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Communications and Information

**ENGINEERING INSTALLATION (EI)
PROCEDURES**

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This Instruction implements Air Force Policy Directive (AFPD) 33-1, *Command, Control, Communications, and Computer (C4) Systems*, and is linked to AFI 33-104, *Base Level Planning and Implementation* for the purpose of managing C4 projects performed by Air Force organic resources assigned to active duty and air National Guard (ANG) Engineering Installation (EI) units. It establishes EI policies and procedures and provides guidelines for active duty support of Air Reserve Component Forces, specialized engineering, training of installers and team chiefs, and engineering, installing, and evaluating communications-electronics projects. This publication applies to ANG EI units.

SUMMARY OF REVISIONS

This document is substantially revised and must be completely reviewed.

This revision defines project acquisition and distribution responsibilities for ANG/C4CE, 38 EIG and EI field units. It identifies sources for EI support and refines procedures for active duty support for ANG EI units. Chapter 3, Lightning Force Academy, has been deleted and will be published as a stand-alone AFMC publication. The team chief job qualification standard is greatly expanded to include more realistic task composition. Project package development procedures and project package review procedures are simplified and project support agreements redesigned to be more customer friendly. All attachments are updated to eliminate out-dated terminology and procedures.

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Chapter 1

ENGINEERING INSTALLATION (EI) ORGANIC WORKLOAD MANAGEMENT AND PROJECT SUPPORT

1.1. General. Non-contingency Communication, Computer, Command, and Control (C4) projects, known as organic projects, are engineered and installed by all EI squadrons as a source of training, honing installation skills, and preparation for wartime deployments. This chapter identifies methods of obtaining, distributing, and supporting engineering and installation of non-contingency projects. It assigns specific responsibilities, outlines procedures, and describes EI support available from a variety of in-house resources. (Refer to [Attachment 1](#) for a list of abbreviations and acronyms.)

1.2. Project Acquisition and Distribution Responsibilities. Acquisition and distribution of projects involves cooperation and coordination between the 38 EIG STEM community, ANG STEM community, ANG/C4CE, and EI squadrons. All those involved with project acquisition and distribution have certain responsibilities as indicated below:

1.2.1. STEM-B. Base-level STEMs play a key role in acquiring projects and initiating the project distribution process. The ratio of projects presented for organic engineering and installation directly relates to STEM-B customer involvement. STEM-B project acquisition and distribution responsibilities include the following:

1.2.1.1. Keep customers informed of EI organic engineering and installation capabilities, the advantages of using EI resources, and the importance of using EI teams to enhance readiness in support of our national defense.

1.2.1.2. Provide customers with technical solutions based upon their C4 requirements to include engineering and installation man-hours.

1.2.1.3. Assist customers in identifying and documenting their C4 requirements.

1.2.1.4. Use C4RSR Infrastructure Planning System (CIPS) tools to document a complete BPID that includes contractor and organic EI costs (Reference AFMAN 33-105).

1.2.1.5. Forward requirements to respective STEM-TM.

1.2.2. ANG STEM. STEMs assigned to ANG EI units have the same basic responsibilities as 38 EIG STEMs B for ANG bases which they support with STEM-B services.

1.2.3. STEM-C. STEMs-C also play an important role in ensuring EI projects are considered for organic engineering and installation. STEMs-C are responsible to

1.2.3.1. Ensure STEMs-B understand the project distribution process and inform their customers of EI capabilities.

1.2.3.2. Ensure STEMs-B actively promote the advantages of organic EI to customers.

1.2.3.3. Keep MAJCOM-level plans and implementation functions advised of advantages of using organic EI resources.

1.2.3.4. Ensure funded project requirements are forwarded by the STEM-TM to ANG/C4CE for distribution to EI field units.

1.2.4. STEM-TM. STEMs-TM (telecommunication managers) are assigned to each 38 EIG/PID. STEM-TM responsibilities include the following:

1.2.4.1. Work with the MAJCOM EI PEM and STEM-C to develop initial and finalized annual work plans.

1.2.4.2. Distribute projects to ANG/C4CE as they become funded (to include estimated man day requirements for ANG units).

1.2.4.3. For funded projects, provide ANG/C4CE specific details concerning the project, points of contact, project description, AF Form 3215, technical solution and BPID, and other associated information.

1.2.4.4. Monitor project development in the Project Information and Tracking System (PITS).

1.2.5. ANG/C4CE. ANG/C4CE is the focal point to ensure customer requirements are equitably distributed to EI field units for engineering and installation. ANG/C4CE responsibilities include the following:

1.2.5.1. Review and validate requirements received from STEMs-C/STEM-TM and ANG STEMs.

1.2.5.2. Ensure each BPID contains sufficient information.

1.2.5.3. Verify projects are funded to include MPA man-days for ANG units.

1.2.5.4. Maintain a project distribution matrix and distribute projects according to the matrix.

1.2.5.5. Redistribute projects as necessary for EI unit acceptance.

1.2.5.6. Notify the customer (MAJCOM and base) and STEM-TM of project selection or if EI cannot accept a project.

1.2.5.7. Keep customers and STEM-B/TM informed of status until project completion.

1.2.5.8. Monitor project status.

1.2.5.9. Host recurring project distribution conferences.

1.2.6. EI Squadrons. EI squadrons are responsible to assess their personnel availability and accept projects that will help prepare engineers and installers for their wartime mission. EI squadron responsibilities include the following:

1.2.6.1. Refer direct customer requests for EI support to ANG/C4CE.

1.2.6.2. Log initial information into the Project Information and Tracking System (PITS) and maintain current project status throughout the duration of the project.

1.2.6.3. Perform project management/workload control functions identified in [Chapter 4](#) and [Chapter 5](#).

1.2.6.4. Engineer projects IAW procedures contained in [Chapter 4](#) of this instruction.

1.2.6.5. Coordinate with ANG/C4CE or other EI squadrons as necessary to field installation teams.

1.2.6.6. Ensure installation teams have the proper mix in experience and trainees.

1.2.6.7. Install, remove, and relocate C4 systems IAW the project package and **Chapter 5** of this instruction.

1.2.6.8. Keep STEM-B/TM informed of project status by providing information copies of the Project Support Agreement, Notice of Arrival message, and pertinent E-mail

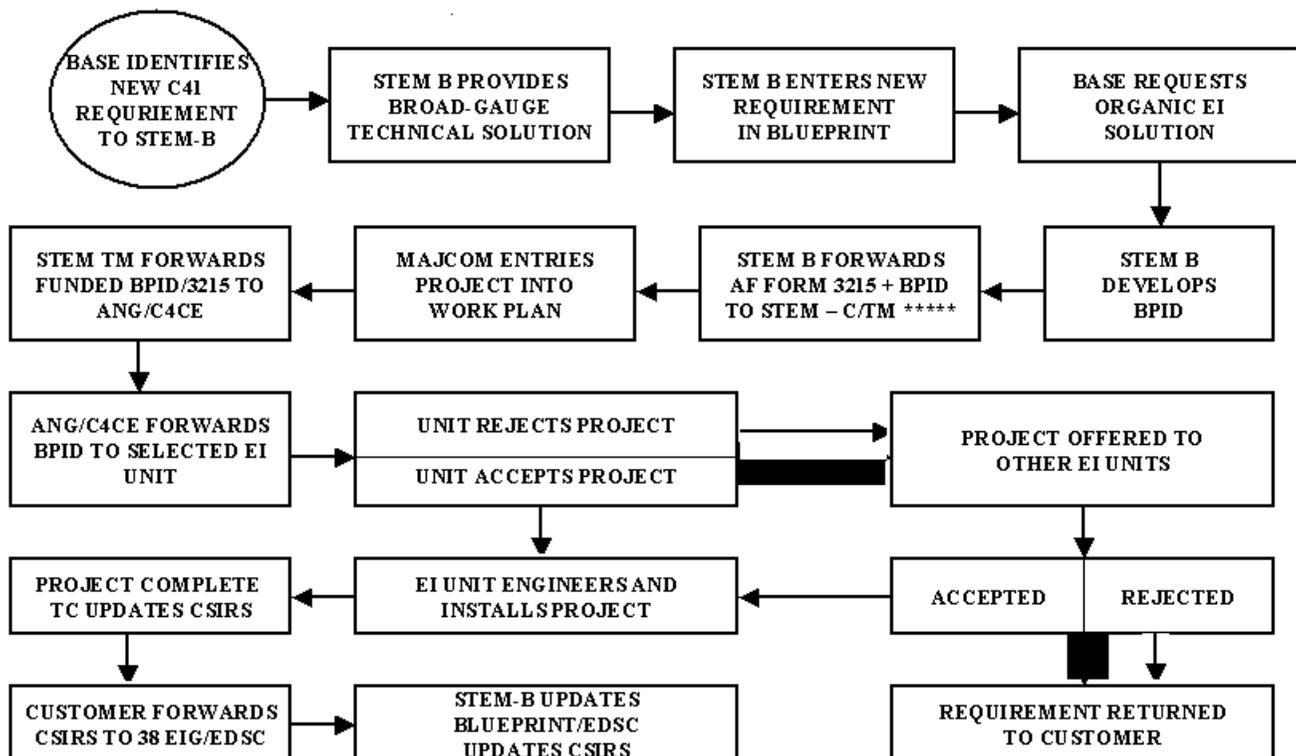
1.2.6.9. Promptly return projects to ANG/C4CE if they cannot be accomplished.

1.2.6.10. Request assistance from ANG/C4CE if a project cannot be completed once engineering or implementation has begun.

1.3. Project Distribution Process. **Figure 1.1.** below depicts the basic project distribution process for acquiring and distributing projects and post-project actions. The project distribution process goal is to quickly match MAJCOM/base C4 requirements to EI squadrons for implementation. The distribution process is used for all upward generated and downward directed projects. Key points in the process follow:

1.3.1. As indicated in **Figure 1.1.**, the customer must request organic installation to initiate the distribution process. STEMs-B should ensure base-level communication information system planners are aware of organic EI capability, potential cost savings, and flexibility associated with EI installations. STEMs-B should encourage customers to use EI organic resources to the maximum extent.

Figure 1.1. Project Distribution Process



*****ANG STEMs forward AF Form 3215 and BPID directly to ANG/C4CE.

1.3.2. STEM-B development of a comprehensive BPID is key to providing EI units with sufficient information to determine whether or not to accept the project. In addition to containing as much detail as possible, BPIDs must identify cost estimates for both contract and EI installation. All BPIDs should be documented similar to the format depicted in [Attachment 2](#).

1.3.3. BPIDs and associated AF Forms 3215 from 38 EIG STEMs B are forwarded to the applicable STEM-C/TM for compilation and entry into the MAJCOM fiscal year work plan. Funded requirements are then forwarded to ANG/C4CE for distribution. Un-funded projects remain on the work plan pending funding prior to forwarding to ANG/C4CE for distribution to EI squadrons.

1.3.3.1. The STEM-TM provides the fiscal year project requirements list to ANG/C4CE for long range planning purposes. Normally a certain percentage of the top priority projects on the list will be funded.

1.3.3.2. Immediate requirements may be provided directly to ANG/C4CE from the STEM-B/C if necessary to expedite with information copy to the applicable 38 EIG STEM-TM.

1.3.4. ANG STEMs forward BPIDs and AF Forms 3215 directly to ANG/C4CE for funding and processing.

1.3.5. Upon receipt of a BPID, ANG/C4CE distributes the BPID to all EI squadrons. The most eligible EI unit is given three working days to either accept or reject the project.

1.3.5.1. The squadrons have three working days to either accept or reject the project. If multiple squadrons accept, the project is given to the most eligible squadron according to the C4CE distribution matrix. 1.3.5.2. If no EI unit accepts the project, the BPID is returned to the customer via the STEM-TM or ANG STEM who advises customer to use a 38 EIG, local contract, or GS schedule.

1.3.5.2. If no EI unit accepts the project, the BPID is returned to the customer via the STEM-TM or ANG STEM who advises customer to use a 38 EIG, local contract, or GS schedule.

1.3.6. There are several exceptions to the normal distribution process as follows:

1.3.6.1. EI units are given first selection on projects for ANG bases to which they provide STEM-B services. If the EI unit that provides STEM-B services cannot perform a project at a base or location to which they provide STEM services, the project is then distributed through the normal C4CE distribution process.

1.3.6.2. The 738 EIS is given first choice selection for projects at Keesler, Eglin, and Columbus AFBs, Hurlburt Field and Duke Field.

1.3.6.3. Projects may be offered first to units with training shortfalls that negatively impact their SORTS rating.

1.3.6.4. Normal distribution may be altered when a customer requests a specific EI unit or when geographic proximity of the customer and most eligible EI unit makes it impractical to perform a project (i.e., extensive travel time, significant cost increase).

1.3.7. Once a project is accepted the EI unit contacts the customer and makes arrangements for a site survey and project package development. The EI unit enters and updates project status in PITS on a continual basis unit project completion. The project is then archived in PITS.

1.4. EI Project Support Functions. The entire EI community works together to provide C4 engineering, installation, and maintenance services to numerous DoD components. Following are types of support available:

1.4.1. Reach Back. Engineering reach back for technical assistance is available from 38 EIG System Telecommunication Engineering Management (STEM) engineers, ANG STEM engineers, and the 738 EIS Specialized Engineering Flight. On-line or telephonic advice and assistance may be obtained during both engineering and installation phases of any project. If unsure of reach back contact points, deployed personnel should contact their unit project manager/workload controller (PM/WC) for assistance.

1.4.2. Guidance. AFMC and 38 EIG EI policy and directives provide the EI community with general guidance on various activities. Examples include this publication, engineering drawing conventions for communications systems installation records (CSIRs), and technical engineering literature published by 38 EIG.

1.4.3. Formal Training. The Lightning Force Academy hosted by the 211 EIS provides formal training courses to include the team chief academy, project engineering, quality assurance, standard installation practices, CAD, and Microsoft computer assisted design. The 38 EIG also provides formal training to newly assigned STEMs.

1.4.4. Augmentation. EI personnel assets and installation equipment are shared through the augmentation process. Requests for augmentation can be coordinated by contacting ANG/C4CE or by direct contact with another EI unit.

1.4.5. Active Duty Support for ANG units. In compliance with AFI 10-301, Responsibilities of Air Reserve Component (ARC) Forces, 38 EIG personnel are available to advise and assist ANG EI units in all operational support functions to include training, information management, safety, security, and readiness.

1.4.5.1. On an as-needed basis, the 38 EIG (738 EIS) will also provide training and assistance in installation policy and procedures, materiel control, project engineering, workload control (project management), and quality control.

1.4.5.2. Support is normally rendered to overcome known or perceived deficiencies or in preparation for OCIs, ORIs, and other types of evaluations.

1.5. Active Duty Support Responsibilities for ANG Units. The 738 EIS will establish and maintain an internal structure to provide assistance and support to ANG EI units as follows:

- Appoint an ANG liaison officer/NCO who will serve as the focal point to interface with ANG units.
- Identify and train active duty individuals in key support positions so they may provide the depth and degree of assistance needed by ANG units. Disseminate a roster of support focal points to all ANG units.
- To the maximum extent possible, make active duty unit resources available to ANG units for training at ANG units or at the active duty home station.
- Based upon known support requirements, budget for travel and per diem to assist and advise ANG units at their home station or at exercise locations.
- Disseminate pertinent safety, security, and training information to 38 EIG and ANG units and provide telephonic/E-mail assistance as needed.

1.5.1. ANG EI Unit Responsibilities. ANG units will maintain close liaison with the active duty EI unit to identify support requirements they may have as follows.

1.5.1.1. Identify a focal point to interface with the active duty EI unit.

1.5.1.2. Provide current unit staff directories and UTA schedules to the active duty component ANG liaison officer/NCO.

1.5.1.3. Annually project anticipated support needs for the upcoming calendar year.

1.5.1.4. Provide as much lead time as possible when requesting unplanned or previously unknown support needs.

1.5.1.5. Involve to the extent possible the active duty component in ANG EI exercises and other joint training environments.

1.5.2. Procedures.

1.5.2.1. Each October ANG units forward assistance requests via E-mail for the coming fiscal year to the 738 EIS ANG liaison officer/NCO who compiles support requests and devise a tentative visit schedule. The liaison officer/NCO coordinates with units to finalize a visit schedule. The schedule is sent via E-mail to all units to be visited with info copy to ANG/C4CE and 38 EIG.

1.5.2.2. Unscheduled requests for assistance will be evaluated by the 738 EIS ANG Liaison Officer/NCO to determine urgency and if they should displace projected visits to others unit or if the requests can be accommodated without planned visit interference. Schedule conflicts will be sent to the affected ANG unit commanders for resolution and prioritization. Unscheduled requests are funded by the requesting unit.

1.5.2.3. If funding and the availability of skilled personnel limit active duty component ability to meet all requested support demands, the limiting factors will be identified to the 38 EIG for resolution and support visit prioritization.

1.5.2.4. Upon return to home station, the active duty support team chief completes a short trip report documenting subject areas where assistance was provided and the ANG unit OPRs. The trip report serves as an audit trail. Copies will be forwarded to the ANG unit visited, 38 EIG, and the active duty ANG liaison officer/NCO. Any necessary after actions will be coordinated by the active duty liaison officer/ NCO and ANG unit focal point.

Chapter 2

SPECIALIZED ENGINEERING SERVICES

2.1. Policy. The 738 EIS/EEE provides specialized engineering services to base-level units and major commands responsible for the engineering, operation, or maintenance of Air Force communications-computer facilities and systems.

2.1.1. Specialized Engineering Scope. Services include investigation and resolution of radio frequency interference and hazard issues, evaluation and resolution of defense information infrastructure (DII) and command and control communications circuit problems, and measurement of the technical ability of Air Force systems to operate in an environment of nuclear electromagnetic pulse and scintillation.

2.1.2. Specialized Engineering Limitations. Services are provided only in the areas of assigned general responsibilities and when specialized engineering skills and capabilities are required and available. This specialized engineering support is not to be used for workload that is more appropriate for maintenance organizations, project engineering activities, contractors, or other activities. There may be cases where unusual circumstances warrant a temporary deviation from this policy. In these cases, all available options should be considered carefully before committing 738 EIS/EEE resources.

2.1.3. Determining Specialized Engineering Applicability. Notify 738 EIS/DOO as soon as possible of any specialized engineering services that may be required. This will allow the maximum time for scheduling and obtaining necessary instrumentation, personnel, training, theater clearances, travel reservations, cost estimates, funding, etc. Programming or other planning documents that commit 738 EIS/EEE resources will not be published prior to appropriate coordination with the 738 EIS/DOO/EEE.

2.1.4. Obtaining Services. Send requests for specialized engineering services directly to 738 EIS/EEE. Funding will be accomplished in the same manner with the exception of those programs centrally funded through the 38 EIG or applicable System Program Office SPO.

2.2. Responsibilities. The 738 EIS/EEE will:

2.2.1. Review each request to ensure only valid requirements are supported and only appropriate workload is accepted. Coordination may be necessary with other activities to validate, reject, or modify requested support.

2.2.2. Maintain a staff of qualified personnel, an inventory of instrumentation, and the mission-essential, special-purpose motor vehicles required to support specialized engineering services. The general areas of specialized engineering services shall include but not be limited to:

2.2.2.1. System acceptance testing of Command, Control, and Communications facilities.

2.2.2.2. Verification of high altitude electromagnetic pulse (HEMP) protection.

2.2.2.3. RF shielding effectiveness.

2.2.2.4. Engineering resolution of Defense Information Infrastructure (DII) and other communications and telecommunications problems.

2.2.2.5. AC power, grounding, and lightning protection surveys.

- 2.2.2.6. RF interference resolution.
- 2.2.2.7. Electromagnetic compatibility and RF radiation hazard studies and surveys.
- 2.2.2.8. Wide and local area networking systems testing.
- 2.2.3. Provide support in new areas of Command, Control, and Communications technology as required by Air Force or DOD customers.
- 2.2.4. Provide trained engineering personnel to support specialized engineering services.
- 2.2.5. Provide consultative assistance in the general areas of specialized engineering services.
- 2.2.6. Provide reach back consult support for active duty and Air National Guard Engineering Installations units.
- 2.2.7. Lease required instrumentation in those cases when it is more cost effective and Air Force instrumentation is unavailable. (Established Air Force supply procedures will be followed for all equipment leases.)
- 2.2.8. Establish, equip, and maintain fixed support facilities for equipment, training, fabrication, and other purposes directly related to assigned specialized engineering services workload.
- 2.2.9. Establish a program to implement new engineering technology and to evaluate state-of-the-art instrumentation. These capabilities will also be utilized in the training of specialized engineering personnel.

Chapter 3

EI TEAM CHIEF DEVELOPMENT PROGRAM (TCDP)

3.1. General. Each EI field unit is required to establish a team chief development program. The TCDP is a deliberate process designed to train and produce a cadre of highly qualified EI team chiefs. The program encompasses selection of candidates, formal training, on-the-job task training, trial performance as a team chief, evaluation, and certification. Only those individuals demonstrating outstanding leadership, strong technical skills, and noteworthy professionalism should be entered into the TCDP.

3.2. Responsibilities.

3.2.1. Immediate Supervisor.

3.2.1.1. Nominate personnel possessing outstanding administrative, managerial, technical, and leadership skills for entry into the TCDP.

3.2.1.2. Initiate personnel action to assign the duty title of “EI Team Chief Nominee (TCN)” or “EI Team Chief (TC)”.

3.2.1.3. Establish and maintain a team chief folder (**Attachment 4**) for individuals entered into the TCDP.

3.2.1.4. Document and maintain training records (AF Form 623 or CAMS equivalent with Team Chief JQS shown in **Attachment 5**) on TCNs and team chiefs in the grade of TSgt and below.

3.2.1.5. Maintain a team chief JQS in team chief folders for each master sergeant and above performing team chief duties (AFMAN 36-2201, Volume 5).

3.2.1.6. Assign certified team chiefs as TCN trainers and oversee TCN training and development.

3.2.1.7. Coordinate with unit training to schedule formal training for TCNs and team chiefs.

3.2.1.8. Request team chief certification evaluations from QA.

3.2.1.9. Review QA team chief evaluations; recommend certification or non-certification to intermediate supervisor.

3.2.1.10. Initiate classification actions for award of TCN, team chief, and Special Experience Identifier (SEI) 200 Code.

3.2.2. Intermediate Supervisor.

3.2.2.1. Review TCN records, conduct TCN interviews, and recommend approval or disapproval for entry into the TCDP.

3.2.2.2. Review TCN evaluations; recommend approval/disapproval of team chief duty title.

3.2.3. Installations Officer/Installations Flight Commander:

3.2.3.1. Review TCN individual personnel records; training records; AFMC Form 148, **Team Chief Fitness Evaluation (Attachment 3)**, and conduct personal interview.

3.2.3.2. Approve/disapprove entry into the TCDP.

- 3.2.3.3. Review TCN Quality Assurance (QA) evaluation and supervisors' recommendation prior to approving or disapproving team chief certification.
- 3.2.3.4. Determine to retain or remove a TCN in the TCDP based upon performance and evaluation results.
- 3.2.4. Unit Lightning Force Academy (LFA) Liaison or Unit Training
 - 3.2.4.1. Submit requests for annual and out-of-cycle formal training quotas to the LFA
 - 3.2.4.2. Provide the LFA with the name, grade, SSAN, and AFSC of individuals scheduled to attend the team chief course or seminar.
 - 3.2.4.3. Brief LFA course attendees on LFA policies and procedures including as a minimum uniform and weight standards, training location, phone numbers, class start times, and transportation phone number as outlined in the LFA welcome letter.
 - 3.2.4.4. Periodically inspect TCN training records for accuracy and training progress.
 - 3.2.4.5. Process AF Form 2096 or computer generated request for assignment of SEI-200.
- 3.2.5. Chief of Quality Assurance.
 - 3.2.5.1. Schedule and perform team chief evaluations.
 - 3.2.5.2. Route a copy of the QA evaluation to the supervisor, intermediate supervisor, and Installations Officer/Flight Commander.
 - 3.2.5.3. Recommend certification or non-certification based on evaluation results.

3.3. Team Chief Nominee and Team Chief Prerequisites:

- 3.3.1. To be entered into the TCDP, unit members must meet grade and skill requirements and have completed required formal training as identified below:
 - 3.3.1.1. Be in the grade of Staff Sergeant or higher, hold at least a 5-skill level in their assigned AFSC.
 - 3.3.1.2. Complete Supervisor Safety Training IAW AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Prevention and Health (AFOSH) Program*.
 - 3.3.1.3. Successfully graduated from AFSC-related Lightning Force Orientation Installation Practices (LFOIP) course.
 - 3.3.1.4. Be approved by Installations Officer/Flight Commander.
 - 3.3.1.5. Formally entered into the Team Chief Nominee program IAW local unit procedures.
- 3.3.2. To be assigned the duty title of "EI Team Chief," nominees must be serving in the grade of staff sergeant or higher, awarded a PAFSC "7" skill level in their assigned AFSC and meet the following requirements:
 - 3.3.2.1. Complete EI Team Chief Course.
 - 3.3.2.2. Be certified on all applicable tasks listed in the team chief JQS.
 - 3.3.2.3. Obtain Hazardous Cargo Certification.
 - 3.3.2.4. Be qualified in pallet buildup.

3.3.2.5. Perform a project, be evaluated by QA, and be approved for certification by the Installations Officer/Flight Commander.

3.4. Unit Procedures.

3.4.1. TCN Nomination. Section supervisors are responsible to initiate the nomination process for NCOs who meet the prerequisites detailed in paragraph **3.3.1.** above and who have demonstrated the professional qualities desired of team chiefs.

3.4.1.1. The section supervisor reviews the individual's personnel files to ensure there is no derogatory information. Active duty supervisors should review EPRs and ANG use AFMC Form 148, **Team Chief Fitness Evaluation**, to further evaluate the individual and determine if he or she has the ability to become a team chief.

3.4.1.2. Following local unit procedures, the section supervisor forwards the TCN nomination request to the intermediate supervisor for review. After the records review the intermediate supervisor interviews the individual to confirm basic qualifications.

3.4.1.3. The intermediate supervisor recommends approval or disapproval and forwards the request to the Installations Officer/Flight Commander who conducts an independent interview and evaluation documented on AFMC Form 148 or EPR review for active duty.

3.4.1.4. If approved by the Installations Officer/Flight Commander, the individual may be entered into the TCDP. IAW local unit procedures, the immediate supervisor initiates the personnel action necessary (AF Form 2096 or computer generated) to award the duty title of TCN.

3.4.1.5. The section supervisor creates a team chief folder IAW **Attachment 4.** Place the AFMC Form 148, **Team Chief Fitness Evaluation**, Installation Officer/Flight Commander's approval, and certificates of training (or other forms of documentation indicating successful completion of training) detailed in paragraph **3.3.1.** above in the folder. Maintain the folder IAW local unit administrative procedures.

3.4.2. Team Chief Training. The TCN's immediate supervisor, with section supervisor oversight, must ensure all proficiency, ancillary, and formal training is scheduled, conducted, properly documented, and certificates of completion (or other forms of documentation indicated successful completion of training) are placed in the team chief folder.

3.4.2.1. The section supervisor coordinates with the unit LFA liaison or unit training to obtain a LFA team chief academy course quota for the TCN. Team chief academy attendance dates should be scheduled according to the degree of TCN field experience. If the TCN has relatively little field experience, it may be better to attend the team chief academy at a later date after more field experience is acquired and the TCN can better relate team chief duties to the course curriculum.

3.4.2.2. The assigned team chief trainer must ensure the TCN is taught and can perform all tasks listed on the team chief JQS in **Attachment 5.** Some team chief tasks may not be encountered when performing an actual project, for example: completing an Air Force Form 9, **Request for Purchase.** In such a case, the trainer makes up a scenario and has the TCN demonstrate how to complete all facets of the task. Ensure task training is complete!

3.4.2.3. Completion of all ancillary training, such as hazardous cargo, pallet buildup, and weapons training must be accomplished prior to TCN evaluation. The immediate supervisor or section chief must ensure the TCN obtains all required ancillary training!

3.4.2.4. Based upon the TCN training completion date, the section supervisor identifies a project, assigns the TCN as team chief and requests Quality Assurance (QA) perform an evaluation. By the time the project is implemented, the TCN should have completed all formal, ancillary, and proficiency training.

3.4.3. Evaluation. Team chief evaluations are conducted by QA to ensure the individual being evaluated meets all requirements to be awarded the title of EI team chief. While the evaluation process is the same, there are several different types of QA evaluations according to the status of the individual being evaluated.

3.4.3.1. Initial. Conducted anytime after successful completion of the EI Team Chief Course and all other training requirements.

3.4.3.2. Special. Conducted to recertify decertified team chiefs IAW AFMAN 36-2201, Vol 3, or to verify the proficiency level of assigned team chiefs. The section supervisor, Installations Superintendent, or Installation Officer may request the special evaluation for the following reasons:

3.4.3.2.1. When a certified SEI 200 EI team chief transfers from one EI unit to another (optional).

3.4.3.2.2. If an EI team chief has not served in an EI unit within the last 13 months (mandatory).

3.4.3.2.3. When an EI team chief has not performed team chief duties because of temporary positions, such as LFA instructor, workload controller, etc., for 13 months or longer (mandatory).

3.4.3.3. Prior to the evaluation, the individual being evaluated should review evaluation procedures documented in **Chapter 6** of this publication. Familiarity with the process helps prepare the individual being evaluated for the actual evaluation.

3.4.4. Certification Process. The final step in the TCDP is certification and award of the duty title EI Team Chief.

3.4.4.1. After the evaluation the QA evaluator completes AFMC Form 162, **Narrative**, by rating the individual being evaluated in seven definitive areas as shown in **Chapter 6**, paragraph **6.5.6.** The evaluation bottom line is a recommendation for certification or non-certification. The evaluation report is routed to the installations flight.

3.4.4.2. Following local unit procedures the section supervisor reviews the QA report. If certification is recommended and section supervisor agrees, the report is annotated and forwarded to the intermediate supervisor. The intermediate supervisor reviews the report, recommends certification approval or disapproval, initials, and forwards the report to the Installations Officer/Flight Commander.

3.4.4.3. The Installations Officer/Flight Commander is the final approving authority for certification. If approved, the section chief is notified to certify the individual and initiate a personnel action request (AF Form 2096 or computer generated) for award of the team chief duty title and SEI-200 IAW AFMAN 36-2108.

3.4.4.4. If certification is not recommended or if for some other reason certification is denied, place a copy of the evaluation in the individual's team chief folder along with any associated cor-

respondence relevant to reason for non-certification. Normally the Installations Officer/Flight Commander will determine whether to retain the individual in the TCDP or pursue other options.

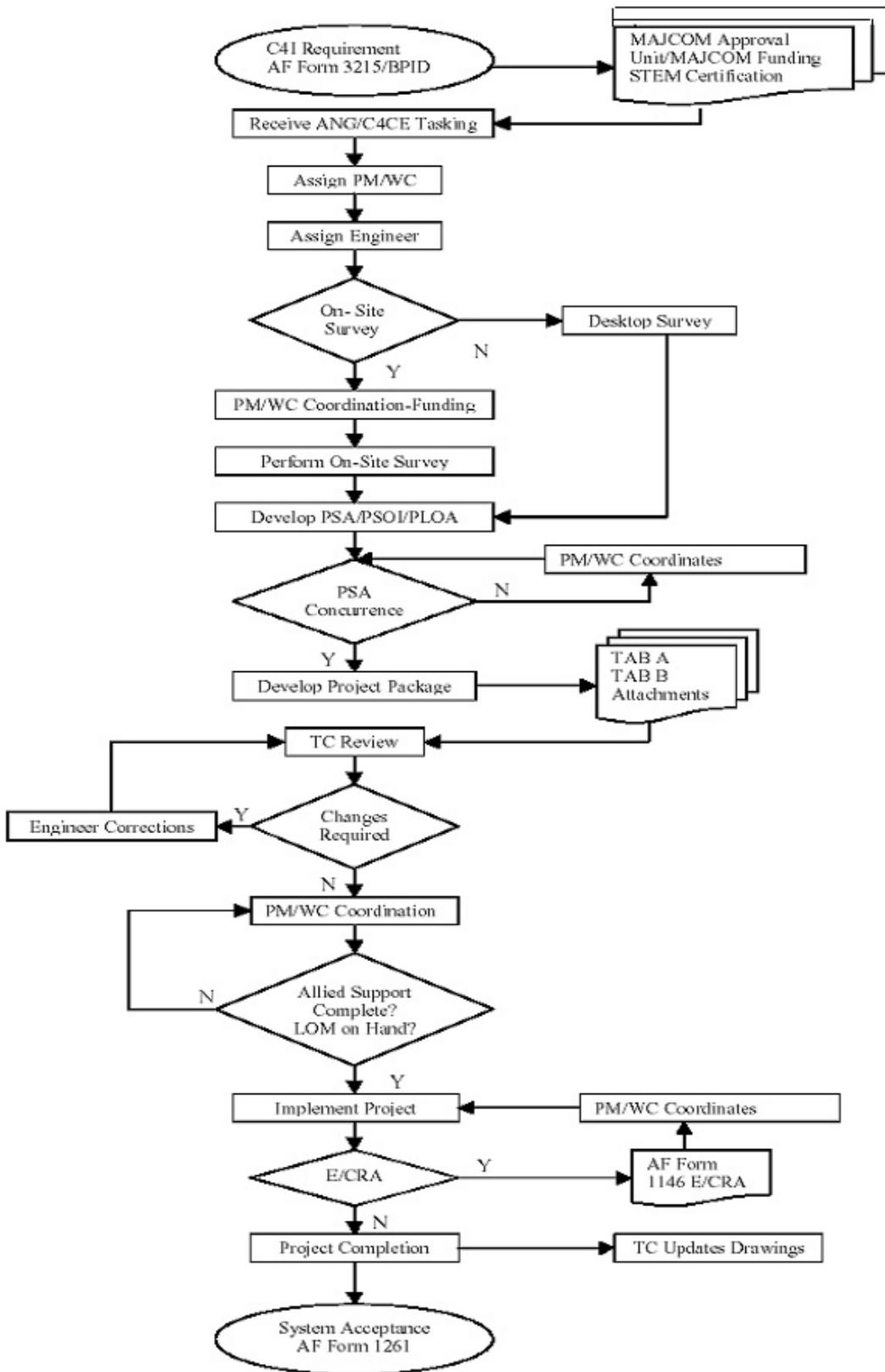
Chapter 4

PROJECT ENGINEERING

4.1. Project Engineering Process. This chapter identifies the major tasks performed by EI project engineers engaged in engineering projects and developing project packages used to install, remove, relocate, reinstall, and retrofit Command, Control, Communications, and Computer (C4) systems. Procedures in this chapter are written in the context of normal non-contingency (UTC deployment) workload. Contingency deployments may dictate procedural variations according to each particular situation. Refer to [Attachment 1](#) as necessary for help with abbreviations, acronyms, and references.

4.1.1. EI Process Overview. [Figure 4.1.](#) depicts the overall EI process from project acquisition to project completion with emphasis on engineering tasks. The following paragraphs briefly describe major steps in the overall process. A more detailed analysis of specific engineering tasks is discussed later in the chapter.

Figure 4.1. Project Engineering Process



4.1.2. EI Workload management. Project requirements from MAJCOMs and bases (through respective STEMs B/C/TM) are collected and presented to EI units through the EI workload Management function currently located at ANG/C4CE . On a rotational basis, ANG/C4CE presents projects to all EI units. Project acceptance by an EI unit is normally based upon wartime training needs and availability of personnel to both engineer and install selected projects. If no unit selects a particular project it is returned to the requester to pursue engineering and installation by civilian contract. EI units may also obtain projects through direct requests from customers.

4.1.3. Assign Project Manager/Workload Controller (PM/WC). Once a project is accepted by an EI unit, a project number is assigned by the active duty project manager or the ANG unit workload controller. As the names imply, active duty project managers (PMs) and ANG workload controllers (WCs) manage all phases of each project. They are the central coordination point for all activities, to include obtaining funds, ensuring materiel acquisition, coordinating project package development and distribution, supporting the EI team in the field, monitoring and reporting project status, and performing all administrative functions to finalize and close out projects.

4.1.4. Assign Engineer. The EI unit responsible for implementing a project assigns an engineer. The assigned engineer will proceed with the engineering project actions and keep the PM/WC advised of changes that may affect the project package development. **Note:** Successful completion of the Lightning Force Academy Project Engineering course is required for all engineers and team chiefs assigned to engineer projects. Successful completion of the Lightning Force Academy Micro Station CADD course is highly desirable.

4.1.5. Funds Coordination. If an on-site survey is to be performed, the engineer provides the PM/WC with a cost estimate. The PM/WC coordinates with the customer as necessary to obtain site survey funding for travel and per diem. In addition, for ANG units the WC also coordinates with the applicable MAJCOM or ANG/C4CE to obtain man-days as necessary.

4.1.6. Site Survey. The engineer performs either a desktop survey or an on-site survey. The type of survey depends upon the complexity of the project and availability of site information.

4.1.7. Project Support Agreement (PSA). Based on site survey information the engineer develops a PSA. The PSA is basically a contract between EI unit assigned to the project and the customer. It details allied support requirements, equipment needs and location, environmental requirements, communications circuits, and any other items relevant to host-base actions necessary to implement and successfully complete the project. Upon completion of an on-site survey, the goal is to leave a PSA on site with the customer POC who is normally the communications squadron Communications and Information Systems Planner (referred to as the customer POC in this publication).

4.1.8. Customer PSA Concurrence. Normally, customer PSA concurrence takes time to coordinate with various base agencies. If the PSA cannot be left on site, a copy should be sent to the customer POC within 30 days of the engineer's conclusion of the survey. The customer POC is responsible to coordinate and obtain concurrence with affected base activities. Within 30 days the customer POC should return the PSA concurrence to the EI PM/WC for project package development.

4.1.9. Develop Project Package. Normally, the assigned engineer begins project package development as soon as the customer concurs with the PSA. Project package content depth and detail is directly related to project complexity. Project packages normally contain a List of Materiel (LOM), installation or removal instructions, testing instructions, drawings, and any other information applicable to the project action.

4.1.10. Team Chief Package Review. The completed project package is submitted to the PM/WC who attaches AFMC Form 150, **Record of EI Project Review**. The package is then submitted to a team chief who conducts a thorough review for completeness and technical accuracy. The team chief records discrepancies and recommended corrective actions on the AFMC Form 150. The team chief and engineer work together to resolve identified discrepancies until the package is suitable to both parties.

4.1.11. Finalize Project Package. Once the project package is finalized, the engineer provides the PM/WC with the sufficient number of copies (hard copies or electronic) of the package for distribution to appropriate parties. The customer is also afforded the opportunity to review the project package and coordinate any changes.

4.1.12. Implement Project. When the materiel and equipment items are on site, allied support is complete, and the customer indicates they are ready, the PM/WC coordinates the deployment of an installation team to accomplish the installation.

4.1.13. Engineering Change Request/ Authorization (ECR/A). Prior to and during project implementation, the team chief or customer (IAW AFI 33-104) may recommend changes to the package by forwarding an ECR/A to the appropriate engineering activity. The engineer works with the team chief or customer as necessary to implement the change or otherwise achieve agreement.

4.1.14. Project Completion. After the installation is complete and tested, the team chief updates and provides two copies of Communications Systems Installations Records (CSIR) drawings to the base CSIR manager. The team chief also consults with the customer for disposition of excess materiel.

4.1.15. System Acceptance. When the installation is completed and accepted, as indicated by all involved parties signatures annotated on the AF Form 1261, **Acceptance Certificate**, the project will be closed out by the PM/WC. Occasionally, there may be exceptions indicated on the AF Form 1261. Projects can still be closed out or may remain open pending rectification of exceptions.

4.2. Conducting Site Surveys:

4.2.1. General: Customer C4 requirements are normally documented on AF Form 3215, **Information Technology/Network System Support (IT/NSS)**. Using information contained on the AF Form 3215, the Systems Telecommunications Engineering Manager-Base Level (STEM-B) develops a technical solution and costing in the form of a Blueprint Phase Implementation Directive (BPID). BPIDs (see [Attachment 2](#)) contain basic information about the proposed project equipment and costs and are distributed to EI units by ANG/C4CE. Desktop surveys and on-site surveys are conducted to verify CSRD/BPID information, physically check requirements, and gather all information needed to develop a PSA and construct a project package.

4.2.1.1. Desktop surveys are normally conducted for uncomplicated installations and removals. The engineer refers to CISRs, standard drawings, BCE drawings, other available data, and telephone coordination to obtain technical information needed for the PSA and project package without physically visiting the work site.

4.2.1.2. On-site surveys are performed when task complexity is high or when there is inadequate reference data to develop a PSA and project package for the installation, removal, or relocation of C4 systems and equipment.

4.2.2. Survey Planning: Survey planning involves obtaining as much information as possible about operational requirements and customer needs prior to performing the survey.

4.2.2.1. Sources of information include discussions with the STEM-B, customer POC and PM/WC; study of the CSRD and BPID; review of available CSIRs and any other available documentation.

4.2.2.2. Types of information to obtain may include Electromagnetic Compatibility (EMC) and Electromagnetic Radiation Hazards (EMRH) for electronic systems, environmental characteristics, siting criteria, connection approval (CA) requirements, allied support requirements, existing facilities, and any related project action or construction which could affect this requirement.

4.2.2.3. Identify site survey support requirements, such as vehicles, transits, test equipment, protective equipment, information technology items, and Base Civil Engineering (BCE) drawings, etc.

4.2.2.4. Determine when the on-site survey is to take place, size of survey team, mode of travel, duration of TDY, and develop a travel and per diem cost estimate for the PM/WC.

4.2.2.5. Provide all essential site survey information to the PM/WC for coordination with the customer POC as necessary to obtain all host base support needed for the survey.

4.2.2.5.1. Based on local unit procedures a notification of site survey team arrival is drafted and forward to the PM/WC for review and submission to the customer via E-mail. The notification should contain the following information:

4.2.2.5.1.1. Project number, title, and purpose of the on-site survey.

4.2.2.5.1.2. Survey dates established through coordination with the host command.

4.2.2.5.1.3. Survey team personnel (name, rank, and security clearance).

4.2.2.5.1.4. Any special site survey supports requirements, such as special vehicles, test equipment, geodetic information, EMSEC officer participation, security requirements, safety concerns, and a host of other special needs. Include required access to certain equipment or locations or any unusual safety concerns while conducting the survey.

4.2.2.5.2. The notification E-mail should be sent to the customer POC as far in advance as possible. E-mail information addressees should include specific EI unit personnel (CC, Installations Officer, chief of engineering, etc.) MAJCOM/SCX, STEM-B, and other support functions involved in the survey or project. This may include host base CE, EMSEC officer, unit or base safety; Federal Aviation Administration (FAA), or other concerned agencies.

4.2.3. On-Site Survey Actions: The type and magnitude of the project, location, and unique customer requirements all influence survey actions and the amount of time required to conduct the on-site survey. The following actions are common to most all surveys:

4.2.3.1. Conduct an in brief with customer POC, Communication System Officer (CSO), CSO representatives, BCE, and other vested parties. In brief agenda should include purpose and scope of the project, host base support required, and anticipated survey results.

4.2.3.2. Physically survey the facility to determine the best location for new C4 equipment. Coordinate with STEM-B, O&M maintenance, and BCE to verify equipment siting is compatible with existing and future plans and expansions.

4.2.3.3. For cable projects, request O&M maintenance assistance and physically assess condition and availability of manholes and cable ducts.

4.2.3.4. Collect and mark as-built drawings and/or CSIRs to indicated equipment locations and reserve space for new equipment. Develop new drawings, sketches, and diagrams as needed for inclusion in the PSA and project package.

4.2.3.5. Make note of and document any and all special requirements to aid in development of the PSA and project package.

4.2.3.6. Coordinate all host base actions with respective OPRs to include allied support, EMSEC requirements, Electromagnetic Compatibility (EMC), such as frequency assignments, and other unique support requirements.

4.2.3.7. Coordinate specific installation team support requirements, such as team chief access to the host base network; vehicle, tool, or test equipment support; suitable office space; tool storage or any other special requirements. Be sure to identify all requirements for inclusion of support information in the PSA.

4.2.3.8. Develop a PSA, Project Statement Of Intent (PSOI), or Project Letter Of Agreement (PLOA) IAW paragraph 4.2.5. of this Chapter. Obtain necessary signatures and provide a copy to the customer POC.

4.2.3.9. Conduct an out brief with the same parties who attended the in brief. Explain PSA, PSOI, PLOA content; identify allied support requirements and customer responsibility to reply within the specified time (normally 30 days). Provide customer with PM/WC name, telephone number, and E-mail address.

4.2.4. Site Survey Considerations and Requirements. An in-depth site survey is necessary to investigate and consider all factors influencing successful completion of the project. Important areas or factors are addressed below.

4.2.4.1. Equipment Location. Determine equipment location based on compatibility, future growth, use of existing construction, air space clearance, electromagnetic environment, and the environmental impact. The final choice of a site for a proposed C4 facility may require a compromise based on the base civil engineer environmental responsibility, economics, operational needs, security requirements, EMC, EMRH, and survivability. Be sure to consider all the above factors prior to selecting the location for installation of electronic equipment.

4.2.4.1.1. In selecting a location for equipment, be sure to consider established siting criteria, space availability, and the equi-potential ground system per latest issue of MIL STD 188-124C. Also consider planned or programmed utilization of space, arrangement of equipment, and any unique requirements as indicated in applicable technical references.

4.2.4.1.2. When necessary, verify equipment layout with the appropriate O&M work center supervisor personnel and select the most efficient implementation methods to minimize costs and preclude operation downtime. **Note:** Attachment 37 identifies actions the responsible O&M work center performs to support EI installations.

4.2.4.1.3. Annotate existing record drawings (CSIRs) with the new survey data and ensure those updated records are included in the PSA and the project package (if established CSIRs are not available, obtain as-built or as-installed drawings from BCE). Sketches may be used in

the PSA if insufficient time exists to process the record drawings for use with the PSA. If established CSIRs, as-built, or as-installed drawings are unavailable, the engineer creates new building, system, or equipment drawings using Bentley MicroStation software on a 1:1 scale, if possible.

4.2.4.2. Grounding. Grounding, bonding, and shielding of all C4 systems must be in accordance with MIL-STD-188-124C, MIL-HDBK-419A, *National Electrical Code (NEC)* and Technical Order 31-10-24. In case of conflicts, the MIL-STD is the governing document for facilities and installations.

4.2.4.3. EMC and EMRH Considerations. Investigate and determine EMC impact of the proposed installation and a description of all potential EMI both to and from other systems. Identify the predicted EMRH impact of the proposed installation with descriptions of all potential EMRH to personnel, fuel, handling operations, and to electro-explosive devices (EEDs).

4.2.4.3.1. Include EMC and EMRH considerations and controls required during installations and operations in every PSA. The EMC and EMRH impact descriptions should be based upon results of specialized studies, data from 738 EIS/EEE, Joint Spectrum Center, equipment manufacturers, standard drawings, etc.

4.2.4.3.2. Direct requests for specialized EMC and EMRH support to the 738 EIS/EEE. Any organization may request these specialized services. (See [Chapter 2](#) of this publication and TO 00-25-108)

4.2.4.4. High Altitude Electromagnetic Pulse (HEMP). When HEMP survivability has been established by the customer as an operational requirement it will be a primary consideration in facility engineering.

4.2.4.4.1. Survivability is defined as the degree to which a system is able to withstand a hostile environment (in this case HEMP) without suffering an abortive impairment of its ability to accomplish its designated mission. HEMP induced stress can cause electronic systems to malfunction due to circuit damage or upset.

4.2.4.4.2. When HEMP survivability is required it should be discussed with the customer early for technical and budgetary concerns. HEMP guidance is contained in MIL-STD-188-125A. The 738 EIS/EEE provides HEMP consulting services as well as acceptance and verification testing. Direct requests for support to 738 EIS/DOO.

4.2.4.5. Emissions Security (EMSEC). EMSEC precautions, such as Red/Black separation, must be considered when surveying for the installation of equipment used to process classified material. Address special shielding requirements against electromagnetic radiation for equipment and facilities by contacting the MAJCOM, host base EMSEC Officer. Refer to AFI 33-203, Emission Security. In addition, engineers involved with EMSEC projects should review AFQTP 2EXXX-202D, *EI Tempest Installation Handbook*.

4.2.4.6. Hazardous Materials. Determine what actions must be taken for the control of hazards discovered during the survey. Asbestos must be cleared by BCE as identified in the PSA. Avoid creating safety hazards by calling out unsafe materials.

4.2.4.7. Telecommunications. When engineering a facility that uses either on or off base transmission media to interconnect elements of the facility, identify the required performance characteristics of the supporting circuits in accordance with Defense Information Systems Agency (DISA)

Circular 300-175-9, DII Operating-Maintenance Electrical Standards. Required telecommunications testing and analysis may be obtained from 738 EIS/EEE.

4.2.4.8. Connection Approval (CA). Host nation connection approval may be required for interconnectivity of US government furnished equipment to both commercial point-to-point leased lines and public switched networks. CA requirements are identified in DISAC 310-130-1, Submission of Telecommunication Service Request, and DISA-DITCO Circular 350-135-1, Defense Communications Acquisition Procedures. In addition, domestic CA may be required in certain SIPRNET applications.

4.2.4.8.1. Identify CA requirements during the site survey

4.2.4.8.2. Include CA requirements in PSA, **Attachment 3**. The customer POC is responsible to coordinate and obtain local connection approval prior to project implementation.

4.2.4.9. Frangibility Requirements. Any projects involving Air Traffic Control and Landing systems (ATCALs) or any other types of equipment located within runway clear zones must meet frangibility requirements specified in civil engineering 32-series instructions. Coordinate frangibility design with host base or MAJCOM civil engineer functions.

4.2.4.10. Air Force Flight Standards Agency (AFFSA) Compliance. AFFSA performs geodetic desktop or on-location site surveys for all ATCALs installations. To ensure optimal operation, equipment must be positioned IAW with AFFSA survey results. Coordinate with your PM/WCP to obtain necessary AFFSA information for all ATCALs projects.

4.2.4.11. Networking Projects. For networking projects, use 38 EIG Handbook XX-02, First Four Hundred Feet, as the primary guide for engineering and materiel identification.

4.2.4.12. Fiber Optics. When surveying a fiber optic cable (FOC) project, use TO 31-10-34, *Standard Installation Practices, Fiber Optic Communication Cable and Connectors*, as the baseline document. If the TO does not provide guidance an industrial standard such as Telecommunications Industry Association/Electronic Industry Association (TIA/EIA) may be used. The following provisions also apply:

4.2.4.12.1. Electrical Fusion of FOC splices is the desired method of splicing both multi-mode and single mode FOC.

4.2.4.12.2. Mechanical splices may also be used in applications where installation speed is a factor, preformed pigtailed are called out, short FOC runs where increased mechanical splice losses are not a factor, or when specifically requested by the customer.

4.2.4.13. Confined Space Safety. When surveying a project which requires work in confined spaces personnel must strictly adhere to safe working procedures designed for the entry, working in, and exiting of confined spaces. All EI personnel must be conscious of the unusual hazards associated with confined spaces and understand that confined spaces are not designed for continuous employee occupancy.

4.2.4.13.1. During the survey, determine the availability of base emergency rescue capability and include such information in the project package.

4.2.4.13.2. Confined Spaces with Electrically Energized Parts. Before any work begins in manholes, vaults, hand holes, and communications closets they must be positively identified by utility type (communications, electrical power distribution, sewer, etc.).

4.2.4.13.2.1. If utilities are not positively identified, coordinate with host base ground safety and the appropriate host base organizations to establish positive identification. This will normally include BCE electrical shop, base communication unit, and the base fire department. Reference Air Force Occupational Safety and Health Standard 91-50, Chapter 4.

4.2.4.13.2.2. If a utility, such as a handhold, manhole, vault, or cable room is designated joint use with power in excess of 50 volts, certain safeguards must be in place prior to entry by EI personnel. Refer to OSHA Standard 1910, Subpart S, parts 301-303 and National Electrical Code 70 series. Be sure to identify joint use facilities in the PSA and identify any allied support required to be compatible with safety standards.

4.2.4.14. Technical References. During the survey identify in engineering notes all technical references required to install the project. Use Standard Installation Practices Technical Orders (SIP-TOs) as baseline documents. Other technical references, such as MIL standards, equipment TOs, National Electric Code, and various engineering standards may be used.

4.2.5. Survey Conclusion and Project Support Agreement (PSA): The PSA ([Attachment 6](#)) is a formal contract between the customer and the engineering unit. It outlines project information, specific engineering actions (equipment, siting, and installation and/or removal data), and the customer support requirements. If at all possible, the PSA should be left on site prior to departure. Note: If the PSA is to be left on site coordinate and finalize the PSA via E-mail with the PM/WC and unit releasing authority.

4.2.5.1. During the course of the survey use notes, sketches, and annotated drawings to develop the PSA foundation. Accurate documentation of site survey findings, clear and concise sketches and diagrams, and properly annotated drawings are indispensable to composing an encompassing PSA and developing a good, useable project package.

4.2.5.2. Coordinate, or have the customer POC coordinate, the left-on-site PSA with and obtain signatures from the support group commander or designated representative, the CSO, Plans and Implementation, and representatives from all organizations affected by the project (maintenance, installation support, BCE, etc.). Use the PSA [Attachment 5](#) concurrence template ([Attachment 11](#) to this publication) as necessary to expedite customer concurrence.

4.2.5.2.1. Establish a 30-day suspense date for customer reply indicating PSA concurrence or non-concurrence.

4.2.5.2.2. Upon return to home duty station, update drawings to reflect survey findings and provide a copy of the PSA to the PM/WCP for inclusion in the project folder.

4.2.5.3. If unable to leave a PSA on site, prepare a Project Statement of Intent (PSOI) and leave it with the customer. The PSOI ([Attachment 12](#)) briefly describes project requirements, tentative solution and support agreements, and an estimated time which the customer can expect the PSA. The PSOI serves as a preliminary coordination document that identifies equipment and facility reservations and support requirements. Provide a copy of the PSOI to the PM/WC for inclusion as an attachment to the subsequent PSA.

4.2.5.4. For projects limited in scope, the project engineer may determine a PSA is not appropriate to document site survey results. In such cases, instead of a PSA, a Project Letter of Agreement (PLOA) may be prepared (see [Attachment 13](#) for a sample PLOA).

4.2.5.4.1. The PLOA serves the same purpose as a PSA but on a reduced scale. It may identify host-base allied support requirements as well as other project requirements normally contained in a PSA.

4.2.5.4.2. If a PLOA is used, obtain the customer's signature on the PLOA before departing. Leave a copy with both the engineer's signature and customer's signature with the customer POC. Provide a copy to the PM/WC.

4.2.5.5. Following local unit procedures, distribute the PSA (or PLOA) through the unit PM/WC to the customer. Provide information copies to the STEM-B and host MAJCOM focal point. The customer POC is responsible to coordinate PSA actions conducted by other host-base activities.

4.2.6. PSA Format: Assemble all project and project support information into the PSA formats shown in **Attachment 6** through **Attachment 11** of this publication. The PSA letter identifies basic project information, PSA content, standard host base support requirements, implementation schedule dates, and the PSA processing data. The attachments further define specific project requirements, to include drawings and a concurrence template as indicated below:

- PSA Attachment 1 (**Attachment 7**) - Siting and Project Installation description and special instructions.
- PSA Attachment 2 (**Attachment 8**) - Identifies civil engineering support requirements.
- PSA Attachment 3 (**Attachment 9**) - Identifies C4 systems support requirements.
- PSA Attachment 4 (**Attachment 10**) - Contains the drawing list.
- PSA Attachment 5 (**Attachment 11**) - PSA concurrence template.

4.2.6.1. The PSA should be countersigned by the engineering section chief and internally reviewed by the assigned PM/WCP to ensure correct content and accuracy and make any corrections prior to release. PSA release should be accomplished IAW the EI unit administrative policy, e.g., release by the CC, flight commander, chief of engineering, PM/WC, etc.

4.2.6.2. Customer PSA Concurrence. Normally, project package development does not begin until customer concurrence is received. If concurrence is not received within the desired 30-day time frame, the PM/WC coordinates with the customer to resolve the delay and establish a new suspense date, if necessary. PSA concurrence may be expedited by using the PSA concurrence template (**Attachment 11**).

4.2.7. Additional PSA Requirements. Templates provided in this instruction may not contain each and every support facet required for the project. Below are areas that may need to be addressed or expanded in the PSA and PSA attachments:

4.2.7.1. LOM. Identify whether the customer or EI unit will order the LOM, LOM delivery point, and who or what function is responsible for safe and secure storage of equipment and materiel.

4.2.7.2. Installation Team Support. Spell out in detail installation team support requirements and when they should be in place so team is not delayed in starting the project.

4.2.7.3. Functional Tests. Ensure the PSA identifies customer responsibilities to jointly perform serviceability checks prior to equipment removal. Normally, O&M performs in conjunction with EI team.

4.2.7.4. Removals. Specify customer responsibility to obtain disposition instructions from the appropriate item manager for all removed equipment items.

4.2.7.5. Frangibility Requirements. For ATCALs installations ensure all frangibility requirements are addressed in PSA [Attachment 2](#), Civil Engineering Support Requirements, IAW 3-260-01, Unified Facilities Criteria (UFC).

4.2.7.6. Sketches and Diagrams. Annotate available CSIRs, as-built or as-installed drawings with the new survey data and ensure all drawings containing survey information are included in the PSA. Create sketches or drawings if CSIRs or other official drawings cannot be obtained or downloaded. If known, list on each sketch or drawing the CSIR number being modified.

4.3. Project Package Development and Format. A standard project package consists of a List of Materiel (LOM), installation or removal instructions, test procedures, drawings, and any other information applicable to the project action. The package is divided into two sections: Tab A and Tab B.

4.3.1. Tab A: Tab A consists of an AFMC Form 149, **C4 Systems Project Cover Sheet** and the List of Materiel (LOM). For instructions on how to complete AFMC Form 149 refer to [Attachment 14](#).

4.3.1.1. List of Materiel (LOM): Normally, the LOM consists of two sections. Section 1 lists end items of equipment required for the project. This is accountable equipment normally controlled by the Custodial Account/Custodian Receipt List (CA/CRL). Section 2 consists of all expendable materiel required for the installation. This is non-accountable materiel, such as cables, connectors, channel, nuts, bolts, etc. Section 1 is normally provided to the customer for acquisition. Section 2 may be procured by EI or by the customer.

4.3.1.1.1. Section 1 of the LOM is listed on a spreadsheet. Be sure to include the Item Number, Stock Number, Description, Unit Of Issue, Total Required, Unit Cost, Extended Cost, and Remarks. An example of LOM Section 1 is located at [Attachment 15](#).

4.3.1.1.2. Section 2 of the LOM is also listed on a spreadsheet and should include the Item Number, Description, Manufacturer Part Number, Unit of Issue, Quantity, Unit Price, Extended Cost, and Total Cost. Also include other information, such as Vendor Information, GSA contract number (if applicable), Ordering Official, and delivery point including Point of Contact information. A sample LOM Section 2 is located at [Attachment 16](#).

4.3.1.2. Identify by National Stock Number (NSN) all LOM equipment items or materiel to be procured through base supply. Identify non-accountable items or equipment procured from a vendor by the manufactures stock number.

4.3.1.3. Materiel Substitution. The project engineer must approve of all materiel substitutions. The team chief, customer, or vendor may request materiel substitutions. Substitution requests should be sent directly to the project engineer with info copy to the PM/WC. If necessary, the PM/WC will assist in the resolution of materiel substitution problems.

4.3.1.4. Towers, telephone poles, shelters, etc., are real property and should be identified as such by remarks in section 1 of the LOM. This will assist the team chief in determining the need to prepare DD Form 1354, **Transfer And Acceptance Of Military Real Property**.

4.3.1.5. Identify towers or hardware required to be embedded in concrete as part of the base construction in the remarks portion of LOM section 1. Note in the remarks section all materiel requiring installation by BCE prior to installation team arrival.

4.3.1.6. Do not list on the LOM test or support equipment authorized in Allowance Standard (AS) 713. Test equipment or special tools required for the installation should be identified in PSA **Attachment 3**.

4.3.2. Tab B Preparation: Tab B consists of the installation description, task instructions with associated lists, and attachments. Tab B must be prepared in sufficient detail to permit the installation of the project without further clarification. However, include only the information necessary to successfully complete the project.

4.3.2.1. Tab B Cover Sheet. The Tab B cover sheet is a table of contents identifying all other items contained within Tab B. Refer to **Attachment 17** when completing the cover sheet.

4.3.2.2. Tab B Installation Description and Special Instructions. Refer to **Attachment 18** for types of information in this section. Include any additional information relevant to the installation not addressed elsewhere in the package.

4.3.2.3. Tab B Drawing List. List all CSIRs, sketches, and diagrams on Table 1 drawing list as depicted in **Attachment 19**.

4.3.2.3.1. CSIRs. If available, engineers should always use established CSIRs. To locate applicable CSIRs search <https://wwwmil.tinker.af.mil/38eig/edsc>. If available, download and annotate with new system/equipment information. Annotated drawings then become engineering project drawings.

4.3.2.3.2. Establishing CSIRs. If established CSIRs, as-built, or as-installed drawings are unavailable then the engineer establishes building, system, or equipment sketches using Bentley MicroStation software on a 1:1 scale, if possible.

4.3.2.3.2.1. Adhere as closely as possible to conventions identified in 38 EIG Standard Computer-Aided Drafting Procedures and Reference Manual EGD.

4.3.2.3.2.2. Annotate each sketch with a drawing number IAW conventions contained in AFI 21-404, *Developing and Maintaining Communication and Information Systems Installations Records*, **Attachment 3** and **Attachment 4**.

4.3.2.3.2.3. Forward copies of sketches to 38 EIG/EDSC with brief explanation concerning development, lack of CSIRs, or other circumstances.

4.3.2.3.2.4. Instruct the team chief in the project package task instructions to provide copies of sketches and diagrams to customer POC or the base CSIR monitor.

4.3.2.3.3. Sketches and Diagrams. Sketches and diagrams that are not to become permanent records are especially useful to clarify instructions. Create sketches and diagrams to show cable runs between antennas and radios, layout of poles and antennas, building penetrations, identifying cable counts, depict specialized work such as panel fabrication, and a host of other situations. Include a list of sketches and diagrams on the Tab B Drawing List.

4.3.2.4. Tab B Publication List. As depicted in **Attachment 20**, list all applicable TOs, commercial manuals, and other documents needed to install, align, cutover, and test the installed system or equipment.

4.3.2.5. TAB B Special Tools and Test Equipment List. List any non-standard tools and test equipment required to install, align and test the system or equipment to be installed (**Attachment 21**).

The engineer must identify special tool and test equipment requirements to ensure their availability in time for project implementation.

4.3.2.5.1. Normally, EI authorized test equipment, as identified in Allowance Source (AS) 713, should be available in the unit and for the project. If unavailable but authorized, the EI unit may wish to procure the test equipment.

4.3.2.5.2. If not authorized or if the EI unit does not wish to purchase the test equipment, coordinate with the customer for equipment lease or purchase by the customer.

4.3.2.5.3. The same general procedures mentioned above also apply to acquisition of non-standard tools. However, tools are normally disposable items and usually purchased by the EI unit.

4.3.2.6. Tab B Task List. Depicted in [Attachment 22](#), the task list is used for large projects where performance of task sequence is crucial. When used, task lists should include installation references, technical orders, manuals, and drawings for each task performed.

4.3.2.7. TAB B Task Instructions. [Attachment 23](#) provides the format for task instructions. Task instructions should be clear and concise, and detailed enough for an inexperienced team chief to understand how each task is to be accomplished. Tasks should contain whole units of work based upon the type of project and should be presented in sequence to be performed.

4.3.2.7.1. Electronic Project Example. Individual tasks for an electronics project might include (a) lay out floor plan, (b) install cable ladder and cabling (c) install and configure racks, (d) install ground system and power, (e) install radios, and (f) test and align radios.

4.3.2.7.2. Cable Project Example. Individual tasks for a cable project might include (a) pretest cable, (b) rod ducts, (c) install and splice (cutover) cable, (d) perform final tests. Typically, cable task instructions are not as in-depth as electronic projects as most procedures are fairly standard and contained in SIPTOs.

4.3.2.7.3. When writing task instructions, do not repeat administrative, procedural guidance, or directions contained in any other documents applicable installation teams. If available and adequately covered in the TO or commercial manual, the task instruction should refer to the specific procedure by page and paragraph.

4.3.2.7.4. Publication references must call out specific sections to be used, such as chapter, paragraph, figures, and tables. The drawing references must identify drawing number, sheet number, revision, and appropriate specifications.

4.3.2.7.5. Task procedures are binding but the method of accomplishment is under the control of the team chief. In unique situations when standard methods cannot be accomplished, identify the preferred technique. This is only an advisory and the team chief may substitute methods for which he has assets and capability.

4.3.2.7.6. Make available to the team chief technical data referenced in the project package, such as commercial off-the-shelf manuals, company installation practices, catalogs, and brochures not available through government sources.

4.3.2.7.7. Be sure the task instructions identify any and all safety hazards along with specific procedures necessary to negate them.

4.3.2.8. Test Plan. Normally, the last task instruction identifies test procedures to be conducted. Test plan instructions must be clear and contain detailed procedures when necessary.

4.3.2.8.1. Identify and reference applicable TOs or commercial manuals for each test to be conducted.

4.3.2.8.2. List required specifications, criteria, or desired levels not included in TOs or commercial manuals.

4.3.2.8.3. Provide step-by-step procedures for complex tests.

4.3.2.8.4. Identify duration of test, such as: 48-hour operation of ASR with no false targets.

4.3.2.8.5. For cable projects, include copies of AFMC Form 159, Installation/Acceptance T-2, and AFMC Form 164, **Fiber Optic End-to-End Attenuation Test**, in the project package, as necessary.

4.3.3. Abbreviated Project Package. The depth and detail of a project package is driven by the project type and project complexity. Therefore, project package content can vary considerably. **Attachment 24** is one example of an abbreviated Tab B.

4.3.3.1. An abbreviated project package may be prepared when a full package is not necessary; such as for standard non-complex installations, removals, or re-locations. Normally, project packages may be abbreviated when there is sufficient information in technical orders, manuals, and drawings, to preclude additional task instructions.

4.3.3.2. Removals normally contain a short LOM, minimal task instructions, and special disposition instructions.

4.3.3.3. A relocation project may require two separate project packages if the reinstallation is at a different base or involves additional equipment or altered configurations. The EI chief of engineering coordinates with the assigned PM/WC to determine if one or two project packages are required.

4.3.3.4. Abbreviated packages, like regular packages, must contain sufficient information to successfully complete the project.

NOTE: Refer to **Chapter 5**, paragraphs **5.2.4.** through **5.2.7.6.**, Review Procedures, for additional information on project package content.

4.3.4. On-Site Engineering. On-site engineering usually occurs when insufficient time or information is available to develop a comprehensive project package. The on-site engineering project package is usually abbreviated with minimal information provided.

4.3.4.1. An on-site engineered project package must provide the team chief with a written test plan and adequate installation drawings, sketches, or diagrams.

4.3.4.2. When projects are on-site engineered, the team chief is solely responsible for the installation and administrative procedures. The on-site engineer supports and assists the team chief in the timely accomplishment of the project by providing technical expertise and problem solving.

4.3.5. Scientific and Technical Information. EI project packages are considered Scientific and Technical Information as defined in AFI 61-204, **Disseminating Scientific and Technical Information**. As such, AFMC Form 149, **C4 Systems Project Cover Sheet**, **Attachment 14**, contains a distribution statement, destruction notice, and export control notice. When disseminating separate portions of

a project package, the contents must be stamped with the same distribution statement, destruction notice and export control notice that appears on AFMC Form 149.

4.4. Project Package Review, Reproduction, and Distribution. Once completed by the assigned engineer, project packages should be reviewed internally by the engineering supervisor, an experienced team chief, and the assigned PM/WC. For specific project package review procedures, refer to **Chapter 5, paragraph 5.2.**

4.4.1. Unit QA may selectively review a sampling of project packages. The customer is also afforded an opportunity to review the package to ensure it meets original concepts. Any reviewer can recommend changes to which the engineer must respond, make valid changes, or otherwise modify and finalize the project package.

4.4.2. Customers initiate AF Form 1146 to recommend changes. Internal to the EI unit, AFMC Form 163, **Record of Corrective Action**, or plain bond paper is used to record project package corrective actions. A copy of the corrective actions is returned to the reviewer and a copy is filed in the project package.

4.4.3. Specific review procedures are established in each EI unit. Normally, the project package is sent to appropriate work center through the PM/WC who coordinates a review completion date with the reviewing section chief.

4.4.3.1. The team chief notes all discrepancies on an AFMC Form 150 (**Attachment 25**) and coordinates directly with the engineer to correct deficiencies. If the engineer and reviewer disagree on changes, the PM/WC sends the package to unit quality assurance for final resolution.

4.4.3.2. The reviewer ensures technical accuracy; compliance with standards, directives, and publications; completeness and accuracy of the LOM, and other areas as identified in paragraph **5.2.** of this publication.

4.4.3.3. In all cases, the object of project package review is to develop an accurate product, which will enable a speedy installation with minimum disruptions thereby delivering to the customer a quality product when promised.

4.4.4. Distribution. The number of project package copies and their distribution is based upon customer requirements and internal EI unit needs. Typical distribution is as follows:

4.4.4.1. One copy to the requiring MAJCOM headquarters. For Air National Guard projects, one copy to ANG/C4CE.

4.4.4.2. One copy to the appropriate base Communications-Computer Systems Officer (CSO).

4.4.4.3. One copy to the appropriate operating agency.

4.4.4.4. One copy to the responsible PM/WC w/o drawings.

4.4.4.5. Two copies with at least two full size base coded drawings (C-sized copies) to the performing installation unit. Annotate C4 Systems Project Cover Sheet to show "Full Size Drawings for Team Chief".

4.4.4.6. Other distribution as determined by local EI unit procedures.

4.4.5. Classified Project Packages. Segregate and mail classified portions of a project package under separate cover. Include a list of the unclassified portions of the project package being mailed separately.

4.5. Changes to In-Work Projects. Occasionally, during the implementation phase of a project, changes to the published package are required. Customers, team chiefs, or engineers may initiate project changes.

4.5.1. Customers and on-site team chiefs recommend changes by forwarding an AF Form 1146, **Engineering Change Request/Authorization (ECR/A)**, (see [Attachment 28](#)) to the assigned engineer. Normally ECR/As are sent back and forth via E-mail. ECR/As are numbered by the project designer, a two-digit ECR/A count number, and the date approved. The first ECR/A approved on 31 Jul 04 for project B244SC522 would be B244SC522-01-31 Jul 04.

4.5.1.1. If the ECR/A is approved, the engineer annotates the changes on the form and makes distribution to the same organizations listed on the project package's C4 System Project Cover Sheet. Frequently, engineers give verbal approvals to team chiefs. For verbal approvals, the team chief is responsible to obtain written confirmation from the engineer, usually via E-Mail.

4.5.1.1.1. The engineer may originate changes by preparing an ECR/A whenever the need becomes apparent. The engineer must coordinate all changes with the assigned PM/WC to obtain additional funding, if necessary.

4.5.1.1.2. All ECR/A entries should clearly indicate the specific change to the original package by referencing paragraphs, drawings, diagrams, etc.

4.5.1.1.3. The ECR/A is not used for TAB A changes. If additional LOM items are needed, the engineer develops a supplemental LOM and coordinates with the PM/WC to secure funding.

4.5.1.2. On-site engineering ECR/As must be documented in sufficient detail to support follow-on maintenance by O&M personnel and future engineering. The engineer annotates, signs, and dates a working copy of all documents affected by on-site changes and lists these documents as attachments to the AF Form 1146.

4.5.1.3. Engineering changes may direct pen and ink changes to the Tab B. Number and date of the changes should be posted to the project cover and the first page of the changed Tab B.

4.5.1.4. When changes involve replacing more than approximately 40 percent of the Tab B pages, the entire Tab B should be re-accomplished.

Chapter 5

EI TEAM AND PROJECT MANAGEMENT

5.1. General. This chapter provides guidance and assistance in the day-to-day management and supervision of EI teams. Team Chiefs, Section Supervisors, Project Managers/Workload Controllers (PM/WC), and other managers of EI resources are responsible for having a working knowledge of information in this chapter and related publications. **Attachment 1** is a list of abbreviations, acronyms, forms, publications, and preferences used in this and related publications. Refer to this Attachment as necessary for clarification.

5.1.1. Qualification of Supervisors and team chiefs.

5.1.1.1. Work center supervisors must successfully complete the EI Team Chief Academy.

5.1.1.2. Team chiefs will be trained, evaluated, and certified according to **Chapter 3** and **Chapter 6** of this instruction.

5.1.2. Team Chief Handbook.

5.1.2.1. This instruction, applicable AF 91-series instructions and applicable AFOSH Standards are required to be in the team chief handbook. The team chief should also have access (electronic or hard copy) to AFI 21-404, AFI 33-104, and any other applicable publications. The handbook may be electronic and loaded on the team chief's computer or all publications and documents placed in a binder.

5.1.2.2. A complete team chief handbook (disc/computer hard drive or binder) will be temporarily issued to each team chief for each job. On job completion, it will be returned to the publications control office for updating before reissue. Supplements and changes will be forwarded to team chiefs on extended TDY (over 30 days). On receipt, the team chief will update the publications set.

5.2. Project Package Review. The project package is a detailed implementation plan produced by the project engineer to fulfill a Command, Control, Communication, Computer, and Information (C4) project requirement. Each project package must be thoroughly reviewed to validate its content for completeness and accuracy and to correct all errors prior to publication and distribution.

5.2.1. The PM/WC ensures all Engineering Change Requests/Approvals (ECR/As), and any other changes to the project package are posted prior to the review process to ensure a complete, up-to-date package is available to the reviewer.

5.2.2. Specific content of a project package is prescribed in **Chapter 4** of this instruction.

5.2.3. Review Processing. The project engineer routes the completed project package to the PM/WC where it is reviewed for proper content. The PM/WC identifies the reviewing work center(s) and initiates and attaches an AFMC Form 150 to the project package. Review suspense dates, as established by local EI unit policy, are annotated on the AFMC Form 150 and the form and project package are then sent to the primary reviewing work center.

5.2.3.1. The EI unit section designated as project lead:

5.2.3.1.1. Conducts an initial review of the project package and document results of the review on the AFMC Form 150.

5.2.3.1.2. Forwards the project package for additional review and documentation of discrepancies to supporting work centers, if applicable. Coordinates with other reviewing work centers to validate and agree upon discrepancies and recommended changes.

5.2.3.1.3. Ensures all documentation is complete and accurate then returns the package to the assigned PM/WC.

5.2.3.2. The PM/WC examines review results for format accuracy and forwards review documents either to Quality Assurance for further review or the engineering activity to make necessary project package changes.

5.2.3.3. The engineering activity analyzes reviewers' recommendations, validates and makes appropriate project package changes, and formally documents on the AFMC Form 163, **Record of Corrective Action**, or plain bond paper, actions taken on each recommendation. Unresolved or disputed deficiencies should be referred to unit Quality Assurance for resolution.

5.2.4. Review Procedures. A project review is a systematic four-step procedure (inventory, familiarization, review and documentation) conducted to ensure the completeness and accuracy of the project package. Qualified team chiefs that have an Air Force Specialty Code (AFSC) compatible with the project commodity should conduct project package reviews. When more than one work center is involved in the project, the PM/WC will ensure all supporting work centers review their portion of the project package.

Table 5.1. Project Package Contents.

TAB A	TAB B
Project Package Cover	Cover Sheet (Table of Contents for Tab B)
List of Materiel	Installation Description and Special Instructions
Section 1 - Equipment (3080)	Drawing List
- Depot Level Repairable (3080)	Publication List
	Special Tools/Test Equipment List
Section 2 - Parts and Supplies	Task List
	Task Instructions
	Attachments to Tab B
	Test Plan/Test Forms (if applicable)
	Project Support Agreement (PSA)
	Endorsed PSA (EPSA)
	Drawing and Sketches

NOTE: LOM sections will be omitted if no requirement exists for materiel items.

5.2.4.1. Inventory is the first step of the review process. **Table 5.1.** shows the normal contents of a project package as described in **Chapter 4.** Use this outline to inventory the package. Use the

drawing list to determine if drawings and sketches provided with the package are the same as called for on the list. Check drawing numbers, sheet numbers, and revisions.

5.2.4.2. Familiarization, the second step, is reading the package to become familiar with the requirements of the project. The project title on the cover sheet identifies the type of project being reviewed. The installation description and special instructions page briefly describes the project. The task list identifies the major steps to be accomplished to complete the project. Becoming familiar with the project requirements defined in the task instructions will help in performing the rest of the review.

5.2.4.3. Review is the third step. Since each project has different requirements and different degrees of complexity, the time required to do a thorough project review will vary from project to project. Allow enough time to properly review the package. Performing a thorough review and identification of all deficiencies along with recommended corrective actions can eliminate the majority of implementation problems. Regardless of the type of job, a thorough review of any project package can be accomplished by following procedures identified below.

5.2.4.4. Documentation of review findings is the fourth and final step of the review process. Transfer review findings from notes made during review to AFMC Form 150 (**Attachment 25**), and if necessary for continuation, on AFMC Form 162, **Narrative**. Process the documents IAW with local unit procedures.

5.2.5. Tab A Review, Project Cover--AFMC Form 149. Although most of the general information listed on the project cover is relevant, some parts are more important to review.

5.2.5.1. The organization, Functional Address Symbol (FAS), name and DSN number, of the PM/WC, project engineer, and releasing engineer should be included. Also, the comment block may contain useful information for the reviewer.

5.2.5.2. Another area is the associated projects block, which identifies other projects associated with the project being reviewed. Associated projects are those that impact each other. For example, an installation of new equipment in an existing building may be dependent upon a removal project of some old equipment to make room. The associated projects block should contain information about how the projects affect each other with specifics on time phasing for implementation. Coordination may be required with other work centers designated to implement associated projects.

5.2.5.3. List of Materiel (LOM). LOM content is detailed in **Chapter 4**. It is a comprehensive list of all materiel and equipment required to complete the project. The importance of having the correct materiel called-out in sufficient quantity, and all materiel and equipment being readily available at the job site, cannot be overemphasized.

5.2.5.3.1. The LOM must be carefully reviewed and closely compared to task instructions, drawings, and any other project package information identified by the engineer. Materiel deficiencies in the LOM or any other project documents must be accurately identified along with recommended materiel changes or substitutions.

5.2.5.3.2. Cable and Inner Duct. Certain LOM items, such as cable and inner duct, are required in specific lengths. Having the correct length of these items is imperative to timely project completion. During project review, compare LOM lengths to the cable drawings and ensure the correct lengths have been called out.

5.2.5.3.3. Real Property. Towers and telephone poles may become real property when installed by EI teams. The team chief will coordinate with BCE on what will and will not become real property on the host base. These items should be identified in Section 1 of the LOM as "potential real property." Items to be preinstalled by allied support may also be identified in Section 1 as early shipment items.

5.2.6. Tab B Review. The Tab B cover sheet is a table of contents. Inventory Tab B to ensure all table of content items are enclosed.

5.2.6.1. Installation Description and Special Instructions. This portion of Tab B should provide a brief description of the facility to be installed, removed, or relocated and the work site location of the project to include building and room numbers, if appropriate.

5.2.6.1.1. If the project facility or equipment must be integrated into existing systems, the engineer should provide necessary sketches, drawings, or diagrams showing how equipment interfaces with the existing plant. There should also be a statement explaining the interface.

5.2.6.1.2. Work to be accomplished by other activities simultaneously with project implementation should be described in detail. The engineer should use this section to define requirements in the Project Support Agreement (PSA).

5.2.6.1.3. All special instructions to the team chief should be identified, especially unique safety requirements associated with the implementation. For removals, disposition instructions for removed equipment must be identified.

5.2.6.2. Tab B Drawing List. The drawing list (**Attachment 19**) contains drawing numbers, sheet numbers, revisions, and short title of all drawings required for project implementation. The list should itemize Communications Systems Installation Records (CSIRs), project drawings, PSA drawings, and sketches as referenced in the project package. If a task instruction references a drawing, the drawing must be listed and provided with the package.

5.2.6.2.1. PSA drawings provided with the project package may be for reference only. The team chief will use these to verify completion of host base and customer support requirements before starting the project.

5.2.6.2.2. When multi-sheet standard drawings are included in the project package, and if sheet 1 is called out, only sheet 1 revision is needed. If sheet 1 is not included, then each drawing must have the proper revision.

5.2.6.2.3. If standard drawings are included in the project package, the project engineer is responsible to cross reference the CAT numbers to indicate NSN, part number, or vendor number.

5.2.6.2.4. During both the inventory and review process, compare Tab B, Drawing List to the PSA drawing list. Ensure all drawings listed on the PSA drawing list are also listed on Drawing List and are on hand.

5.2.6.3. Tab B Publications List. The publications list (**Attachment 20**) is a comprehensive list of publications required for implementation. When a publication is referenced for usage in the package, the publication must be identified on this list.

5.2.6.3.1. Standard Installation Practice Technical Orders (SIPTOs), AFIs, and other publications common to EI projects need not be listed unless there is a specific reference to it in the project package. Commercial publications or installation manuals should be identified.

5.2.6.3.2. If commercial publications or manuals are not available through normal government publication sources, they must be provided to the team chief by the project engineer. The publications list should have notes explaining how these publications are to be furnished.

5.2.6.4. Special Tools and Test Equipment List. This list (**Attachment 21**) identifies all special tools and test equipment required for implementation. These are special tools or special test equipment not authorized in the Allowance Standard (AS) for an EI unit. Since these items may not be available in the unit support section, special attention must be given to ensure availability. These requirements will be identified to the work center supervisor and PM/WC to accomplish necessary coordination to obtain them. The list should also provide the function and purpose of these items and sufficient data to allow procurement.

5.2.6.5. Tab B Task List. The task list (**Attachment 22**) provides a breakdown of individual tasks. A task is a self-contained portion of the installation that can be completed independent of other tasks (e.g. rod ducks, install racks, etc.). The task list is an organizing aid to both the installer and engineer and is formatted in columns as follows:

5.2.6.5.1. Column 1 contains the task number beginning with 1, then sequentially through all listed tasks. If the project requires ten separate tasks, the task numbers would be 1 through 10.

5.2.6.5.2. Column 2 contains the sequence numbers assigned to each specific task. Sequence numbers indicate the order in which the task must be accomplished during implementation of the project. The same sequence number may be assigned to several tasks in a group, where the tasks within that group are performed simultaneously or where there is no preference for sequence of accomplishment. **Note:** The engineer may leave the sequencing up to the team chief. To do this a statement must be made in the Installation Description and Special Instruction section.

5.2.6.5.3. Column 3 contains the title of the task. It should include equipment types and floor positions, if applicable; for example, Anchor MT-686 Equipment Rack at FPI 1001.

5.2.6.5.4. Column 4 contains implementation references that explain where to find information necessary to perform the task. This may be a publication reference, drawing reference, or task instruction reference.

NOTE: If there is a single document (drawing, TO, commercial manual) that provides all the information necessary to perform a task and the form in which the information is presented is adequate without further elaboration or clarification by the engineer, then the task instruction should simply reference the document along with applicable pages and paragraphs.

5.2.6.5.5. Column 5 contains location information, such as building numbers, room numbers, site locations, and grid map locations.

5.2.6.6. Tab B Task Instruction. Task instructions (see **Attachment 23**, Task Instruction Format) are detailed implementation instructions that provide complete guidance to enable the team chief to accomplish the task. The publication references must call out specific sections to be used, such as chapter, paragraph, figures, and tables. The drawing references must identify drawing number, sheet number, revision, and appropriate specifications.

5.2.6.6.1. When reviewing task instructions, concentrate on feasibility of implementation. For example, if a task instruction reads "Assemble equipment racks IAW drawing LDBWS00931AD000, sheet 1, rev G, and anchor racks to concrete floor IAW TO 31-10-29, at floor positions 1121, 1122, and 1123 indicated on drawing SHCZB04002FP000, sheet 1, rev D," thoroughly analyze every aspect to determine if the task can be accomplished as follows:

5.2.6.6.1.1. See if TO 31-10-29 is on the publication list and referenced sections are clear and appropriate for the task.

5.2.6.6.1.2. See if referenced drawings are on the drawing list and are provided with the package. Check the assembly drawing for adequate instructions and to verify any required materiel items, which are not an integral part of the assembly, are included in the LOM.

5.2.6.6.1.3. Check the floor plan drawing to see if Floor Position Indicators (FPI) and other equipment location specifications are clearly marked.

5.2.6.6.1.4. Reference PSA, **Attachment 1**, Siting and Project Installation Data, and confirm spaces required for equipment installation are properly identified as reserved spaces.

5.2.6.6.1.5. Determine how many anchors are required by counting racks and number of anchors needed for each rack. Then ensure a sufficient number is called for in the LOM.

5.2.6.6.2. Another important area of the task instructions is the test plan. Test instructions must be clear, detailed procedures to include, but not limited to:

5.2.6.6.2.1. Test procedures to be conducted, including any special tests.

5.2.6.6.2.2. Specifications, criteria, or desired levels.

5.2.6.6.2.3. Step-by-step procedures.

5.2.6.6.2.4. Duration of test.

5.2.6.7. Tab B may have one or more attachments that must be reviewed to determine accuracy and affect on project implementation.

5.2.6.7.1. Test Plan/Test Data Sheets. If required, a test plan and test data sheets, such as AFMC Form 159, **Installation/Acceptance Testing T-2**, and AFMC Form 164, **Fiber Optic End-to-End Attenuation Test**, or other designs of test data sheets may be attached.

5.2.6.7.2. Test documents should be annotated with appropriate data and upon project completion become part of the facility records. A copy of test data is attached to the finalized AF Form 1261.

5.2.6.8. Abbreviated Tab B. For small, less complex projects, the engineer may elect to construct an abbreviated project package. **Attachment 24** depicts an abbreviated project package format. Review procedure methodology is the same as for a normal project package but not as time consuming.

5.2.7. Project Support Agreement (PSA). The PSA is a document prepared by the project engineer and sent to the host base requesting various types of support. It consists of a basic letter and several attachments that outline support required by the implementing activity in order to complete the project. The basic letter specifies appropriate attachments and general support requirements levied on the host base. The following outlines a typical PSA by area and identifies the sections to be reviewed

for impact on implementation: **Note:** For more detailed PSA information refer to **Chapter 4**, paragraph **4.2.6**.

5.2.7.1. Siting and Project Installation Data. This first attachment describes the exact equipment location such as base location, building number, room number, and placement of equipment as shown on floor plan drawings. Compare the location identified on the specified drawings to the reserved space described in this attachment. This attachment will also contain other equipment placement data such as waivers, limitations, restrictions, etc. This data should be reviewed for clarity and applicability to the project.

5.2.7.2. Civil Engineering Support Requirements. This attachment identifies support to be provided by host BCE. The primary areas to check are the requirements relative to supporting construction, (site work, exterior utilities, buildings, tower pedestals, cable ports, etc.).

5.2.7.2.1. If electrical power is to be installed in support of the project, verify adequacy of general power, technical power, and grounding considerations.

5.2.7.2.2. Another area to check is special services which identifies special items of support not covered elsewhere, including: cranes, water trucks, high reach vehicles, shop services (welding, machine, carpentry), trenching, landscaping, etc.

5.2.7.2.3. Check miscellaneous requirements such as building restoration actions, staking of buried utilities for proposed trenching routes, reservation of space in existing ducts and conduits.

5.2.7.3. C4 Systems Support Requirements. This third attachment is similar to BCE support requirements except it is directed toward the host base communications squadron. C4 requirements include information about circuits, leased equipment, frequency assignments, Telecommunications Service Requests/Telecommunications Service Orders (TSR/TSO) and climbing protection for tall structures. C4 support requirements may include the following:

5.2.7.3.1. References to COMSEC equipment installations should identify all applicable COMSEC and EMSEC considerations.

5.2.7.3.2. If test equipment is to be furnished by the customer during implementation, agreements made with the customer should be identified.

5.2.7.3.3. Downtime for existing operational equipment must be addressed. The engineer should have discussed this with the customer during the site survey and needs to include it in this attachment.

5.2.7.3.4. Staking or marking of buried cable and/or utility service for proposed trenching should be identified as a customer responsibility.

5.2.7.3.5. For removals, the customer is required to obtain disposition instructions for the removed equipment and a statement to this effect should be included.

5.2.7.3.6. If locally available command assets are being installed, statements about their availability and serviceability shall be addressed here.

5.2.7.4. PSA Drawing List. Attachment four identifies those drawings that may be attached to the PSA to provide siting data and specifications for construction. Information contained in the draw-

ings assist support activities in identifying support requirements. Compare drawing specifications, as referenced in various parts of the PSA, to determine applicability and accuracy.

5.2.7.4.1. All drawings attached to Tab B should be listed on the drawing list. This should have been previously determined during the inventory by comparing listed drawings to drawings actually provided. The accuracy of drawing specifications also should have been previously determined by comparing task instructions to drawing specifications as task instructions were reviewed.

5.2.7.4.2. In addition to specifications, check the drawings for clarity. Blurred, smeared, or unreadable drawings could create a problem during implementation.

5.2.7.5. The PSA basic letter also contains other general support requirements the customer POC is required to coordinate as identified in AFI 33-104. Review these items to ensure all support requirements are identified.

5.2.7.6. The PSA is a request for support and does not become a formal agreement until the host base responds with a concurrence letter or E-mail. Compare the concurrence document to the support requirements listed in the project package. BCE work order numbers and estimated completion dates should be cited for work to be completed by them. Additionally, any security clearances, Chemical Warfare Defense Equipment (CWDE), safety, and health hazards should be stipulated for implementing personnel.

5.2.7.7. Prior to transferring discrepancy notes to an AFMC Form 150, it's a good idea to discuss them with the engineer and PM/WC. Often many discrepancies can be immediately corrected or clarified without formal documentation; those that cannot should be listed on the AFMC Form 150.

NOTE: There are a multitude of situations facing a team chief on any given project. Paragraphs 5.3. through 5.14 identify many but certainly not all. Knowing what actions to take for any particular situation is an important element in being a successful team chief.

5.3. Safety and Health.

5.3.1. General Safety. Safety is the most important aspect of any job. The success of the team effort depends on strict observance of safety rules and regulations. All personnel must comply with safety regulations. Sound judgment is required in all situations where published guidance is not available or where conditions present situations wherein possible injury to individuals or damage to equipment may result. The supervisor's attitude toward safety is reflected in the approach the team takes in performance of assigned tasks.

5.3.1.1. Team chiefs **will not** participate in the actual work functions when hazardous work is being accomplished (such as rigging, raising towers, or erecting antennas). The team chief's full attention should be devoted to supervision and monitoring safety conditions. If the team chief cannot physically be available to supervise the entire operation, the most qualified team member will be appointed safety monitor.

5.3.1.2. Team chiefs will obtain a safety briefing and a safety kit prepared by the Unit Ground Safety Technician or designated representative. The minimum safety kit requirements are:

5.3.1.2.1. A first aid kit that is certified and inspected by base medical using AFTO Form 104 and accident reporting instructions with appropriate forms.

5.3.1.2.2. When traveling by military/GSA vehicle a spill kit, road flares and fire extinguisher as well as accident reporting instructions with appropriate forms.

5.3.1.2.3. Safety kit forms include AF Form 592, **USAF Welding, Cutting, and Brazing Permit**; AF Form 979, **Danger Tag**; AF Form 980, **Caution Signs**; AF Form 981, **Out of Order Tag**; Do Not Start Tag, and Warning Radio Frequency Hazard in accordance with AFOSH STD 91-45 and AFOSH STD 161-9.

5.3.1.2.3.1. Unit Commanders must designate team chiefs as tag-issuing individuals for tagging unsafe equipment

5.3.1.2.3.2. If assistance is required in preparing the accident-reporting forms, contact the host base safety office. Report all facts pertaining to accidents in detail to the host base safety office, the local communications unit, and the unit ground safety office.

5.3.1.2.3.3. If host base stand-by medical assistance is needed, include specific requirements in the notification of arrival (NOA) e-mail message.

5.3.1.2.3.4. When feasible a Lockout device must be used in conjunction with Danger Tags.

5.3.1.2.3.5. Record the use of lockout devices in the EI Team Chief Log.

5.3.2. Safety Briefings. Team Chiefs are responsible to conduct safety briefings prior to weekends, holidays, leaves, and prior to start of hazardous tasks. Discuss daily work to be performed, safety aspects of the overall job, potential safety hazards and establish procedures to avoid unsafe situations. Document these briefings by subject, in the EI Team Chief Log and perform the following:

5.3.2.1. Conduct a daily inspection of all equipment associated with the job to ensure serviceability and safety. Attach AF Form 979 to unsafe or unserviceable equipment and remove items from the job site. Return the defective item to the unit installation support flight for repair/replacement.

5.3.2.2. Ensure a safety equipment location is established before beginning work unless one is already present in the immediate area.

5.3.2.3. Ensure bailout alarms, telephones, non-tactical radios, or other means of direct communications with control tower personnel are available prior to beginning work in the vicinity of an active runway.

5.3.2.4. Coordinate with the host base safety office to determine classification of confined spaces. Ensure all safety precautions concerning confined spaces are adhered to in accordance with AFOSH STD 91-25.

5.3.2.5. Complete and process an AF Form 592 through the local base fire department prior to beginning any torch work, brazing or working on lead, or exothermic welding (reference: AFOSH STD 91-5).

5.3.2.6. Ensure temporary electrical wiring is installed in accordance with applicable standards.

5.3.2.7. Ensure all personnel are aware of the possible hazards associated with any fluid or oil leaking from transformers, capacitors, and diodes. This fluid may contain polychlorinated biphenyl (PCB) and is extremely hazardous to their health. Any leakage, to include vehicles, when sighted will be reported immediately to the host base bioenvironmental engineer or the base civil engineering environmental section. Do not disturb leaking fluid or the transformer. Do not handle

or transport any transformers or related communications equipment that contain PCB's or other hazardous materiel.

5.3.2.8. Coordinate with base environmental management for instruction on disposal of chemical waste material.

5.3.2.9. Report to Base Safety Office at the TDY location and receive a local safety briefing.

5.3.3. General Health. Team Chiefs must be aware of team members mental attitudes as well as their working and living conditions to avoid any adverse impact on team performance or effectiveness. Team Chiefs will direct any member to leave the work site when in the team chief's opinion, his or her performance or mental attitude is not conducive to job requirements.

5.3.3.1. Quarters. On arrival at the work location, the team will report to the host base billeting office for assignment of quarters. Base quarters should conform to AFI 34-246. Team members should be quartered in close proximity to maintain team integrity. AFI 34-246 specifies group travelers will be billeted as a group either on or off base.

5.3.3.1.1. When authorized to reside off base under quarters non-availability status, work with billeting personnel to select off-base accommodations for team members. Give consideration to the security of personnel, equipment and vehicles, and distance from the job site when selecting quarters.

5.3.3.1.2. If problems are encountered in obtaining adequate quarters, messing facilities, etc., coordinate with the customer POC to rectify the problem through the chief of base services. If not resolved, notify your PM/WC.

5.3.4. Medical Treatment Overseas in non-US medical Facilities. If necessary, get assistance from an interpreter. If the charge for medical or dental treatment is nominal, the team member may make payment with personal funds. If the team member pays the doctor, an itemized receipt is to be obtained; then, on return to home station, the bill or receipt should be submitted to the resource management office at the Air Force medical facility for reimbursement. Ensure all medical treatment and medications administered are documented by medical personnel and ensure the team member has a copy to place into their medical records.

5.3.5. Reporting On-the-Job Injuries.

5.3.5.1. Immediately notify the local safety office and home unit supervisor or safety POC of any accident and assist in any resulting investigation.

5.3.5.2. Fatality. If a fatality occurs, immediately notify the nearest military mortuary officer, parent unit, and customer. Base authorities and the parent EI unit will provide necessary guidance in such matters.

5.3.5.2.1. Completely secure the area and summon assistance.

5.3.5.2.2. Notify the parent unit and provide name and grade of deceased; name of witnesses; date, time, and location of occurrence; and any other necessary details. Notify the nearest Air Force medical facility.

5.3.5.2.3. Obtain a receipt and the address of the storage place if civilian or foreign military authority removes the body.

5.3.5.2.4. Contact the nearest US Consulate office, the Air Attaché office, or US Embassy for assistance if in a nation where there are no US military installations.

5.3.5.2.5. Do not attempt notification of next-of-kin of the deceased or discuss details of the incident with news agencies.

5.4. Transportation and Travel.

5.4.1. Government/GSA Motor Vehicles: EI unit vehicle operations is responsible to provide trip kits IAW AFI 24-301, Transportation, and Vehicle Operations.

5.4.1.1. Vehicle Inspections: When government motor vehicles are to be used, ensure that a thorough inspection of each vehicle is performed and documented before departure, during operation, and after return to home station using AF Form 1806, **Operator's Inspection Guide and Trouble Report (Special Purpose Vehicles)**, and AF Form 1800, **Operator's Inspection Guide and Trouble Report (General Purpose Vehicles)**.

5.4.1.2. While at the work location, ensure a daily operator inspection is performed prior to use of each vehicle and that inspections are properly documented.

5.4.1.3. On the first day of each month while TDY, the team chief annotates the current months AF Forms 1800 and AF Forms 1806 with appropriate data (deferred work order numbers, etc.).

5.4.1.4. Return completed forms for the previous month to the EI unit motor vehicle section.

5.4.1.5. Operator Maintenance. Vehicle operators are responsible for organizational maintenance IAW AFI 24-301.

5.4.1.6. Operation and Controls. Vehicles such as tractor-trailers cable reel trucks, and low profile line trucks require two qualified drivers for extended trips beyond the local area. The unit commander determines the number of personnel required in vehicles such as pickups, six-passenger cargo types, and 3/4 and 1-ton telephone maintenance trucks. Inclement weather, hazardous driving conditions, and type of cargo should be considered before departure.

5.4.1.6.1. Government motor vehicles will be operated IAW AFI 24-301.

5.4.1.6.2. All commercial services purchased will be in accordance with Government Vehicle Operations Pamphlet provided with vehicle trip kits. Substantiate purchases with a copy of the service station delivery receipt. Mail purchase receipts to the parent organization IAW unit policy. **Note:** When purchasing gasoline for government vehicles from commercial services stations, use the lower-cost self-service pumps.

5.4.1.6.3. When expending funds for government vehicle parts or maintenance from a commercial source while en-route to or from a TDY location, obtain two copies of receipts. Immediately send one copy to the parent EI unit support flight for processing. The team chief keeps a record copy.

5.4.1.6.4. Government-owned or leased vehicles will only be used in support of mission requirements. When TDY, personnel are authorized to use government-owned or leased vehicles for travel between the job site, quarters, and the dining facility. When public transportation is not available or its use is impractical, government-owned or leased vehicles may be used after duty hours consistent with the provisions of the JFTR, Volume I; JTR, Volume II; and AFI 24-301.

5.4.1.7. Vehicle Security. When government quarters are used, park government-owned or leased vehicles in safe locations, such as TDY location transportation compound, lighted areas, or near the quarters of the vehicle drive. When commercial lodging is used:

5.4.1.7.1. Secure all high-value pilferage-type items (test equipment, electronic components, etc.) in the vehicles or move them inside quarters with the team.

5.4.1.7.2. Secure and park vehicles in a well lighted, patrolled area, if possible.

5.4.1.8. Vehicle Support. Contact the EI unit PM/WC or installation support flight vehicle section, by telephone or e-mail, when deferred maintenance and parts are required.

5.4.1.8.1. EI vehicle control will provide the work order number to the team chief.

5.4.1.8.2. Some vehicle maintenance actions are scheduled in advance. EI unit vehicle control must notify the team chief who, in turn, must make arrangements to have the scheduled maintenance performed at the TDY location.

5.4.1.8.3. Maintenance Priority. AFI 24-301, establishes the vehicle maintenance priority system which expedites the maintenance of mission essential vehicles. : Obtain the highest priority maintenance as follows:

5.4.1.8.3.1. Determine the number of vehicles, by type, necessary to be in service at any one time to ensure mission accomplishment. Vehicles in transient status normally receive a routine maintenance priority IAW AFI 24-301; however, the host base vehicle maintenance officer can assign a priority 1 for any vehicle on a one-time basis.

5.4.1.8.3.2. Request priority 1 maintenance service when the normal routine priority will not return the vehicle to a serviceable condition in sufficient time to prevent mission impact.

5.4.1.8.4. Maintenance of Special-Purpose Vehicles. The team chief must ensure special-purpose vehicles and trenchers are adequately cared for and maintained at the TDY location. Use EI unit provided trip kits to perform operator maintenance. Ensure required operator maintenance is performed daily, following procedures outlined in vehicle technical manuals or TOs.

5.4.2. Commercial Transportation. Team chiefs are responsible to complete the following actions:

5.4.2.1. Check with the travel section and verify the Transportation Request (TR) is annotated to reflect any authorized excess weight.

5.4.2.2. Ensure all team members are familiar with, and comply with, customs requirements IAW DODR 5030.49 and the USAF Foreign Clearance Guide.

5.4.2.3. Determine and comply with the prescribed traveling uniform regulations.

5.4.2.4. Ensure team members have passports, if required.

5.4.3. Military Air. When flying military air, team chiefs have the following responsibilities:

5.4.3.1. Verify adequacy of piece and weight allowance as authorized in special orders for both accompanied and unaccompanied baggage, including authorized excess accompanied baggage.

5.4.3.2. Verify accuracy of piece and weight allowance as authorized in special orders for tools and test equipment. Request any changes needed through the work center supervisors.

- 5.4.3.3. Obtain Military Transportation Authorization (MTA) and verify that the MTA authorizes any required excess weight.
- 5.4.3.4. Find out where and when equipment will be loaded aboard the aircraft and by whom.
- 5.4.3.5. Find out and follow-up with the prescribed travel uniform regulations.
- 5.4.3.6. Arrange for in-flight lunches, if applicable.
- 5.4.3.7. Find out flight schedules, reporting time and place and advise team members accordingly.
- 5.4.4. Travel by Privately Owned Conveyance (POC). Brief the following information to team members traveling to and from job sites by POC:
 - 5.4.4.1. Advise team members of their responsibility to have adequate funds to cover minor emergencies as well as normal expenses.
 - 5.4.4.2. Explain allowable travel time by common carrier and the latest permissible reporting time at the destination following good safety practices.
 - 5.4.4.3. There must be sufficient drivers to return all military vehicles to home station. The privilege of using their POCs shall not interfere with the EI mission.
- 5.4.5. Return to home station prior to project completion.
 - 5.4.5.1. Personnel may return to their residence on non-duty hours/days IAW JFTR, Volume 1, with prior approval of the team chief. Distance involved, weather conditions, job requirements and safety factors must be considered when granting permission to travel. The performance of official duty while in the area of their home duty station will terminate their TDY status unless a return trip is authorized in their initial TDY travel orders or by subsequent amendment.
 - 5.4.5.2. Returns within the metropolitan/local area of home station on non-duty days must be annotated on travel vouchers. The metropolitan/local area differs for each geographical location. Prior to departure, check with the base finance office for guidance.
 - 5.4.5.3. Individuals returning to home station will be reimbursed based upon least cost to the government. For example, individuals will not be paid more in combined travel and per diem than the per diem rate at the TDY location.

5.5. E-Mail Communications. E-mail. Written communications should be accurate, clear, concise, and correctly addressed. Ensure all E-mail complies with the following guidelines:

- 5.5.1. Be sure to use proper protocol when addressing your E-mail by listing addresses in order of rank, i.e., Major before Captain, Chief before MSgt etc.
- 5.5.2. Info E-mail copies should be sent to your PM/WC, and customer POC. Depending upon the E-mail subject, information copies to the project engineer and STEM-B may also be appropriate.
- 5.5.3. The E-mail subject line should always include the project number and short title of the project, e.g., Project Identification Number (PIN) AG001234, Ajo Radio Relocation.
- 5.5.4. The first line of E-mail text should be prefaced by "TEAM CHIEF SENDS: followed by the E-mail topic, e.g., "Request for QA Evaluation," "Anticipated Work Stoppage," "Materiel Discrepancy," etc.

5.5.5. The second line of E-mail text should reference previous correspondence or telecons, e.g., REF: 23 Jan 01 telecon with STEM B Jake Foster.

5.5.6. It's a good idea to sequentially number the E-mail body paragraphs. This will add clarity and prevent readers from misconstruing E-mail content and purpose.

5.5.7. The final numbered line of the E-mail body identifies the POC as in this example: POC: SSgt Billy Phipps, 241 EIS Team Chief, DSN 247-1010.

5.5.8. Be prompt in sending out important project information! Anticipated work stoppage E-mails should be generated as soon as any situations which could halt or slow down a project become known.

5.5.9. Hard copies or a disc of all E-mails, memos, and other correspondence should be placed in the project folder for future reference.

5.6. Contingencies and Incident Reporting.

5.6.1. Labor Disputes. The team chief will immediately report to the supervisor any information concerning possible or threatened objection to the EI team's presence or any other labor dispute that may affect government agencies or DOD.

5.6.2. Disasters, Civil Disorders and Incidents. EI teams should avoid known disaster areas. The team chief will:

5.6.2.1. Render all possible assistance if local authorities request assistance in cases of a natural disaster or emergency situation.

5.6.2.2. Notify the parent unit as soon as possible by the most expeditious means available if detained by local authorities or if the team becomes involved.

5.6.3. Command Incident Reporting (CIR). Immediately report any serious crimes or incidents involving team members while TDY to the host unit, parent unit, and local authority.

5.6.3.1. Handle CIRs as a confidential matter.

5.6.3.2. Report incidents involving foreign governments to the nearest American Embassy, Consulate, military mission, or installation when traveling in or through a foreign country.

5.6.4. Wartime Contingencies. When deployed via formal Unit Type code (UTC) orders, EI teams are directly assigned to the theater commander and are subject to full control by the local communications squadron commander. This may include duty assignments, detail to other work, and extension of TDY duration.

5.6.5. Property Damage. The team chief will immediately report the circumstances to the proper local authorities and to the parent unit and provide:

5.6.5.1. Name and address of the property owner.

5.6.5.2. Date, time, and location of the incident.

5.6.5.3. Names and addresses of witnesses, if any.

5.6.5.4. A detailed narrative of circumstances leading to the cause of damage.

5.6.5.5. A description of the damage.

5.6.5.6. An estimated cost of the damage.

NOTE: At no time admit fault if involved in an accident with a government or commercially leased vehicle.

5.6.6. Cable or Utility Damage. If a communications system cable, electrical power line, or other utility is damaged, the team chief immediately notifies the assigned 24-hour contact point or host base communications unit Job Control at the TDY location and provide details of the damage. The team chief also contacts the EI unit PM/WC and records the following incident information on AFMC Form 165, **Utility Cut/Damage Report**.

5.6.6.1. Date and time of cable or utility damage.

5.6.6.2. Cable or utility involved.

5.6.6.3. Identify cable by number, size, type, gauge, and counts affected.

5.6.6.4. Type of utility if other than communications cable.

5.6.6.5. Critical circuits or services affected (if known).

5.6.6.6. Assistance required (materiel and/or personnel).

5.6.6.7. Estimated restoration time and date.

5.6.6.8. Brief and concise details (including information on AF Form 103, **Base Civil Engineering Work Clearance Request**, cable markers, etc.) regarding corrective action being taken.

5.6.6.9. Project number.

5.6.7. Anticipated and Actual Work Stoppages. Submit anticipated work stoppage E-mails as soon as practical and work stoppage messages the day prior to the actual work stoppage. Include the following plus any other pertinent information:

5.6.7.1. Anticipated or actual work stoppage date.

5.6.7.2. Situation causing the anticipated or actual work stoppage.

5.6.7.3. Action taken to date to resolve cause.

5.6.7.4. Further action needed to resolve cause.

5.6.7.5. Impact of work stoppage in terms of days and dollars (if known).

5.6.7.6. Recommend disposition of team (return home, perform other work, etc.).

5.6.8. Notification. Prepare and send an E-mail containing applicable information in paragraphs **5.6.5.** through **5.6.7.** above to the EI unit PM/WC, section chief, and installations officer (follow protocol in **paragraph 5.5.**). Send information copies to the customer POC, and MAJCOM POC (if known). For cable cuts, attach a copy of the completed AF Form 165.

5.7. Local Purchase and Requisitioning of Contract Services, Rental, and Supplies. There are several methods of obtaining services and supplies available to the team chief while deployed to the job site. These methods involve the use of AF Form 616, **Fund Cite Authorization; International Merchant Purchase Authorization Card (IMPAC)**, AF Form 9; **Request for Purchase**, and AF Form 15, **USAF Invoice**.

5.7.1. AF Form 616 (DFAS-DER 7010-1). AF Form 616 provides the authority for the team chief to expend funds for contractual services, rental of equipment and purchase of supplies exceeding \$2,500.

5.7.1.1. Prior to departing TDY to the job site, the team chief should identify known contractual requirements, such as crane or trencher rental (with or without operator) to the PM/WC or unit resource advisor. After obtaining personal and specific job information from the team chief or PM/WC, the unit resource advisor will generate an AF Form 616 with a fixed dollar value and an effective and expiration date.

5.7.1.2. If required while at the TDY job site, the dollar value of the AF Form 616 may be increased; likewise the expiration date may be extended if necessary. The AF Form 616 may be hand-carried, mailed or electronically transferred to the team chief and the or customer POC.

5.7.1.3. The team chief uses the AF Form 616 at the job site for authority to initiate AF Form 9 to request contract services through base contracting. The team chief lists each obligation document issued against the AF Form 616 fund cite by number, date, and dollar amount obligated. The most common obligation document is SF Form 1449, **Solicitation/Contract/Order for Commercial Items**. Do not initiate an AF Form 9 for any purpose not specifically identified on the AF Form 616. Contact your unit resource advisor for any new requirements.

5.7.1.4. When all obligations authorized by the AF Form 616 are completed, the team chief enters obligation information on back side of the form followed by the statement: "The record of entries is complete." The form, along with all obligation attachments, are returned to the unit resource advisor by mail or hand-carried if project is complete.

5.7.2. IMPAC. The IMPAC card is used by the team chief (or the customer POC) to locally purchase project materiel, small equipment items, repair of equipment and vehicles, and rental valued up to a maximum of \$2,500 per transaction. The IMPAC card is the preferred method of obtaining necessary support items both in station and at the TDY location.

5.7.2.1. The unit resource advisor monitors and controls use of IMPAC cards by issuing control numbers before the team chief deploys or a separate control number is issued before each individual purchase is made. As such, the team chief must coordinate with the resource advisor prior to departing on a project. While individual EI unit procedures may vary, it's important each team chiefs knows precisely when and how to coordinate IMPAC purchases with their unit resource advisor.

5.7.2.2. If a team chief does not have access to an IMPAC card, coordinate with the unit resource advisor and or customer POC prior to departure to establish the method of locally purchasing project materiel. Depending upon the method of project funding, it may be necessary to transfer funds to the customer so they can locally purchase materiel to support the project. Alternately, the customer may agree to use their own IMPAC account to purchase materiel as needed.

5.7.3. AF Form 9, AFI 64-109 (see [Attachment 26](#)). The AF Form 9 may be used when an AF Form 616 has been issued to purchase contractual services, such as a crane or trencher (with or without operator) or supply items that cannot be obtained through base supply or from a single vendor when the cost totals over \$2,500.

5.7.3.1. AF Forms 9 are prepared and submitted electronically by the customer POC or customer resource advisor. The team chief is responsible to manually draft the form and provide all necessary information to the submitter.

5.7.3.2. Submission of the AF Form 9 should result in base contracting letting a contract with a commercial vendor. The contract is documented on SF Form 1449. Be sure to forward an informa-

tion copy of the 1449 to your unit resource advisor as it becomes a record of obligation against the AF Form 616 fund cite.

5.7.4. AF Form 15 (see [Attachment 27](#)). The AF Form 15 is used for emergency procurement of supplies or services; usually to prevent a work stoppage. Types of procurement include emergency material purchases, rental of equipment without operators, rental of tools, and certain contract services.

5.7.4.1. Use of AF Form 15 should only be considered when an IMPAC card is unavailable or prohibitive because the requirement exceeds \$2500 or an AF Form 9 cannot be processed in a timely manner.

5.7.4.2. Like IMPAC cards, AF Forms 15 are monitored by your unit resource advisor and controlled by issuing a control number. Prior to initiating this form, contact your supervisor and resource advisor for consideration of other options or permission to use the form and issuance of a control number.

5.7.4.3. If a vendor agrees to accept the AF Form 15, follow the guidance in [Attachment 27](#), complete the form in five copies; leave two with the vendor and return three copies, along with the bill of sale, to your unit resource advisor. Be sure the correct and legible control number is entered on the form.

5.7.4.4. When expenditures are expected to exceed \$2,500, use of the AF Form 15 must be approved by the base contacting office. Again, the preferred method of obtaining support equipment or services that exceed \$2,500 is the AF Form 9; determine if this form can be quickly processed before using the AF Form 15. Do not maintain an "open account" Form 15. An individual AF Form 15 is required for each separate purchase.

5.7.5. Team Chief On-Site Procurement Responsibilities. Regardless of the method used to procure supplies, equipment, or services, the team chief is obligated to ensure accurate descriptions of need and proper delivery of the products or services requested.

5.7.5.1. Be sure to provide the contracting officer (customer POC, or vendor) with accurate information of the work to be performed or equipment to be purchased, required specifications and drawings, type of equipment required, date equipment is needed, and duration of rentals. Remember, for AF Form 9 transactions or other requests involving base contracts, the contracting officer is the only individual authorized to negotiate with the contractor. The team chief is not authorized to direct the contractor to perform any task not in the contract.

5.7.5.2. Always attempt to project contractual requirements well in advance. If contracting needs are known before departure, request the customer POC coordinate with base contracting as necessary to have the contract in place prior to arrival. This can save time and prevent job delays. **Always** coordinate all actions involving obligation of funds with your unit resource advisor.

5.7.5.3. When coordinating AF Form 9 initiation with the customer POC, or resource advisor, the team chief should consider and ensure special provisions are identified and included in the contract (SF Form 1449). Provisions may include (a) the contractor starting work only when notified by the team chief through the contracting officer, (b) appointing the team chief as Quality Assurance Evaluator (QAE), or (c) having the contractor replace sod, repaint, cleanup, etc. Each project may offer its own special set of circumstances; be sure they are identified early on and included as necessary in the contract.

5.7.5.4. Team chiefs must ensure contractual obligations are delivered in time and meet all contract specifications. Accomplish this by closely monitoring contractor performance and reporting discrepancies to the customer POC or the contracting officer. Obtain and carefully review a copy of the contract to ensure all services are performed as specified. Timely delivery of contract services and procurement in the correct amounts of project materiel and supplies all contribute to providing an on-time quality product to the customer.

5.8. Engineering Change Request/Authorization (ECR/A), AF Form 1146, ECR/A ([Attachment 28](#)).

5.8.1. If changes to the installation instructions project package or the drawings are required and the engineer is not on site, the team chief will submit an original AF Form 1146 (or use a message or FAX in the form's format) to the appropriate engineering activity. Forward an information copy to the responsible PM/WC, the host base communications unit customer POC, and retain one copy for your records.

5.8.2. Attach sketches, if appropriate, to the original copy of the ECR/A to explain the proposed change. Complete items 2 through 6. Show any change in man-hours or materiel required along with information concerning local availability of materiel in block 6.

5.8.3. In an emergency or if a work stoppage is imminent, contact the engineer by telephone, e-mail, FAX, or message; and notify the appropriate EI PM/WC and the work center supervisor. Provide all information normally required on the ECR/A. If you contact the engineer by telephone, you must immediately follow-up with a message or FAX in AF Form 1146 format. Telephonic approval of an ECR/A from the engineer is authorized.

5.8.3.1. If the security classification of an ECR/A e-mail is in question, contact the host security officer for guidance prior to transmission.

5.8.3.2. DO NOT, under any conditions, proceed with any change to project specifications until you have received an approved ECR/A, FAX, or E-mail in ECR/A format.

5.8.3.3. Any changes by the customer will be processed using AF Form 1146 during project PSS and/or implementation.

5.8.3.4. If no man-hours or materiel are required, place the following statement in block 6: "no additional man-hours or materiel needed."

5.8.4. The team chief will not accept blanket authority from an engineer to make changes to the project.

5.8.5. On-Site Engineering. When on-site engineering is performed, it may become necessary for changes to be made to the project drawings or installation instructions. The engineer prepares AF Form 1146 documenting the action, and annotates and signs affected drawings or instructions. The engineer should also annotate all associated documents and resolve technical problems.

5.8.6. Documenting ECR/A Changes to a Project Package.

5.8.6.1. Project package recipients will make the appropriate pen and ink and page changes to Tab B. Post the number and date of the ECR/A on AFMC Form 149, Tab B cover page, and the affected section of Tab B, and appropriate drawings.

5.8.6.2. For telephonic approval of engineering changes, document the Engineering Installation Team Chief Log and drawings (revision block area) by indicating ECR/A number, engineer's name, date of approval, and specifications to be changed.

5.9. Augmentation. Whenever personnel are assigned to augment an EI team, the team chief will integrate personnel into the team and render them all guidance, training, and support provided to other members of the team.

5.9.1. Augmented activities are responsible for operational control of augmenters.

5.9.2. Team chiefs are responsible to keep the augmenters' parent unit informed of their status. Provide the following information to each augments' parent unit, the team chief's unit, and the PM/WC via E-mail or telephone:

5.9.2.1. Name, grade, and AFSC.

5.9.2.2. Arrival and departure information.

5.9.2.3. Billeting location.

5.9.2.4. Team chief's name and contact number or E-mail address.

5.10. Team Chief Replacement.

5.10.1. When team chief replacement on an active project is necessary, the departing team chief thoroughly briefs the host base customer POC on project status prior to departure.

5.10.2. The departing team chief also briefs the replacement on current job requirements and progress, to include:

5.10.2.1. All job-related documents turned over to the new team chief.

5.10.2.2. All accountable items transferred to the new team chief on AF Form 1297, **Temporary Issue Receipt**, or other acceptable accounting means.

5.10.3. If the departing team chief must depart before the replacement arrives, a temporary team leader must be appointed from among the remaining team members. All job-related documents and accountable items are given to the temporary team leader and turned over to the new team chief upon arrival.

5.10.3.1. If the temporary team leader is not team chief certified, a certified team chief must be deployed as soon as possible to assume leadership of the team.

5.10.3.2. If the temporary team leader is a team chief nominee awaiting initial evaluation and the remainder of the job is sufficient for certification, another team chief need not be deployed. The appropriate work center supervisor has the responsibility and authority to make this determination through the installations flight commander.

5.10.3.3. Document the team chief replacement on the original EI Team Chief Log.

5.11. Leaving a Project Before Completion. If it becomes necessary to stop work prior to project completion, accomplish the following actions:

5.11.1. Secure equipment and materiel before leaving the job sites.

5.11.2. Take photographs of partially installed, removed, or relocated equipment to verify its condition prior to departure.

5.11.3. Annotate drawings and work statements to reflect work completed. Jointly inspect all completed work with the customer to determine condition. Put your name and the date you are leaving the job site on all working drawings.

5.11.4. Prepare a Letter of Custodial Agreement (LOCA) between you and the customer (See [Attachment 38](#), Sample).

5.11.4.1. Include an estimated date for resumption of the project. Contact your supervisor for guidance on making this determination.

5.11.4.2. You and the customer's representative (usually the customer POC) will sign the LOCA. Leave one copy of the LOA, project package, and drawings with the customer.

5.11.4.3. File one copy of the LOCA in the project folder.

5.11.4.4. Package all materiel not installed and provide the host base or customer POC with a current inventory.

5.11.5. The customer POC arranges for or provides protection for partially installed equipment, installation team tools, and equipment left on site IAW AFI 33-104. All equipment and supplies will be transferred (use AF Form 1297) to a representative designated by the customer POC and will be released only on written approval of the RPO.

5.11.6. Include a complete narrative report on the Team Chief Log on the status of uninstalled materiel and equipment for the project.

5.11.7. Return 2 sets of drawings, the project package, all correspondence, and the Engineering Installation Team Chief Log to your unit PM/WC.

5.11.8. Upon return to the job site, make a 100% item-by-item re-inventory.

5.12. Customer Use of Equipment Prior to Project Completion. If, prior to project completion, the customer has a requirement or operational need for a piece of equipment or portion of the installed project, prepare a Letter of Agreement (LOA) identifying the equipment by serial number if available; if not, provide a description.

5.12.1. List Specific Test Data. Include a statement of acceptance by the customer for custodial and maintenance responsibility. The team chief and the customer POC both sign the LOA.

5.12.1.1. The letter serves as an interim document until the AF Form 1261 has been signed.

5.12.1.2. File a signed copy of the LOA in the project folder.

5.13. Deficiency Reporting.

5.13.1. AFTO Form 22, **Technical Order Improvement Reports**. Complete AFTO Forms 22 on TO discrepancies IAW TO 00-5-1. If assistance is required, contact the customer Quality Control office or home base QA. If a TO discrepancy is against equipment owned by the customer, submit the AFTO Form 22 through the customer QC office. Submit other AFTO Forms 22 through your unit QA office. Always retain a file copy in the working project package folder.

5.13.2. Product Quality Deficiency Report (PQDR). A PQDR is required when deficiencies on hardware, software, mission critical computer system, vehicles, clothing and textiles are discovered (IAW TO 00-35D-54). If, during the course of the project, you discover an equipment deficiency that may warrant a PQDR, coordinate with customer QC to complete necessary documentation. Turn the defective item over to the customer QC.

5.14. Pre-Deployment Actions. Adequate home-station preparation is key to starting any project off on the right foot. Following are some important actions to be accomplished prior to departure to the job site:

5.14.1. Complete AFMC Form 151, **Pre-deployment Checklist**. (See [Attachment 29](#)). The pre-deployment checklist is initiated by the team chief's supervisor or applicable section chief by completing Section I. Units should add additional items to the checklist as needed. Once Section I is complete and all items annotated, the team chief complies with and annotates all applicable Section II items and then signs and dates the form. The completed checklist is filed in the team chief's project folder.

5.14.2. Initiate Team chief Log: During the pre-deployment process the team chief or team chief's supervisor initiates an AFMC Form 152, **Engineering Installation Team Chief Log** (see [Attachment 30](#)) for each project. The AFMC Form 152 is a permanent record of all project actions; team chiefs maintain either an electronic or manual log as follows:

5.14.2.1. Record pertinent information on a daily basis, e.g., special safety briefings, leaves, job progress, problems encountered (even though the problem may have been resolved), changes in personnel, vehicle status, gas detector field checks, resolution of previously identified problems, site visitors, materiel issues, support issues, and any other pertinent information.

5.14.2.2. Use plain bond paper or lined paper for EI Team Chief Log continuation entries or maintain a computer generated log. Follow the same format depicted in block 12 of the AFMC Form 152. Annotate the project number at the head of each continuation sheet and also include page numbers.

5.14.3. Check on Availability of Personal Communications. Determine the adequacy of postal services near the work site before deployment. Explain personal mail options to team members (hold or forward). Verify access to E-mail for all team members. Ensure copies of computer security training are included in team member training records.

5.14.4. Coordinate Emergency Rescue. Prior to departure of a team that will work in confined spaces check with the host base to confirm support will be provided to the installation team for emergency rescue from manholes (reference AFOSH STD 91-25.). If support cannot be obtained or confirmed, the installation team must take their confined space emergency rescue equipment. This request may be part of the Notification of Arrival (NOA) or by a separate e-mail.

5.14.5. Compose Notice of Arrival E-Mail as shown in [Attachment 32](#).

5.14.5.1. The NOA E-mail should be a confirmation of pre-coordinated support verbally agreed to by the team chief, and/or PM/WC and customer POC.

5.14.5.2. Use the NOA Verbal Coordination Record at [Attachment 31](#) to record status of all support needed to implement the project.

5.14.5.3. Use the information on the NOA Verbal Coordination Record to structure the NOA E-mail.

- 5.14.5.4. Address info copies of the NOA to all agencies associated with the project as indicated in **Attachment 32**. Forward the draft NOA to the PM/WC for review and release to the customer.
- 5.14.5.5. Follow-up with the PM/WC if there are any changes in NOA information.
- 5.14.6. Perform Final Project Package Review. Carefully review the project package and the results of any previous survey that may have taken place. Ensure all deficiencies identified during the project review, which could impact project start and completion, are corrected. If major deficiencies were not corrected, coordinate with the PM/WC who will contact the customer to determine if the job should be started. Refer unresolved issues to the PM/WC for resolution assistance.
- 5.14.7. Verify Availability of Customer Furnished Support Items. The team chief may, in lieu of transporting test equipment, technical orders, and tools coordinate with the host base communication unit to obtain the required equipment necessary to complete the project. If the communications unit agrees to provide the needed items, the team chief must ensure the equipment will be set aside and TMDE properly calibrated for the team's use during the entire duration of the project.
- 5.14.7.1. If practical, assigned EI unit test equipment should be the first source of test equipment selection to ensure proficiency is maintained in the operation of LOGDET assets.
- 5.14.7.2. Confirm all customer support items in the NOA.
- 5.14.8. Verify Gas Detector Usability. Ensure gas detectors have been calibrated by checking unit documentation. Unit documentation will indicate gas detector serial number, date of calibration, who calibrated the detector, and if any parts were replaced. The gas detector must have a current calibration date before it can be used. Results of gas detector field checks will be recorded daily on Engineering Installation Team Chief Log. NOTE: Some newer gas detectors are user calibrated or returned to the manufacture for calibration. Ensure such detectors can be calibrated prior to departure.
- 5.14.9. Obtain Other Items. If available, the team chief should check out a laptop computer and digital camera for support use during project implementation. Also check out digital or hard copy team chief handbook.
- 5.14.10. Confirm Vehicle Support. If the host base is to provide vehicle or special purpose vehicle support, confirm it will be available when needed and so indicate in the NOA.
- 5.14.11. Plan Trip Itinerary. When traveling by vehicle, plan RON locations and make necessary billeting reservations. Provide itinerary to the PM/WC. At RON locations and final destination contact the PM/WC to identify safe arrival.
- 5.14.12. Team Preparation: Team chiefs brief all team members and ensure each team member knows the assembly location and the departure time, duration of the TDY, detailed travel itinerary, and alternate reporting procedures in the event of unforeseen circumstances. Team chiefs also conduct a physical inspection to ensure:
- 5.14.12.1. Special clothing required is adequate and serviceable.
- 5.14.12.2. Individual and special tools and safety equipment are adequate and serviceable.
- 5.14.12.3. Safety training, specifically CPR, flight line driver training, pole top rescue, climbing certification and confined space rescue is up-to-date on all team members.
- 5.14.12.4. All team members AF Forms 623, **Training Record**, (CAMS products) are available when deployed.

5.14.12.5. All available USAF qualification training packages and career development courses are incorporated into the on-site training schedule.

5.14.12.6. Designated drivers are properly trained to drive/operate assigned vehicles.

5.14.12.7. Coordinate WAPS testing schedules. Team members may test at TDY location when working on extended projects.

NOTE: Paragraphs 6-15 through 6-17 identify specific tasks and describe the management and administration actions performed by the team chief. These paragraphs also provide guidance on how to effectively interface with customers and successfully plan and execute projects.

5.15. Pre-Implementation Actions. Upon arrival at the job site, accomplish the following actions:

5.15.1. Coordinate Billeting. Report to the billeting office and obtain quarters assignment. If quarters or rations were determined available at the TDY locations IAW AFI 34-246 and, on arrival, the quarters or rations were not provided to the entire team or a portion of the team, contact the PM/WC and advise of the non-availability of billeting or messing. The PM/WC will coordinate additional funding, if necessary.

5.15.2. Immediately Inform Unit Officials of Personnel Status. Advise your PM/WC and the local host base unit POC of local quarters address and phone number. This may be accomplished verbally or by E-mail (AFMC Form 166, **Project Status Report**). Be sure to include team-billeting arrangements to include the team chief's local billeting address, duty and off-duty phone numbers. Update this information, as necessary.

5.15.3. Arrange In Brief. Contact the customer POC and schedule an in brief. Advise the customer POC of which support agencies should attend the in-brief, such as the CSO, quality control, maintenance project coordinator, chief of maintenance, BCE, safety, bio-environmental, etc. **Note:** It's advisable to delay the in brief until you have conducted the Pre-Installation Site Survey (PSS) and have an accurate assessment of any shortfalls. If the in brief can't be delayed, ask for a follow-on briefing after completion of the survey.

5.15.3.1. When briefing the host base and customer personnel, prepare a list of items to be discussed and how each item could impact the project. Have necessary reference material or notes available in case you are asked a question about the equipment or facility. When preparing the briefing, determine the audience and tailor the contents for appropriate presentation. Suggested topics are:

5.15.3.1.1. Type of job/work to be accomplished/new capabilities provided.

5.15.3.1.2. Base support responsibilities to include the customer, BCE, bioenvironmental, etc.

5.15.3.1.3. Anticipated problems associated with PSS observations.

5.15.3.1.4. How the job will impact local systems and operations.

5.15.3.1.5. Downtime requirements/flight check schedules.

5.15.3.1.6. Planned work schedule, i.e., night shifts, rotating shifts, weekend work.

5.15.3.1.7. Customer assistance required for installation, testing, and cutover.

5.15.3.1.8. Anticipated EI QA visit.

- 5.15.3.1.9. Estimated duration of job.
- 5.15.3.2. Invite periodic customer Quality Control (QC) visits to the job site and explain that the EI unit QA may conduct periodic visits to the work site.
- 5.15.3.3. Do not commit to accepting additional workload not identified in the project package without first checking with the PM/WC. The parent unit must ensure everyone is aware of the request and proper coordination/approval is obtained (i.e., STEM, section chief, installations officer, etc.).
- 5.15.4. Secure Restricted Area Badges. If restricted area badges are required, contact or request the customer POC contact the security agency issuing badges to determine requirements for issue at the TDY location.
- 5.15.5. Contact or visit the following host base activities before beginning work:
 - 5.15.5.1. Customer quality control function and review the test plan so QA will know when to be on site the types of tests to be performed.
 - 5.15.5.2. Host base and customer ground safety office and request a local industrial safety briefing pertaining to work to be performed. The team chief will obtain and brief the team on location, hours, and telephone numbers of ambulance service and hospital emergency room.
 - 5.15.5.3. Host base bioenvironmental engineering to determine if asbestos, PCB, and contaminated soil surveys have been accomplished for the job site. Do not begin work in an area suspected of having any contamination which might present a hazard to personnel or equipment until the area is checked by bioenvironmental engineering and clearance to begin work is received IAW Code of Federal Regulation 40 series, *Resource Conservation Recovery Act*. Request disposal instructions for any chemical waste materials which may be excess/residue to project actions, e.g. paint, no-ox, encapsulant, etc. **Note:** Immediately notify your PM/WC or section supervisor if any contamination is discovered and document specifics on the Team Chief Log.
 - 5.15.5.4. Flight Safety if work will be near or on the flight line. Check for local procedures to operate vehicles on or around the flight line.
 - 5.15.5.5. Host base EMSEC officer for secure communications jobs to determine if all secure criteria can be met.
 - 5.15.5.6. Host Base Fire Department. If not previously accomplished, coordinate with the host base fire department to find out if they will provide manhole rescue. If rescue equipment is not available to the installation team, immediately notify your work center supervisor to obtain necessary rescue equipment. Also, make arrangements to have compressed air tanks serviced by the base fire department for the manhole rescue equipment.
 - 5.15.5.7. Base Civil Engineering (BCE), if applicable, to determine if any items to be installed will become real property after installation and require processing DD Form 1354, **Transfer and Acceptance of Military Real Property** (See [Attachment 34](#)).
 - 5.15.5.8. Customer POC to obtain AF Form 103, **Base Civil Engineering Work Clearance Request** ([Attachment 33](#)) before starting any construction. **Note:** The customer POC is responsible to process AF Form 103.

5.15.5.9. Use AF Form 103 for any work, whether inside or outside a building that involves trenching, excavating, boring, drilling or any other construction activity that disturbs or may disturb established structures or utilities. Also, use it to identify potentially hazardous work conditions in an attempt to prevent accidents. If delays are encountered or job site conditions change, the AF Form 103 must be reprocessed.

5.15.5.10. If TDY to a non-US Air Force facility or installation, process a local work clearance request form or letter. Ensure the AF Form 103 format is followed when using a form or letter.

5.15.6. Job Safety. The team chief must ensure all applicable safety practices are adhered to in all environments. When construction work is being accomplished near power lines, utilities, or communications-computer systems cables. In the event multi-operations are in progress, the team chief will ensure safety precautions are followed by requesting assistance from the base or customer ground safety office.

5.15.7. BCE Assistance. Request assistance from BCE before starting construction work. This includes drilling inside structures, and when any questions exist concerning physical locations of hidden or buried civil engineering facilities or hazards.

5.15.8. Perform Pre-Implementation Site Survey (PSS). The purpose of a PSS is to confirm the availability of all project materiel, ensure proper completion of allied support, the status of support facilities and to evaluate whether a project can begin and reasonably proceed to completion without a work stoppage. Using the AFMC Form 153, **PSS Checklist** (See [Attachment 35](#)) as a guide, conduct the PSS as follows:

5.15.8.1. Review PSA and the customer endorsement to the PSA with the customer POC to verify status of host base support requirements.

5.15.8.1.1. If a structure is being constructed to support the project, compare Beneficial Occupancy Date (BOD) to Team Start Date (TSD) to determine compatibility of schedules.

5.15.8.1.2. The project package siting and project installation data section will identify specific locations reserved for equipment installation. If waivers are required for equipment placement, verify if customer has acquired the waivers. Also, personally inspect reserved space to see if it is available for equipment placement.

5.15.8.2. Coordinate with the customer POC to obtain copies of shipping documents and packing lists and use them to make a box count and materiel inventory. A thorough inspection of the LOM and its suitability to perform the project is essential to determine if the project can start and be completed without interruption.

5.15.8.2.1. Ensure each item is visually inspected for completeness, serviceability, and suitability. If substitutions have been made for LOM items, determine suitability. If suitability cannot be determined, contact the project engineer for assistance.

5.15.8.2.2. Keep copies (or a record of) shipping documents, receiving reports, packaging lists, equipment tags, etc. Documents or records must contain sufficient data to permit tracer or follow-up action (government bill of lading, shipping manifest number, registered mail number, etc.) if required.

5.15.8.2.3. Do not destroy reusable containers. Turn them in to the base TMO. Determine local requirements for disposition of wooden cable reels; e.g., will the Defense Reutilization

Marketing Office (DRMO) accept them or you will need to break them down and dispose of as scrap wood.

5.15.8.2.4. Retain all project materiel documentation in the project folder. This documentation may be required when submitting a materiel deficiency report.

NOTE: If facilities and methods used for storage of project materiel are inadequate, document findings in the Team Chief Log. Attach photographs for clarity and proof. Pay particular attention to outside storage in open or unsecured areas and to the storage of project materiel in separate physical locations. Immediately identify any storage problems to the customer POC for resolution. Keep the EI unit PM/WC appraised of unsatisfactory materiel situations.

5.15.8.3. Perform an item-by-item inventory of all project materiel. Compare the inventory to the LOM to determine if all required materiel is on hand and if substituted materiel is suitable. Resolution of materiel discrepancies, such as shortages, unsuitable substitutes, incorrect counts, misidentification of parts, etc., will depend upon the source of supply and the agency that ordered the LOM. In all cases involve the engineer and PM/WC to help identify corrective actions.

5.15.8.3.1. If the LOM was ordered by the customer, work with the project engineer and PM/WC to provide the customer with a list of items to be re-supplied. The list should include part numbers, NSNs if obtained through base supply, and item descriptions. Assist the customer as necessary to ensure correct items are placed on order from the original source of supply.

5.15.8.3.2. If the LOM was ordered by the EI unit, deal directly with the PM/WC and engineer to work out corrective actions and re-order, replace, or substitute needed items. Keep the customer POC appraised of status and when re-supply is anticipated.

5.15.8.3.3. Always keep the customer POC and PM/WC aware of materiel discrepancies and potential impact on the project.

5.15.8.3.4. Do not accept responsibility for materiel until corrective action is properly documented. If discrepancies are discovered after acceptance, immediately notify the customer POC, engineer, and PM/WC to pursue corrective.

5.15.8.4. Inventory Command Assets. Command assets (end items of equipment controlled via CA/CRL) remain the property of the using command and at no time will team chief accept accountability for them.

5.15.8.4.1. Check all command assets for TO completeness, including Time Compliance Technical Orders (TCTO).

5.15.8.4.2. Verify the availability and completeness of TCTO kits. If TCTO kits are not available on site, notify the PM/WC.

5.15.8.4.3. If unauthorized modifications are installed, inform customer that the modification must either be approved IAW DODI 5000-2AFSUP1 or removed and the equipment returned to specifications prior to implementation start.

5.15.8.4.4. If the equipment is awaiting parts (AWP) or awaiting maintenance (AWM) thoroughly document this on the PSS Checklist and the Engineering Installation Team Chief Log.

5.15.8.4.5. On completion of inventory, or if you must leave, repack and reseal all containers before departing the area.

5.15.8.4.6. Never leave containers crates, or boxes unsecured following the PSS.

5.15.8.5. Project No-Go. When the project is a No-Go or a delay is anticipated due to lack of materiel which cannot be obtained from the local support base supply, local purchase, or from original supplier, notify the customer POC, your section, and the PM/WC. Always indicate the projected date materiel shortage will impact the project.

5.15.8.5.1. Be sure to record all known information concerning materiel shortages in the Team chief Log. Complete information (e.g.; boxes open before team arrived, wrong item sent, materiel damage in transit, materiel damaged by warehouse worker, etc.) allows decisions to be made concerning actions required to correct the discrepancy and to prevent similar discrepancies in the future.

5.15.8.5.2. Check to see if the customer has established an Initial Supply Spares List (ISSL) and determine the percentage of fill and the estimated fill date. (For first time installation of a major end item, an ISSL may be issued). The ISSL will temporarily support the end item between installations completion and establishment of supplies for the logistic supportability of the new major end item.

NOTE: ISSL parts may be used by the EI team as a source of supply to prevent installation delays.

5.15.8.6. Process or request any necessary ECR/As so they may be formalized prior to start of implementation.

5.15.8.7. Perform a thorough review of the work site and project data, simulating proposed installation. Ensure allied support is complete or will be completed in time to prevent delays.

5.15.8.8. Document the results of the PSS and implementation assessments on AFMC Form 153, **PSS Checklist**.

5.15.8.8.1. Provide a copy of the completed AFMC Form 153 to the host base customer POC and file the original in the team chief job folder.

5.15.8.8.2. Contact your work center supervisor, PM/WC, and customer POC if PSS results indicate the project cannot be implemented or if a potential work stoppage exists.

5.16. Project Implementation.

5.16.1. Types of Projects. Most projects performed by EI are installations; however, several different types of projects drive what actions the team chief must take. Following are general guidelines for removals, relocations, and classified projects:

5.16.1.1. Removals.

5.16.1.1.1. The customer must contact the item manager for disposition instructions of end items for removal projects.

5.16.1.1.2. Before implementing a removal project, ensure a serviceability inspection is performed by the communications unit and documented if removed equipment is slated for re-use according to disposition instructions. The communications unit also is responsible for unit level repair, as required, condition tagging, and providing any packing lists required.

5.16.1.1.3. If the equipment was certified serviceable or repairable, complete the removal according to the project package and provide proper disposition.

5.16.1.1.4. If disposition instructions require items to be sent to the DRMO, the customer will prepare the supply turn-in documents.

5.16.1.1.5. Contact the customer POC to arrange for packing, crating, and local transportation and shipment of the equipment. This is the responsibility of the host command IAW AFI 33-104.

5.16.1.1.6. Have the following documents available when you request an acceptance inspection:

5.16.1.1.6.1. Annotated project drawings and removal instructions.

5.16.1.1.6.2. A completed copy of each equipment inventory.

5.16.1.1.6.3. AF Form 1261, associated documents, and serviceability inspection results.

5.16.1.2. Relocations. A relocation project combines procedures for removals and installations in the same project. Existing equipment (command assets) is removed from its present location and reinstalled at another location under the same project number. Before implementing the removal phase of a relocation, perform and accurately document results of a joint serviceability inspection, with a communications unit (preferably QC) representative on all equipment to be reinstalled on the project.

5.16.1.3. Classified Projects. When tasked to implement a project of which any portion is classified, use caution when making entries on any document to avoid a security violation. Some basic rules to protect the team chief are listed below; however, if any doubt exists, consider the information classified and check with the unit security officer. Control classified documents IAW AFI 31-401.

5.16.1.3.1. If an AF Form 1146 requires changes to a classified blueprint, photos, drawings, or attachments, ask for assistance from the customer EMSEC officer in classifying the materiel and determining the method to be used to send correspondence to your unit.

5.16.1.3.1.1. Do not discuss a subject on the telephone or include it in a non-secure communications if in doubt as to its security classification.

5.16.1.3.1.2. Always be sure of the steps you intend to take to accomplish paperwork or transmit data that may be classified. If you are not sure and cannot locally resolve the problem, classify your work until you receive competent guidance to do otherwise.

5.16.1.3.1.3. If a project exception reveals a security weakness, the completion certificates will be classified.

5.16.1.3.1.4. Any specific guidance and instructions received will be in writing and classified, as necessary. Ensure team members remove security badges from view upon exiting secure areas, maintain proper control of issued badges, and surrender them to the issuing authority upon project completion.

5.16.2. Keys to Team Chief Success.

5.16.2.1. Planning. There is no substitute for thoroughly planning how your team will complete the project. The more complex the project the more planning required.

5.16.2.2. Long term planning involves projected estimates of when each phase of the project, assuming allied support, materiel, installers, and access to the job site are available, will be com-

pleted. **Attachment 36**, Project Timeline, is a good example of a time line you can develop for your use, to give to the customer, and to share with team members. Be sure to include team members in on the planning stage; this will give them a stake in the project. Remember: informed teams members will usually be more involved in the project.

5.16.2.3. Short term planning is something you will do daily, or perhaps every evening to map out the next day's events. This may encompass work completion goals, listing whom you must contact, problems to overcome or simple work assignments. Begin each day with a team meeting. Work off your long-term schedule to make short-term adjustments. Keep all team members up-to-date.

5.16.2.4. Be Flexible. Flexibility is of the key to EI success. No matter how sound your planning, more than likely, some obstacle will arise to throw you off schedule, require a little overtime, and possible require adjustments to your long-term plan. Three important elements here:

5.16.2.4.1. Readjust your plan as necessary,

5.16.2.4.2. Keep the customer well informed of adjustments and their cause.

5.16.2.4.3. Don't work your team to death to compensate for situations clearly beyond your control.

5.16.2.5. Coordination. Close and continued coordination with all base support functions is another must for timely and efficient completion of projects. You must keep the customer POC, as well as the maintenance activity, QC, and CSO current on project status and current or anticipated problems that could impact completion dates. Keep the customer POC and PM/WC fully informed of project status at all times.

5.16.2.6. Training. Training EI team members is an ongoing process that must be given number 1 priority. Both active duty and ANG personnel continuously turn over. You must build training into your long and short term planning. If not, the next project down the road may not have any qualified technicians. Even if a day or two has been added to project duration at customer expense, you must do so!

5.16.2.7. Funding: If cost estimates are erroneous, or project delays occur, it's quite possible obligated funding may be insufficient to complete the project. If this situation occurs, notify the PM/WC as early on as possible. The PM/WC is responsible to obtain funding—not the team chief. Keep the customer informed but let the PM/WC coordinate funding.

5.16.2.8. Safety. Safety is mentioned throughout this instruction, but it's useless unless the team chief strictly enforces safe practices AT ALL TIMES. This includes wear of protective equipment, proper use of tools and equipment, adhering to vehicle operating procedures, watching out for each other, and just plain application of everyday common sense. A team chief not involved in team safety is not worthy of the title. A few safety reminders follow:

5.16.2.8.1. Identify the locations of applicable circuit breaker boxes. The team chief will ensure that all team members are aware of the locations prior to commencing any work action. Use lockout devices when necessary.

5.16.2.8.2. Ensure all manholes are classified and working gas detectors are used to check prior to entering confined space.

5.16.2.8.3. Ensure safety boards and equipment are available at all work locations.

5.16.2.8.4. Make sure safety climb devices are in place and approved safety harnesses are used.

5.16.2.8.5. Confined Space Precautions. EI personnel will not enter any confined space that is not properly identified as a communications manhole/vault.

5.16.2.8.5.1. Regardless of how the host base has classified a confined space, personnel will not enter until the area has been tested for atmospheric contaminants and declared safe for entry. Continuous monitoring and continuous forced air ventilation is required when atmospheric contaminants are detected when testing.

5.16.2.8.5.2. A minimum of two personnel are required on any confined space work. An observer is required when atmospheric contaminants are detected and continuous testing and continuous forced air ventilation are necessary to keep the confined space non-hazardous. The two personnel will have emergency telephone numbers and have access to communications for emergency calls.

5.16.2.8.5.3. A confined space is classified as safe for entry when it tests as having no hazardous atmosphere, has no unguarded electrical, has no engulfment potentials, and has no potentials of developing a hazardous environment such as carbon monoxide, fuel vapors, or possible leaking from chemical storage.

5.16.2.9. Customer Involvement. Involve the customer in the project from day one. The customer POC, as well as the section that will assume maintenance responsibility, has certain obligations to support EI teams. Team chiefs need to know these support requirements.

5.16.2.9.1. The customer Plans and Implementation section (where the customer POC works) responsibilities are identified in AFI 33-104.

5.16.2.9.2. Maintenance responsibilities are spelled out in AFI 21-116. **Attachment 37** contains AFI 21-116 support responsibility excerpts.

5.16.2.9.3. Know what the customer is supposed to do for EI. If support is lacking, request, in diplomatic fashion, they fulfill their duties.

5.16.2.9.4. Be sure to let the Chief of Maintenance or Chief of Systems know you'd like to provide weekly project status briefings in conjunction with their maintenance or staff meetings.

5.16.2.10. Show Stoppers. Historically, the two biggest project show-stoppers are allied support and materiel deficiencies. Because of customer funding, project NO-GOs are almost a thing of the past. A good in-depth PSS goes a long way in identifying problems up front. If discovered during the course of the project, be sure to alert the customer, PM/WC, and your section as early on as possible. A well-thought out estimate of when the support deficiency will impact the project is essential in obtaining timely assistance. Be sure to include all the information identified in **paragraph 5.6.7.**

5.16.2.11. Documentation. Accurate documentation is an important element in managing projects. Be sure to record all pertinent information on the Team Chief Log. Also, update drawings as you go rather than waiting to the last minute.

5.16.3. Project Status Report. Accurate project status reporting to the home unit and the customer is extremely important. Frequency of team chief reporting varies according to job complexity and instal-

lation, support, and personnel problems encountered. The frequency of project status reporting to the home unit should be IAW local EI unit procedures. The customer should be updated on at least a weekly basis. AFMC Form 166, **Project Status Report**, may be used to track job status as follows:

5.16.3.1. Header Information. Usually the PM/WC initiates an AFMC Form 166 for each new project by filling in all known header information, to include project number, location, job description, team chief, etc. The form may be maintained and filled out electronically or in hard copy by the team chief, section supervisor, or PM/WC IAW local procedures. A copy is also placed in the project package for the team chief to update prior to calling in and updating project status.

5.16.3.2. Personnel Information. Name and rank of the team chief and the correct names and ranks of all team personnel are entered in the appropriate sections of the AFMC Form 166. Especially important is contact phone numbers for both the TDY duty location and billeting. If unknown in advance, the individual updating the form enters contact information as soon as known or anytime numbers change.

5.16.3.3. Task Breakout. Prior to team departure, the responsible supervisor, or team chief, reviews the project package and on the remarks portion of the AFMC Form 166, lists the series of tasks to be performed. This breakout may follow the individual task instructions or may list the major portions of the job, such as installing racks, installing cable ladder, trenching 3,000 feet, pulling in 5000 meters of fiber, etc. The task breakout should depict, in chronological or logical sequence, the major tasks to be performed.

5.16.3.4. Percentage (%) Complete. As each task is completed, the team chief can update project status and have a good reference for calling status back to the home unit. Based on task completion, the supervisor or team chief can estimate the overall project percentage complete. The percentage complete is normally updated each week to provide EI unit managers with an accurate picture of project status.

5.16.3.5. Problem Areas. The bottom section of the AFMC Form 166 has a space for listing problem areas. While any team usually encounters a multitude of problems, the intent is to identify situations beyond the team chief's control which could impact project completion or adversely affect team members. Examples include materiel shortages, allied support incomplete, team members not receiving accrual payments, etc. Problems are identified with the intent of keeping the installing unit managers aware of undesirable situations and what's being done to correct them.

5.16.4. Testing C4 Facilities and Systems.

5.16.4.1. The engineer is responsible for including a test plan in the project package.

5.16.4.2. Project testing is accomplished in three phases: pre-shakedown, shakedown, and operational tests.

5.16.4.2.1. Pre-shakedown and shakedown tests are required to ensure the equipment or system is functionally capable of performing the operational mission.

5.16.4.2.2. The operational test is normally run for a specified period of time during which the EI team and the customer quality assurance verify the equipment or system meets all technical order parameters.

- 5.16.4.2.3. If deficiencies are encountered which cannot be resolved during testing, contact the project engineer and PM/WC for guidance. Also request local assistance from the customer QC section.
- 5.16.4.3. Maintain a worksheet or log that includes test data, final facility alignment, data recordings, oscilloscope photographs, record of part failures, and other data if required by testing instructions in the project package. AFMC Form 159, **Installation/Acceptance Testing** or AFMC 164, **Fiber Optic End to End Attenuation Test**, may be used to record cable plant test results. Always provide the customer with a copy of test results and file one copy in the project folder.
- 5.16.4.4. When the project is being accomplished within a facility or system already operational, keep the Chief of Maintenance or Systems Officer advised of progress and plans to proceed. Test each phase of the work.
- 5.16.4.5. If special customer QC inspections are required where continued job progress would prevent performing a thorough inspection upon completion of the project, give advance notice to QC to prevent job delay. If QC elects not to perform an inspection, annotate on the Team Chief Log and continue with the job. Get copies of the inspection documents and give a copy to your unit QA office. File your copy with the completed job folder. If the QC inspection reveals a problem, correct it if possible and request the QC activity to re-inspect the item concerned.
- 5.16.4.6. If electromagnetic interference threatens to prevent successful testing and acceptance, advise the project engineer and the PM/WC.
- 5.16.4.7. As indicated in the PSA, customers are responsible to fund for purchase of XD and XF ERRC coded Depot Level Repairable (DLRs) that fail during the installation and testing. Coordinate with the maintenance work center project monitor or customer POC to place needed items on order.
- 5.16.5. Flight Inspections. The FAA will perform flight inspections to verify a newly installed or modified ATCALs system is operating according to specifications.
- 5.16.5.1. Coordinate with the customer POC to arrange a flight check as early as possible. Tentative dates are acceptable for planning aircraft schedules. Firm dates should be provided at least seven days before inspection is required (IAW: AFMAN 11-225).
- 5.16.5.2. Before requesting the final flight inspection, ensure that all alignments, tests, QA evaluations, and QC inspections (which will affect the flight inspection) are completed.
- 5.16.6. QA Evaluation and QC Inspection.
- 5.16.6.1. The EI unit commander, installations officer/ flight commander, operations officer, or team chief, determines if an in-progress or final QA evaluation is needed.
- 5.16.6.2. QA evaluations should be prearranged prior to team departure. During the course of the project, the team chief provides as much notice as possible to enable QA to schedule evaluation dates.
- 5.16.6.3. The team chief must perform a "self evaluation" on each project. Document the self-evaluation on AFMC Form 154, Quality Assurance Evaluation Report (see [Attachment 39](#)) and reference noted deficiencies to paragraphs in the QA Reference Guide.
- 5.16.6.4. The team chief makes the following documents available to QA and QC personnel:

- 5.16.6.4.1. Annotated project drawings, installation instructions, and design performance standards (if final QA evaluation, certified drawing, documents, etc.).
- 5.16.6.4.2. Cable distribution sheets.
- 5.16.6.4.3. A draft copy of the AF Form 1261 jointly prepared by the team chief and the customer POC (if final QA inspection).
- 5.16.6.4.4. An itemized list of excess or residue LOM.
- 5.16.6.4.5. Equipment performance records, test data sheets, and recordings of tests conducted during the installation or checkout.
- 5.16.6.4.6. Operational test logs, including the Pressure Test Record T-1, if applicable, an itemized part failure list, and applicable deficiency reports.
- 5.16.6.4.7. A report from the appropriate medical office when radiation certification is required by the project package.
- 5.16.6.4.8. Profiles of radio frequency radiation indicating the personnel hazard limits (10mw/cm²), when radio frequency hazard certification is required. Drawings and instructions will be provided in the project package.
- 5.16.6.4.9. Radio frequency radiation profiles relating to fuels and ordnance hazard boundaries, when applicable. Drawings and instructions will be provided in the project package.
- 5.16.6.4.10. A copy of each applicable Standard Installation Practices Technical Order (SIPTO).
- 5.16.6.4.11. DD Form 1354, if applicable.
- 5.16.6.4.12. A copy of each approved ECR/A.
- 5.16.6.4.13. A copy of drawing transmittal letter.
- 5.16.6.5. In addition to the above the team chief provides the following to QA:
 - 5.16.6.5.1. A copy of each AFMC Form 152.
 - 5.16.6.5.2. Training Records for each military team member, as required.
 - 5.16.6.5.3. Your project (self-evaluation) AFMC Form 154 with listed discrepancies you identified.

5.17. Project Wrap-Up. Complete and annotate all applicable actions identified in Part I of the AFMC Form 155, **Team Chief Post Deployment Checklist**, prior to departing the job site.

- 5.17.1. Annotate Project Drawings. Update changes to “working copies” of drawings daily using the following appropriate color-coded pencils:
 - Yellow--For deleted data.
 - Red--For additions.
 - Blue--Instructions to the engineer and draft person.
- 5.17.1.1. Annotate the project designator on all project drawings and installation instructions

5.17.1.2. Any changes to command assets, CA/CRL equipment, or other accountable items must be reflected on the corresponding Data Equipment List. Use appropriate colors to update the list.

5.17.1.3. If changes to schematic diagrams are required, reflect the changes and return copies of changed diagrams with the "actual-as-installed" drawings.

5.17.1.4. As specified in AFI 21-404, *Developing and Maintaining Communications and Information Systems Installation Records*, the team chief provides two copies of the updated drawings along with a memorandum transmittal cover letter (see [Attachment 42](#)) to the base CSIR manager. The base CSIR manager retains one copy and forwards the other copy to the 38 EIG Engineering Data Service Center (EDSC) to permanently update the affected CSIRs.

5.17.1.4.1. Sign and date each copy to certify they are correct and accurate.

5.17.1.4.2. Provide a copy of the memorandum to the customer and file one in the team chief folder. Be sure to obtain the recipient's signature on the memorandum.

5.17.2. Transfer of Accountability: Final transfer of accountability is formalized by all applicable parties signing AF Form 1261. Prior to the signing, the team chief must ensure all accountable items are properly transferred to the customer or host base OPR.

5.17.2.1. Non-Expendable Equipment. Accountable equipment is controlled according to procedures outlined in AFMAN 23-110, Volume IV. Transfer of accountability for non-expendable items to base supply is accomplished on AF Form 1261 when the COS or designated representative enters the base stock record account number and the receiving organization's document numbers in block 9F of the AF Form 1261.

5.17.2.2. Transfer of real property, i.e. towers, buildings, and telephone poles identified during the PSS to the host BCE is by DD Form 1354. The real property items will be listed on the form. Attach the finalized DD Form 1354 to the AF Form 1261.

5.17.2.2.1. The host BCE or designated representative is required to accomplish an acceptance inspection of installed real property. Coordinate the acceptance inspection through the customer POC. If there is any disagreement, contact your PM/WC.

5.17.2.2.2. The BCE representative signs block 28 of the DD Form 1354 and provides a voucher number for block 29. If an item is incomplete, indicate this in block 26 and explain the action to be taken, responsible agency, and estimated date of correction in block 30.

5.17.2.2.3. Complete block 27 as the EI representative.

5.17.2.2.4. In the case of off-base installations, the signature of the customer representative is required in block 31.

5.17.2.2.5. Individuals signing block 28 on the DD Form 1354 will be provided a copy of the document after all signatures are obtained. Provide the customer POC and PM/WC with a copy along with other completion documents.

5.17.2.2.6. Normally, the DD Form 1354 transfer takes place simultaneously with the signing of AF Form 1261.

5.17.2.3. Excess or Residue Project Materiel. Disposition procedures for excess or residue materiel are dependent upon source of funding. Normally the immediate customer or MAJCOM funds for all upward directed projects. Downward directed projects are normally AF funded.

5.17.2.3.1. For upward generated projects, query the appropriate chief of maintenance, superintendent or designated representative, who will identify what serviceable materiel, if any, they want to retain.

5.17.2.3.2. For downward directed projects, contact the PM/WC for disposition instructions. In many cases, project residue will still be turned over to the customer unless earmarked for other like projects.

5.17.2.3.3. Report cable (FSC 6145 and 6015) by continuous lengths in feet or meters respectively. Any manufacturer's test data must remain attached to the cable. Ensure those items wanted by maintenance are identified to the original source of purchase plus the name of the PM/WC.

5.17.2.3.4. Turn-in condemned property, damaged metals, cable reels, and scrap to DRMO. Dispose of wooden reels and hazardous materiel in accordance with local base policy.

5.17.2.3.5. Quantities of non-accountable items less than the designated unit of issue are considered residue and not turned in to supply. These may be turned over to the local communications unit maintenance activity or retained by the EI unit. Otherwise, these items are turned in to DRMO (IAW AFMAN 23-110, Vol I, Part One, Chapter 3).

5.17.2.3.6. Prepare an excess/residue project materiel list (use the same format as the LOM) identifying all remaining residue including empty reusable steel cable reels. Keep copies of all documents in your project folder relating to transfer of accountability of materiel and equipment.

5.17.3. Customer Project Acceptance. Use AF Form 1261, **Communications and Information Systems Acceptance Certificate**, and AFMC Form 155, **Post Deployment Checklist** to accomplish all project completion actions.

5.17.3.1. The equipment or system being installed is officially accepted by the customer and commissioned by obtaining necessary signatures on AF Form 1261 as shown in [Attachment 40](#). The purpose of the joint QA/QC inspection, during the operational test was to verify acceptability of equipment and the installation so the AF Form 1261 can be initiated.

5.17.3.2. IAW AFI 33-104, Chapter 5, the customer POC is responsible to initiate and process for signature the AF Form 1261. After required signatures (blocks 10a thru 10d) are annotated, obtain two copies of the form. Send or hand-carry a copy to the PM/WC and file a copy in the project folder.

NOTE: When performing projects for non-AF activities, the team chief may have to initiate and process the AF Form 1261.

5.17.3.3. If minor exceptions exist, ensure thorough explanations of deficiencies are included on AF Form 1261. Identify the activity responsible for correction. Normally, minor exceptions can be cleared by the customer O&M activity and the EI team is released with the signed AF Form 1261.

5.17.3.4. List uncompleted TCTOs as a minor exception on AF Form 1261 if equipment meets operational requirements. If an unaccomplished TCTO is an organizational level modification, the correcting activity will be the customer.

5.17.3.5. When a major exception impacts successful system operation, the EI team is normally responsible for corrective action and the AF Form 1261 is not completed until the major exception

is cleared as specified in AFI 33-104, Chapter 5. If the EI team must depart prior to clearing the exception, the team chief drafts a letter of custodial agreement (**Attachment 38**) for his/her and the customer POC signature.

5.17.4. Customer Out brief: The final step prior to departure for home station is to conduct a courteous and professional out briefing to the same representatives you in briefed at the start of the project. Out briefing subjects include:

5.17.4.1. Narrative of how the project went; resolution of problems.

5.17.4.2. Recognition of individuals who provided outstanding support.

5.17.4.3. Technical recommendations for system or equipment follow-on maintenance and support.

5.17.4.4. Leftover project materiel disposition.

5.17.4.5. Identification of exceptions and correction responsibility.

5.17.4.6. Appraise attendees of EI capabilities for future workload.

5.17.4.7. Inform customer to expect to receive a customer satisfaction questionnaire from the PM/WC.

5.17.5. Post Deployment. The term "post deployment" applies to the steps and actions that follow the completion of the primary work mission of the team at the work location. This includes preparation for return to home unit, in-route considerations, and arrival procedures. As indicated in paragraph **5.17** above, before departing the TDY work location, the team chief initiates the AFMC Form 155, (**Attachment 41**) and completes all requirements listed on the form.

5.17.6. Team Departure. The team chief's responsibilities until returning to home station are all-encompassing. The team chief ensures:

5.17.6.1. Transportation, housing, messing, training, logistical, and administrative needs are satisfied.

5.17.6.2. The team's conduct and bearing reflect favorably on the Air Force.

5.17.6.3. The PM/WC is advised of team location and contact number when traveling by vehicle with overnight stops.

5.17.7. Unit In-Processing: Upon arrival to home duty station follow the Post Deployment Checklist and local procedures to in-process the unit, turn-in vehicles, tools, and equipment, and in brief the installations flight commander/officer IAW local procedures.

5.17.8. Project Folder. Turn in completed project folders to the applicable section chief for review and validation. Once the folder is validated as complete, it's forwarded to the PM/WC for filing and future reference. Maintain master copies of project folders for a period of two years IAW AFMAN 37-139, Table 33-4, Rule 11.

5.18. Maintenance Requirements. In addition to projects, EI teams are subject to perform certain maintenance and technical assist functions to include antenna Preventive Maintenance Inspections (PMIs) as spelled out in the Air Force Technical Order 00-25-108.

NOTE: Prior to departing on any maintenance requirement, the applicable section chief and team chief should review and become familiar with TO 00-25-108, Section III. The team chief should have a copy of this TO on hand when performing any type of maintenance or PMIs.

5.18.1. Maintenance and Technical Assistance. Maintenance and technical assistance is limited to restoration of service only. Your responsibility is the repair or replacement of parts or components, splices, cable reroutes, transmission lines, antennas, etc., necessary to return the system to the condition that existed prior to the unexpected or imminent failure. IAW TO 00-25-108 the 738 EIS/DOO is the designated POC for maintenance assistance requests.

5.18.1.1. Emergency maintenance may be necessary to repair inoperative Air Traffic Control and Landing System (ATCALS) facilities, and vital communication links with no backup capability.

5.18.1.2. Urgent and Routine Maintenance involve impaired C4 systems or situations when the maintaining unit does not possess organic repair capability.

5.18.1.3. Procedures. Maintenance and technical assistance requests usually originate at the base or unit experiencing C4 maintenance difficulties. Request for maintenance and technical assistance are submitted IAW TO 00-25-108 through the parent MAJCOM.

5.18.1.3.1. When assigned to provide maintenance or technical assistance, the EI team chief should contact the requesting unit to determine the nature of the problem, type of equipment, and any other information which can be used to assemble the best repair team and bring along any needed TMDE, tools and technical data.

5.18.1.3.2. Urgency of the requirement will dictate response time. Always attempt to gather as much information as possible before departing. Out process and in process the unit IAW local deployment procedures.

5.18.1.3.3. At the job site, maintain a Team Chief log and follow the same general team management and reporting procedures identified in this publication.

5.18.1.3.4. Upon completion of the maintenance or technical assistance prepare completion documents IAW TO 00-25-108, and out brief the customer prior to departure for home station.

5.18.2. Job Site Procedures:

5.18.2.1. Upon arrival at the TDY location, request an interview with the customer's chief of maintenance, and applicable work center supervisor. Normally the POC for maintenance actions and technical assistance is the maintenance section supervisor responsible for maintaining the system or equipment in need of repair. Brief them on the purpose of your visit. Your briefing should consist of, but not be limited to, the following:

5.18.2.1.1. Review any available documentation related to the customer's original request for assistance.

5.18.2.1.2. Coordinate required downtime and circuits affected.

5.18.2.1.3. Coordinate required administrative support.

5.18.2.1.4. Coordinate your work schedule. Normal shift support will be 8 hours a day, 5 days a week.

5.18.2.1.5. Request a maintenance coordinator be assigned as QC monitor and to identify deficiencies or exceptions. Resolve problems on the spot, if possible.

5.18.2.2. During the course and upon completion of repair actions, closely follow the instructions in TO 00-25-108, Section III. Ensure all administrative actions are complete to your and the customer's satisfaction. Prior to departure, out brief the customer to include plans for any necessary follow-on maintenance or repair actions.

5.18.3. Antenna PMI Program. IAW TO 00-25-108, the antenna PMI program is administered by ANG/C4CE.

5.18.3.1. Field units identify their antenna PMI requirements through their respective MAJCOM functional POCs to ANG/C4CE.

5.18.3.2. ANG/C4CE contacts EI units in close geographic proximity to the unit requesting antenna PMI assistance.

5.18.3.3. When an EI unit accepts the request to perform antenna PMIs, ANG/C4CE notifies the requestor and advises both the customer and EI unit to coordinate directly with each other to schedule the PMIs.

5.18.3.4. Team chiefs follow the procedures in TO 00-25-108, Section III, and this publication to perform the PMIs, follow-on maintenance if necessary, maintain required documentation, and complete AF Form 1261.

Chapter 6

ENGINEERING INSTALLATION QUALITY ASSURANCE (QA) PROGRAM

6.1. Introduction. This chapter establishes the Engineering Installation Quality Assurance (QA) Program under the provisions of AFI 63-501. It provides the policy and guidance necessary to carry out the EI QA program. EI Quality Assurance evaluates the quality of engineering, installation, project management, logistic support, workmanship, unit support, and safety. Quality assurance evaluators reinforce quality installation practices, recommend improvements, demonstrate proper procedures, and collect installation data that identifies positive and negative trends. Quality Assurance evaluations focus on product quality, customer satisfaction, and continuous process improvement of EI procedures and processes.

6.2. Policy.

6.2.1. A QA program will be established within each EI squadron.

6.2.2. Unit commanders are responsible for the effectiveness of the QA program within their units. To ensure program integrity, the chief of QA will report directly to the unit commander.

6.2.2.1. QA must be staffed with highly qualified personnel capable of evaluating the entire EI process. A minimum of one 2E6XX and one 2EXXX will be assigned to each unit QA function. AFSC substitution is authorized if qualified personnel in specified AFSCs are unavailable.

6.2.2.2. Within manning constraints, QA personnel must be in the grade of TSgt or above. QA personnel must be among the most experienced in their career field, be awarded SEI 200, and must have completed the following mandatory training to become a fully certified QA evaluator. (**Note:** Completion of all courses is not a pre-requisite to being assigned to unit QA.).

6.2.2.2.1. Applicable Lightning Force Academy Orientation and Standard Installation Practices.

6.2.2.2.2. EI QA Qualification Training Package (QTP 2EXXX-201X).

6.2.2.2.3. Lightning Force Academy Team Chief course.

6.2.2.2.4. Lightning Force Academy EI Project Engineering course.

6.2.2.2.5. Lightning Force Academy EI Quality Assurance course.

6.2.2.2.6. EMSC (TEMPEST) training if evaluating secure communications (QTP 2EXXX-202D).

6.2.3. A regional QA Council with representatives from the four geographic quadrants and the 738 EIS will be established to represent EI units in all QA matters and interface with the EI Weapon Systems Council.

6.2.4. Air National Guard EI units will appoint a full-time technician to be available on a daily basis to function as a liaison with Regional QA Council concerning QA matters. Air National Guard EI units will provide the Regional QA Council chairman with the name of their current QA liaison in January of each year or whenever a different liaison is appointed.

6.2.5. QA Augmentation. QA evaluators from other units may augment the installing unit by performing required evaluations. The installing unit is responsible to initiate the augmentation request and provide funding. Augmentation may be solicited directly from other units or through ANG/C4CE.

6.2.5.1. The augmenting evaluator must properly document all evaluation reports required by this instruction. Upon completion of evaluations, the augmenting evaluator forwards copies of the documents to the installing unit QA office.

6.2.5.2. The augmented unit is responsible to enter unit trend analysis data into their database and process QA reports IAW local unit procedures.

6.3. Quality Assurance Objectives.

6.3.1. Assess, evaluate, and report the quality of EI products and services.

6.3.2. Evaluate team chiefs and team chief nominees IAW **Chapter 3** of this publication.

6.3.3. Identify, make recommendations, and provide assistance to solve problems with safety, engineering, installation, logistics, workmanship, training, and other areas identified in the EI Quality Assurance Reference guide.

6.3.4. Develop and implement a trend analysis system that captures data covering all phases of project evaluations, team chief evaluations, training effectiveness, and customer satisfaction.

6.4. Quality Assurance Responsibilities.

6.4.1. Perform project evaluations, team chief evaluations, and training effectiveness assessments (Note: Training effective assessments are optional for active duty EI).

6.4.2. Perform periodic project package reviews or upon request from the installations or engineering flight.

6.4.3. Fully train newly assigned QA personnel. Newly assigned personnel will accompany an experienced QA evaluator on at least one project evaluation trip before being tasked to proceed independently. QA evaluators must be able to explain and demonstrate proper QA evaluation techniques.

6.4.3.1. Document QA Certification.

6.4.3.2. Record QA certification on AF Form 623, AF Form 797, or CAMS as a permanent record of training.

6.4.4. Disseminate, collect, and review Customer Satisfaction Questionnaires (CSQ). Compile questionnaire data to identify trends. Recommend actions to correct negative trends and sustain positive trends.

6.4.5. Complete unit trend analysis reports IAW standard procedures.

6.4.6. Process, track, and follow up to closure Product Quality Deficiency Reports (PQDR) and Technical Order System Publication Improvement Reports and Replies (AFTO Form 22) submitted through the EI unit.

6.4.7. Make recommendations to project engineering for establishment or revision of standard installations practices or drawings.

6.4.8. Control and issue QA stamps, if used.

6.4.9. Provide assistance and/or cross feed to other EI units on quality issues, concerns, and deficiencies in the areas of engineering, installation, logistics, workmanship, training, and safety.

6.4.10. Provide feedback for QA evaluation guides and checklists. Forward feedback for guides and checklists to the QA council for review, potential publication, and dissemination to EI units.

6.4.11. Coordinate with engineering, installations, logistics, and project manager/ workload controller to resolve deficiencies identified by customers.

6.5. Quality Assurance Evaluations and Assessments.

6.5.1. QA performs evaluations and assessments to determine quality and effectiveness of EI engineering, project management, logistics support, team chief development, training, workmanship, installation practices, unit support, and safety.

6.5.1.1. QA evaluators use AFMC Form 154, **QA Evaluation and Assessment Report**, (see [Attachment 37](#)), to provide complete, accurate and impartial data on the entire EI process. QA evaluations are performed and documented to measure processes and tasks against established standards, determine if standards are complied with, identify areas of improvement and areas of excellence, and recommend actions necessary to attain continuous compliance with standards.

6.5.1.2. Safety is the responsibility of each Air Force member. QA evaluators have authority to stop an installation during an evaluation when a hazardous condition to personnel or equipment exists. All safety violations will be corrected immediately. QA evaluators will not permit the project to restart until the safety hazard is abated.

6.5.1.3. QA must maintain a file of all QA evaluation and assessment reports. They should be kept for at least 2 years.

6.5.2. Types of Evaluations and Assessments.

6.5.2.1. Project Evaluations give an overall view of the quality of installations and compliance with current EI directives, standards, and practices. They also provide data for identifying training deficiencies and potential problem areas.

6.5.2.2. Team Chief evaluations ensure team chief nominees meet the requirements for Team Chief certification by on-site evaluations to ensure they have necessary team chief skills. Certification or re-certification evaluations are conducted in the same manner as project evaluations.

6.5.2.3. Training Effectiveness Assessments help assess a work center's training program and installer competence. Assessing these areas ensure effective and efficient project installations.

6.5.2.4. Special Evaluations and Assessments are mandatory when directed by higher authority or initiated by unit level section supervisors and cover administrative, managerial, or technical subjects. Guidance for performing special evaluations or assessments will come from the directing office.

6.5.3. Project Evaluations.

6.5.3.1. Project evaluations are performed at the request of the EI unit commander, installations flight chief, chief of QA or when directed by higher authority. Normally, QA evaluations are performed on projects under the following conditions:

6.5.3.1.1. Projects involving Air Traffic Control and Landing Systems (ATCALs) that require a flight check.

6.5.3.1.2. Secure Communication projects where emissions security (EMSEC) is an issue.

- 6.5.3.1.3. Team chief evaluations.
 - 6.5.3.1.4. All projects over 90 days; may include both in-progress and final evaluations.
 - 6.5.3.1.5. In-house Prefabricated, Pre-assembled, and Prototype (P3) Workload projects.
 - 6.5.3.1.6. When there is cause to believe the project may be subject to errors which compromise system performance or erode customer satisfaction.
- 6.5.4. Evaluation Preparation:
- 6.5.4.1. Thoroughly review the project package.
 - 6.5.4.2. Review reports, correspondence, and in house reviews to become familiar with job progress.
 - 6.5.4.3. Coordinate with section supervisor to obtain items needed for deployed installation team.
 - 6.5.4.4. Contact team chief prior to departure.
 - 6.5.4.5. Send a Notice of Arrival E-mail to team chief no later than five duty days prior to arrival date. Send information copies to customer Plans and Implementation office or customer POC. Send info copies to support agencies as necessary stating the following:
 - 6.5.4.5.1. Subject to include project designator, short title, and site or location (unless classified) for each job to be evaluated.
 - 6.5.4.5.2. QA evaluator's name, grade, Air Force specialty code, and security clearance.
 - 6.5.4.5.3. Estimated date of arrival and duration of stay.
 - 6.5.4.5.4. Purpose of visit. (in-progress, final, or after-the-fact QA evaluation etc).
 - 6.5.4.5.5. Point of contact and duty phone number.
- 6.5.5. Conducting Evaluations.
- 6.5.5.1. Notify the customer Plans and Implementation office or customer POC of arrival and schedule an in briefing and out briefing.
 - 6.5.5.2. Identify purpose and objectives of EI QA Program. Stress importance of CSQ and how feedback helps to better improve our services. Encourage Quality Control (QC) participation during your visit. **Note:** IAW AFI 21-116, QC is required to participate in operational checks.
 - 6.5.5.3. Determine if problems are being encountered by the team and offer assistance and solutions.
 - 6.5.5.4. Schedule the QA evaluation to coincide with the team chief's activities as much as possible.
 - 6.5.5.5. Procedures and Reports.
 - 6.5.5.5.1. Use AFMC Form 154, **EI Quality Assurance Report (Attachment 39)**, and AFMC Form 162, **Narrative**, or plain bond paper to record evaluation results.
 - 6.5.5.5.2. Use the EI QA Reference Guide and other checklists as applicable to perform a thorough evaluation of EI work. All technical requirements specified in the project package, Technical Orders (TO), or official commercial publications must be met.

6.5.5.5.3. While at the job site, evaluate all applicable items on the QA Evaluation Report. Annotate the number of items observed (OBS), not observed (NOT OBS), deficient (DEF), corrected. (COR), or not applicable (N/A).

6.5.5.5.3.1. OBS is the number of actual items the evaluator physically observed within a subcategory.

6.5.5.5.3.2. NOT OBS is used to record numbers of items the evaluator was unable to observe.

6.5.5.5.3.3. DEF is the actual number of deficient items found out of the number of items observed.

6.5.5.5.3.4. COR is the actual number of deficient items that were corrected during the evaluation.

6.5.5.5.3.5. N/A is annotated if the sub-category is not applicable to the project.

6.5.5.5.4. Use AFMC Form 162 or bond paper to provide an overall assessment of the project. Break the assessment out by topic areas in the QA reference guide, i.e., Engineering, Project Accomplishment, Team Chief, Workmanship, Base Support, etc.”

6.5.5.5.4.1. For all deficiencies, document deficiency, corrective action, recommendation, deficiency status (open or closed), reference, and office of primary responsibility (OPR).

6.5.5.5.4.2. Document specific references for procedural deficiencies. This ensures proper procedures are followed during corrective actions. For example, failure to follow standard installation practices or not identifying an out-of-tolerance condition is a procedural deficiency.

6.5.5.5.5. The QA evaluator should review all test data to ensure adequacy and accuracy.

6.5.5.5.6. For in-progress evaluations, the evaluator stamps or initials observed and completed tasks on the working copy of the project package task instructions or drawings. Stamp or initial next to the task number, drawing number, or on an easily viewed location.

6.5.5.5.7. The team chief signs the QA Evaluation Report and the QA evaluator provides one copy of the report to the team chief. The QA evaluator also out briefs the customer with the team chief in attendance.

6.5.5.6. Upon return to home station, the QA evaluator:

6.5.5.6.1. Performs post-evaluation research on data collected during the evaluation.

6.5.5.6.2. Briefs the Installations Officer/RRF Chief on results of the evaluation.

6.5.5.6.3. Completes and processes all QA evaluation reports.

6.5.5.7. Follow-up, Corrective Actions, and Closing Evaluation Reports.

6.5.5.7.1. Evaluation reports are routed and suspense established in accordance with local procedures. The unit commander, chief of QA, chief of engineering, installations officer/flight commander, intermediate supervisor, and section supervisor should review and annotate all evaluation reports. EI unit commanders may also exercise authority to close or leave open a report until satisfied all discrepancies are corrected.

6.5.5.7.2. Open project evaluations deficiencies are processed as follows:

6.5.5.7.2.1. If the OPR for the open deficiency is *internal* to the unit, follow-up, corrective, and suspense actions, are determined by the Chief of QA.

6.5.5.7.2.2. If there's an external OPR, coordinate report review and request reply within a reasonable time frame. **Note:** QA reports may be sent to other EI units but not outside the EI community. If necessary, correspond with other types of organizations by letter or E-mail IAW unit administrative policy.

6.5.5.7.3. Close the report after all deficiencies are corrected.

6.5.5.7.4. Maintain a file of all project evaluation reports and corrective actions for two years.

6.5.6. Team Chief Certification Evaluations. To maintain standards and lend credibility to the team chief development program, team chief evaluations are performed under the circumstances identified in **Chapter 3**, paragraph **3.4.3**.

6.5.6.1. When requested by the section supervisor and approved by the installations officer/flight commander, the chief of QA assigns an evaluator to perform a team chief evaluation on the identified Team Chief (TC) or Team Chief Nominee (TCN).

6.5.6.2. The QA evaluator should possess the same general commodity (2EXXX or 2E6XX) as the TC or TCN.

6.5.6.3. Observe and then document TC's and TCN's performance on AFMC Form 162, Narrative. Write summary paragraphs using the following headings and guidelines:

6.5.6.3.1. Evaluation Conditions: Describe the conditions under which project is being installed and evaluation being performed. This includes such areas as project complexity, team composition, allied support status, contractor interface, base support, team experience, weather for outside projects, etc.

6.5.6.3.2. Team Chief Qualifications: Does TC/TCN demonstrate a good working knowledge of TC duties by being familiar with project requirements, procedures in this publication, project technical data, and ability to coordinate with support agencies?

6.5.6.3.3. Customer/Supplier Relationship: Does TC/TCN project professionalism, gain respect, and inspire confidence from the customer? Was the customer kept informed of project status, problems?

6.5.6.3.4. Technical Accomplishments: Is workmanship in compliance with technical specifications and SIPTO standards? Make a general overall statement concerning workmanship quality.

6.5.6.3.5. Team Management: (Including supervision, training, health-morale-welfare of team members, safety, etc.) Were resources properly managed, logical work assignments given with proper work sequence, all team members full employed, meaningful training conducted, and was there cost-effective use of materiel?

6.5.6.3.6. Leadership: Explain how the TC/TCN influences team members to accomplish the project. Consider desire to achieve, interpersonal skills, task competence, self-confidence, decisiveness, tolerance for stress, and flexibility.

6.5.6.3.7. Administrative: Does TC/TCN have a working knowledge of team chief administrative duties (status reporting, team chief log, ECR/A's, PQDR, AFTO 22, etc., and completion of all required documents? Was all documentation thorough and accurate?

6.5.6.4. Maintain a file of all team chief certification evaluation reports for 2 years.

6.5.7. Training Effectiveness Assessment (TEA).

6.5.7.1. Installer performance can indicate the effectiveness of a section's training program. Installers must perform tasks in a proficient and professional manner. TEA results may reflect deficiencies in a training program that can be rectified through additional training or training program improvements.

6.5.7.2. TEAs assess individual knowledge and job proficiency.

6.5.7.2.1. Knowledge - how much the installer knows about the job. (Determined by asking questions about the task during task performance. Installers may also complete written tests contained in Air Force Qualification Training Packages or use interactive training devices.)

6.5.7.2.2. Job proficiency - how well the installer performs the job. (Criteria for evaluating and analyzing this element are identified in a section's training plan and equipment technical data used to perform the job. Evaluators observe how well tasks are performed to determine if sufficient skill is demonstrated.)

6.5.7.3. Perform an adequate cross section of TEAs to evaluate proficiency training within the unit. Assessment efforts should concentrate on how well training is being conducted. The chart below offers a recommended number assigned to number to be evaluated (by AFSC) sampling ratio.

Table 6.1. Sampling Ratio

NUMBER OF PERSONNEL IN AFSC	ANNUAL SAMPLE SIZE
1	1
2-15	3 to 4
16-25	5 to 7
26-50	8 to 10
51-90	10 to 15

6.5.7.3.1. QA will perform the majority of TEAs on installers who are newly assigned, in up-grade training, qualification or proficiency training, and being cross-utilized.

6.5.7.4. The TEA program consists of two types of evaluations: Initial, and Follow-on.

6.5.7.4.1. Initial TEAs are designed to measure the adequacy of the qualification training and indicate both strong and weak areas of improvement. The assessment is performed after installers are trained and certified on assigned tasks.

6.5.7.4.2. Follow-on TEAs are conducted to reevaluate individuals who were task decertified or to evaluate a suspected area needing improvement. Follow-on evaluations may also be conducted to measure installer continual training and ensure proficiency is maintained.

6.5.7.5. Conducting TEAs:

6.5.7.5.1. QA Evaluators will not be the same individual who certified task proficiency. Ideally, the evaluator is certified on the task(s) being evaluated and possesses the same AFSC at a higher skill level than the individual being evaluated. When this is not practical, the evaluator must be capable of observing and verifying task accomplishment with a TO, manual, or other official reference. The evaluator must also be capable of verifying proper procedures, tools, TMDE, materiel, and ensuring the task completion conforms to established standards.

6.5.7.5.2. Before conducting the assessment, evaluators should review the applicable project package and the installer's training record to determine which tasks can be evaluated. When possible, select tasks based on deficiency indicators, training management visits, previous TEAs done in the section, and other management indicators. If analysis does not indicate any areas requiring emphasis, select tasks not previously evaluated in the section. TEAs can be performed at home station.

6.5.7.5.2.1. Coordinate assessments with the team chief and/or section supervisor.

6.5.7.5.2.2. Before beginning, brief the installer on the task(s) to be assessed, the rating criteria, and the performance standards.

6.5.7.5.2.3. Assess the preparation, task performance, and post performance phases.

6.5.7.5.2.4. Stop the assessment if installer uses methods or procedures that could jeopardize safety or cause equipment damage. Task assessments may be continued after the hazard has been corrected.

6.5.7.5.2.5. During the assessment, ask relevant questions on the methods and procedures used by the installer.

6.5.7.5.2.6. Assessments are complete when the evaluator determines that the installer's performance and proficiency is sufficient.

6.5.7.5.2.7. Brief the installer, team chief, or section supervisor at the conclusion of the assessment.

6.5.7.6. TEA Results.

6.5.7.6.1. A technician's performance is assessed as satisfactory or unsatisfactory. Explanations and recommendations are required for each task rated as unsatisfactory.

6.5.7.6.2. Unsatisfactory task performance results require investigation to determine the cause. Unsatisfactory task performance requires de-certification of the particular task. It does not mean the individual is incapable of performing other tasks.

6.5.7.6.3. Brief section supervisors, certifying officials, and trainers as soon as practical on unsatisfactory task performance. Training effectiveness assessments will not be recorded on or made part of performance reports, unfavorable information files, etc.

6.5.7.7. TEA Reports.

6.5.7.7.1. Document TEA results on AFMC Form 160 ([Attachment 43](#)). Use a separate TEA control number for each assessment report. Maintain the same TEA control number for a multiple task assessment.

6.5.7.7.2. Document number of task errors in each performance phase by category of error. Rate overall task performance as satisfactory or unsatisfactory. In the comments block, describe task performance and provide recommendations if necessary.

6.5.7.7.3. Unsatisfactory task performance will require a follow-up evaluation and report.

6.5.7.7.4. The responsible section supervisor must document intended or accomplished corrective actions for unsatisfactory task performance on AFMC Form 162, **Narrative**. Enter the TEA Control Number in the PIN block and put the Name, Rank, and Office Symbol of the individual who was evaluated in the work location block. Attach the Narrative to a copy of the original AFMC Form 160.

6.5.7.7.5. Route and suspense TEA reports in accordance with local instructions.

6.5.7.7.6. Maintain a file of all TEA reports and corrective actions for unsatisfactory task ratings for two years.

6.5.8. Training Effectiveness Assessments Guide.

6.5.8.1. QA evaluators accomplish each task being evaluated by judging three phases; preparation, task, and post performance. Errors made in any of these phases must be considered when determining results. The decision to declare a performance error must be based on published standard installation practices and TO procedures.

6.5.8.2. Pre-Task or Preparation Errors normally indicate inadequate training on job preparation procedures. Mistakes corrected before the task begins are considered preparation errors and if not corrected, may have a bearing on task performance. For example, installer sets up an oscilloscope, which is overdue calibration, document this as a preparation error. However, if installer uses that oscilloscope during task performance, document as a Category I or II task performance error. Some preparation errors include:

6.5.8.2.1. TMDE overdue calibration.

6.5.8.2.2. Applicable technical data not on hand.

6.5.8.2.3. Tools or support equipment not obtained before task initiation.

6.5.8.2.4. Support equipment missing needed parts.

6.5.8.2.5. Equipment was improperly handled.

6.5.8.2.6. Equipment status not checked to determine the existing condition.

6.5.8.2.7. Failure to place manhole guards.

6.5.8.2.8. Not knowing manhole status; failure to check for gas.

6.5.8.3. Task Performance Errors normally indicate inadequate task training. Examples of task performance errors are:

6.5.8.3.1. Applicable technical data or directives not used.

6.5.8.3.2. Warning, cautions, and notes not complied with.

6.5.8.3.3. Not all steps performed.

6.5.8.3.4. Steps not performed in the required sequence.

6.5.8.3.5. Individuals not familiar with emergency procedures.

6.5.8.4. Examples of Post Performance Errors:

6.5.8.4.1. Documentation not properly completed.

6.5.8.4.2. Work area cleanup actions not accomplished.

6.5.8.4.3. Tools and support equipment not properly stored after task completion.

6.5.8.5. Task Performance Error Categories. Error categories assist QA Evaluators in determining overall task performance results. Errors are categorized by degree of seriousness:

6.5.8.5.1. Category I errors result in an unsatisfactory rating for that particular task. Some examples are:

6.5.8.5.1.1. An error causes or has the potential to cause an injury. Such an error is serious enough to stop the task assessment.

6.5.8.5.1.2. An error causes or has the potential to cause damage to any item. This includes the item being worked on, all support equipment, or any other item in the work area.

6.5.8.5.1.3. Task performance could not be completed because the individual lacked sufficient knowledge of the task or operation of required support equipment.

6.5.8.5.1.4. An error causes or has the potential to cause a security violation.

6.5.8.5.1.5. An out of tolerance condition or measurement was not recognized and resulted in the equipment not meeting technical data specifications.

6.5.8.5.2. Category II errors do not necessarily result in an unsatisfactory task rating. Some examples are:

6.5.8.5.2.1. Causes or has the potential to cause damage to any item but does not have detrimental effect on the operational life of the item.

6.5.8.5.2.2. A violation of a standard installation practice such as improper use of TMDE or hand tools, improper soldering techniques, or inadequate corrosion control.

6.5.8.5.2.3. Excessive delays attributable to insufficient job knowledge or improper planning, coordination, or supervision, although the task was successfully completed. The QA evaluator must determine what is excessive after taking into consideration such factors as complexity and length of the task, adverse working conditions, and other extenuating circumstances.

6.5.8.5.3. Category III errors are of minor impact and lack the seriousness to meet the criteria for a Category I or Category II error.

6.5.8.6. Results are based on overall task performance. QA Evaluators must:

6.5.8.6.1. Document all errors during the evaluation and brief the team chief, section supervisor, and the individual being evaluated upon completion.

6.5.8.6.2. Determine the category of each error using the above criteria.

6.5.8.6.3. Rate each task as satisfactory or unsatisfactory.

6.5.8.6.4. Brief the team chief or section supervisor, certifying official and the trainer as soon as possible when an unsatisfactory task rating occurs.

6.6. Project Reviews.

6.6.1. General.

6.6.1.1. An important part of QA in-house workload consists of performing project reviews after initial review by the assigned and assisting sections. The QA review is threefold: (1) to determine if the package was properly reviewed by the responsible section, (2) ensure all discrepancies have been identified and properly described to the engineer for correction and, (3) assist in resolving disagreements over project package corrections.

6.6.1.2. Selection of projects for review depends upon several factors including QA manning, project complexity, project duration, team chief and engineer experience, past section performance, and project visibility. The chief of QA, in concert with the installation officer/section chief, should jointly determine which projects QA will review. Generally, the same types of projects identified in paragraph 6.5.3. are perhaps the best ones to review.

6.6.2. Unit Coordination and Review.

6.6.2.1. Once a project package is complete, unit engineering forwards it to the project manager or workload controller for review and inventory. Once satisfied package contents are complete, the package is routed to the primary installing section for in-depth review and identification of deficiencies. If the project involves more than one section (commodity), the primary reviewing section sends the package to the applicable section(s) for further review.

6.6.2.2. The review is documented on AFMC Form 150 (**Attachment 25**) and a continuation narrative if necessary. The project review is conducted according to the procedures in **Chapter 5**, paragraph 5.2. of this publication.

6.6.2.3. The QA review should focus on the completeness and accuracy of the original team chief review. Ensure all discrepancies are identified and logical and workable solutions accurately documented. An important judgment call is how the deficiencies will impact the project. This should be explained in detail in terms of man-hours, materiel, delays, and overall estimated additional costs if not corrected.

6.6.2.4. Discrepancies discovered by QA should be brought to the attention of the original reviewer for correction. QA should add their comments to the AFMC Form 150 include recommendations, references, and any other pertinent information. Stamp or initial and date the front of the AFMC Form 150 to indicate QA review. It's a good idea to make a copy of the review for future follow up actions.

6.6.2.5. Depending on the nature and severity of discrepancies, QA may want to re-review the package after engineering changes are accomplished. Follow-up with the section to ensure valid changes are incorporated and the final package is complete.

6.7. Trend Analysis.

6.7.1. General. Time and manpower permitting, unit trend analysis may prove beneficial when project deficiency data can be collected over a period of time, correctly analyzed, deficiency causes identified, and proper corrective measures recommended and accepted by the responsible management

level. A solid trend analysis not only pinpoints negative trends but also identifies areas of positive performance which can be analyzed and possibly used to improve deficient areas.

6.7.2. Project Evaluation Trend Data.

6.7.2.1. Project evaluation data is taken from the EI Quality Assurance Evaluation Reports, and entered into QA program software. All unit QA sections should use standardized software that includes databases, input forms, report formats, trend graphs, and data logs.

6.7.2.2. List total number of project evaluations performed during a selected time period. Include number of evaluations for the three previous time periods. Within the totals for each time period, breakdown the number of mandatory evaluations, type of evaluations (i.e. final, in-progress, after-the-fact), and number of team chief certification evaluations and type (i.e. initial, re-certification, special).

6.7.2.3. Calculate percentage of effectiveness in all six sections on EI Quality Assurance Evaluation Reports for the Selected time period. Include percentage of effectiveness for the three previous time periods.

6.7.2.3.1. For each section, total the number of OBS from each sub-section for all project evaluations performed during the time period. Next, total the number of DEF from each sub-section. Then, divide the total DEF in the section by the total OBS in the section, and multiply by 100. Finally subtract that percentage from 100. The result is the percentage of effectiveness for the section.

6.7.2.3.2. For the percentage of effectiveness to be of value, the number of OBS versus the number of DEF must be as accurate as possible.

6.7.3. Training Effectiveness Assessment Trend Data. Training effectiveness trend data must contain the following elements:

6.7.3.1. Number of training effectiveness assessments performed during a selected time period. Include number of assessments for the three previous time periods. Within the total per time period show the number SAT/UNSAT tasks ratings and the type of assessment (i.e. initial or follow-on).

6.7.3.2. Identify where training effectiveness assessments were performed, either in-station or while deployed during a project installation.

6.7.3.3. Breakdown the total number of training effectiveness assessments performed in each Air Force Specialty (AFS) (i.e. 2E0, 2E1, 2E3, 2E6, etc.). Within each AFS show the number SAT/UNSAT task ratings.

6.7.3.4. Breakdown where errors occurred in either task preparation, task performance, or post performance.

6.7.4. Customer Satisfaction Questionnaire (CSQ) Trend Data. Trend data from CSQs ([Attachment 44](#)) must contain the following elements:

6.7.4.1. The number of CSQs received during a selected time period. Include the number of CSQs for the three previous time periods.

6.7.4.2. From section II of the CSQs received during the selected time period, add the ratings received in each category, and divide by the number of CSQs. This results in an average for each category.

6.7.5. QA analysis of Trend Data.

6.7.5.1. Analyze and document a summary of the overall fitness of the installations mission as seen through the performance of project reviews, project evaluations, team chief certification evaluations, customer satisfaction questionnaires, and training effectiveness assessments during the selected time period. The analysis summary should compare previous data to recent data to determine if new positive or negative trends have developed.

6.7.5.2. Provide analysis of deficiencies found during project evaluations. Identify possible causes and provide recommendations to prevent reoccurrence.

6.7.5.3. Include a narrative in the areas of engineering, project accomplishment, EI team chief, workmanship, EI unit support, safety. The narrative should explain any adverse trends, as seen in the project evaluation trend data.

6.7.5.4. Assess the effectiveness of the team chief development program. Analyze the results of team chief certification evaluations.

6.7.5.5. Comment on the health and status of the unit training program as seen through the performance of training effectiveness assessments. The narrative should identify suspected causes of any unsatisfactory task ratings and provide recommendations for improvement to a specific training program.

6.7.5.6. Address changes in status (open, closed, or pending) by report control number of Product Quality Deficiency Reports and Technical Order Improvement Reports.

6.7.5.7. Other areas of discussion may include accomplishments, new developments, improvements to current procedures, changes to standards, solution to problems, recommendations for QA program improvements, and areas of concern.

6.8. Technical Order Improvement And Materiel Deficiency Reports.

6.8.1. General.

6.8.1.1. Aggressive action is required by all personnel to identify, report, and correct deficiencies in technical orders and materiel.

6.8.1.2. Air Force technical order system provides procedures for correcting technical publications. AFTO Form 22, Technical Order Improvement Report and Reply, is the tool used to recommend specific TO improvements and corrections IAW TO 00-5-1.

6.8.1.2.1. 738 EIS/DOO serves as the AFMC Equipment Specialist for all Standard Installation Practices Technical Orders. Route all AFTO Forms 22 on 31-10-series Technical Orders to 738 EIS/DOO, 670 Maltby Hall Drive, Keesler AFB MS 39534. 738 EIS/DOO is responsible to investigate and validate AFTO Forms 22 prior to submission to the AFMC Air Logistics Center for processing and approval or disapproval.

6.8.1.3. Standard Form 368, **Product Quality Deficiency Report (PQDR)** is used to report deficiencies on hardware, software, mission critical computer systems, vehicles, clothing, and textiles to Air Logistics Centers for investigation and resolution.

6.8.1.3.1. Category I deficiency reports are submitted on materiel that if not corrected, would cause death, severe injury, or severe occupational illness; would cause major loss or damage to equipment or a system; or would directly restrict combat or operational readiness.

6.8.1.3.2. Category II deficiency reports are submitted on materiel that is attributable to errors in workmanship not conforming to specifications, drawing standards, or other technical requirements.

6.8.1.3.3. Deployed team chiefs submit PQDRs to the customer for project materiel procured through the base standard supply system. The O&M unit quality control function is the screening point as defined in TO 00-35D-54. When there is no Air Force host unit, the EI unit QA office is the screening point.

6.8.1.3.4. The EI unit QA office is the screening point for PQDRs on EI unit-owned materiel, such as test equipment, tools, and in-house work. . .

6.8.1.3.5. The team chief must provide sufficient information to the screening point for documenting and submitting the PQDR. PQDR exhibits are retained by QC or QA pending disposition instructions.

6.8.1.3.6. Equipment procured direct from commercial vendors is not subject to the standard deficiency reporting system. Such equipment items are normally under warranty and the procurement source should work with the applicable vendor for restitution.

6.8.1.4. Reports of Discrepancy (ROD) are used to report all shipping and packaging discrepancies for items received through the standard base supply system. The base supply receiving section responsible to submit RODs when deficiencies are reported to them.

6.8.2. QA TO and Materiel Deficiency Reporting Procedures.

6.8.2.1. Determine if team chief has identified and properly reported TO and materiel deficiencies.

6.8.2.2. Record a deficiency on EI Quality Assurance Evaluation Reports, section III, item G, when team chief fails to initiate required TO or materiel deficiency reports and assist team chief to initiate required report.

6.8.2.3. Finalize and process PQDRs and AFTO Forms 22 received from team chiefs and unit personnel.

6.8.2.4. Maintain a separate log for AFTO Forms 22 and PQDRs, and follow up as required by TO 00-5-1 and TO 00-35D-54 respectively. The QA software program can be used to log AFTO Forms 22 and PQDRs.

6.8.3. AFTO Form 22 QA Procedures.

6.8.3.1. Assign report numbers in accordance with TO 00-5-1. Record reports in QA software program or locally developed log.

6.8.3.2. Submit AFTO Forms 22 on 31-10 series TOs to the 738 EIS/DOO. For other TOs submit to the screening point identified in TO 00-5-1.

6.8.3.3. For AFTO Forms 22 involving safety or conditions which seriously impact equipment operation of installation procedures, cross-feed information to other EI units and ANG/C4CE.

6.8.4. Product Quality Deficiency Report (PQDR) QA procedures.

6.8.4.1. Assign control numbers and route reports in accordance with TO 00-35D-54. Record reports in QA software program or locally developed log.

6.8.4.2. Analyze PQDRs generated by field units and provide cross-feed information.

6.9. Customer Satisfaction Questionnaires.

6.9.1. General. AFMC Form 161, Customer Satisfaction Questionnaire (CSQ), provides customers an avenue to evaluate the quality of EI products and services. Customer feedback provides data to continually improve our processes in engineering, project management, logistics, installation and training. [Attachment 44](#) is a sample CSQ.

6.9.2. QA CSQ Procedures.

6.9.2.1. E-mail, or coordinate with the project manager/ workload controller, to E-mail CSQs to the customers upon completion of project. The CSQ E-mail should describe the purpose of CSQ program and stress importance of accurate and factual comments.

6.9.2.2. Maintain an electronic or manual CSQ log to keep track of CSQ status.

6.9.2.2.1. Enter CSQ mailing date in tracking log.

6.9.2.2.2. If no reply is received within 30 calendar days after project completion, perform a follow-up by phone or e-mail and document actions in tracking log.

6.9.2.2.3. If necessary, E-mail another CSQ and document actions.

6.9.2.2.4. If no reply is received within 60 calendar days, CSQ monitor has the option to write off CSQ as “no response received” in tracking log.

6.9.2.2.5. Electronically or manually retain a copy of each CSQ on file for two years.

6.9.2.3. Review all CSQs returned by customers. If comments are vague for dissatisfied ratings of 1, 2, or 3, contact customer for clarification and additional information.

6.9.2.4. Route a copy of each CSQ to the unit commander, installation officer, and applicable work center according to locally determined routing procedures.

6.9.2.5. CSQs with dissatisfied ratings or negative comments should be thoroughly investigated by QA and then routed to the unit commander and the installations flight along with investigation information, comments, and recommended corrective action.

6.9.2.6. Provide customers with written feedback if CSQs contain unsatisfactory ratings or comments. File a copy of the feedback and any customer responses in the CSQ file.

6.9.2.7. Use CSQs to provide data for the trend analysis report. Customer satisfaction is a strong indicator of how well the EI mission is performed. CSQs help determine effectiveness of EI products and services. Data collection and analysis of customer feedback provides the opportunity to improve processes in engineering, project management, logistics, installation practices and training.

6.10. Quality Assurance Of In-House Prefabrication, Preassembled, And Prototype (P3) Workload.

6.10.1. All in-house (P3) projects will be evaluated by the unit QA function. Establish an audit trail to ensure deficiencies identified with pre-assembled assets can be quickly isolated back to the source of assembly and corrective measures initiated.

6.10.2. QA Procedures.

6.10.2.1. Evaluate each rack, harness, jig, etc., separately using existing or locally devised checklists. Also evaluate storing, packaging, and shipping procedures.

6.10.2.2. Stamp or sign and date the condition status tag of each inspected item.

6.10.2.3. Record the results of P3 inspections on EI Quality Assurance Evaluation Report. Multiple item inspections may be documented on one report with a serial number listing and item condition on a continuation sheet.

6.10.2.4. For non-serial numbered items, local control and identification procedures will be established. When physically possible, recommend evaluator affix QA stamp imprint on item to certify quality. Use same location on like assets.

6.11. Funding Policy. QA evaluations and assessments are considered part of the implementation phase of all projects. They will be budgeted as part of the installation team composition and paid for by the customer. Project managers and workload controllers are responsible to incorporate QA travel and per diem costs with installation cost estimates before submitting total cost estimates to customers.

LARRY O. SPENCER, Brigadier General, USAF
Director of Mission Support

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 21-404, *Management of Communication and Information Systems Records*

AFI 23-202, *Buying petroleum products and other supplies and services off station*

AFI 24-101, *Passenger Movement*

AFI 24-301, *Vehicle Operations*

AFI 24-302, *Vehicle Maintenance Management*

AFI 31-401, *Information Security Program Management (Supplements DOD 5200.1R)*

AFI 31-501, *Personnel Security Program Management*

AFI 32-6005, *Unaccompanied Housing Management*

AFI 33-104, *Base Level Planning and Implementation*

AFI 34-246, *Air Force Lodging Program*

AFI 36-2201, *Vols 1 thru 6, AF Training*

AFI 36-2403, *Officer and Enlisted Evaluation System*

AFI 36-2903, *Dress and Personal Appearance of Air Force Personnel*

AFI 41-101, *Obtaining Alternative Medical and Dental Care*

AFI 64-109, *Local Purchase Program*

AFI 91-204, *Safety Investigation and Reports*

AFI 91-207, *USAF Traffic Safety Program*

AFI 91-301, *Air Force Occupational Safety, Fire Prevention and Health Program*

AFMAN 11-225, *US Standard Flight Inspection Manual*

AFMAN 23-110, *USAF Supply Manual*

AFM 33-105, *Engineering Installation Services*

AFPAM 36-2241, Vol I, *Promotion Fitness Examination (PFE) Study Guide*

AFPAM 36-2241, Vol II, *USAF Supervisory Examination (USAFSE) Study Guide*

AFPAM 36-2627, *Airman and NCO Performance Feedback System*

AFTO 0-1-CD-01, *Numerical Index, Alphabetical Index, Cross-Reference Table*

AFTO 0-4-6-2-CD-1, *Cross-Reference File of Equipment Numbers to Technical Order Numbers, WEB SITE <https://toindex-s.robins.af.mil/toindex/index.cfm>*

AFTO 00-5-1, *Air Force Technical Order System*

AFTO 00-5-15, *Air Force Time Compliance TO Process*

AFTO 00-20-1, *Aerospace Equipment Maint General Policies and Procedures*

AFTO 00-25-108, *Communications-Electronics (C-E) Depot Support*

AFTO 00-35D-2, *Electronics Set, Inventory Checklist for Ground Communications-Electronics (CE) Equipment*

AFTO 00-35D-54, *USAF Materiel Deficiency Reporting and Investigating System*

AFTO 11H5-33-1, *Hydrogen Sulfide, Combustible Gas and Oxygen Alarm System*

AFTO 31-10-2, *Fanning and Forming Conductors for Ground C-E Equipment*

AFTO 31-10-3, *Outside Plant Installation*

AFTO 31-10-4, *Delta-Matched Doublet Antenna*

AFTO 31-10-5, *Concrete Pads and Piers for Ground C-E Equipment*

AFTO 31-10-6, *Cable Racks, Troughs and Their Supports*

AFTO 31-10-7, *Terminating and Soldering Electrical Connections*

AFTO 31-10-9, *Marking Site Layout*

AFTO 31-10-10, *Anchoring Devices for Ground C-E Equipment*

AFTO 31-10-11, *Cross Connections*

AFTO 31-10-12, *Metal Ducts and Conduits*

AFTO 31-10-13, *Cabling for Fixed Ground C-E Equipment*

AFTO 31-10-14, *Radio Frequency Connectors and Cables*

AFTO 31-10-19, *Antenna Systems-Anchors and Supports*

AFTO 31-10-20, *Antenna Systems -High Frequency Discone Antenna*

AFTO 31-10-21, *Antenna Systems -Protection, Stepping, and Splicing of Poles*

AFTO 31-10-22, *Antenna Systems -Open Wire Radio Frequency Transmission Lines*

AFTO 31-10-23, *Antenna System-High Frequency Rhombic Antenna*

AFTO 31-10-24, *Communications Systems Grounding, Bonding, and Shielding*

AFTO 31-10-27, *Equipment Designations*

AFTO 31-10-28, *Erection of Steel Towers*

AFTO 31-10-29, *Erection and Assembly of C-E Equipment*

AFTO 31-10-32, *Circular Metallic Waveguide*

AFTO 31-10-33, *Corrugated Copper Elliptical Waveguide*

AFTO 31-10-34, *Fiber Optics Communications Cables and Connectors*

AFTO 31R-10-5, *Antenna Systems Maintenance, Repair, and Testing*

AFTO 31R-10-38, *HF Radio Communications Systems*

AFTO 31W2-10-16, *Telephone, Inside Plant Installation*

AFTO 31W3-10-12, *Outside Plant Cable Placement*
AFTO 31W3-10-13, *Outside Plant Cable Splicing*
AFTO 31W3-10-14, *Outside Plant Cable Termination*
AFTO 31W3-10-15, *Outside Plant Cable Testing*
AFTO 31W3-10-16, *Outside Plant Pressurization*
AFTO 31W3-10-19, *Telephone, Outside Plant Installation, Poleline*
AFTO 31W3-10-20, *Telephone Outside Plant Installation, Drop and Block Wiring and Station Installation*
AFTO 31W3-10-21, *Outside Plant Cable Maintenance and Repair*
AFTO 31W3-10-22, *Outside Plant Telephone*
AFTO 31Z-10-2, *Prevention and Elimination of Interference of C-E Equipment*
AFTO 31Z-10-4, *Electromagnetic Radiation Hazards*
AFTO 31Z-10-6, *Radio Frequency Interference Prediction Procedures*
AFH 37-137, *The Tongue and Quill*
AFOSH 91-5, *Welding, Cutting and Brazing*
AFOSH 91-25, *Confined Spaces*
AFOSH 91-50, *Communications Cable, Antenna and C-E Systems*
AFOSH 91-66, *General Industrial Operations*
AFOSH 91-38, *Hydrocarbon Fuels General*
AFOSH 48-9, *Radio Frequency Radiation Program*
AFVA 91-303, *Danger - Do Not Energize - Person Working on Antenna*
AFVA 91-304, *Danger - Do Not Energize - Work in Progress*
AFVA 91-305, *Danger - Interlocks Disabled*
AFVA 91-306, *Danger - High Voltage*
NBSH-30, *National Bureau of Standards Handbook -National Electric Safety Code*
TM 5-725, *Rigging*
TM 5-744, *Structural Steel Work*
NFPA 70, *National Electric Code Handbook*
MIL-HDBK 419, Vol I and II, *Grounding, Bonding, and Shielding for Electric*
MIL-HDBK 232A, *Red/Black Engineering and Installation Guidelines*
MIL-STD 188-124B, *Grounding, Bonding and Shielding*
NACSIM 5203, *National Agency COMSEC Installation Manual (Red/Black Installation Criteria)*
5 USC, *United States Code*

Forms

AF Form 9, **Request for Purchase**

AF Form 15, **United States Air Force Invoice**

AF Form 103, **Base Civil Engineering Work Clearance Request**

AF Form 171, **Request for Driver's Training and Addition to U.S. Government Driver's License**

AF Form 332, **BCE Work Request**

AF Form 592, **USAF Welding, Cutting and Brazing Permit**

AF Form 601, **Equipment Action Request**

AF Form 616, **Fund Cite Authorization (FCA)**

AF Form 623, **On-the-Job Training Record**

AF Form 711A, **Ground Mishap Report**

AF Form 910, **Enlisted Performance Report**

AF Form 911, **Senior Enlisted Performance Report**

AF Form 979, **Danger Tag**

AF Form 980, **Caution Tag**

AF Form 981, **Out of Order Tag**

AF Form 988, **Leave Request/Authorization**

AF Form 1098, **Special Task Certification and Recurring Training**

AF Form 1146, **Engineering Change Request/Authorization**

AF Form 1261, **Communication and Information System Acceptance Certificate**

AF Form 1297, **Temporary Issue Receipt**

AF Form 1566, **WAPS Test Verification**

AF Form 1800, **Operator's Inspection Guide and Trouble Report (General Purpose Vehicles)**

AF Form 1806, **Operator's Inspection Guide and Trouble Report (Aircraft Towing, Base Maintenance, Deicers, High Reach and Snow Removal)**

AF Form 2005, **Issue/Turn In Request**

AF Form 2282, **Statement of Adverse Effect - Use of Government Facilities**

AFMC Form 148, **Team Chief Fitness Evaluation**

AFMC Form 149, **C4 Systems Project Cover Sheet**

AFMC Form 150, **EI Project Review**

AFMC Form 151, **Engineering Installation Team Pre-Deployment Checklist**

AFMC Form 152, **Engineering Installation Team Chief Log**

AFMC Form 153, **Pre-Implementation Site Survey (PSS) Checklist**

AFMC Form 154, **EI Quality Assurance Evaluation Record**
AFMC Form 155, **Engineering Installation Team Post Deployment checklist**
AFMC Form 160, **Training Effectiveness Assessment (TEA)**
AFMC Form 161, **Customer Satisfaction Questionnaire (CSQ)**
AFMC Form 162, **Narrative**
AFMC Form 163, **Record of Corrective Action**
AFMC Form 164, **Fiber Optic End-to-End Attenuation Test**
AFMC Form 165, **Consolidated Utility Cut/Damage Report**
AFMC Form 166, **Project Status Report**
AFTO Form 22, **Technical Manual Change Recommendation and Reply**
AFTO Form 470, **Electronic Set Inventory Checklist**
AFTO Form 471, **Electronic Set Inventory Checklist**
AFTO Form 472, **Electronic Set Inventory Checklist Completion Data**
DD Form 200, **Financial Liability Investigation of Property Loss**
DD Form 518, **Accident-Identification Card**
DD Form 1149, **Requisition and Invoice/Shipping Document**
DD Form 1348-1, **DOD Single Line Item Release/Receipt Document.**
DD Form 1351, **Travel Voucher**
DD Form 1351-2, **Travel Voucher or Subvoucher**
DD Form 1351-5, **Government Quarters and Mess**
DD Form 1354, **Transfer and Acceptance of Military Real Property**
DD Form 1575, **Suspended Tag - Materiel**
SF 91, **Operator's Report of Motor Vehicle Accident**
SF 149, **US Government National Credit Card**
SF 361, **Transportation Discrepancy Report**
SF 364, **Report of Discrepancy**
OF 346, **US Government Motor Vehicle Operators Identification Card**

Abbreviations and Acronyms

AFI—Air Force Instructions

AFMAN —Air Force Manuals

AFOSH—Air Force Occupation Safety, Fire Prevention And Health

AFO—Accounting Finance Office

AFPD—Air Force Policy Directive
AFI—Air Force Instruction
AFTO—Air Force Technical Order
ASC—Allied Support Completion
ATCALS—Air Traffic Control And Landing Systems
AWM—Awaiting Maintenance
AWP—Awaiting Parts
BCE—Base Civil Engineer
BEE—Base bioenvironmental Engineer
BOD—Beneficial Occupancy Date
BPID—Blueprint Phase Implementation Directive
BTU—British Thermal Units
C4—Command, Control, Communications-Computer
CA—Connection Approval
CA/CRL—Custodian Authorization/Custody Receipt Listing
CAT—Catalog
CE—Civil Engineer
CIR—Command Incident Report
CI—Communications and Information
COMSEC—Communications Security
COS—Chief of Supply
COTS—Commercial Off The Shelf
CSIR—Communications-Computer Installation Record
CSRD—Communications-Computer Systems Requirement Document
CSO—Communications Systems Officer
CWD—Chemical Warfare Defense
CII—Command, Control, Communications, Computer, and Intelligence
DDN—Defense Data Network
DISA—Defense Information Systems Agency
DMR—Date Materiel Required
DMS—Defense Messaging System
DOD—Department of Defense

DRMO—Defense Reutilization and Marketing Office
DSN—Defense Switching Network
DWG's—Drawings
ECR/A—Engineering Change Request/ Authorization
EED—Electro-Explosive Devices
EI—Engineering Installation
EIG—Engineering Installation Group
EIS—Engineering Installation Squadron
E-Mail—Electronic Mail
EMC—Electromagnetic Compatibility
EMI—Electromagnetic Interference
EMO—Equipment Management Office
EMP—Electromagnetic Pulse
EMRH—Electromagnetic Radiation Hazard
EMSEC—Emissions Security
ERRC—Expandability/Reparability/Recoverability/Cost
FAA—Federal Aviation Administration
FAS—Functional Address Symbol
FO—Fiber Optic
GPS—Global Positioning System
GSA—General Services Administration
HEMP—High-Altitude Electromagnetic Pulse
HNA—Host Nation Approval
HQ—Headquarters
IAW—In Accordance With
IM—Item Manager
ISM—Implementation Strategy Meeting
ISSL—Initial Spares Support List
JETDS—Joint Electronics Type Designator System
JFTR—Joint Federal Travel Regulation
JTR—Joint Travel Regulation
LAN—Local Area Network

LOA—Letter of Agreement
LOM—List of Materiel
LOS—Line of Sight
MAJCOM—Major Command
MC&G—Mapping, Charting, and Geodetic Services
MCL—Minimum Cutting Length
METNAV—Meteorological Navigational
MICAP—Mission Impairment Capabilities
MIRD—Maintenance-Installation Required Date
MSES—Measurement and Specialized Engineering Services
MSS—Mission Support Squadron
MTA—Military Transportation Authorization
NEC—National Electrical Code
NOA—Notification of Arrival
NSL—Non-Stock Listed
NSN—National Stock Number
ODC—Ozone Depleting Chemicals
O&M—Operations and Maintenance
OPlan—Operations Plan
P3—Prefabrication, Preassembled, and Prototype
PCB—Polychlorinated Biphenyl
PIN—Project Identification Number
PM/WC—Project manager/Workload controller
PMD—Program Management Directive
POC—Point of Contact
POL—Petroleum, Oil, and Lubricant
POM—Program Objectives Memorandum
PQDR—Product Quality Deficiency Report
PSA—Project Support Agreement
PSS—Pre-Implementation Site Survey
PTT—Post, Telephone, and Telegraph
QAE—Quality Assurance Evaluator

RFR—Radio Frequency Radiation

ROD—Required Operational Date

ROD—Report of Discrepancy

RPO—Responsible Property Officer

SA—Support Agreement

SAT—Systems Acceptance Testing

SCI—Sensitive Compartmented Information

SIPTO—Standard Installation Practices Technical Order

SOI—Statement of Intent

SOW—Statement of Work

SRL—Standard Reel Length

STEM—Systems Telecommunications Engineering Manager

STEMB—Systems Telecommunications Engineering Manager For The Base

TCTO—Time Compliance Technical Order

TDY—Temporary Duty

TEMPEST—Special Shielding Against Electromagnetic Radiation

TFG—Total force Group

TI—Task Instructions

TMDE—Test Measurement Diagnostic Equipment

TPA—Travel by Privately Owned Conveyance - Mileage Reimbursement

TPC—Travel by Private Conveyance - Cost of Common Carrier

TR—Transportation Request

TSD—Team Start Date

TSO—Telecommunications Service Order

TSR—Telecommunications Service Request

WIN—Workload Identification Number

Attachment 2

BLUEPRINT PHASE IMPLEMENTATION DIRECTIVE (BPID)

Table A2.1. Blueprint.

1. **Title:** Relocation of Copper Cable for New CCF **Date:** *(enter date)*

2. **Implementation Phase:** (Identify phase of multi-phased projects) **BPID No:** *(enter #)* **RCD:** *(enter date)*

Requirement: Engineer, provide LOM, and relocate existing copper feed cable within the new Consolidated Communications Facility construction area. Buried 900 pair and several smaller cables need to be relocated. Installation needs to occur as soon as practical to avoid any delays in facility construction schedule

3. **Proposed Solution:** The recommended solution follows:

Note that to avoid downtime, hot section throws or half tapping will be required.

Reopen 3000 pair splice in MH 54, splice in new 900 pair cable to replace existing 900 pair, A: 1-200 + 07: 2301-2975 + A: 876-900. Also splice in new 6 pair, 07: 2795-2800. Route new 900 pair and 6 pair east through stubouts and across Hamby Rd, intercept existing 12 pair cable and splice to new 6 pair. (approx 250')

Continue burying new 900 pair northeast around 90603 parking lot and north up to 90642 (approx 500'). West of 90642, splice in new 25 pair, 07: 2801-2825 and intercept existing 25 pair feeding 90642 (approx 50'). Also, splice in new 50 pair, 07: 2701-2750 and intercept existing 50 pair feeding 90604, 90640, 90628 and 90627. (approx 50'). Finally, splice in 100 pair, 07: 2826-2900.

Splice remaining pairs and continue routing 900 and 100 pair north and across road leading to 90642 (approx 300'). Route cables west along north side of road to existing splice point east of Hamby Rd (approx 100'). Reopen existing splice and splice new 100 pair, 07:2826-2900 to existing 100 pair feeding 90606 and 90617.

Continue burying 900 pair across Hamby road crossing and to existing 600 pair cable (approx 100'). Open sheath on 600 pair and splice in 07: 2301-2700. Also, splice in new 25 pair, 07: 2951-2975. Route 25 pair west and then south across substation road crossing and intercept existing 12 pair, 07: 2964-2975 (approx 200').

Allied Support Required: 1 ea 6" stub-out from across south end of Hamby and pump house parking lot. 1 ea 6" conduits across road to 90642, just south of 90607. 1 ea 4" conduit across Hamby road immediately north of intersection with gravel road. 1 ea 4" conduit across gravel road

Installation Summary:

6 pair: 250' buried, 1 splice

25 pair: 50' buried, 1 splice

50 pair: 50' buried, 1 splice.

100 pair: 400' buried, 1 splice.

900 pair: 1250' buried, 3 splices.

Other: Reopen large splice, MH 54 (3000 pair)

Other. Sheath opening in buried 600 pair

Other: Sheath openings in 6, 12, 25 and 50 pair

5. Communications Construction Support Cost Estimate:

- a. Base Allied Support (3400) \$6,000
- b. MCP Support (3300)

6. Estimate of Customer Costs:	Organic Install (\$)	38 EIG Contracted (\$)
a. Equipment	\$0	\$0
b. Installation Hardware/Supplies	\$22,000	\$22,000
c. Engineering (100 man-hours)	\$0	\$12,000
d. Engineering Travel/Per Diem	\$1,400	\$1,400
e. Installation (497 man-hours)	\$0	\$17,500
f. Installation Travel/Per Diem	\$12,500	\$12,500
g. Quality Assurance Travel/Per Diem	\$1,250	\$0
Total Reimbursable Costs	\$37,150	\$65,400

7. Other Customer-Funded Costs:	Initial (\$)	Recurring (\$)
a. Equipment, Software, Etc.	\$0	\$0
b. O&M (rentals, special tools, etc.)	\$0	\$0
c. Telecommunications	\$0	\$0
d. Training	\$0	\$0
Total Other Customer-Funded Costs:	\$0	

8. Total Estimated Costs (includes reimbursable and customer funded):

- a. Using Organic EI Resources \$37,150
- b. Using 38 EIG Contractor \$65,400
- c. Allied Support \$6,000

9. Additional Notes:

a. This Initial Technical Solution and Costing was prepared by the STEM-B in accordance with AFI 33-103. Please refer any questions to the STEM-B.

b. This BPID is in support of nominated workload from the AFSOC FY 04 Work plan.

c. The costs shown in this document represent current fiscal year dollars.

d. The engineering and installation per diem rates are figured using non-available quarters.

e. Funds are required before 38 EIG or ANG/C4CE expends resources for travel, per diem, equipment, materials and/or contracts.

f. The costs provided are estimates only. It is not intended as a final engineering or installation solution, but it is to be used for budgetary planning purposes only. The actual costs cannot be determined until project implementation is complete.

g. This costing is intended for U.S. Government agencies only and should not be released to commercial contractors or vendors.

h. Please use **\$71,400** as the estimated cost figure for budgetary purposes. Any questions please contact, (*Name and E-mail address*), STEM-B, DSN 884-0010.

Attachment 3

AFMC 148, TEAM CHIEF FITNESS EVALUATION

Figure A3.1. AFMC 148.

TEAM CHIEF FITNESS EVALUATION			
NAME			
	E= EXCELLENT	S= SATISFACTORY	U= UNSATISFACTORY
1. PRODUCTIVITY	E	S	U
QUALITY OF WORK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
QUANTITY OF WORK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TIMELINESS OF WORK	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS			
2. TRAINING	E	S	U
UPGRADE (OUI/DOU)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PROFICIENCY/QUALIFICATIONS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CONTINGENCY/ABILITY FOR	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS			
3. RESPONSIBILITIES	E	S	U
SAFETY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SECURITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CONTROL/SAFEGUARD OF EQUIPMENT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS			
4. STANDARDS	E	S	U
DRESS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WEIGHT	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FITNESS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS			
5. PERSONAL QUALITIES	E	S	U
INITIATIVE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
JOB KNOWLEDGE	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PUNCTUALITY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TECHNICAL PROFICIENCY	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
WORKING RELATIONS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMUNICATIVE SKILLS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COMMENTS			

AFMC FORM 148, 20010312 (I/MT-Vf)

Attachment 4**TEAM CHIEF/TEAM CHIEF NOMINEE FOLDER CONTENTS**

A4.1. Establish and maintain in each applicable duty section six-part folders for each Team Chief (TC) and Team Chief Nominee (TCN). Folders for certified team chiefs not performing team chief duties should be retained in an inactive file and reactivated when individuals are reassigned to team chief duty positions.

A4.2. Format the front cover of each team chief and team chief nominee folder with rank, name, AFSC, and privacy act label. Insert the following documents:

A4.2.1. Tab A.

TC/TCN: Letter of nomination approved by the Installations Officer/Flight commander for entry into the TCDP.

TC: Letter of nomination approved by the Installations Officer/Flight commander for award of the "EI Team Chief" duty title.

A4.2.2. Tab B:

TC/TCN: Annotated AFMC Form 148, **Team Chief Fitness Evaluation**.

A4.2.3. Tab C:

TC/TCN: AF Form 1256, **Certification of Training, for completion of Lightning Force Orientation and Installation Practices (LFOIP)** in the related AFSC.

TC/TCN: Supervisor Safety Training Completion Document IAW AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Prevention and Health (AFOSH) Program*.

TC/TCN: AF Form 1256, **Certificate of Training, certifying completion of the Lightning force Academy (LFA) EI Team Chief Course**.

TC/TCN: Hazardous cargo training certification.

TC/TCN: Other LFA completion certificates, such as Project Engineering, etc.

A4.2.4. Tab D:

TCN: AF Form 797, **EI Team Chief Job Qualification Standard (JQS)**, or electronic equivalent (AFMCI 33-104, **Attachment 5**).

TC: Completed AF Form 797, **EI Team Chief JQS**, with all required tasks certified.

TC: AFMC Form 154 (with attachments) documenting team chief evaluations.

A4.2.5. Tab E:

TC: AF Form 2096, **Classification/On-the-Job Training Action** designating the award of Special Experience Identifier (SEI) Code 200 or computer generated equivalent.

A4.2.6. TAB F:

TC/TCN: Memos for record, signed by individual's supervisor, covering missing documents.

TC: Copies of AFMC Forms 161, **Customer Satisfaction Questionnaires**.

NOTE: AFMC Forms originated in Jun 00. Equivalent 38 EIW, or AFCC forms covering actions prior to Jun 00 are valid and should not be replaced by AFMC forms.

Attachment 5

EI TEAM CHIEF JOB QUALIFICATION STANDARD

(AF 797 or CAM)

Figure A5.1. AF Form 797 (Page 1).

JOB QUALIFICATION STANDARD CONTINUATION/COMMAND JQS						
CRITICAL TASK	TASK NUMBER	TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	CERTIFICATION			
			START DATE	COMPLETION DATE	TRAINER'S INITIALS	TRAINERS INITIALS
	5.1*	PROJECT PACKAGE REVIEW				
	5.11	Inventory package to ensure correct format and content TR: AFMCI 33-104, paragraph 5.2				
	5.12	Review Tab A to verify LOM accuracy TR: AFMCI 33-104, paragraph 5.2.5				
	5.13	Review Tab B to ensure drawings are on hand, publications tools, test equipment identified, task instructions are clear and accurate and test plan is correct TR: AFMCI 33-104, paragraph 5.2.6				
	5.14	Review Tab B to verify project support agreement identifies all required support items TR: AFMCI 33-104, paragraph 5.2.7				
	5.15	Document project package review findings on AFMC Form 150, Record of EI Project Review. TR: AFMCI 33-104, paragraph 5.2.7.6, and Attachment 25				
	5.2	PRE-DEPLOYMENT ACTIONS				
	5.2.1	Complete and document all applicable items on AFMC Form 151, EI Team Predeployment Checklist TR: AFMCI 33-104, paragraph 5-14-1 and Attachment 29				
	5.2.2	Coordinate and document all initial AFMC Form 152, EI Team Chief Log actions; maintain, update log TR: AFMCI 33-104, paragraph 5-14-2 and Attachment 30				
	5.2.3	Coordinate project support with customer and compose a notice of arrival E-mail message TR: AFMCI 33-104, paragraphs 5.5 and 5.14.5 Attachments 31 and 32				
	5.2.4	Perform final project package review TR: AFMCI 33-104, paragraph 5.14.6				
	5.2.5	Verify customer support and confirm unit vehical and equipment support TR: AFMCI 33-104, paragraphs 5.14.7 thru 5.14.10				
TRAINEE NAME				CFETP/JQS NUMBER		PAGE NO.

Figure A5.2. AF Form 797 (Page 2).

JOB QUALIFICATION STANDARD CONTINUATION/COMMAND JQS							
CRITICAL TASK	TASK NUMBER	TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	CERTIFICATION				
			START DATE	COMPLETION DATE	TRAINEE'S INITIALS	TRAINERS INITIALS	CERTIFIER'S INITIALS (IF REQUIRED)
	5.2.6	Plan trip itinerary TR: AFMCI 33-104, paragraphs 5.4.1.9 thru 5.4.1.11 and 5.14.11					
	5.2.7	Prepare team members for travel TR: AFMCI 33-104, paragraph 5.14.12					
	5.2.8	Conduct team travel and work safety briefings TR: AFMCI 33-104, paragraph 5.3.2					
	5.3	PRE-IMPLEMENTATION SITE SURVEY					
	5.3.1	Initiate and document AFMC Form 153, PSS Checklist AFMCI 33-104, paragraph 5.15.8 Attachment 35					
	5.3.2	Arrange for and conduct customer in- and out-briefings TR: AFMCI 33-104, paragraphs 5.15.3 and 5.17.4					
	5.3.3	Coordinate project actions with host base activities TR: AFMCI 33-104, paragraph 5.15.5					
	5.3.4	Inventory materiel and initiate action to correct noted deficiencies TR: AFMCI 33-104, paragraph 5.15.8.2 through 5.15.8.4					
	5.3.5	Verify allied support adequacy; coordinate as necessary to expedite completion TR: AFMC 33-104, paragraph 5.15.8.7					
	5.4	PROJECT IMPLEMENTATION					
	5.4.1	Initiate project and comply with task instructions and other special requirements TR: Project package and applicable TOs and other official guidance					
	5.4.2	Document and submit ECR/A. Properly annotate approved ECR/A changes in project package TR: AFMCI 33-104, paragraph 5.8 Attachment 28					
TRAINEE NAME				CFETP/JQS NUMBER		PAGE NO.	

Figure A5.3. AF Form 797 (Page 3).

JOB QUALIFICATION STANDARD CONTINUATION/COMMAND JQS						
CRITICAL TASK	TASK NUMBER	TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	CERTIFICATION			
			START DATE	COMPLETION DATE	TRAINEE'S INITIALS	TRAINERS INITIALS
	5.4.3	Obtain services and supplies using AF Forms 9, 15, 616, and International Merchant Purchase Authorization Card (IMPAC) TR: AFMCI 33-104, paragraph 5.7				
	5.4.4	Submit project status reports TR: AFMCI 33-104, paragraph 5.16.3 and local EI unit procedures				
	5.4.5	Demonstrate proper use of AF Forms 592, 979, 980, and 981 TR: AFMCI 33-104, paragraph 5.3.1.2.4.				
	5.4.6	Submit AFTO Form 22 and Product Quality Deficiency reports TR: AFMCI 33-104, paragraph 5.13, TO 00-5-2 and TO 00-35D-54				
	5.4.7	Prepare Letters of Agreement and other required actions when departing job site prior to project completion TR: AFMCI 33-104, paragraph 5.11, Attachment 38				
	5.4.8	Perform and document pre-shakedown, shakedown, and operational tests TR: AFMCI 33-104, paragraph 5.16.4, test plan, and applicable TOs and technical manuals				
	5.4.9	Perform a self evaluation using AFMC Form 154, Quality Assurance Evaluation report and QA Reference guide TR: AFMCI 33-104, paragraph 5.16.6, Attachment 39 and QA Reference Guide				
	5.4.10	Initiate and document AFMC Form 155, Team Chief Post Deployment Checklist TR: AFMCI 33-104, paragraph 5.17, Attachment 41				
	5.4.11	Update project drawings; transfer to customer TR: AFMCI 21-404, AFMCI 33-104, paragraph 5.17.1, Attachment 42				
	5.4.12	Transfer accountable of real property; complete DD Form 1354, Transfer and Acceptance of Military Real Property TR: AFMCI 33-104, paragraph 5.17.2 an Attachment 34				
	5.4.13	Inventory, segregate, package, document and turn in excess or residue project materiel TR: AFMCI 33-104, paragraph 5.17.2.3				
	5.4.14	Coordinate with customer POC to process AF Form 1261, Acceptance Commissioning and Removal Certificate TR: AFMCI 33-104, paragraph 5.17.3 and Attachment 40				
TRAINEE NAME				CERT/JQS NUMBER		PAGE NO.

Figure A5.4. AF Form 797 (Page 4).

JOB QUALIFICATION STANDARD CONTINUATION/COMMAND JQS							
CRITICAL TASK	TASK NUMBER	TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	CERTIFICATION				
			START DATE	COMPLETION DATE	TRAINEE'S INITIALS	TRAINERS INITIALS	CERTIFIER'S INITIALS (IF REQUIRED)
	5.4.15	Perform post deployment actions TR: AFMCI 33-104, Paragraph 5.17.6					
	5.4.16	In-process home unit, turn in vehicles, tools, test equipment, perform in-briefing TR: AFMCI 33-104, paragraph 5.17.8, local procedures					
	5.4.17	Finalize and turn in project package to supervisor TR: AFMCI 33-104, paragraph 5.17.8					
	5.4.18	Perform and document maintenance technical assistance TR: AFMCI 33-104, paragraphs 5.18.1, and TO 00-25-108 (not required for team chief certification)					
	5.4.19	Perform and document antenna preventive maintenance inspections TR: AFMCI 33-104, paragraphs 5.18.3 and TO 00-25-108 (not required for team chief certification)					
TRAINEE NAME				CFET/JQS NUMBER		PAGE NO.	

Attachment 6**TYPICAL PROJECT SUPPORT AGREEMENT (PSA) FORMAT****(Insert Organization Letterhead)***(Date)*MEMORANDUM FOR: *(Address PSAs to base CSO or designated POC)*FROM: *(Insert appropriate office symbol)**(Insert appropriate EI unit address)*SUBJECT: Project Support Agreement for *(insert project title, location, project number)*.

1. Project Information:

a. The purpose of this project is to provide *(insert summary of project or functional description of work to be performed)*.

b. Authority for the project is *(insert tasking letter or E-Mail message, IT/NSS, or BPID) dated: (insert appropriate date)*.

c. The project engineer is *(insert full name, grade, telephone number and E-Mail address)*

d. The project manager/workload controller is *(insert full name, telephone number, and E-Mail address)*.

2. PSA Purpose and Content: This PSA is a contract between *(insert the customer requesting EI services)* and the *(Insert the EI unit)* assigned to deliver the requested Command, Control, Communications, Computer and Information (C4) service or product. PSA content defines responsibilities to be accomplished by the customer or host base support functions and the EI unit in order to deliver the C4 service or product. Specific project information, detailed support requirements, project drawings, and PSA concurrence are contained in five PSA attachments:

a. Siting and Project Installation Data: PSA Attachment 1 contains the siting and project installation data.

b. Civil Engineering Support Requirements: PSA Attachment 2 identifies the support requirements to be provided by the host civil engineering activity.

c. C4 Systems Support Requirements: PSA Attachment 3 identifies the support requirements to be provided by the host C4 systems activity.

d. Drawing List: PSA Attachment 4 identifies CSIRs, standard drawings, engineer sketches and diagrams depicting all facets of the project (Attach drawings, sketches, diagrams).

e. PSA Concurrence Template: PSA Attachment 5 can be used to record expedited PSA concurrence or identify reasons for non-concurrence.

3. EI Team Support: In addition to specific support items identified in Attachments 2 and 3, the host base or project site owner is responsible to provide the following services and support: *(delete non-applicable paragraphs)*

a. Funding: Obtain or coordinate funding and provide fund cites as necessary to the assigned project manager/workload controller for purchase of materiel, travel, and per diem for site survey and

installation teams. Provide funds for local purchase of supplies, XB3 parts, and XD/XF components as necessary to complete project installation, alignment, and testing.

b. Materiel: When requested, purchase accountable and non-accountable LOM items. Upon receipt, inventory the LOM and store in a secure area. Procure materiel items identified by the team chief during the course of the installation.

c. Storage and Working Space: Provide the EI team chief with a dry, secure area to stow toolboxes, test equipment, and project materiel. Also provide workspace with a desk and telephone with DSN access.

d. NIPRNET Accounts: Provide EI engineer, team chief, and team members with LAN accounts, internet access, and a designated workstation. Security awareness training and education documentation will be provided by EI information assurance personnel.

e. Cable Ducts and Confined Spaces: For cable projects, verify duct availability, condition, and install pull rope as needed. Classify all confined spaces and provide entry permits as needed.

f. Frangibility: For ATCALs projects, coordinate with BCE to ensure compliance with frangibility requirements identified in Attachment 2.

g. Emissions Security (EMSEC): Coordinate with the base EMSEC officer on all SIPRNET projects and cryptographic equipment installations. Ensure EMSEC evaluations and certifications are performed on all secure communication systems (AFI 33-203).

h. Communications Systems Installation Records (CSIRs): Provide copies of BCE “as-installed” or “as-built” drawings to the EI engineer or team chief as necessary. As specified in AFIs 21-404 and 33-104, upon project completion forward copies of annotated CSIRs to 38 EIG/EDSC for updating.

i. Connection Approval: Process Host Nation Approval and Connection Approval (address all requirements in PSA Attachment 3).

j. Facility Preparation: Process AF Form 103, **Base Civil Engineering Work Clearance Request** for any work, whether inside or outside a building that involves trenching, excavating, boring, drilling or any other construction activity that disturbs or may disturb established structures or utilities. Ensure all facilities are properly identified and marked or otherwise protected from potential damage.

NOTE: The installing EI unit is not responsible for any damage to unmarked underground facilities or non-negligent damage to facilities in the course of trenching, excavating, boring, drilling, affixing clamps, hanging threaded rods, or other construction activities associated with this project.

k. Hazardous Materials: Identify and manage materials containing asbestos (AFI 32-1052), PCBs, lead acid batteries, lead based paints, creosote treated telephone poles, hazardous materials storage sites, and hazardous wastes storage sites as defined in OSHA 1926.58, Toxic Substance Act for PCBs-40 CFR 761; the Clean Water and Clean Air Acts, CFR-40 parts 260 through 270; OSHA 1910.1200, Resources Conservation and Recovery Act; and the Federal Facility Compliance Act. Ensure the work site has undergone an environment assessment for hazardous materiel. Provide a copy of the environmental assessment to the EI unit project manager/workload controller along with proposed abatement procedures and projected date for abatement. The EI team will not start the project until all hazards are removed or otherwise neutralized.

l. Chemical Warfare Defense (CWD) Requirements. Identify CWD requirements to the project manager/ workload controller. If CWD requirements are altered during the project engineering phase,

immediately notify the project manager/ workload controller. Late notification of CWD requirements or requirement changes could delay project implementation.

n. Logistic Support: Obtain logistics support required for the project and follow-on equipment maintenance, to include technical data, spares, training, and technical assistance through local base resources, the host command, or the equipment manufacturer. Provide technical data to the team chief as needed.

o. Project Support. Within manning constraints assign maintenance personnel to assist the installation team IAW AFI 21-116.

4. Implementation Schedule Dates:

a. As determined during the site survey the anticipated allied support completion date for all support covered in this PSA is, (insert DD/MM/YY). If this date cannot be met, advise our project manager/workload controller identified in paragraph 1d above.

b. If there are any allied support completion date changes please provide new project completion dates to our project manager/workload controller. Allied support completion delays will most likely delay project implementation. Excessive delays could result in installation team non-availability.

NOTE: EI personnel are subject to contingency deployments which take precedence over this project. If a contingency arises, the project manager/workload controller will immediately contact your focal point to adjust projected engineering and installation dates.

c. Assuming the anticipated allied support completion can be met and there are no other unforeseen delays, the anticipated team start date is (insert DD/MM/YY).

5. Purchase of Materiel. When developed by the EI engineer the List of Materiel (LOM) will be {purchased by the (insert EI unit) or purchased by the (insert customer unit designator)} for delivery to (Insert customer unit designator).

6. PSA Processing:

a. Request you acknowledge receipt of this PSA via E-Mail message (this statement is not needed if PSA is left on site). We have allocated 30-calander days for you to coordinate all PSA requirements and return the PSA concurrence letter (see Attachment 5). If this schedule cannot be met, please notify our project manager/workload controller and provide the following information:

(2) Reasons for delay.

(3) Estimated date PSA concurrence will be sent.

NOTE: Engineering of this project will not begin until we have received PSA concurrence. PSA concurrence delays will result in corresponding delays in engineering and project installation.

b. Concurrence with the PSA should address all applicable support items identified in Attachment 5, PSA concurrence template. Non-concurrence with specific items will be negotiated between the EI project manager/workload controller and customer POC.

(Insert Project Engineer Signature Element. Follow local unit policy for PSA release)

Attachments:

1. Siting & Project Installation Data
2. Civil Engineering Support Requirements
3. C4 Systems Support Requirements
4. Drawing List with Drawings
5. PSA concurrence Template

cc:

EI Project Manager/Workload Controller

Base Communications Information Systems Planner

Base Civil Engineer

MAJCOM/SCP

MAJCOM EMSEC office if EMSEC considerations are involved

List other addresses as appropriate

NOTE: Use complete addresses (office, street address, base, and zip) for organizations outside of your unit.

Attachment 7**PSA ATTACHMENT 1
SITING AND PROJECT INSTALLATION DATA**

Project: (*Insert applicable project number*), (*Insert Project Title*), (*Insert applicable base or site*) (**Note:** Delete non-applicable paragraphs)

1. Coordination information: (*Insert the applicable paragraph below for the type of survey accomplished*).

Information for this PSA was obtained during an engineering site survey conducted on (*insert date*) by (*insert survey personnel, engineering activity office symbol, DSN, and E-mail address*). The following personnel were contacted (*list personnel, organization office symbol, DSN, and E-mail address*).

Information for this PSA was obtained by (*insert survey personnel, engineering activity office symbol, DSN, and E-mail address*) a desktop survey of available C4 systems installation records and other technical data. Siting information contained herein was coordinated by telephone with personnel listed below. (*List personnel, organization, office symbol, DSN, and E-mail address*)

2. Siting Data: (Describe exact equipment space, facilities, etc., to be reserved and make reference to attached drawings, by number and revision, which shows required space. Where possible, identify floor space, equipment racks, shelf space, cable port, antenna positions, underground cable ducts, cable pair, circuit breakers, etc.).

a. Waivers. (If the site requires a waiver of any existing clearance regulations, so state and specify why another site cannot be used that doesn't violate clearance).

b. Limitations. (Identify all known or suspected limitations in equipment or facility performance attributable to the proposed site).

c. Restrictions. (List any known restrictions on future expansion or construction in the vicinity. If applicable, include the following: Any future construction or buildup in the area of this siting must be coordinated with {identify organization and office symbol}.)

d. Other. (If site is not on government owned property, note any real estate acquisition requirements, any special site problems, mineral rights, sewage disposal, restricted access, access road requirements, antenna restrictions as to size or placement. NOTE: Real estate acquisition information may be classified).

3. Proposed Project Installation:

a. (List the C4 system equipment to be installed, removed, or relocated in each facility involved, or reference attachment that lists the same information).

b. (For removal and relocation of equipment and associated real property structures, such as towers, poles, and guys, be very specific on what has to be done and how it must be accomplished so full coordination and cooperation of the support base will be secured. Task the base to arrange for disposition of equipment removed in accordance with AFI 33-104).

c. No change to the existing construction design criteria that affects these C4 support structures will be approved without (*insert organization and office symbol of engineer*) concurrence.

4. Related Factors: *(Insert statements as appropriate.)*

a. Enter the required EMC and EMRH impact summary. The summary must include a description of all EMI problems which may result from the proposed C4 system installation or a statement to the effect the results of EMC study indicates no EMI problems are expected. The summary must include a description of the predicted EMRH impact to personnel, petroleum, oil, lubricants (POL), explosives and required controls. The predicted absence of EMRH will be clearly stated if the results of studies indicate there are no predicted EMRH to personnel, POL, and explosives. The summary may refer to EMRH drawings or to other documents attached to the PSA. Enter laser hazards statement if appropriate.

b. Describe relationship to other supporting or related projects.

c. Environmental impact will be determined IAW AFI 32-7061.

d. Reference and attach copies of any related SOI or written agreement made between survey team and base personnel, if applicable..

e. If EMSEC considerations are involved, identify the requirements for or request availability of the EMSEC evaluation.

5. Drawings: See PSA attachment 4.

Attachment 8**PSA ATTACHMENT 2
CIVIL ENGINEERING SUPPORT REQUIREMENTS**

Project: (*Insert applicable project number*), (*Insert Project Title*), (*Insert applicable base or site*)

1. Supporting Construction Requirements: (Outline or provide an overview of basic requirements for this project which require host concurrence. Be very clear and specific; expand details in the below format. Include all changes to existing real property required in preparation for the project. If multiple locations are involved, add subparagraphs identifying the same type of information for each location. Individual attachments may also be used. Eliminate all paragraphs that do not apply. If no BCE support is required, indicate so on this attachment).

2. Site Work and Exterior Utilities:

- a. Clearing and grubbing.
- b. Building excavation.
- c. Grading.
- d. Paving and walks.
- e. Drainage and landscaping.
- f. Sewer, water and fuel.
- g. Access road and drives.
- h. Power generation and distribution.

i. For cable projects in the AOR, include the following statement: "This project will require trenching and/or digging to varying depths. To ensure the safety of equipment operators BCE must ensure the area to be excavated is searched and cleared to a minimum depth of 10 feet and to a distance of 10 feet either side of trench line or dig area (refer to sketches). The explosive ordnance (EOD) team must use a MK 26 or equivalent ferrous ordnance locator, clearly identify their search area with highly visible marking materials, and document their findings and actions to the on-site team chief. Also request EOD support throughout dig/trenching operation to ensure operations are being performed in the area cleared and to provide guidance in the case unexploded ordnance (UXO) items are encountered or uncovered."

3. Buildings: Towers and other structures, existing, addition expansion, or new construction required. (Break this out into three categories as shown below).

a. Civil architectural requirements:

- 1) Type of construction.
- 2) Interior utilities required.
- 3) Dimensions, include minimum clear heights required
- 4) Walls, floors, ceilings, doors, and window criteria.
- 5) Acoustic requirements.
- 6) Cable port locations, floor loading, equipment openings for entry or removal.

7) Physical security requirements. (Identify the applicable references, including paragraph number. Address any requirements for electronic security, the level of security required, and the level or category of the resource requiring protection).

8) EMSEC requirements. (Identify EMSEC requirements as applicable IAW current AF EMSEC guidance. Submit, under separate cover, any classified requirements in accordance with AFI 31-401.)

9) ATCALs Frangibility Requirements. (Identify specific frangibility requirements for towers and other structures to be installed in the vicinity of runways. Ref 32-series AFIs)

b. Mechanical Requirements:

1) Design criteria for environmental control:

a) (List interior maximum and minimum operating temperature and humidity with allowable tolerances and gradients. Also list Air Force Technical Order equipment limitation where appropriate).

b) (Identify exterior critical or non-critical systems.)

2) Heat emission, BTU per hour: (Give the BTU per hour heat emission for each piece of equipment to be installed. Identify the location of the equipment by building and room number if multiple rooms are involved. If multiple locations are involved, use subparagraphs to provide data for each room, floor, and building.)

a) Electronic equipment.

b) List number of personnel.

c) Other sources.

3) Ventilation requirements: (if existing is adequate state so)

4) Fire protection systems shall be IAW the Engineering Technical Letter (ETL) 93-5: Fire Protection Engineering Criteria - Electronic Equipment Installations - INFORMATION MEMORANDUM date 10 Feb 94.

5) Special considerations: (Air filtration and safety equipment)

c. Electrical Requirements:

1) Power. (State requirements, in columnar form, for voltage, frequency, phase, number of wires, and total KVA or kW for electronics equipment, for primary AC, backup AC, and miscellaneous AC or for primary and backup DC. Specify voltage tolerances must be within + or - 5% and frequency tolerances must be within + or - 1/2 cycle for 50/60 HZ. Specify overseas bases must confirm this in writing.)

2) Technical Power Panels. (Specify quantity of filtered and AC power panels to be provided or reserved. Include specific information on circuit breakers to be provided or reserved, quantity of each type, voltage, current rating, number of poles and use.)

3) Non-Technical Power Panels. (Specify quantity of AC power panels to be provided or reserved. Include specific information on circuit breakers to be provided or reserved, quantity of each type, voltage, current rating, number of poles and use.)

4) Lighting and receptacle requirements.

5) Grounding requirements: Requirements must be in accordance with the latest issue or revision of MIL-STD-188-124, MIL-HDBK-419, TO 31-10-24, NEC, and MIL-HDBK-232. (**Note:** In case of conflict the MIL-STD 188-124C is the governing document for DoD facility installations. Engineers must identify the specific type of grounding system to be provided with references to the appropriate paragraph of each document that is applicable to the project requirements. When possible, provide a sketch or drawing of the grounding system desired.)

6) Lightning protection requirements.

7) Obstruction lighting requirements.

8) Fire detection.

4. Special Services. (Identify special items of support not covered elsewhere. Provide as much information as possible. Typical items are:)

a. Crane – (Identify load radii, height to be lifted, weight to be lifted, number of days required, base provided or rental.

b. Water trucks.

c. Trenching, restoration, compacting, landscaping and ensure the base civil engineer is given the opportunity to decide on the method of crossing pavements, roads, walkways, and air fields by trenching, boring, jacking, or tunneling for underground utility installations.

d. High reach vehicle, cherry picker.

e. Shop services, welding, machine, carpentry, painting for known requirements.

5. Restore the Work Location to include patching, painting, replacing floor, wall or ceiling tiles to its original conditions.

6. AF Form 103, **Work Clearance Request:** Upon receipt and subsequent approval of AF Form 103, stake all buried utility lines which are responsibility of base civil engineering and located where trenching or excavation is proposed.

7. EMRH and Laser Hazard Controls: As required by AFOSH STD 161-9, TO 31Z-10-4, and AFOSH 161-10. (Each PSA for installations with EMRH considerations will include a statement concerning hazards controls during installation. Specialized support by 738th EIS/EEE or other agencies must be specified.)

8. Design Drawings and Specifications: The 35%, 65%, and 95% design stages must be forwarded to the base communications unit, their parent Civil Engineering Office, and (enter the engineering activity) for review of technical adequacy of supporting structures in accordance with AFI 33-104. (**Note:** To ensure this critical need is met, recommend adding a statement that the BCE must forward a copy of the statement of work used to hire the A-E Design Firm so that we can ensure that the A-E is on contract to provide those copies.)

9. Early Occupancy of New or Modified Structures: (When conflicts between scheduled beneficial occupancy date of base support facilities and scheduled operational date of programmed C4 equipment or facilities are known to exist. Document early access requirements needed for project installation and testing.)

10. (Projects requiring DD Form 1391 documentation: Each facility requiring EEIC 529 construction funds must be identified on a separate DD Form 1391 with a unique project number in order to minimize problems associated with the minor construction statutory limit. If EEIC 592 expense funds are to be used, they must not only be identified on the DD Forms 1391, but must also be separately identified in the bid schedule for obligation and audit purposes. For each facility, identify the EEIC 529 and EEIC 592 costs on the same DD Form 1391.)

Attachment 9**PSA ATTACHMENT 3
C41 SYSTEMS SUPPORT REQUIREMENTS**

Project: (*Insert applicable project number*), (*Insert Project Title*), (*Insert applicable base or site*)

(**Note:** Omit items listed that are not applicable to your project and renumber paragraphs.)

1. Circuit Requirements: (Specify quantity, minimum technical characteristics, and termination points. Identify specific circuit segments that are leased or government owned if applicable. Consider the following items in developing circuit requirements: 2-wire/4-wire circuits, allowable signal loss, frequency response, data speed, termination equipment, modems, types of cabling, secure/non-secure, PDS, EMSEC.)
2. Leased Equipment Requirements: (List all requirements for C4 equipment, hardware, and services to be provided through lease action arranged by the host base program management activity. Include any requirements for contractor representatives to be present during testing and acceptance procedures.)
3. Telecommunications Service Requests: The (*Enter appropriate organization*) must ensure a telecommunications service request (TSR) and work orders are initiated as required to provide the necessary transmission facilities. **Note:** When necessary to maintain commercial or administrative telephones in a controlled area, criteria in NACSIM 5203 (C) will apply.
4. Connection Approval: The (*enter appropriate organization*) must obtain host nation connectional approval IAW DISAC 310-130-1 and DISA-DITCO Circular 350-135-1 prior to project implementation for (Identify circuit requirements).
5. Command Furnished Equipment: The (*Enter appropriate organization*) must provide the following command furnished equipment and serviceability inspection certificates for each item. Command furnished equipment will be installed by (*enter appropriate organization*.)
6. Radar Systems: (When a video mapper is to be installed, task the operating agency to obtain maps, radar aeronautical video plates or charts.)
7. Secure Communications Systems: (For secure communications system installations include the following:)
 - a. The O&M unit responsible for maintenance of the secure systems installed by this project is required to provide secure systems maintenance personnel, certified to accomplish operational checks, to perform required maintenance and certify the facility after installation.
 - b. Applicable COMSEC items: During the pre-installation site survey, the team chief will verify COMSEC equipment and keying materiel have been received by the COMSEC custodian or maintenance supply facility.
8. Cable Work:
 - a. Transfer jumpers as required during project installation.
 - b. Remove all affected drop wire.
 - c. Reserve Cables, as applicable, and pairs as applicable.

9. Emission Security (EMSEC) Requirements: (Identify requirements as applicable in accordance with current AF EMSEC guidance. Submit, under separate cover, any classified requirements involved in accordance with AFI 31-401. Coordinate with the base EMSEC officer on all SIPRNET projects and cryptographic equipment installations. Ensure EMSEC evaluations and certifications are performed on all secure communication systems AFI 33-203).
10. Cable ducts and confined spaces. (When reservation of existing underground cable ducts has been requested, task the base to provide specific serviceable ducts and associated manholes in accordance with AFI 33-104. Include placement of 1/4" diameter nylon or polypropylene pull ropes. Classify all confined spaces and provide entry permits to EI team chief prior to project start.)
11. Marking Cable Routes. The O&M unit responsible for keeping cable records will coordinate on AF Form 103 and survey and mark any buried communications cables where trenching or excavation is proposed.
12. Climbing Protection: (For antenna tower and tall structure projects require the customer to identify the type of installed safety climbing devices. This is to ensure installers have compatible belts, lanyards and sleeves. The support base must provide necessary belts and sleeves if climbing devices are not standard. If required and not installed at the time of site survey, task the host base to provide safety climb equipment.)
13. Special Equipment: (Identify any type of equipment to be provided by the customer, such as test equipment, manuals, safety climb gear, etc.)
14. Down Time: (Identify specific circuit or system downtime required to implement the project. Task the customer to provide circuit alternatives or obtain necessary backup equipment, such as a mobile control tower, etc.)
15. Removal projects. (Require the host base plans & Implementation office to obtain disposition instructions for all equipment items to be removed. Request disposition instructions be forwarded to your project manager/workload controller).
16. Power Systems. (State requirements for primary and backup DC power requirements, when applicable.)
17. Frangibility: (For ATCALs projects, coordinate with BCE to ensure compliance with frangibility requirements identified in Attachment 2).

Attachment 10

PSA ATTACHMENT 4
PSA DRAWING LIST

Project: (Insert applicable project number), (Insert Project Title), (Insert applicable base or site)

Table A10.1. PSA Drawing List

NUMBER	<u>SHEETS</u>	<u>REV</u>	SHORT TITLE
(SAMPLE LISTING)			
VGWUB00113FP000	1	G	Floor Plan Layout
FRFTS50928AD000	1,3	B	Data Line Interface
FRFTS50928AD000	2	A	Data Line Interface
LDBWS00719AD000	1 thru 4	Orig	Patch Module
			Red/Black
SKETCH 1			Antenna Platform
			Tower Sec S4

NOTE: The engineering activity will use this list to reproduce and distribute the PSA with drawings.

Attachment 11

**PSA ATTACHMENT 5
PSA CONCURRENCE LETTER**

Figure A11.1. PSA Concurrence Letter.



**DEPARTMENT OF THE AIR FORCE
Unit Portion of Letterhead (MAJCOM)
Base/City, State ZIP portion of Letterhead**

(Enter date: dd/mm/yy)

MEMORANDUM FOR: Enter EI unit/office symbol
Address line 1
Address line 2

FROM: (Enter Customer Unit/CC)
(Address line 1)
(Address line 2)

SUBJECT: Concurrence with Project Support Agreement (PSA) for project (enter project number), (enter project title), (enter project location)

1. All support requirements identified in basic PSA letter
 - a. Concur
 - b. Non-Concur . Remarks:
2. Equipment or facility siting. (PSA Attachment 1)
 - a. Concur
 - b. Non-Concur . Remarks:
3. Civil Engineering support requirements. (PSA Attachment 2)
 - a. Concur
 - b. Non-Concur . Remarks:
 - c. Not Applicable
4. C4I Systems support requirements. (PSA Attachment 3)
 - a. Concur
 - b. Non-Concur . Remarks:
5. Allied Support Completion (ASC) date. (PSA Para. 4a)
 - a. Concur
 - b. Non-Concur . Remarks:
 - c. Not Applicable
6. There are no contractual obligations that may involve penalties associated with the anticipated implementation schedule dates for this project.
 - a. Concur
 - b. Non-Concur . Remarks:
7. Asbestos survey certification will be accomplished IAW AFI 32-1052.
 - a. Concur
 - b. Non-Concur . Remarks:
 - c. Not Applicable
8. Signing this memorandum and marking the concur boxes in the above sections confirms that coordination with all applicable base agencies, including Base Civil Engineering (BCE), has been accomplished by (Concurring Unit) and that those agencies have concurred to the support requirements in this PSA and PSA attachments.

(FIRST MI LAST, Rank, USAF)
(Unit and Title)

Attachment 12

PROJECT STATEMENT OF INTENT (PSOI) FORMAT

(Enter Organization Letterhead)

(DD/MM/YY)

MEMORANDUM FOR: *(Enter unit and office symbol)*FROM: *(Enter EI unit and office symbol)*

SUBJECT: Project Statement of Intent (PSOI)

1. This PSOI is between *(Enter EI unit)* and *(Enter customer unit designator and office symbol)* as it pertains to the *(Enter site survey date)* site survey for project *(Enter project number)*, *(Enter project title)*, at *(Enter project location)*.

2. The purpose of this PSOI is to reserve the area(s) required for this project and to note the major allied support requirements needed for later installation of the project equipment at this location. The actual implementation of this PSOI is contingent upon approval of the by the appropriate authority.

3. The results of this survey are as follows:

a. Space to be reserved - *(Specify exactly what areas are to be utilized and note whether these area(s) are existing or must be constructed and if they are vacant or occupied. If occupied, note what disposition is to be made of present occupants. When possible, include a sketch showing the space(s) to be reserved.)*

b. Base support requirements - *(Cover to the greatest extent possible, all allied support construction needed - civil, architectural, mechanical, electrical.). The (Enter customer unit designator and office symbol) is responsible to coordinate or arrange for all base support requirements.*

c. Other Requirements - *(Include any other information deemed necessary to identify the survey team findings such as preliminary equipment layouts, specific known problem areas, manhole classification, rodding and cleaning of ducts, disposition instructions for removed equipment, etc.)*

d. *(Identify any additional information not included in above topic areas.)*

*Name, grade, signature block
of base CSO or designee*

*Name, grade, signature block
of engineer*

Attachments (list as needed)

Attachment 13

SAMPLE PROJECT LETTER OF INTENT (PLOI)

(Enter Unit Letterhead)

MEMORANDUM FOR *(Base CSO)**(DATE)*FROM: *(Office symbol, include unit and unit address if unit letterhead is not available)*SUBJECT: Letter of Intent, *(Project Number, Project Title, Location)*

1. This is a Project Letter of Intent (PLOI) between *(EI unit conducting the site survey)* and *(customer unit and office symbol)* for *(project number)*.
2. Purpose: *(Briefly describe the installation, removal, or relocation and explain how the project will impact, improve, or change the customer's mission)*
3. Equipment/System/Facilities to be installed/ removed or relocated: *(List the major equipment to be installed, removed or relocated. Do not address hardware, cable, bits and pieces, etc.)*
4. Siting for Equipment/System/Facilities.
 - a. Space to be reserved - *(Specify exactly what area(s) need to be reserved for each component, equipment, system or facility)*.
 - b. Sketches/drawings: *(Include a sketches or drawings showing the space(s) to be reserved)*.
5. Allied Support Requirements: *(Address all allied support requirements to include civil engineering, architectural, mechanical, electrical, communications support, administrative support, etc.)*.
6. Other Support Requirements: *(Identify all other support requirements such as customer furnished vehicles, rentals, test equipment, manhole classification, duct rodding, etc)*.
7. LOM Procurement: *(Identify whether EI or customer will purchase LOM)*.
8. Projected Installation Dates: *(If known, specify ROD)*
9. Other: *(Address any other pertinent issues impacting the project)*.

Attachments: (as required)

1. Sketches-reserve space
2. Equipment layout
3. Site plan

Signature block of Project Engineer

(Signature block of customer POC
Organization/Office symbol

Attachment 14

AFMC 149, C4 SYSTEMS PROJECT COVER SHEET

A14.1. The required information for a Cover Sheet is as follows:

Figure A14.1. AFMC 149, Sample.

C4 SYSTEMS PROJECT COVER SHEET - COMMUNICATIONS/INFORMATION SYSTEMS PROJECT	
HOME UNIT ADDRESS	PREPARED BY
1. PROJECT DESIGNATOR(S)	DATE OF ISSUE
3. PROJECT TITLE AND LOCATION	
4. ORGANIZATION/FAS, PROGRAM MANAGER, AND DSN	
5. ORGANIZATION/FAS, PROJECT ENGINEER, AND DSN	SIGNATURE
6. ORGANIZATION/FAS, RELEASING ENGINEER, AND DSN	SIGNATURE
7. FUNCTIONAL DESCRIPTION	
8. <input type="checkbox"/> UNUSUAL SHIPPING AND MARKING INSTRUCTION <i>(List Below)</i> <input type="checkbox"/> NONE	
9. ASSOCIATED PROJECTS	
10. COMMENTS AND/OR DISTRIBUTION	
<p>DESTRUCTION NOTICE: Destroy by any method that will prevent disclosure of contents or reconstruction of the document. EXPORT CONTROL NOTICE: WARNING - EXPORT CONTROLLED IAW Arms Export Control Act (Title 22, USC 2751) or Export Administration Act of 1979, as ammended (Title 50, US, App 2401)</p>	
<p>DISTRIBUTION AUTHORIZED TO U.S. GOVERNMENT AGENCIES AND THEIR CONTRACTORS FOR ADMINISTRATIVE OR OPERATIONAL USE, 1 MAY 1986. OTHER REQUESTS FOR THIS DOCUMENT SHALL BE REFERRED TO THE ORIGINATOR.</p>	

A14.1.1. Project Number: consists of the project designator.

A14.1.2. Date of Issue: Date final project package is reproduced and distributed.

A14.1.3. Project Title and Location: enter special project name if applicable, project title, base or station name, and geographical location.

A14.1.4. Project Manager/ Workload Controller (PM/WC) Name, Organization, Office Symbol, DSN, and E-Mail address.

A14.1.5. Engineer Name, Organization, Office Symbol, DSN, E-Mail address, and Signature.

A14.1.6. Releasing Engineer Name (if applicable), Organization, office symbol, DSN, E-Mail address, and signature.

A14.1.7. Functional Description: enter a brief functional description of the services or facility to be provided by this project.

A14.1.8. Associated Project: identify project numbers that support or are supported by this project with the estimated team completion date of the project. Briefly describe the relationship of the support. Leave blank if not applicable.

A14.1.9. Comments and Distribution: enter information important to the project recipients. Example: If a PSA was not required and not published, state so in this block. Project package distribution will show addressees as determined during the on-site survey.

Attachment 15

LIST OF MATERIEL (SECTION 1) EXAMPLE

Table A15.1. List of Materiel (Section 1)

Item #	NSN	Description	U/I	Qty	Unit Cost	Cost	Total Cost
1	5820010691880CS	Mounting Base	EA	1	\$674.00	\$674.00	\$674.00
2	591--1-037152CS	Box Assy, Intercomm	EA	2	\$674.00	\$1,384.00	\$2,022.00
3	5820010866217	Multiplexer, AN/FCC-98	EA	7	\$1987.00	\$13,909.00	\$15,931.00
4	5820011217079	Multiplexer Set	EA	3	\$19,951.00	\$59,853.00	\$75,784.00
5	5445013307079	Tower Section	EA	1	\$44,000.00	\$44,000.00	\$119,784.00
6	5445013320627	Tower Section	EA	5	\$8,500.00	\$42,500.00	\$162,284.00
7	598500975393ZE	Radome CW-603/ FPS-77(V)	EA	1	\$2,573.00	\$2,573.00	\$164,857.00
8	6660001189660	Console GP OA3491FPS77V	EA	1	\$45,000.00	\$45,000.00	\$209,857.00
9	6660001189661	ANT GP OA-3493/ FPS77V	EA	1	\$2,000.00	\$2,000.00	\$211,857.00
10	6660001130781	RCVR TRANS RT639FTPS77V	EA	1	\$4,000.00	\$4,000.00	\$215,857.00
Total Cost							\$215,857.00

Attachment 16

LIST OF MATERIEL (SECTION 2) EXAMPLE

Table A16.1. List of Materiel (Section 2)

Item #	Description	Part No.	U/I	Qty	Unit Cost	Cost	Total Cost
1	PE-89, 1500PR, 24AWG Copper cable	E-150024DFC		1400	\$11.59	\$16,226.00	\$16,226.00
2	PE-89, 900PR, 24AWG Copper cable	E-090024DFC		3000	\$7.12	\$21,360.00	\$37,586.00
3	PE-89, 600PR, 24AWG Copper cable	E-060024DFC		1800	\$4.69	\$8,442.00	\$46,028.00
4	PE-89, 400PR, 24AWG Copper cable	E-040024DFC		800	\$3.68	\$2,944.00	\$48,972.00
5	PE-89, 300PR, 24AWG Copper cable	E-030024DFC		2400	\$2.37	\$5,688.00	\$54,660.00
6	PE-89, 200PR, 24AWG Copper cable	E-020024DFC		5000	\$1.68	\$8,400.00	\$63,060.00
7	PE-89, 200PR, 24AWG Copper cable	E-020024DFO		800	\$2.00	\$1,600.00	\$64,660.00
8	PE-89, 100PR, 24AWG Copper cable	E-010024DFO		4000	\$1.31	\$5,240.00	\$69,900.00
9	PE-89, 100PR, 24AWG Copper cable	E-010024DFC		4000	\$0.92	\$3,680.00	\$73,580.00
10	100PR, 24AWG Indoor copper cable	E-010024AAR		400	\$1.27	\$508.00	\$74,088.00
11	100PR, 22AWG Copper cable	E-010022DFC		12000	\$1.75	\$21,000.00	\$95,088.00
12	PE-89, 50PR, 24AWG Copper cable	E-005024DFC		9000	\$0.60	\$5,400.00	\$100,488.00
13	PE-89, 50PR, 24AWG Copper cable	E-005024DFO		1700	\$0.80	\$1,360.00	\$101,848.00
14	Building entrance terminal, 100PR	489BCS1-100		12	\$378.65	\$4,543.80	\$106,391.80
15	Building entrance terminal, 25PR	489BCS1-25		22	\$207.47	\$4,564.34	\$110,956.14
16	MDF Connector, 100PR, 30" stub	064095		24	\$464.47	\$11,147.28	\$122,103.42
17	Protector modules, black	106805		14000	\$3.48	\$48,720.00	\$170,823.42
18	Connector block, 25 PR	005810		50	\$6.13	\$306.50	\$171,129.92
19	710 connectors, bridge, filled	058171		4	\$45.47	\$181.88	\$171,311.80
20	Load coils	032686		3	\$383.19	\$1,149.57	\$172,461.37

Item #	Description	Part No.	U/I	Qty	Unit Cost	Cost	Total Cost
21	Splice closure 12.5" x 28.4"	B005219		23	\$836.99	\$19,250.77	\$191,712.14
	Suggested source:						
	Anixter Bros - Federal						
	12379-B Sunrise Valley Drive						
	Reston, VA 20191						
	Voice (703) 227-0944						
	Fax (703) 227-0945						
	Attn: Chris Abele						

Attachment 17
TAB B COVER SHEET
TAB B
TABLE OF CONTENTS

A17.1. Engineering Activity: Insert Unit Designation and Location

A17.2. Project No: Insert Project Number

A17.3. Title: Insert Project Title From C4 Systems Project Cover Sheet

A17.4. Contents: Insert Applicable Information.

A17.4.1. Installation Description and Special Instructions.

A17.4.2. Table 1 - Drawing List.

A17.4.3. Table 2 - Publications List.

A17.4.4. Table 3 - Special Tools and Test Equipment List.

A17.4.5. Table 4 - Task List.

A17.4.6. Task Instructions 1 through (# of instructions).

A17.5. Attachments:

A17.5.1. Forms, Test Readings (list applicable).

A17.5.2. PSA with endorsements; w/o drawings.

A17.5.3. Project drawings, (see Table 1 for list).

Attachment 18**TAB B INSTALLATION DESCRIPTION AND SPECIAL INSTRUCTIONS****(Typical Format)**

PROJECT: (Insert Project Number)

A18.1. Installation Description.

A18.1.1. Facilities And Location: (Provide a brief description of the facilities to be installed and where they are to be installed, i.e., building and room.)

A18.1.2. Interface With Existing Facilities: (Describe how the facilities installed by the project will interface with the existing plant. Do not include this paragraph if it does not apply.)

A18.1.3. Work By Others: (Describe the work to be accomplished by other activities in support of the project during the installation phase. Allied support specified in the PSA will not be included if it is to be completed prior to installation start. Be specific about the work and the activity performing it. Note: This paragraph will not be used to task other activities.)

A18.2. Special Instructions.

A18.2.1. Unique Safety Requirements: {(State any known unique safety requirements associated with the installation. If none, so state (example: Confine space rescue at remote manholes not supported by host base fire department).}

A18.2.2. EMC And EMRH Controls: (Describe EMC and EMRH controls during installation or immediately upon commissioning).

A18.2.3. (Add any special instructions deemed necessary).

A18.2.4. (Include any disposition instructions to deliver to a local base location as specified by the host base Plans and Implementation representative for all removed items. Also, expand the task list, as required to implement these instructions.)

Attachment 19**TAB B DRAWING LIST****(Typical Format)****DRAWING LIST****PROJECT:** *(Insert Project Number)*

Number	Sheet	Revision	Short Title
--------	-------	----------	-------------

NOTES:

1. Identify the applicable revision of each drawing sheet listed.
2. Attach all listed drawings to Tab B unless another source is specifically identified.
3. List all PSA drawings specifically referenced in the project package.
4. On the reproduction order, request two full size sets and three "C" size sets of project base coded drawings for team chiefs copies of the project.

Attachment 20

TAB B PUBLICATIONS LIST

(Typical Format)

PUBLICATIONS LIST

PROJECT: (Insert Project Number)

NUMBER

SHORT TITLE

A20.1. Air Force Technical Orders.

A20.2. Manuals and Instructions.

A20.3. Commercial Documents.

Attachment 21**TAB B SPECIAL TOOLS AND TEST EQUIPMENT LIST****(Typical Format)****SPECIAL TOOLS AND TEST EQUIPMENT LIST****PROJECT:** (Insert Project Number)

NSN/Mfg. & Part No	Description, Function, Purpose, etc. (list appropriate)	Quantity
--------------------	--	----------

Attachment 22**TAB B TASK LIST****(Typical Format)****TASK LIST****PROJECT:** (Insert Project Number)

Task No.	Sequence No.	Task	Installation Reference	Location	Rm.
----------	--------------	------	------------------------	----------	-----

NOTES:

1. Task number is a consecutive numerical designator per task.
2. The sequence number specifies the order in which tasks should be accomplished. This may or may not be the same order as given in the task number.
3. Task is a simple, self-contained installation requirement that can be accomplished as an individual portion of the project.
4. Installation reference is a single document (commercial or Air Force standard) or task instruction.
5. Location column can be expanded to include a base, site, or area designator when the project covers requirements at more than one location.
6. For standardization all columns must be used even when a task instruction is written for every task or when the task numbers and sequence numbers are identical.

Attachment 23**TAB B TASK INSTRUCTION FORMAT****(Typical Format)****TASK INSTRUCTION No. (Insert applicable number)****(Insert title of the task - same as indicated on the Task List)****PROJECT:** (Insert Project Number)

A23.1. Task Description: This is just an extension of the task title, except it should be a more elaborate description that further specifies the task to be accomplished.

A23.2. References:

A23.2.1. Drawings

A23.2.1.1.

A23.2.2. Technical Orders:

A23.2.2.1.

A23.3. Detail the task to be accomplished by instruction.

Attachment 24**ABBREVIATED TAB B FORMAT****(Sample Format)****ABBREVIATED TAB B****A24.1. Drawing List.**

ABCDB000015FP000	AMC Command Post, Floor Plan	Sht 1 Rev J-1
ABCDB00015WD000	AMC Command Post, DLAN Wiring Diagram	Sht 1 Rev B-1
LDBWS99999AD000	Standard Drawing, AN/XYZ-75	Sht 1,2 Rev K

A24.2. Publication List.

TO AFI 31W4-2AN/XYZ75-2 Service Manual, AN/XYZ-75

A24.3. Task Instructions.

A24.3.1. Reference Standard Drawing, AN/XYZ-75 for installation of equipment at location indicated FPI 1 on DWG ABCDB000015FPOOO.

NOTES:

In general the contents of the Abbreviated Tab B are:

1. Cover letter - provides same information as the C4 Systems Project Cover Sheet
2. List of Materiel
3. Information detailed in the sample format
4. Any other details the engineer feels need clarification

Attachment 25

AFMC FORM 150, RECORD OF EI PROJECT REVIEW

A25.1. Checklist.

Figure A25.1. AFMC Form 150, Sample.

EI PROJECT REVIEW				DATE INITIATED	SUSPENSE DATE		
TO: REVIEWING WORK CENTER		TO: WORKLOAD CONTROL/QUALITY ASSURANCE		TO: ENGINEERING ACTIVITY			
PROJECT NUMBER (Four Elements)							
TYPE OF REVIEW <input type="checkbox"/> INITIAL <input type="checkbox"/> FOLLOW-UP				COMPLETION DATE			
CHECKLIST	S	D	NA	CHECKLIST	S	D	NA
A. TAB A				5. SPECIAL TOOLS & SPECIAL TEST EQUIP			
1. AFMC Form 149 (Project Cover)				6. TASK LISTING			
a. GENERAL INFORMATION				7. TASK INSTRUCTIONS			
(1) PHONE/FAS OF PML PE AND RE				a. COMPLETE & CLEAR INSTRUCTIONS			
(2) COMMENTS (Block 10)				b. PUBLICATION REFERENCES			
b. AMENDMENTS AND ECRAS				c. DRAWING REFERENCES			
c. ASSOCIATED PROJECTS				d. FEASIBILITY OF IMPLEMENTATION			
2. LIST OF MATERIEL				e. MATERIEL ITEMS IDENTIFIED			
a. SECTION 1				f. TEST PLAN			
b. SECTION 2				8. TAB B ATTACHMENTS			
c. OTHER				a. TEST DATA SHEETS			
d. OTHER				b. PROJECT SUPPORT AGREEMENT			
				(1) SITING AND PROJECT INSTL DATA			
				(2) CIVIL ENGINEERING SUPPORT			
				(3) LOCAL COMM UNIT SUPPORT			
				(4) PSA DRAWINGS			
				(5) HOST BASE SUPPORT			
B. TAB B				c. PSA INDORSEMENT			
1. COVER SHEET				d. PROJECT DRAWINGS			
2. INSTL DESCRIPT & SPECIAL INSTRUCTION				(1) CORRECT DRAWINGS PROVIDED			
a. DESCRIPTION OF PROJECT				(2) SPECIFICATIONS			
b. SYSTEMS INTERFACING				(3) CLARITY			
c. WORK BY OTHER ACTIVITIES				C. GENERAL			
d. SPECIAL INSTRUCTIONS				1. MAN-HOURS ASSIGNED			
e. SAFETY				2. SCHEDULED COMPLETION DATE			
3. DRAWING LIST				3. OTHER			
4. PUBLICATIONS LIST							
WILL IDENTIFIED DISCREPANCIES ADVERSELY AFFECT IMPLEMENTATION <input type="checkbox"/> YES <input type="checkbox"/> NO							
NARRATIVE							

INSTRUCTIONS FOR COMPLETING AFMC FORM 150

This form serves as a checklist for completing a project review and a means to document the results of the project review. Form Sections A through C comprise the checklist laid out commensurate with normal project package content. The bottom portion and reverse side is used to document deficiencies identified in Sections A through C.

A25.1.1. There are three check blocks associated with each portion of the project package: S = Satisfactory, D = Deficient, and NA = Not Applicable. Mark one of the three blocks to describe the appropriate condition of each project package section.

A25.1.2. Identify the specific deficiency and work backwards to develop a deficiency item number referenced to each Tab and Tab subsection. Example: Item 8b(2) CIVIL ENGINEERING SUPPORT is found deficient. Mark item **8b(2)** as deficient and work backwards to develop a deficiency item number. In this case retrace back to **8b**, PROJECT SUPPORT AGREEMENT; block **8**, TAB B ATTACHMENTS; and block **B**, TAB B. Thus the deficiency item number would be **B8b(2)**.

A25.1.3. Follow this procedure for each identified deficiency.

A25.2. Implementation Impact. In the approximate center of the AFMC Form 150 are yes or no blocks related to the question “WILL IDENTIFIED DISCREPANCIES ADVERSELY AFFECT IMPLEMENTATION? This is a reviewer subjective judgment based upon the number and severity of deficiencies identified in form sections A through C and substantiated by the narratives describing each deficiency. Mark the appropriate yes or no block after all identified deficiencies are thoroughly researched and properly documented in the narrative.

A25.3. Narrative. Describe in detail each deficiency as follows:

A25.3.1. For each deficiency identified in blocks A through C document a narrative composed of five elements: (1) **ITEM NUMBER**, (2) **WHERE** the problem is located within the project package, (3) **WHAT** the problem entails, (4) **RECOMMENDED CORRECTIVE ACTION**, and (5) **AFMCI 33-104 REFERENCE**. See the following example:

A25.3.1.1. **ITEM NUMBER** : Item B8b(2)

A25.3.1.2. **WHERE** the deficiency is located: PSA Attachment 2, paragraph 7.

A25.3.1.3. **WHAT** specifically is the deficiency: PSA, Attachment 2, paragraph states host base BCE will accomplish all grounding and bonding for the entire project; however, the LOM contains eight (8) exothermic welding kits and task instruction 9, paragraph 3, directs EI to ground the OS-21 mast and power pedestal. The PSA is in conflict with the LOM and referenced task instruction.

A25.3.1.4. **RECOMMENDED CORRECTIVE ACTION:** The PM/WC should coordinate with the customer POC to determine if host base BCE or EI team will ground and bond the OS-21. Based on coordination outcome, the engineer should either amend the PSA or change the LOM and task instruction to reflect grounding and bonding responsibilities.

A25.3.1.5. **REFERENCE:** AFMCI 33-104, paragraph 6.2.7.2.

A25.3.1.6. Document each deficiency as described in paragraphs [A25.3.1.1.-A25.3.1.5.](#)

A25.4. Review and date the AFMC Form 150 and forward to appropriate supervisor.

Attachment 26

AF FORM 9, REQUEST FOR PURCHASE

Figure A26.1. AF Form 9, Sample.

REQUEST FOR PURCHASE				NO 7779311	
INITIALS/DTM				DATE 19950215	
TO: CONTRACTING OFFICER S201 GP/ACP				CLASS N/A	
THROUGH S201 GP/ACP				CONTRACT, PURCHASE ORDER OR DELIVERY ORDER NO.	
FROM: Name #&CC # (optional) MSgt Keegan/Ext 16416				N/A	
IT IS REQUESTED THAT THE SUPPLIES AND SERVICES ENUMERATED BELOW AND IN THE ATTACHED LIST, BE					
PURCHASE FOR 938 EIS		FOR DELIVERY TO MSgt Keegan, Bldg 6400		NOT LATER THAN	
ITEM	DESCRIPTION OF MATERIAL OR SERVICES TO BE PURCHASED	QUANTITY	UNIT	ESTIMATED UNIT PRICE	ESTIMATED TOTAL COST
001	<p>Furnish trencher capable of trenching 7500 linear feet at a width of 6 inches and a depth of 30 inches. Furnish an operator to utilize trencher, under the control of the on-site Team Chief in charge of the project. Furnish a quality of #3 sand to cover a minimum of 5 inches (maximum 7 inches) the entire length of trenchline. Allow the fill team to place the cable after and electrically test it. Place 5-7 inches of additional #3 sand on top of the cable after successful testing. Backfill the entire trenchline and compact. Add excess soil to leave a 6 inch berm the entire length of the trenchline.</p> <p>The contractor is scheduled to be on-site NLT 1 Mar 95. The actual trenching is to be completed by 5 Mar 95. The trencher operator must work closely with the Team Chief with regards to safety and work schedule. Working hours will be 8 hours. Lunch hour will be taken at the same time as fill team. Hours to be 0730 through 1630.</p>	2500	ft	\$ 1.07	\$ 2675.00
TOTAL					\$ 2,675.00
PURPOSE To provide trenching for buried cable. WIN924A300					
DATE	TYPER NAME AND GRADE OF APPROVING OFFICIAL	SIGNATURE			
19950215	MARTY R. KEEGAN, MSgt	TELEPHONE NO. DSN 523-6435			
DATE	TYPER NAME AND GRADE OF APPROVING OFFICIAL	SIGNATURE			
I certify that the supplies and services listed above and in the attached list are properly chargeable to the financing accounts, the amounts balance of which are sufficient to cover the cost thereof, and funds have been committed.					
ACCOUNTING CLASSIFICATION					AMOUNT
					\$
DATE	TYPER NAME AND GRADE OF APPROVING OFFICIAL	SIGNATURE			

Table A26.1. Instructions for Completing AF Form 9.

Purpose of this form is to provide an audit trail for all funds expended on a project and to effect payment to the service provider.

Block	Instructions
No	This will be provided by the contracting activity.
Installation:	Enter the location for which the Fund Cite was issued.
Date:	Enter the date the purchase request (PR) is prepared.
To:	Base Contracting Officer
Class:	If the requirement is for supplies, enter the Federal Supply Classification (FSC) otherwise enter "N/A."
Through:	Enter the organizational symbol(s) of offices through which the PR is routed before being accepted in the procuring office (such as the Accounting and Finance Office).
From:	Enter the team chief's rank, name and local duty phone.
Contract:	Enter "N/A."
Purchased For:	Identify activity for which procurement is being made.
For Delivery To:	Give specific location, including building number, person to whom delivery will be made (if applicable).
Not Later Than:	The specific Julian date(s) required is to be entered in this block. Terms such as "75 days" or "As soon as possible" are not acceptable.
Item:	Self-explanatory. Always start with 001.
Description of Materiel or Services to be Purchased:	<p>(a) Enter the NSN for supply items, applicable reference to mandatory Federal/Military T.O. specifications. Include complete descriptions, supported by statements/specifications and drawings, as applicable. Enter manufacturer's model/part/serial number or other Identifying numbers, as applicable.</p> <p>(b) For non-personal services, data, etc.(service contracts or rentals), detailed descriptions via work statement/specifications, if necessary, will be provided. If known, include suggested source(s).</p>
Quantity and Unit:	Self-explanatory.
Estimated Unit Price:	Enter the estimated unit price and multiply times the estimated total quantity to arrive at Estimated Total Cost: the estimated total cost.

Total:	Enter the accumulated estimated grand total from individual item total costs above or on continuation sheets.
Purpose:	Enter the purpose for which procurement is requested (such as project code name or project number and intended use of item or service).
Date:	This is the date that the team chief signed the form.
Name and Grade	Self-explanatory.
Date/Approving	Self-explanatory.
Official:	The approving official will depend on the amount being spent. Contact your unit resource advisor, or the base contracting office for guidance.
Signature:	Self-explanatory.
Accounting Classification Amount:	The team chief will normally certify and annotate the classification accounting on the AF Form 9 from the AF Form 616 issued by the parent unit.
Certifying Official:	Team chief.
Commander or Designee	Self explanatory

NOTES:

1. The host base contracting office will assist in preparing the form.
2. If the request deviates from the guidance provided, contact your resource advisor for assistance.

Attachment 27

AF FORM 15, USAF INVOICE

A27.1. Purpose of this form is to provide a record of vehicle support/maintenance services provided by civilian agencies.

Figure A27.1. AF Form 15, Sample.

"WHEN USING BALL-POINT PEN PRESS HARD TO ASSURE LEGIBILITY ON ALL COPIES"

UNITED STATES AIR FORCE INVOICE <i>(See instructions on Reverse)</i>		1. DATE		C		
2. PAY TO (Name and Address of Payer)		AIRCRAFT DATA				
		5. ORGANIZATION		6. HOME STATION		
3. PURCHASED AT (City, State, Country or refer to Fltp)		7. MAJOR COMMAND		8. MDS OR VEHICLE ID	9. SERIAL NO.	
		10. OPERATIONS, FLIGHT, OR TRAVEL ORDER NUMBER AND DATE OF ORDERS.				
4. SEND BILL TO:						
11. ARTICLES/SERVICES		(TO BE COMPLETED BY VENDOR ONLY)				
		12. QUANTITY	13. UNIT	14. UNIT PRICE	15. TOTAL	
		TAX (if not included in unit price)				
		TOTAL				
INSTRUCTIONS TO SELLER						
<p>16. For payment without further action on your part, complete copy 1 of this form and return to the purchaser. Payment will be made directly to you after return of this document to home station.</p> <p>If you wish to retain original copy of this form, you will not be paid until submission of the original of this form or an invoice with the original copy of this form to the address in block 4:</p>						
PURCHASER'S CERTIFICATION						
<p>17. Pursuant to authority vested in me, I certify that the supplies enumerated above or on an attached list have been received in good condition and in quantities as stated; that the services enumerated have been satisfactorily performed. That the supplies or services were purchased in an emergency for the maintenance, operation, or protection of Government equipment and were necessary for the public service.</p> <p><input type="checkbox"/> I have retained original.</p> <p><input type="checkbox"/> Seller has retained original. Company invoice payment will be made when invoice(s) supported by a copy of AF Form 15 is received.</p> <p>VENDOR'S DELIVERY TICKET NUMBER IS (if applicable) _____</p>						
18. PRINTED NAME OF PURCHASER		19. GRADE	20. SQUADRON	21. SIGNATURE		
VENDOR'S CERTIFICATION						
I certify that the above bill is correct and just, and that payment thereto has not been received.						
22. PRINTED NAME OF SELLER'S REPRESENTATIVE		23. SIGNATURE		24. DATE		
VALIDATING OFFICIAL'S CERTIFICATION						
25. PRINTED NAME	26. GRADE	27. ORGANIZATION	28. SIGNATURE	29. DATE		
30. ACCOUNTING AND APPROPRIATION DATA				<input type="checkbox"/> PAYMENT <input type="checkbox"/> COMPLETE <input type="checkbox"/> PARTIAL <input type="checkbox"/> FINAL	34. PAID BY	
				APPROVED FOR		-\$
				EXCHANGE RATE		- \$ 1.00
				ON (Name of Bank)		
Pursuant to authority vested in me, I certify that this voucher is correct and proper for payment.				33. AMOUNT VERIFIED		
31. SIGNATURE AND TITLE OF CERTIFYING OFFICER		32. DATE		CORRECT FOR	\$	
				D.O. VOUCHER NO.		
				CHECK NO.		
FOR PURCHASES IN FOREIGN COUNTRIES INDICATE: Type of currency in pounds, francs, lire, etc.						

A27.2. Team chiefs are authorized to make purchases using this form. It will be prepared and forwarded IAW AFI 23-202 and the instructions of the EI Unit.

A27.3. DO NOT USE PENCIL. Ensure that all copies are accurate, legible, and signed by you and the vendor.

A27.3.1. Give the vendor two copies of the form and get an itemized bill of sale. Advise the vendor that no additional paperwork is necessary.

A27.3.2. Deliver original form with three copies, and the bill of sale to your supervisor, or as directed by your unit. Ensure that these forms arrive at your unit as soon as possible so that the vendor is promptly paid. **Note:** If vendor decides to retain original, advise that payment will not be made until original is delivered to the addressee in block 4.

A27.4. The following instructions to complete AF Form 15 are extracted from the reverse side of the AF Form 15 IAW AFI 23-202; however, the sequential order is rearranged, and additional information is provided where appropriate.

Table A27.1. Instructions on Completing AF Form 15

Item	Entry
1	Date of purchase.
2	Name and check-mailing address of payee (vendor).
3	Appropriate geographic location information.
4	Team chief: enters "DEPT OF THE AIR FORCE, Your Unit (AFMC), and complete address." ANG EI team chief: enters - "MIRESP unit if purchase supports project being implemented. If purchase is for repair of ANG vehicle enter name of ANG parent unit."
5	Team chief's parent unit. (738 EIS, 219 EIS, etc.)
6	Enter name of installation where your unit is located.
7	Active duty enter "AFMC;" Air National Guard enter "ANG."
8	If purchase is materiel for project, enter NA. If purchase is for repair of vehicle, enter type of vehicle and odometer reading.
9	Enter NA for materiel purchases. Enter serial number of vehicle if applicable.
10	Enter PROJECT NUMBER, control number and date obtained from issuing authority.
11	Enter description of vendor provided services or materiel purchased. NOTE: Purchases for materiel and services (crane rental, trenching) will not be included on the same AF Form 15. An AF Form 15 must be prepared for each type purchase. Emergency vehicle repair data for both labor and material will be included on the same AF Form 15.
12-15	Enter NA for services; however, total price for services should be entered in bottom total block. For material purchases enter quantity of item purchased (block 12), unit of issue(block 13), unit price (block 14), and total cost of each type item purchased (block 15). Enter tax charged for purchase. Add material cost column (block 15) and combine with tax to derive amount to be entered in bottom total block.

Attachment 28

AF FORM 1146, ENGINEERING CHANGE REQUEST/AUTHORIZATION
INSTRUCTIONS FOR COMPLETING AF FORM 1146

A28.1. Purpose of this form is to document formal engineering change requests/authorizations and approval of same.

Figure A28.1. AF Form 1146, Sample.

ENGINEERING CHANGE REQUEST/AUTHORIZATION			
TO: (Address of Engineering Activity)		FROM: (Address of Originating Activity)	
		1. ECRSA NO.:	
		2. STATUS <input type="checkbox"/> EMERGENCY <input type="checkbox"/> ROUTINE	
3. ORIGINATOR			
TYPED NAME:	SIGNATURE:	PHONE NO.:	DATE:
4. INSTALLATION CHANGE DESCRIPTION			
AFFECTED DOCUMENTS:	NUMBER:	STATUS:	DATE:
5. REASON FOR CHANGE (Attach additional sheet, if necessary.)			
6. NATURE OF CHANGE (Attach additional sheet, if necessary.)			
7. ENGINEERING CHANGE AUTHORIZATION			
DATE:	ORGANIZATION:	ACTION:	
		<input type="checkbox"/> APPROVED <input type="checkbox"/> PARTIALLY APPROVED <input type="checkbox"/> DISAPPROVED	
TYPED NAME:	SIGNATURE:	PHONE NO.:	DATE:
COMMENTS:			

A28.2. The team chief will coordinate all changes with the host base communications unit prior to submitting an AF Form 1146 to make them aware of problems encountered or the necessity for changing any portion of the planned facility configuration.

A28.3. The team chief will complete the heading and blocks 2 through 6:

TO: Appropriate Engineering Activity. **Note:** If in doubt of the correct FAS of the appropriate engineering activity, contact your unit PM/WC.

FROM: TDY Location, Customer Address

Block 1. Leave Blank.

Block 2. Indicate the urgency of the change.

Block 3. Name of the originator (team chief) signature, phone number where he can be reached, and date the form was initiated.

Block 4. **AFFECTED DOCUMENTS:** Identify the portion of the project package affected by the change, (Task instructions, PSA, drawings {put drawing numbers in Block 5}).

NUMBER: Project Number

STATUS: Installation, Removal, PSS, etc.

DATE: Date of the basic project package (AFMC Form 149, **C4 Systems Project Cover Sheet**)

Block 5. State briefly, in narrative form, the reason for the change. Reference the applicable paragraph in the TIs and the affected drawing number.

Block 6. Give a recommendation for corrective action to resolve the problem cited in Block 5. Include a statement to show any change in material or man-hours and statements indicating whether material is locally available. Attach a sketch of the recommendation to the original copy of the AF Form 1146. **Note:** Ensure that all attachments to the AF Form 1146 are identified. Include the date of the AF Form 1146, WIN, and attachment number on each attachment.

Block 7. To be filled out by the project engineer.

A28.4. Prepare 3 copies:

- Send the original to the Engineering Activity, with an info copy to the responsible EI project manager/workload controller.
- Provide one copy to the local host base communications unit project manager/workload controller.
- Keep one copy for your records.

Attachment 29

AFMC FORM 151, ENGINEERING INSTALLATION TEAM PREDEPLOYMENT CHECKLIST

Figure A29.1. AFMC Form 151, Sample.

ENGINEERING INSTALLATION TEAM PREDEPLOYMENT CHECKLIST		DATE
PROJECT DESIGNATOR	TEAM CHIEF'S NAME	
CUSTOMER UNIT/BASE	WORKCENTER SUPERVISOR NAME	
SECTION I	WORKCENTER SUPERVISOR RESPONSIBILITIES	DATE ACCOMPLISHED AND INITIALS
1. SELECT TEAM CHIEF AND INITIAL DATE AFMC FORM 152		
2. BRIEF TEAM CHIEF (AW AFMCI 33-104)		
3. ENSURE AVAILABILITY OF:		
A. QUARTERS AND MESS		
B. TRANSPORTATION AND VEHICLE SUPPORT FOR THE TEAM		
C. OBTAINING PAY AND MAIL FOR THE TEAM		
4. SUBMIT REQUEST FOR TOY ORDERS		
A. EXCESS WEIGHT ALLOWANCE		
B. DESIGNATE RESPONSIBLE PROPERTY OFFICER		
5. DETERMINE MEANS FOR FUNDING FOR LOGISTICS		
A. ESTABLISH AF FORM 618 (if required)		
B. ADVISE TEAM CHIEF OF \$50.00 REIMBURSEMENT FOR MATERIEL		
C. ADVISE TEAM ON USE OF AF FORMS 9 AND 15IMPAC CARD		
6. BRIEF TEAM CHIEF ON TOY AREA TRAVEL RESTRICTIONS		
7. BRIEF TEAM CHIEF ON TERRORIST THREAT		
8. ENSURE NOTIFICATION OF ARRIVAL MESSAGE IS SENT (AW AFMCI 33-104)		
9. ADVISE THE TEAM ADMINISTRATOR OF TEAM CHIEF HOLDINGS EVAL REQUIREMENTS (if applicable)		
10. OTHER (LOCAL REQUIREMENTS, PASSPORTS, DISTANCE/DIRTS, ETC.)		
SECTION II	TEAM CHIEF'S RESPONSIBILITIES	
1. REVIEW JOB FOLDER WITH SUPERVISOR		
2. CONDUCT TEAM BRIEFING (AW AFMCI 33-104)		
3. DETERMINE SPECIAL EQUIPMENT/TOOL REQUIREMENTS		
A. CHECK FOR AVAILABILITY		
B. INSURE SERVICEABILITY AND CALIBRATION FOR DURATION OF TOY		
4. ENSURE TEAM MEMBERS ARE AWARE OF:		
A. TRAVEL ITINERARY		
B. RESPONSIBILITY FOR PERSONAL OBLIGATIONS		
C. PARTICULAR SAFETY HAZARDS, TERRORIST THREAT		
D. PER DIEM AND BILLETING COSTS AND OBLIGATION TO PAY CHARGES UPON RECEIPT OF TOY FUNDS		
5. OBTAIN AND INVENTORY ADMINISTRATIVE KIT		
6. OBTAIN TECHNICAL DATA, STANDARD INSTALLATION PRACTICE AND EQUIPMENT TECHNICAL ORDERS		
7. CHECK TECHNICAL ORDER NUMERICAL INDEXES FOR TERRORS ON EQUIPMENT BEING INSTALLED		
8. ENSURE ALL TEAM MEMBERS HAVE MILITARY DRIVER'S LICENSES FOR VEHICLES BEING UTILIZED		
9. CHECK MILITARY VEHICLES		
A. SERVICEABILITY		
B. AVAILABILITY OF SERVICING TECHNICAL ORDERS		
C. SPECIAL VEHICLE REQUIREMENTS		
10. CONDUCT INSPECTION OF TEAM AND EQUIPMENT (AW AFMCI 33-104)		
11. PROCESS THROUGH UNIT TRAINING OFFICE - OBTAIN AF FORM 829s (Training Records)		
12. PROCESS THROUGH INSTALLATIONS FLIGHT CC		
A. OBTAIN SAFETY BRIEFING		
B. OBTAIN SAFETY KIT AND PORTABLE SAFETY BOARD, IF REQUIRED		
13. ENSURE TEAM MEMBERS OUTPROCESS UNIT/BASE (AW LOCAL PROCEDURES)		
ALL ITEMS HAVE BEEN ACCOMPLISHED ON THE DATES INDICATED		
TEAM CHIEF NAME (Type/Print)		DATE
TEAM CHIEF SIGNATURE		

Attachment 30

AFMC FORM 152, ENGINEERING INSTALLATION TEAM CHIEF LOG
INSTRUCTIONS FOR COMPLETING EI TEAM CHIEF LOG

A30.1. Purpose of this form is to provide a chronological record of events as an audit trail for project actions.

Figure A30.1. AFMC Form 152, Sample.

ENGINEERING INSTALLATION TEAM CHIEF LOG										
TEAM CHIEF (Name, Grade, Organization, Work)					LOG OPENING DATE		LOG CLOSING DATE			
1. IDENTIFICATION										
PROJECT DESIGNATOR					TYPE JOB (TAGAN, Control Tower, Rehabilitation, etc).					
CUSTOMER ADDRESS/PHONE					ACTUAL WORK LOCATION		TEAM CHIEF OFF DUTY ADDRESS			
2. TRAVEL INFORMATION										
TIME AND DATE										
DEPARTED		ARRIVED			TRAVEL MODE		TRANS SUPPORT			
HOME STATION		TDY LOCATION					SAT	UNSAT	N/A	
TDY LOCATION		HOME STATION								
3. VEHICLES										
DESCRIPTION		REGISTRATION NUMBER	OWNER		CONDITION		MILEAGE			
			CUST	EI			DEPARTURE	RETURN		
4. TEAM COMPLEMENT					5. REQUIRED COORDINATION					
GRADE	NAME		AFSC	AGENCIES		DATE AND INITIALS				
				EI UNIT		TRAINING	OUT	IN		
						VEHICLE CONTROL				
						FIRST SERGEANT				
						SAFETY				
							IN	OUT		
				SUPPORT BASE		VEHICLE OPS				
						BASE SUPPLY				
						SAFETY				
						SECURITY POLICE				
						BIENVIRONMENTAL				
				CUS TOWER		COMMANDER				
						PROGRAMS OFFICER				
						CHIEF OF MAINTENANCE				
						QUALITY CONTROL				
6. BASE/CUSTOMER SUPPORT					7. SITE VISITS/INSPECTIONS (QA, OC, etc).					
TYPE		RATING			TYPE		DATE			
8. DATE JOB										
STARTED		COMPLETED								
9. TEAM CHIEF										
NAME AND GRADE: (Typical Print)					SIGNATURE:					
10. TEAM CHIEF SUPERVISOR										
NAME AND GRADE: (Typical Print)					SIGNATURE:					

Figure A30.2. AFMC Form 152 (Reverse).

REMARKS (If additional space is required, continue on plain bond paper)	
12. DAILY LOG	
INSTRUCTIONS	
Enter DAILY a brief description of work accomplished, difficulties encountered, etc. <i>(NOTE: It is important that you include the brief description of difficulties encountered even though you may have resolved them yourself and need not further assistance. The information you provide will become part of the job record and may help prevent recurrence of problems on future jobs.) (If additional space is required, continue on plain bond paper.)</i>	
DATE	COMMENTS

A30.2. General. Prepare EI Team chief Log in one copy. Print legibly in ink or type on computer. (See Notes) Use bond paper or a computer generated form as a continuation sheet. Enter the PROJECT NUMBER on the first line entry on each continuation sheet.

A30.3. Initiation. The work center supervisor initiates the log concurrent with tasking of the team chief. Initiate a separate form for each project if more than one project is to be implemented during deployment. The team chief initiates the log if he/she is tasked with another project while deployed.

A30.3.1. Team chief's name, grade, organization and work center symbol are entered in the "Team Chief" block. On team chief replacements, place "See Remarks" in this block, then enter the new team chief's information and a comment of the team chief replacement in block 11.

A30.3.2. Log Opening Date Block: Date the log was initiated.

Part 1 - Identification. Enter the appropriate information:

a. PROJECT NUMBER. Enter the Project number

b. Type Job. Enter the project description as described on the AF Form 149, for example: 600 pair cable installation, GPN-22 PAR installation, network upgrade, etc.

c. Customer Address and Phone Number. Annotate the customer unit designator, base, and extension number.

d. Work Location. Enter building number or work area, such as Bldg 412, 600 Area, receive site, etc.). If not enough room, continue in Remarks Section.

e. Team Chief Off duty Address. Enter this information when known Example: Airman transient quarters, Building 920, Ext 2142; off-base quarters: motel name, address, city, and phone number.)

Part 2 - Travel Information:

a. Time and Date. Use local time and date.

b. Travel mode. Use descriptive abbreviations (Com Air, Govt Aircraft, Gov Motor Vehicle (GMV), POV, etc.). Unsatisfactory transportation support must be explained in part 12. If more than one mode, place "see remarks" and explain in block 11.

Part 3 - Vehicles:

a. Description/Type. (example: low profile, 6 PAX, V-11, etc.)

b. Registration No. Self-explanatory.

c. Owner. Indicate whether vehicles were EI or customer furnished.

d. Condition. Good, fair, or poor. Annotate discrepancies on AF Form 1800 or AF Form 1806, as appropriate.

e. Mileage. Record odometer reading before departing home station and on actual return to home station. For customer owned vehicles and for vehicles either received from or sent to home station, record odometer readings at time of receipt and turn in of vehicles.

Part 4 - Team Complement. List original team members. If more room is needed or if team members are replaced, enter in remarks, block 11.

Part 5 - Required Coordination. The work center supervisor will identify each agency requiring coordination. Date entries will be numerical day/month.

Part 6 - Base/Customer Support. Rate as Outstanding, Excellent, Satisfactory, Marginal or Poor. Marginal or Poor ratings must be explained in Part 11, (Remarks).

Part 7 - Site Visits/Inspections. List work site visits by other than the customer job monitor. Normally, the type of visits includes base/unit commander, safety, staff/supervisory, in progress/final QA , etc.

Part 8 -Date Job: Started: Date work starts at the project location. **Completion:** Date work stops at the project location.

Part 9 - Team Chief. Name of assigned team chief.

Part 10 - Team Chief's Supervisor. The team chief's supervisor or work center supervisor reviews the log, takes appropriate steps on problem/action items in Blocks 11 & 12. The reviewing supervisor enters the date of review following his/her signature in part 10 and also enters the Log Closing Date located in the upper right hand corner.

Part 11 - Remarks. This block is used to document information required to clarify the Installation Team Log and Job Summary. e.g., change of team chief, team complement, or when additional space is required.

Part 12 - Daily Log. Refer to [Chapter 5](#) for log entry guidance.

NOTES:

1. When a PSS is performed and job start is consecutive use a single EI Team Chief Log to cover both. If there is a break between these two phases, initiate separate logs for the survey and the actual implementation. To differentiate between logs initiated against the same PROJECT NUMBER, enter "PSS" in Part I "Type Job" block in the PSS log.
2. The original copy of the EI Team Chief Log initiated for a PSS, is retained in the job folder until completion of the actual project. Locally reproduce a copy of the PSS log and provide to the team chief prior to his/her departure to accomplish the project.
3. For in-house workload, use of EI Team Chief Log is optional.

Attachment 31

AF FORM 2519, NOA VERBAL COORDINATION RECORD

Figure A31.1. AF Form 2519, Sample.

ALL PURPOSE CHECKLIST		PAGE 1	OF 2	PAGES
TITLE/SUBJECT/ACTIVITY/FUNCTIONAL AREA		OPR	DATE	
NO VERBAL COORDINATION RECORD, WIN:		IS		
NO.	ITEM <i>(Assign a paragraph number to each item. Draw a horizontal line between each major paragraph.)</i>	YES	NO	N/A
	<p>PROJECT SUPPORT ITEMS</p> <p>PSA:</p> <p>Is all CE support (Atch 2) complete? Was a physical inspection of job site accomplished? Is all C-CS support (Atch 3) complete? Deficiencies/comments:</p> <p>MATERIAL:</p> <p>Have all shipments arrived? Damaged? Are boxes missing? Is all contractor/customer-supplied equipment installed? Are all cable shipment MCL requirements met? Has unit procured "C" coded items? Deficiencies/comments?</p> <p>BILLETING:</p> <p>Are on-base quarters available? Are contract quarters available? Accept American Express? Rate Per Day _____ Are American Express ATMs available? On Base () Off-Base () Comments:</p> <p>TRANSPORTATION:</p> <p>Are required vehicles available? If yes, type/number reserved: If required, is adequate govt trans available at TDY location? Is off-base use for meals/qtrs allowed? Is FAD Code II priority repair available?</p> <p>SAFETY:</p> <p>Has an asbestos material report been accomplished? Results of report: Is a safety board available? Are climbing equipment/protective devices installed? Are there any confined space criteria CAT A/B MHEs? Is there a waste disposal facility available? Comments:</p> <p>SECURITY:</p> <p>Are proposed team member clearances adequate? Are badges required? Comments/minimum security level required:</p>			

Figure A31.2. AF Form 2519 (Reverse).

		PAGE 2 OF 2 PAGES		
NO.	ITEM <i>(Assign a paragraph number to each item. Draw a horizontal line between each major paragraph.)</i>	YES	NO	N/A
	<p>TEAM SUPPORT: Is office space, desk, telephone, available for team chief? Is a secure storage area available for tools and equipment? Is a work center project coordinator assigned (AFI 21-116)? NAME _____ PHONE: _____</p> <p>EXERCISES: Will team be exempt? Comments:</p> <p>COMMUNICATIONS: Is adequate DSN access available? Is an IIR frequency available? Is a hamper available? Comments:</p> <p>LIMITING FACTORS: Is the ISSL complete? Will team have uninterrupted access to work site? Will equipment downtime be required? Can uninterrupted operational tests be conducted? Comments:</p> <p>COORDINATION EFFECTED WITH:</p> <p>NAME/GRD: _____ DSN: _____</p> <p>ORG/FAS: _____</p> <p>COORDINATION EFFECTED BY:</p> <p>NAME/GRD: _____ DSN: _____</p> <p>ORG/FAS: _____</p>			

Attachment 32

NOTICE OF ARRIVAL

NOTICE OF ARRIVAL (NOA) E-MAIL

Subject: *(In the E-mail subject line, enter the project number and short project title)*

(Send E-mail to the customer POC; send info copies to the MAJCOM POC, the STEM-B, the project manager, project engineer, and your installation superintendent/branch chief.)

On the first line of E-Mail text, use all capital letters to state TDY purpose, i.e., 738 EIS CABLE TEAM ARRIVAL TO IMPLEMENT C4 PROJECT FIBER CABLE INSTALLATION AT EGLIN AFB FL.

OPENING PARAGRAPH. *Enter the following.*

1. The following *(Enter EI Unit)* team members are scheduled to arrive your base O/A DATE to implement the subject project. We estimate a project completion date of DATE.

TEAM CHIEF	SEX	RANK/GRADE	AFSC	SSAN	SCTY	CLNC
------------	-----	------------	------	------	------	------

(Enter Team Chief data)

TEAM MEMBERS

(List all Additional Team Members)

NOTE: If NOA is for additional team members joining team already on site, use the following in lieu of previous opening statement: THE FOLLOWING *(EI Unit)* TEAM MEMBER(S) (IS/ARE) SCHEDULED TO ARRIVE YOUR BASE O/A DATE TO JOIN EI TEAM PRESENTLY ON-Site: *(list additional team members as outlined above)*

Paragraph 2. *(This paragraph should include a statement outlining where the team chief will report, appointments requested, or previously scheduled via telephone. It should also expand on the purpose of the deployment stated in the subject line. See examples below)*

Example Only: *(You may construct sentences using your own words.)*

2. On arrival, our team chief will report to your C4 Plans and Implementation for coordination, in briefing, and scheduling of appointments with your project coordinator, the base safety officer and, if desired, the base or unit commander. A pre-implementation survey will be performed prior to job start.

Paragraph 3. *(This paragraph will be used to confirm support requirements previously coordinated by telephone using the initial NOA telephone checklist. It will cite date, name, rank/grade, organization, and office symbols of all persons participating in the initial telephonic coordination. If telephonic coordination was not performed, request only those support items applicable to the subject project/deployment. Enter only those items confirmed on your checklist. See example below.)*

Example: The following team requirements and host base support items have been confirmed as complete or adequate per telecon between MSgt Doe, 738EIS/DOO, AND CMS Jones, 81CS/XP, on 21 Mar 04.

A. Our team will be quartered on base. *(off base using contract quarters) (off base non-contract quarters)*. Private accommodations with telephone for our team chief has been secured. *(Construct sentence as applicable)*.

B. All boxes of materiel cited on the project LOM have been received and inspected, no damage (*damage, minor/major*) was observed. **Note:** If there is damage, identify the problem and explain how you are planning to resolve the issue, if the deployment schedule will continue.

C. A secure storage area has been designated for project materiel, team tools, and equipment.

D. All host base support cited in the project support agreement has been inspected and completed according to specifications. (will be completed prior to team arrival or will be performed during project implementation and will not cause project delays). **Note:** If there is concern about a particular host base support item not completed, state your concerns and possible consequences if team will be deployed anyway. Construct sentence as applicable.

E. The following vehicle support has been confirmed: (*list number and type of vehicles reserved, if confirming base support*), or team will travel via 738 EIS vehicles. (*list vehicles, maintenance, fuel, food support confirmed if EI vehicles will be used at the work site*).

F. The work site has been inspected for asbestos material and a report will be made available to our team chief upon arrival.

G. A safety board will be provided at the job site.

H. All climbing equipment and safety protective devices are installed IAW AFOSH STD 91-50 (If not, confirm that a MAJCOM waiver will be provided to the team chief).

I. All manholes associated with this project have been categorized and identified according to the confined spaces criteria In AFOSH STD 91-25.

J. A hazardous waste disposal facility has been identified and is available locally that can accept (*Enter name of items that will require special disposal*)

K. Security clearances listed for team members are adequate and uninterrupted access to the work site is confirmed. (*If line badges or escorts are required confirm availability.*)

L. Equipment downtime (*list equipment type, inclusive dates and times*) has been confirmed.

M. DSN access (IBR Frequency) has been reserved or confirmed.

N. The ISSL is complete. (If not, confirm that it will not be a factor in getting the completion document signed.)

O. Uninterrupted operational tests can be performed. (*enter any other support you may have confirmed such as test equipment, arctic clothing, augmentation, admin work space for the team chief, etc.*)

P. Customer is responsible to fund for and procure all XD/XF items needed to troubleshoot or repair installed/relocated equipment.

Paragraph 4. Terminate the message with a statement such as:

4. Please inform us of any support status changes which could impact project implementation. Our POC is (*enter name, rank/grade, office symbol, and DSN for project manager/workload controller*).

Attachment 33

AF FORM 103, BASE CIVIL ENGINEERING WORK CLEARANCE REQUEST

Figure A33.1. AF Form 103, Sample.

BASE CIVIL ENGINEERING WORK CLEARANCE REQUEST <i>(See Instructions on Reverse)</i>				DATE PREPARED 19950510	
1. Clearance is requested to proceed with work at <u>Corner of Davis and First Blvd</u>					
on Work Order No. <u>1234abcd</u> , Contract No. <u>N/A</u> , involving excavation or utility disturbance per attached sketch. This area <input type="checkbox"/> has <input type="checkbox"/> has not been staked or clearly marked.					
2. TYPE OF FACILITY/WORK INVOLVED					
A. PAVEMENTS		D. FIRE DETECTION & PROTECTION SYSTEMS		G. AIRCRAFT OR VEHICULAR TRAFFIC FLOW	
B. DRAINAGE SYSTEMS		E. UTILITY		H. SECURITY	
C. RAILROAD TRACKS		F. COMM		I. OTHER	
3. DATE CLEARANCE REQUIRED 19950517			4. DATE OF CLEARANCE 19950701		
5. SIGNATURE OF REQUESTING OFFICIAL			6. TELEPHONE NO. Ext 1234		7. ORGANIZATION 838 EIS
ORGANIZATION		REMARKS <i>(Use Reverse for additional comments)</i>			REVIEWER'S NAME AND INITIALS
R B A S E C I V I L E N G I N E E R I N G	A. ELECTRICAL DISTRIBUTION		Underground primary in area. Call before digging		
	B. STEAM DISTRIBUTION		Area is clear		
	C. WATER DISTRIBUTION		Area is clear		
	D. POL DISTRIBUTION		Area is clear		
	E. SEWER DISTRIBUTION		Area is clear		
	F. ENVIRONMENTAL		N/A		
	G. PAVEMENTS/ GROUNDS		Barricade and clearly mark with warning lights		
	H. FIRE PROTECTION		N/A		
	I. ZONE _____		N/A		
	J. OTHER <i>(Specify)</i>		N/A		
8. SECURITY POLICE		Will check barricades and lights at night			
10. SAFETY		Underground lines in the area. Area has been staked.			
11. COMMUNICATIONS		N/A			
12. BASE OPERATIONS		N/A			
13. CABLE TV		N/A			
14. COMMERCIAL UTILITY COMPANY		N/A			
TELEPHONE					
GAS					
ELECTRIC					
15. OTHER <i>(Specify)</i> _____					
16. REQUESTED CLEARANCE <input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED					
17. TYPED NAME AND SIGNATURE OF APPROVING OFFICER <i>(Chief of Operations Flight or Chief of Engineering Flight)</i>					17a. DATE SIGNED

Figure A33.2. AF Form 103 (Reverse).

INSTRUCTIONS
<p><i>The BCE work clearance request is used for any work (contract or in-house) that may disrupt aircraft or vehicular traffic flow, base utility services, protection provided by fire and intrusion alarm systems, or routine activities of the installation. This form is used to coordinate the required work with key base activities and keep customer inconvenience to a minimum. It is also used to identify potentially hazardous work conditions in an attempt to prevent accidents. The work clearance request is processed just prior to the start of work. If delays are encountered and the conditions at the job site change (or may have changed) this work clearance request must be reprocessed.</i></p>
<p>18. REMARKS. <i>(This section must describe specific precautionary measure to be taken before and during work accomplishment. Specific comments concerning the approved method of excavation, hand or powered equipment, should be included.)</i></p>

A34.1.1. Blocks 1, 2, 4, 5, 6, 17, 20, and 22 through 27 will be filled out by team chief with help from BCE/DEER/.

A34.1.2. Blocks 3, 7, 8, 9, 10-16, 18, 19, 21, 28, and 29 will be left blank.

A34.1.3. Notes 1 and 2 will be completed by team chief.

NOTES:

Note 1 will always be “(Nomenclature of item)” installed by EI personnel.

Note 2 cost will be computed as:

(a) Item cost from shipping document .

(b) Labor cost estimation will be computed by total man-hours used to install the item, times the installation cost per hour. Obtain this cost from BCE/DEER.

A34.1.4. Block 30 and AFI 31 will be completed by BCE for transfer and acceptance of Military of Real Properties.

A34.2. Coordination. In most cases, only the coordination of the BCE and the operating unit is necessary; however, in the case of missile, radar warning, and communications sites, the Detachment Commander or Operating Location chief may sign the DD Form 1354.

A34.3. Distribution. The signed and coordinated forms will be distributed as follows:

A34.3.1. Original copy to the supporting/host BCE.

A34.3.2. One copy attached to AF Form 1261.

A34.3.3. One copy filed in the Project Folder.

Attachment 35

AFMC FORM 153, PRE-IMPLEMENTATION SITE SURVEY (PSS) CHECKLIST
INSTRUCTIONS FOR COMPLETING PRE-IMPLEMENTATION CHECKLIST

A35.1. Purpose of this form is to provide a method to verify that all matters related to the installation of a project are complete prior to team departure.

Figure A35.1. AF Form 153, Sample.

PRE-IMPLEMENTATION SITE SURVEY (PSS) CHECKLIST		PSS COMPLETION		
PROJECT DESIGNATOR (Four Elements)		CUSTOMER UNIT DESIGNATION		
BASE		LOCATION		
SECTION I HOST/BASE CUSTOMER SUPPORT				
NOTE: REVIEW PROJECT SUPPORT AGREEMENT FOR SUPPORT REQUIREMENTS OF THE HOST/BASE CUSTOMER. VERIFY ADEQUACY OF EACH REQUIREMENT AND INDICATE YOUR FINDINGS BELOW.				
		B	D	NA
1. MILITARY CONSTRUCTION PROGRAM (Complies GDD and TSD)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. SITING AND PROJECT INSTALLATION DATA		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. CIVIL ENGINEERING SUPPORT REQUIREMENTS		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. COMMUNICATIONS/COMPUTERS SYSTEM SUPPORT REQUIREMENTS		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. TRANSPORTATION		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. HOUSING		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. MESSING		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. ADMIN AREA (DSA, computer/Network Access, Etc.)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. SPECIAL EQUIPMENT (Pvt Bed, Trencher, etc.)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. SECURE STORAGE AREA		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. TEST EQUIPMENT (Availability and Calibration Dates)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. TECHNICAL DATA		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. CUSTOMER FURNISHED MATERIEL (Locally Available)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. PACKING AND CRATING SERVICES		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. BIO-ENGINEERING (Asbestos/Minerals)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SECTION II PROJECT MATERIEL				
NOTE: CONTACT PROJECT STORAGE MONITOR TO VERIFY ARRIVAL OF MATERIEL SHIPMENTS. IF MATERIEL SHIPMENTS CAN'T BE LOCATED, FOLLOW PROCEDURES IN AFMCI 33-104. PERFORM 100% INVENTORY OF AVAILABLE MATERIEL USING LOM, PACKING LIST AND MATERIEL.				
		B	D	NA
1. INVENTORY		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. SUBSTITUTION		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. COMMAND ASSETS		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. INITIAL SPARES SUPPORT LIST		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. SHIPPING/HANDLING		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. POTENTIAL REAL PROPERTY ITEMS IDENTIFIED		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. OTHER PROJECT CONTAINERS		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SECTION III HOST/BASE CUSTOMER REPRESENTATIVES				
GRADE	NAME (Last, First and MI)	FUNCTIONAL ADDRESS		PHONE NUMBER
SECTION IV GENERAL				
NOTE: ENSURE PROBLEMS ARE THOROUGHLY IDENTIFIED IN "REMARKS" ON REVERSE SIDE.				
		YES	NO	N/A
1. ARE ALL PROJECT TESTING PROVISIONS IDENTIFIED		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. IS BASE CIVIL ENGINEERING WORK CLEARANCE REQUIRED		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. ARE RESTRICTED AREA BADGES REQUIRED		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. HAS CUSTOMER ACQUIRED DISPOSITION INSTRUCTIONS FOR REMOVED EQUIPMENT		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. CAN THE JOB PROCEED ON SCHEDULE		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Figure A35.2. AF Form 153, Reverse.

SECTION IV		REMARKS
SURVEY TEAM CHIEF		
NAME, GRADE, UNIT (Printed/Typed)		SIGNATURE

A35.2. This form will be used as a basic checklist/guide for documenting Pre- Implementation Site Survey (PSS) findings. Ensure the following information, as a minimum is addressed: problem areas; recommended corrective actions; impact if the problem is not corrected; change in any funding issue and job hours.

A35.2.1. **HEADING BLOCKS** - Enter the completion date, project number, customer designation, host base name, and job location.

A35.2.2. **SECTION I and SECTION II** - Check appropriate block, and write a word picture about conditions, if required. Blocks: "S" - Satisfactory; "D" - Deficient; "NA" - Not Applicable.

A35.2.3. **SECTION III** - Enter rank, name, functional address symbol, and phone number of host base/customer representatives contacted during PSS .

A35.2.4. **SECTION IV** - Check appropriate block and enter in remarks, pertinent information about each area. Identify individuals with whom coordination actions were accomplished and an explanation of agreements obtained.

A35.2.5. **SECTION V** - Use this section to comment about conditions which need clarification. For sections I, II, and IV items marked deficient, thoroughly explain how the deficiency will impact job start/progress, and what action was taken by the team chief to correct the deficiencies. Sections I, II, and IV items marked satisfactory may also have comments for clarity, even if corrective action is not required. Items marked N/A do not require comments. If additional space is needed, continue on plain bond paper.

A35.2.6. The survey team chief will enter his name, grade, and unit in SURVEY TEAM CHIEF blocks and sign, certifying completion of the survey.

Attachment 37**EXCERPTS FROM AFI 21-116 (EI PROJECT/TEAM SUPPORT)****CHAPTER 3. CHIEF OF MAINTENANCE/CHIEF OF SYSTEMS (COM/COS)**

3.2.2.14. Ensure EI project packages are reviewed for installability and continued validity of the requirements. This includes providing tools, test equipment, and support to EI teams as required by the project support agreements (PSAs) or when needed to preclude work stoppages.

3.2.2.15. Ensure Maintenance Support participates acceptance and operational testing of new installations.

3.2.2.16. Ensure TCTO modifications kits are supplied to EI team chiefs for compliance during installation of new systems.

3.2.2.17. Ensure the EI customer satisfaction questionnaire is completed within 45 days after EI teams complete work. Provide meaningful comments and specific examples when dissatisfied with the service provided. Send questionnaire to the QA office of the EI teams parent unit.

CHAPTER 6. WORK CENTER SUPERVISOR RESPONSIBILITIES

6.12.1. Work Center Logistics Support. Ensure work center logistics support management responsibilities and *work center project coordinator* duties are accomplished. (Para 6.12.7)

6.12.2.1. Appoint a work center project coordinator for each EI project, contractor project, or self-help project to ensure project coordinator duties are accomplished.

6.12.2.2. Assign one or more technicians to work with EI project and maintenance assistance teams. The COM/COSF may waive this requirement, on a case-by-case basis. Assigned technicians can receive valuable training from the team and should be used as the trainer for other work center technicians after the team departs.

6.12.3. Work Center Project Coordinators. Project coordinators act as the work center focal point for all matters concerning the assigned project. Project coordinators ensure projects are accomplished with minimum difficulty and the work center can support systems or equipment programmed for installation or major modification. Project coordinators:

6.12.3.1. Work closely with the unit P&I office, EI engineers, and EI teams.

6.12.3.2. Participate in site surveys and provide technical advice to the EI team, work center supervisor, COM/COSF, and the P&I office.

6.12.3.3. Coordinate with other work center project coordinators to identify and resolve conflicts (such as storage space, power requirements, or programmed equipment locations).

6.12.3.4. Provide continuity of logistics support preparations for the project.

6.12.3.5. Review EI project packages and amendments. Initiate engineering change requests with an AF Form 1146, Engineering Change Request/authorization, according to AFI 33-104, Base Level Planning and Implementation for necessary changes to the project for deficiencies noted in the project package. Identify changes and deficiencies before the installation begins, to ensure timely project completion and to prevent delays and work stoppages during installation. Use attachment 4 and AFMQCC 200-3 as a guide to conduct these reviews.

6.12.3.9. Request technicians be appointed to work with the EI team and monitor progress of the project.

Attachment 38**LETTER OF CUSTODIAL AGREEMENT***(Enter Date)*MEMORANDUM FOR *(Customer Unit/Office Symbol)*FROM: *(EI Unit)*

SUBJECT: Letter of Custodial Agreement

1. This letter transfers custodial responsibility for *(project number)*, *(project title)*, from *(EI Unit)* to *(Customer POC)* during the team's absence. By signing the below endorsement, *(Customer POC)* is accepting full custodial responsibility for all project equipment and materiel until the EI team returns. The team is scheduled to depart 18 December 04 with an estimated team return date of 13 January 05.
2. Current project status, materiel inventory, tool inventory, and test equipment inventory, are contained in attachments to this document.
3. Please address any questions, comments, or request for action concerning this project during the team's absence to *(enter Project Manager/Workload Controller, telephone, E-mail)*.

(Team Chief Signature block)

Attachments:

1. Installation Project Status
2. Materiel Inventory
3. Tool Inventory
4. Test Equipment Inventory

1st Endorsement, *(Customer Unit/Office Symbol)*

We agree to accept custodial responsibility for all project equipment and materiel. We will secure and maintain all project equipment and materiel including tools and test equipment until EI team return.

(Customer POC Signature Block)

Attachment 39

AFMC FORM 154, EI QUALITY ASSURANCE EVALUATION REPORT
INSTRUCTIONS FOR COMPLETING EI QUALITY ASSURANCE REPORT

A39.1. Purpose of this form is to document the quality of all facets of the engineering and installation effort.

Figure A39.1. AFMC Form 154, Sample.

EI QUALITY ASSURANCE EVALUATION RECORD													
1. UEN			2. WORK LOCATION					3. DATE					
4. ITEM EVALUATED		OSB	NOT OSB	DEF	CCR	N/A	5. ITEM EVALUATED		OSB	NOT OSB	DEF	CCR	N/A
SECTION I: ENGINEERING						SECTION IV: WORKMANSHIP							
A. PROJECT PACKAGE RECEIVED							A. ANTENNA/POLE/TOWER						
B. PUBLICATION IDENTIFIED							B. GUY/SANCHORS/HARDBWARE						
C. PROJECT SUPPORT AGREEMENT (PSA)							C. EQUIPMENT ASSEMBLY/HANGING						
D. LIST OF MATERIALS (LOM)							D. CONSULTS/INSTRUMENTATION/SLADDERS						
E. TASK INSTRUCTIONS (TI)							E. EQUIPMENT GROUNDS/LIGHTNING PROTECTION						
F. QUALITY ASSURANCE PROVIDERS (Testing)							F. MARKING						
G. DRAWINGS AND SCHEMATICS							G. RANING/FORMING						
SECTION II: PROJECT ACCOMPLISHMENT						SECTION V: UNIT SUPPORT							
A. DC SUPPORT REQUIREMENT							H. CABLE INSTALLATION/SPLICING						
B. C-OS SUPPORT REQUIREMENT							I. SOLDERING						
C. MATERIAL PROVIDED/SUBSTITUTED							J. WELDABLE TERMINATION						
SECTION III: TEAM CHIEF						SECTION VI: SAFETY							
A. PRE-INSTALLATION SITE SURVEY (PSS)							K. CORROSION CONTROL						
B. PUBLICATIONS AVAILABLE/COMPLETE							L. EQUIPMENT CONDITION						
C. COMPLIANCE WITH TASK INSTRUCTIONS							M. OTHER						
D. C-C SYSTEMS INSTALLATION RECORDS UPDATED (CSIB)							SECTION VII: UNIT SUPPORT						
E. QA TESTS COMPLETED							A. TEST EQUIPMENT						
F. PROJECT DOCUMENTATION							B. TEAM TOOLS						
G. DEFICIENCY REPORTING							C. VEHICLES AND AUXILIARY EQUIPMENT						
H. TRAINING DOCUMENTATION							D. TECHNICAL ORDERS/PUBLICATIONS						
I. COMPLIANCE WITH AFMCI 33-104							E. OTHER						
TYPE OF EVALUATION						COMPLIANCE WITH SAFETY DIRECTIVES							
6. FINAL		IN-PROGRESS		AFTER THE FACT		7. UNIT COORDINATOR (Date approved by Chief of CAU)		DATE	CRS	RESPONSE	RESULTS		
8. INITIAL		REQUALIFICATION		SPECIAL									
9. CERTIFICATION													
TEAM CHIEF (Name, Grade, Organization)						SIGNATURE							
EVALUATOR (Name, Grade, Organization)						SIGNATURE							

A39.2. Introduction: AFMC Form 154 is used by QA personnel performing on-site evaluations and team chiefs when performing a “self-evaluation.” AFMC Form 154, Sections I through VI, are keyed to the EI Quality Assurance Reference Guide. QA evaluators and team chiefs performing self-inspections should review relevant sections of the EI QA Reference Guide to identify and document deficiencies. For self-inspections, the team chief must be able to explain the deficiencies found, and what corrective actions were taken. Documenting deficiencies and the corrective actions ensures continuity of the project, and serves as a management tool to ensure problem areas are resolved.

A39.2.1. Block 1, PROJECT NUMBER. Enter the project number and project title.

A39.2.2. Block 2, Work Location. Enter the base or site and state or country. .

A39.2.3. Block 3, Date. Enter the calendar day, month, and year.

A39.2.4. Block 4, Block 4 columns are used to record the status of items evaluated in relation to those identified in the EI QA Reference Guide. Use the EI QA Reference Guide to evaluate each applicable portion of any project.

A39.2.4.1. Enter the number of QA Reference Guide items observed in the corresponding “OBS” column for each item in each Block 4 Section.

A39.2.4.2. Enter the number of QA Reference Guide items that are applicable to the project but not observed by the evaluator in the “NOT OBS” column. (e.g., QA test were completed but not observed by the QA evaluator)

A39.2.4.3. Enter the number of deficiencies identified in the corresponding “DEF” column.

A39.2.4.4. Enter the number of deficiencies corrected on the spot in the corresponding “COR” column.

A39.2.4.5. Enter the number of QA Reference Guide items for each applicable Block 4 Section subsection not applicable the project being evaluated.

A39.2.4.6. A brief explanation of Sections 1 through 6 and their corresponding subsections follow:

A39.3. Section I – Engineering. This section covers the problems directly or indirectly attributed to engineering. If engineering caused or could have caused a problem with project implementation, then a deficiency will be annotated in this area. If a deficiency was previously identified during a project review but no action, or insufficient action was taken, then annotate a deficiency in the appropriate area under Section I. NOTE: A thorough project package review should identify the majority of engineering deficiencies; therefore, consider whether engineering deficiencies should have been identified and corrected during the review process.

A39.3.1. Section I, Item A - Project Package Received - problems with the received project package caused by engineering or inadequate project package review by installations.

A39.3.2. Section I, Item B - Publications Identified - All technical publications needed to accomplish the work should be identified in the project package. Also, address deficiencies with technical data that should be included in the project package by the engineer (e.g., commercial off-the-shelf manuals, company installation practices, catalogs, and brochures that are not available through normal government sources).

A39.3.3. Section I, Item C - Project Support Agreement (PSA) - Entails adequacy of support (to include allied support) identified by engineering to successfully complete the job.

A39.3.4. Section I, Item D - List of Materiel (LOM) - Identifies problems caused by engineering with the LOM, such as insufficient quantities and improper types of materiel called out, etc. This area should also be used to identify any problems with amendments to the LOM.

A39.3.5. Section I, Item E - Task Instructions (TI) - Adequacy of detailed information in the TI or ECR/A to successfully complete the job WITHOUT further clarification from engineering. Even if "normal" team chief/engineer coordination corrects a problem, a deficiency will be annotated in this area.

A39.3.6. Section I, Item F - Quality Assurance Provisions (Testing) - Adequacy of the test and acceptance portion of the TI to successfully and completely check out the installation. The test plan must be current and meet TO specifications.

A39.3.7. Section I, Item G - Drawings/Schematics - Adequacy of drawings/schematics (provided or not provided) to successfully complete the job without further clarification from engineering.

A39.4. Section II - Project Accomplishment. Identify deficiencies with Base Civil Engineering (BCE) or the local communication agency for failure to comply with requirements addressed in the PSA and problems associated with project materiel.

A39.4.1. Section II, Item A - BCE Support Requirement - Adequacy of support provided by the host BCE as addressed in the PSA. It includes such items as site/building preparation prior to EI team arrival.

A39.4.2. Section II, Item B - C4 Support Requirement - Adequacy of support provided by the host base communication agency as addressed in the PSA. It includes such items as telecommunications service requests (TSR), connection approval, availability of COMSEC equipment for installation, reserved cable pairs, test equipment, etc.

A39.4.3. Section II, Item C - Materiel Provided/Substituted - Problems with project materiel.

A39.5. Section III - EI Team Chief. This section covers the team chief's ability to implement the project IAW this instruction and comply with all administrative responsibilities.

A39.5.1. Section III, Item A - Pre-Installation Site Survey (PSS) - Adequacy of the team chief's Pre-Implementation Site Survey.

A39.5.2. Section III, Item B - Publications Available/Complete - All required publications must be current and available, either in the team chief's possession or readily accessible at the work area.

A39.5.3. Section III, Item C - Compliance with Task Instructions - Team chief compliance with the TI including drawings, amendments, ECR/A. Failure to obtain ECR/A action is just as important to check as failure to follow engineering provided ECR/A's.

A39.5.4. Section III, Item D - C4 Systems Installation Records (CSIR) Updated - Team chief's proper and timely update of project drawings.

A39.5.5. Section III, Item E - QA Tests Completed - Team chief compliance with the testing portion of the project to include pre-testing at the beginning of the installation, and pre-shakedown, shakedown and operational testing at job completion, and documentation of test results.

A39.5.6. Section III, Item F - Project Documentation - Project documentation the team chief is required to perform during the course of the installation. Documentation related to the PSS, deficiency reporting, testing, and training should not be addressed under this area.

A39.5.7. Section III, Item G - Deficiency Reporting - Team chief identifying and properly reporting deficiencies when applicable.

A39.5.8. An AFTO Form 22 is required for each omission or error identified in technical publications (TO 00-5-1).

A39.5.9. A Product Quality Deficiency Report (PQDR) is required whenever equipment operation or structures are unsafe and if not corrected could cause major loss or damage to equipment, severe injury or death to include a deficiency attributable to errors in workmanship, or non-conformance to specifications, drawings, standards, or other technical requirements (TO 00-35D-54).

A39.5.10. Section III, Item H - Training Documentation - Proper documentation of training for team members.

A39.5.11. Section III, Item I - Compliance with AFMCI 33-104- Team chief compliance not covered in other areas under Section III.

A39.6. Section IV – Workmanship. All the areas in Section IV cover team workmanship in accordance with SIPTOs or other applicable directives.

A39.6.1. Section IV, Item A - Antenna/Pole/Tower - All antenna, pole, and tower installation deficiencies.

A39.6.2. Section IV, Item B - Guys/Anchors/Hardware - Guy, anchor, and hardware installation deficiencies.

A39.6.3. Section IV, Item C - Equipment Assembly/Anchoring - All assembly and anchoring type deficiencies associated with equipment.

A39.6.4. Section IV, Item D - Conduits/Ducts/Troughs/Ladders - All assembly/anchoring type deficiencies associated with conduits, ducts, troughs and cable ladders.

A39.6.5. Section IV, Item E - Equipment Ground/Lightning Protection - All termination and assembly/anchoring type deficiencies associated with ground/lightning protection.

A39.6.6. Section IV, Item F - Marking - All marking type deficiencies.

A39.6.7. Section IV, Item G - Fanning/Forming - All fanning, forming, and lacing deficiencies.

A39.6.8. Section IV, Item H - Cable Installation/Splicing - All cable installation and splicing type deficiencies.

A39.6.9. Section IV, Item I - Soldering - All soldering type deficiencies.

A39.6.10. Section IV, Item J - Wire/Cable Termination - All wire and cable wrapping/termination type deficiencies.

A39.6.11. Section IV, Item K - Corrosion Control - All corrosion control type deficiencies.

A39.6.12. Section IV, Item L - Equipment Condition - General equipment condition deficiencies (due to team workmanship) not covered in other areas.

A39.6.13. Section IV, Item M - Other - This area is for all team workmanship areas not covered under Section IV.

A39.7. Section V - EI Unit Support. Support EI parent unit provides in the form of special tools, test equipment, vehicles and TOs/Pubs, so that the team can successfully complete its work. This includes calibration of the test equipment and special tools.. **Note:** If a deficiency is not due to unit support, DO NOT annotate the deficiency under this section. Consider annotating the deficiency under Section I, II, or III, whichever is appropriate.

A39.7.1. Section V, Item A - Test Equipment - EI unit making required testing devices available or accessible to the team, ensuring that any test device signed out by the team is calibrated, and that all accessories required for TO completeness are provided.

A39.7.2. Section V, Item B - Team Tools - EI unit making required tools available, safe, and accessible to the teams.

A39.7.3. Section V, Item C - Vehicles and Ancillary Equipment - EI unit responsibility to ensure safe vehicles and ancillary equipment are available or accessible to the team.

A39.7.4. Section V, Item D - Tech Orders/Pubs - EI unit making the required technical orders and publications available or accessible to the team and ensuring they are current with all changes and updates.

A39.7.5. Section V, Item E - Identify any other support deficiencies not covered in A through D.

A39.8. Section VI – Safety. Compliance with Safety Directives -Team chief and team compliance with safety directives.

Block 5, Type of Evaluation. The evaluator should mark the block corresponding to the type of evaluation performed.

Block 6, Team Chief Evaluation. Mark the block corresponding to the type of evaluation being performed.

Block 7, Unit Coordination. N/A for TC self-evaluation. For QA evaluation complete IAW local EI unit procedures.

Block 8, Certification. Enter the team chief's name, grade, parent organization, and office symbol in the "Team Chief" block.

Attachment 40

AF FORM 1261, CI SYSTEMS ACCEPTANCE CERTIFICATE

A40.1. Purpose of this form is to ensure that all required action are accomplished at the TDY location and upon return to home station are documented.

Figure A40.1. AF Form 1261, Sample.

COMMUNICATIONS AND INFORMATION SYSTEMS ACCEPTANCE CERTIFICATE					
1. DESCRIPTIVE TITLE OF SYSTEM					
2. BASE		3. BUILDING AND ROOM NUMBER		4. USER	
5. DOCUMENT AUTHORIZING SYSTEM					
6. LIST OF RELATED PROJECTS/CONTRACTS					
7. MAJOR ITEMS OF EQUIPMENT/SOFTWARE INSTALLED, REMOVED OR TRANSFERRED:					
NSN/PN A	NOMENCLATURE B	ASC C	QTY D	DETAIL DOCUMENT NUMBER E	U/R/T F
8. NARRATIVE PROJECT SUMMARY					
9. INSPECTION AND TRANSFER SUMMARY (Enter "X" or "NA" on each line, A through I.)					
A. INSTALLATION ACTIVITY IS RELIEVED OF RESPONSIBILITY.					
B. INSTALLATION TESTED PER TEST PLAN CRITERIA. FLIGHT CHECK MADE, IF APPLICABLE. DATA ATTACHED.					
C. REPORT OF MEASURED X-RADIATION IS ATTACHED.					
D. RF INTENSITY PLOT IS ATTACHED.					
E. EQUIPMENT ACCOUNTABILITY WAS TRANSFERRED.					
F. COMSEC ACCOUNT NUMBER IS:					
G. REAL PROPERTY WAS TRANSFERRED.					
H. AS-INSTALLED DRAWINGS WERE PROVIDED TO THE BASE CSO.					
I. ADDITIONAL REMARKS ARE ATTACHED.					
J. DESCRIPTION OF MINOR EXCEPTIONS.		RESPONSIBLE ACTIVITY	FORECAST DATE OF CORRECTION	DATE CORRECTED	

Figure A40.2. AF Form 1261 (Reverse), Sample.

ACCEPTANCE CERTIFICATE				
10. An inspection and operational test was conducted. Inspection results are in Item 9. The system is accepted as installed, as planned, and in accordance with established standards. It performs according to established criteria, and to the satisfaction of the undersigned.				
FUNCTION	ORGANIZATION	TYPED NAME, GRADE AND TITLE	SIGNATURE	DATE
A. INSTALLATION ACTIVITY				
B. OPERATING ACTIVITY				
C. MAINTAINING ACTIVITY				
D. INSPECTION ACTIVITY				
E. BASE SUPPLY				
F.				
G.				
H.				
11. CERTIFICATION: All exceptions have been corrected. All operating and maintenance personnel, spare parts, test equipment, tools, expendable operating supplies, technical data, and other logistical support deemed necessary to meet the operational mission of the system are available.				
FUNCTION	ORGANIZATION	TYPED NAME, GRADE AND TITLE	SIGNATURE	DATE
A. BASE CSO				
B. USER				
ADDITIONAL REMARKS				

Attachment 41

AFMC FORM 155, POST DEPLOYMENT CHECKLIST

A41.1. Purpose of this form is to ensure that all required action are accomplished at the TDY location and upon return to home station are documented.

Figure A41.1. AFMC Form 155.

ENGINEERING INSTALLATION POST DEPLOYMENT CHECKLIST		DATE
PROJECT DESIGNATOR	TEAM CHIEF'S NAME	
CUSTOMER UNIT/BASE	WORKCENTER SUPERVISOR'S NAME	
SECTION I	AT TDY LOCATION	DATE ACCOMPLISHED AND INITIALS
1. ENSURE ALL FORMS/DOCUMENTS ARE COMPLETED, SIGNED AND DISTRIBUTED		
A. ONE COMPLETE SET OF AS-INSTALLED DRAWINGS TO THE CUSTOMER AND ONE TO DRAFTING SVCS		
B. TRANSFER AND ACCEPTANCE OF REAL PROPERTY ACCOMPLISHED ON DD FORM 1354		
C. AF FORM 1261 WITH ALL ATTACHMENTS DISTRIBUTED IAW AFMCI 33-104		
2. EXCESS PROJECT MATERIEL DISPOSED OF		
3. LOCAL SUPPLY ACCOUNT CLEARED		
4. WORK AREA CLEANED		
5. BORROWED VEHICLES CLEANED AND TURNED IN		
6. ENSURE CUSTOMER REPRESENTATIVES ARE OUT BRIEFED		
7. ENSURE		
A. BORROWED EQUIPMENT IS RETURNED AND AF FORMS 1297 ARE CLEARED		
B. TOOLS INVENTORIED AND PACKED FOR SHIPMENT		
C. EQUIPMENT PREPARED FOR SHIPMENT		
D. TEAM MEMBERS CLEAR BILLETING (<i>Pickup DD Form 1351-5, if applicable</i>)		
E. TEAM MEMBERS PREPARED FOR DEPARTURE		
8. NOTIFY SUPERVISOR OF TRAVEL ITINERARY		
9. INFORM 24-HOUR CONTACT POINT OF DEPARTURE TIME		
10. OTHER (<i>Local Requirements</i>)		
SECTION II	AT HOME UNIT	
1. ENSURE TEAM-IN-PROCESSES IAW LOCAL PROCEDURES		
2. IN BRIEF WORK CENTER SUPERVISOR		
3. ENSURE TEAM MEMBERS PROCESS TRAVEL VOUCHERS		
4. CLEAN AND TURN-IN SPECIAL TOOLS, TEST EQUIPMENT, AND VEHICLES		
5. PROCESS THROUGH		
A. SAFETY OFFICE		
B. TRAINING OFFICE		
C. TECHNICAL ORDER/PUBLICATIONS OFFICE		
D. ORDERLY ROOM		
E. OPERATIONS FLIGHT (<i>Team Chief Only</i>)		
6. TURN IN TEAM CHIEF ADMINISTRATIVE KIT		
7. PROCESS FINAL PROJECT FOLDER AND APPLICABLE DOCUMENTS IAW LOCAL PROCEDURES		
8. TURN IN LETTERS OF EVALUATION (<i>LOEs</i>)		
9. OTHER (<i>Local Requirements</i>)		
ALL ITEMS HAVE BEEN ACCOMPLISHED ON THE DATES INDICATED		
TEAM CHIEF NAME (<i>Type/Print</i>)	TEAM CHIEF SIGNATURE	DATE

INSTRUCTIONS FOR COMPLETING EI TEAM POST-DEPLOYMENT

A41.2. Date: Date post deployment starts at TDY location.

A41.3. Project Designator: Include all four elements.

A41.4. Team Chief's name: Self explanatory.

A41.5. Customer unit/base: Self explanatory.

A41.6. Systems Installation Flight Supervisor's name: Self explanatory.

A41.7. Section I and II. Team chief will enter the date and his initials as each of the responsibilities are completed. Enter N/A if an area is not applicable. After completion, the team chief dates and signs the form and provides it to the systems installation flight supervisor for review/filing. **NOTE:** Units may use the reverse side to include local requirements.

Attachment 42

INSTRUCTIONS FOR MEMORANDUM TO TRANSMIT DRAWINGS (AFI 21-404)

(Use the following memorandum example to prepare CSIR transmittal letter to the CSIR manager.)

MEMORANDUM FOR BASE CSIR MANAGER (*unit and office symbol*) (date)

FROM: (*team chief name, rank, unit address*)

SUBJECT: Transmittal of Updated CSIRs, (*insert project number*)

1. IAW AFI 21-404, two copies of the following project drawings associated with subject project are forwarded for your action.

a. Drawings with changes: (*list all drawings by drawing number that were changed or marked in any way*)

b. Drawings without changes: (*list all drawings used to implement the project by drawing number that were not changed or marked in any way*)

c. Drawings with changes pending due to project exceptions as listed on AF Form 1261: (*list any drawings requiring further update upon completion of exceptions*)

2. Request you acknowledge receipt by signing 1st endorsement below.

(team chief signature block)

1st Ind, CSIR Manager

(date)

Received 2 copies of all CSIRs listed above.

(base CSIR manager signature block)

NOTE: file endorsed copy of letter in project folder)

Attachment 43

AFMC FORM 160, TRAINING EFFECTIVENESS ASSESSMENT

Figure A43.1. AFMC Form 160, Sample.

TRAINING EFFECTIVENESS ASSESSMENT (TEA)							
NAME		OFFICE SYMBOL		AFSC		DUTY TITLE	
TRAINING STATUS OF EVALUATEE: <input type="checkbox"/> UPGRADE <input type="checkbox"/> QUALIFICATION <input type="checkbox"/> PROFICIENCY <input type="checkbox"/> CROSS-UTILIZED <input type="checkbox"/> OTHER							
PERFORMANCE LOCATION OF TRAINING EFFECTIVENESS ASSESSMENT: <input type="checkbox"/> DEPLOYED <input type="checkbox"/> IN-STATION							
TRAINER NAME: (Last name, First, MI, Rank, Office Symbol)				CERTIFIER NAME: (Last name, First, MI, Rank, Office Symbol)			
<p>TEAs are performed to determine an installer's technical proficiency and competence and to gauge the effectiveness of the training program. The Evaluator makes careful observations of those separate and distinct phases. Errors made in any of these phases must be considered when determining results. The decision to declare a performance error must be based on published standard installation practices, and/or T.O. procedures, manuals, or other references (AW AFMCI 33-104, Chapter 7).</p> <p>CATEGORY I errors are of critical importance and result in an unsatisfactory assessment for that particular task.</p> <p>CATEGORY II errors are of major importance, but do not necessarily result in an unsatisfactory task performance. Three or more CAT II errors will result in an unsatisfactory performance.</p> <p>CATEGORY III errors are of minor importance and lack the seriousness for a critical or major error. Although CAT II errors do not result in an unsatisfactory performance six or more Cat III errors will result in a Cat II error.</p>							
CPETP OR 797 TASK NUMBER	TASK REFERENCE	DATE QUALIFIED	PERFORMANCE PHASE	CATEGORIES OF ERROR			TASK RATING
				CAT I	CAT II	CAT III	
			PRE TASK				
			TASK				
			POST TASK				
COMMENTS							
CPETP OR 797 TASK NUMBER	TASK REFERENCE	DATE QUALIFIED	PERFORMANCE PHASE	CATEGORIES OF ERROR			TASK RATING
				CAT I	CAT II	CAT III	
			PRE TASK				
			TASK				
			POST TASK				
COMMENTS							
CPETP OR 797 TASK NUMBER	TASK REFERENCE	DATE QUALIFIED	PERFORMANCE PHASE	CATEGORIES OF ERROR			TASK RATING
				CAT I	CAT II	CAT III	
			PRE TASK				
			TASK				
			POST TASK				
COMMENTS							
EVALUATOR'S NAME: (Last name, First, MI, Rank, Office Symbol)				SIGNATURE		DATE	
INSTALLATION OFFICER WILL DOCUMENT CORRECTIVE ACTIONS FOR UNSATISFACTORY TASK PERFORMANCE ON PLAIN BOND PAPER.							
UNIT COORDINATION SECTION							
OFFICE SYMBOL	SUSPENSE	INITIALS	DATE	OFFICE SYMBOL	SUSPENSE	INITIALS	DATE

Attachment 44

AFMC FORM 161, CUSTOMER SATISFACTION QUESTIONNAIRE

Figure A44.1. AFMC Form 161, Sample.

CUSTOMER SATISFACTION QUESTIONNAIRE (CSQ)		
PROJECT NUMBER	PROJECT TITLE	DATE
PLEASE COMPLETE AND RETURN THIS CSQ TO OUR EI UNIT WITHIN 45 CALENDAR DAYS FROM PROJECT COMPLETION		
TO	FROM (# Unit, POC, DSN)	
SECTION I GENERAL INFORMATION AND INSTRUCTIONS		
This questionnaire is part of our Quality Assurance (QA) Program. Our goal is to provide you, the CUSTOMER, with the best products and services. Your comments allow us to evaluate and continually improve our process. Please provide a rating for each subject area in Section II. Specific comments are highly encouraged. If you need further assistance or would like a response to your comments, please contact our POC. Thank you.		
SECTION II SUBJECT AREAS AND RATING SCALES		
6 - VERY SATISFIED 4 - SOMEWHAT SATISFIED 2 - DISSATISFIED 5 - SATISFIED 3 - SOMEWHAT DISSATISFIED 1 - VERY DISSATISFIED		
PLEASE WRITE THE CORRESPONDING RATING IN THE BLOCK FOLLOWING EACH SUBJECT AREA		
A. PROJECT ENGINEER (Project, Package, PSA, Site Survey, complete LOM)		
COMMENTS		
B. PROJECT MANAGEMENT (Project coordination)		
COMMENTS		
C. MATERIAL PROVIDED (Complete, On-Time, Serviceability)		
COMMENTS		
D. INSTALLATION TEAM (Appearance, Conduct, Safety)		
COMMENTS		
E. EI TEAM CHIEF (Communication, Coordination, Team Leadership)		
COMMENTS		
F. SYSTEM INSTALLATION (Workmanship, Testing, Documentation)		
COMMENTS		
G. PROJECT TIMELINESS (Completed in time to satisfy your requirements)		
COMMENTS		
H. ESTIMATED COST VERSUS FINAL COST (Cost Overrun, Over Estimating)		
COMMENTS		
I. PROJECT PERFORMANCE (Operates and performs as designed)		
COMMENTS		
J. WAS AHEI QUALITY ASSURANCE EVALUATION PERFORMED <input type="checkbox"/> YES <input type="checkbox"/> NO If Yes, please rate		
COMMENTS		
K. OVERALL RATING (Consider all areas above)		
COMMENTS		
L. WOULD YOU REQUEST OUR SERVICES AGAIN <input type="checkbox"/> YES <input type="checkbox"/> NO If Yes, please rate		
COMMENTS		
UNIT CO OR REPRESENTATIVE (Last Name, First, MI)		DATE
SIGNATURE		