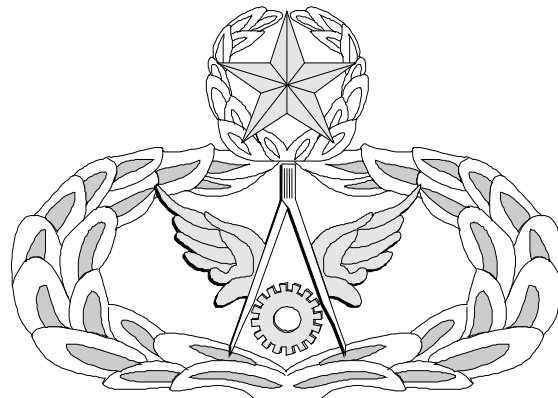
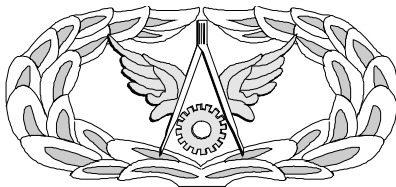


## Air Force Specialty Code (AFSC) 3E3X1

# STRUCTURAL



MASTER



BASIC



SENIOR

## CAREER FIELD EDUCATION AND TRAINING PLAN

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**CAREER FIELD EDUCATION AND TRAINING PLAN  
STRUCTURAL SPECIALTY  
AFSC 3E3X1**

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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 Structures specialty. This CFETP provides Airmen with a defined developmental path and instills rigor in all aspects of career field 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 both mandatory and supplemental courses, and exportable courseware.
- 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 courses material required for this specialty in support of contingency/wartime training.

Using guidance provided in the CFETP, supervisors must 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 Career Field Manager (AFCFM).** An individual on the Air Staff charged with the responsibility for overseeing all training and career field management for an Air Force specialty or group of specialties.

**Air Force Civil Engineer Center (AFCEC).** Formally, Air Force Civil Engineer Support Agency (AFCESA), the focal point for all Civil Engineer training development. All individual AFSC Force Development Managers and the Chief of Force Development are located at AFCEC Detachment 1, Tyndall AFB, FL.

**Air Force Credentialing Opportunities On-Line (AF COOL) Program.** AF COOL is a pathway for enlisted Airmen to earn industry recognized professional certifications, licenses to enhance their active-duty work, and to prepare them as they transition to the civilian job market. Access the AF COOL Program through the [Air Force Virtual Education Center \(AFVEC\)](#) website. The website 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 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 (valid requirements) describes the minimum mandatory qualifications of personnel to fill these jobs. The updated AFECD is available at the Air Force Personnel Center's website, [myPers](#), located under the military classification menu.

**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 at [AFIT Civil Engineer School Course Catalog](#).

**Air Force Job Qualification Standard (AFJQS).** A comprehensive task list that describes a particular job type or duty position. Used by supervisors to document task qualifications. The tasks on the AFJQS 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 or program, or on a piece of equipment. AFQTPs identify the Air Force's standardized method for performing the task. The AFQTP may be printed (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 3E3X1 AFSC are located on [myLearning](#) and in CE DASH within the [Structures Field Collaboration Workspace](#).

**Air Force Virtual Education Center (AFVEC).** The Air Force's premier website for information about educational benefits offering a wide array of on-line services to empower you to actively participate in all aspects of your education to include the creation and management of funding requests (i.e., Tuition Assistance), credentialing opportunities, and the Skill Bridge civilian transition program.

**Civil Engineer Dashboard (CE DASH).** The Air Force Civil Engineering technical information and support portal.

**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, to eliminate duplication, and to ensure this training is budget defensible.

**Chief, Force Development.** Located at AFCEC, Detachment 1, this individual oversees all force development education and training associated within the 3E0 to 3E6 AFSCs.

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

**Computer-Based Training (CBT).** A self-paced, stand-alone computer product used to deliver interactive subject and task knowledge.

**Core Tasks (5<sup>^</sup> or 7<sup>^</sup>).** Tasks the AFCFM identifies as minimum qualification requirements for everyone within an AFSC, regardless of duty position.

**Critical Tasks.** Tasks identified by the work center supervisor as having a detrimental effect on 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 individual's 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, completion of the task's AFQTP is all that 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, AFIT offer DL 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.

**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).

**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 References and Requirements 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 used to support questions on a given promotion test. The catalog also contains administrative and special instructions for test control officers. The EPRRC is available at [Airman Promotion Tools Testing](#).

**Expeditionary Combat Support-Training Certification Center (ECS-TCC).** Total Force training center managed by the Air Force Reserve Command.

**Force Development Manager (FDM).** Located at AFCEC, Detachment 1, these individuals are responsible for overseeing all training/development and career field management for a specific Air Force Civil Engineer specialty.

**Initial Skills Training.** The Air Force Specialty (AFS) - specific training an individual receives upon entry into the Air Force or upon retraining into this specialty for award of the 3-skill level. For our career field, the 366 TRS, Detachment 6 (AETC) at the Naval Construction Training Center (NCTC), Gulfport, MS provides the training.

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

**Learning Management System (LMS).** A software application that provides the framework to handle all aspects of the learning process. An LMS houses, delivers, and tracks training content.

**Major Command (MAJCOM) Functional Manager (MFM).** Senior enlisted leaders, selected by the appropriate functional authority to provide day-to-day management and responsibility over specific functional communities at the MAJCOM, FOA, DRU, or ARC level. While they should maintain an institutional focus in regard to resource deployment and distribution, MFMs are responsible for ensuring their specialties are equipped, developed, and sustained to meet future needs of the total Air Force mission.

**[myLearning](#).** The Air Force's secure LMS for enterprise-wide computer-based education and training. Accessible on a government or civilian network via computer or tablet, it is an anytime, anywhere system designed to centralize LMS platforms across the Department of the Air Force.

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

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

**Proficiency Training.** Additional training, either in-residence or exportable advanced training courses, or on-the-job training, provided to personnel to increase their skills and knowledge beyond the minimum required for upgrade.

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

**Regional Training Site (RTS).** Total Force training centers managed by the Air National Guard.

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

**Specialty Training Requirements Team (STRT).** A forum chaired by the AFCFM along with a team of Subject Matter Experts from each MAJCOM meet to determine 3E3X1 education and training requirements (formal and OJT)

**Specialty Training Standard (STS).** An DAF publication that describes an AFS in terms of tasks and knowledge Airmen in that specialty must perform or know. It also identifies the training required and provided to achieve a 3-, 5-, or 7-skill level within an enlisted AFS. It further serves as a contract between AETC and the functional user to show which of the overall training requirements for an AFSC, taught in formal schools and correspondence courses.

**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 providing Airmen who are qualified in one or more positions of their specialty with additional skills/knowledge to enhance their expertise in the career field. Training is for selected career Airmen in advanced levels of the AFS.

**Total Force (TF).** Organizations, units, and individuals that comprise the Air Force’s resources for meeting its mission. This includes civilian personnel, Regular Air Force, Air National Guard, and Air Force Reserve Command military personnel.

**Upgrade Training (UGT).** Mandatory training courses, task qualification requirements, and correspondence course completion requirements that lead to attainment of higher level of proficiency and are required for award of the 5-, 7-, and 9-skill levels.



**Utilization and Training Workshop (U&TW).** An executive decision meeting to vote on funding for instructor authorizations, equipment and facilities needed to support any new or revised training coming from the STRT. During the U&TW, the team will determine which organizations will furnish resources. The team will also establish commitments and delivery dates in writing and document equipment availability dates or shortfalls.

## PART 1

### SECTION A - GENERAL INFORMATION

**A1. Purpose:** This CFETP provides the necessary information for AFCFMs, MFMs, commanders, unit training managers, 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, advanced, and 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 it 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 the delivery methods.

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

**A2. Uses.** MFMs and supervisors at all levels will use the plan to ensure comprehensive and cohesive training programs are available for each individual 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 resources needed to provide the identified training.

A2.2. MFMs will ensure their training programs complement the CFETP mandatory initial, upgrade, qualification, and proficiency training requirements and identify requirements satisfied by OJT, in-residence training, vendor training, or web-based training courses. MFMs also identify MAJCOM-developed training to support this AFS in the plan.

A2.3. Unit Training Managers and supervisors must ensure each Airman completes the mandatory training requirements (including MAJCOM supplemental requirements) for the upgrade training specified in this plan.

A2.4. Each individual will complete mandatory training requirements specified in this plan. Use the list of courses in Part II of this CFETP as a reference to support training.

**A3. Coordination and Approval.** The AFCFM is the certification authority for the CFETP. MAJCOM representatives and AETC personnel will identify and coordinate on the career field training requirements. The AETC Training Manager for this specialty will initiate an annual review of this document by AETC and MFMs to ensure currency and accuracy. Using the list of courses in Part II, they will eliminate duplicate training.

## **SECTION B - CAREER FIELD PROGRESSION AND INFORMATION**

### **B1. Specialty Description**

B1.1. Specialty Summary. Manages, constructs, repairs, and modifies structural systems and wooden, masonry, metal, and concrete structures and facilities. Fabricates and repairs components of buildings, utility systems, and real property installed equipment (RPIE). Ensures compliance with environmental regulations. Related DoD Occupational Subgroup: 171000

B1.2. Duties and Responsibilities for Apprentice (3E331), Journeyman (3E351), and Craftsman (3E371).

B1.2.1. Prepares and interprets working drawings and schematics for maintaining, altering, and repairing buildings and structures. Surveys proposed work sites to determine material and labor requirements, prepares cost estimates. Reviews structural work progress and coordinates changes in schedules. Constructs and repairs footings, floors, slabs, foundations, walls, roofs, steps, doors, and windows for prefabricated and permanent structures. Constructs and modifies buildings. Prepares, applies, and finishes mortar, concrete, plaster, and stucco. Fabricates, repairs, and installs metal parts and assemblies for utility systems, facilities, and RPIE.

B1.2.2. Erects and lays out trusses and structural steel to specified dimensions. Welds, cuts, brazes, and solders ferrous and nonferrous metals using various welding processes. Welds butt, lap, tee, and edge joints in all working positions. Inspects, maintains, repairs, and installs overhead, roll-up, hangar, and mechanical doors and gates. Installs forms and reinforcing material. Applies protective coatings such as primers, stains, and sealants.

B1.2.3. Troubleshoots, repairs, and installs commercially manufactured locking devices such as keyed and combination, cipher, cylindrical, mortised, and panic hardware/exit devices, and pad locks.

B1.2.4. Erects and works from scaffolding, ladders, and mobile platforms.

B1.2.5. Identifies and selects masonry construction materials considering strength, moisture content, grade, mix, application procedures, and curing.

B1.2.6. Manages, inspects, and evaluates work center activities. Ensures compliance with commercial and DoD publications. Submits and reviews supply and equipment requisitions. Discusses inspection findings and recommends corrective action.

B1.3. Duties and Responsibilities for Superintendent (3E290).

B1.3.1. Supervises and plans construction and repair of airfield pavements, building and structural repairs, roads, streets, curbs, footings, floors, slabs, foundations, walls, roofs, steps, doors, and windows for prefabricated and permanent structures, surface mats, membranes, improved and unimproved land areas using appropriate structural, paving, and surfacing procedures and equipment to include both in-garrison and specialized training requirements. Interprets

construction drawings and surveys using information such as sub-grade contours and grade alignment. Inspects pavements for surface, base, and sub-base damage or defects. Identifies damaged or defective areas needing joint removal and replacement, crack sealant, surface overlays, and seal coats. Investigates proposed work sites to determine resource requirements. Prepares cost estimates for in-service work requirements. Applies engineered performance standards in planning and estimating jobs. Coordinates measured and direct schedule work requirements during approval, processing, and completion stages. Recommends method of accomplishment based on existing capabilities. Develops, monitors, and maintains work order priority program. Monitors work costs to ensure compliance with legal limits or support agreements and recapitalization process. Coordinates Work Order Review Board processes and provides meeting agenda as required.

B1.3.2. Determines type and application of equipment to use in various construction, maintenance, and repair operations. Manages construction equipment operation to complete a finish grade, level, slope, and compaction of construction materials. Supervises snow and ice removal operations to include chemical application and other ice control products. Prepares and interprets working drawings and schematics for maintaining, altering, and repairing buildings and structures.

B1.3.3. Inspects and manages operator maintenance on horizontal construction and snow removal equipment. Schedules and coordinates equipment repair and servicing with the vehicle maintenance activity and other servicing facilities.

B1.3.4. Performs planning activities and conducts facility surveys. Surveys proposed work to determine resource requirements. Obtains certifications, special tools, and equipment for assigned personnel. Ensures compliance with all safety and environmental regulations to include confined space programs.

B1.3.5. Manages and coordinates demolition projects, placement, and detonation of explosives to include quarry demolition, clearing, and base denial operations as required. Supervises construction material selection, water well drilling, rock crushing, and fixed and mobile concrete and asphalt batch plants operations.

B1.3.6. Coordinates, monitors, and executes contingency and Prime BEEF training requirements and associated deployment preparation programs and duties. Ensures personnel are in a constant ready state to meet deployment commitments.

B1.3.7. Coordinates, monitors, and executes required contract quality assurance functions.

**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. It is essential that 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 each individual receives viable training at appropriate points in their career.

## **B2.1. Apprentice (AFSC 3E331 – 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 CDCs, AFQTP and web-based courses for subject and task fundamentals in the career field.

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

B2.1.4. After all upgrade training requirements are completed, supervisors and Unit Training Managers (UTMs) coordinate upgrade procedures.

## **B2.2. Journeyman (AFSC 3E351 – SrA, SSgt).**

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

B2.2.2. Completion of 5-level CDCs and all 5-level core and diamond tasks are basic prerequisites for five skill level award.

B2.2.3. Complete Civil Engineer (CE) 5-Level Core Concepts Course located on [myLearning](#) prior to ordering their CDCs.

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

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

B2.2.6. Use CDCs and other reference material to prepare for Weighted Airman Performance System (WAPS) testing. Review the ([EPRRC](#)).

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

B2.2.8. Completion of AFIT WMGT 301, Intro to Asset Management course is mandatory.

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

## **B2.3. Craftsman (AFSC 3E371 – SSgt, TSgt, and MSgt).**

B2.3.1. A 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 Common Core Concepts Course located on [myLearning](#) and all core and diamond tasks are basic prerequisites for seven skill level award.

B2.3.3. Starting with the FY24 SSgt promotion cycle, Airmen must complete the Structural Craftsman Course (JCACR3E371 00AA) 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.

B2.3.4. Must complete Basic EPME and Resident EPME as outlined in DAFI 36-2670, *Total Force Development*.

B2.3.5. Should take additional training courses to broaden technical knowledge or management of resources and personnel.

B2.3.6. Use CDCs and other reference material to prepare for WAPS testing. Review the ([EPRRC](#)).

B2.3.7. Completion of the following AFIT courses is mandatory: WMGT 131, SMS BUILDER Level 1; WMGT 322 Intro to Project Management; and WENG 200, Scoping and Estimating.

B2.3.8. After all upgrade training requirements are completed, supervisors and UTMs coordinate upgrade procedures.

B2.3.9. Completion of Troop Construction Project Management Course (AFIT WMGT 437) is mandatory for Regular Air Force 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.

B2.3.10. Structural Airmen are encouraged to continue academic education through CCAF, nationally or regionally accredited institution, or other degree-awarding institutions.

Note: Airmen eligible for promotion to SMSgt must have a conferred (awarded) associate or higher-level degree from any nationally or regionally accredited institution on or before the promotion eligibility cutoff date to be eligible for promotion to SMSgt (AFI 36-2502, Enlisted Airman Promotion and Demotion Programs).

#### **B2.4. Superintendent (AFSC 3E290 - SMSgt).**

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

B2.4.2. Completion of AFIT WMGT 570, Civil Engineer Superintendent Course is mandatory for Regular Air Force and Air Force Reserve SMSgts. This course is highly encouraged for Air National Guard SMSgts and mandatory for promotion to CMSgt.

**Note:** This is not a skill level awarding course.

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

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

B2.4.5. Recommend continued academic development through higher education.

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 (3E090, 3E290, 3E490, 3E591, or 3E691).

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 Structural 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. A career field STRT held at Naval Construction Battalion Center (NCBC) Gulfport, MS from 14 through 18 January 2019 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.** The STRT members reviewed, validated, and updated existing CDCs to ensure only current material remained and include new technology information.

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

**B3.4. Proficiency Training.** Assign additional knowledge and skill requirements not taught through initial skills or upgrade training 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 Structural 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 members reviewed supplemental training courses for technical accuracy and identified outdated training. They revalidated the remaining courses that support AFS career progression.

**B4. Community College of the Air Force (CCAF) Academic Programs.** Enrollment in CCAF occurs upon completion of basic military training. CCAF is one of several federally chartered degree-granting institutions; however, it is the only 2-year institution exclusively serving military enlisted personnel. CCAF receives accreditation through Air University by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award Associate of Applied Science (AAS) degrees designed for specific Air Force occupational specialties and is the largest multi-campus community college in the world. CCAF provides the opportunity to obtain an AAS degree. For the award of the AAS degree, complete requirements before the Airman separates/retires from the Air Force or commissioned as an officer. See the [CCAF website](#) for details regarding the AAS degree programs. In addition to its Associates degree program, CCAF offers the following programs:

**B4.1. CCAF Instructor Certification (CIC).** Awarded to qualified instructors teaching at CCAF affiliated schools. The purpose of the CIC is to recognize the outstanding instructor training provided to prepare instructors to teach CCAF collegiate courses and acknowledge the instructors' exceptional teaching qualifications and experience. Once awarded, place the certification into the instructor's CCAF academic record in their official transcript. AF Instructors who receive the CIC can have this updated on their official military record. For more information, refer to the CCAF Campus Affiliations Policies, Procedures and Guidelines (PPG) or contact CCAF/DEAL at [ccaf.deal@us.af.mil](mailto:ccaf.deal@us.af.mil).

**B4.2. Instructional Systems Development (ISD) Certification.** The ISD Certification is for qualified individuals who develop or manage CCAF collegiate-level courses or curriculum at a CCAF affiliated school. The purpose of the CCAF ISD certification is to recognize the extensive training, education, qualifications, and experience required to develop and manage CCAF curriculum. Qualified course or curriculum writers and managers who meet program requirements are eligible for this certification. For more information, refer to the CCAF Campus Affiliations Policies, Procedures and Guidelines (PPG) or contact CCAF/DEAL at [ccaf.deal@us.af.mil](mailto:ccaf.deal@us.af.mil).

**B4.3. Air Force Credentialing Opportunities On-Line (AF COOL) Program.** AF COOL is a pathway for enlisted Airmen to earn industry recognized professional certifications, licenses to enhance their active-duty work, and to prepare them as they transition to the civilian job market. [The AF COOL Program](#) website 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. The AF COOL Program also provides information on specific occupational specialties, civilian occupational equivalencies, CCAF degree programs, and AFSC-related national professional credentials available to enlisted members through credentialing agencies and professional organizations. The AF COOL Program contains a variety of information about credentialing and licensing and can be used to:

B4.3.1. Get background information about civilian licensure and certification in general and specific information on individual credentials including eligibility requirements and resources to prepare for an exam.

B4.3.2. Identify licenses and certifications relevant to an AFSC.

B4.3.3. Learn how to fill gaps between Air Force training and experience and civilian credentialing requirements.

B4.3.4. Get information on Tuition Assistance and GI Bill eligible funding opportunities to pay for credentialing examinations and associated fees.

B4.3.5. Learn about resources available to you that can help gain civilian job credentials.

B4.3.5.1. 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](#).

**B.4.4. Air University Associate to Baccalaureate Cooperative (AU-ABC).** AU-ABC establishes partnerships between Air University and civilian institutions to provide CCAF Associate in Applied Science (AAS) degree students with on-line bachelor degree opportunities. AU-ABC is available to currently serving members in the regular Air Force, Air Force Reserve and Air National Guard. Airmen may continue their AU-ABC program after separation or retirement. Students will work directly with the AU-ABC school to complete enrollment and degree requirements. Upon completion of CCAF AAS degree, students need no more than 60 semester hours to complete an AU-ABC degree program.

B4.4.1. AU-ABC Program Categories:

B4.4.1.1. CAT I: For CCAF Graduates. Guarantees CCAF AAS graduates need no more than 64 semester hours to complete an AU-ABC degree program.

B4.4.1.2. CAT II: For CCAF AAS Students. Students complete up to nine semester hours with partner school to complete CCAF AAS degree through dual tracking -- simultaneously fulfilling the CCAF AAS degree requirements and some of the AU-ABC degree program requirements.

B4.4.1.3. CAT III: For CCAF AAS Graduates. Must complete more than 64 semester hours of credit beyond the CCAF AAS and meet all other AU-ABC degree program requirements.

B4.4.2. CCAF students and graduates can search for degree programs from a list of military-friendly civilian institutions via the 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](#).

**B5. CCAF Degree Completion Requirements (60 Semester Hours).** The Construction Technology Associates Degree (4VEB) applies to the 3E3X1 AFSC. A minimum of 15 semester hours of CCAF Institutional credit must be applied to graduate and can be fulfilled through Technical Education, Leadership, Management, and Military Studies (LMMS), and/or Program Electives. Prior to completion of a CCAF degree, the individual must hold a Journeyman skill-level (3E351) and meet the following requirements:

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

**B5.1. Technical Education (24 semester hours).** Apply a minimum of nine (9) semester hours of CCAF institutional credit awarded from specialty-related formal training towards Technical Core subject requirements. Satisfy Technical Electives by CCAF credit or from other sources in-transfer.

<u>Technical Core Requirements</u>	<u>Maximum Semester Hours</u>
Advanced Planning/Design Requirements of Soil and Pavements	6
Advanced Roof Maintenance, Inspection & Repair	3
CE Organization & Work Force Management	3
Construction Equipment Operator	9
Construction Structural Apprentice	6
Construction Survey	6
Contingency Maintenance	3
Contract Construction Inspector	6
Flexible Pavements	3
Fundamentals of Contingency Operations	3
Fundamentals of Data Collection	3
Fundamentals of Surveying	6
Geographic Information Systems	6
Metallic Inert Gas (MIG) Welding	3
Metals Layout & Fabrication	9
Oxyacetylene Welding	6
Site Planning, Facility Design, Soils and Pavement Testing	9
Rigid Pavements	6
Shielded Metal Arc Welding	3
Soils/Pavement Plan & Design	3

**B5.2. Technical Electives.**

<u>Technical Electives</u>	<u>Maximum Semester Hours</u>
Blueprint Reading	3
CCAF Upgrade Training	15
College Algebra/Trigonometry/Calculus	3
Computer Aided Drafting	3
Computer Science	6
General Physics	3
Specialty-Related Subjects In-Transfer	15
Technical Writing	3

**B5.3. Leadership, Management, and Military Studies (LMMS) (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 as provided in the current *CCAF General Catalog*.

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

**B5.6. Program Elective (15 semester hours):** Courses applying to technical education, LMMS or GER; natural science courses meeting GER application criteria; foreign language credit earned at Defense Language Institute; maximum 9 semester hours of CCAF degree-applicable technical course credit otherwise not applicable to program of registration.

**B5.7.** Additional off-duty education is a personal choice that is encouraged for all. Individuals desiring to become an AETC Instructor should be actively pursuing an associate degree. A degreed faculty is necessary to maintain accreditation through the SACSCOC.

**B6. Civil Engineer Career Field Path.** The following chart depicts the 3E3X1 specialty career path:



## B7. Enlisted Career Path.

<b>ENLISTED CAREER PATH</b>				
	<b>GRADE REQUIREMENTS</b>			
<b>Education and Training Requirements</b>	Rank	Average Sew-On	Earliest Sew-On	High Year of Tenure (HYT)
<b>Basic Military Training School</b>				
<b><u>Upgrade To Apprentice</u></b> (3-Skill Level) – Complete Technical School	Amn A1C	6 months 10 months		8 years
<b><u>Upgrade To Journeyman</u></b> (5-Skill Level) – Complete 5-level CDCs – Complete CE 5-Level Common Core Concept CBT – Complete all 5-level core/duty-related tasks – Complete AFIT WMGT 301 course – In-residence ALS for SSgt sew-on (AD only)	SrA	3 years	28 months  BTZ (22 Months)	10 years
<b><u>Trainer</u></b> – Must be qualified and certified to the perform tasks to be trained. – Attend AF Training Course – Recommended by the supervisor				
<b><u>Upgrade To Craftsman</u></b> (7-Skill Level) – Minimum rank of SSgt – Complete CE 7-Level Common Core Concepts CBT – Complete all core/duty related tasks – Complete Craftsman (FY24 promotion cycle), AFIT WMGT 131, WMGT 322, and WENG 200 courses – In-residence NCOA graduation for MSgt sew-on (AD only)	SSgt TSgt MSgt	5 years 9.4 years 16 years	3 years 5 years 8 years	20 years 22 years 24 years
<b><u>Certifier</u></b> – SSgt with 5-skill level or civilian equivalent – Attend AF Training Course – Appointed by commander – Be a person other than the trainer (for core and critical tasks only)				
<b><u>MSGT</u></b> Completion of Troop Construction Project Management Course (AFIT WMGT 437) is mandatory for Regular Air Force 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.				
<b><u>Upgrade To Superintendent</u></b> (9-Skill Level) – Minimum rank of SMSgt – CE Superintendents Course (WMGT570) (AD/AFR Only) – In-residence USAF SNCOA, or sister service equivalent, graduation is for SMSgt sew-on (AD only)	SMSgt	19.2 years	11 years	26 years
<b><u>Senior Enlisted Leader</u></b> – Chief Orientation Course (AFR Only) – CE Superintendents Course (WMGT 570) (ANG only) – In-residence Chief Leadership Course is required for all CMSgt selects and CMSgts prior to 1-year time-in-grade.	CMSgt	21.5 years	14 years	30 years

**B7.1. 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 award and wear of AF occupational badges is in AFMAN 36-2100, *Military Utilization and Classification* and AFI 36-2903, *Dress and Personal Appearance of Air Force Personnel*.

**B7.2. CE Badge Heraldry.** The gear wheel and compass represent the engineering profession, in both the military and in the private sector. 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 together symbolize all the diverse specialties within Air Force civil engineer. 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.

**B7.2.1. Basic Badge.** Awarded upon successful completion of the apprentice course.



**B7.2.2. Senior Badge.** Adds a star to the top of the badge. Wear the senior badge after award of the 7-skill level.



**B7.2.3. 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.



## **B8. Enlisted Professional Military Education (EPME).**

**B8.1. Basic EPME (Distance Learning).** Airmen complete basic EPME requirements via DL courses to establish a foundation for continued development and include the Airman Leadership School Distance Learning Program (ALS DLP), Noncommissioned Officer Distance Learning Course (NCO DLC), and Senior Noncommissioned Officer Distance Learning Course (SNCO DLC).

**B8.2. Resident EPME (In-residence).** Resident EPME requirements include Airman Leadership School (ALS), Noncommissioned Officer Academy (NCOA), Senior Noncommissioned Officer Academy (SNCOA), and the Chief Master Sergeant Leadership Course (CLC). Resident attendance is not duplicative of the basic EPME requirements but builds upon the competencies obtained to achieve higher proficiency levels. Resident EPME completion is required for promotion to the grades of SSgt, MSgt, and CMSgt.

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

<b>EPME Course</b>	<b>Selection Priority</b>
ALS	1. SSgts 2. SSgt-selects 3. SrA
NCOA	1. TSgts 2. TSgt-selects
SNCOA	1. SMSgts 2. SMSgt-selects 3. Non-selects to SMSgt based on combined U.S. Air Force Supervisory Examination and promotion board score (highest to lowest)
CLC	1. CMSgts 2. CMSgt-selects



## SECTION C - SKILL LEVEL TRAINING REQUIREMENTS

**C1. Purpose.** This section outlines the 3E3X1 specialty qualification requirements for each skill level and establishes the mandatory requirements for entry, award, and retention of each skill level. The STS in attachment 2 identifies the core tasks, diamond tasks, knowledge items, and skill level requirements.

**C2. Specialty Qualification.** Refer to [Air Force Enlisted Classification Directory \(AFECD\)](#) for the most current minimum requirements for entry into the Structural career field. See AFECD attachment 4 for additional entry physical requirements.

### C3. Skill Level Training Requirements.

#### C3.1. Apprentice (3-Level) Training Requirements.

<b>KNOWLEDGE</b>	Completion of: <ul style="list-style-type: none"> <li>- Structural Apprentice Qualifying I (J9AQN3E331 00NB)</li> <li>- Structural Apprentice Qualifying II (J9AQN3E331 01NB)</li> <li>- Structural Apprentice (JCABP3E331 00AD)</li> </ul>
<b>EDUCATION</b>	For entry into this specialty, completion of high school with courses in mathematics mechanical drawing, and use of metal, masonry and wood working tools is desirable.
<b>TRAINING</b>	Completion of the Structural Apprentice courses is mandatory.
<b>EXPERIENCE</b>	None required.
<b>OTHER</b>	For entry, award, and retention of AFSC 3E331: <ul style="list-style-type: none"> <li>- Normal color vision as defined in DAFMAN 48-123, <i>Medical Examinations and Standards</i></li> <li>- Must possess a valid state driver's license to operate government motor vehicles (GMV) in accordance with AFI 24-301, <i>Ground Transportation</i></li> <li>- Freedom from fear of heights (acrophobia)</li> <li>- Must maintain local network access IAW AFI 17-130, <i>Cybersecurity Program Management</i>, and AFMAN 17-1301, <i>Computer Security (COMPUSEC)</i></li> </ul>
<b>IMPLEMENTATION</b>	The Unit Training Manager at member's gaining unit of assignment submits for award of the 3-skill level upon graduation of the apprentice course.
<b>TRAINING SOURCES AND RESOURCES</b>	Reference <a href="#">PART II</a> , SECTIONS: B - COURSE OBJECTIVE LIST (COL); C - SUPPORT MATERIAL; D – EDUCATION AND TRAINING COURSE INDEX; E – MAJCOM UNIQUE REQUIREMENTS; F - HOME STATION

### C3.2. Journeyman (5-Level) Training Requirements.

<p><b>KNOWLEDGE</b></p>	<p>Knowledge is mandatory of: building maintenance, repair, and construction, including roofing; nomenclature of woodworking materials and methods of material storage; theory of squaring by equivalent measurements; application of shop mathematics; theory of wood treatment; type and specification requirements of masonry products: masonry batching formulas; methods of curing masonry products; types of coating preservatives and applications; compatible products to be combined in composite systems; methods of preparing various surfaces for finishing; locking devices; composition, characteristics, and identification of common commercial grade metals; construction grade metal requirements; types and uses of metal hardware; methods of forming and cutting metals; metal layout fabrication and repair; welding processes; shop drawings; metal measurement and layout devices; cutting equipment; gas and arc welding equipment; safety procedures and practices; and environmental concerns and safety precautions required in using, storing, and disposing of hazardous materials.</p>
<p><b>EDUCATION</b></p>	<p>Complete AFIT WMGT 301 Intro to Asset Management course.</p> <p>The following are strongly encouraged:</p> <ul style="list-style-type: none"> <li>- CCAF Construction Technology Associates Degree (4VEB) or equivalent degree</li> <li>- Higher education through a civilian institution</li> </ul>
<p><b>TRAINING</b></p>	<p>Completion of 5-level CDCs.</p> <p>Completion of all the paper-based AFQTPs and their associated web-based courses on <a href="#">myLearning</a> on all core (5^) and diamond (♦) tasks with a passing score of 80%.</p> <p>Completion of the CE 5-Level Common Core Concepts web-based course located on <a href="#">myLearning</a> is mandatory for award of this skill level.</p> <p>Certification of all 5-skill level core tasks identified within the STS.</p> <p>Certification of all 5-skill level diamond tasks identified within the STS if the equipment is available. When equipment is unavailable, the minimum UGT requirement is completion of the associated AFQTP and signing off tasks on the AFQTP Documentation Record.</p> <p>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 AF Form 623A or AF Form 797.</p>

<b>EXPERIENCE</b>	<p>Qualification in and possession of AFSC 3E331.</p> <p>Experience in functions such as constructing and repairing buildings and heavy structures; erecting prefabricated structures; laying masonry units; mixing, applying, and finishing masonry products; erecting steel; use of protective equipment; and fabricating, installing, and repairing metal components using gas or arc welding equipment.</p>
<b>OTHER</b>	<p>For entry, award, and retention of AFSC 3E351:</p> <ul style="list-style-type: none"> <li>- Normal color vision as defined in DAFMAN 48-123, Medical Examinations and Standards</li> <li>- Must possess a valid state driver's license to operate government motor vehicles (GMV) in accordance with AFI 24-301, Ground Transportation</li> <li>- Freedom from fear of heights (acrophobia)</li> <li>- Must maintain local network access IAW AFI 17-130, <i>Cybersecurity Program Management</i>, and AFMAN 17-1301, <i>Computer Security (COMPUSEC)</i></li> </ul>
<b>TRAINING SOURCES &amp; RESOURCES</b>	<p>Reference PART II, SECTIONS: B - COURSE OBJECTIVE LIST (COL); C - SUPPORT MATERIAL; D - EDUCATION AND TRAINING COURSE INDEX; E - MAJCOM UNIQUE REQUIREMENTS; F - HOME STATION TRAINING</p>
<b>IMPLEMENTATION</b>	<p>Initiate entry into 5-level upgrade training after the individual has completed all 3-level requirements. Initiate QT any time individuals cannot perform their new duties. Use OJT, CDCs, AFJQs, and AFQTPs concurrently to obtain the necessary qualifications.</p>

### C3.3. Craftsman (7-Level) Training Requirements.

<b>KNOWLEDGE</b>	<p>All 3-level and 5-level knowledge requirements apply to 7-level</p>
<b>EDUCATION</b>	<p>Complete AFIT WMGT 131 SMS BUILDER Level 1, WMGT 322 Intro to Project Management, WENG 200, Scoping and Estimating, and WMGT 437 Construction Project Management. Find these and other AFIT funded skill progression courses at <a href="#">AFIT The Civil Engineer School</a>.</p> <p>The following are strongly encouraged:</p> <ul style="list-style-type: none"> <li>- Roof Installation, Maintenance, Inspection and Repair JCAZP3E351 01AC</li> <li>- Metals Layout, Fabrication and Welding JCAZP3E351 02AB</li> <li>- Contingency Maintenance Course JCAZP3E351 03AB</li> <li>- CCAF Construction Technology Associate Degree (4VEB)</li> <li>- Higher education through a civilian institution</li> </ul>

<b>TRAINING</b>	<p>Completion of all the paper-based AFQTPs and their associated web-based courses on <a href="#">CE DASH</a> for all 5- and 7- skill level core (*) and diamond (◆) tasks with a minimum passing score of 80%.</p> <p>Completion of the CE 7-Level Common Core Concepts web-based course located on <a href="#">myLearning</a> is mandatory for award of this skill level.</p> <p>Certification of all 5- and 7- skill level, core tasks identified within the STS.</p> <p>Completion of the Structural Craftsman Course (JCACR3E371 00AA) for award of the 7-skill level is required for the FY24 promotion cycle.</p> <p>Certification of all 5- and 7-skill level diamond tasks identified within the STS if the equipment is available. When equipment is unavailable, the minimum UGT requirement is completion of the associated AFQTP and signing off tasks on the AFQTP Documentation Record.</p> <p>Certification of duty position requirements identified by the supervisor.</p>
<b>EXPERIENCE</b>	<p>Qualification in and possession of AFSC 3E351.</p> <p>Performing or supervising functions such as laying masonry units; carpentry; constructing, erecting, maintenance, and repair of buildings and heavy structures; and planning, installing, repairing, welding, or forging metal components.</p>
<b>OTHER</b>	<p>For entry, award, and retention of AFSC 3E371:</p> <ul style="list-style-type: none"> <li>- Normal color vision as defined in DAFMAN 48-123, <i>Medical Examinations and Standards</i></li> <li>- Must possess a valid state driver’s license to operate government motor vehicles (GMV) in accordance with AFI 24-301, <i>Ground Transportation</i></li> <li>- Freedom from fear of heights (acrophobia)</li> <li>- Must maintain local network access IAW AFI 17-130, <i>Cybersecurity Program Management</i>, and AFMAN 17-1301, <i>Computer Security (COMPUSEC)</i></li> </ul>
<b>MSGT</b>	<p>Completion of Troop Construction Project Management Course (AFIT WMGT 437) is mandatory for Regular Air Force and required for promotion to MSgt. This course is highly encouraged for Air Reserve Component MSgts. <b>Note:</b> this is not a skill level-awarding course.</p>
<b>TRAINING SOURCES &amp; RESOURCES</b>	<p>Reference PART II, SECTIONS: B - COURSE OBJECTIVE LIST (COL); C - SUPPORT MATERIAL; D – EDUCATION AND TRAINING COURSE INDEX; E – MAJCOM UNIQUE REQUIREMENTS; F - HOME STATION TRAINING</p>
<b>IMPLEMENTATION</b>	<p>Initiate entry into 7-level upgrade training after the individual has completed all 5-level requirements and selected for SSgt. Initiate QT any time individuals cannot perform their new duties. Use OJT, CDCs, AFJQSS, and AFQTPs concurrently to obtain the necessary qualifications.</p>

### C3.4. Superintendent (9-Level) Training Requirements.

<b>KNOWLEDGE</b>	<p>In addition to mastering 3E3X1 3-, 5-, and 7-level core competencies, 3E290s are expected to have management-level knowledge in the following functions of the 3E2X1 and 3E3X1 AFSCs:</p> <p>Characteristics, capabilities, operation, and maintenance of equipment used in construction and paving, soil types, properties, limitations, compaction methods, soil stabilization, drainage, erosion control, construction and maintenance of asphalt and concrete surfaces, roadbeds, structure erection, landscaping, safety and environmental concerns, and pavement and building maintenance plans.</p>
<b>EDUCATION</b>	<p>For entry into this specialty, completion of high school with courses in mathematics, mechanical drawing and use of metal, masonry and wood working tools is desirable.</p> <p>The following are strongly encouraged:</p> <ul style="list-style-type: none"> <li>- CCAF Construction Technology Associates Degree (4VEB) or equivalent degree</li> <li>- Higher education through a civilian institution</li> <li>- WENG 555, Airfield Pavement Construction and Inspection</li> <li>- WMGT 422, Project Management</li> <li>- WMGT 436, Operations Support</li> </ul> <p>Find these and other AFIT funded skill progression courses at <a href="#">AFIT The Civil Engineer School</a>.</p>
<b>TRAINING</b>	<p>Completion of Civil Engineer Superintendent Course AFIT WMGT 570 is mandatory for Regular Air Force and Air Force Reserve SMSgts. This course is highly recommended for Air National Guard SMSgts and mandatory for promotion to CMSgt. Note: This is not a skill level awarding course.</p> <p>Certification of duty position requirements identified by the supervisor.</p>
<b>EXPERIENCE</b>	<p>For award of AFSC 3E290, qualification in and possession of AFSC 3E371 or 3E271 is mandatory. Must be a SMSgt. Experience in directing and managing functions such as snow and ice removal, erecting structures, building maintenance, construction equipment operations and pavements for execution of horizontal and vertical construction programs.</p>

<b>OTHER</b>	<p>For entry, award, and retention of AFSC 3E290:</p> <ul style="list-style-type: none"> <li>- Normal color vision as defined in DAFMAN 48-123, <i>Medical Examinations and Standards</i></li> <li>- Must possess a valid state driver's license to operate government motor vehicles (GMV) in accordance with AFI 24-301, <i>Ground Transportation</i></li> <li>- Freedom from fear of heights (acrophobia)</li> </ul> <p>Must maintain local network access IAW AFI 17-130, <i>Cybersecurity Program Management</i>, and AFMAN 17-1301, <i>Computer Security (COMPUSEC)</i></p> <p>Heavy Repair Superintendents should pursue any additional knowledge and skill requirements that not available through initial skills or upgrade training.</p>
<b>OTHER</b>	<p>Effective in present and future duty positions. Recommended areas of study include but are not limited to:</p> <ul style="list-style-type: none"> <li>- AFIT Training courses such as Project Management courses</li> <li>- Contract Management courses.</li> </ul>
<b>IMPLEMENTATION</b>	<p>Initiate entry into 9-level upgrade training after the individual has completed all 7-level requirements and selected for SMSgt. Initiate qualification training any time individuals cannot perform their new duties.</p>

### C3.5. Senior Enlisted Leader.

<b>KNOWLEDGE</b>	<p>Knowledge is mandatory 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.</p>
<b>TRAINING</b>	<p>In-residence Chief Leadership Course (within 1 year of CMSgt date of rank). Reserve Component Chief Orientation Course (AFRC only).</p>
<b>EXPERIENCE</b>	<p>Possess qualifications in feeder specialty (i.e., 3E290) prior to award of Civil Engineer Manager Code 3E000. Managerial ability to plan, direct, coordinate, implement, and control a wide range of work activities.</p>
<b>OTHER</b>	<p>N/A</p>
<b>IMPLEMENTATION</b>	<p>Selection to CMSgt enters an individual into the Civil Engineer Manager Code 3E000. They must possess the qualifications from a feeder specialty (3E090, 3E290, 3E490, 3E591, and 3E691).</p>

## SECTION D - RESOURCE CONSTRAINTS

**D1. Purpose.** This section identifies known resource constraints that preclude optimal training at the schoolhouse, to include cost and manpower information. 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: None**

D2.1. Constraints.

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: Minimal**

D3.1. Constraints. Apprentice course graduates will use the current paper-based CDC for upgrade training until the new web-based CDC is on-line.

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: Required for FY24 Promotion Cycle**

D4.1. Constraints.

D4.1.1. Impact.

D4.1.2. Resources Required.

D4.1.3. Action Required.

D4.2. OPR/Target Completion Date.

### **D5. Superintendent (9-Level) Training: N/A**

## **SECTION E – TRANSITIONAL TRAINING GUIDE**

There are no transition training requirements for the Structural specialty. This section is reserved.



## PART II

### SECTION A - SPECIALTY TRAINING STANDARD

**A1. Implementation.** This STS will be used for technical training provided for the AETC Structural Apprentice Training Qualifying I course with class beginning 1 Feb 2023 and graduating on or after 12 Jun 2023 and the Structural Craftsman course with class beginning 1 May 2023 and graduating on or after 10 May 2023.

**A2. Purpose.** As prescribed in DAFI 36-2670, *Total Force Development*, and in collaboration with the AFCFM, it is mandatory for all civil engineers, regardless of duty assignment, to use paper-based or approved automated training record system.

**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 AFI 10-2501, *Emergency Management 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. AFMAN 10-2503 outlines TQTs recurring requirements.

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

**A2.2.1. Wartime Tasks.** All tasks in the 3-level course column are wartime tasks. In response to a wartime scenario, the schoolhouse teaches these tasks in a streamlined training environment.

**A2.2.2. Diamond Tasks.** Tasks identified by a diamond (◆) after the line 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. In instances where required equipment is not available for instruction, completion of the corresponding task AFQTP is all that is required for upgrade/qualification training.

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

**A2.4. Column 4 (*Proficiency Codes Used to Indicate Training/Information Provided*).** Shows formal training requirements provided by AETC. Airmen demonstrate to a supervisor/trainer on the job by a graduate because of training received from AETC courses, web-based training, AFQTPs, or CDCs. See the UTM for the current CADRE/AFSC/CDC/DL Course listing.

**A2.5. Qualitative Requirements.** The CFETP proficiency code key used to indicate the level of training and knowledge provided by CDCs, web-based, and in-resident training.

**A2.6. Job Qualification Standard (JQS).** The STS becomes a JQS for OJT in an automated training application and used according to DAFI 36-2670, *Total Force Development*. Supervisors/trainers use AFQTPs to ensure Air Force-wide standardized procedures for training Core tasks. When used as a JQS, the following requirements applies:

**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 and loaded into the automated training management application. Completion of core, critical, and diamond tasks are mandatory for all duty positions. Ensure the Profile section lists the correct duty position title in the trainee's automated training record.

**A2.6.1.2. AFQTP Training and Documentation.** AFQTP assessments have been created for all core (5<sup>+</sup> or 7<sup>+</sup>) tasks and 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.** Documentation of the start and completion of the AFQTP in the *QTP section* located in the automated training record is required for all core tasks. The automated training record will not let you sign off any tasks in the JQS until the trainer enters a completion date. Diamond tasks require the completion of the web-based course (with the review and post-test located in the program) or completion of the AFQTP assessment located on [myLearning](#) to determine if the trainee has attained the knowledge level required. Once the trainee has completed the web-based course or AFQTP assessment, Airmen provide the course completion certificate to the trainer/supervisor for annotation 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, the completion of the AFQTP or AFQTP assessment is the ONLY requirement for upgrade. Sign off the JQS tab 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.** Most items should transcribe automatically during updates to a CFETP. The UTM and supervisor must conduct a review of the new STS to identify any new core, or non-core tasks and add those tasks to their duty positions.

**A2.6.2.1. Previous training certification not listed.** If previous training certifications are not listed in the individual training record, select the task to be transcribed, and click on the transcribe button. Enter the date of the original certification and sign off the task(s). The trainee will then sign off the task(s) to finalize the transcription of previous training certification(s). The automated application will place an entry into the trainee's AF Form 623a. The transcriber and trainer must acknowledge the entry.

**A2.6.2.2. Transcribing external training certification.** If a trainee attended a formal training course and received appropriate accreditation, select the formal training section of the users automated training record, and locate the course title in the master task list, then enter the completion date. Contact the UTM to have a missing course loaded from the master catalog. Contact the FDM at AFCEC to have a missing course loaded into the master catalog.

**A2.6.3. Documenting Career Knowledge.** When a CDC/DL course is not available, the supervisor identifies STS training references that the trainee requires for career knowledge IAW DAFI 36-2670, *Total Force Development* and ensures, as a minimum, that trainees cover all mandatory items specified in AFMAN 36-2100, *Military Utilization and Classification*. For two-time CDC/DL course exam failures, the unit commander will take appropriate action IAW DAFI 36-2670. **Note:** Document career knowledge to submitting a CDC/DL course waiver.

**A2.6.4. Decertification.** When an Airman is unqualified on a task, the supervisor shall identify the task in the JQS. The supervisor shall select the Decertify button and enter a comment on the AF Form 623a explaining why the task was decertified, and then enter the Airman into qualification training. Recertify the individual using the normal certification process.

**A2.6.5. Recertification.** To recertify an Airman on an annual or bi-annual requirement, use an AF Form 1098 to document training or the supervisor shall identify the task in the JQS, select the Recertify button, and enter the date the recertification was completed.

**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 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 development of promotion tests used in the WAPS. Senior NCOs with extensive practical experience in their career fields develop Specialty Knowledge Tests (SKTs) at the AETC Airman Advancement Division. SMEs authenticate WAPS material and reference AFS occupational analysis data, to develop SKTs. They develop questions based upon the study references listed in the Enlisted Promotions References and Requirements Catalog. Individual responsibilities are in AFMAN 36-2664, *Personnel Assessment Program*. WAPS is not applicable 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](mailto: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.

## SECTION B - COURSE OBJECTIVE LIST (COL)

**B1. Measurement.** Measure each learning objective as follows:

B1.1. Progress Check (PC) indicates formal measurement of knowledge and/or performance elements using a written or performance progress check.

**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, which means the student can do most parts of the task but does need assistance on the hardest parts of the task (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 366 TRS, 3E3X1 Training Manager.

## SECTION C - SUPPORT MATERIAL

### **C1. Air Force Qualification Training Packages.**

C1.1. The 3E3X1 AFQTP tracker identifies the **mandatory AFQTPs** for each skill level.

C1.2. For a complete list of up-to-date AFQTPs applicable to the 3E3X1 AFSC, go to [myLearning](#) or [CE DASH](#) under *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 AFCEC in the 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 AFCEC in the topic header Civil Engineer CDC 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).

**SECTION D – EDUCATION AND TRAINING COURSE INDEX**

**D1. Purpose.** This section of the CFETP identifies training courses available for the Structural 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.**

<u>Course ID</u>	<u>Title</u>	<u>Location</u>
J9AQN3E331 00NB	Structural Apprentice Qualifying I	366 TRS, Det 6
J9AQN3E331 01NB	Structural Apprentice Qualifying II	366 TRS, Det 6
JCABP3E331 00AC	Structural Apprentice (Air Force Unique)	366 TRS, Det 6
JCAZP3E351 01AB	Roof Installation, Maintenance, Inspection and Repair	366 TRS, Det 6
JCAZP3E351 02AB	Metals Layout, Fabrication and Welding	366 TRS, Det 6
JCAZP3E351 03AA	Contingency Maintenance	366 TRS, Det 6
5 LVL UGT - BK 1	Structures Carpentry, Masonry and Facility Maintenance 5-level Upgrade Course Block 1	AFRC ECS-TCC
5 LVL UGT - BK 2	Structures Welding and Sheet Metal Components 5-level Upgrade Course Block 2	AFRC ECS-TCC

**D3. Air Force Career Development Academy (AFCDA).**

<u>Course Number</u>	<u>Title</u>	<u>Edit Code</u>
CDC D3E351	Structural Journeyman	01
CDC E3E351	Structural Journeyman	01

**D4. Web-based and Exportable Courses.**

D4.1. Find the most up-to-date web-based and exportable courses on [myLearning](#) by selecting the AFCEC tile then the appropriate drop-down menu.

**D5. Courses in Development/Revision**

<u>Course Number</u>	<u>Title</u>	<u>ECD</u>
JCABP3E331 00AD	Structural Apprentice (Air Force Unique)	Nov 22
JCAZP3E351 01AC	Roof Installation, Maintenance, Inspection and Repair	Feb 23
JCACR3E371 00AA	Craftsman Course	Sep 23
JCAZP3E351 03AB	Contingency Maintenance	Jun 24
CDC 3E3X1	Structural Journeyman web-based CDC	Jun 24

## **SECTION E – MAJCOM UNIQUE REQUIREMENTS**

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

## SECTION F - HOME STATION TRAINING

**F1. Purpose.** The purpose of this section is to identify the tasks, training references, and training sources available in support of contingency/wartime training. CE 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. Home Station Training (HST).** HST is knowledge-based and hands-on training conducted at the individual's home station for contingency operations. The CE Commander ensures training is provided and documented and appoints subject matter experts to conduct training as required.

**F3. Combat Skills Training (CST).** CST is an integral part of any HST 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 HST 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. Mission Essential Equipment Training (MEET).** Wartime or contingency environments often involve the use of specialized and unique mission-essential equipment that civil engineers do not use in their day-to-day operations. Mission essential contingency equipment and trainer expertise are not available at most CONUS installations due to the cost and complexity. Personnel must be hands-on certified, and the certification 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. Expeditionary Readiness Training (ERT).** The Air Force must train as it fights and continually assess expeditionary readiness training across the Air Force 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. Refer to AFI 10-405, *Expeditionary Readiness Training Program*, for additional information.

### **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. DAFI 36-2670, *Total Force Development*, and AFI 10-405, identify Expeditionary Readiness Training requirements.

F6.4. Web-based Training (WBT). WBT products are available on [myLearning](#). Airmen completing these courses can receive credit for HST. 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

3 Attachments

1. Qualitative Requirements (Proficiency Code Key)
2. 3E3X1 Specialty Training Standard (STS)
3. 3E3X1 AFQTP Documentation Record

## Attachment 1 Qualitative Requirements (Proficiency Code Key)

### A1. Qualitative Requirements

<i>This Block Is For Identification Purposes Only.</i>		
<b>Name Of Trainee</b>		
<b>Printed Name (Last, First, Middle Initial)</b>	<b>Initials (Written)</b>	<b>SSAN (Last four)</b>
<b>Printed Name of Trainer, Certifying Official and Written Initials</b>		
<i>N/I</i>	<i>N/I</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 instruction 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 to do the task 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 3 <sup>rd</sup> 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)	Use this mark in the course columns 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. Accomplish hands-on certification 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 10-2501, these tasks will also be accomplished in MOPP 4 and annotated on AF Form 623A or AF 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 indicates no provided training in the course. Major commands and/or units may establish scale values and combat training as dictated by mission requirements.	
Use a task-knowledge scale value alone or with a task-performance scale value to define a level of knowledge for a specific task.	
A subject knowledge scale value is used 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**  
**3E3X1 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 <sup>^</sup>	Deployment* SEI+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
<b>1.0. CIVIL ENGINEER (CE) COMMON CORE CONCEPTS</b> TR: <a href="#">myLearning</a> Note: QTP required for UGT											
<b>1.1. Accomplish CE 5-level Core Concepts Course ▲</b> Note: Must complete WBT	5										
<b>1.2. Accomplish CE 7-level Core Concepts Course ▲</b> Note: Must complete WBT	7										
<b>1.3. CE Core Concepts Overview</b>								A			
<b>2.0. AFS-SPECIFIC SAFETY</b> TR: AFMAN 91-203; AFI 91-202; DAFI 91-204; AFPD 91-2; NIOSH 87-116 Note: QTP required for UGT											
<b>2.1. AF Occupational Safety and Health Program</b>								B	B		
<b>2.2. Hazard abatement awareness</b>								A	B		
<b>2.3. Identify hazards ▲</b>	5 <sup>^</sup>								b		
<b>2.4. Plan hazard abatement ▲</b>	5 <sup>^</sup>										
<b>2.5. Exercise Safety Precautions when:</b> TR: NAVEDTRA 14256; T.O. 32-1-101; T.O. 32-1-151; T.O. 34-1-3; T.O. 34W4-1-5											
<b>2.5.1. Operating power tools and equipment</b>								2b(I)	b		
<b>2.5.2. Using hand tools</b>								2b(I)	b		
<b>2.5.3. Working from heights</b>								b(I)	b		
<b>2.5.4. Lifting manually</b>								2b(I)	b		
<b>2.5.5. Handling compressed gas containers ▲</b>	5 <sup>^</sup>							b	b		

**Attachment 2**  
**3E3X1 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 +	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
2.5.6. Handling corrosive materials associated with Structural AFS								b(I)	b		
2.5.7. Performing Lockout/Tagout procedures ▲	5^							b(I)	b		
<b>2.6. Safety Training Standards for AFS</b>											
2.6.1. Utilize Safety Data Sheet (SDS) TR: AFMAN 32-7002											
2.6.2. Initial Federal Hazard Communication Training Program (FHCTP) TR: DoDI 6050.05											
<b>2.7. Fall Protection Awareness</b> TR: Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910 and 29 CFR 1926 Note: Must complete WBT											
2.7.1. Purpose ▲	5^							A			
2.7.2. Fall Protection plan ▲	5^							A			
2.7.3. Rescue plan ▲	5^										
2.7.4. Develop Rescue plan											
<b>2.7.5. Fall Protection Equipment</b>											
2.7.5.1. Inspect ▲	5^							2b			
2.7.5.2. Demonstrate proper use ▲	5^							2b			
2.7.5.3. Maintain ▲	5^							b			
<b>3.0. AFS-SPECIFIC PUBLICATIONS</b> TR: <a href="#">e- Publishing</a>											
3.1. Publication types									A	B	
<b>3.2. Locate Desired Information in:</b>											
3.2.1. Standard publications										2b	
3.2.2. Technical orders TR: T.O. 00-5-1											
3.2.3. National Electrical Code (NFPA 70)											
3.2.4. National Electrical Safety Code											
3.3. Utilize technical publications to perform maintenance, operations, and troubleshooting											

**Attachment 2**  
**3E3X1 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 <sup>^</sup>	Deployment* SEI+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
<b>4.0. SUSTAINMENT MANAGEMENT SYSTEMS (SMS)</b> TR: AFI 32-1001											
4.1. Perform workcenter management functions using NexGen										2b	
4.2. Document inspections into BUILDER TR: UFC 3-110-03 ▲	7									2b	
4.3. Attend AFIT WMGT 131 SMS BUILDER Level 1 course	7										
<b>5.0. PROJECT PLANNING</b> TR: NAVEDTRA 14250 and 14251; AFI 32-1023 Note: QTP required for UGT											
5.1. Functions									B		
5.2. Attend AFIT WENG 200 Scoping and Estimating course ♦	7										
5.3. Attend AFIT WMGT 301 Intro to Asset Management course ♦	5										
5.4. Attend AFIT WMGT 322 Intro to Project Management course ♦	7										
5.5. Attend AFIT WMGT 437 Troop Construction Project Management course											
<b>5.6. Planning Functions</b> TR: AFI 32-1020; NTRP 4-04.2.5; NAVEDTRAs 14040, 14043, and 14045; AFI 32-1020											
5.6.1. Demonstrate the proper use of estimating standards										2b	
5.6.2. Apply special precautionary measures (e.g. AF Forms 103 and 592)											
5.6.3. Sketch working drawings								1a			
5.6.4. Construction drawings									B	B	
5.6.5. Interpret blueprints										2b	
<b>5.7. Use Construction Drawings for:</b> TR: NAVEDTRAs 14040, 14043, and 14045											
5.7.1. Carpentry ▲	7^							2b(I)			
5.7.2. Masonry ▲	7^							2b(I)			
5.7.3. Metalwork ▲	7^							2b			

**Attachment 2  
3E3X1 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 <sup>^</sup>	Deployment* SEI+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
5.7.4. Roofing systems TR: TM 5-617											
5.8. Identify construction material based on provided blueprints									b	2b	
<b>5.9. Identify Types of Material Required for:</b> TR: NAVEDTRAs 14040, 14043, and 14045											
5.9.1. Carpentry ▲	7 <sup>^</sup>							a(I)			
5.9.2. Masonry ▲	7 <sup>^</sup>							a(I)			
5.9.3. Metalwork ▲	7 <sup>^</sup>							a(I)			
5.9.4. Roofing systems TR: TM 5-617								a(I)			
5.10. Estimate construction materials based on provided blue prints TR: NTRP 4-04.2.3									b	2b	
<b>5.11. Establish Quantity of Material Required for:</b> TR: NTRP 4-04.2.3; NAVEDTRAs 14040, 14043, and 14045											
5.11.1. Carpentry ▲	7 <sup>^</sup>							2b(I)			
5.11.2. Masonry ▲	7 <sup>^</sup>							2b(I)			
5.11.3. Metalwork ▲	7 <sup>^</sup>							2b(I)			
5.11.4. Roofing systems TR: TM 5-617								a(I)			
<b>6.0. TOOLS AND EQUIPMENT</b> TR: NAVEDTRAs 14043, 14044, 14045, 14250, 14251, and 14256; AFMAN 91-203											
6.1. Usage of hand tools and equipment									B		
<b>6.2. Demonstrate Proper Use of:</b> TR: T.O. 32-1-101; T.O. 32-1-151											
6.2.1. Hand tools								2b(I)			
6.2.2. Portable power tools								2b(I)			
6.2.3. Shop-installed equipment								2b(I)			
6.2.4. Laser level											
6.2.5. Powder actuated tools											
6.2.6. Ladders								a(I)			
<b>6.2.7. Mobile Work Platforms</b>											
6.2.7.1. Aerial work platform								a			
6.2.7.2. Scissor lift								a			

**Attachment 2**  
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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 +	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
6.2.7.3. Scaffolds								a			
6.3. Maintenance of hand tools and equipment									B		
<b>6.4. Maintain</b>											
6.4.1. Hand tools								2b(I)			
6.4.2. Portable power tools								2b(I)			
6.4.3. Shop-installed equipment								2b(I)			
6.4.4. Laser level											
6.4.5. Powder actuated tools											
6.4.6. Scaffolds and ladders											
6.4.7. Mobile work platforms											
<b>7.0. CONCRETE STRUCTURES</b> TR: NAVEDTRAs 14043, 14044, 14045, and 14251 Note: QTP required for UGT											
7.1. Prepare subgrade								a(I)	b		
<b>7.2. Concrete Reinforcement</b>											
7.2.1. Install reinforcing steel ▲	7^							b(I)	b		
7.2.2. Install wire mesh								1a(I)	b		
7.3. Concrete forms									B		
<b>7.4. Construct</b>											
7.4.1. Footings								a(I)			
7.4.2. Piers								a(I)			
7.4.3. Columns								a(I)			
7.4.4. Slabs ▲	7^							2b(I)			
7.4.5. Steps								a(I)			
7.4.6. Ramps								a(I)			
7.4.7. Walls ▲	7^							a(I)			
7.4.8. Earth								a(I)			
7.5. Construct batter boards								2b(I)			
7.6. Install expansion and contraction joints								b(I)			
<b>7.7. Concrete</b>											
7.7.1. Principles of concrete									B		
7.7.2 Mix ingredients to meet project specifications								2b(I)			

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	Core Cert <sup>^</sup>	Deployment* SEI+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
7.7.3. Demonstrate the proper use of admixtures								a(I)			
7.7.4. Place concrete in forms ▲	7 <sup>^</sup>							2b(I)			
7.7.5. Consolidate concrete								2b(I)			
7.7.6. Install anchor bolts (J-bolt, Wedge, Expansion)								2b(I)			
7.7.7. Finish concrete ▲	7 <sup>^</sup>							2b(I)			
7.7.8. Cure concrete								b(I)			
7.7.9. Inspect concrete for defects								a(I)			
7.7.10. Repair concrete								a(I)			
<b>8.0. STRUCTURAL LAYOUT and FRAMING COMPONENTS</b> TR: NAVEDTRAs 14043, 14044, and and 14045; UFGS-06 10 00 Note: QTP required for UGT											
8.1. Structural framing principles									B		
<b>8.2. Construct</b>											
8.2.1. Floors ▲	5 <sup>^</sup>							2b(I)			
8.2.2. Stair members ▲	5 <sup>^</sup>							2b(I)			
8.2.3. Wall studs ▲	5 <sup>^</sup>							2b(I)			
8.2.4. Ceilings								1a(I)			
<b>8.2.5. Roofs</b>											
8.2.5.1. Trusses ▲	5 <sup>^</sup>							a(I)			
8.2.5.2. Rafters ▲	5 <sup>^</sup>							2b(I)			
<b>9.0. EXTERIOR CONSTRUCTION AND FINISHING</b> TR: NAVEDTRAs 14043, 14044, and 14045; UFGS-06 20 00											
9.1. Exterior construction principles									B		
<b>9.2. Install</b>											
9.2.1. Metal siding								a			
9.2.2. Wood siding								a(I)			
9.2.3. Vents								a(I)			
9.2.4. Louvers								a(I)			
9.2.5. Exterior trim								1a(I)			
<b>9.3. Repair</b>											



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	A	B	A	B	C	D	E	A	B	C	D
	Core Cert <sup>^</sup>	Deployment* SEI+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
9.3.1. Metal siding								a			
9.3.2. Wood siding								a(I)			
9.4. Construct wooden fences											
9.5. Replace screen fabric											
9.6. Replace glass								b(I)			
9.7. Cut glass								b(I)			
9.8. Cut acrylic sheets											
<b>10.0. MASONRY CONSTRUCTION AND MAINTENANCE</b> TR: NAVEDTRAs 14043, 14044, 14045, and 14251 Note: QTP required for UGT											
10.1. Components of masonry construction									B		
10.2. Prepare mortar ▲	5 <sup>^</sup>							b(I)			
<b>10.3. Lay Masonry Units</b>											
10.3.1. Brick											
10.3.2. Block ▲	5 <sup>^</sup>							1a(I)			
<b>10.4. Install Reinforcement</b>											
10.4.1. Prefabricated wire joint reinforcement								a(I)			
10.4.2. Structural reinforcing bars								a(I)			
10.5. Install anchor bolts (J-bolts)								2b(I)			
10.6. Construct control joints								a(I)			
<b>10.7. Construct Openings</b>											
10.7.1. Brick											
10.7.2. Block								a(I)			
10.8. Repair masonry units								a(I)			
<b>10.9. Plaster and Stucco</b> TR: NAVEDTRAs 14044 and 14045; UFGS-09 23 00; UFGS-09 24 23											
<b>10.9.1. Apply</b>											
10.9.1.1. Plaster								a(I)			
10.9.1.2. Stucco								a(I)			
<b>10.9.2. Patch</b>											
10.9.2.1. Plaster								a(I)			

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	A	B	A	B	C	D	E	A	B	C	D
	Core Cert <sup>^</sup>	Deployment * SEI+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
<b>10.9.2.2. Stucco</b>								a(I)			
<b>11.0. ROOFING SYSTEMS</b> TR: UFC 3-110-03; NAVEDTRAs 14044, 14045, and 14251, TM 5-617 Note: QTP required for UGT											
<b>11.1. Low-slope roofing systems</b>									B		
<b>11.2. Attend Roof Installation, Maintenance, Inspection, and Repair Course</b>	7										
<b>11.3. Install Low-slope Roof Systems</b>											
<b>11.3.1. Built-up roof</b>											
<b>11.3.2. Modified bitumen</b>											
<b>11.3.3. Metal</b>								a(I)			
<b>11.3.4. Composition roll roofing</b>								a(I)			
<b>11.4. Repair Low-slope Roof Systems</b>											
<b>11.4.1. Built-up roof</b>											
<b>11.4.2. Modified bitumen</b>											
<b>11.4.3. Metal</b>								a(I)			
<b>11.4.4. Composition roll roofing</b>								a(I)			
<b>11.5. Steep-slope roofing systems</b>									B		
<b>11.6. Install Steep-slope Roof Systems</b>											
<b>11.6.1. Tile</b>											
<b>11.6.2. Composition shingles</b>								2b(I)			
<b>11.6.3. Metal</b>								a(I)			
<b>11.7. Repair Steep-slope Roof Systems</b>											
<b>11.7.1. Tile</b>											
<b>11.7.2. Composition shingles</b>								a(I)			
<b>11.7.3. Metal</b>								a(I)			
<b>11.8. Inspect Roof Systems</b> TR: AFI 32-1001											
<b>11.8.1. Low-slope ▲</b>	5 <sup>^</sup>							a	b		
<b>11.8.2. Steep-slope ▲</b>	5 <sup>^</sup>							a			
<b>11.9. Gutter Systems</b>											
<b>11.9.1. Fabricate</b>											
<b>11.9.2. Install</b>								a	b		
<b>11.9.3. Repair</b>								a	b		

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	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEI+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
<b>11.10. Flashing</b>											
11.10.1. Fabricate								1a			
11.10.2. Install								1a(I)	b		
11.10.3. Repair									b		
11.11. Manage roofing program											
<b>12.0. FINISH CARPENTRY</b> TR: NAVEDTRAs 14044 and 14045; UFGS-06 20 00; UFGS-09 29 00 Note: QTP required for UGT											
12.1. Walls									B		
12.2. Install wall paneling											
<b>12.3. Gypsum Board</b>											
12.3.1. Install ▲	5^							2b(I)			
12.3.2. Finish ▲	5^							2b(I)			
12.3.3. Patch ▲	5^							2b(I)			
12.4. Flooring									B		
<b>12.5. Install Floor Coverings</b>											
12.5.1. Vinyl								2b(I)			
12.5.2. Wood											
<b>12.6. Repair Floor Coverings</b>											
12.6.1. Vinyl								b(I)			
12.6.2. Wood											
12.7. Ceilings									B		
<b>12.8. Install Ceiling Systems</b>											
12.8.1. Acoustical Tile											
12.8.2. Suspended ceiling ▲	5^							2b(I)			
<b>12.9. Repair Ceiling Components</b>											
12.9.1. Acoustical Tile											
12.9.2. Suspended ceiling								b(I)			
<b>12.10. Interior Trim</b>											
12.10.1. Install								2b(I)			
12.10.2. Repair								a(I)			
<b>13.0. MASONRY WALL/FLOOR TILE INSTALLATION AND MAINTENANCE</b> TR: NAVEDTRAs 14043, 14044 and 14045											
13.1. Installation methods									B		

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	A	B	A	B	C	D	E	A	B	C	D
	Core Cert ^	Deployment * SEL+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
13.2. Prepare surface to receive adhesive								1a(I)			
13.3. Lay out areas to receive tile								1a(I)			
13.4. Apply adhesive method								1a(I)			
13.5. Apply thin set method								a(I)			
13.6. Set tile								1a(I)			
13.7. Cut tile								1a(I)			
13.8. Install fixtures											
13.9. Apply grout								1a(I)			
13.10. Replace tile								a(I)			
13.11. Replacement methods									B		
<b>14.0. PROTECTIVE COATINGS</b> TR: NAVEDTRAs 14044 and 14045											
14.1. Finishes									B		
14.2. Apply protective coatings								a(I)			
<b>15.0. PERSONNEL DOOR AND WINDOW MAINTENANCE</b> TR: NAVEDTRAs 14043, 14044 and 14045 Note: QTP required for UGT											
15.1. Components									B		
<b>15.2. Install Personnel Door Units</b>											
15.2.1. Wood ▲	5^							1a(I)			
15.2.2. Metal ▲	5^							a(I)			
15.2.3. Glass											
<b>15.3. Repair Personnel Door Units</b>											
15.3.1. Wood								a(I)			
15.3.2. Metal								a(I)			
15.3.3. Glass											
15.4. Install window units								1a(I)			
15.5. Repair window units								a(I)			
<b>15.6. Personnel Door Hardware</b>											
15.6.1. Install door closures ▲	5^							2b			
15.6.2. Adjust door closures								b			
15.6.3. Adjust thresholds								b			
15.6.4. Adjust hinges								b			
<b>16.0. LOCKSMITHING</b> TR: NAVEDTRA 14044; AFI 31-101; FED-STD-809D; Manufacturer's Instructions Note: QTP required for UGT											

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	Core Cert <sup>^</sup>	Deployment* SEI+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
16.1. Implement master key system											
16.2. Cut keys											
16.3. Locking devices									B		
<b>16.4. Install Locking Devices</b>											
16.4.1. Cylinder locks ▲	5 <sup>^</sup>							2b(I)			
16.4.2. Mortise locks								a(I)			
16.4.3. Cipher locks											
16.4.4. Panic hardware/exit device ▲	5 <sup>^</sup>							1a(I)			
<b>16.5. Repair Locking Devices</b>											
16.5.1. Cylinder locks								a(I)			
16.5.2. Mortise locks								a(I)			
16.5.3. Cipher locks											
16.5.4. Panic hardware								a(I)			
16.6. GSA equipment											
<b>16.7. High Security Electronic Locks</b>											
16.7.1. Components and functions											
<b>16.7.2. X-10</b>											
16.7.2.1. Install											
16.7.2.2. Set combination											
<b>16.7.3. CDX-10</b>											
16.7.3.1. Install											
16.7.3.2. Life safety exit devices											
16.7.4. Perform field expedient entry on GSA containers											
<b>16.8. Expedient Locksmithing</b>											
16.8.1. Security containers with combination locks											
16.8.2. Principles of dial combination locks											
16.8.3. Open combination locks											
16.8.4. Force entry of combination locks											
16.8.5. Inspect and perform preventative maintenance											
<b>17.0. WOODWORKING</b> TR: NAVEDTRAs 14043, 14044 and 14045											
17.1. Cabinetry									B		

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	Core Cert ^	Deployment * SEI+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
17.2. Install countertops											
17.3. Install cabinet hardware											
17.4. Apply laminated plastics											
17.5. Install cabinets											
<b>18.0. ENERGY-CONSERVING MATERIAL</b> TR: NAVEDTRAs 14043, and 14044											
18.1. Conservation methods									B		
18.2. Install thermal insulation								a(I)			
18.3. Apply caulking compound								a(I)			
18.4. Install weather stripping								a(I)			
<b>19.0. METAL/FIBERGLASS COMPONENT FABRICATION AND INSTALLATION</b> TR: NAVEDTRAs 14250 and 14251; AFMAN 91-203; T.O. 34W4-1-5 Note: QTP required for UGT											
19.1. Fabrication methods									B		
<b>19.2. Layout Metal Components using:</b>											
19.2.1. Parallel line development ▲	5^							2b		2b	
19.2.2. Radial line development								2b		2b	
19.2.3. Triangulation development								2b		2b	
<b>19.3. Fabricate Metal Components</b>											
19.3.1. Rectangular								2b			
19.3.2. Round								2b			
19.3.3. Rectangular-to-round transition								2b			
19.4. Assemble metal components using appropriate fasteners								1a			
19.5. Installation methods									B		
<b>19.6. Install Duct Systems</b>											
19.6.1. Sheet metal ducts ▲	5^							1a			
19.6.2. Flex Duct								a			
19.6.3. Rectangular-to-round transition											
19.6.4. Stacks								a			
19.6.5. Ventilators											
<b>19.7. Install Fixed Utility Equipment</b>											
19.7.1. Tabletops											

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	Core Cert <sup>^</sup>	Deployment* SEI+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
19.7.2. Counter tops											
19.7.3. Overhead canopies											
19.7.4. Hoods											
19.7.5. Doors											
19.8. Repair fiberglass duct board											
<b>20.0. VEHICLE AND EQUIPMENT FACILITY DOORS AND GATES</b> TR: Manufacturer's Instructions Note: QTP required for UGT											
<b>20.1. Inspect</b>											
20.1.1. Overhead doors ▲	5 <sup>^</sup>							2b	b		
20.1.2. Rollup doors ▲	5 <sup>^</sup>							2b	b		
20.2. Installation requirements									B		
<b>20.3. Install</b>											
20.3.1. Overhead doors								b			
20.3.2. Roll-up door								b			
20.3.3. Door operators								b			
20.3.4. Manual gates											
20.3.5. Mechanical gates											
20.4. Maintenance requirements									B		
<b>20.5. Maintain</b>											
20.5.1. Overhead doors ▲	5 <sup>^</sup>							2b			
20.5.2. Roll-up doors ▲	5 <sup>^</sup>							2b			
20.5.3. Door operators								b			
20.5.4. Aircraft hangar doors											
<b>20.6. Hardened Aircraft Shelter Doors</b> TR: USAFEI 32-1004											
20.6.1. Maintain											
20.6.2. Repair											
20.6.3. Door adjustment									b		
20.6.4. Roller replacement									b		
20.7. Manual gates											
20.8. Mechanical gates											
<b>21.0. METAL CUTTING AND WELDING</b> TR: NAVEDTRA 14250; Manufacturer's Instructions; AFMAN 91-203; T.O. 34W4-1-5 Note: QTP required for UGT											

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	Core Cert ^	Deployment * SEI +	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
<b>21.1. Oxyacetylene</b>											
21.1.1. Principles									B		
21.1.2. Metal identification									B		
21.1.3. Set up equipment ▲	5^							2b			
21.1.4. Perform oxyacetylene welding TR: T.O. 34W4-1-5								1a			
21.1.5. Perform cutting ▲	5^							2b			
21.1.6. Use equipment to form metal components								a			
21.1.7. Maintain equipment								2b			
<b>21.2. Plasma Arc Systems</b> TR: NAVEDTRA 14250; Manufacturer's Instructions											
21.2.1. Principles								B	B		
21.2.2. Set up equipment ▲	5^							2b			
21.2.3. Perform cutting ▲	5^							2b			
21.2.4. Maintain equipment								2b			
<b>22.0. SHIELDED METAL ARC WELDING (SMAW)</b> TR: NAVEDTRA 14250; Manufacturer's Instructions; AFMAN 91-203; T.O. 34W4-1-5 Note: QTP required for UGT											
22.1. Principles of shielded metal arc welding								B	B		
22.2. Select arc welding equipment for specific tasks								2b			
22.3. Select the electrodes for specific welding jobs TR: T.O. 34W4-1-5								2b	b		
22.4. Set up welding machine for a specific welding job ▲	5^							2b	b		
22.5. Prepare joints for welding ▲	5^							2b			
<b>22.6. Use Shielded Metal Arc Welding Equipment to Weld Carbon Steel</b>											
<b>22.6.1. Butt Joint Positions</b>											
22.6.1.1. Flat ▲	5^							2b			
22.6.1.2. Horizontal								b			
22.6.1.3. Vertical								b			



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	Core Cert ^	Deployment * SEI +	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
22.6.1.4. Overhead								b			
<b>22.6.2. Lap Joint Positions</b>											
22.6.2.1. Flat								b			
22.6.2.2. Horizontal ▲	5^							2b			
22.6.2.3. Vertical								b			
22.6.2.4. Overhead								b			
<b>22.6.3. Tee Joint Positions</b>											
22.6.3.1. Flat								b			
22.6.3.2. Horizontal								b			
22.6.3.3. Vertical ▲	5^							2b			
22.6.3.4. Overhead								b			
<b>22.6.4. Edge Joint Positions</b>											
22.6.4.1. Flat											
22.6.4.2. Horizontal											
22.6.4.3. Vertical											
22.6.4.4. Overhead											
22.7. Equipment maintenance requirements									B		
22.8. Maintain shielded metal arc welding equipment								2b			
22.9. Hard surface welding TR: T.O. 34W4-1-5									B		
22.10. Perform hard-surfacing welding								a			
<b>23.0. TUNGSTEN INERT GAS (TIG) WELDING</b> TR: NAVEDTRA 14250; Manufacturer's Instructions; AFMAN 91-203; T.O. 34W4-1-5											
23.1. Principles of tungsten inert gas welding								B	B		
23.2. Select tungsten inert gas welding equipment for specific jobs											
23.3. Set up welding machine for specific job											
<b>23.4. Use Tungsten Inert Gas Welding Equipment to Weld Carbon Steel</b>											
<b>23.4.1. Butt Joint Positions</b>											
23.4.1.1. Flat											
23.4.1.2. Horizontal											

**Attachment 2  
3E3X1 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+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
23.4.1.3. Vertical											
23.4.1.4. Overhead											
<b>23.4.2. Lap Joint Positions</b>											
23.4.2.1. Flat											
23.4.2.2. Horizontal											
23.4.2.3. Vertical											
23.4.2.4. Overhead											
<b>23.4.3. Tee Joint Positions</b>											
23.4.3.1. Flat											
23.4.3.2. Horizontal											
23.4.3.3. Vertical											
23.4.3.4. Overhead											
<b>23.4.4 Edge Joint Positions</b>											
23.4.4.1. Flat											
23.4.4.2. Horizontal											
24.4.4.3. Vertical											
24.4.4.4. Overhead											
23.5. Use tungsten inert gas welding equipment to weld corrosion resistant alloy											
23.6. Use tungsten inert gas welding equipment to weld non-ferrous alloy											
23.7. Equipment maintenance requirements									B		
23.8. Maintain tungsten inert gas equipment											
<b>24.0. METALLIC INERT GAS (MIG) WELDING</b> TR: NAVEDTRA 14250; Manufacturer's Instructions; AFMAN 91-203; T.O. 34W4-1-5 Note: QTP required for UGT											
24.1. Principles of metallic inert gas welding								B	B		
24.2. Select metallic inert gas welding equipment for specific jobs								2b			
24.3. Set up welding machine for specific job ▲	5^							2b	b		
<b>24.4. Use Metallic Inert Gas Welding Equipment to Weld Carbon Steel</b>											
<b>24.4.1. Butt Joint Positions</b>											

**Attachment 2  
3E3X1 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 <sup>^</sup>	Deployment* SEI+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
24.4.1.1. Flat								b			
24.4.1.2. Horizontal ▲	5 <sup>^</sup>							2b			
24.4.1.3. Vertical								b			
24.4.1.4. Overhead								b			
<b>24.4.2. Lap Joint Positions</b>											
24.4.2.1. Flat								b			
24.4.2.2. Horizontal								b			
24.4.2.3. Vertical ▲	5 <sup>^</sup>							2b			
24.4.2.4. Overhead								b			
<b>24.4.3. Tee Joint Positions</b>											
24.4.3.1. Flat ▲	5 <sup>^</sup>							2b			
24.4.3.2. Horizontal								b			
24.4.3.3. Vertical								b			
24.4.3.4. Overhead								b			
<b>24.4.4. Edge Joint Positions</b>											
24.4.4.1. Flat											
24.4.4.2. Horizontal											
24.4.4.3. Vertical											
24.4.4.4. Overhead											
24.5. Use metallic inert gas welding equipment to weld corrosion resistant alloy								b			
24.6. Use metallic inert gas welding equipment to weld non-ferrous alloy								b			
24.7. Equipment maintenance requirements									B		
24.8. Maintain metallic inert gas equipment								2b			
<b>25.0. AFS-SPECIFIC CONTINGENCY RESPONSIBILITIES</b> TR: AFI 10-210; AFI 10-2501; AFPAM 10-219 Vols 1-7; AFTTP 3-32.11; WMP-1, CE Supplement Note: QTP required for UGT											
<b>25.1. Expedient Repair</b> TR: AFPAM 10-219 Vol 1-3 and 7; AFTTP 3-32.33 Vol 3											

**Attachment 2**  
**3E3X1 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 +	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
25.1.1. Facility repairs		*									
25.1.1.1. Identification of wartime facility damage		*						A	B		
25.1.1.2. Damage reporting ▲ (TQT)	5^	*~						A	B		
25.1.1.3. Repair prioritization		*						A	B		
25.1.1.4. Quick-fix Techniques											
25.1.1.4.1. Repair roof ▲ (TQT)		*~							b		
25.1.1.4.2. Repair exterior walls ▲ (TQT)		*~							b		
25.1.2. Structural repairs (e.g. shoring)		*						A	B		
25.1.3. Structural Reinforcement TR: AFPAM 10-219 Vol 1 and 2											
25.1.3.1. Earthen		*						A	B		
25.1.3.2. Wooden		*						A	B		
25.2. Airfield Paint TR: AFTTP 3-32.13; UFC 3-260-04; DAFMAN 13-217; T.O. 35E2-6-1; AFMAN 32-1040; AFPAM 10-219, Vol 4 and 5											
25.2.1. Characteristics of paint used for pavement surfaces		*						A	B		
25.2.2. Conduct Striping Procedures											
25.2.2.1. Runways ◆ ▲ (TQT)	5^	*~						a			
25.2.2.2. Taxiways		*									
25.2.2.3. Parking aprons		*									
25.2.3. Minimum Airfield Operating Strip (MAOS) Marking System		*						A	B		
25.3 Basic Expeditionary Airfield Resource (BEAR) Base Tactical Shelters TR: AFTTP 3-32.34 Vol 1; AFH 10-222 Vol 1; AFPAM 10-219, Vol 1, 2, 5, and 6											
25.3.1. Large Shelter Systems											
25.3.1.1. Types		*							B		
25.3.1.2. Dome Shelter TR: T.O. 35E4-216-1											
25.3.1.2.1. Purpose		*						A			
25.3.1.2.2. Set up		*									
25.3.1.2.3. Maintain ◆ ▲	5^	*									

**Attachment 2**  
**3E3X1 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 <sup>^</sup>	Deployment* SEI+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
<b>25.3.1.3 Aircraft Maintenance Hangar (ACH)</b> TR: T.O. 35E4-133-1											
25.3.1.3.1. Purpose		*									
25.3.1.3.2. Set up		*									
25.3.1.3.3. Maintain		*									
<b>25.3.1.4. Large Area Maintenance Shelter (LAMS)</b> TR: T.O. 35E4-219-1											
25.3.1.4.1. Purpose		*						A			
25.3.1.4.2. Set up		*									
25.3.1.4.3. Maintain ♦ ▲	5 <sup>^</sup>	*									
<b>25.3.2. Small Shelter System (SSS)</b> TR: T.O. 35E5-6-11											
25.3.2.1. Purpose		*						A	B		
25.3.2.2. Set up ♦ ▲ (TQT)	5 <sup>^</sup>	*~						2b			
25.3.2.3. Maintain ♦ ▲	5 <sup>^</sup>	*						b			
25.3.2.4. Reconstitute ♦ ▲	5 <sup>^</sup>	*						2b			
<b>25.3.3 Medium Shelter System (MSS)</b> TR: T.O. 35E5-6-21; T.O. 35E4-245-1											
25.3.3.1. Purpose		*						A	B		
25.3.3.2. Set up ♦ ▲	5 <sup>^</sup>	*						a			
25.3.3.3. Maintain ♦ ▲	5 <sup>^</sup>	*						a			
25.3.3.4. Reconstitute ♦ ▲	5 <sup>^</sup>	*						a			
<b>25.4. Construct field latrines</b> TR: AFPAM 10-219 Vol 5 and 7; T.O. 35E35-5-1; TC 4-02.3		*							b		
<b>25.5. Assemble Revetments</b> TR: AFH 10-222 Vol 2 and 14; AFTTP 3-32.34 Vol 1 and 3; AFPAM 10-219 Vol 1, 2, 5, 6											
<b>25.5.1. B-1</b> TR: T.O. 35E4-170-2											
<b>25.5.2. Expandable Bin Type (e.g. HESCO) ♦ ▲</b> TR: AFTTP 3-32.33 Vol 2	5 <sup>^</sup>	*									
<b>25.6. Rapid Airfield Damage Repair (RADR)</b> TR: AFH 10-222 Vol 1; AFI 10-210; TSPWG M 3-270-01.3-270-07; AFTTP 3-32.12; AFTTP 3-32.17; AFTTP 3-32.20; AFPAM 10-219, Vol 4											

**Attachment 2  
3E3X1 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 <sup>^</sup>	Deployment* SEI+	Tng Start	Tng Comp	Trainee Initials	Trainer Initials	Certifier Initials	3 Lvl	5 Lvl	7 Lvl	9 Lvl
25.6.1. RADR philosophy ▲ TR: AFTTP 3-32.10	5 <sup>^</sup>	*						A	A		
25.6.2. Spall repair procedures (TQT)		*~						A	A		
25.6.3. Crater repair procedures (TQT)		*~						A	A		
25.6.4. Assemble AM-2 Matting (TQT) TR: AFH 10-222 Vol 2; T.O. 35E2-2-7		*~									
<b>25.6.5. Fiber-Reinforced Polymer (FRP) Mat</b> TR: AFTTP 3-32.20											
25.6.5.1. Assemble ♦ ▲ (TQT)	5 <sup>^</sup>	*~						A			
25.6.5.2. Anchor ♦ ▲ (TQT)	5 <sup>^</sup>	*~						A			
25.6.5.3. Re-anchor		*						A			

## Attachment 3 3E3X1 Air Force Qualification Training Package Documentation Record

### A3. AFQTP Documentation Record.

A3.1. To ensure each Structural Airman trains to the correct standard, an Air Force Qualification Training Package (AFQTP) for each core task. Trainees, trainers, and certifiers use these **mandated** AFQTPs 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 provides 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 AFQTP's. Paper-based AFQTP's are on [CE DASH](#) under documents in the AFQTP folder.

A3.2.2. In addition to the paper-based AFQTPs there are web-based courses or assessments developed for certain tasks that are available on [myLearning](#) under AFCEC in the 3E3X1 or Home Station topic area.

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 section.

A3.3.1. **Core Tasks (5<sup>^</sup> or 7<sup>^</sup>).** To document the completion, the supervisor or trainer opens the individual automated training record, navigates to the QTP section, enter the start, and completed date with signatures.

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, completion of the task's AFQTP web-based course or assessment with a passing score of 80% is all that is required for upgrade training. Accomplish hands-on certification at the first opportunity when equipment or funding is available.

**Attachment 3**  
**3E3X1 Air Force Qualification Training Package Documentation Record**

**A3.4. 3E3X1 AFQTP's for Core and Diamond Tasks Requirements.**

Task Number	Tasks, Knowledge, and Technical References	Core/Diamond Tasks		Certification of AFQTPs			
		5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials
<b>1.0.</b>	<b>CIVIL ENGINEER (CE) CORE CONCEPTS</b>						
1.1.	Accomplish CE 5-Level Core Concepts Course	5					
1.2.	Accomplish CE 7-Level Core Concepts Course		7				
<b>2.0.</b>	<b>AFS SPECIFIC SAFETY</b>						
2.3.	Identify hazards	5					
2.4.	Plan hazard abatement	5					
<b>2.5.</b>	<b>Exercise Safety Precautions when:</b>						
2.5.5.	Handling compressed gas containers	5					
2.5.7.	Performing Lockout/Tag out procedures	5					
<b>2.7.</b>	<b>Fall Protection Awareness</b>						
2.7.1.	Purpose	5					
2.7.2.	Fall Protection plan	5					
2.7.3.	Rescue plan	5					
<b>2.7.5.</b>	<b>Fall Protection Equipment</b>						
2.7.5.1.	Inspect	5					
2.7.5.2.	Demonstrate proper use	5					
2.7.5.3.	Maintain	5					
<b>4.0.</b>	<b>SUSTAINMENT MANAGEMENT SYSTEMS (SMS)</b>						
4.2.	Document inspections into BUILDER		7				
4.3	Attend AFIT WMGT 131 SMS Builder Level 1 course		7				
<b>5.0.</b>	<b>PROJECT PLANNING</b>						
5.2.	Attend AFIT WENG Scoping and Estimating course		7				
5.3.	Attend AFIT WMGT 301 Intro to Asset Management course	5					
5.4.	Attend AFIT WMGT 322 Intro to Project Management course		7				
<b>5.7.</b>	<b>Use Construction Drawings for:</b>						
5.7.1.	Carpentry		7				
5.7.2.	Masonry		7				
5.7.3.	Metalwork		7				
<b>5.9.</b>	<b>Identify Types of Material Required for:</b>						
5.9.1.	Carpentry		7				
5.9.2.	Masonry		7				
5.9.3.	Metalwork		7				
<b>5.11.</b>	<b>Establish Quantity of Material Required for:</b>						
5.11.1.	Carpentry		7				
5.11.2.	Masonry		7				
5.11.3.	Metalwork		7				
<b>7.0.</b>	<b>CONCRETE STRUCTURES</b>						
<b>7.2.</b>	<b>Concrete Reinforcement</b>						
7.2.1.	Install reinforcing steel		7				



**Attachment 3**  
**3E3X1 Air Force Qualification Training Package Documentation Record**

Task Number	Tasks, Knowledge, and Technical References	Core/Diamond Tasks		Certification of AFQTPs			
		5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials
<b>7.4.</b>	<b>Construct</b>						
7.4.4.	Slabs		7				
7.4.7.	Walls		7				
<b>7.7.</b>	<b>Concrete</b>						
7.7.4.	Place concrete in forms		7				
7.7.7.	Finish concrete		7				
<b>8.0.</b>	<b>STRUCTURAL LAYOUT and FRAMING COMPONENTS</b>						
<b>8.2.</b>	<b>Construct</b>						
8.2.1.	Floors	5					
8.2.2.	Stair members	5					
8.2.3.	Wall studs	5					
<b>8.2.5.</b>	<b>Roofs</b>						
8.2.5.1.	Trusses	5					
8.2.5.2.	Rafters	5					
<b>10.0.</b>	<b>MASONRY CONSTRUCTION AND MAINTENANCE</b>						
10.2.	Prepare mortar	5					
<b>10.3.</b>	<b>Lay Masonry Units</b>						
10.3.2.	Block	5					
<b>11.0.</b>	<b>ROOFING SYSTEMS</b>						
11.2	Attend Roof Installation, Maintenance, Inspection, and Repair course		7				
<b>11.8.</b>	<b>Inspect Roof Systems</b>						
11.8.1.	Low-slope	5					
11.8.2.	Steep-slope	5					
<b>12.0.</b>	<b>FINISH CARPENTRY</b>						
<b>12.3.</b>	<b>Gypsum Board</b>						
12.3.1.	Install	5					
12.3.2.	Finish	5					
12.3.3.	Patch	5					
<b>12.8.</b>	<b>Install ceiling systems</b>						
12.8.2.	Suspended ceiling	5					
<b>15.0.</b>	<b>PERSONNEL DOOR AND WINDOW MAINTENANCE</b>						
<b>15.2.</b>	<b>Install Personnel Door Units</b>						
15.2.1.	Wood	5					
15.2.2.	Metal	5					
<b>15.6.</b>	<b>Personnel Door Hardware</b>						
15.6.1.	Install door closures	5					
<b>16.0.</b>	<b>LOCKSMITHING</b>						
<b>16.4.</b>	<b>Install Locking Devices</b>						
16.4.1.	Cylinder locks	5					
16.4.4.	Panic hardware/exit device	5					
<b>19.0.</b>	<b>METAL/FIBERGLASS COMPONENT FABRICATION AND INSTALLATION</b>						
<b>19.2.</b>	<b>Layout Metal Components using:</b>						
19.2.1.	Parallel line development	5					

**Attachment 3**  
**3E3X1 Air Force Qualification Training Package Documentation Record**

Task Number	Tasks, Knowledge, and Technical References	Core/Diamond Tasks		Certification of AFQTPs			
		5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials
<b>19.6.</b>	<b>Install Duct Systems</b>						
<b>19.6.1.</b>	Sheet metal ducts	5					
<b>20.0.</b>	<b>VEHICLE AND EQUIPMENT FACILITY DOORS AND GATES</b>						
<b>20.1.</b>	<b>Inspect</b>						
<b>20.1.1.</b>	Overhead doors	5					
<b>20.1.2.</b>	Rollup doors	5					
<b>20.5.</b>	<b>Maintain</b>						
<b>20.5.1.</b>	Overhead doors	5					
<b>20.5.2.</b>	Roll-up doors	5					
<b>21.0.</b>	<b>METAL CUTTING AND WELDING</b>						
<b>21.1.</b>	<b>Oxyacetylene</b>						
<b>21.1.3.</b>	Set up equipment	5					
<b>21.1.5.</b>	Perform cutting	5					
<b>21.2.</b>	<b>Plasma Arc Systems</b>						
<b>21.2.2.</b>	Set up equipment	5					
<b>21.2.3.</b>	Perform cutting	5					
<b>22.0.</b>	<b>SHIELDED METAL ARC WELDING</b>						
<b>22.4.</b>	Set up welding machine for a specific welding job	5					
<b>22.5.</b>	Prepare joints for welding	5					
<b>22.6.</b>	<b>Use Shielded Metal Arc Welding Equipment to Weld Carbon Steel</b>						
<b>22.6.1.</b>	<b>Butt Joint Positions</b>						
<b>22.6.1.1.</b>	Flat	5					
<b>22.6.2.</b>	<b>Lap Joint Positions</b>						
<b>22.6.2.2.</b>	Horizontal	5					
<b>22.6.3.</b>	<b>Tee Joint Positions</b>						
<b>22.6.3.3.</b>	Vertical	5					
<b>24.0.</b>	<b>METALLIC INERT GAS (MIG) WELDING</b>						
<b>24.3.</b>	Set up welding machine for specific job	5					
<b>24.4.</b>	<b>Use Metallic Inert Gas Welding Equipment to Weld Carbon Steel</b>						
<b>24.4.1.</b>	<b>Butt Joint Positions</b>						
<b>24.4.1.2.</b>	Horizontal	5					
<b>24.4.2.</b>	<b>Lap Joint Positions</b>						
<b>24.4.2.3.</b>	Vertical	5					
<b>24.4.3.</b>	<b>Tee Joint Positions</b>						
<b>24.4.3.1.</b>	Flat	5					
<b>25.0.</b>	<b>AFS-SPECIFIC CONTINGENCY RESPONSIBILITIES</b>						
<b>25.1.</b>	<b>Expedient Repair</b>						
<b>25.1.1.2.</b>	Damage reporting	5					
<b>25.1.1.4.</b>	<b>Quick-fix Techniques</b>						
<b>25.1.1.4.1.</b>	Repair roof						
<b>25.1.1.4.2.</b>	Repair exterior walls						
<b>25.2.</b>	<b>Airfield Paint</b>						
<b>25.2.2.</b>	<b>Conduct Striping Procedures</b>						

**Attachment 3**  
**3E3X1 Air Force Qualification Training Package Documentation Record**

Task Number	Tasks, Knowledge, and Technical References	Core/Diamond Tasks		Certification of AFQTPs			
		5 Level	7 Level	Tng Start	Tng Complete	Trainee Initials	Trainer Initials
25.2.2.1.	Runways	5					
<b>25.3.</b>	<b>Basic Expeditionary Airfield Resource (BEAR) Base Tactical Shelters</b>						
<b>25.3.1.</b>	<b>Large Shelter Systems</b>						
<b>25.3.1.2.</b>	<b>Dome Shelter</b>						
25.3.1.2.3.	Maintain	5					
<b>25.3.1.4.</b>	<b>Large Area Maintenance Shelter (LAMS)</b>						
25.3.1.4.3.	Maintain	5					
<b>25.3.2.</b>	<b>Small Shelter System (SSS)</b>						
25.3.2.2.	Set up	5					
25.3.2.3.	Maintain	5					
25.3.2.4.	Reconstitute	5					
<b>25.3.3.</b>	<b>Medium Shelter System (MSS)</b>						
25.3.3.2.	Set up	5					
25.3.3.3.	Maintain	5					
25.3.3.4.	Reconstitute	5					
<b>25.5.</b>	<b>Assemble Revetments</b>						
25.5.2.	Expandable Bin Type (e.g., HESCO)	5					
<b>25.6.</b>	<b>Rapid Airfield Damage Repair (RADR)</b>						
25.6.1	RADR Philosophy	5					
<b>25.6.5.</b>	<b>Fiber-Reinforced Polymer (FRP) Mat</b>						
25.6.5.1.	Assemble	5					
25.6.5.2.	Anchor	5					