AFI 10-210, *Prime Base Engineer Emergency Force (BEEF) Program*, Attachment 4, identifies the minimum number of trained personnel (positions) by specialty and the frequency requirements. Inadequate training on these key equipment items can negatively affect Air Force contingency operations.

F5. AF Expeditionary (ES) Training Requirement. The AF must train as it fights and continually assess expeditionary readiness training across the AF continuum of learning to produce Airmen ready to support all combatant commands. Expeditionary readiness training must be relevant, timely, synchronized, standardized, and integrated to ensure combatant commands provide a standard presentation of forces to support specified mission requirements while maximizing efficiency. Expeditionary readiness training divides training into three categories to ensure Airmen receive the right training at the right time: Basic Airman Readiness, Basic Deployment Readiness, and Advanced Deployment Readiness. For additional information, refer to AFI 10-405, *Ready Airmen Training.*

F6. Expeditionary Training References.

F6.1. AFI 10-209, *RED HORSE Program*, Chapter 3 and Attachments 4-9 identify RED HORSE training requirements.

F6.2. AFI 10-210, *Prime Base Engineer Emergency Force (BEEF) Program*, Chapter 4 and Attachments 2-8 identify the Prime BEEF training requirements.

F6.3. DAFMAN 36-2689, *Training Program*, and AFI *10-405*, *Ready Airmen Training*, identifies expeditionary readiness training requirements.

PART II

F6.4. Web-based Training products are available on **myLearning**. Airmen completing these courses can receive credit for FT. Use group WBT products in a classroom setting to train as many personnel as possible. Document group training attendance on a sign-in roster IAW AFI 10-210.

BY ORDER OF THE SECRETARY OF THE AIR FORCE

OFFICIAL

TOM D. MILLER, Lieutenant General, USAF
DCS/Logistics, Installation and Mission Support

4 Attachments:
1. Qualitative Requirements (Proficiency Code Key)
2. 3E5X1 Specialty Training Standard (STS)
3. 3E5X1 AFQTP Documentation Record
4. 3E5X1 Supplemental Course Training Standards

Attachment 1
Qualitative Requirements (Proficiency Code Key)

A1. Qualitative Requirements

This Block Is For Identification Purposes Only.		
Name Of Trainee		
Printed Name (*Last, First, Middle Initial*)	**Initials (Written*)***	**SSAN (Last four)**
Printed Name Of Trainer, Certifying Official And Written Initials		
N/I	*N/I*	

Note: Place a continuation sheet behind the CFETP when additional space is required.

Proficiency Code Key		
	Scale Value	**Definition: The individual**
Task Performance Levels	1	Can do simple parts of the task. Needs to be told or shown how to do most of the task. (Extremely Limited)
	2	Can do most parts of the task. Needs only help on hardest parts. (Partially Proficient)
	3	Can do all parts of the task. Needs only a spot check of completed work. (Competent)
	4	Can do the complete task quickly and accurately. Can tell or show others how to do the task. (Highly Proficient)
Task Knowledge Levels	a	Can name parts, tools, and simple facts about the task. (Nomenclature)
	b	Can determine step-by-step procedures for doing the task. (Procedures)
	c	Can identify why and when the task must be done and why each step is needed. (Operating Principles)
	d	Can predict, isolate, and resolve problems about the task. (Advanced Theory)
Subject Knowledge Levels	A	Can identify basic facts and terms about the subject. (Facts)
	B	Can identify relationship of basic facts and state general principles about the subject. (Principles)
	C	Can analyze facts and principles and draw conclusions about the subject. (Analysis)
	D	Can evaluate conditions and make proper decisions about the subject. (Evaluation)

Explanations	
5	This symbol in the core task column indicates that it is a 5-level core task.
7	This symbol in the core task column indicates that it is a 7-level core task.
9	This symbol in the core task column indicates that it is a 9-level core task.
^	This symbol in the core task column indicates that 3rd party task certification is required.
*	This symbol in the deployment/SEI column indicates that the task is a deployment task.
+	This symbol in the deployment/SEI column indicates that the task is a Special Experience Identifier.
~	This symbol in the deployment/SEI/TQT column indicates that the task is CBRN Qualification Task
2b/b	This mark in the course columns shows that training is required but not given due to resource limitations.
(I)	This mark in the course columns is used to show that training is multi-service.
♦	A diamond in the task column indicates it is a core task, however due to equipment or funding constraint at some units, the completion of the AFQTP and/or web-based training course is all that is required for upgrade. Hands-on certification must be accomplished at the first opportunity when equipment or funding is available.
TQT	TQT in the task column indicates the task is a CBRN Qualification Task. IAW AFI 10-2503, these tasks will also be accomplished in MOPP 4 and annotated on the DAF Form 623A or DAF Form 797.
▲	A black triangle in the task column indicates a AFQTP is available for use.
△	A white triangle in the task column indicates a AFQTP is under development.
Specific tasks not identified with a symbol or proficiency code key indicate no provided training in the course. Major commands and/or units may establish scale values and combat training as mission requirements dictate.	
Use a task-knowledge scale value alone or with a task-performance scale value to define a level of knowledge for a specific task.	
Use a subject knowledge scale value alone to define a level of knowledge for a subject not directly related to any specific task or for a subject common to several tasks.	

Attachment 2
Specialty Training Standard (STS)

A2. Specialty Training Standard

A2.1. Identification. In the automated training record User Profile section, the UTM will assign individuals to the correct work center upon in processing into the unit.

A2.2. Specialty Tasks. The following are tasks the work center supervisor will use to create the duty task list for each duty position created for their work center.

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
1.0. CIVIL ENGINEER (CE) CORE CONCEPTS TR: **myLearning**											
1.1. Accomplish CE 5-Level Core Concepts Course	5										
1.2. Accomplish CE 7-Level Core Concepts Course	7										
1.3. Career Progression								A			
1.4. AFSC Duties and Responsibilities											
1.4.1. Peacetime								A			
1.4.2. Contingency								A			
1.5. Functions of:											
1.5.1. Base Civil Engineer (BCE)								A			
1.5.2. Prime BEEF								A			
1.5.3. RED HORSE								A			
1.5.4. HQ ANG/AFRC								A			
1.6. Training											
1.6.1. Civil Engineering Training Ecosystem								A	B		
1.6.2. Attend AFIT WENG 200 Scoping and Estimating (AD Only)	7										
1.6.3. Attend AFIT WMGT 301 Introduction to Asset Management (AD Only)	5										
1.6.4. Attend AFIT WMGT 322 Introduction to Project Management (AD Only)	7										

Attachment 2
Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
1.6.5. Attend AFIT WMGT 437 Troop Construction Project Management (AD Only)											
2.0. COMPUTER-AIDED DRAFTING (CAD) and Design TR: ERDC/ITL TR-12-X, A/E/C CAD Standard; TM 3-34.51, American National Standards Institute; Architectural and Graphic Standards; AutoCAD Civil 3D Essentials Training Volume I/II/III (DL). **AFQTP Module 2**											
2.1. Fundamentals of Drafting								B/I	C		
2.2. Engineering (Manual) Sketches											
2.2.1. Interpret									b		3c
2.2.2. Create								2b/I	b		3c
2.3. CAD Principles (perform tasks using software listed in CE UTC)											
2.3.1. Set up Drawings											
2.3.1.1. Paper space	5^							2b/I	b	3c	
2.3.1.2. Model space	5^							2b/I	b	3c	
2.3.1.3. Units	5^							2b/I	b	3c	
2.3.1.4. Plot styles	5^							2b/I	b	3c	
2.3.1.5. Layers	5^							2b/I	b	3c	
2.3.1.6. Maps	5^							2b/I		3c	
2.3.2. Utilize Drawings Commands											
2.3.2.1. Draw	5^							2b/I	c	3c	3c
2.3.2.2. Modify	5^							2b/I	c	3c	3c
2.3.2.3. Layers	5^							2b/I	c	3c	3c
2.3.2.4. Annotation	5^							2b/I	c	3c	3c
2.3.2.5. Blocks	5^							2b/I	c	3c	3c
2.3.2.6. Properties	5^							2b/I	c	3c	3c
2.3.2.7. Reference Files	5^							2b/I	c	3c	3c

Attachment 2
Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
2.3.2.8. Print (Plot)	5^								c	3c	3c
2.3.3. Drawing Management											
2.3.3.1. Create drawings file directories								1a/I	b		
2.3.3.2. Maintain Drawing Files								1a/I	b		
2.3.3.3. Utilize standards, such as AEC, ANSI, AGS, ISO	5^							2b/I	b	3c	**3c**
2.4. Technical Drawings											
2.4.1. Produce Civil Drawings	5^							2b/I	b	3c	**3c**
2.4.2. Interpret Civil Drawings	7^									3c	
2.4.3. Produce Architectural Drawings	5^							2b/I	b	3c	3c
2.4.4. Interpret Architectural Drawings	7^									3c	
2.4.5. Produce Structural Drawings	5^							2b/I	b	3c	3c
2.4.6. Interpret Structural Drawings	7^									3c	
2.4.7. Produce Mechanical Drawings	5^							2b/I	b	3c	3c
2.4.8. Interpret Mechanical Drawings	7^									3c	
2.4.9. Produce Electrical Drawings	5^							2b/I	b	3c	3c
2.4.10. Interpret Electrical Drawings	7^									3c	
2.5. Convert Data											
2.5.1. CAD to GIS	5^							2b	b	3c	
2.5.2. GIS to CAD	5^							2b	b	3c	
3.0. BUILDING INFORMATION MODELING (BIM) TR: American National Standards Institute; Architectural and Graphic Standards; Architectural, Engineering & Construction											
3.1. Building Information Modeling											
3.1.1. Principles Modeling											
3.1.2. Parametric Modeling											

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Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
3.2. BIM Principles											
3.2.1. Drawing Set up											
3.2.1.1. Project Template											
3.2.1.2. Units											
3.2.1.3. Plot styles											
3.2.1.4. Model views											
3.2.1.5. Model organization (levels & grids)											
3.2.1.6. Collaboration (work sets)											
3.2.2. Drawing Commands											
3.2.2.1. Display control											
3.2.2.2. Draw											
3.2.2.3. Edit											
3.2.2.4. Dimension											
3.2.2.5. Text											
3.2.2.6. Create and utilize components (families)											
3.2.2.7. Utilize reference files/linked files or models											
3.2.2.8. Print/Plot											
3.3. BIM Management											
3.3.1. Project template											
3.3.2. Standards utilization such as AEC, ANSI, AGS											
3.3.3. Model management											
3.3.4. Software license management											
3.4. Drawing Production											
3.4.1. Create sheets											
3.4.2. Rendering (camera views)											
3.4.3. Schedules											
3.4.4. Data Collection											
3.4.5. Data Management											

Attachment 2
Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
3.4.6. Walkthrough Creation											
3.4.7. Technical Review of Drawings											
3.4.8. QA/QC - Clash detection (Navisworks)											
3.4.9. QA/QC - Model quality											
4.0. GEOGRAPHIC INFORMATION SYSTEM (GIS) TR: Federal Geographical Data Committee; Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE); AFI 32-10112; International Organization for Standards (ISO). **AFQTP 3E5X1 Module 4**											
4.1. Geographic Information Systems											
4.1.1. Fundamentals of GIS								A	B		
4.1.2. Common Installation Picture (CIP)								A	B		
4.1.3. Geospatial Datasets								A	B		
4.1.4. Data Models											
4.1.4.1. Raster								B	B		
4.1.4.2. Vector								B	B		
4.1.4.3. Tabular								B	B		
4.1.5. Map projections								B	B		
4.1.6. Coordinate systems								B	B		
4.1.7. Datums								B	B		
4.1.8. Imagery sources								B	B		
4.1.9. Import imagery	5^							2b	b	3c	
4.1.10. Export imagery	5^							2b	b	3c	
4.2. Create Geospatial Data											
4.2.1. GIS File Formats	5^							2b	b	3c	
4.2.2. Metadata	5^							2b	b	3c	
4.2.3. Vector	5^							2b	b	3c	

Attachment 2
Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
4.2.4. Attribute Data	5^							2b	b	3c	
4.2.5. Sub type	5^							2b	b	3c	
4.3. Edit Geospatial Data											
4.3.1. GIS File Formats	5^							2b	b	3c	
4.3.2. Metadata	5^							2b	b	3c	
4.3.3. Vector	5^							2b	b	3c	
4.3.4. Attribute Data	5^							2b	b	3c	
4.3.5. Sub type	5^							2b	b	3c	
4.4. Utilize GIS Functions											
4.4.1. Tools (trace, snaps, etc.)	5^							2b	b	3c	
4.4.2. Import data (bring outside data into existing data)	5^							2b	b	3c	
4.4.3. Join data (attribute, spreadsheet, etc.)	5^							2b	b	3c	
4.4.4. Relate data (attribute, spreadsheet, etc.)	5^							2b	b	3c	
4.4.5. Print/Plot a map	5^							2b	b	3c	
4.4.6. Connect data between software platforms	5^							2b	b	3c	
4.4.7. Convert coordinate systems	5^							2b	b	3c	
4.5. Convert Geospatial Data											
4.5.1. Vector (i.e. .dwg to shape file)	5^							2b	b	3c	
4.5.2. Raster (i.e. .tiff to MrSid)									b		
4.5.3. Spreadsheets to GIS	5^								b	3c	
4.5.4. Utilize Export Options (i.e., Access, SQL, shape file, pdf, dwg)								2b	b		
5.0. SURVEYING TR: Surveying with Construction Applications; Surveying: Theory and Practice; ATTP 3-34.80; TM 3-34.55; EM 1110-1-1002, EM 1110-1-1005; BLM Manual of Surveying Instructions; Manufacturers operating manuals, Civil Software Package **AFQTP 3E5X1 Module 5**											

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Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
5.1. Fundamentals (Foundation)											
5.1.1. Survey theory								B	B		
5.1.2. Coordinate references (Datum, Grids)								B	B		
5.1.3. Survey control networks								B	B		
5.1.4. Survey accuracy								B	B		
5.1.5. Perform Survey Math											
5.1.5.1. Pythagorean Theorem	5^							2b	b	3c	
5.1.5.2. Trigonometry	5^							2b	b	3c	
5.1.5.3. Coordinate geometry	5^							2b	b	3c	
5.2. Surveying Instrument Maintenance											
5.2.1. Perform 2 Peg Test	5^							2b	b	3c	
5.2.2. Perform Collimation Test	5^							2b	b	3c	
5.2.3. Perform optical survey instrument maintenance	5^							2b	b	3c	
5.2.4. Perform GPS survey instrument maintenance	5^							2b	b	3c	
5.3. Data Collection (STANDARDS/RULES)											
5.3.1. Maintain manual survey field notes	5^							2b	b	3c	
5.3.2. Maintain electronic survey field notes	5^							2b	b	3c	
5.3.3. Utilize data functions	5^							2b	b	3c	
5.3.3.1. Feature Code Library											
5.3.3.1.1. Create	5^							2b	b	3c	
5.3.3.1.2. Edit	5^							2b	b	3c	
5.4. Survey Planning											
5.4.1. Utilize mission planning software	7^							2b	b	3c	
5.5. Perform Expedient Survey											
5.5.1. Accuracy requirements								2b	b		
5.5.2. Pace Count	5^							2b	b	3c	

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Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
5.5.3. 3-4-5 Triangle	5^							2b	b	3c	
5.5.4. Reconnaissance Survey	5^							2b	b	3c	
5.6. Construction Survey											
5.6.1. Optical Survey											
5.6.1.1. Set up optical survey equipment	5^							2b	b	3c	
5.6.1.2. Set up data collection equipment	5^							2b	b	3c	
5.6.1.3. Horizontal Control											
5.6.1.3.1. Utilize known control	5^							2b	b	3c	
5.6.1.3.2. Utilize relative control	5^							2b	b	3c	
5.6.1.3.3. Establish known control	7^									3c	
5.6.1.3.4. Establish relative control	7^									3c	
5.6.1.4. Vertical Control											
5.6.1.4.1. Utilize known control	5^							2b	b	3c	
5.6.1.4.2. Utilize relative control	5^							2b	b	3c	
5.6.1.4.3. Perform Level Loop (Computations and Adjustments)	5^							2b	b	3c	
5.6.1.5. Perform Resection	5^							2b	b	3c	
5.6.1.6. Perform topographic survey	5^							2b	b	3c	
5.6.1.7. Download Survey Data	5^							2b	b	3c	
5.6.1.8. Correct Survey Data	5^							2b	b	3c	
5.6.1.9. Generate contours using civil software package	5^							2b	b	3c	
5.6.1.10. Stake out utilities	5^							2b	b	3c	
5.6.1.11. Stake out buildings	5^							2b	b	3c	
5.6.1.12. Stake out roads	5^							2b	b	3c	
5.6.1.13. Compute earthwork volumes using civil software package	5^								b	3c	
5.6.1.14. Set centerline stakes using civil software package	5^								b	3c	
5.6.1.15. Set grade stakes using civil software package	5^								b	3c	

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Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
5.6.1.16. Set slope stakes using civil software package	5^								b	3c	
5.6.1.17. Design utilidors using civil software package	5^									3c	
5.6.1.18. Design buildings using civil software package	5^									3c	
5.6.1.19. Design roads using civil software package	5^									3c	
5.6.1.20. Perform remote object elevation	5^							2b	b	3c	
5.6.2. GPS/GNSS Surveying											
5.6.2.1. Set up GPS equipment	5^							2b	b	3c	
5.6.2.2. Set up data collection equipment	5^							2b	b	3c	
5.6.2.3. GPS frequencies									B		
5.6.2.4. Establish Project Control											
5.6.2.4.1. RTK	5^							2b	b	3c	
5.6.2.4.2. PPK	5^							2b	b	3c	
5.6.2.4.3. Static	5^							2b	b	3c	
5.6.2.5. Download electronic data to post-processing software	5^							2b	b	3c	
5.6.2.6. Correct PPK data using post-processed correction	5^							2b	b	3c	
5.6.2.7. Perform topographic survey	5^							2b	b	3c	
5.6.2.8. Download topographic survey data	5^							2b	b	3c	
5.6.2.9. Correct topographic survey data	5^							2b	b	3c	
5.6.2.10. Generate contours using civil software package	5^							2b	b	3c	
5.6.2.11. Stake out utilities	5^							2b	b	3c	
5.6.2.12. Stake out roads	5^							2b	b	3c	
5.6.2.13. Stake out buildings	5^							2b	b	3c	
5.7. Perform Mishap Survey TR: AFMAN 91-223; AFI 34-242; AFH 10-247v4	5^							2b	b	3c	

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Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
6.0. CONTRACT MANAGEMENT TR: DoDD 5500.7; AFI 32-1023, AFI 32-6002; AFI 32-1001, AFI 63-124, AFI 64-123; AFPAM 32-1005, AFPAM 32-1000 (TM 3- 34.41), AFPAM 32- 1006, AFPAM 91-210; FAR Part 37.6; AFCEE Program Managers Guide for Design and Construction;; USACE EM 385-1-1. **AFQTP 3E5X1 Module 6**											
6.1. Standards of conduct	5^							A	B	3c	
6.2. Construction safety and health requirements	5^								B	3c	
6.3. General contract provisions enforcement									B		
6.4. Conduct constructability review	7^								b	3c	
6.5. Apply applicable building codes or regulations to construction activities	7^								b	3c	
6.6. Inspect civil works	7^								b	3c	
6.7. Inspect electrical works	7^								b	3c	
6.8. Inspect structural works	7^								b	3c	
6.9. Inspect utilities works	7^								b	3c	
6.10. Inspect mechanical works	7^								b	3c	
6.11. Document construction activities	7^								b	3c	
6.12. Evaluate construction contract progress schedule	7^								b	3c	
6.13. Evaluate progress reports	7^								b	3c	
6.14. Evaluate materials submittals and test reports	7^								b	3c	
6.15. Pre-performance conference									B		
6.16. Construction permit coordination									B		
6.17. Surveillance of Military Construction (MILCON) projects									B		
6.18. Perform project close-out	7^								b	3c	

Attachment 2
Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
6.19. Warranty and Guarantee Program									B		
6.20. Perform contract modifications	7^								b	3c	
6.21. Indefinite Delivery Indefinite Quantity (IDIQ)											
6.21.1. Simplified acquisition methods (SABER/SATOC)									B		
6.21.2. Job/Task Order Contract (JOC/TOC)									B		
6.21.3. Multiple Award Contracts (e.g., MACC/MATOC)									B		
6.21.4. Multiple-Scope requirements									B		
6.21.5. Single-Scope requirements									B		
6.22. Design Documents											
6.22.1. Estimate cost elements (such as: Materials, Equipment, and Labor)	7^								b	3c	3c
6.22.2. Develop Statements of Work (SOW)	7^								b	3c	2b
6.22.3. Review project specifications	7^								b	3c	2b
6.22.4. Perform Design Review (such as: Materials, Equipment, Installation, and Construction)	7^								b	3c	2b
6.22.5. Prepare programming documents	7^								b	3c	2b
6.23. NEXGEN IT											
6.23.1. Overview									B		
6.23.2. Workflow									B		
6.24. BUILDER									B		
6.25. PAVER									B		

Attachment 2
Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
7.0. INSTALLATION PLANNING and MAPPING TR: AFIs 32-1021, 32-1022, 32-1023, 32-1024, 32-1032, 32-6002, 32-7062, 32-10140, 32-10141; AFMAN 91-201, AFPAM 32-1104v2, 32-1005; CONOPs - ESM and ESSP; **AFQTP 3E5X1 Module 7**											
7.1. Installation Development Plan requirements									B		C
7.2. Apply Site Planning requirements	7^								b	3c	3c
8.0. CONSTRUCTION SITE MATERIALS TR: FM 5-472 [AFJMAN 32-32- 1221(I)]; UFC 3-220-10N; ASTM D2487; ASTM D6951; AFQTP 3E5X1 Module 8; Soil Testing under Field Conditions Course Metering devices											
8.1. Soil											
8.1.1. Properties of Soils								A	B		B
8.1.2. Soils Classification								A	B		B
8.1.3. Field Identification											
8.1.3.1. Classify soils in field conditions	5^	*						2b	b	3c	3c
8.1.3.2. Determine California Bearing Ratio (CBR) using Dynamic Cone Penetrometer (DCP) ♦	5^	*						2b	b	3c	3c
8.1.3.3. Determine layer structure using Dynamic Cone Penetrometer (DCP) ♦	5^	*						2b	b	3c	3c
8.2. Perform Concrete Slump Test									b		
8.3. Evaluate Material Testing Reports TR: ASTM D2216, C136, D1883, D4318, D698, D1557, D1556, C143, C1064, C231, C31, C192, C39, C78											
8.3.1. Soil											

Attachment 2
Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
8.3.1.1. Laboratory determination of water (moisture) content of soil and rock by mass									A		B
8.3.1.2. Sieve Analysis of fine and coarse aggregates									A		B
8.3.1.3. California Bearing Ratio (CBR) of laboratory compacted soils									A		B
8.3.1.4. Liquid Limit, Plastic Limit, and Plasticity Index of soils									A		B
8.3.1.5. Laboratory Compaction Characteristics of Soil											
8.3.1.5.1. Modified Effort									A		B
8.3.1.5.2. Standard Effort									A		B
8.3.1.5.3. Density and Unit Weight of soil in-place by sand cone method									A		B
8.3.2. Asphalt											
8.3.2.1. Aggregate									A		B
8.3.2.2. Bituminous Material									A		B
8.3.3. Concrete											
8.3.3.1. Materials									A		B
8.3.3.2. Concepts									A		B
8.3.3.3. Slump of Hydraulic Cement Concrete									A		B
8.3.3.4. Temperature of Freshly Mixed Hydraulic Cement Concrete									A		B
8.3.3.5. Air Content of Freshly Mixed Concrete by the Pressure Method									A		B
8.3.3.6. Compressive Strength of Cylindrical Concrete Specimens									A		B
8.3.3.7. Flexural Strength of Concrete									A		B

Attachment 2
Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
8.4. Conduct Material Testing (*This section is <u>mandatory</u> for* RED HORSE)											
8.4.1. Soil (ASTMs C702, C136, D2216, D6913, D1883, D4318, D1557, D698, D1556, D7830)											
8.4.1.1. Reducing/Splitting Samples											
8.4.1.2. Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass											
8.4.1.3. Sieve Analysis of Fine and Coarse Aggregates (Dry)											
8.4.1.4. Sieve Analysis of Fine and Coarse Aggregates (Wet)											
8.4.1.5. California Bearing Ratio (CBR) of Laboratory Compacted Soils											
8.4.1.6. Liquid Limit, Plastic Limit, and Plasticity Index of Soils											
8.4.1.7. Modified Proctor											
8.4.1.8. Standard Proctor											
8.4.1.9. Sand Cone											
8.4.1.10. Density Testing (E-Gauge)											
8.4.2. Concrete (ASTMs C172, C1064, C143, C231, C31, C39, C78)											
8.4.2.1. Concrete properties											
8.4.2.2. Sampling											
8.4.2.3. Temperature											
8.4.2.4. Slump											
8.4.2.5. Air Entrainment											
8.4.2.6. Making Concrete Specimens											

Attachment 2
Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
8.4.2.7. Curing Concrete Specimens (field, lab)											
8.4.2.8. Compression strength test											
8.4.2.9. Flexural strength test											
8.4.3. Asphalt (ASTMs D6307, D2726, D2041, D6927, D7113, D7228)											
8.4.3.1. Asphalt properties											
8.4.3.2. Reducing/Splitting Samples											
8.4.3.3. Determine Asphalt Content											
8.4.3.4. Bulk Specific Gravity											
8.4.3.5. Rice Testing											
8.4.3.6. Marshal Testing											
8.4.3.7. Density Testing (E-Gauge)											
8.4.3.8. Temperature											
9.0. AFS-SPECIFIC CONTINGENCY RESPONSIBILITIES TR: AFIs 10-209, 10-210, 10- 211; T.O.s 35E-5-6-1, 35E4-132-1, 35E4-94-1; Army TMs 10-8340-207-14, 10-450-200-12; WMP-1, Annex S; AFPAM 10-219 series; AFH 10-222 series. **AFQTP 3E5X1 Module 9**											
9.1. Pre-deployment beddown planning and purpose TR: AFPAM 10-219, Vol 5, 6; AFI 10-401, 10-404; AFMAN 11-218, 11-235; AFH 10-222 v1 & 2; AFTTP 3-32.11; UFC's 3-260-01, 4-010-01, CONOPs, ESM & ESSP											
9.1.1. Contingency Planning Factors		*						A	B		C
9.1.2. Standards of construction		*						A	B		B
9.1.3. BEAR Base assets		*						A	B		
9.1.4. Base Support and Expeditionary (BAS&E) Site Planning TR: AFI 10-404		*						A	B		C

Attachment 2
Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
9.1.5. Expeditionary Site Survey Process (ESSP)		*						A	B		B
9.1.6. Expeditionary Site Mapping (ESM)		*						A	B		B
9.1.7. Aircraft parking planning; TR: UFC 3-260-01; AFMAN 11-218		*						A	B		
9.1.8. Base conceptual planning guidance		*							B		
9.1.9. Combat Air Base Planning Applications (performs tasks using software listed in CE UTC)											
9.1.9.1. Utilize BEAR Base Planning within GeoExPT software	5^	*						2b	b	3c	3c
9.1.9.2. Utilize Aircraft Parking Planner within GeoExPT software	5^	*						2b	b	3c	3c
9.1.9.3. Utilize GeoExPT software for taxiway linework	5^	*							b	3c	
9.1.9.4. Utilize GeoExPT to create a Common Installation Picture (CIP)	5^	*							b	3c	
9.1.9.5. Export beddown to CAD software	5^	*							b	3c	
9.2. Beddown Operations TR: AFPAM 10-219; AFDD 3-34; UFC 4-010-01, UFC 4-010-02											
9.2.1. Initial Air Base/Airfield evaluation		*						A	B		C
9.2.2. Contingency Airfield Pavement evaluation		*						A	B		C
9.2.3. Evaluate Airfield Pavement Evaluation Report	7^	*							b	3c	2b
9.2.4. Validate airfield suitability	7^	*							b	3c	2b
9.2.5. BEAR Base Planning Criteria											
9.2.5.1. Perform site selection	7^	*						1a	b	3c	2b
9.2.5.2. Establish dispersed lay out	7^	*						1a	b	3c	2b

Attachment 2
Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
9.2.5.3. Establish non-dispersed lay out	7^	*						1a	b	3c	
9.2.5.4. Shelter orientation		*						A	B		C
9.2.5.5. Aircraft revetment siting	5^	*						A	B	3c	
9.2.6. Employment Operations											
9.2.6.1. Emergency Operations Center (EOC) **(TQT)**		*~						B	B		
9.2.6.2. Unit Control Center (UCC) Operations **(TQT)**		*~						B	B		
9.2.6.3. Perform Airfield Damage Assessment **(TQT)**	5^	*~						b	b	3c	
9.2.6.4. Perform Facility and Utility Damage Assessment **(TQT)**	5^	*~						b	B	3c	
9.2.6.5. Plot Airfield/Facility Damage **(TQT)**	5^	*~						2b	b	3c	
9.3. Minimum Operating Strip (MOS) Selection Procedures TR: AFPAM 10-219 v4; T.O. 35E2- 6-1; UFC 3-270-07											
9.3.1. Perform Minimum Operating Strip (MOS) Selection Procedures and Considerations **(TQT)**	5^	*~						2b	b	3c	
9.3.2. Utilize Airfield Damage Repair Software Package for ADR **(TQT)**	5^	*~						2b	b	3c	
9.3.3. Identify Minimum Airfield Operating Surface (MAOS) **(TQT)**	5^	*~						a	b	3c	
9.3.4. Compute Repair Quality Criteria (RQC) for ADR **(TQT)** TR: ETL 13-1	5^	*~						b	b	3c	
9.3.5. Lay out Minimum Airfield Operating Surface Marking System (MAOSMS) ♦	5^	*~						a	b	3c	
9.3.6. Perform Crater Profile Measurement (CPM) Operations ♦	5^	*~						2b	b	3c	
9.3.7. Evaluate Soil Strength for Airfield Damage Repair		*~							b		

Attachment 2
Specialty Training Standard (STS)

1. Tasks, Knowledge, and Technical References	2. Tasks		3. Certification For OJT					4. Proficiency Codes Used To Indicate Training/Information Provided via DL and/or Course			
	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI + TQT ~	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	OJT	7 Lvl
9.3.8. Precision Approach Path Indicator (PAPI) Procedures TR: T.O. 35F5-3-16-1; AFTTP 3-32.13 Airfield Marking Procedures											
9.3.8.1. Calculate Light Elevation and Location ♦	5^	*							b	3c	
9.3.8.2. Lay out ♦	5^	*							b	3c	
9.3.8.3. Align ♦	5^	*							b	3c	
9.3.9. Mobile Aircraft Arresting System (MAAS) Procedures TR: AFPAM 10-219, Vol 3, 4 & 5; T.O.s 35E8-2-5-4, 35E8-2-10-3, 35E8-2-10-1S-1, 35E8-2-1-101, 35E8-2-10-1; FMs 5-430-00-2, 35E8-2-11-1, 35E8-2-11-2; ETL 02-19											
9.3.9.1. Evaluate soil strength for MAAS installation	5^	*							b	3c	
9.3.9.2. Lay out MAAS with Fairlead Beams and Mobile Runway Edge Sheaves (MRES) ♦	5^	*							b	3c	
9.3.9.3. Align MAAS with Fairlead Beams and Mobile Runway Edge Sheaves (MRES) ♦	5^	*							b	3c	
9.3.9.4. Lay out MAAS with Standard Fairlead Beams, MRES, and Dead Man Anchoring System ♦	5^	*							b	3c	
9.3.9.5. Align MAAS with Standard Fairlead Beams, MRES, and Dead Man Anchoring System ♦	5^	*							b	3c	
9.4. Small Shelter System (SSS) TR: T.O. 35E5-6-11											
9.4.1. Assemble		*						2b	b		
9.4.2. Disassemble		*						2b	b		

Attachment 3
3E5X1 Air Force Qualification Documentation Record

A3. AFQTP Documentation Record.

A3.1. To ensure each Engineering Specialist is trained to the correct standard an AF Qualification Training Package (AFQTP) has been developed for each core task identified in their STS. These AFQTPs are **mandated** to be used by the trainee, trainer, and certifier in their on-the-job-training program for upgrade to the 5- or 7-level.

A3.2. These AFQTPs cover all aspects of the task sufficiently and provide additional task knowledge in preparation for hands-on training. AFQTPs summarize procedures on a task performance checklist for use by trainers, certifiers, and trainees.

A3.2.1. The UTM or supervisor can download paper-based AFQTPs. Paper-based AFQTPs are on **myLearning** in the Civil Engineer library.

A3.2.2. In addition to the paper-based AFQTPs, there are web-based courses that are available on **myLearning** in the Civil Engineer library.

A3.3. **Documentation.** Before signing off a core or diamond task in the JQS section of the individual automated training record, signed off the task first in the AFQTP.

A3.3.1. **Core Tasks (5^ or 7^).** To document the completion, the supervisor or trainer opens the individual's training record, navigates to the STS line, and the supervisor or trainer checks the box that the Airman has completed the AFQTP.

A3.3.2. **Diamond (♦) Tasks.** Supervisors/Trainers **DO NOT** sign off the corresponding JQS task until the trainee has completed hands-on training. If the required equipment is not available at your location, completing the task's AFQTP web-based course or assessment with a passing score of 80% is all required for upgrade training. Accomplish hands-on certification at the first opportunity when equipment or funding is available.

Attachment 3
3E5X1 Air Force Qualification Documentation Record

A3.4. 3E5X1 Core and Diamond Tasks Requirements.

Task Number	Tasks, Knowledge, and Technical References	Core/Deployment Tasks		Certification of AFQTPs			
		Core	Deployment	Tng Start	Tng Complete	Trainee Initials	Trainer Initials
1.0.	**CIVIL ENGINEER (CE) COMMON CORE CONCEPTS**						
1.1.	Accomplish CE 5 Level Core Concepts Course	5					
1.2.	Accomplish CE 7 Level Core Concepts Course	7					
1.6.	**CE Training overview**						
1.6.2.	Attend AFIT WENG 200 Scoping and Estimating (AD Only)	7					
1.6.3.	Attend AFIT WMGT 301 Introduction to Asset Management (AD Only)	5					
1.6.4.	Attend AFIT WMGT 322 Introduction to Project Management (AD Only)	7					
2.0.	**COMPUTER-AIDED DRAFTING (CAD) and Design** Accomplish Paper-Based AFQTP						
2.3.	**CAD Principles (perform tasks using software listed in CE UTC)**						
2.3.1.	**Set up Drawings**						
2.3.1.1.	Paper space	5					
2.3.1.2.	Model space	5					
2.3.1.3.	Units	5					
2.3.1.4.	Plot styles	5					
2.3.1.5.	Layers	5					
2.3.1.6.	Maps	5					
2.3.2.	**Utilize Drawings Commands**						
2.3.2.1.	Draw	5					
2.3.2.2.	Modify	5					
2.3.2.3.	Layers	5					
2.3.2.4.	Annotation	5					
2.3.2.5.	Blocks	5					
2.3.2.6.	Properties	5					
2.3.2.7.	Reference Files	5					
2.3.2.8.	Print (Plot)	5					
2.3.3.	**Drawing Management**						
2.3.3.3.	Utilize standards, such as AEC, ANSI, AGS, ISO	5					
2.4.	**Technical Drawings**						
2.4.1.	Produce Civil Drawings	5					
2.4.2.	Interpret Civil Drawings	7					
2.4.3.	Produce Architectural Drawings	5					
2.4.4.	Interpret Architectural Drawings	7					
2.4.5.	Produce Structural Drawings	5					
2.4.6.	Interpret Structural Drawings	7					
2.4.7.	Produce Mechanical Drawings	5					
2.4.8.	Interpret Mechanical Drawings	7					
2.4.9.	Produce Electrical Drawings	5					
2.4.10.	Interpret Electrical Drawings	7					
2.5.	**Convert Data**						

Attachment 3
3E5X1 Air Force Qualification Training Package (AFQTP) Documentation Record

Task Number	Tasks, Knowledge, and Technical References	Core/Deployment Tasks		Certification of AFQTPs			
		Core	Deployment	Tng Start	Tng Complete	Trainee Initials	Trainer Initials
2.5.1.	CAD to GIS	5					
2.5.2.	GIS to CAD	5					
4.0.	**GEOGRAPHIC INFORMATION SYSTEM (GIS)** Accomplish Paper-Based AFQTP						
4.1.	**Geographic Information Systems (GIS)**						
4.1.9.	Import imagery	5					
4.1.10.	Export imagery	5					
4.2.	**Create Geospatial Data**						
4.2.1.	GIS File Formats	5					
4.2.2.	Metadata	5					
4.2.3.	Vector	5					
4.2.4.	Attribute Data	5					
4.2.5.	Sub type	5					
4.3.	**Edit Geospatial Data**						
4.3.1.	GIS File Formats	5					
4.3.2.	Metadata	5					
4.3.3.	Vector	5					
4.3.4.	Attribute Data	5					
4.3.5.	Sub type	5					
4.4.	**Utilize GIS Functions**						
4.4.1.	Tools (trace, snaps, etc.)	5					
4.4.2.	Merge data (copy, paste, etc., bring outside data into existing data)	5					
4.4.3.	Join data (attribute, spreadsheet, etc.)	5					
4.4.4.	Link data (attribute, spreadsheet, etc.)	5					
4.4.5.	Print/Plot a map	5					
4.4.6.	Connect data between software platforms	5					
4.4.7.	Convert coordinate systems	5					
4.5.	**Convert Geospatial Data**						
4.5.1.	Vector (i.e., .dwg to shape file)	5					
4.5.3.	Spreadsheets to GIS	5					
5.0.	**SURVEYING** Accomplish Paper-Based AFQTP						
5.1.	**Fundamentals of Surveying (FOUNDATION)**						
5.1.5.	**Perform Survey Math**						
5.1.5.1.	Pythagorean Theorem	5					
5.1.5.2.	Trigonometry	5					
5.1.5.3.	Coordinate geometry	5					
5.2.	**Surveying Instrument Maintenance**						
5.2.1.	Perform 2 Peg Test	5					
5.2.2.	Perform Collimation Test	5					
5.2.3.	Perform optical survey instrument maintenance	5					
5.2.4.	Perform GPS survey instrument maintenance	5					
5.3.	**Data Collection (STANDARDS/RULES)**						
5.3.1.	Maintain manual survey field notes	5					
5.3.2.	Maintain electronic survey field notes	5					

Attachment 3
3E5X1 Air Force Qualification Training Package (AFQTP) Documentation Record

Task Number	Tasks, Knowledge, and Technical References	Core/Deployment Tasks		Certification of AFQTPs			
		Core	Deployment	Tng Start	Tng Complete	Trainee Initials	Trainer Initials
5.3.3.	Utilize data functions	5					
5.3.3.1.	**Feature Code Library**						
5.3.3.1.1.	Create	5					
5.3.3.1.2.	Edit	5					
5.4.	**Survey Planning**						
5.4.1.	Utilize mission planning software	7					
5.5.	**Perform Expedient Survey**						
5.5.2.	Pace Count	5					
5.5.3.	3-4-5 Triangle	5					
5.5.4.	Reconnaissance Survey	5					
5.6.	**Construction Survey**						
5.6.1.	**Optical Survey**						
5.6.1.1.	Set up optical survey equipment	5					
5.6.1.2.	Set up data collection equipment	5					
5.6.1.3.	**Horizontal Control**						
5.6.1.3.1.	Utilize known control	5					
5.6.1.3.2.	Utilize relative control	5					
5.6.1.3.3.	Establish known and relative control	7					
5.6.1.3.4.	Utilize known and relative control	7					
5.6.1.4.	**Vertical Control**						
5.6.1.4.1.	Utilize known control	5					
5.6.1.4.2.	Utilize relative control	5					
5.6.1.4.3.	Perform Level Loop (Computations and Adjustments)	5					
5.6.1.5.	Perform Resection	5					
5.6.1.6.	Perform topographic survey	5					
5.6.1.7.	Download Survey Data	5					
5.6.1.8.	Correct Survey Data	5					
5.6.1.9.	Generate contours using civil software package	5					
5.6.1.10.	Stake out utilities	5					
5.6.1.11.	Stake out buildings	5					
5.6.1.12.	Stake out roads	5					
5.6.1.13.	Compute earthwork volumes using civil software package	5					
5.6.1.14.	Set centerline stakes using civil software package	5					
5.6.1.15.	Set grade stakes using civil software package	5					
5.6.1.16.	Set slope stakes using civil software package	5					
5.6.1.17.	Design utilidors using civil software package	5					
5.6.1.18.	Design buildings using civil software package	5					
5.6.1.19.	Design roads using civil software package	5					
5.6.1.20.	Perform remote object elevation	5					
5.6.2.	**GNSS (e.g., GPS) Surveying**						

Attachment 3
3E5X1 Air Force Qualification Training Package (AFQTP) Documentation Record

Task Number	Tasks, Knowledge, and Technical References	Core/Deployment Tasks		Certification of AFQTPs			
		Core	Deployment	Tng Start	Tng Complete	Trainee Initials	Trainer Initials
5.6.2.1.	Set up GPS equipment	5					
5.6.2.2.	Set up data collection equipment	5					
5.6.2.	**Establish Project Control**						
5.6.2.4.1.	RTK	5					
5.6.2.4.2.	PPK	5					
5.6.2.4.3.	Static	5					
5.6.2.5.	Download electronic data to post-processing software	5					
5.6.2.6.	Correct PPK data using post-processed correction	5					
5.6.2.7.	Perform topographic survey	5					
5.6.2.8.	Download topographic survey data	5					
5.6.2.9.	Correct topographic survey data	5					
5.6.2.10.	Generate contours using civil software package	5					
5.6.2.11.	Stake out utilities	5					
5.6.2.12.	Stake out roads	5					
5.6.2.13.	Stake out buildings	5					
5.7.	Perform Mishap Survey	5					
6.0.	**CONTRACT MANAGEMENT** Accomplish Paper-Based AFQTP						
6.1.	Standards of Conduct	5					
6.2.	Construction Safety and Health Requirements	5					
6.4.	Conduct Constructability Review	7					
6.5.	Apply applicable building codes or regulations to construction activities	7					
6.6.	Inspect civil works	7					
6.7.	Inspect electrical works	7					
6.8.	Inspect structural works	7					
6.9.	Inspect utilities works	7					
6.10.	Inspect mechanical works	7					
6.11.	Document construction activities	7					
6.12.	Evaluate construction contract progress schedule	7					
6.13.	Evaluate progress reports	7					
6.14.	Evaluate materials submittals and test reports	7					
6.18.	Perform project close-out	7					
6.20.	Perform contract modifications	7					
6.22.	**Design Documents**						
6.22.1.	Estimate cost elements (such as: Materials, Equipment, and Labor)	7					

Attachment 3
3E5X1 Air Force Qualification Training Package (AFQTP) Documentation Record

Task Number	Tasks, Knowledge, and Technical References	Core/Deployment Tasks		Certification of AFQTPs			
		Core	Deployment	Tng Start	Tng Complete	Trainee Initials	Trainer Initials
6.22.2.	Develop Statements of Work (SOW)	7					
6.22.3.	Review project specifications	7					
6.22.4.	Perform Design Review (such as: Materials, Equipment, Installation, and Construction)	7					
6.22.5.	Prepare programming documents	7					
7.0.	**INSTALLATION PLANNING/MAPPING** Accomplish Paper-Based AFQTP						
7.2.	Apply Site Planning Requirements	7					
8.0.	**CONSTRUCTION SITE MATERIALS** Accomplish Paper-Based AFQTP						
8.1.	**Soil**						
8.1.3.	**Field Identification**						
8.1.3.1.	Classify soils in field conditions	5					
8.1.3.2.	Determine California Bearing Ratio (CBR) using Dynamic Cone Penetrometer (DCP) ♦	5					
8.1.3.3.	Determine layer structure using Dynamic Cone Penetrometer (DCP) ♦	5					
9.0.	**AFS SPECIFIC CONTINGENCY RESPONSIBILITIES** Accomplish Paper-Based AFQTP						
9.1.9.	**Combat Air Base Planning Applications (performs tasks using software listed in CE UTC)**						
9.1.9.1.	Utilize BEAR Base Planning within GeoExPT software	5	*				
9.1.9.2.	Utilize Aircraft Parking Planner within GeoExPT software	5	*				
9.1.9.3.	Utilize GeoExPT software for taxiway linework	5	*				
9.1.9.4.	Utilize GeoExPT to create a Common Installation Picture (CIP)	5	*				
9.1.9.5.	Export beddown to CAD software	5	*				
9.2.	**Beddown Operations**						
9.2.3.	Evaluate Airfield Pavement Evaluation Report	7	*				
9.2.4.	Validate airfield suitability	7	*				
9.2.5.	**BEAR Base Planning Criteria**						
9.2.5.1.	Perform site selection	7	*				
9.2.5.2.	Establish dispersed lay out	7	*				
9.2.5.3.	Establish non-dispersed lay out	7	*				
9.2.5.5.	Aircraft revetment siting	5	*				
9.2.6.	**Employment Operations**						
9.2.6.3.	Perform Airfield Damage Assessment **(TQT)**	5	*				
9.2.6.4.	Perform Facility and Utility Damage Assessment **(TQT)**	5	*				

Attachment 3
3E5X1 Air Force Qualification Training Package (AFQTP) Documentation Record

Task Number	Tasks, Knowledge, and Technical References	Core/Deployment Tasks		Certification of AFQTPs			
		Core	Deployment	Tng Start	Tng Complete	Trainee Initials	Trainer Initials
9.2.6.5.	Plot Airfield/Facility Damage **(TQT)**	5	*				
9.3.	**Minimum Operating Strip (MOS) Selection Procedures**						
9.3.1.	Perform Minimum Operating Strip (MOS) Selection Procedures and Considerations **(TQT)**	5	*				
9.3.2.	Utilize Airfield Damage Repair Software Package for ADR **(TQT)**	5	*				
9.3.3.	Identify Minimum Airfield Operating Surface (MAOS) **(TQT)**	5	*				
9.3.4.	Compute Repair Quality Criteria (RQC) for ADR **(TQT)** TR: ETL 13-1	5	*				
9.3.5.	Lay out Minimum Airfield Operating Surface Marking System (MAOSMS) ♦	5	*				
9.3.6.	Perform Crater Profile Measurement (CPM) Operations ♦	5	*				
9.3.8.	**Precision Approach Path Indicator (PAPI) Procedures**						
9.3.8.1.	Calculate Light Elevation and Location ♦	5	*				
9.3.8.2.	Lay out ♦	5	*				
9.3.8.3.	Align ♦	5	*				
9.3.9.	**Mobile Aircraft Arresting System (MAAS) Procedures**						
9.3.9.1.	Evaluate soil strength for MAAS installation	5	*				
9.3.9.2.	Lay out and Align MAAS with Fairlead Beams ♦	5	*				
9.3.9.3.	Lay out and Align MAAS with Standard Fairlead Beams and Dead Man Anchoring System ♦	5	*				
9.3.9.4.	Lay out MAAS with Standard Fairlead Beams, MRES, and Dead Man Anchoring System ♦	5	*				
9.3.9.5.	Align MAAS with Standard Fairlead Beams, MRES, and Dead Man Anchoring System ♦	5	*				

Attachment 4
3E5X1 Supplemental Course Training Standards (CTS)

Supplemental Courses

ADVANCED SURVEYING (JCAZP3E571 01AB -10 Days)

1. FUNDAMENTALS	PROFICIENCY CODE
1.1. Survey Theory	C
1.2. Survey Control Networks	C
1.3. Develop Feature Code Libraries	3c
1.4. Develop Data Dictionaries	3c
1.5. Survey Accuracy	C
1.6. Set-Up Data Collector	c
1.7. Utilize Mission Planning Software	c
1.8. Perform Optical Survey Instrument Maintenance	3c
1.9. Perform GNSS (e.g., GPS) Instrument Maintenance	3c
1.10. Perform 2 Peg Test	3c
1.11. Perform collimation test	b
1.12. Radio Frequencies	C
2. SURVEY APPLICATIONS	
2.1. Perform Pace Count	3c
2.2. Perform Reconnaissance Survey	3c
2.3. Establish Relative Control (Total Station)	3c
2.4. Establish Control using GNSS (e.g., GPS) (Static)	3c
2.5. Transfer Control	
2.5.1. Relative Control to known	3c
2.5.2. PPK	3c
2.6. Perform Topographic Survey (Optical & GPS/GNSS)	3c
2.7. Download and Adjust Survey Data (Optical & GNSS)	
2.7.1. Review Survey Job (Controller)	3c
2.7.2. Download Survey to Civil Software Package	3c
2.7.3. Edit data using Civil Software Package	3c
2.7.4. Upload survey to Controller	3c

Attachment 3
3E5X1 Air Force Qualification Training Package (AFQTP) Documentation Record

2.8. Generate Contours (Optical & GNSS) using Civil Software Package	3c
2.9. Compute Remote Object Elevations (Manual)	3c
3. CONSTRUCTION ACTIVITIES	
3.1. Compute Earthwork Volumes using Civil Software Package	2b
3.2. Set Centerline using Civil Software Package	3c
3.3. Set Grade using Civil Software Package	3c
3.4. Set Slope stakes using Civil Software Package	3c
3.5. Stake Out Utilidors	3c
3.6. Stake Out Buildings	3c
3.7. Set Building Corner Elevations (Batterboards)	3c

CONTRACT CONSTRUCTION INSPECTION (MTT)
J7AZT3E571 01AB (10 Days)

TASK	PROFICIENCY CODE
1. Enforce General Contract Provisions	2b
2. Conduct Constructability Review	2b
3. Inspect Construction Activities	2b
4. Document Construction Activities	2b
5. Evaluate Construction Contract Progress Schedule	2b
6. Evaluate Progress Reports	2b
7. Evaluate Materials Submittals	2b
8. Pre-Performance Conference	B
9. Coordinate Construction Permits	2b
10. Surveillance of Military Construction (MILCON) projects	B
11. Project Close-out Procedures	b
12. Warranty and Guarantee Program	B
13. Contract Modifications	B
14. Simplified Acquisition Base Engineer Requirements (SABER/SATOC)	B
15. Indefinite Delivery Indefinite Quantity (IDIQ)	B