

**AIR FORCE**  
**QUALIFICATION TRAINING PACKAGE (AFQTP)**



**FOR**  
**ENGINEERING**  
**(3E5X1)**

**MODULE 19**

**CONTRACT MANAGEMENT**

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Career Field Education and Training Plan (CFETP) references from 1 April 02 version.

OPR: HQ AFCESA/CEOF  
(SMSgt Pat Abbott)  
Supersedes AFQTP 3E5X1-18, 1 May 01

Certified by: HQ AFCESA/CEOF  
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Pages: 69/Distribution F

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# AIR FORCE QUALIFICATION TRAINING PACKAGES FOR (3E5X1)

## INTRODUCTION

**Before starting this AFQTP**, refer to and read the [“AFQTP Trainer/Trainee Guide.”](#)

**AFQTPs are mandatory and must be completed** to fulfill task knowledge requirements on core and diamond tasks for upgrade training. **It is important for the trainer and trainee to understand** that an AFQTP **does not** replace hands-on training, nor will completion of an AFQTP meet the requirement for core task certification. AFQTPs will be used in conjunction with applicable technical references and hands-on training.

**AFQTPs and Certification and Testing (CerTest) must be used as minimum upgrade requirements for Diamond tasks.**

## MANDATORY minimum upgrade requirements:

**Core task:**

AFQTP completion  
Hands-on certification

**Diamond task:**

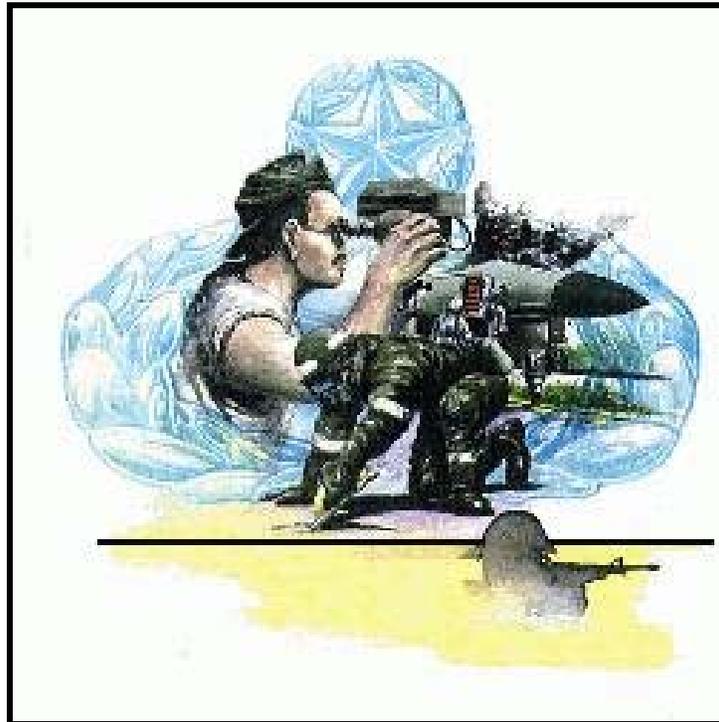
AFQTP completion  
CerTest completion (80% minimum to pass)

**Note:** Trainees will receive hands-on certification training for Diamond Tasks when equipment becomes available either at home station or at a TDY location.

**Put this package to use.** Subject matter experts under the direction and guidance of HQ AFCESA/CEOF revised this AFQTP. If you have any recommendations for improving this document, please contact the Career Field Manager at the address below.

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## CONTRACT MANAGEMENT

MODULE 19

AFQTP UNIT 2

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ENFORCE GENERAL PROVISIONS OF CONTRACTS (19.2.)

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**ENFORCE GENERAL PROVISIONS OF CONTRACTS**  
***Task Training Guide***

|                                    |   |
|------------------------------------|---|
| <b>STS Reference Number/Title:</b> | 19.2. - Enforce general provisions of contracts.  |
| <b>Training References:</b>        | <ol style="list-style-type: none"> <li>1. <a href="#">Federal Acquisition Regulation (FAR)</a>.</li> <li>2. Local Procedures</li> <li>3. Career Development Course (CDC) 3E551B Engineering Journeyman, Volume 3, Unit 1-3, Section 410, <i>Documentation</i>.</li> </ol>   |
| <b>Prerequisites:</b>              | <ol style="list-style-type: none"> <li>1. <b>Possess as a minimum a 3E551 AFSC.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. FAR.</li> <li>2.2. Local Procedures.</li> </ol> </li> <li>3. <b>Complete CDC 3E551B Engineering Journeyman, Volume 3, Unit 1-3, Section 410.</b></li> </ol> |
| <b>Equipment/Tools Required:</b>   | A construction contract, preferably the trainee's construction contract.  |
| <b>Learning Objective:</b>         | The trainee will be able to enforce general provisions of contracts.  |
| <b>Samples of Behavior:</b>        | The trainee will enforce general provisions of contracts.   |
| <b>Note:</b>                       | FAR clauses can be found on-line at <a href="http://www.arnet.gov/far/">http://www.arnet.gov/far/</a> . Trainee should be familiarized with this site.  |

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## ENFORCE GENERAL PROVISIONS OF CONTRACTS

**1. Background.** This element deals with the general provisions included in construction contracts. Before we begin, let's take a look at some of the documents that might be contained in these contracts, including:

**1.1. Standard Form 1442.** This form is the solicitation, offer, and award document. It's usually the first document of the contract and is often referred to as the boilerplate.

**1.2. General provisions.** These are basically all of the Federal Acquisition Regulation (FAR) clauses pertaining to your contract. Note: Some contracts may contain the Instructions to Bidders and the Representations and Certifications documents, which come before the general provisions, but are normally removed after the award of the contract (See Figure 1).

**1.3. Labor standards.** Labor standards are designed to protect the contractor employees. They address such things as safe and sanitary working conditions.

**1.4. Wage rates.** Wage rates are the typical rates paid for each construction trade and all levels within each trade (e.g., electrical helpers and journeyman).

**1.5. Amendments and modifications.** Amendments are changes to the contract or solicitation prior to award. Changes made after award are referred to as modifications.

**1.6. Specifications.** Specifications are written instructions and the technical requirements of the job.

**1.7. Drawings.** Drawings supplement information designated in the specifications. Where specifications deal with quality characteristics, drawings deal more with form of construction. Drawings graphically show shape, dimension, location, and relation between components.

**2.** Federal Acquisition Regulations make up the general provisions section of the contract. The contracting officer (CO) is responsible for ensuring that all applicable clauses are incorporated into each contract. The CO is also the main source of information if the need arises to see these regulations. As a construction inspector, you should familiarize yourself with these regulations once the project is assigned. The inspector should have enough training and experience to be able to read, comprehend, and apply all applicable FAR clauses. This may avoid any future conflicting directions, instructions, or misconception by the parties involved. Some FAR clauses must be checked off in order to be applicable. It's important to note that only those clauses referenced in the contract can be enforced.

**3.** The following are examples of the FAR clauses referenced in the general provisions of a typical construction contract. FAR clauses can be referenced by either number and title, or by number, title, and full text. **FAR clauses can be found on-line at <http://www.arnet.gov/far/>.** You should familiarize yourself with this site.

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**Figure 1. Sample of General Provisions**

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GENERAL PROVISIONS  
FIXED PRICE CONSTRUCTION CONTRACT  
CLAUSES INCORPORATED BY REFERENCE [APR 84]

THIS CONTRACT INCORPORATES THE FOLLOWING CLAUSES BY REFERENCE, WITH THE SAME FORCE AND EFFECT AS IF THEY WERE GIVEN IN FULL TEST. UPON REQUEST, THE CONTRACTING OFFICER WILL MAKE THEIR FULL TEXT AVAILABLE.

I. FEDERAL ACQUISITION REGULATION [48 CFR CHAPTER 1] CLAUSES

| REF NO. | FAR REF.  | CLAUSE TITLE   | DATE   |
|---------|-----------|--|--------|
| 1       | 52.202-1  | DEFINITIONS  | DEC 01 |
| 2       | 52.203-5  | COVENANT AGAINST CONTINGENT FEES   | APR 84 |
| 3       | 52.203-1  | OFFICIALS NOT BE BENEFIT   | APR 84 |
| 4       | 52.203-3  | GRATUITIES   | AUG 96 |
| [ ]* 5  | 52.204-2  | SECURITY REQUIREMENTS  | SEP 00 |
| [x]* 6  | 52.211-12 | LIQUIDATED DAMAGES - CONSTRUCTION (THE AMOUNT TO BE INCLUDED IN THE BLANK IN PARA (a) IS <u>\$ 39.00</u> ) | APR 84 |
| [ ]* 7  | 52.211-13 | TIME EXTENSIONS  | APR 84 |
| 8       | 52.212-8  | DEFENSE PRIORITY AND ALLOCATION REQUIREMENTS   | SEP 00 |
| [ ]* 9  | 52.212-11 | VARIATION IN ESTIMATED QUANTITY  | APR 84 |
| 10      | 52.242-14 | SUSPENSION OF WORK   | APR 84 |
| 11      | 52.214-26 | AUDIT AND RECORDS – SEALED BIDDING   | OCT 97 |
| *** 12  | 52.214-27 | PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA- MODIFICATIONS - SEALED BIDDING                         | OCT 97 |
| *** 13  | 52.215-13 | SUBCONTRACTOR COST OR PRICING DATA- MODIFICATIONS  | OCT 97 |
| 14      | 52.215-1  | INSTRUCTIONS TO OFFERORS – COMPETITIVE ACQUISITION   | MAY 01 |

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WAIVER OF MATERIAL SAFETY DATA SHEET [APR 1984]

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UNDER ITS OFFER, THE CONTRACTOR HAS CERTIFIED THAT THE MATERIAL CALLED FOR IN THIS CONTRACT IS NOT HAZARDOUS WITHIN THE MEANING OF THE HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA CLAUSE OF THIS CONTRACT OR THAT A MATERIAL SAFETY DATA SHEET (MSDS) FOR THE MATERIAL HAS BEEN PREVIOUSLY SUBMITTED. FOR THAT REASON, THE CONTRACTOR IS NOT REQUIRED TO SUBMIT A MSDS.

74. \* AF FAR SUP 52.223-9002 MATERIAL SAFETY DATA SHEET-LOCAL PURCHASE [APR 1984]

(a) THE CONTRACTOR SHALL MAIL ONE COPY OF THE MATERIAL SAFETY DATA SHEET (MSDS) REQUIRED BY THE HAZARDOUS MATERIAL IDENTIFICATION AND MATERIAL SAFETY DATA CLAUSE OF THIS CONTRACT TO THE FOLLOWING ADDRESS INSTEAD OF THE ADDRESS GIVEN IN THE FEDERAL STANDARD NO. 313A:  
CONTRACTING OFFICER - HQ USAF/ECH, BROOKS AFB TX 78235

(b) THE CONTRACTOR SHALL VERIFY THAT THE NATIONAL STOCK NUMBER, TRADE OR PART NAME, FEDERAL SUPPLY CODE FOR MANUFACTURERS (FSCM), AND CONTRACT NUMBER ARE INCLUDED IN THE MSDS.

\*IF FAR 52.223-3 IS INCLUDED IN THIS SOLICITATION GENERAL PROVISION NO. 73 OR 74 WILL BE CHECKED AS APPLICABLE TO THE RESULTING CONTRACT DEPENDING ON WHAT THE CONTRACTOR CERTIFIES IN PARAGRAPH 10 OF THE REPRESENTATIONS AND CERTIFICATIONS.

75. 5336.290 MATERIAL APPROVAL SUBMITTAL FORM (AF FORM 3000).

WITHIN TEN DAYS AFTER COMMENCEMENT OF WORK OR AS OTHERWISE ESTABLISHED BY THE CONTRACTING OFFICER, ALL MATERIALS AND ARTICLES REQUIRING APPROVAL, AS CONTEMPLATED BY THE MATERIALS AND WORKMANSHIP CLAUSE, SHALL BE SUBMITTED BY THE CONTRACTOR BY MEANS OF AF FORM 3000. THE CONTRACTING OFFICER SHALL ESTABLISH A SUSPENSE DATE ON ACTION TO BE TAKEN ON SUBMITTALS AND SHALL RETAIN A SUSPENSE COPY FOR NECESSARY FOLLOW-UP ACTION.

76. PREPARATION OF PROGRESS SCHEDULES AND REPORTS [APR 1984]

THE REPORTS CONTEMPLATED BY THE CLAUSE HEREIN ENTITLED “PROGRESS CHARTS AND REQUIREMENTS FOR OVERTIME WORK” SHALL BE ACCOMPLISHED ON AND IN ACCORDANCE WITH INSTRUCTIONS PERTAINING TO AF FORM 3064, CONTRACT PROGRESS SCHEDULE AND AF FORM 3065, CONTRACT PROGRESS REPORT.

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**3.1. 52.236-2, Differing Site Conditions.**

**3.1.1.** The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the CO of:

**3.1.1.1.** subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or

**3.1.1.2.** unknown physical conditions at the site, of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inherent in the work of the character provided for in the contract.

**3.1.2.** The CO shall investigate the site conditions promptly after receiving the notice. If the conditions do materially differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, an equitable adjustment shall be made under this clause, and the contract modified in writing accordingly.

**3.1.3.** No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided that the time prescribed in (a) above for giving written notice may be extended by the CO.

**3.1.4.** No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

**3.2. 52.236-5, Material and Workmanship (para c).** All work under this contract shall be performed in a skillful and workmanlike manner. The CO may require, in writing, that the Contractor remove from the job site any employee the CO deems incompetent, careless, or otherwise objectionable.

**3.3. 52.236-6, Superintendence by the Contractor.** At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the work a competent superintendent who is satisfactory to the CO and has authority to act for the Contractor.

**3.4. 52.236-7, Permits and Responsibilities.** The Contractor shall, without additional expense to the Government, be responsible for obtaining any necessary licenses and permits, and for complying with any Federal, State, and municipal laws, codes, and regulations applicable to the performance of the work. The Contractor shall also be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence, and shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work that may have already been accepted.

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**3.5. 52.236-10, Operations and Storage Areas.**

**3.5.1.** The Contractor shall confine all operations (including storage of materials) on Government premises to areas authorized or approved by the CO. The Contractor shall hold and save the Government, its officers, and agents, free and harmless from liability of any nature occasioned by the Contractor performance. Temporary buildings (e.g., storage sheds, shops, offices) and utilities may be erected by the Contractor only with the approval of the CO and shall be built with labor and materials furnished by the Contractor without expense to the Government. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the CO, the buildings and utilities may be abandoned and need not be removed.

**3.5.2.** The Contractor shall, under regulations prescribed by the CO, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the CO. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

**3.6. 52.236-11, Use and Possession Prior to Completion.**

**3.6.1.** The Government shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the CO shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the Government intends to take possession of or use. However, failure of the CO to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The Government's possession or use shall not be deemed an acceptance of any work under the contract.

**3.6.2.** While the Government has such possession or use, the Contractor shall be relieved of the responsibility for the loss of or damage to the work resulting from the Government's possession or use, notwithstanding the terms of the clause in this contract entitled "Permits and Responsibilities." If prior possession or use by the Government delays the progress of work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

**3.7. 52.236-12, Cleaning Up.** The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Government. Upon completing the work, the Contractor shall leave the work area in a clean, neat, and orderly condition satisfactory to the CO.

**3.8. 52.236-21, Specifications and Drawings for Construction (para a).** The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the CO access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in figures, in the drawings, or in the specifications, the matter shall be promptly submitted to the CO, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The CO shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

**3.9. 52.243-4, Changes.**

**3.9.1.** The CO may, at any time, without notice to the sureties, if any, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract, including changes:

**3.9.1.1.** in the specifications (including drawings and designs).

**3.9.1.2.** in the method or manner of performance of the work.

**3.9.1.3.** in the Government-furnished facilities, equipment, materials, services, or site.

**3.9.1.4.** directing acceleration in the performance of the work.

**3.9.2.** Any other written or oral order (which as used in this paragraph includes direction, instruction, interpretation, or determination) from the CO that causes a change shall be treated as a change order under this clause; provided that the Contractor gives the CO written notice stating:

**3.9.2.1.** the date, circumstances, and source of the order, and

**3.9.2.2.** that the Contractor regards the order as a change order.

**3.9.3.** Except as provided in this clause, no order, statement, or conduct of the CO shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.

**3.9.4.** If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any such order, the CO shall make an equitable adjustment and modify the contract in writing. However, except for a "proposal for adjustment" (hereafter referred to a proposal) based on defective specifications, no proposal for any change under paragraph (3.9.2.) above shall be allowed for any costs incurred more than 20 days before the Contractor gives written notice as required. In the case of defective specifications for which the Government is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.

**3.9.5.** The Contractor must submit any proposal under this clause within 30 days after:

**3.9.5.1.** receipt of a written change order under paragraph (3.9.1.) above or

**3.9.5.2.** the furnishing of a written notice under paragraph (3.9.2.) above, by submitting to the CO a written statement describing the general nature and amount of the proposal, unless this period is extended by the Government. The statement of proposal for adjustment may be included in the notice under paragraph (3.9.2.) above.

**3.9.6.** No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.

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**3.10. 52.246-12, Inspection of Construction.**

**3.10.1. Definition.** "Work" includes, but is not limited to, materials, workmanship, and manufacture and fabrication of components.

**3.10.2.** The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. The Contractor shall maintain complete inspection records and make them available to the Government. All work shall be conducted under the general direction of the CO and is subject to Government inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.

**3.10.3.** Government inspections and tests are the sole benefit of the Government and do not--

**3.10.3.1.** relieve the Contractor of responsibility for providing adequate quality control measures.

**3.10.3.2.** relieve the Contractor of responsibility for damage to or loss of the material before acceptance.

**3.10.3.3.** constitute or imply acceptance.

**3.10.3.4.** affect the continuing rights of the Government after acceptance of the completed work under paragraph (3.10.9.) of this section.

**3.10.4.** The presence or absence of a Government inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specification without the CO's written authorization.

**3.10.5.** The Contractor shall promptly furnish, at no increase in contract price, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests, as may be required by the CO. The Government may charge the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes re-inspection or retest necessary. The Government shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

**3.10.6.** The Contractor shall, without charge, replace or correct work found by the Government not to conform to contract requirements, unless in the public interest the Government consents to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.

**3.10.7.** If the Contractor does not promptly replace or correct rejected work, the Government may--

**3.10.7.1.** by contract or otherwise, replace or correct the work and charge the cost to the Contractor.

**3.10.7.2.** terminate for default the Contractor's right to proceed.

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**3.10.8.** If, before acceptance of the entire work, the Government decides to examine already completed work by removing it or tearing it out, the Contractor, on request, shall promptly furnish all necessary facilities, labor, and material. If the work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray the expenses of the examination and of satisfactory reconstruction. However, if the work is found to meet contract requirements, the CO shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.

**3.10.9.** Unless otherwise specified in the contract, the Government shall accept, as promptly as practicable after completion and inspection, all work required by the contract or that portion of the work the CO determines can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the Government's rights under any warranty or guarantee.

**4. To enforce these provisions, we recommend the following steps:**

**Step 1: Review the contract and all applicable FAR clauses.**

**Step 2: Review all project drawings and specifications.**

**NOTE:**

Steps 3 through 9 must be accomplished throughout the life of a contract.

**Step 3: Note any differing site conditions found.**

**Step 4: Verify the site superintendent is present at all times.**

**Step 5: Verify the contractor has all licenses and permits required, and is complying with all Federal, State, and Municipal laws, codes, and regulations.**

**Step 6: Ensure the contractor's materials and equipment are being kept in authorized areas, and any temporary facilities built were approved in advance.**

**Step 7: Ensure contractor keeps the work area free from accumulation of waste material.**

**Step 8: Ensure all safety criteria is met.**

**Step 9: Verify construction drawings and specifications are on site at all times.**

**Step 10: Validate the contractor is performing and documenting work site inspections.**

**NOTE:**

Discrepancies in Steps 3 through 9 should be brought immediately to the contracting officer.

**REVIEW QUESTIONS  
FOR  
ENFORCE GENERAL PROVISIONS OF CONTRACTS**

| QUESTION   | ANSWER   |
|--|--|
| 1. What are the general provisions found in the contract document?                                 | <ul style="list-style-type: none"> <li>a. General provisions are the required or applicable Federal Acquisition Regulation (FAR) clauses.</li> <li>b. Drawings.</li> <li>c. Amendments and modifications.</li> <li>d. Wage rates.</li> </ul>   |
| 2. Who is responsible for ensuring all of the applicable clauses are incorporated into a contract? | <ul style="list-style-type: none"> <li>a. Contracting officer (CO).</li> <li>b. BCE.</li> <li>c. Base Commander.</li> <li>d. Real Property Clerk.</li> </ul>   |
| 3. Why are general provisions included in a contract document?                                     | <ul style="list-style-type: none"> <li>a. To protect the contractor and the Government in fulfilling the terms of the contract.</li> <li>b. To protect SPMO.</li> <li>c. To protect the Base Commander.</li> <li>d. To protect the workers.</li> </ul>   |
| 4. As an inspector, why do you need to enforce these applicable clauses?                           | <ul style="list-style-type: none"> <li>a. To ensure construction is done according to the terms of the contract.</li> <li>b. Relieve the Contractor of responsibility for damage.</li> <li>c. Not to constitute or imply acceptance.</li> <li>d. Affect the continuing rights of the Government after acceptance of the completed work under paragraph.</li> </ul> |

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**ENFORCE GENERAL PROVISIONS OF CONTRACTS**

**PERFORMANCE CHECKLIST**

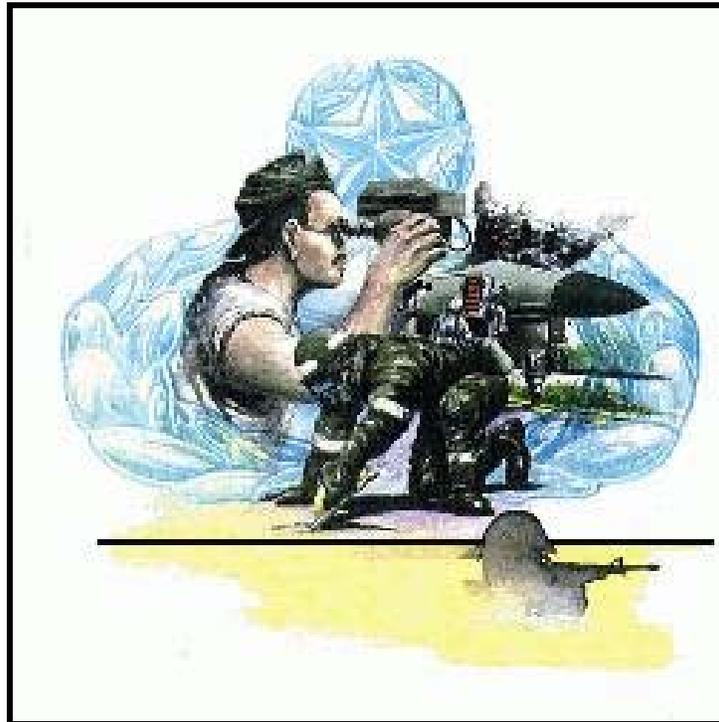
**INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee’s performance using this checklist.

| DID THE TRAINEE....  | YES | NO |
|--|-----|----|
| 1. review all applicable FAR clauses?  |     |    |
| 2. review the contract drawings and specifications?                              |     |    |
| 3. verify the requirement for permits and licenses?                              |     |    |
| 4. verify the contractor’s materials and equipment are in authorized areas?      |     |    |
| 5. ensure the contractor kept waste material from accumulating at the work site? |     |    |
| 6. verify the construction drawings and specifications were on site?             |     |    |
| 7. verify the contractor performed and documented his work site inspections?     |     |    |

**FEEDBACK:** Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the minds of both the trainee and trainer/certifier.

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## CONTRACT MANAGEMENT

MODULE 19

AFQTP UNIT 3

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### CONDUCT CONSTRUCTABILITY REVIEW (19.3.)

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**CONDUCT CONSTRUCTABILITY REVIEW**  
***Task Training Guide***

|  |   |
|--|---|
| <b>STS Reference Number/Title:</b>   | 19.3. - Conduct constructability review.  |
| <b>Training References:</b>  | <ol style="list-style-type: none"> <li>1. <a href="#"><u>Air Force Instruction (AFI) 32-1023, Design and Construction Standards and Execution of Facility Construction Projects.</u></a></li> <li>2. <a href="#"><u>Air Force Pamphlet (AFPAM) 32-1005, Working in the Engineering Flight.</u></a></li> <li>3. Local Procedures.</li> <li>4. Career Development Courses 3E551B Engineering Journeyman, Volume 3, Unit 1-2, Section 404, <i>Review Process</i>.</li> </ol> |
| <b>Prerequisites:</b>  | <ol style="list-style-type: none"> <li>1. <b>Possess as a minimum a 3E551 AFSC.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. AFI 32-1023.</li> <li>2.2. AFPAM 32-1005.</li> <li>2.3. Local Procedures.</li> <li>2.4. Applicable Construction References (i.e. NFPA 70).</li> </ol> </li> <li>3. <b>Complete CDC 3E551B Engineering Journeyman, Volume 3, Unit 1-2, Section 404.</b></li> </ol>                     |
| <b>Equipment/Tools Required:</b>   | <ol style="list-style-type: none"> <li>1. A set of plans and specifications (from a construction project -- medium size).</li> <li>2. Constructability Review Checklist, AFPAM 32-1005, Attachment 2.</li> </ol>  |
| <b>Learning Objective:</b>   | The trainee will be able to conduct constructability review.  |
| <b>Samples of Behavior:</b>  | Given a set of drawings and specifications, the trainee will conduct constructability review.   |
| <b>Note:</b>   |   |
| The trainer will need to provide the trainee a set of drawings and specifications for a constructability review. |   |

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## CONDUCT CONSTRUCTABILITY REVIEW

**1. Background.** The Air Force spends millions of dollars each year on change orders and contract modifications. These costs, however, can be greatly reduced by properly reviewing the project drawings and specifications before awarding a contract. There are four types of reviews that will take place during various stages of design. They are the technical review, the constructability review, installation review, and the base procurement review.

**1.1. Technical Review.** A technical review includes a thorough check of the methods, materials, and calculations for proposed structural, mechanical, electrical, etc., systems to assure the design will achieve the desired results. The project engineer has the project reviewed by those other engineers, and of course, the chief engineer determines the feasibility of the whole design.

**1.2. Constructability Review.** The term "constructability" means literally "having the ability to be constructed." A constructability review is, therefore, a review of plans and specifications to ensure their clarity and to determine if the project is practical and constructible. The goal of the constructability review is to reduce both the likelihood of delays in bid openings or potential modifications during construction which causes wasted effort, higher construction cost, subsequent contractor claims, increased administrative effort, and delayed contract completion.

**1.3. Installation Review.** The appropriate staff agencies, including Communications, Safety, Bioenvironmental Engineering, Fire Protection, Security Forces, the using agency, and Base Civil Engineering (BCE) do the installation review. These agencies review the contract drawings as they pertain to their field. For instance, BCE reviews the contract drawings to remove any conflict with recent or planned in-house or contract civil engineering efforts. The using agency reviews the contract drawings to verify that all its needs are satisfied or to incorporate changes if needed.

**1.4. Base Procurement Review.** Once all other reviews are complete, the Base Procurement Office reviews specifications, work descriptions, and procedural documents. This review is to insure the provisions do not conflict with other provisions of the invitation for bids, request for proposals, or resultant contract, but will provide strong contractual basis for the government's intent during the performance of the contract.

**2.** The construction inspector for the team assigned to the project ensures the contractors can determine, from the project specifications and drawings, exactly what the project designer wants built or repaired and how that repair or construction should take place.

**3.** Various major commands (MAJCOMs) have developed standardized constructability review checklist. We recommend using the Constructability Review Checklist in AFPAM 32-1005, Attachment 2.

### **4. The following procedures should be used along with your checklist:**

**Step 1: Existing site conditions.** Check the existing site conditions to ensure that they match or agree with the requirements stated in the plans and specifications.

#### **Step 2: Contract performance period.**

**2.1.** Ensure the contract performance time is adequate and not excessive or deficient (e.g., is there ample time to order long-lead items such as structural steel).

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2.2. Also, check the necessity for construction phasing requirements such as for weather and staged beneficial occupancies (e.g., has the engineer asked the contractor to replace concrete at Elmendorf AFB, Alaska, in January without considering the need for cold weather shut downs).

**Step 3: Submittal requirements.** Ensure material submittals are adequate and not excessive or deficient (e.g., do we really need a sample bag of aggregate or should not we ask for shop drawings for the installation of packaged refrigeration units).

**Step 4: Provisions for coordination between agencies.**

4.1. Check to see if there will be multiple contractors' working on the same site, or if some of the work will be supplemented by base civil engineer work forces.

4.2. Also, check if the using agency will be in operation during construction.

**Step 5: Adequacy of space for equipment.**

5.1. Ensure the size and configuration of the proposed equipment meet the expected function or mission.

5.2. Also, ensure there is adequate room for maintenance of the equipment.

**Step 6: Practicality and economy of construction.**

6.1. Compare the economy and availability of selected materials and structural systems to others that are available in the local area.

6.2. Check to see special construction features are necessary and do not exist strictly for aesthetic purposes.

6.3. Consider alternate methods to lower the requirement for craft labor, which is scarce or expensive (e.g., off-site versus on-site fabrication of specialized facility components).

**Step 7: Clarity of specifications.**

7.1. Check the specifications to ensure they are clear, concise, and legally enforceable.

7.2. Always try to ensure there are no errors, omissions, or ambiguities.

**Step 8: Correlation between plans and specifications.**

8.1. Check for major items of equipment listed and referenced in the specifications and verify that they are coordinated with the contract drawings.

8.2. Verify that items specified "as indicated" or "where indicated" in the specifications are in fact indicated in the contract drawings.

8.3. Verify that cross-referenced specification sections do exist.

8.4. Verify that different plan views of the contract drawings match the architectural plans to ensure no variance exists in room finishes, dimensions, fixtures, and equipment (e.g., check ceiling diffusers and registers against the mechanical floor plan and check light fixtures on the electrical floor plan against the reflected ceiling plan).

**Step 9: Demolition.**

9.1. Do local laws prevent blasting?

9.2. Do other facilities nearby prevent the swing required of a boom and ball?

9.3. Does the structure contain asbestos or other hazardous pollutants?

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**Step 10: Site restrictions.**

**10.1.** Is the project facility located in controlled or restricted areas where escorts are needed?

**10.2.** Will there be controlled travel routes and vehicular interferences such as those on the flight line?

**10.3.** Are there certain times of the day that the user will not allow contractor operations (e.g., WAPS testing at CBPO)?

**Step 11: Availability and compatibility of Government Furnished Material (GFM) or Government Furnished Equipment (GFE).**

**11.1.** Ensure all GFM/GFE will be available on time.

**11.2.** Also, ensure if the GFM/GFE has been in government storage that it has been maintained and is serviceable prior to turning it over to the contractor.

**11.3.** The purpose of this review is a pre-check to identify any possible difficulties that may arise during construction phase.

**Step 12: Record all discrepancies found during the review and forward them for correction.** Use Constructability Review Checklist found in AFPAM 32-1005.

**12.1.** Be sure to note what sheet or page the discrepancy is on.

**12.2.** Also, ensure you keep a copy of your discrepancies. This will aid you when the project returns with the corrections completed.

**4.** It is extremely important that constructability reviews be performed on contracts before award. It is equally important that we, as construction inspectors, have a thorough knowledge and understanding of the things that should be checked during these reviews, in order to help reduce and prevent contract modifications and contractor claims.

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**Figure 1. Constructability Review Checklist Items**

**ALL PURPOSE CHECKLIST**

TITLE/SUBJECT/ACTIVITY/FUNCTION AREA

OPR

PAGE 1 of 4

DATE

Constructability Review Checklist Format

CONTRACTS  
ELEMENT

| NO                        | ITEM   | YES | NO | N/A |
|---------------------------|--|-----|----|-----|
| <b>SECTION I. GENERAL</b> |  |     |    |     |
| 1                         | If the using agency functions will continue, is the project phased to allow this?  |     |    |     |
| 2                         | If the using agency functions will be affected, have they been notified of the impact?   |     |    |     |
| 3                         | If the project involves restricted or secured areas, do the project documents make provisions for this?  |     |    |     |
| 4                         | Make sure phasing has been noted on the Work Clearance Request, AF Form 103, with the user.  |     |    |     |
| 5                         | If the project involves major road closures, or utility outages, has the user been considered in the phasing?  |     |    |     |
| 6                         | Have access and haul routes for the contractor been considered?  |     |    |     |
| 7                         | If the project involves multiple facilities, what is the maximum number of facilities that can be worked on at one time?<br>Is it clear when the contractor will be allowed additional facilities?<br>Is it possible for one inspector to work that many facilities, and maintain several other projects?<br>Is it clear who makes the choice on the order in which facilities are worked? |     |    |     |
| 8                         | If there is a maximum time the user can be without the facility, do the project documents consider breaking the contract performance period into material ordering time, and construction time?  |     |    |     |
| 9                         | If the project documents indicate the presence of asbestos, is it clear where the asbestos is located? Is it clear how much must be removed? Is the method to be employed removing asbestos clear?<br>Is it indicated whether or not the facility will remain occupied?<br>Have all environmental permits been obtained?   |     |    |     |
| 10                        | Are the sections and details easy to locate?   |     |    |     |
| 11                        | Are items specified, "as indicated" or "where indicated" in fact indicated on contract drawings?   |     |    |     |
| 12                        | If there are references in the specifications to industry standards, are they specific enough to be of any use?  |     |    |     |
| 13                        | Does the AF Form 66 accurately reflect the material submittals called for in the specifications?   |     |    |     |
| 14                        | Does the contract performance time seem reasonable? Are the following considered:<br>a. Long-lead construction or equipment items?<br>b. Local construction customs?<br>c. Local labor availability?<br>d. Does phasing prevent normally concurrent work?<br>e. Local site conditions and restrictions?<br>f. User caused delays?  |     |    |     |

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Figure 1. Constructability Review Checklist Items (Continued)

**ALL PURPOSE CHECKLIST**

TITLE/SUBJECT/ACTIVITY/FUNCTION AREA

OPR

PAGE 2 of 4

DATE

Constructability Review Checklist Format

CONTRACTS  
ELEMENT

| NO   | ITEM  | YES | NO | N/A |
|--|---|-----|----|-----|
| 15   | If there is government-furnished equipment involved, is it clear in the project documents exactly what will be provided? At what time and to what location will the equipment be delivered to the contractor? Is there a memorandum for record failed to document such agreements between Contracts Element and the providing agency? |     |    |     |
| 16   | Is there a basic understanding of what is expected? Is the scope of work clear?   |     |    |     |
| 17   | Are there any clear ambiguities of what is expected? Is the scope of work clear?  |     |    |     |
| 18   | Does design comply with Command and Base Architectural Standards?   |     |    |     |
| <b>SECTION II. CONSTRUCTION SITE</b>         |   |     |    |     |
| 1  | Do the plans accurately depict obvious as-built conditions?   |     |    |     |
| 2  | Do the plans accurately depict the locations of utilities, i.e.:<br>a. Electrical power poles/service to facility<br>b. Telephone poles<br>c. Manholes<br>d. Water lines<br>e. Gas lines  |     |    |     |
| 3  | Will temporary utilities be readily available if the project documents offer them?  |     |    |     |
| 4  | Spot-check the elevations. Do the plans seem relatively accurate?   |     |    |     |
| 5  | Do the plans indicate sodden, or some means for quick turf establishment in problem areas?<br>Do the plans address turf establishment at all?   |     |    |     |
| <b>SECTION III. ARCHITECTURAL/STRUCTURAL</b> |   |     |    |     |
| 1  | Do the plans clearly distinguish the difference in existing and new work?   |     |    |     |
| 2  | Does the room finish schedule include information on all rooms indicated to receive work?   |     |    |     |
| 3  | Do the specifications call for all color selections to be submitted at one time?  |     |    |     |
| 4  | Does the door finish schedule include information on all rooms indicated to receive applicable work? Does it agree with the specifications?   |     |    |     |
| 5  | Are all dimensions shown clearly? Do the dimensions shown agree with the indicated scale?   |     |    |     |
| 6  | Do the structural, mechanical, and electrical floor plans agree with the architectural plans?   |     |    |     |
| 7  | Do all concrete columns and walls on architectural plans agree with the structural plans?   |     |    |     |
| 8  | Does the reflected ceiling plan agree with the mechanical and electrical plans for the locations of diffusers/registers, and light fixtures?  |     |    |     |

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**Figure 1. Constructability Review Checklist Items (Continued)**

**ALL PURPOSE CHECKLIST**

TITLE/SUBJECT/ACTIVITY/FUNCTION AREA

OPR

PAGE 3 of 4

DATE

Constructability Review Checklist Format

CONTRACTS  
ELEMENT

| NO                                     | ITEM  | YES | NO | N/A |
|--|---|-----|----|-----|
| 9                                      | Do the plans allow adequate space in utility and mechanical rooms for proper installation and maintenance of equipment?   |     |    |     |
| 10                                     | Are all mechanical rooms on the ground floor with exterior doors?   |     |    |     |
| 11                                     | Is there a complete legend for the project including architectural, structural, mechanical, and electrical symbols?   |     |    |     |
| <b>SECTION IV. MECHANICAL/PLUMBING</b> |   |     |    |     |
| 1                                      | Do the plans show where all new gas, water, sewer lines etc. connect to existing?   |     |    |     |
| 2                                      | Do the plumbing fixture locations agree with the architectural plans?   |     |    |     |
| 3                                      | Do the plumbing fixtures shown on the plans agree with the fixture schedule, and/or the specifications?   |     |    |     |
| 4                                      | Are all plumbing fixtures connected to domestic water supply, and sanitary drains?  |     |    |     |
| 5                                      | Do the plans for the storm drain system agree with the architectural roof plans?  |     |    |     |
| 6                                      | If there is a fire sprinkler system, are there sprinkler heads in all rooms?  |     |    |     |
| 7                                      | If there is any above ground exterior piping, is any consideration given to freeze protection?  |     |    |     |
| 8                                      | Are all pipe concealment spaces, or chases shown on architectural plans?  |     |    |     |
| 9                                      | Do the plans allow for adequate ceiling height to install new ductwork at worst-case intersection?  |     |    |     |
| 10                                     | Do the project documents call for structural support of piping, ductwork, plumbing fixtures, and all mechanical equipment?  |     |    |     |
| 11                                     | Is there a size indicated for all ductwork and piping?  |     |    |     |
| 12                                     | Is there a schedule of performance on the plans, or in the specifications for all mechanical equipment?   |     |    |     |
| 13                                     | Are all schedules of performance filled in with units, numbers, or N/A?   |     |    |     |
| 14                                     | Is all roof mounted, or externally mounted, mechanical equipment shown on architectural plans?  |     |    |     |
| 15                                     | Does all mechanical equipment show connections for piping, power, controls etc., as necessary?  |     |    |     |
| <b>SECTION V. ELECTRICAL</b>           |   |     |    |     |
| 1                                      | Do all light fixtures agree with the reflected ceiling plan?  |     |    |     |
| 2                                      | Do the electrical plans indicate that all major pieces of equipment receive power?<br>Does all the scheduled mechanical equipment in the mechanical plans receive power?<br>Do the voltages, phases, and frequencies in the mechanical schedules agree with the electrical plans? |     |    |     |
| 3                                      | Is the location for all panel boards shown in the plans and on the electrical riser?  |     |    |     |

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Figure 1. Constructability Review Checklist Items (Continued)

**ALL PURPOSE CHECKLIST**

TITLE/SUBJECT/ACTIVITY/FUNCTION AREA

OPR

PAGE 4 of 4

DATE

Constructability Review Checklist Format

CONTRACTS  
ELEMENT

| NO                               | ITEM  | YES | NO | N/A |
|----------------------------------|---|-----|----|-----|
| 4                                | Do the specifications require that all electrical work be in accordance with the latest edition of the NEC?   |     |    |     |
| 5                                | If the plans call for removing existing panels and installing new, is temporary power provided for in the project documents? If not, is this acceptable?  |     |    |     |
| 6                                | Does all electrical equipment shown scheduled or sized on plans agree with schedules or sizes in specifications?  |     |    |     |
| <b>SECTION VI. ENVIRONMENTAL</b> |   |     |    |     |
| 1                                | Are there any environmental contaminants that may be present in existing equipment or on site? (i.e. - asbestos, lead paint, Hazardous Air Pollutants (HAPs), contaminated soil, Ozone Depleting Chemicals (ODC's), etc). |     |    |     |
| 2                                | Are there any environmental materials that can be recycled or recovered? (i.e. – Ozone Depleting Substances, Halon tubes, etc.)   |     |    |     |
| 3                                | Has the project been reviewed by a base environmental representative?   |     |    |     |

**NOTE TO TRAINER:**

Provide the trainee a set of drawing and specifications for a constructability review. Have the trainee use the above steps and Constructability Review Checklist for the review process. Upon completion of the review provide the trainee feedback on his/her review.

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**REVIEW QUESTIONS  
FOR  
CONDUCT CONSTRUCTABILITY REVIEW**

| <b>QUESTION</b>   | <b>ANSWER</b>   |
|---|---|
| 1. List the three types of reviews performed on a construction project.   | Written Answer.   |
| 2. Constructability review is a review of plans and specifications to ensure their clarity and to determine if the project is practical and able to be built. | a. True.<br>b. False.   |
| 3. List the purposes of a constructability review?  | Written answer.   |
| 4. What are three things that should be checked during a constructability review?   | Written answer.   |
| 5. Why is it important that constructability review be performed on contracts before award?   | a. It is important because this will help reduce and prevent contract modifications and contractor claims.<br>b. To keep the Comptroller out o trouble.<br>c. To keep the BCE out of trouble.<br>d. Base Contracting knows what's going on. |

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**NOTE TO TRAINER/CERTIFIER:**

In order for the trainee to complete this task you need to provide the trainee a set of drawing and specifications for the constructability review.

**CONDUCT CONSTRUCTABILITY REVIEW**

**PERFORMANCE CHECKLIST**

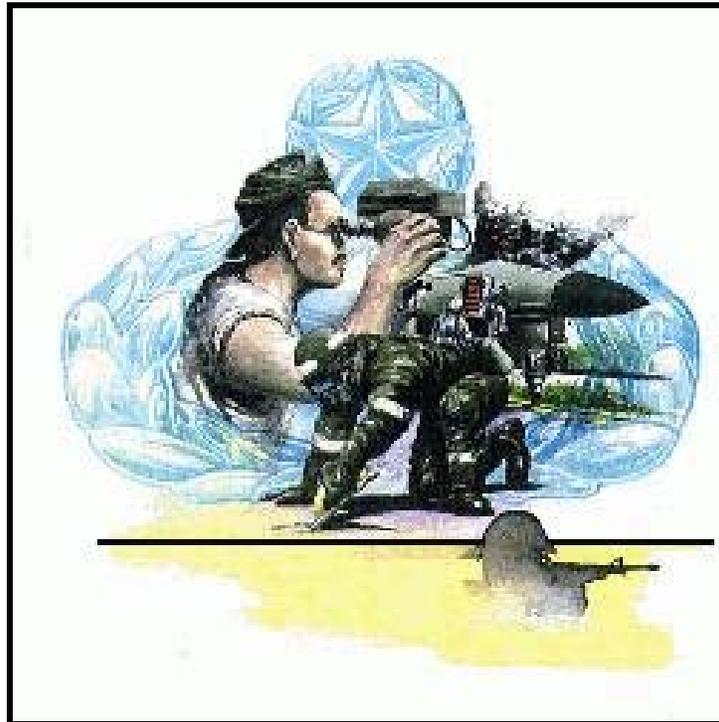
**INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

| DID THE TRAINEE....  | YES | NO |
|--|-----|----|
| 1. verify the existing site conditions are reflected in the drawings?  |     |    |
| 2. validate the contract performance period?   |     |    |
| 3. review submittal requirement?   |     |    |
| 4. review the provisions for coordination between agencies?  |     |    |
| 5. verify the proper sizing of equipment?  |     |    |
| 6. verify the practicality of the project?   |     |    |
| 7. verify the clarity of the specifications?   |     |    |
| 8. check the correlation between the plans and specifications?   |     |    |
| 9. review the proposed demolition?   |     |    |
| 10. review for any site restrictions that may hinder construction?   |     |    |
| 11. review for the availability and compatibility of any Government Furnished Material/Government Furnished Equipment? |     |    |

**FEEDBACK:** Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the minds of both the trainee and trainer/certifier.

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## CONTRACT MANAGEMENT

MODULE 19

AFQTP UNIT 4

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### DOCUMENT CONSTRUCTION ACTIVITIES (19.4.)

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**DOCUMENT CONSTRUCTION ACTIVITIES**  
***Task Training Guide***

|                                    |  |
|------------------------------------|--|
| <b>STS Reference Number/Title:</b> | 19.4. - Document construction activities.  |
| <b>Training References:</b>        | <ol style="list-style-type: none"> <li>1. <a href="#">Air Force Instruction (AFI) 32-1023, <i>Design and Construction Standards and Execution of Facility Construction Projects.</i></a></li> <li>2. <a href="#">Air Force Pamphlet (AFPAM) 32-1005, <i>Working in the Engineering Flight.</i></a></li> <li>3. <a href="#">Air Force Handbook (AFH) 33-337, <i>Tongue and Quill.</i></a></li> <li>4. Local Procedures.</li> <li>5. Career Development Courses 3E551B Engineering Journeyman, Volume 3, Unit 1-4, Section 411, <i>Acceptance Inspection.</i></li> </ol> |
| <b>Prerequisites:</b>              | <ol style="list-style-type: none"> <li>1. <b>Possess as a minimum a 3E551 AFSC.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. AFI 32-1023.</li> <li>2.2. AFPAM 32-1005.</li> <li>2.3. AFH 33-337.</li> <li>2.4. Local Procedures.</li> </ol> </li> <li>3. <b>Complete CDC 3E551B Engineering Journeyman, Volume 3, Unit 1-4, Section 411.</b></li> </ol>   |
| <b>Equipment/Tools Required:</b>   | <ol style="list-style-type: none"> <li>1. A construction contract, Standard Form 1422.</li> <li>2. Construction Inspection Record (<a href="#">AF Form 1477</a>).</li> <li>3. Seven day's narrative of a construction project.</li> </ol>  |
| <b>Learning Objective:</b>         | The trainee will be able to document construction activities.  |
| <b>Samples of Behavior:</b>        | The trainee will document construction activities.   |
| <b>Notes:</b>                      | <ol style="list-style-type: none"> <li>1. Using extracts from a construction contract, and AFPAM 32-1005, a sample Construction Inspection Record (AF Form 1477), and seven day's narrative of a construction project, document the narrative by correctly completing the required entries on the AF Form 1477.</li> <li>2. Using the narrative from the above criterion objective, and extracts from AFH 33-337, draft an official memorandum documenting a non-compliance item.</li> </ol>   |

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## DOCUMENT CONSTRUCTION ACTIVITIES

**1. Background.** There are at least three reasons for maintaining good documentation. The first reason is to provide accurate data for periodic payment and reporting of construction progress. The second reason is to establish written records of noncompliance or deviations from the contract standards, which are required to support the Air Force's position in litigation. The third reason is to establish records for contract modifications, which may also be required to support the Air Force in potential litigation suits. Statements in the daily diary or in any letters of memorandum that are not referenced to an authoritative source are of little or no value in the event a contractor's claim goes to court. Therefore, in order for your documentation to be useful in supporting the Air Force's position in litigation, statements therein must be properly documented.

**1.1. Definition of Documentation.** The definition of documentation is to equip with exact references to authoritative sources as to proof of statements made. If you look at this definition, you can see three distinct areas or parts. The first being exact references, followed by authoritative sources, and lastly proof of statements made. Let's take a look at each one of these parts.

**1.1.1. Exact references.** An exact reference could be a FAR clause, specification paragraph, drawing detail or view, or a specific article or paragraph in a referenced standard such as the National Electric Code (NEC) or the American Society for Testing and Materials (ASTM).

**1.1.2. Authoritative sources.** An authoritative source could be the contract documents such as the plans and specifications, or an agency such as the Occupational Safety and Health Administration (OSHA).

**1.1.3. Proof of statements made.** Proof of statements made during a contract could take the form of daily diary entries or letters of memorandum.

**1.2. Requirements for Good Documentation.** Always keep foremost in your mind that the contractor can only be required to follow those standards and publications referenced in the contract documents. For example, when you make the statement the contractor is in noncompliance, in a specific area, you must be able to reference that to some part of the contract documents. You must also keep in mind accuracy and critical thinking on your part have a very definite impact on the validity of your statements. You must exercise critical thinking when deciding what your statements will say. Also, to be of value your statements must be permanent, accurate, understandable, legible, and complete.

**1.2.1. Permanent.** Log entries will be made in ink.

**1.2.2. Accurate.** Concentrate on facts and be specific with who, what, when, where, and why.

**1.2.3. Understandable.** Use terminology common to the trade.

**1.2.4. Legible.** Always print in logbooks, Gothic print is easily read and understood.

**1.2.5. Complete.** Never forget details when updating logs and do not assume things are known. Anyone should be able to read and understand entries without having to visit the site. Missing details can also be the deciding factor in whether a contractor's claim is allowed.

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**1.3. Requirements for the Construction Inspection Record.** An AF Form 1477, Construction Inspection Record, is required for all construction projects. This form is the Inspector's diary, a log of the construction events on each project. It is an essential part of management and should provide an accurate story of the details of any project. Hence, the entries must be complete and accurate. At times, this diary, alone, can substantiate or disallow a contractor's claim if events are recorded promptly and properly. Disputes with the contractor, in many cases, are settled by the fact that requests of the contractor were recorded in the diary. The inspector will enter all data and information listed in the appropriate blocks of the AF Form 1477. All entries should be legibly entered in ink, made for each day of the week. In the event the contractor chooses not to work on Saturday, Sunday, or holidays, include the weather data and the notation "No Work Accomplished." For each day the contractor works, a daily inspection record is completed and the following elements included in the diary entries. Most of the information entered in the AF Form 1477 should be discussed and verified with the contractor to avoid any miscommunication or misinterpretation of events. All unused areas of the daily entries should be lined out after the inspector signs the report. Diary entries include:

**1.3.1.** A description of actual work accomplished.

**1.3.2.** All work and materials approved/disapproved, including submission of AF Form 3000's, Material Submittal Approval.

**1.3.3.** Any unsafe conditions involving construction methods, storage of equipment, access to areas, etc. Include contractors' efforts to rectify them.

**1.3.4.** Instructions and interpretations of contract documents given to contractor, providing a detailed re-call in case of potential conflict.

**1.3.5.** Interruptions and delays in operations, their cause and duration, and potential conflicts as a result of delays.

**1.3.6.** Data required with using organization on construction site and the reasons for interaction.

**1.3.7.** Any visits by government officials, industry representatives, and base organizations (i.e., Safety, FD, Comm.) by name, title, and reason for visit.

**1.3.8.** The use of photography as a means of documentation is highly encouraged. Pictures should be used to substantiate records of work accomplished, unsafe conditions, and work rejected. Photos should be stapled on each page with the date, time, subject, and signature. Photos are hard to refute and can be extremely valuable in contractor negotiations. At the conclusion of a project, the construction inspector will make sure the AF Form 1477 is complete and reviewed by the Chief of the Section. The daily diaries are formally transmitted to the Contracting Officer for inclusion in their files. After one year, the project folder can be retired and sent to staging in accordance with current administrative procedures.

**2. Requirements For Using Photographs To Support Documentation.** One of the best ways to document construction deficiencies is through the use of photographs; however, before taking photographs, here are some things you should know:

**2.1. Cameras are authorized per Table of Allowance (TA) 445.** TA 445 (Engineering TA) authorizes Construction Management to have a Polaroid camera.

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**2.2. The base photo lab.** One of the alternatives you have in the event that you cannot obtain a Polaroid camera is the base photo lab. Routine items can be taken care of through normal photo requests; however, there are times when you may need immediate action such as for property or material damage, safety violations, and personnel accident scenes.

**2.3. Use something in the photo that will relate to size.** When taking photographs, remember to use things such as rulers, pens, or government identification cards, in the photo to give indications of apparent size.

**2.4. Key the photo to the daily diary and correspondence.** You should always correlate the photo to the appropriate daily diary entry, as well as any letters of memorandums for non-compliances or change requests to adequately describe the circumstances for the photo.

**2.5. Place date, time, contract number, and subject on the back of the photo.** This information is vital if you expect to refer back to the photo at some future date.

**3. Construction Areas of Noncompliance.** There may come a time during your tenure as an inspector in which you will observe sub-standard contractor performance. In this light, you will need to know how to address noncompliance items. Below are some typical areas where you will find noncompliance items.

**3.1. General provisions.** Once again, the general provisions are the Federal Acquisition Regulations (FAR) that are in the front of the contract. Being separate from the plans and specifications, these FAR clauses tend to be overlooked.

**3.2. Specifications.** Due to the volume and technical nature of some specifications, it's very easy for a contractor to overlook or misinterpret specification requirements.

**3.3. Plans.** The project drawings are just as important as the contract specifications. Ensure that the contractor complies with all plans, elevations, sections, details, and notes on each sheet of the contract drawings.

**3.4. Safety.** Safety violations run rampant on most project sites due to the contractor trying to cut corners and the inspector trying to keep up with the technical requirements of the plans and specifications. You should always make safety your number one priority. As the project inspector, you must be knowledgeable of all contract requirements, including any "referenced" requirements pertaining to safety.

**3.5. Environment.** You will more than likely run into environmental issues related to asbestos, lead-based paint, underground storage tanks, and polychlorinated biphenyl (PCB) removal. You and the contractor must keep abreast of all environmental requirements in order to prevent fines and protect the environment.

**4. Procedures for Documenting Noncompliance Items.** Addressing noncompliance items consists of four distinct parts: verifying, notifying, documenting, and following-up.

**4.1. Verify noncompliance with a reference.** The first step to take in addressing noncompliance items is to ensure that they exist. Without a contract reference, the contractor cannot be in noncompliance. Therefore, you must be able to support noncompliance items with at least one contract reference (e.g., FAR 52.236-12, Clean-up).

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**4.2. Perform verbal notifications.** The inspector should immediately notify the Contracting Officer (CO) and Construction Manager when the contractor is not conforming to the plans and specifications. The inspector should then notify the contractor and request corrective action. You should at a minimum notify the prime contractor's superintendent. If the project inspector finds the contractor to be in noncompliance with referenced safety standards, the inspector must immediately notify the Construction Manager, the appropriate safety office, security official, or fire inspector, and the contracting officer. It should be mentioned here that only the contracting officer has the authority to stop the contractor's work. Also, depending on local policy, the base safety officer may stop work if the conditions threaten the safety of "Government" property or personnel. Therefore, the inspector should make no attempt to stop work; rather he or she should immediately notify the contractor, to include the project superintendent as well as the effected workers, that they are in violation of an applicable safety standard. Finally, upon notification of the contracting officer, CO should be advised if corrective action is being taken.

**4.3. Document in logbook.** You must record all noncompliance items in your daily diary. This serves as the initial written proof that the event has taken place.

**4.4. Write letter of memorandum addressing the noncompliance.** To ensure the incident does not recur, write a letter of noncompliance, and send it to the contracting officer. The contracting officer will in-turn notify the contractor in writing and require corrective action.

**4.5. Follow-up on corrective actions.** Never assume the problem will be taken care of. Always track noncompliance items to their end.

**4.6. Format for Drafting an Official Memorandum.** The official Air Force memorandum is a simple and efficient way to communicate. You should use the official memorandum when you document items of noncompliance. Before writing any official correspondence, you consult AFH 33-337, Tongue and Quill. A sample of an official memorandum is included on the following page (figure 1).

**4.6.1. Header.** The header or caption of the official memorandum must show who the letter is for (MEMORANDUM FOR), who the letter is from (FROM:), and what the subject is all about (SUBJECT:).

**4.6.2. Body.** The body of your letter should address who, what, when, where, and why of your subject. Without sacrificing accuracy, try to keep all letters short and to the point. Each paragraph of your letter should be numbered.

**4.6.3. Signature block.** The signature block at the end of the letter should go on the bottom right-hand side. Any attachments to your letter will go on the left-hand side just below the signature block.

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Figure 1. Sample of an Official Memorandum



4 Jan 99

MEMORANDUM FOR 4392 ASW/LGCC

FROM: 393 CES/CECN

SUBJECT: Non-compliance of Remodel Enlisted Dining Facility Contract (F046892C0025),  
Project No. 95-0111 A/B

1. This letter is to inform you that the contractor (Koncrete Constructors Inc.) was in non-compliance of the above mentioned contract. On the morning of 4 Jan 96, at 0730, I observed concrete being placed at the Enlisted Dining Facility, Bldg 13302, in 28-degree weather. This is in direct violation of the contract specifications, section 03300, paragraph 3.6.3, which states that the ambient temperature of the air where concrete is to be placed and the temperature of the surfaces to receive concrete must not be less than 40 degrees F.
2. Our office recommends, that the in-place hardness of the subject concrete be taken, after 14 days of curing, in order to determine the structural integrity of the concrete foundation. If the concrete is found to be sub-standard, it is our opinion that the subject concrete should be removed in its entirety. If you concur with our recommendation, please inform the contractor of our decision. Also, please remind the contractor of his contractual obligations to fulfill any and all contract requirements.
3. Please direct any questions to MSgt Lane Miller, at extension 6-3852.

DONALD P. OLIVERIO, GS-12, DAF  
Construction Manager

**4.7.** Whether you are documenting a noncompliance item with an official memorandum or just filling out your logbooks, always keep in mind the requirements for good documentation. If your documentation is permanent, accurate, understandable, legible, and complete, chances are your documentation will successfully support the Air Force's position in a litigation suit.

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**5. Procedures to Document Construction Activities.** The following is a list of items that are considered pertinent entries in the AF Form 1477, Construction Inspection Record, for most construction projects. The five blocks below correspond with AF Form 1477 designated entries.

**Step 1: Complete the outside of the front cover. Block I (AF Form 1477, Outside, Front Cover).**

**1.1.** The outside of the front cover contains the following blocks which should be completed:

- 1.1.1.** Installation.
- 1.1.2.** Project number.
- 1.1.3.** Contract number.
- 1.1.4.** Award cost.
- 1.1.5.** Final cost.
- 1.1.6.** Project title.
- 1.1.7.** Project description.
- 1.1.8.** Date Notice to Proceed was issued.
- 1.1.9.** Number of calendar days in the contract.
- 1.1.10.** Scheduled completion date.
- 1.1.11.** Actual completion date, prime contractor.
- 1.1.12.** Name of Air Force project engineer.
- 1.1.13.** Sub-contractors.
- 1.1.14.** Inspector certification.
- 1.1.15.** Air Force construction manager.
- 1.1.16.** Completed reports.
- 1.1.17.** Period covered.
- 1.1.18.** Book number.

**1.2.** If you refer back to the SF 1442, you'll be able to obtain the contract number, award cost, project title, number of calendar days in the contract, and the prime contractor.

**Step 2: Complete the inside of the front cover. Block II (AF Form 1477, Inside, Front Cover).** The inside of the front cover contains blocks for the following areas:

**2.1. Noncompliance items.** List the contract reference (e.g., plans, specifications, or general provisions) that supports the noncompliance and include the date identified and the date corrected. Due to the limited space in this area, it's suggested that it be "keyed" to the daily inspection record report number and the letter of memorandum, which thoroughly address the noncompliance item.

**2.2. Construction permits.** Here you'll list the type of permit (e.g., AF Form 103, Base Civil Engineering Work Clearance Request, or AF Form 592, USAF Welding, Cutting, and Brazing Permit), date requested, and the date approved. Again, it is suggested that this area be "keyed" to a daily inspection record report number, especially if there is a problem with the permit (e.g., the permit is not properly processed, rejected, or incomplete).

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**2.3. Contract modifications.** In this section you should list the number, date, description, number of days, and cost of each modification, as well as the revised contract length and cost. You (and your alternate) must keep current on the changes in the scope of the project. If you don't, you may be inspecting something that is no longer part of the project. If a change has not been agreed to, maintain daily log entries as to the number of men working on unauthorized

**Step 3: Complete the Daily Inspection Record. Block III (AF Form 1477, Front Side, Daily Inspection Record).** There are 31 Daily Inspection Records that make up the logbook. Each record has a front and backside. The front side contains the following blocks: date, time, weather, contractor's work force, materials delivered to the job, equipment on hand, and work accomplished or in progress.

**3.1. Date.** Enter the date the inspection was made.

**3.2. Time** of inspector's visit to the job site. Here, blocks have been provided to enter the inspector's arrival and departure times each time he or she visits the job site that day.

**3.3. Weather** conditions satisfactory for work. Here, "yes" and "no" blocks have been provided. If the weather is satisfactory, check the "yes" block and no other entry is required. If the weather is not satisfactory, check the "no" block, and provide a description of the weather in the space provided. Recording unfavorable weather conditions serves two purposes:

**3.3.1.** First, it may be used to grant a time extension because of unusual weather

**3.3.2.** Second, it alerts the inspector to pay close attention to those aspects of the project that cannot be accomplished under specified weather conditions unless certain precautions are taken (e.g., concreting in extreme temperature or painting during unfavorable humidity or wind conditions). For paving, roofing, or painting projects, where the weather is of extreme importance, it would be a good idea to indicate weather conditions even if they are satisfactory for work. This is not required, but specific weather information could be of more value than a check in a block if the application process fails. In case of a claim, the inspector will already have documentation supporting this decision rather than trying to rely on recall and guessing. Documentation is the key.

**3.4. Work force.** You'll need to indicate the number and trade of the prime and sub-contractor work force. Since you probably will not be at the job site all day, the best way to get this information is to ask the project superintendent. This information is used in part by contracting in crosschecking the contractor's payroll records.

**3.5. Materials delivered to the job site.** You'll need to indicate any items of material and equipment that were received. It's possible the contractor, through negotiation with the CO, may be paid for materials delivered to the site; payment will normally be made based on your records. It's also a good idea to verify your count of materials by getting copies of any invoices from the contractor's project superintendent

**3.6. Contractor equipment on hand.** You'll need to indicate the significant pieces of equipment (e.g., air compressors, cranes, or rented equipment) the contractor has on hand. If applicable to your contract, this is very important information along with the work force documentation above, for two reasons:

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**3.6.1.** First, if the contract is well ahead of schedule, there may be several causes such as a larger work force than anticipated, more equipment on the job than anticipated, progress schedule not realistic, or specification items not being adequately accomplished.

**3.6.2.** Second, if the contractor is behind schedule, there may be several causes such as too small of a work force for the project, not enough equipment available, progress schedule not realistic, or weather problems. Your documentation may very well be the prime factor for approving or disapproving a claim for or against the contractor.

**3.7. Work accomplished or in progress and tests performed.** Several items of interest are documented in this area:

**3.7.1. Accomplishments on the project.** This information is used by the inspector to determine progress when submitting progress reports to the CO. It may also be used by other interested persons, such as the Base Civil Engineer or Support Group Commander in checking the status of the project.

**3.7.2. Contractor violations or work reject.** Proper documentation here cannot be over stressed. On these items, there are two actions that must be taken:

**3.7.2.1.** First, take action to ensure corrections are made

**3.7.2.2.** Second, take follow-up action to ensure these items do not re-occur. Keep in mind continuing contract violations are possible indications of poor attitude, and closer observation of the contract may be required.

**3.7.3. Instructions and requests of the contractor and to whom they were given.** Consider the following hypothetical situation. The contractor tells you today that he will be placing concrete tomorrow with four ready-mix trucks due to arrive at 0800. You do not record this information. On the way home you are involved in an auto crash, and your injuries will keep you from work for a week. How will your alternate know that one of your contractors is going to be doing concrete work? What are the consequences if those four loads of concrete are already in place by the time your alternate arrives at that job site?

**3.7.4. Actual or potential delays on the project, their causes, and action taken to correct them.** If you can identify potential delays and take necessary action to prevent them (or lessen their effect), you are helping greatly in getting the project finished on time and with as little trouble as possible.

**3.7.5. Test reports or results.** When tests are performed in place, you should record the following information: type and location of the test, who performed the test, what standard was used for the test, results of the test, and action to be taken if the test fails. A proper testing program during construction and the proper approval of materials are two of the principal means of determining compliance with the plans and specifications and determining quality of work.

**3.7.6. Accidents and details of cause, as well as safety violations.** Ensuring the contractor continually complies with applicable safety regulations will go a long way towards the prevention of accidents.

**3.7.7. Contractor's equipment and hours used.** As with the work force on hand, this information can be used by the contracting office in crosschecking the contractor's labor records.

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**Step 4: Complete the backside of the Daily Inspection Record. Block IV (AF Form 1477, Reverse Side, Daily Inspection Record).** The back side of the inspection record is used to continue the information recorded on the front side, if necessary.

**4.1.** The bottom of the backside of the inspection record has a place for the inspector's signature and date. The date should match the date on the front side of the inspection record.

**4.2.** Remember, all unused areas must be lined out. This action prevents entries after the record has been signed.

**Step 5: Complete the inside of the back cover. Block V (AF Form 1477, Inside, Back Cover).** The inside of the back cover contains two blocks covering the following areas, material submittals and Government Furnished Property (GFP):

**5.1. Record of Submittal Data.** You'll need to indicate the submittal specification or drawing reference, submittal description and type, date due and received, date approved and approved by, and remarks. The information recorded in this section will provide you with a ready reference to use when checking materials as they arrive at the job site.

**5.2. Government Furnished Property.** You'll need to indicate the description of the GFP, date ordered and received, date inspected and inspected by, and remarks. This area provides the inspector with a readily accessible reference list of Government Furnished Property. The inspector must closely monitor this area to ensure that the government is not responsible for delaying the contractor's performance due to the non-arrival of the equipment.

**Step 6: Turn daily logbooks over to Contracting Officer.**

**NOTE:**

All daily logbooks must be turned over to the contracting officer at the completion of the construction contract.

**REVIEW QUESTIONS  
FOR  
DOCUMENT CONSTRUCTION ACTIVITIES**

| QUESTIONS   | ANSWERS   |
|---|---|
| 1. What are the three main parts of the definition of documentation?                          | a. Exact references.<br>b. Authoritative sources.<br>c. Proof of statements.<br>d. All of the above.  |
| 2. What are the characteristics of good documentation?  | a. Permanent.<br>b. Accurate.<br>c. Understandable.<br>d. Legible and complete.<br>e. All of the above.   |
| 3. What are at least three requirements for the AF Form 1477, Construction Inspection Record? | a. Entries are made for each day of the project.<br>b. Required for projects over 59 days.<br>c. All entries should be legibly made in ink.<br>d. All of the above.                     |
| 4. Where is the AF Form 103 recorded on the AF 1477?  | a. Inside the front cover under construction permits on the AF Form 1447.<br>b. Inside front cover of the AF Form 623.<br>c. Back of the AF Form 2277.<br>d. Front of the AF Form 2596. |
| 5. What are four things that should be recorded on the reverse side of a photograph?          | a. Place; Date.<br>b. Time.<br>c. Contract number.<br>d. Subject recorded on the back of the photo.<br>e. All of the above.   |
| 6. What are the five typical areas in which you will find non-compliance items?               | a. General provisions; specifications.<br>b. Plans and safety.<br>c. Environment.<br>d. All of the above.   |
| 7. What is the first step you should take in documenting non-compliance items?                | a. Verify the non-compliance with a reference.<br>b. Check with the environmental agency.<br>c. Check with the contractor.<br>d. Verify through the contracting office.                 |
| 8. Who should be notified of non-compliance items?  | a. Base construction manager.<br>b. Contractor.<br>c. Contracting Officer.<br>d. All of the above.  |
| 9. What are the three major parts to the official memorandum?                                 | a. Header.<br>b. Body.<br>c. Signature block.<br>d. All of the above.   |

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**NOTE TO TRAINER/CERTIFIER:**

In order for the trainee to complete this task, you must provide the trainee with a construction contract and seven day's narrative of the construction project. Then have the trainee to fill out AF Form 1477 and draft an official memorandum documenting a non-compliance item.

**DOCUMENT CONSTRUCTION ACTIVITIES**

**PERFORMANCE CHECKLIST**

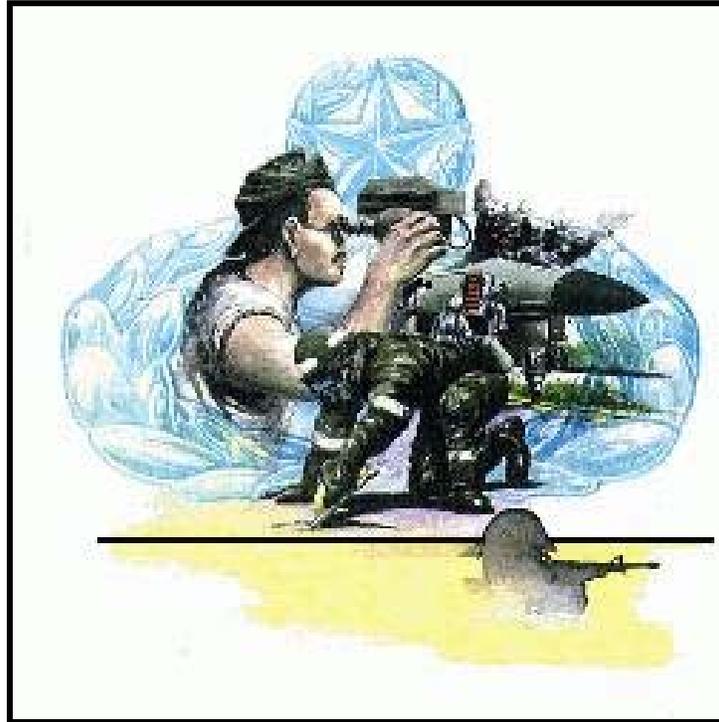
**INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

| <b>DID THE TRAINEE....</b>                          | <b>YES</b> | <b>NO</b> |
|---|------------|-----------|
| 1. utilize the requirements for good documentation? |            |           |
| 2. properly complete Block I of the AF Form 1477?   |            |           |
| 3. properly complete Block II of the AF Form 1477?  |            |           |
| 4. properly complete Block III of the AF Form 1477? |            |           |
| 5. properly complete Block IV of the AF Form 1477?  |            |           |
| 6. properly complete Block V of the AF Form 1477?   |            |           |
| 7. prepare an official memorandum correctly?        |            |           |

**FEEDBACK:** Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the minds of both the trainee and trainer/certifier.

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## CONTRACT MANAGEMENT

MODULE 18

AFQTP UNIT 5

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### EVALUATE CONSTRUCTION CONTRACT PROGRESS SCHEDULE (19.5.)

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EVALUATE CONSTRUCTION CONTRACT PROGRESS SCHEDULE

*Task Training Guide*

|                                    |  |
|------------------------------------|--|
| <b>STS Reference Number/Title:</b> | 19.5. - Evaluate construction contract progress schedule.  |
| <b>Training References:</b>        | <ol style="list-style-type: none"> <li>1. <a href="#">Air Force Pamphlet (AFPAM) 32-1005, Working in the Engineering Flight.</a></li> <li>2. <a href="#">Federal Acquisition Regulation (FAR).</a></li> <li>3. Local Procedures.</li> <li>4. Career Development Courses 3E551B Engineering Journeyman, Volume 3, Unit 1, Section 409, <i>General Contractual Provisions and Plans and Specifications.</i></li> </ol> |
| <b>Prerequisites:</b>              | <ol style="list-style-type: none"> <li>1. <b>Possess as a minimum a 3E551 AFSC.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. AFPAM 32-1005.</li> <li>2.2. Federal Acquisition Regulation (FAR).</li> <li>2.3. Local Procedures.</li> </ol> </li> <li>3. <b>Complete CDC 3E551B Engineering Journeyman, Volume 3, Unit 1-3, Section 409.</b></li> </ol>        |
| <b>Equipment/Tools Required:</b>   | <ol style="list-style-type: none"> <li>1. Contractor submitted Contract Progress Schedule.</li> <li>2. <a href="#">AF Form 3064, Contract Progress Schedule.</a></li> <li>3. <a href="#">AF Form 3065, Contract Progress Report.</a></li> </ol>  |
| <b>Learning Objective:</b>         | The trainee will be able to evaluate construction contract progress schedule   |
| <b>Samples of Behavior:</b>        | The trainee will evaluate construction contract progress schedule  |
| <b>Note:</b>                       | Using extracts from the FAR clauses and a contractor submitted Contract Progress Schedule (AF Form 3064); evaluate the contractor's progress schedule by correctly recommending approval or disapproval of the schedule.   |

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## EVALUATE CONSTRUCTION CONTRACT PROGRESS SCHEDULE

**1. Background.** On an Air Force construction project there are two forms used to monitor progress and authorize payment to a contractor. The first one is the AF Form 3064, Contract Progress Schedule, and the second one is the AF Form 3065, Contract Progress Report (to be discussed in the next element.) These documents are important project management tools for ensuring a project is completed on schedule and for ensuring a contractor is only paid for the work that he or she has satisfactorily completed.

### **2. The following FAR clauses relate to contract progress:**

**2.1. 52.211-10, Commencement, Prosecution, and Completion of Work.** The Contractor shall be required to:

**2.1.1.** commence work under this contract within. [Contracting Officer inserts number] calendar days after the date the Contractor receives the notice to proceed.

**2.1.2.** prosecute the work diligently, and

**2.1.3.** complete the entire work ready for use not later than. [The Contracting Officer shall specify either a number of days after the date the contractor receive the notice to proceed, or a calendar date]. The time stated for completion shall include final cleanup of the premises.

### **2.2. 52.211-12, Liquidated Damages.**

**2.2.1.** If the Contractor fails to complete the work within the time specified in the contract, or any extension, the Contractor shall pay to the Government as liquidated damages, the sum of [Contracting Officer insert amount] for each day of delay.

**2.2.2.** If the Government terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the work together with any increased costs occasioned the Government in completing the work.

**2.2.3.** If the Government does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

**2.3. 52.211-13, Time Extensions.** Notwithstanding any other provisions of this contract, it is mutually understood that the time extensions for changes in the work will depend upon the extent, if any, by which the changes cause delay in the completion of the various elements of construction. The change order granting the time extension may provide that the contract completion date will be extended only for those specific elements so delayed and that the remaining contract completion dates for all other portions of the work will not be altered and may further provide for an equitable readjustment of liquidated damages under the new completion schedule.

### **2.4. 52.236-16, Quantity Surveys.**

**2.4.1.** Quantity surveys shall be conducted, and the data derived from these surveys shall be used in computing the quantities of work performed and the actual construction completed and in place.

**2.4.2.** The Government shall conduct the original and final surveys and make the computations based on them. The Contractor shall conduct the surveys for any periods for which progress payments are requested and shall make the computations based on these surveys. All surveys conducted by the Contractor shall be conducted under the direction of a representative of the Contracting Officer, unless the Contracting Officer waives this requirement.

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**2.4.3.** Promptly upon completing a survey, the Contractor shall furnish the originals of all field notes and all other records relating to the survey or to the layout of the work to the Contracting Officer, who shall use them as necessary to determine the amount of progress payments. The Contractor shall retain copies of all such material furnished to the Contracting Officer.

**2.5. 52.249-10, Termination for Default.**

**2.5.1.** If the Contractor refuses or fails to prosecute the work or any separable part, with the diligence that will ensure its completion within the time specified in this contract including any extension or fails to complete the work within this time, the Government may, by written notice to the Contractor, terminate the right to proceed with the work (or the separate part of the work) that has been delayed. In this event, the Government may take over the work and complete it by contract or otherwise, and may take possession of and use any materials, appliances, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the Government resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the Government in completing the work.

**2.5.2.** The Contractor's right to proceed shall not be terminated nor the Contractor charged with damages under this clause, if:

**2.5.2.1.** the delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include (i) acts of God or of the public enemy, (ii) acts of the Government in either its sovereign or contractual capacity, (iii) acts of another Contractor in the performance of a contract with the Government, (iv) fires, (v) floods, (vi) epidemics, (vii) quarantine restrictions, (viii) strikes, (ix) freight embargoes, (x) unusually severe weather, or (xi) delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and

**2.5.2.2.** the Contractor, within 10 days from the beginning of any delay (unless extended by the Contracting Officer), notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, the time for completing the work shall be extended. The findings of the Contracting Officer shall be final and conclusive on the parties, but subject to appeal under the Disputes clause.

**2.5.3.** If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the Government.

**2.5.4.** The rights and remedies of the Government in this clause are in addition to any other rights and remedies provided by law or under this contract.

**3. The following FAR clauses relate to contract progress schedule:**

**3.1. 5336.291, Contract Progress Schedules and Reports for construction projects**

**(para a).** AF Form 3064, Contract Progress Schedule, shall be used to satisfy the requirements of the Progress Charts and Requirements for Overtime Work clause. Use of the form is optional in connection with requirements type contracts except that it shall be used to support each delivery order which establishes a continuous performance period of 60 days or more. Additional copies of the form may be used to provide for a performance period in excess of the time frame available on the form. Upon submission of the initial AF Form 3064, the contracting officer and civil engineer shall carefully evaluate the percentage of the total job assigned to each work element. Particular attention shall be devoted to those elements to be performed in the early stages of the effort to preclude overstatement that would result in an imbalance in payments and exceed the value of work performed. Work elements shall be limited to those tasks which will indicate the progress of the work and which may be readily identified and measured by personnel monitoring the contractor's progress. Normally the percentage factors of each work element should be related to the total value of the contract.

**3.2. 52.236-15, Schedules for Construction Contracts.**

**3.2.1.** The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates upon which the Contractor contemplates starting and completing the several salient features of the work (including acquiring materials, plant, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments until the Contractor submits the required schedule.

**3.2.2.** The Contractor shall enter the actual progress on the chart as directed by the Contracting Officer, and upon doing so shall immediately deliver three copies of the annotated schedule to the Contracting Officer. If, in the opinion of the Contracting Officer, the Contractor falls behind the approved schedule, the Contractor shall take steps to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the Government. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.

**3.2.3.** Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the default terms of this contract.

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#### 4. Procedures to Evaluate Contract Progress Schedules.

**4.1.** The Air Force FAR Supplement 5336.291, Contract Progress Schedules and Reports for construction projects, states the AF Form 3064, Contract Progress Schedule, will be used by the contractor to schedule work. The schedule is very important to the contractor because without an approved progress schedule the Contracting Officer cannot pay the contractor.

**4.2. Instructions are on the back of the form.** Instructions to the contractor on how to fill out the AF Form 3064 are located on the reverse side of the form. The instructions also include what is to be done if the contract is modified and what is to be done if any part of the progress is delayed.

**4.3.** The contractor is required to submit three copies of the AF Form 3064, within five days after the commencement of work or another period of time, or as determined by the Contracting Officer. The contractor must submit AF Form 3064 to the Contracting Officer. Upon receipt, the contracting officer will send the three copies of the schedule to Construction Management.

**NOTE TO TRAINER:**

You must have a sample of AF Form 3064 before proceeding on this subject. Guide the trainee as per instructions.

#### 5. The following procedures are recommended guidelines in order to properly evaluate a construction contract progress schedule:

**Step 1: Work elements must indicate progress of work (Column D – O).** It is the responsibility of the contractor to submit for approval a progress schedule indicating the work to be done (by work element) and the time sequence in which he proposes to start and stop each element.

**Step 2: Work elements must be identifiable and measurable (Column B).** Work elements should be in sufficient detail to be identified at the job site. If work elements are such that the inspector cannot readily assign a percentage complete, then the proposed schedule should be disapproved and returned to the contractor for re-accomplishment.

**Step 3: Elements must be in a logical sequence (Column B).** The work elements must be in logical sequence and should normally be sequenced to follow the specifications, which are sequenced in accordance with the 17 major divisions of the Construction Specification Institute's format.

**Step 4: Percentages must be realistic and accurate (Column C – O).**

**4.1.** Progress percentages for each work element must be realistic (e.g., is Site Work really 25% of the project or is the contractor just trying to get extra money up front?).

**4.2.** According to FAR Supplement 36.292, Contract Progress Schedules and Reports, items like preparatory work, supervision, administration, mobilization, demobilization and clean up could be considered as inappropriate entries in the "Work Elements" column of the progress schedule.

**4.3.** However, with approval of the contracting officer, the contractor may be paid for mobilization and demobilization and paid for bulk, expensive materials such as HVAC units.

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4.4. The contractor must first indicate and submit for approval these items, which he or she expects to be paid for, on the progress schedule. Factors such as the contractor being out of state and having paid invoices for bulk materials will be considered during the evaluation of his or her progress schedule. Percentages on the contractor's progress schedule must also be accurate.

4.5. Do the scheduled percentages for each work element add up to the total percentage indicated for that work element, and does the total percentage of all line items add up to 100%?

**Step 5: Distribution and approval of the form.**

5.1. Construction Management will then evaluate the schedule and "recommend" approval or disapproval.

5.2. The schedules are then sent back to the contracting officer where he or she, as having the final approval authority, will sign and date the form as approved or disapproved.

5.2.1. If disapproved, the CO sends all three copies of the form back to the contractor for resubmission.

5.2.2. If approved, the CO retains one copy of the form and the other two copies are sent to the contractor and Construction Management.

**Step 6. Revisions to the form.**

6.1. In the event the contract is modified, changing the progress of work as originally scheduled, a revised progress schedule will be prepared by the contractor and submitted to the contracting officer for approval.

6.2. In preparing the revised schedule, the amount of work completed will be considered, together with the changed new completion date set forth in the contract modification.

6.3. Considering these factors:

6.3.1. The work under the contract will be rescheduled over the new total performance period in the same manner that the original schedule was prepared.

6.3.2. The new completion date will be entered in Block 3.

6.3.3. "First Revised Schedule" will be entered immediately underneath the form title Block 9.

6.3.4. The contracting officer will determine the time for the submission of the revised schedule.

6. As we have discussed, AF Form 3064 is an important management tool for determining contract progress. We, as construction inspectors, must be able to track contract progress that will ensure the contractor only gets paid for satisfactory services and materials, which are received.

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**REVIEW QUESTIONS  
FOR  
EVALUATE CONSTRUCTION CONTRACT PROGRESS SCHEDULE**

| <b>QUESTION</b>  | <b>ANSWERS</b>  |
|--|-----------------|
| 1. As per AF FAR Supplement 5336.291, Contract Progress Schedules and Reports for construction projects (para a), when is a progress schedule required?    | Written answer. |
| 2. As per FAR 52.236-15, Schedules for Construction Contracts, when must the contractor submit the progress schedule and how many copies must be provided? | Written answer. |
| 3. How must work elements on the progress schedule be sequenced?   | Written answer. |
| 4. What are some inappropriate line item entries on the progress schedule?   | Written answer. |

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**NOTE TO TRAINER/CERTIFIER:**

In order for the trainee to complete this task, you must provide the trainee with an AF Form 3064, Contract Progress Schedule. Then have the trainee evaluate the contractor's progress schedule by correctly recommending approval or disapproval of the schedule.

**EVALUATE CONSTRUCTION CONTRACT PROGRESS SCHEDULE**

**PERFORMANCE CHECKLIST**

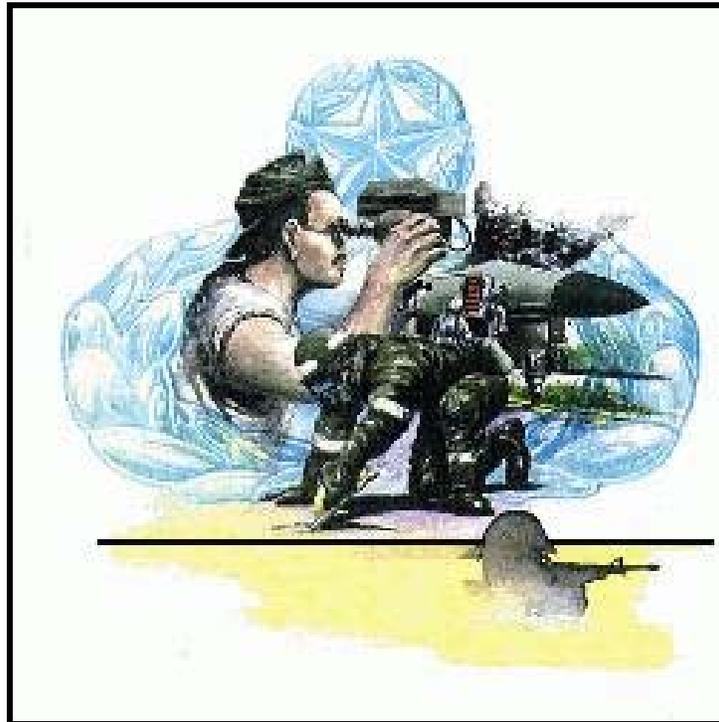
**INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

| DID THE TRAINEE....   | YES | NO |
|---|-----|----|
| 1. verify that the work elements reflected progress of the work?  |     |    |
| 2. verify that the work elements were identifiable and measurable?  |     |    |
| 3. evaluate the schedule to ensure work elements were in a logical sequence?  |     |    |
| 4. evaluate percentages to verify that they were realistic and accurate:<br>4.1. Was schedule front-loaded?<br>4.2. Did total percentage add up to 100%?<br>4.3. Do the scheduled percentages for each work element add up to the total percentage indicated for that work element? |     |    |
| 5. properly recommend the schedule for approval or disapproval and sent back to the contracting officer?  |     |    |
| 6. repeat the entire process for the new schedule, if the contract was modified?  |     |    |

**FEEDBACK:** Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the minds of both the trainee and trainer/certifier.

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## CONTRACT MANAGEMENT

MODULE 19

AFQTP UNIT 6

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### EVALUATE PROGRESS REPORTS (19.6.)

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**Notice.** This AFQTP is *NOT* intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**EVALUATE PROGRESS REPORTS**  
***Task Training Guide***

|  |  |
|--|--|
| <b>STS Reference Number/Title:</b>   | 19.6. - Evaluate progress reports.   |
| <b>Training References:</b>  | <ol style="list-style-type: none"> <li>1. <a href="#">Air Force Pamphlet (AFPAM) 32-1005, Working in the Engineering Flight.</a></li> <li>2. <a href="#">Federal Acquisition Regulation (FAR).</a></li> <li>3. Local Procedures.</li> <li>4. Career Development Courses 3E551B Engineering Journeyman, Volume 3, Unit 1-3, Section 408, <i>Progress Reports</i>.</li> </ol>                                    |
| <b>Prerequisites:</b>  | <ol style="list-style-type: none"> <li>1. <b>Possess as a minimum a 3E551 AFSC.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. AFPAM 32-1005.</li> <li>2.2. Federal Acquisition Regulations (FAR).</li> <li>2.3. Local Procedures.</li> </ol> </li> <li>3. <b>Complete CDC 3E551B Engineering Journeyman, Volume 3, Unit 1-3, Section 408.</b></li> </ol> |
| <b>Equipment/Tools Required:</b>   | <ol style="list-style-type: none"> <li>1. An approved Contract Progress Schedule, <a href="#">AF Form 3064</a>.</li> <li>2. A Blank Contract Progress Report, <a href="#">AF Form 3065</a>.</li> </ol>   |
| <b>Learning Objective:</b>   | The trainee will be able to evaluate progress report.  |
| <b>Samples of Behavior:</b>  | The trainee will evaluate progress report.   |
| <b>Notes:</b>  |  |
| <ol style="list-style-type: none"> <li>1. Using extracts from the FAR clauses and an approved Contract Progress Schedule (AF Form 3064), evaluate the contractor's progress according to schedule. To accomplish this, trainee must be able to determine the progress percentages and correctly fill out all the required data.</li> <li>2. Tasking requirement is to evaluate the construction progress for one month or four completed reports.</li> </ol> |  |

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## EVALUATE PROGRESS REPORTS

**1. Background.** On an Air Force construction project there are two forms used to monitor progress and authorize payment to a contractor. The first one is the AF Form 3064, Contract Progress Schedule (As discussed in the previous element), and the second one is the AF Form 3065, Contract Progress Report. These documents are important project management tools for ensuring a project is completed on schedule and for ensuring that a contractor is only paid for the work he or she has satisfactorily completed.

### **2. FAR Clauses Relating to Progress Reporting and Payment:**

#### **2.1. 52.232-5, Payments under Fixed-Price Construction Contracts.**

**2.1.1.** The Government shall pay the Contractor the contract price as provided in this contract.

**2.1.2.** The Government shall make progress payments monthly as the work proceeds, or at more frequent intervals as determined by the Contracting Officer, on estimates approved by the Contracting Officer. If requested by the Contracting Officer, the Contractor shall furnish a breakdown of the total contract price showing the amount included therein for each principal category of the work, in such detail as requested to provide a basis for determining progress payments. In the preparation of estimates the Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration if:

**2.1.2.1.** consideration is specifically authorized by this contract.

**2.1.2.2.** the Contractor furnishes satisfactory evidence that it has acquired title to such material and that the material will be used to perform this contract.

**2.1.3.** In making these progress payments, there shall be retained 10 percent of the estimated amount until final completion and acceptance of the contract work. However, if the Contracting Officer finds that satisfactory progress was achieved during any period for which a progress payment is to be made, the Contracting Officer may authorize payment to be made in full without retention of a percentage. When the work is substantially complete, the Contracting Officer considers adequate protection of the Government and may release to the Contractor all or a portion of any excess amount. Also, on completion and acceptance of each separate building, public work, or other division of the contract, for which the price is stated separately in the contract, payment may be made for the completed work without retention of a percentage.

**2.1.4.** All material and work covered by progress payments made shall, at the time of payment, become the sole property of the Government, but shall not be construed as:

**2.1.4.1.** relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or

**2.1.4.2.** waiving the right of the Government to require the fulfillment of all of the terms of the contract.

**2.1.5.** The Government shall, upon request, reimburse the Contractor for the entire amount of premiums paid for performance and payment bonds (including coinsurance and reinsurance agreements, when applicable) after furnishing evidence of full payment to the surety.

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**2.1.6.** The Government shall pay the amount due the Contractor under this contract after:

- 2.1.6.1.** completion and acceptance of all work;
- 2.1.6.2.** presentation of a properly executed voucher; and
- 2.1.6.3.** presentation of release of all claims against the Government arising by virtue of this contract, other than claims, in stated amounts that the Contractor has specifically accepted from the operation of the release.

**2.2. 5336.291, Contracts Progress Schedules and Reports for construction projects**

**(para b).** AF Form 3065, Contract Progress Report, shall be used to satisfy the requirement of periodic progress reporting by one of the following methods, at the discretion of the contracting officer.

**2.2.1.** Separate reports covering the same period will be prepared by the contractors and by the civil engineers or their designees.

**2.2.2.** The contractor shall prepare the report and route it through civil engineering. The civil engineers or their designees shall review the report and make necessary comments and forward it to the base contracting office for action.

**NOTE TO TRAINER:**

You must have a blank AF Form 3065 and an approved Contract Progress Schedule, AF Form 3064 before proceeding on this subject. Guide the trainee as per instructions.

**3. To evaluate progress reports, follow these steps:**

**Step 1: Preprinted data on the AF Form 3065.**

- 1.1.** In the essence of time, certain data may be preprinted on the form and then readily reproduced in order to prevent retyping this data.
- 1.2.** The following data on the AF Form 3065 may be preprinted.
  - 1.2.1.** Contractor's company name and address.
  - 1.2.2.** Project and contract number.
  - 1.2.3.** Scheduled completion date.
  - 1.2.4.** Line numbers and work element names.
  - 1.2.5.** The percent of the total job that each work element represents.
- 1.3.** Note that the line numbers, work elements, and percentages for the work elements should come directly off the approved progress schedule.

**Step 2: Fill out variable data.** The required variable data on the AF Form 3065 is as follows:

- 2.1.** Report number (numbered numerically starting with the first construction period).
- 2.2.** Period covered (start and stop dates of the period shown on the progress schedule).
- 2.3.** Percent completed this period.
- 2.4.** Percent completed cumulative (found by adding the percent completed on the current period with the percentages completed from all previous periods).
- 2.5.** Remarks section (comment on any project delays).

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- 2.6. Materials received.
- 2.7. Non-compliance items.
- 2.8. Scheduled completion percentages.
- 2.9. Signature block (date and signature certifying the contractor has completed the indicated percentages).

**Step 3: Determining progress percentages.**

3.1. As the project inspector, you should have been keeping track of work completed in your logbook, as this is the first area to consult. For example, a typical progress schedule might show "Concrete" to be 20% of the total job. If "Concrete" represents 3000 square feet of footings and 6000 square feet of floor slabs, both with reinforcing, and the logbook shows the contractor has completed all of the footings, what percent complete do you report to the CO for the Concrete? In all fairness to the contractor, you would not want to arbitrarily assign percentages for the work completed.

3.2. Another way to estimate percentages is to sub-divide the work elements into quantifiable parts. For example, "Concrete" may be subdivided into formwork, reinforcing, placing/finishing, curing, and form removal.

3.3. Yet another method of estimating percentages is to discuss work completed with the project superintendent. It's easy for either of you to miss something; therefore you both stand to benefit from the conversation. However, do not give into the contractor concerning how much you believe has been completed.

**Step 4: Routing of the report.** In accordance with AF FAR Supplement 5336.291, the AF Form 3065 may be submitted in one of two ways:

- 4.1. The first being that both the contractor and inspector each fill out separate forms and send them separately to the contracting officer.

**NOTE:**

If there is a disagreement of 5% or more, the contracting officer must take the steps necessary to correct the disparity. This is usually handled through a meeting with the contractor, inspector, and the contracting officer.

- 4.2. The second alternative is for the contractor to prepare the AF Form 3065 and send it to the contracting officer through the contract inspector. The contract inspector will examine the form and annotate it as necessary as to whether he or she agrees or disagrees with the contractor's estimate of progress.

4. Once again, AF Form 3064 and AF Form 3065 are both important management tools for determining construction contract progress and payment. We as construction inspectors must be able to track contract progress and ensure the contractor only gets paid for satisfactory services and materials received.

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**REVIEW QUESTIONS  
FOR  
EVALUATE PROGRESS REPORTS**

| <b>QUESTION</b>   | <b>ANSWERS</b>  |
|---|-----------------|
| 1. According to FAR 52.232-5, Payments Under Fixed Priced Construction Contracts, when is the government supposed to make progress payments?    | Written answer. |
| 2. What are the two different ways an AF Form 3065 may be submitted to the contracting officer?   | Written answer. |
| 3. Where should the information for the line numbers, work elements, and total percentages for the work elements on the AF Form 3065 come from? | Written answer. |
| 4. How are the 'percent completed cumulative' totals calculated on the AF Form 3065?  | Written answer. |
| 5. What information should go in the remarks section of the AF Form 3065?   | Written answer. |

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**NOTE TO TRAINER/CERTIFIER:**

In order for the trainee to complete this task, you must provide the trainee with an approved Contract Progress Schedule (AF Form 3064). Then have the trainee to evaluate the contractor's progress according to the schedule.

**EVALUATE PROGRESS REPORTS**

**PERFORMANCE CHECKLIST**

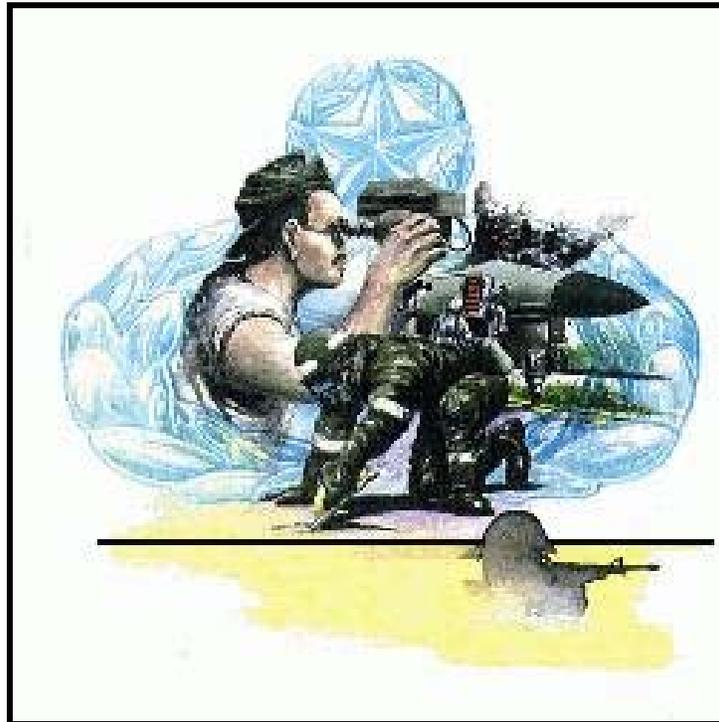
**INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

| <b>DID THE TRAINEE....</b>  | <b>YES</b> | <b>NO</b> |
|---|------------|-----------|
| 1. understanding the FAR clauses relating to progress reporting and payment?    |            |           |
| 2. follow the procedures for preparing and evaluating contract progress report? |            |           |
| 3. determine progress percentages correctly?                                    |            |           |

**FEEDBACK:** Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the minds of both the trainee and trainer/certifier.

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## CONTRACT MANAGEMENT

MODULE 19

AFQTP UNIT 7

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### EVALUATE MATERIAL SUBMITTALS AND TEST REPORTS (19.7.)

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**Notice.** This AFQTP is NOT intended to replace the applicable technical references nor is it intended to replace hands-on training. It is to be used in conjunction with these for training purposes only.

**EVALUATE MATERIAL SUBMITTALS AND TEST REPORTS**  
***Task Training Guide***

|                                    |   |
|------------------------------------|---|
| <b>STS Reference Number/Title:</b> | 19.7. - Evaluate material submittals and test reports.  |
| <b>Training References:</b>        | <ol style="list-style-type: none"> <li>1. <a href="#">Federal Acquisition Regulation (FAR)</a>.</li> <li>2. Local Procedures.</li> <li>3. Career Development Courses 3E551B Engineering Journeyman, Volume 3, Unit 1-2, Section 407, <i>Material Submittals</i>.</li> </ol>   |
| <b>Prerequisites:</b>              | <ol style="list-style-type: none"> <li>1. <b>Possess as a minimum a 3E551 AFSC.</b></li> <li>2. <b>Review the following references:</b> <ol style="list-style-type: none"> <li>2.1. Federal Acquisition Regulations (FAR).</li> <li>2.2. Local Procedures.</li> </ol> </li> <li>3. <b>Complete CDC 3E551A Engineering Journeyman, Volume 3, Unit 1-2, Section 407.</b></li> </ol> |
| <b>Equipment/Tools Required:</b>   | <ol style="list-style-type: none"> <li>1. A set of specifications and the FARs.</li> <li>2. An <a href="#">AF Form 66, Schedule of Material Submittals</a>, or equivalent material listing.</li> <li>3. A contractor submitted <a href="#">AF Form 3000, Material Approval Submitted</a> with all the required attachments.</li> </ol>  |
| <b>Learning Objective:</b>         | The trainee will be able to evaluate material submittals and test reports.  |
| <b>Samples of Behavior:</b>        | The trainee will evaluate material submittals and test reports.   |
| <b>Note:</b>                       | Using extracts from a set of specifications and the FARs, and a contractor submitted AF Form 3000 with all the required attachments; evaluate the contractor's material submittal by recommending approval or disapproval on the items listed on the AF Form 3000.  |

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## EVALUATE MATERIAL SUBMITTALS AND TEST REPORTS

**1. Background.** Two principal ways of determining compliance with the plans and specifications and assuring high quality work is through an appropriate testing program and the proper approval of materials. Brand names and product descriptions contained in the specifications are intended to establish standards of quality and are not intended to limit competition of products. When these products are submitted for approval, it is the responsibility of Construction Management to compare those materials to the specifications and recommend approval or disapproval to the contracting officer.

**2. Types of submittals required by contract documents.** The following is a list of the different categories of submittals that may be required from the contractor.

**2.1. Certificate of Compliance.** A certificate of compliance is basically a certified statement from a manufacturer stating their product meets or exceeds the specification requirements for the product (e.g., reinforcing steel for concrete must conform to ASTM A615).

**2.2. Test reports,** as the name implies, are the results of various tests taken during the course of the project (e.g., compressive and flexural strength test results for concrete).

**2.3. Shop drawings** are the drawings submitted by the contractor showing in detail the proposed fabrication and assembly of structural elements and the installation of materials and equipment.

**2.4. Samples** are actual materials are submitted to graphically show things such as color, shape, texture, and construction. Some of the typical samples are bricks, concrete masonry units (CMUs), acoustical ceiling tiles, ceramic tiles, fasteners, adhesives, and paints.

**2.5. Catalog data** is basically published information from a manufacturer, detailing their product. Important information such as size, construction, composition, and classification or rating can be obtained from catalog data.

**2.6. Manufacturer's instructions** are similar to catalog data in that they come from the manufacturer. The difference is those specific precautions or steps must be taken for the fabrication and installation of certain products. Manufacturer's recommendations are basically the same as instructions.

**NOTE:**

In each case of a required submittal, the project engineer will specify which method or type of submittal the contractor must use.

**3. FAR clauses relating to materials and submittals.** Use of proper materials is one of the best ways to assure compliance with the plans and specifications.

**3.1. 5336.290, Material Approval Submittal Form (AF Form 3000).**

**3.1.1.** Within 10 days after commencement of work or as otherwise established by the contracting officer, all materials and articles requiring approval, as stipulated in the Materials and Workmanship clause, shall be submitted by the contractor, by means of AF Form 3000. The contracting officer shall establish a suspense date on action to be taken on submittals and retain the fourth copy for necessary follow-up action.

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**3.1.2.** Insofar as practical and before commencement of work, the contracting officer shall inform the contractor of the materials or articles requiring approval.

**3.2. 52.236-5, Materials and Workmanship.**

**3.2.1.** All equipment, material, and articles incorporated into the work covered by this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the specifications to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.

**3.2.2.** The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles that the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. When directed to do so, the Contractor shall submit samples for approval at the Contractor's expense, with all shipping charges prepaid. Equipment, materials, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

**3.3. 52-236-21, Specifications and Drawings for Construction (para d through g).**

**3.3.1.** Shop drawings mean drawings submitted to the Government by the Contractor, subcontractor, any lower tier subcontractor pursuant to a construction contract, showing in detail:

**3.3.1.1.** the proposed fabrication and assembly of structural elements and

**3.3.1.2.** the installation (i.e., form, fit, and attachment details) of materials of equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the contractor to explain in detail specific portions of the work required by the contract. The Government may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.

**3.3.2.** If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the Government's reasons therefore. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.

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**3.3.3.** If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Contracting Officer approves any such variation, the Contracting Officer shall issue an appropriate contract modification, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.

**3.3.4.** The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. The Contracting Officer will retain three sets of all shop drawings (unless otherwise indicated) and one set will be returned to the Contractor.

**NOTE:**

Alternate I (APR 1984). When record shop drawings are required and reproducible shop drawings are needed, add the following sentences to paragraph (g) of the basic clause:

**“Upon completing the work under this contract, the Contractor shall furnish a complete set of all shop drawings as finally approved. These drawings shall show all changes and revisions made up to the time the equipment is completed and accepted.”**

**4. Key areas of a good submittal program.**

**4.1. Submittal List.** Prepare a list of the required submittals. Some engineers include, in the project specifications, an itemized list of materials on an AF Form 66, Schedule of Material Submittals. If your office uses this form, include this in your training.

**4.2. Suspense List.** Prepare a suspense list of those items that must be submitted by a specific time (e.g., paint samples should be submitted 30 days prior to use to allow time for testing).

**4.3. Timely Evaluations.** Always ensure timely evaluations; otherwise you may be deterring the contractor's progress and he or she will later submit a claim for the delay.

**4.4. Observance of Tests.** Observe tests that are performed at the job site to ensure compliance with the applicable standards. Contractors like to save overhead by not performing tests.

**4.5. Checking of Materials.** Check the materials at the job site to ensure that they are the same as those that were approved. It's easy for the contractor to submit one thing and install another.

**4.6. Prompt Removal of Rejected Materials.** Ensure removal of rejected materials. If this does not happen, the rejected material will more than likely be incorporated back into the work.

**4.7. Follow-up Actions.** Ensure submittal documentation is complete and follow-up action has been taken on all resubmissions.

**5. Procedures to process and evaluate material submittals.**

**5.1. Instructions to the Contractor.** Per AF FAR Supplement 36.290, Material Approval Submittal Form, the contractor is responsible for submitting all submission requirements on an AF Form 3000. The reverse side of the AF Form 3000 provides the contractor detailed instructions on how to make submissions for approval.

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**NOTE:**

Trainer must have a contractor submitted AF Form 3000 with all the appropriate attachments and AF Form 66 or equivalent listing before proceeding with this subject. Guide the trainee as per instructions.

**5.2.** Per the instructions on the back of the form, the contractor shall, within 10 days after the commencement of work or as stipulated by the contracting officer, submit the items requiring approval to the government. Also, per these instructions, the contractor is responsible for submitting four signed copies of the AF Form 3000, along with the appropriate attachments. The contracting officer establishes a suspense for civil engineering to evaluate the submittal. He or she signs the first government signature block, retains one copy of the form, and forwards three copies to construction management.

**5.3. To evaluate materials submittals and test reports, follow these steps:**

**Step 1: Compare material submittals.** Construction management, upon receipt of the three copies of the AF Form 3000 from the contracting officer, compares all submittals with the plans and specifications.

**Step 2: Evaluation process.**

**2.1.** Evaluate each submittal in order to "recommend" approval or disapproval as per project requirement.

**2.2.** If approved, initial off and evaluation is completed.

**2.3.** If disapproval is recommended, the "see reverse" column is checked and the reason(s) for disapproval is (are) fully explained on the back of the form. If the material submittal evaluator, normally the project inspector, is unfamiliar with the item being submitted on, he or she must exhaust all resources before making a recommendation. These resources may include manufacturer's catalogs, microfilm retrieval system tapes, or consultations with engineers and shop personnel.

**2.4.** A timely evaluation is very critical in this phase.

**Step 3: Reroute AF Form 3000.**

**3.1.** After the submittal has been evaluated, the construction manager will sign the appropriate signature block and return the three copies of the form back to the CO.

**3.2.** Upon return of the form from construction management, he or she then signs the last signature block on all copies of the form as being the only one having final approval authority.

**3.3.** The contracting officer then retains one copy of the form, forwards one copy to Construction Management, and returns one copy to the contractor.

**3.4.** The contractor is responsible for the submission of all AF Forms 3000 and construction management is solely responsible for the timely evaluations and "recommendations" of these forms to the contracting officer.

**3.5.** The contracting officer is the final approval authority for all equipment, materials, and articles used on the job site.

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**REVIEW QUESTIONS  
FOR  
EVALUATE MATERIAL SUBMITTALS AND TEST REPORTS**

| <b>QUESTION</b>  | <b>ANSWERS</b>  |
|--|-----------------|
| 1. What is a Certificate of Compliance?  | Written answer. |
| 2. What are test reports?  | Written answer. |
| 3. Interpret AF FAR Supplement 36.290.   | Written answer. |
| 4. Who recommends approval or disapproval for the AF Form 3000 and who is the final approving authority? | Written answer. |

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**NOTE TO TRAINER/CERTIFIER:**

In order for the trainee to complete this task, you must provide the trainee with a contractor's material submittal. Then have the trainee to evaluate the contractor's material submittal by recommending approval or disapproval on the items listed on the AF Form 3000.

**EVALUATE MATERIAL SUBMITTALS AND TEST REPORTS**

**PERFORMANCE CHECKLIST**

**INSTRUCTIONS:**

The trainee must satisfactorily perform all parts of the task without assistance. Evaluate the trainee's performance using this checklist.

| <b>DID THE TRAINEE....</b>   | <b>YES</b> | <b>NO</b> |
|--|------------|-----------|
| 1. have knowledge on the different types of submittals required?         |            |           |
| 2. have an understanding of FAR clauses relating to material submittals? |            |           |
| 3. know how a submittal is processed and evaluated?                      |            |           |
| 4. have an understanding on the key areas of a good submittal program?   |            |           |
| 5. complete material submittals and test reports correctly?              |            |           |

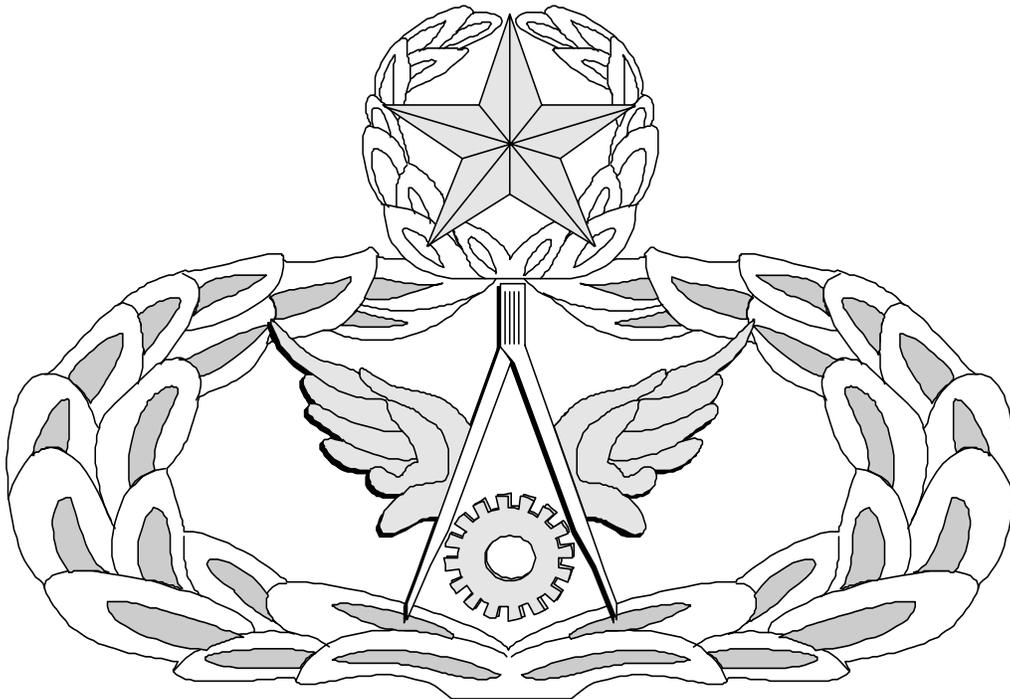
**FEEDBACK:** Trainer/Certifier should provide both positive and/or negative feedback to the trainee immediately after the task is performed. This will ensure the issue is still fresh in the minds of both the trainee and trainer/certifier.

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# Air Force Civil Engineer

## QUALIFICATION TRAINING PACKAGE (QTP)

### REVIEW ANSWER KEY



FOR  
**ENGINEERING**  
(3E5X1)

**MODULE 19**  
**CONTRACT MANAGEMENT**

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**Key-1**

**ENFORCE GENERAL PROVISIONS OF CONTRACTS  
(3E5X1-19.2.)**

| <b>QUESTION</b>  | <b>ANSWER</b>  |
|--|--|
| 1. What are the general provisions found in the contract document?                                 | a. General provisions are the required or applicable Federal Acquisition Regulation (FAR) clauses. |
| 2. Who is responsible for ensuring all of the applicable clauses are incorporated into a contract? | a. Contracting officer (CO).   |
| 3. Why are general provisions included in a contract document?                                     | a. To protect the contractor and the Government in fulfilling the terms of the contract.           |
| 4. As an inspector, why do you need to enforce these applicable clauses?                           | a. To ensure construction is done according to the terms of the contract.                          |
| 5. Can an inspector enforce all FAR clauses in a construction contract?                            | a. No.   |

**CONDUCT CONSTRUCTABILITY REVIEW  
(3E5X1-19.3.)**

| <b>QUESTION</b>  | <b>ANSWER</b>   |
|--|---|
| 1. List the four types of reviews performed on a construction project.   | Technical review; Constructability review, Installation review, and Base Procurement review.  |
| 2. Constructability review is a review of plans and specifications to ensure their clarity and to determine if the project is practical and constructible. | a. True.  |
| 3. List the purposes of a constructability review?   | The purposes of a constructability review are to ensure clarity in the plans, specifications reduce potential modification, and stop wasted effort reduce construction costs; reduce contractor claim, reduce the administrative effort; and avoid delays in contract completion. |
| 4. What are three things that should be checked during a constructability review?  | Correlation between plans and specifications, existing site conditions, and submittal requirements.   |
| 5. Why is it important that constructability review be performed on contracts before award?  | a. It is important because this will help reduce and prevent contract modifications and contractor claims.  |

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**DOCUMENT CONSTRUCTION ACTIVITIES  
(3E5X1-19.4.)**

| QUESTION  | ANSWER  |
|---|---|
| 1. What are the three main parts of the definition of documentation?                          | d. All the above.   |
| 2. What are the characteristics of good documentation?  | e. All the above.   |
| 3. What are at least three requirements for the AF Form 1477, Construction Inspection Record? | d. All the above.   |
| 4. Where is the AF Form 103 recorded on the AF 1477?  | a. Inside the front cover under construction permits on the AF Form 1477. |
| 5. What are four things that should be recorded on the reverse side of a photograph?          | e. All the above.   |
| 6. What are the five typical areas in which you will find non-compliance items?               | d. All the above.   |
| 7. What is the first step you should take in documenting non-compliance items?                | a. Verify the non-compliance with a reference.                            |
| 8. Who should be notified of non-compliance items?  | d. All the above.   |
| 9. What are the three major parts to the official memorandum?                                 | d. All the above.   |

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**EVALUATE CONSTRUCTION CONTRACT PROGRESS SCHEDULE  
(3E5X1-19.5.)**

| <b>QUESTION</b>  | <b>ANSWER</b>   |
|--|---|
| 1. As per AF FAR Supplement 5336.291, Contract Progress Schedules and Reports for construction projects (para a), when is a progress schedule required?    | It is required to support each delivery order, which establishes a continuous performance period of 60 days or more.  |
| 2. As per FAR 52.236-15, Schedules for Construction Contracts, when must the contractor submit the progress schedule and how many copies must be provided? | The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule.   |
| 3. How must work elements on the progress schedule be sequenced?   | The work elements must be in logical sequence and should normally be sequenced to follow the specifications, which are sequenced in accordance with the 17 major divisions of the Construction Specification Institute's format.  |
| 4. What are some inappropriate line item entries on the progress schedule?   | According to AF FAR Supplement 5336.291, Contract Progress Schedules and Reports for construction projects (para a), items like preparatory work, supervision, administration, mobilization, demobilization and clean-up could be considered as inappropriate entries in the "Work Elements" column of the progress schedule. |

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**EVALUATE PROGRESS REPORTS  
(3E5X1-19.6.)**

| QUESTION  | ANSWER  |
|---|---|
| 1. According to FAR 52.232-5, Payments Under Fixed Priced Construction Contracts, when is the government supposed to make progress payments?    | Monthly or at more frequent intervals as determined by the Contracting Officer, on estimates approved by the Contracting Officer.   |
| 2. What are the two different ways an AF Form 3065 may be submitted to the contracting officer?   | (1) Separate reports covering the same period will be prepared by the contractors and by the civil engineers or their designees; and (2) The contractor shall prepare the report and route it through civil engineering. The civil engineers or their designees shall review the report and make necessary comments and forward it to the base contracting office for action. |
| 3. Where should the information for the line numbers, work elements, and total percentages for the work elements on the AF Form 3065 come from? | The approved Contract Progress Schedule, AF Form 3064.  |
| 4. How are the 'percent completed cumulative' totals calculated on the AF Form 3065?  | One way to estimate percentages is to subdivide the work elements into quantifiable parts. Another method is to discuss work completed with the project superintendent.   |
| 5. What information should go in the remark section of the AF Form 3065?  | Contract progress schedule complete, actual start date and materials delivered.   |

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**EVALUATE MATERIAL SUBMITTALS AND TEST REPORTS  
(3E5X1-19.7.)**

| <b>QUESTION</b>  | <b>ANSWER</b>  |
|--|--|
| 1. What is a Certificate of Compliance?  | A certified statement from a manufacturer stating their product meets or exceeds the specification requirements for the product (e.g., reinforcing steel for concrete must conform to ASTM A615).  |
| 2. What are test reports?  | The results of various tests taken during the course of the project (e.g., compressive and flexural strength test results for concrete).   |
| 3. Interpret AF FAR Supplement 5336.290.   | Within 10 days after commencement of work or as otherwise established by the CO, all materials and articles requiring approval, as stipulated in the Materials and Workmanship clause, shall be submitted by the contractor, by means of AF Form 3000. The contracting officer shall establish a suspense date on action to be taken on submittals and retain the fourth copy for necessary follow-up action. In so far as practical and before commencement of work, the contracting officer shall inform the contractor of the materials or articles requiring approval. |
| 4. Who recommends approval or disapproval for the AF Form 3000 and who is the final approving authority? | Construction management, project inspector recommends approval or disapproval for the AF Form 3000 while the contracting officer is the final approving authority.   |

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MEMORANDUM FOR HQ AFCESA/CEOF  
139 Barnes Drive Suite 1  
Tyndall AFB, FL 32403-5319

FROM:

SUBJECT: Qualification Training Package Improvement

1. Identify module.

Module # and title \_\_\_\_\_

2. Identify improvement/correction section(s):

|  |  |
|--|--|
| <input type="checkbox"/> STS Task Reference        | <input type="checkbox"/> Performance Checklist |
| <input type="checkbox"/> Training Reference        | <input type="checkbox"/> Feedback              |
| <input type="checkbox"/> Evaluation Instructions   | <input type="checkbox"/> Format                |
| <input type="checkbox"/> Performance Resources     | <input type="checkbox"/> Other                 |
| <input type="checkbox"/> Steps in Task Performance |  |

3. Recommended changes--use a continuation sheet if necessary.

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4. You may choose to call in your recommendations to DSN 523-6322 or FAX DSN/Commercial 523-6488 or (850) 283-6488 or email [ceof.helpdesk@tyndall.af.mil](mailto:ceof.helpdesk@tyndall.af.mil).

5. Thank you for your time and interest.

YOUR NAME, RANK, USAF  
Title/Position