

III CORPS AND FORT HOOD REGULATION 415-2

Troop Construction
**REQUESTING, PROCESSING, AND DIRECTING
ENGINEER TROOP CONSTRUCTION SUPPORT**

**Department of the Army
Headquarters, III Corps and Fort Hood
Fort Hood, Texas 76544
16 January 2015**

UNCLASSIFIED

SUMMARY OF CHANGE

Fort Hood Regulation 415-2

Requesting, Processing, and Directing Engineering Troop Construction Support

This Fort Hood Regulation is dated, 16 January 2015

New III Corps and Fort Hood Regulation addressing Troop Construction across all III Corps installations.

Troop Construction
**REQUESTING, PROCESSING, AND DIRECTING ENGINEER TROOP
CONSTRUCTION SUPPORT**

History. No formal process has been established for III Corps Troop Construction program.

Summary. This publication establishes the responsibilities for procedures to be used in executing III Corps construction projects that require coordination outside of subordinate Divisions.

Applicability. This publication applies to all units and activities assigned or attached to III Corps. The Troop Construction Regulation applies to the Active Army, the Army National Guard of the United States, and the Army Reserve units conducting training on Fort Bliss, Fort Carson, Fort Hood, and Fort Riley. During mobilization, procedures in this publication can be modified to support policy changes as necessary.

Army management control process. This publication does not contain management control provisions.

Supplementation. Supplementation of this publication is prohibited without prior approval from the Chief of Staff, Headquarters, III Corps.

Distribution. This publication is only available in electronic media and is intended for the use of units assigned and attached to III Corps.

Suggested improvements. Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to the Corps Engineer, Headquarters, III Corps & Fort Hood.

Proponent and exception authority. The proponent of this publication is the Corps Engineer, III Corps. The proponent has the authority to approve exceptions or waivers to this publication that are consistent with controlling laws and regulations.

FOR THE COMMANDER:

DAVID A. LESPERANCE
COL, AR
Chief of Staff

Official:



CHARLES E. GREEN, SR.
Director, Human Resources

DISTRIBUTION:
IAW Fort Hood Form
1853, S

Contents

Chapter 1, page 1

Introduction, page 1

Purpose, 1-1, page 1

References, 1-2, page 3

Explanation of abbreviations and terms, 1-3, page 3

Chapter 2, page 4

Responsibilities, page 4

Corps Chief of Staff, 2-1, page 4

Staff Judge Advocate, 2-2, page 4

Corps G3 Section, 2-3, page 4

Corps G4 Section, 2-4, page 4

Corps Engineer (Proponent/ Corps Project Candidate List (CPCL) Voting Member), 2-5, page 4

Directorate of Public Works, 2-6, page 4

Directorate of Plans, Training, Mobilization, and Security, 2-7, page 5

Corps Troop Construction Manager, 2-8, page 5

Post Troop Construction Manager (PTCM), 2-9, page 5

36th Engineer Brigade Commander (Corps Project Candidate List (CPCL) Voting Member), 2-10, page 6

Division Engineers (Corps Project Candidate List (CPCL) Voting Members), 2-11, page 6

Constructing Unit, 2-12, page 6

Customer, 2-13, page 6

Chapter 3, page 7

The Troop Construction Planning Process, pages 7

General, 3-1, page 7

Phase 1 – Staffing, 3-2, page 7

Phase 2 – Unit Review, 3-3, page 8

Phase 3 – Planning, 3-4, page 8

Phase 4 – Design, 3-5, pages 9

Phase 5 – Execution, 3-6, page 10

Phase 6 – Closeout, 3-7, page 11

Chapter 4, page 12

Materials and Equipment Coordination, page 12

General, 4-1, page 12

Responsibilities, 4-2, page 12

Generation of BOM's, 4-3, page 12

Material procurement, 4-4, page 13

Supplemental BOM, 4-5, page 13

Equipment estimates, 4-6, page 13

Special equipment and tools requirements, 4-7, page 14

Chapter 5, page 15
Testing, Inspections, and Evaluations, page 15
General, 5-1, page 15
Testing, 5-2, page 15
Inspection, 5-3, page 15
Evaluation, 5-4, page 16

Chapter 6, page 16
Applicability, page 16

Appendix, pages 17
Appendix A: References, page 17
Appendix B: SAMPLE DD Form 1391 Military Construction Project Data, page 18
Appendix C: SAMPLE DA Form 2702 – Bill of Materials, page 19
Appendix D: Example OPORD Annexes, page 20
Appendix E: Quality Control Checklist, page 26
Appendix F: Quality Assurance Inspection Sheet, page 27
Appendix G: Example Mission Extension Request, page 28
Appendix H: Example Letter of Acceptance, page 29
Appendix I: Mission Milestones, page 30
Appendix J: Example Form DD1144 Support Agreement page 31
Appendix K: Sample Construction Summary (CS) (Microsoft Excel), page 33
Appendix L: Construction References, page 35
Appendix M: Work Flow, page 41
Appendix N: Fort Hood Specific Procedures, 42

Figure List

Figure 1, page 2
Figure 2, page 14
Figure B-1, page 18
Figure C-1, page 19
Figure D-1, Annex A, page 20
Figure D-2, Annex B, page 21
Figure D-3, Annex C page 22
Figure D-4, Annex D page 23
Figure D-5, Annex E page 24
Figure D-6, Annex F page 25
Figure E-1, Quality Control Checklist, page 26
Figure F-1, Quality Assurance Inspection Sheet, page 27
Figure G-1, Mission Extension Request, page 28
Figure H-1. Letter of Acceptance, page 29
Figure I-1, Mission Milestones, page 30

Figure J-1, Example DD1144, page 31
Figure K-1, Construction Summary (CS) (Microsoft Excel), page 33
Figure L-1, Construction References, page35
Figure M-1, Work Flow, page 41
Figure N-1, Fort Hood Specific Procedures, page 42

Glossary, pages 42

Chapter 1 Introduction

1-1. Purpose

a. Establishes objectives of the Engineer Troop Construction Program. The primary objective of military construction units is to construct, rehabilitate, expand, and maintain operations in time of war or emergency. When used in garrison, the primary objectives of the Engineer Troop Construction Program is to provide an additional cost effective means to execute projects as part of III Corps Sustainment, Restoration, and Modernization (SRM) program and Environmental Compliance while providing Military Occupational Specialty (MOS) training opportunities. The scope of projects shall focus on construction engineer troop training value through repair or construction missions. Projects shall be approved and prioritized based on these objectives. Engineer Troop projects substantially minimize cost savings to the government over utilizing commercial contractors since labor is not included in the project costs.

b. Outlines the procedures for submitting, processing, funding, and executing projects to be accomplished through the Engineer Troop Construction Program. Troop projects are developed from an approved DA Form 4283 (Facilities Engineering Work Request) and are of sufficient scope to require the dedication of engineer construction unit assets. These projects are administered in a manner similar to commercial construction contracts with the constructing unit serving as the contracted party.

c. Assigns responsibilities associated with the Engineer Troop Construction Program.

d. Provides for a system of project control and materials accountability.

e. Outlines the Life-cycle project management approach to manage the program.

Troop construction will be accomplished using a life-cycle project approach. This requires the active participation and support of the garrison, Directorate of Public Works (DPW), Directorate of Plans, Training, Mobilization, and Security (DPTMS), Corps Engineer, project customer, and the constructing unit's chain of command from the initial project identification, through project turnover. Figure 1 (Project Life Cycle) shows the typical life-cycle of a project and Chapter 3 further describes the process in detail.

PHASE	MILESTONES
Staffing	Customer submits Department of the Army (DA) Form 4283 as outlined in post specific Standing Operating Procedures (SOPs). Post Engineer approves or disapproves repair and new construction requests and manages them per post SOP if the project can be completed using internal Post assets. If the Post Engineer Section determines the project is outside of the scope of internal engineering assets, the Post Engineer Section submits the project to the Corps Engineer Cell for approval or disapproval. Included in the submission is a detailed finance and procurement plan. Corps Engineer approves or disapproves request at the monthly Troop Construction Working Group (TCWG) and places large projects on the Corps Project Candidate List (CPCL) for semi-annual review, planning, and scheduling.
Unit Review	Available constructing unit reviews small projects during the TCWG and large projects on the CPCL and informs Corps Engineer of intent to execute or to decline work. Construction unit shall prepare preliminary Bill of Materials (BOM) and cost estimates as part of their assessment for accepted projects.
Planning	Once a constructing unit commits to executing the project, the Corps Troop Construction Manager (CTCM) oversees the completion of a DD1144 (Support Agreement) between the customer and the constructing unit. The customer will finalize the funding and logistical support to the constructing unit. The constructing unit is responsible to schedule and host a coordination meeting to discuss and confirm the project scope, responsibilities, and schedule. This can be accomplished via the monthly troop construction working group and/or conference call.

FIGURE 1: Project Life Cycle

Design	The constructing unit performs detailed design. Customer approves design. Constructing unit submits required plans, timeline, and BOM to the Post Troop Construction Manager (PTCM). Customer coordinates BOM approval, equipment estimate, procures materials and equipment. Constructing Unit conducts project-related skill training and resourcing. Constructing Unit obtains all necessary permits or other pre-construction coordination.
Execution	Constructing unit hosts pre-construction conference, constructs project, receives materials, coordinates and conducts unit level routine Quality Assurance (QA)/ Quality Control (QC) and pre-final inspection, and remedies punch-list items. Troop Construction Manager (TCM) in conjunction with (ICW) DPW and/or DPTMS conducts inspections, project coordination, and material delivery.
Closeout	Constructing unit coordinates and conducts final inspection/acceptance by TCM, performs equipment accountability and turn-in of equipment used, submits project documentation to TCM. Customer conducts final inspection, accepts work, and completes and submits DD Form 1354 (Transfer and Acceptance of DoD Real Property) as necessary.

FIGURE 1: Project Life Cycle continued

1-2. References

Publications and forms are listed in Appendix A.

1-3. Explanation of abbreviations and terms

Abbreviations and terms used in this publication are explained in the glossary. Required and related publications and referenced forms are listed in Appendix L.

Chapter 2

Responsibilities

2-1. Corps Chief of Staff

The Corps Chief of Staff is the approval authority for this regulation. They review and approve, or disapprove, any supplementation and revisions to the Troop Construction Program regulation.

2-2. Staff Judge Advocate

The Staff Judge Advocate (SJA) provides legal review and advises on legal issues within the processes of the Troop Construction Program.

2-3. Corps G3 Section

The Corps G3 provides overall annual training guidance that supports III Corps' mission readiness. Corps G3 Section reviews and publishes command-directive construction orders.

2-4. Corps G4 Section

The Corps G4 monitors the overall funding and supply chain guidance to include training supplies, materials, and equipment.

- a. Monitors training supplies and construction materials.
- b. Provides information on equipment availability for leasing and/or loaning.

2-5. Corps Engineer (Proponent / Corps Project Candidate List (CPCL) Voting Member)

The Corps Engineer is the lead proponent for the III Corps Troop Construction Program and is responsible for:

- a. Managing the Troop Construction Program.
- b. Reviewing engineer training objectives of subordinate units.
- c. Managing engineer capabilities within the Corps.
- d. Synchronizes construction priorities, plans, and resources between subordinate
- e. Divisions/Brigades and constructing units.
- f. Prioritizing and authorizing projects on the CPCL for execution.
- g. Ensuring adequate construction resources are devoted to troop construction projects.
- h. Establishing the operating procedures to execute projects in accordance with all project life-cycle phases.
- i. Informing the Corps Command Team on the status of troop construction projects.
- j. Chairing the Troop Construction Working Group.
- k. Provide Quality Assurance throughout construction project.

2-6. Directorate of Public Works

DPW is the garrison command's lead on the SRM program and master planning for each post. Post DPWs are responsible for the following on their respective posts:

- a. Supporting the Troop Construction Program.
- b. Receiving the work requests (DA Form 4283), approving and prioritizing work request In Accordance With (IAW) Garrison's priorities.
- c. Identification of the proper funding source for troop construction projects on their respective posts.
- d. Providing funding for the construction of identified SRM and Environmental Compliance projects.
- e. Approval of construction design(s) and BOM orders.
- f. Providing for the sustainment of the work upon completion and acceptance for real property projects, if DD 1354 is required to add to Real Property.
- g. Executing final inspections, and assume final responsibility of real property projects following its completion.
- h. Informing the Garrison Command on the status of troop construction projects.
- i. Ensures troop construction projects comply with current laws and regulations outlined in the National Environmental Policy Act (NEPA) regulation.

2-7. Directorate of Plans, Training, Mobilization, and Security

DPTMS is responsible for:

- a. Providing funding for the construction of Sustained Readiness Program (SRP) and Integrated Training Area Management (ITAM) projects.
- b. Submitting work requests to DPW for range or DPTMS projects for consideration for troop construction.
- c. Complying with customer responsibilities for projects involving range assets.
- d. Providing for the sustainment of the work for SRP and ITAM projects.
- e. Executing final inspections and assume final responsibility of the project following its completion.

2-8. Corps Troop Construction Manager

The CTCM serves as the Corps Engineer's program manager for troop construction on all Corps installations. The CTCM is responsible for:

- a. Managing the daily requirements of the Troop Construction Program.
- b. Hosting the monthly troop construction working group.
- c. Overseeing timelines for planning and execution of troop construction.
- d. Overseeing the completion of a DD1144 between the constructing unit and customer.
- e. Maintaining a list of Reserve Component (RC)/(NG) construction units available for conducting troop construction projects.

2-9. Post Troop Construction Manager (PTCM)

The PTCM serves as the post's program manager for troop construction on their respective installation. The PTCM is responsible for:

- a. Managing the daily requirements of the Troop Construction Program.
- b. Hosting the troop construction working group.
- c. Establishing timelines for planning and execution of troop construction.
- d. Monitoring projects for compliance with scope of work, safety, and timeline.
- e. Receives the constructing unit's plans, design, and BOM.
- f. Conducting periodic construction inspections (QA) and coordinating final inspection and project acceptance with DPW or DPTMS.
- g. Managing the project closeout and any ribbon cutting ceremony.

2-10. 36th Engineer Brigade Commander (Corps Project Candidate List (CPCL) Voting Member)

The 36th Engineer Brigade Commander or his designated representative is a voting member for the CPCL.

2-11. Division Engineers (Corps Project Candidate List (CPCL) Voting Members)

The Division Engineers or designated representatives are voting members for the CPCL for all Troop Construction projects at their respective posts. Division Engineers are responsible for identifying potential projects for the CPCL from their respective post requirements.

2-12. Constructing Unit

The Constructing unit is responsible for the following when selecting a project:

- a. Identifying potential projects based upon individual and collective training values and provides prioritized project lists to the PTCM.
- b. Committing to executing projects.
- c. Developing project designs, BOM list, DD Form 1391 (FY__Military Construction Project Data), and cost estimates.
- d. Coordinating with respective contracting agencies to refine cost estimates and conduct proper market research, and assist with the purchase of construction material.
- e. Scheduling projects on the unit-training calendar to accomplish the work in a timely manner.
- f. Coordinating their unit's billeting, equipment, and life support with PTCM.
- g. Identifying, training, and certifying unit level QA and QC personnel for each project ensuring periodic quality inspections.
- h. Reporting progress on a monthly basis to the CTCM at the working group.
- i. Conducting final inspection with customers.
- j. Documenting project costs IAW AR 420-1 (Army Facilities Management).
- k. Track unfunded costs for the construction project. Unfunded costs do not count towards the project's approval amount limitation

- I. Coordinate with customer to create and sign a DD 1144.

2-13. Customer

The Customer (the unit requesting the project) is responsible for:

- a. Submitting their project request on a DA Form 4283 IAW post procedures. Providing funding for the project. Providing for the sustainment of the project work as needed.
- b. Providing access or clearances to the project site for the constructing unit.
- c. Providing any information, equipment, or materials as specified in the Corps OPORD.
- d. Coordinate with constructing unit to create and sign a DD 1144.
- e. Contracts the Bill of Materials based upon constructing unit estimates.

Chapter 3

The Troop Construction Planning Process

3-1. General

Successful execution of troop construction projects depends upon proper planning and resourcing. This process is a combined effort of all III Corps agencies, constructing units, and the Troop Construction Working Group. This chapter details the steps to be accomplished and associated duties to be performed in all phases of the project life-cycle.

3-2. Phase 1 - Staffing

- a. Staffing involves development and review of work orders to be considered for either completion or addition to the CPCL. The CTCM is responsible for the TCWG and the consolidation of the CPCL. PTCMs will provide a respective list of construction projects that support troop training requirements and cannot be completed with post internal assets. Projects are taken from an approved DA Form 4283, Annual Work Plan, Backlog Maintenance and Repair Listing, and command-directed projects.
- b. The customer will recommend the type, source and/or responsible unit for the project funding, as well as develop an initial cost estimate. The required funding source and type of sustainment responsibility will be determined by the DPW, in accordance with AR 420-1, and will be identified on the Project Candidate List (PCL).
- c. During staffing, the customer will route the work order for staffing as defined by their Installation SOP. If a project is unable to be completed using post internal assets, the project will be submitted to the Corps TCM to be reviewed for feasibility and included in the Corps Troop Construction Working Group for a decision on whether to use Corps assets to complete the project.

d. The customer will recommend the type, source, and/or responsible unit for the project funding, as well as develop an initial cost estimate. The customer is responsible for funding the project, however procurement details will be decided upon by the customer and the constructing unit, once the constructing unit is determined.

e. The project funding (max budget of \$750,000) must be sufficient to:

- (1) Procure the project BOM.
- (2) Lease the necessary special tools and equipment.
- (3) Reimburse the constructing unit for equipment rental.
- (4) Provide a small contingency amount equivalent to approximately 10-15% of the cost of the project.
- (5) Fuel for construction equipment and support equipment.

3-3.Phase 2 – Unit Review

a. The constructing units will review the scope of work for each project. They may request additional information and site visits to better understand the project scope. The unit shall assess those projects based upon the training value while also considering the project's scope, and their unit capabilities and availability to complete the project by the required completion date.

b. Constructing units shall communicate to the TCM their willingness to execute specific projects. Constructing units shall also communicate to the TCM their inability to execute certain projects. This will allow the TCM to decide whether to pursue other mechanisms for project execution or recommend removing the project from the CPCL.

c. The constructing unit, in its evaluation of the projects, shall develop some initial cost estimates to develop an initial BOM for review by the TCWG. The cost estimate should include materials cost, fuel, transportation and rental costs as well as any required specialized tools. TCWG members will review the initial cost estimate and determine the proper source(s) of funding required for the project. This initial cost estimate will determine the amount of funding the project is authorized.

3-4.Phase 3 – Planning

a. Once a constructing unit accepts the project, the CTCM will issue a tasking order (if all units are internal to III Corps and project is command directed) or oversee the completion of a DD 1144 (Support Agreement). The DD 1144 shall be signed by the Corps Engineer/TCM, Constructing unit, and the customer. The DD 1144 will:

- (1) Describe the scope of work, including specific salient project features.
- (2) Assign responsibility for design, construction, inspections, and material procurement.
- (3) Specify the required submittals in conjunction with DPW and establish a project completion date.
- (4) Provide any other information or responsibilities required for project execution.
- (5) Assign responsibility for sustainment of the project.
- (6) Assign responsibility for funding of the project and the funding type.
- (7) The signatory authorities for the Memorandum of Agreement (MOA) are:
 - (a) Corps Engineer: Troop Construction Manager
 - (b) Troop Construction Unit: Battalion Commander or higher

- (c) Customer: Brigade Commander or Director
- b. After the DD 1144 has been signed by all parties and funding has been approved, allocated, and/or transferred from the responsible unit, an execution package will be prepared. The execution package will be created by the Customer and reviewed by the CTCM for direct coordination with the constructing unit to begin the design phase. The execution package will consist of:
 - (1) DD1144 (Appendix J)
 - (2) Approved DA Form 4283 (work order)
 - (3) All staffing comments and permitting requirements
 - (4) Funding documents (Appendix B)

3-5.Phase 4 – Design

a. Coordination meeting. After the constructing unit receives the execution package, the constructing unit will schedule a preliminary coordination meeting with the PTCM and the customer. There will be a confirmation of the scope of work, time period, and duration of the project. The plan of action will include at a minimum:

(1) The time periods required for design, materials procurement, and construction consistent with this regulation.

(2) Provide In Progress Reviews (IPR) as necessary.

b. Detailed design. Detailed design work will begin after the preliminary coordination meeting. Either the Post DPW or the constructing unit will be responsible for the detailed design; however, it is preferable to have the constructing unit perform the detailed design. Design responsibility will be based upon the constructing unit's capabilities and relation of the project to the unit's Mission Essential Task List. Designs submitted for approval will contain a set of project drawings and specifications. The Post DPW has design approval authority.

c. Project Plans and Coordination.

(1) Site safety. The constructing unit will fill out a signed risk assessment and create a phased safety plan prior to the beginning of construction for approval. The site safety plan will be reviewed by the TCM to ensure the constructing unit has covered at a minimum, the names of the safety Noncommissioned Officer (NCO) and assistant, an activity hazard analysis, plans for handling hazardous materials, fire prevention plans, provisions for first aid and medical evacuation, and plans for protection of visitors and the general public. The plan will also include names of the QAs and external QCs to ensure the project is constructed according to plans and in a safe manner. The Safety Plan and all construction activities will be completed IAW EM 385-1-1 (Safety and Health Requirements Manual).

(2) Site security. The site security plan will discuss the methods to be used, to ensure physical security of the site, construction equipment, and materials.

(3) NEPA requirements. The final plans and coordination shall address all requirements specified in the NEPA review. The project's final NEPA review, which may be a Record of Environmental Consideration (REC) or Environmental Assessment (EA) will be part of the project execution package. The specified requirements may include Storm water Management plans and permits, Air Quality Assurance submittals, Clean Water Action Section 404 permitting, and other coordination with regulatory

agencies. All required permitting and approvals shall be obtained prior to beginning work. Early coordination with Environmental is essential.

(4) Quality Assurance/Control (QA/QC). At a minimum, the QA/QC Plan will contain:

(a) The names of the project Officer in Charge (OIC)/Non-Commissioned Officer In Charge (NCOIC).

(b) Materials testing schedule.

(c) Daily and weekly inspection requirements.

(d) Required phase preparatory charts.

(e) Progress reporting requirements.

(f) Materials control procedures.

(5) Construction schedule. The DD1144 will specify the required completion date and the type of project schedule required to be submitted. For small scope projects, a time-phased bar chart will normally be sufficient. Larger projects will require the construction schedule to be developed using a Critical Path Method network analysis. The schedule will display both workdays and calendar days.

(6) Dig Permit. Any projects involving excavations or utility outages or connections require a dig permit per DPW's "Dig Safe" SOP.

d. Project Resources.

(1) Materials. After the design is approved, the constructing unit will prepare a BOM on DA Form 2702 (Bill of Materials). This requirement shall be factored into the project schedule, to ensure the materials are procured and delivered to meet the construction milestones. The constructing unit will work with the respective post Mission and Installation Contracting Command (MICC) as needed. It is the customer's responsibility to facilitate communication between the MICC and the constructing unit.

(2) Equipment. The constructing unit will submit an equipment estimate and any special tools and equipment requirements. The TCM will facilitate the acquisition of equipment as needed. Preferred methods of equipment procurement include: rental, borrowing from other units, or from the DPW, Mobilization and Training Equipment Site (MATES), and/or DPTMS equipment set.

(3) Training. The constructing unit will identify the specific skills and tasks required to construct the project and will conduct any necessary individual or unit training on those skills.

(4) Fuel. Fuel for unit construction equipment will be funded by the customer unless prior coordination is made through the DD1144.

3-6. Phase 5 - Execution

a. Construction may begin after the design is approved and all permitting requirements are complete. No separate Notice to Proceed (NTP) will be issued to the constructing unit.

b. Construction Quality Management (CQM). The CQM is the performance of tasks, which ensure construction is completed according to the project plans and specifications, on a timely basis, and within a defined budget. The two components of CQM are QC and QA.

(1) QC is a responsibility of the constructing unit and requires that the project OIC/NCOIC or alternate be on the site at all times. QC includes:

- (a) Daily oversight of construction operations.
- (b) Performance of materials testing and certification.
- (c) Construction progress reporting.
- (d) Materials accountability and coordination.
- (e) Enforcement of the project Safety and Security Plans.
- (f) Construction phase coordination.

(2) QA is a shared responsibility between the constructing unit's battalion staff, the TCM, and DPW/ DPTMS when determined initially during the planning phase. QA refers to the procedures used to ensure the QC plan is functioning effectively, and that the end product complies with the level of quality, established by the project plans and specifications. The process starts before construction and includes:

- (a) Review of the plans and specifications.
- (b) Plans-in-hand site reviews.
- (c) Coordination with using agencies.
- (d) Establishment of project duration periods.
- (e) QC requirements, training of personnel in critical skills.
- (f) Review of testing results, control of completing requirements and distractions, construction inspection, and project documentation.

c. Construction progress report (CPR).

(1) The constructing unit will submit a report on a bi-weekly basis to the TCM. The TCM shall disseminate the CPRs to the Division Engineer Representative, Corps Engineer, and other members of the TCWG.

(2) The constructing unit will submit a monthly schedule update to the TCM. The submittal will contain an updated network diagram/bar chart, project status in terms of percent complete and days ahead/behind, the critical path of completion, and the plan for bringing the project back on schedule. Completion dates will not be extended or changed without mutual approval of the signatories to the DD1144.

(3) The constructing unit will also keep detailed records of accounting for all monies spent on the project using DD Form 1391, Military Construction Project Data, IAW Army Regulation (AR) 420-01, 2-17. (Appendix A &B).

3-7. Phase 6 - Closeout

a. Pre-final inspection. Upon completion of construction, the constructing unit will schedule and conduct a pre-final inspection with the customer and DPW, if the DPW has been involved with inspections throughout construction, and DPTMS as needed. This inspection examines the project for compliance with the approved plans and specifications. Deficiencies in construction will be annotated on a punch-list (Memorandum for Record). On the spot corrections will not be recorded. The constructing unit will receive a copy of the inspection results.

b. Final inspection. After correcting the deficiencies identified during the pre-final inspection, the constructing unit will schedule a final inspection with the unit. Before the final inspection, all unit equipment and remaining materials will have been removed.

c. Project documentation. The constructing unit will provide DPW and TCM with a complete set of as-built drawings in MicroStation DGN or AutoCADD pdf format for the project. When applicable, operations and maintenance manuals, product warranties, repair parts, and material certifications will also be provided.

d. Final procurement closeout. A project will be closed-out only after all deficiencies have been corrected, materials and equipment have been accounted for, and project documentation has been transferred.

e. DD Form 1354(Transfer and Acceptance of DoD Real Property). The TCM will complete a draft DD Form 1354, Transfer and Acceptance of Real Property, and submit to DPW Real Property for comments and corrections. The TCM will make corrections to the draft DD 1354, as noted by DPW Real Property, then complete and submit a final DD 1354 to the DPW Real Property Specialist for acceptance of the real property via hard copy and Compact Disk (CD). The CD will also include a scope of work, site map, and post-construction photos of all real property assets listed on the DD form 1354 labeled with date and time taken.

f. Troop Labor Savings. The constructing unit will submit to the TCM the estimated labor savings realized in the project. DPW and/or DPTMS can provide assistance in calculating the cost savings based on the actual labor and equipment actual hours logged on the project.

Chapter 4

Materials and Equipment Coordination

4-1. General

This chapter establishes procedures for developing, reviewing, procuring, issuing, and securing materials and equipment for troop construction projects. Figure 2 depicts the materials flow.

4-2. Responsibilities

a. The constructing unit's Battalion, Operations Officer (S3) or equivalent will:

(1) Perform a materials take-off from the approved project, plans, and specifications; prepare a project BOM; and submit the BOM to DPW and courtesy copy to TCM.

(2) Develop a Project Material Management Plan (PMMP) for the project. The PMMP for the project will address the issues of internal storage, on-site storage requirements, items requiring on-site delivery, and storage of environmentally sensitive items. Upon approval, materials will be processed IAW the PMMP.

(3) Designate a NCO to serve as Unit Materials Coordinator (UMC). This person will monitor the status of materials that are on order and coordinate the delivery and issue of materials IAW the PMMP.

b. The Constructing Unit Project Officer will:

(1) Secure materials on the construction site.

(2) Report losses in a timely manner.

4-3. Generation of BOM's

a. Upon receipt of an approved design, the constructing unit will perform a materials take-off and generate a BOM. The BOM will contain:

(1) Only materials necessary to complete the project and 15 - 20% overage to allow for training losses.

(2) A complete description and a required date for the necessary items. The S3 will review and approve the BOM before forwarding it to the PTCM.

b. The Battalion S3 will submit the project original and two copies of the BOM to the customer and PTCM in advance of the scheduled project start date, normally 90 days.

4-4. Material procurement

a. Upon approval of the project BOM, the construction unit will coordinate actions to:

(1) Place the materials on order and forward a copy of the BOM to the UMC.

(2) Place a copy of the detailed material breakout in the project file.

b. The UMC will:

(1) Monitor the status of due-in items.

(2) Notify the constructing unit's S4 as materials are received.

(3) Issue and deliver materials IAW the PMMP.

c. The Contracting Officer Representative (COR) (if required) will ensure the materials delivered meet the specifications outlined in the BOM and scope of work. The COR will immediately contact the Contracting Officer (KO) if materials do not meet specification and/ or are not delivered in the correct amounts. The KO will determine if the COR will accept substandard materials or amounts of materials. The KO, not the COR, will work with the vendor to remedy the materials order.

4-5. Supplemental BOM

a. The supplemental BOM will be developed as necessary to maintain the momentum of the project.

b. The constructing unit will provide a justification for the supplemental BOM listing the items required. The justification will fall into one of the following categories. A justification must be attached to the BOM when there is:

(1) Loss/damage to materials.

(2) Change in project scope; a copy of the modification to the directive must be attached.

(3) Design error; a copy of marked-up drawings illustrating changes must be attached.

(4) Omission from original BOM.

(5) Unforeseen site conditions; a short description of the unforeseen site conditions must be attached.

c. The constructing unit will:

(1) Plan on a 45-day delivery date for items on a supplemental BOM, unless a justification for expeditious processing is attached.

(2) Plan on a 7 day delivery schedule for items requiring expeditious processing.

4-6. Equipment estimates

a. At the same time the constructing unit performs its materials take-off for a project, it will develop an estimate of equipment hours. The estimate will:

(1) Display items of equipment.

- (2) Hourly rental rates.
- (3) Effort required.
- (4) Efficiency factors applied.
- (5) Total equipment costs.

b. After approval, the equipment estimate becomes the maximum funding level for equipment use, unless additional effort can be justified. Requests for increasing the equipment allowance must be justified using one of the following reasons:

(1) Change in project scope; constructing unit must forward a copy of the modification to the project directive and must be forwarded with the request to the TCM.

(2) Design error; a copy of marked-up drawings illustrating changes must be attached to the request.

(3) Unforeseen site conditions; a short description of the unforeseen site conditions must be attached to the request.

(4) Estimating error. If the constructing unit discovers an error in the initial estimate of equipment hours, it may submit a written request for change to the customer and TCM. The request will include an explanation of the error and steps taken to correct the training deficiency in the planning process.

4-7. Special equipment and tool requirements

a. Requests for special tools and equipment will be forwarded with the project BOM. Equipment requests must display dates and duration of the requirement.

b. Requests for these items must be justified by a memorandum attached to the BOM, signed by the Battalion S3.

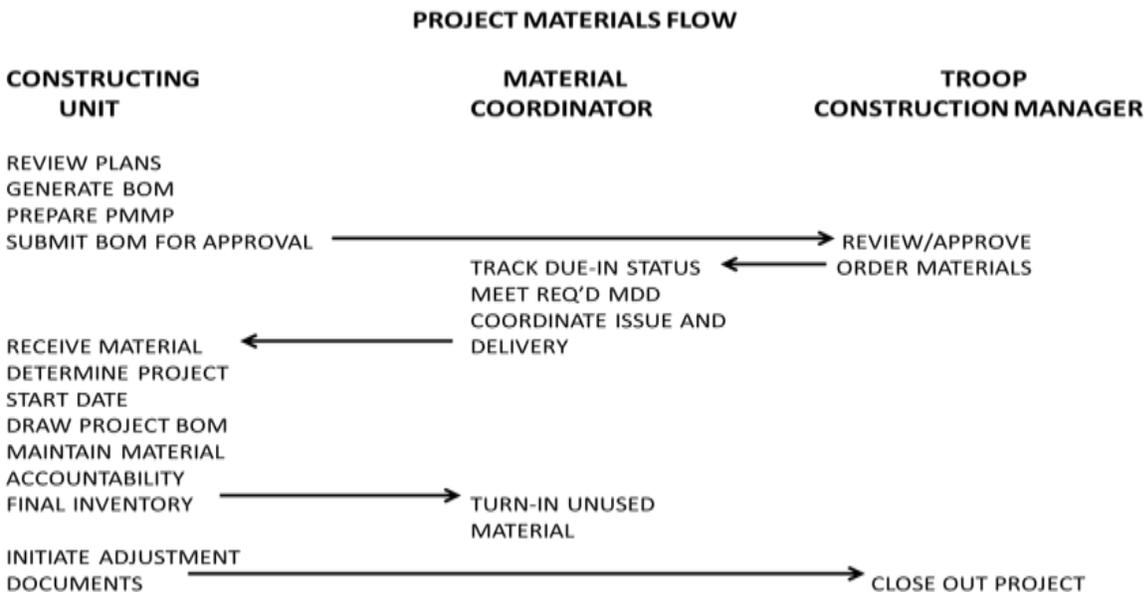


FIGURE 2

Chapter 5

Testing, Inspections, and Evaluations

5-1. General

Testing, inspection, and evaluation are performed to ensure that construction work on troop projects is accomplished efficiently and according to project specifications and accepted engineering practices. They are the key elements in a successful QA/QC Program.

5-2. Testing

Testing is done to ensure work performed and materials used meet current Army engineering standards. Testing is objective in nature and focuses on the technical acceptability of construction. Examples of testing are compaction and moisture content analysis, concrete cylinder testing, slump cone analysis, and materials certification. Testing is accomplished as required by the project specifications. Work that does not conform to the prescribed test standards will be removed and replaced.

5-3. Inspection

a. In contrast to testing, inspections are performed to assess the proficiency and efficiency of construction methods. The focus is on the techniques employed to achieve the work and ensure the construction meets project specification. Inspections are both objective and subjective in nature.

b. Type of inspections.

(1) Interim. Interim inspections are performed during the course of construction at random intervals. Internal inspections are performed continuously by the chain of command and are vital in enforcing the QC Program. Feedback is immediate, oral in nature, and directed at correcting skill deficiencies. The TCM will perform external inspections. Feedback is provided both informally through on the spot comments and formally through written project inspection reports. This mechanism provides a means to assess project status and identify areas of weakness to the constructing unit's chain of command.

(2) Pre-final inspection. The constructing unit schedules and conducts the pre-final inspection with the customer and DPTMS/DPW, as needed, when the constructing unit determines the project to be complete. The purpose is to determine if work meets the project specifications and identifies corrections that need to be made before the final inspection of the project is complete and ready for turnover. The noted deficiencies are documented on a punch-list and submitted by the constructing unit for correction. The pre-final inspection is a joint effort between the constructing unit and DPW and/or DPTMS and the TCM.

(3) Final. Upon correction of the punch list, the constructing unit schedules a final inspection with the TCM in accordance with DPW and/or DPTMS. If no deficiencies are found, DPW will accept the work and initiate project closeout documents. The work will become the responsibility of the party identified in the Memorandum of Agreement (MOA).

5-4. Evaluation

Type of evaluations:

a. IPR. The IPR is conducted at scheduled intervals to assess the status of ongoing projects. The constructing unit presents the percent completion (scheduled versus actual), actual material status, and issues impacting completion for active construction projects. Design status and resourcing problems are presented for future projects.

b. After-Action Review (AAR). There will be two separate AARs performed, one will be conducted by the project OIC with the Soldiers conducting the construction, and the second AAR will be conducted by the TCM with the project OIC, NCOIC and the customer. The AAR is performed to assess the execution of completed projects and training proficiency of tasks performed during the project. The focus is on evaluating unit areas for sustainment and improvement. Whenever possible, objective standards will be used such as unit Mission Essential Task List (METL), appropriate Army Doctrine Publications (ADP), etc. Also, the Troop Construction project procedures described herein may be reviewed and evaluated in order to improve the program.

Chapter 6

Applicability

a. All projects that are estimated to cost above \$100,000 or will require coordination outside of the respective Division will require Corps Troop Construction Board approval.

b. This includes coordination with AR/NG units as well as 36th Engineer Brigade (EN) (BDE).

This regulation applies to projects by both the Active Component and Reserve Component Engineer Units when performing construction on III Corps Posts. There are no additional or differing requirements or support mechanisms for Reserve Component Units, than for Active Component Units.

APPENDIX A

References

Section I. Required Publications

AR 415-32

Engineer Troop Unit Construction in Connection with Training Activities cited figure L-1

AR 420-1

Army Facilities Management cited para 2-12(j), 3-2(b), 3-6(C-3)

EM 385-1-1

Safety and Health Requirements Manual cited para 3-5 (c-1)

Section II. Related Publications

Military Construction Publications cited in Annex K.

Section III. Prescribed Forms

DA 2702

Bill of Materials cited para 3-5(6-d (1)),

DA 4283

Facilities Engineering Work Request cited para 1-1(b), Figure 1, 2-6(b), 2-13(a, e) 3-2 (a), 3-4(b-2)

DA 2028

Recommended changes to Publications and Blank Forms, cited suggested improvements

DD 1144

Support Agreement cited Figure 1, 2-8(d), 2-12(l), 3-4(a, b), 3-4(b-1), 3-5(5), 3-5(d-4), 3-6(C-2),

DD 1354

Transfer and Acceptance of DoD Real Property cited para 3-7(e), Figure 1,

DD 1391

FY __ Military Construction Project Data cited para 2-12(c), 3-6(C-3)

APPENDIX B

1. COMPONENT		FY _____ MILITARY CONSTRUCTION PROJECT DATA		2. DATE (YYYYMMDD)	REPORT CONTROL SYMBOL DD-A&T(A)1610
3. INSTALLATION AND LOCATION			4. PROJECT TITLE		
5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST (\$000)		
9. COST ESTIMATES					
ITEM		U/M	QUANTITY	UNIT COST	COST (\$000)
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
					0.00
10. DESCRIPTION OF PROPOSED CONSTRUCTION					

DD FORM 1391, JUL 1999 PREVIOUS EDITION IS OBSOLETE. PAGE NO. Adobe Professional 7.0

Figure B-1. SAMPLE DD FORM 1391 MILITARY CONSTRUCTION PROJECT DATA

APPENDIX C

ACCOUNT CODE NO.	BILL OF MATERIALS <small>For use of this form, see DA Pam 420-6; the proponent agency is COE.</small>			DATE 7 March 2002	
PREPARED BY S-3 Construction, 864th Engineer Combat Battalion (Heavy)			DESIRED DELIVERY DATE	JOB ORDER NO.	
DELIVER MATERIAL TO NAS Fallon, Range B-20			WORK REQUEST NO. -		
STOCK OR PART NO.	DESCRIPTION OF ARTICLE	UNIT	QUANTITY	UNIT PRICE	TOTAL COST
	Concrete, Ready Mix 4000 psi	CY	37	85.00	3,145.00
	Wire Mesh Reinforcement (6 x 6 - W8.6 x W8.6)	SF	1,400	0.45	630.00
	#4 (1/2" dia.) Rebar	LF	230	1.25	287.50
	Rebar Dowel, 1" dia.	LF	90	2.00	180.00
	3" rebar high chairs	EA	100	0.25	25.00
	5" rebar high chairs	EA	300	0.25	75.00
	Washed gravel, 3/8" (-)	CY	12	100.00	1,200.00
	5/8" x 12" long Anchor Bolt	EA	10	3.00	30.00
	3/4" x 13" long Anchor Bolt	EA	20	3.25	65.00
	2" concrete nails	EA	200	0.10	20.00
	Seka 2-CSL Joint Sealant	GL	2	35.00	70.00

DA FORM 2702, JUL 63

USAPPC V1.00

Figure C-1 SAMPLE DA FORM 2702 - BILL OF MATERIALS

APPENDIX D
OPORD ANNEXES

EXAMPLE ONLY!!!

ANNEX A (Information Brochure) to ___Company, 864th Engineer Battalion OPORD__(Project Title).

1. Situation: See Base OPORD.
2. Mission: See Base OPORD.
3. Execution:
 - a. Project Title:
 - b. Mission Number:
 - c. Location:
 - d. Mission OIC:
Mission NCOIC:
 - e. Scope:
 - f. Funding:
 - Unfunded Costs:
 - Equipment Depreciation:
 - Troop Labor:
 - Funded Costs:*
 - Equipment Costs:
 - Material Costs:
4. Service Support: See Basic OPORD.
5. Command and Signal: See Basic OPORD.
6. Safety: See Annex__ (Safety) to this OPORD.

Total Costs:

ACKNOWLEDGE.

COMPANY COMMANDER NAME
CPT, EN
COMMANDING

Figure D-1

EXAMPLE ONLY!!!

ANNEX B (Activities List) to __Company, 864th Engineer Battalion OPORD__(Project Title).

1. Situation: See Base OPORD.
2. Mission: See Base OPORD.
3. Execution:

#:	Activity:	Soldier Hours:
1	Mobilization/Set-up	28
2	Grading	21
3	Compacting	26
4	EQ Mobilization	42
5	Spraying MC800	42
6	Cure	0
7	Apply CRS-2	266
8	Cure	0
9	Apply CRS-2	266
10	Cure	0
11	Clean-up	21

4. Service Support: See Base OPORD.
5. Command and Signal: See Base OPORD.
6. Safety: See Annex__(Safety) to this OPORD.

ACKNOWLEDGE.

COMPANY COMMANDER NAME
CPT, EN
COMMANDING

OFFICIAL:
APPENDICES:
1-CWS
2-CPM

Figure D-2

EXAMPLE ONLY!!!

ANNEX C (Quality Control Plan) to __Company, 864th Engineer Battalion OPORD __ (Project Title).

1. Situation: See Base OPORD.

2. Mission: See Base OPORD.

3. Execution:

a. _____ is ultimately responsible for the quality of the project.

b. The following is a list of activities, tests and procedures that will be taken to ensure the quality control:

#	Activity:	Quality Control Test:	Date:
10	Compacting	Density Test to ensure 95% max CE55 construction.	20 AUG 13
20	Formwork	Surveying to ensure forms are set in accordance with the Troop Specs.	20 AUG 13

E. T. C.

c. Drainage Plan:

1) Protection of Existing Facilities: Only traffic deemed essential by the mission OIC will be allowed within the site area.

2) Construction Drainage: Intercept ditches will be placed where the mission OIC/NCOIC deems them necessary. Address procedures that will be used to prevent rainfall damage to the jobsite. (Attach a sketch, if necessary).

3) Permanent Drainage: The classroom will have gutters and down spout that are directed into splash blocks to negate erosion.

4) *The construction site will be sealed at the end of each day to maximize rain runoff.*

4. Service Support: See Base OPORD.

5. Command and Signal: See Base OPORD.

6. Safety: See Annex __ (Safety) to this OPORD.

ACKNOWLEDGE.

COMPANY COMMANDER NAME
CPT, EN
COMMANDING

OFFICIAL:

PLATOON LEADER

Figure D-3

EXAMPLE ONLY!!!

ANNEX D (Safety Plan) to __Company, 864th Engineer Battalion OPORD__ (Project Title).

1. Situation: See Base OPORD.

2. Mission: See Base OPORD.

3. Execution:

a. Preventive measures:

1) *Safety NCO*: _____.

2) The Safety NCO will conduct a safety briefing prior to beginning work each day and will include appropriate precautionary advice for hazardous tasks.

3) *The safety NCO will be present at all times on the project site.*

b. Emergency Actions:

1) Dispensary: (location).

2) Fire Department: (phone number).

3) Military Police: (phone number).

4) Available Phone: (location).

5) A medic will be on site during work day or combat life saver with bag.

6) (vehicle) will be used as an ambulance.

4. Service Support: See Base OPORD.

5. Command and Signal: See Base OPORD.

COMPANY COMMANDER NAME
CPT, EN
COMMANDING

OFFICIAL:

PLATOON LEADER

APPENDIX:

1- RISK ASSESMENT

Figure D-4

EXAMPLE ONLY!!!

ANNEX E (Maintenance Plan) to __Company, 864th Engineer Battalion OPORD __ (Project Title).

1. Situation: See Base OPORD.

2. Mission: See Base OPORD.

3. Execution:

a. General: Weekly/monthly maintenance will be accomplished every Tuesday IAW current maintenance procedures and policies. Vehicles will be dispatched daily with PMCS being conducted every morning and at the end of each workday. During operation PMCS checks will be performed when each piece of equipment has some down time or as a minimum every two hours. All NMC equipment will be reported to __ ASAP.

b. Specific:

1) The following is a list of vehicles with what type and when their respective AOAP samples are due.

2) The following is a list of vehicles with what type and when their scheduled services are due.

4. Service Support: See Base OPORD.

5. Command and Signal: See Base OPORD.

6. Safety: See Annex__(Safety) to this OPORD.

ACKNOWLEDGE.

COMPANY COMMANDER NAME
CPT, EN
COMMANDING

OFFICIAL:

PLATOON LEADER

Figure D-5

EXAMPLE ONLY!!!

ANNEX F (Material Control Plan) to __Company, 864th Engineer Battalion OPORD__(Project Title).

- 1. Situation: See Base OPORD.
- 2. Mission: See Base OPORD.
- 3. Execution:

a. The following list specifies desired material delivery dates (MDD):

<u>ITEM</u>	<u>PICK-UP/DELIVERY DATE</u>
(1) 4cy Concrete	Pour 11 AUG 13
(2) 200 BF, 2x4 Lumber	Pick-up 16 OCT 13
(3) 5/8" Gravel, 5 YD	Deliver 23 AUG 13

b. DPW material NCOIC: (discuss who is responsible for material acquisition, transformation, and storage and accountability.)

c. Special tools coordinator: (discuss who is responsible for special tool coordination and procurement from DPW or Battalion S-4).

d. Material storage and security: (discuss where materials will be stored and security measures to discourage pilferage).

e. Material Inventory Plan: (date for both initial and during construction inventory plan)

f. A special tool list follows:

<u>SPECIAL TOOL</u>	<u>ANTICIPATED PERIOD OF USE</u>
(1) Concrete Saw	23 AUG- 21 SEP 13
(2)	
(3) Continue as necessary.	

- 4. Service Support: See Base OPORD.
- 5. Command and Signal: See Base OPORD.
- 6. Safety: See Annex__(Safety) to this OPORD.

ACKNOWLEDGE.

COMPANY COMMANDER
CPT, EN
COMMANDING

OFFICIAL:

PLATOON LEADER

Figure D-6

APPENDIX E

QUALITY CONTROL CHECKLIST

This is an **example** Quality Control Checklist. The checklist is a tool that can be used to support the Quality Control Plan. Checklists should be tailored to the specific tasks that make up a project.

QUALITY CONTROL CHECKLIST	
Site Preparation	OIC/NCOIC Remarks
ITEM DESCRIPTION	
Clearing (organics, existing structures, etc removed)	
Fill Compacted to 90% MDD	
Subgrade Elevation	
Building Layout	
Foundation – Prior to Footing Placements	OIC/NCOIC Remarks
ITEM DESCRIPTION	
Dig permit obtained	
Trench width & depth verified	
Rebar placement – 3” cover / 34” splices	
Vertical reinforcing @ corners and openings	
Formwork straight, level, square & braced	
Anchor bolts in place	
Plumbing rough-in	
Electrical rough-in	
Foundation – Prior to Slab Placements	OIC/NCOIC Remarks
ITEM DESCRIPTION	
Electrical rough-in	
Plumbing rough-in	
Formwork straight, level, square & braced	
Vertical rebar properly spaced	
Rebar with proper spacing and 3” cover	
Embedded anchors in place – measurements checked	
Vapor barrier in place	
Adequate concrete slump (1”-3”)	
Masonry – Prior to First Grout Lift	OIC/NCOIC Remarks
ITEM DESCRIPTION	
Walls covered at the end of the day to keep water out	
Block work plumb, straight, square & level	
Electrical rough-in	
Plumbing rough-in	
Vertical rebar extending above bond beam course 34” min.	
Horizontal rebar in the bond beam – 34” splice	
Cells with rebar free from debris	
Mortar joints proper 3/8” and tooled	
Block free of excess mortar	

Figure E-1

APPENDIX F
QUALITY ASSURANCE INSPECTION SHEET

S-3 CONSTRUCTION
QUALITY ASSURANCE INSPECTION FORM

PROJECT: _____ PROJECT NUMBER: _____

CONSTRUCTING UNIT: _____ DATE: _____

SCHEDULED/ UNSCHEDULED INSPECTION

I. ADMINISTRATIVE:

	<u>YES</u>	<u>NO</u>
A. Is the project folder (with all required documents) on site?	_____	_____
B. Are updated plans on site?.....	_____	_____
C. Is the project board posted?.....	_____	_____
D. Is the briefing board in place and updated?.....	_____	_____
E. Are the soldiers licensed on the equipment they are operating?.....	_____	_____
COMMENTS: _____		

II. SAFETY:

A. Is a combat lifesaver bag on site?.....	_____	_____
B. Are personnel wearing appropriate safety equipment?.....	_____	_____
C. Are strip maps from the job site to the hospital and unit available?.....	_____	_____
D. Is communication readily available and in proper working condition?.....	_____	_____
E. Are vehicles properly parked (choked)?.....	_____	_____
F. Was the daily safety brief conducted? Who conducted it?.....	_____	_____
G. Is there a designated ambulance vehicle? Bumper #?.....	_____	_____
COMMENTS: _____		

III. SITE MANAGEMENT/LAYOUT:

A. Is the Project OIC/NCOIC present?.....	_____	_____
B. Are soldiers in the proper uniform?.....	_____	_____
C. Is equipment being operated efficiently?.....	_____	_____
D. Has an effective traffic flow plan been implemented?.....	_____	_____
E. Is the BOM accounted for and stored properly?.....	_____	_____
F. Are equipment, tools, and vehicles properly secured?.....	_____	_____
G. Is the site clean and orderly?.....	_____	_____
COMMENTS: _____		

IV. CONSTRUCTION:

A. Do the soldiers understand the concept of the operation?.....	_____	_____
B. Is the CPM/CWS updated and being used?.....	_____	_____
C. Are the plans being followed correctly?.....	_____	_____
D. Is construction being done to standard?.....	_____	_____
E. Is drainage established and adequate?.....	_____	_____
F. What work is currently being accomplished?		

G. Additional Remarks: _____

Figure F-1

APPENDIX G

EXAMPLE MISSION EXTENSION REQUEST

DEPARTMENT OF THE ARMY
864th ENGINEER BATTALION
Fort Riley, KS 66441

AFZH-CEE-____

DATE_____

MEMORANDUM FOR: Commander, 864th Engineer Battalion, ATTN: S-3, Fort Riley, KS 66441

SUBJECT: Request for Project Extension.

Construction Mission number: _____

Mission title: _____

1. Request an extension of the mission completion date for this Construction Mission.

Scheduled completion date: _____

Additional work days required: _____

Requested completion date: _____

2. Reason for request:

3. Actions previously taken by the constructing unit to avoid a delay in mission completion are:

4. This request for a mission extension is the final course of action to resolve the situation described in # 2 above. (Attach any substantiating documents).

5. This extension will/will not increase the mission's total cost. (If the mission cost will increase, provide an attachment detailing the cost increase).

CPT, EN
Commanding

Figure G-1

APPENDIX H
EXAMPLE LETTER OF ACCEPTANCE

DEPARTMENT OF THE ARMY
864th ENGINEER BATTALION
Fort Riley, KS 66441

AFZH-CEE _____

MEMORANDUM FOR RECORD

SUBJECT: Final Acceptance of _____ Construction Project

1. The _____ is 100% complete according to plans and specifications. The customer and the 864th Engineer Battalion have approved all changes, additions, and deletions to the original plans.
2. The final inspection was conducted on _____. In attendance were representatives from NAS Fallon, Alpha Company, and S-3 Construction.
3. This memorandum is the official completion document and acceptance for the _____. No further work is required.

4. Parties in Agreement:

Customer Representative/DPW

Signature:

Printed Name:

Date:

Project Officer

Signature:

Printed Name:

Date:

S-3 Construction

Signature:

Printed Name:

Date:

5. The point of contact for this memorandum is the undersigned at (785) _____.

CPT, EN
Battalion Civil Engineer

Figure H-1

APPENDIX I
MISSION MILESTONES

MISSION:

MISSION #:

<u>MILESTONES</u>	<u>TARGET DATE</u>
1. MISSION APPROVAL/RECEIVE GRP DIRECTIVE	_____
2. INITIAL RECON / INITIAL PLANNING CONFERENCE	_____
3. RECEIVE/DEVELOP FINAL DRAWINGS	_____
4. INITIAL ESTIMATE FORWARDED	_____
5. ISSUE CONSTRUCTION DIRECTIVE	_____
6. OPORD REVIEW	_____
7. BN CDR PRE-CONSTRUCTION BRIEF	_____
8. PRE-CONSTRUCTION CONFERENCE	_____
9. BEGIN CONSTRUCTION	_____
10. CONDUCT 95% INSPECTION	_____
11. CONDUCT 100% INSPECTION	_____
12. TURNOVER CEREMONY	_____
13. AS BUILTS, TRANSFER AND ACCEPTANCE OF MILITARY REAL PROPERTY	_____
14. AAR & PAO ARTICLE	_____

Figure I-1

APPENDIX J

SUPPORT AGREEMENT			
1. AGREEMENT NUMBER <i>(Provided by Supplier)</i> MWR #####	2. SUPERSEDED AGREEMENT NO. <i>(If this replaces another agreement)</i> N/A	3. EFFECTIVE DATE (YYYYMMDD) 20140620	4. EXPIRATION DATE <i>(May be "Indefinite")</i> 20141231
5. SUPPLYING ACTIVITY		6. RECEIVING ACTIVITY	
a. NAME AND ADDRESS 52d Engineer Battalion 7435 Buckley Ave. BLDG 3605 Fort Carson, CO 80913		a. NAME AND ADDRESS Directorate of Public Works BLDG 1219 Fort Carson, CO 80913	
b. MAJOR COMMAND FORSCOM		b. MAJOR COMMAND INCOM	
7. SUPPORT PROVIDED BY SUPPLIER			
a. SUPPORT <i>(Specify what, when, where, and how much)</i>		b. BASIS FOR REIMBURSEMENT	c. ESTIMATED REIMBURSEMENT
Purpose: Improve Iron Horse Park Facilities in order to enhance experience of park patrons. SCOPE OF WORK: 1. De-construct Amphitheater Building (BLDG 1912) i. Sort all construction waste by type and place metal/wood waste into on-site waste bins. ii. Dispose of concrete and masonry materials at off-post recycle facility. 2. De-construct Amphitheater Seating/Berm i. Sort all construction waste by type and place metal/wood waste into on-site waste bins. ii. Dispose of earth material at Fort Carson Clean Fill site. iii. Dispose of concrete and asphalt materials at off-post recycle facility. iv. Grade final elevations to tie-in with existing drainage features. v. Seed all disturbed areas with drill seeder. 3. General i. Maintain traffic control and pedestrian access around the work during construction. ii. Construction unit will complete project NLT 30SEP14.		No Reimbursement Provided	\$0.00
ADDITIONAL SUPPORT REQUIREMENTS ATTACHED: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO			
8. SUPPLYING COMPONENT		9. RECEIVING COMPONENT	
a. CONTROLLER SIGNATURE	b. DATE SIGNED	a. CONTROLLER SIGNATURE	b. DATE SIGNED
c. APPROVING AUTHORITY		c. APPROVING AUTHORITY	
(1) TYPED NAME BATTALION COMMANDER		(1) TYPED NAME DIRECTOR, DPW	
(2) ORGANIZATION 52d Engineer Battalion, Battalion Commander	(3) TELEPHONE NUMBER (555) 555-5555	(2) ORGANIZATION Directorate of Public Works Director	(3) TELEPHONE NUMBER (555) 555-5555
d. SIGNATURE	(4) DATE SIGNED	d. SIGNATURE	(5) DATE SIGNED
10. TERMINATION <i>(Complete only when agreement is terminated prior to scheduled expiration date.)</i>			
a. APPROVING AUTHORITY SIGNATURE		a. APPROVING AUTHORITY SIGNATURE	
b. DATE SIGNED		b. DATE SIGNED	

Figure J-1 EXAMPLE FORM DD 1144 Support Agreement

11. GENERAL PROVISIONS (Complete blank spaces and add additional general provisions as appropriate: e.g., exceptions to printed provisions, additional parties to this agreement, billing and reimbursement instructions.)

- a. The receiving components will provide the supplying component projections of requested support. (Significant changes in the receiving component's support requirements should be submitted to the supplying component in a manner that will permit timely modification of resource requirements.)
- b. It is the responsibility of the supplying component to bring any required or requested change in support to the attention of CONSTRUCTING UNIT POC (POC E-MAIL) prior to changing or cancelling support.
- c. The component providing reimbursable support in this agreement will submit statements of costs to: CUSTOMER POC (POC E-MAIL)
- d. All rates expressing the unit cost of services provided in this agreement are based on current rates which may be subject to change for uncontrollable reasons, such as legislation, DoD directives, and commercial utility rate increases. The receiver will be notified immediately of such rate changes that must be passed through to the support receivers.
- e. This agreement may be cancelled at any time by mutual consent of the parties concerned. This agreement may also be cancelled by either party upon giving at least 180 days written notice to the other party.
- f. In case of mobilization or other emergency, this agreement will remain in force only within supplier's capabilities.

ADDITIONAL GENERAL PROVISIONS ATTACHED: YES NO

12. SPECIFIC PROVISIONS (As appropriate: e.g., location and size of occupied facilities, unique supplier and receiver responsibilities, conditions, requirements, quality standards, and criteria for measurement/reimbursement of unique requirements.)

RESPONSIBILITIES:

Troop Construction Unit will:

- i. Furnish all labor and equipment to survey, design, and stake the project.
- ii. Furnish all labor and equipment to complete the project as described above.
- iii. Request disconnect of utilities through Troop Construction Manager.
- iv. Submit dig permit requests.
- v. Comply with the requirements contained in the Record of Environmental Consideration (REC).

Directorate of Public Works will:

- i. Provide assistance to determine the final design of the project.
- ii. Provide government furnished materials.
- iii. Coordinate the delivery of materials.
- iv. Disconnect utilities upon notification by construction unit.
- v. Inspect the project for quality control.
- vi. Conduct final acceptance inspection of the work.
- vii. Provide unrestricted and unimpeded access to the construction site.

ADDITIONAL SPECIFIC PROVISIONS ATTACHED: YES NO

DD FORM 1144, NOV 2001

Page 2 of 3 Pages

Figure J-1continued EXAMPLE DD 1144 Support Agreement

APPENDIX K

C O N S T R U C T I O N W O R K S U M M A R Y						
CONSTRUCTING UNIT:		OIC:		NCOIC:		
MISSION #:		PROJECT NAME:				
CUSTOMER UNIT:		DATE STARTED:		DATE COMPLETED:		
LOCATION:		GRID COORDINATE:		PROJECT DURATION:		
SCOPE OF WORK						
TROOP LABOR COST SAVINGS						
PERSONNEL		HOURS	x	COST/HOUR	=	TOTAL COST
MANAGEMENT	CE	0	x	\$68	=	\$0
	CE	0	x	\$53	=	\$0
	CI	0	x	\$44	=	\$0
	ES	0	x	\$60	=	\$0
SUPERVISORS	E7	0	x	\$53	=	\$0
	E6	0	x	\$46	=	\$0
SKILLED LABOR	E5	0	x	\$38	=	\$0
OPERATOR	E1 - E4	0	x	\$31	=	\$0
SURVEYORS	ANY	0	x	\$40	=	\$0
INSPECTORS	ANY	0	x	\$60	=	\$0
						TOTAL TROOP LABOR SAVINGS
						\$0
TROOP EQUIPMENT SAVINGS						
EQUIPMENT TYPE		HOURS	x	COST/HOUR	=	TOTAL COST
Bobcat		0	x	\$45	=	\$0
Crane 22.5 Ton		0	x	\$140	=	\$0
Bulldozer		0	x	\$111	=	\$0
Grader		0	x	\$72	=	\$0
Loader 2.5 Yard		0	x	\$73	=	\$0
Smooth Roller		0	x	\$91	=	\$0
HS Roller		0	x	\$45	=	\$0
Tractor/Trailer		0	x	\$80	=	\$0
Scraper		0	x	\$130	=	\$0
Water Truck		0	x	\$80	=	\$0
Dump Truck 5 Ton		0	x	\$47	=	\$0
Dump Truck 20 Ton		0	x	\$60	=	\$0
Fueler (HMNT)		0	x	\$55	=	\$0
Hand Tamper		0	x	\$25	=	\$0
2 1/2 Ton Cargo		0	x	\$25	=	\$0
5 Ton Cargo		0	x	\$30	=	\$0
Compressor Trailer		0	x	\$30	=	\$0
SEE		0	x	\$55	=	\$0
Excavator		0	x	\$140	=	\$0
HMNT/WV		0	x	\$25	=	\$0
						TOTAL EQUIPMENT SAVINGS
						\$0
TOTAL TROOP LABOR SAVINGS						\$0
TOTAL TROOP EQUIPMENT SAVINGS						\$0
TOTAL TROOP CONSTRUCTION SAVINGS						\$0

Figure K-1 SAMPLE Construction Summary (CS) (Microsoft Excel)

PROJECT COSTS

CONTRACTED PERSONNEL				
POSITION	ORG	HOURS	HOURLY RATE	TOTAL COST
General Laborer	DT	0	\$0	\$0
Equipment Operator	DT	0	\$0	\$0
Engineer	US	0	\$0	\$0
Equipment Operator	US	0	\$0	\$0
TOTAL PERSONNEL COSTS				\$0
CONTRACTED EQUIPMENT				
EQUIPMENT DESCRIPTION	ORG	HOURS	HOURLY RATE	TOTAL COST
3 Axle Dump	DT	0	\$0	\$0
Bulldozer	DT	0	\$111	\$0
0		0	\$0	\$0
0		0	\$0	\$0
0		0	\$0	\$0
TOTAL EQUIPMENT COSTS				\$0
PETROLEUM/OIL/LUBRICANT CONSUMPTION				
ITEM DESCRIPTION	UNITS	QUANTITY	UNIT COST	TOTAL COST
JP8 (FUEL)	GAL	0	\$0	\$0
Motor Oil	GAL	0	\$0	\$0
Grease	Lbs	0	\$15	\$0
Hydraulic Fluid	GAL	0	\$0	\$0
Transmission Fluid	GAL	0	\$0	\$0
TOTAL POL COSTS				\$0
MATERIALS CONSUMPTION				
ITEM DESCRIPTION	UNITS	QUANTITY	UNIT COST	TOTAL COST
Rough Fill	LF3	0	\$10	\$0
7' HESCOs	Rolls	0	\$1,200	\$0
4' HESCOs	Rolls	0	\$300	\$0
2' HESCOs	Rolls	0	\$100	\$0
2"x4"x12'	EA	0	\$3	\$0
1/2" Plywood	EA	0	\$4	\$0
3/4" Plywood	EA	0	\$7	\$0
0	0	0	\$0	\$0
0	0	0	\$0	\$0
0	0	0	\$0	\$0
TOTAL MATERIALS COSTS				\$0
TOTAL PROJECTS COSTS				
Personnel Cost	+	0		
Equipment Cost	+	0		
POL Cost	+	0		
Material Cost	+	0		
TOTAL COST	=	0		
MISSION/CIC REMARKS:				

Figure K-1 SAMPLE continued Construction Summary (CS) (Microsoft Excel)

APPENDIX L

CONSTRUCTION REFERENCES

In the absence of special specifications, all construction will be performed according to commonly accepted standards. These standards can be commercial codes, military technical manuals or other written specifications. A partial list of applicable US Army publications follows:

Publication Number	Publication Date	Publication Title
AR 415-16	3/17/1989	Army Facilities Components System
AR 415-18	12/1/1982	Military Construction Responsibilities
AR 415-28	4/15/2014	Real Property Category Codes
AR 415-32	4/15/1998	Engineer Troop Unit Construction In Connection With Training Activities
AR 420-1	2/12/2008	Army Facilities Management
AR 420-41	9/15/1990	Acquisition And Sales Of Utilities Services
ATP 3-34.80	6/23/2014	Geospatial Engineering (Enclosure (Incl) Change 1(C1))
ATTP 3-34.23	7/8/2010	Engineer Operations–Echelons Above Brigade Combat Team
FM 3-34	4/2/2014	Engineer Operations
FM 3-34.170	3/25/2008	Engineer Reconnaissance
FM 3-34.22	2/11/2009	Engineer Operations - Brigade Combat Team And Below
FM 3-34.400	12/9/2008	General Engineering
FM 3-34.5	2/16/2010	Environmental Considerations
FM 5-430-00-1	8/26/1994	Planning And Design Of Roads, Airfields, And Heliports In The Theater Of Operations - Road Design
FM 5-430-00-2	9/29/1994	Planning And Design Of Roads, Airfields, And Heliports In The Theater Of Operations - Airfield And Heliport Design
FM 5-472	10/27/1999	Materials Testing (Incl C1 And C2)
JP 3-34	6/30/2011	Joint Engineer Operations
PAM 415-28	7/10/2013	Guide To Army Real Property Category Codes
PAM 415-3	8/10/1992	Economic Analysis: Description And Methods
PAM 420-11	3/18/2010	Project Definition And Work Classification

Figure L-1

PAM 420-1-1	4/2/2009	Housing Management
PAM 420-1-2	4/2/2009	Army Military Construction And Non-appropriated-Funded Construction Program Development And Execution
PAM 420-1-3	4/9/2009	Transportation Infrastructure And Dams
PAM 420-6	5/15/1997	Directorate Of Public Works Resource Management System
STP 5-21P2-SM-TG	3/31/2009	Soldier's Manual And Trainer's Guide, Military Operational Specialty (MOS) 21P, Prime Power Production Specialist, Skill Level 2
STP 5-21P34-SM-TG	12/22/2008	Soldier's Manual And Trainer's Guide, MOS 21P, Prime Power Production Specialist, Skill Levels 3/4
STP 5-21Q14-SM-TG	5/25/2007	Soldier's Manual And Trainer's Guide MOS 21Q Power Line Distribution Specialist Skill Levels 1/2/3/4
STP 5-21V13-SM-TG	10/30/2003	MOS 21V, Concrete And Asphalt Equipment Operator, Skill Levels 1/2/3, Soldier's Manual And Trainer's Guide
STP 5-51B12-SM-TG	9/23/2002	Soldier's Manual And Trainer's Guide, MOS 51B, Carpentry And Masonry Specialist, Skill Levels 1/2
STP 5-51H34-SM-TG	3/28/2003	MOS 51H, Construction Engineering Supervisor, Skill Levels 3/4, Soldier's Manual And Trainer's Guide
STP 5-51K12-SM-TG	9/18/2002	Soldier's Manual And Trainer's Guide, MOS 51K, Plumber, Skill Levels 1 And 2
STP 5-51R12-SM-TG	9/18/2002	Soldier's Manual And Trainer's Guide, MOS 51R, Interior Electrician, Skill Levels 1/2
STP 5-62E12-SM-TG	11/7/2002	Soldier's Manual And Trainer's Guide, MOS 62E, Heavy Construction Equipment Operator, Skill Levels 1 And 2
STP 5-62F12-SM-TG	10/1/2002	Soldier's Manual And Trainer's Guide, MOS 62F, Crane Operator, Skill Levels 1 And 2
STP 5-62J12-SM-TG	10/11/2002	Soldier's Manual And Trainer's Guide, MOS 62J12, General Construction Equipment Operator, Skill Levels 1 And 2
STP 5-62N34-SM-TG	3/28/2003	MOS 62N, Construction Equipment Supervisor, Skill Levels 3/4, Soldier's Manual And Trainer's Guide
STP 5-81L14-SM-TG	10/1/2002	Soldier's Manual And Trainer's Guide, MOS 81L, Lithographer, Skill Levels 1/2/3/4
STP 5-82D12-SM-TG	8/27/2001	Soldier's Manual And Trainer's Guide, MOS 82D, Topographic Surveyor, Skill Levels 1/2
STP 5-82D34-SM-TG	10/11/2002	Soldier's Manual And Trainer's Guide, MOS 82D, Topographic Surveyor, Skill Levels 3/4
TC 3-34.316-5	2/6/2014	Headquarters And Headquarters Company (HHC), Brigade Engineer Battalion (BEB), Armored Brigade Combat Team (ABCT) Collective Task Publication
TC 5-340	12/27/1988	Air Base Damage Repair (Pavement Repair)
TM 3-34.22	10/17/2013	Military Nonstandard Fixed Bridging

Figure L-1 continued

TM 3-34.41	12/1/2010	Construction Estimating
TM 3-34.42	12/1/2010	Construction Project Management
TM 3-34.44	7/23/2012	Concrete And Masonry
TM 3-34.45	8/13/2013	Engineer Prime Power Operations
TM 3-34.46	5/3/2013	Theater Of Operations Electrical Systems
TM 3-34.47	9/20/2013	Carpentry
TM 3-34.51	6/15/2012	Construction Drafting
TM 3-34.55	8/3/2012	Construction Surveying
TM 3-34.56	7/19/2013	Waste Management For Deployed Forces
TM 3-34.61	2/12/2013	Geology
TM 3-34.62	6/29/2012	Earthmoving Operations
TM 3-34.63	8/13/2013	Paving And Surfacing Operations
TM 3-34.64	9/25/2012	Military Soils Engineering
TM 3-34.65	10/30/2013	Quarry Operations
TM 3-34.70	7/23/2012	Plumbing, Pipe Fitting, And Sewerage
TM 3-34.72	11/15/2013	Pile Construction
TM 3-34.73	1/4/2013	Port Construction And Repair
TM 3-34.85	10/17/2013	Engineer Field Data (C1(Incl))
TM 5-300	12/10/1958	Real Estate Operations In Overseas Commands
TM 5-301-2	6/27/1986	Army Facilities Components System Planning (Tropical)
TM 5-301-4	6/27/1986	Army Facilities Components System Planning (Desert)
TM 5-304	10/1/1990	Army Facilities Components System User Guide
TM 5-600	12/6/1994	Bridge Inspection, Maintenance And Repair
TM 5-610	11/1/1979	Preventive Maintenance For Facilities Engineering, Buildings And Structures
TM 5-617	1/30/1974	Facilities Engineering: Maintenance And Repair Of Roofs
TM 5-618	6/15/1981	Paints And Protective Coatings
TM 5-620	5/10/1990	Facilities Engineering Maintenance And Repair, Of Architectural And Structural Elements Of Buildings And Structures
TM 5-622	6/1/1978	Maintenance Of Waterfront Facilities
TM 5-623	11/30/1982	Pavement Maintenance Management
TM 5-624	10/27/1995	Maintenance And Repair Of Surface Areas
TM 5-626	1/16/1995	Unsurfaced Road Maintenance Management
TM 5-627	1/1/1980	Maintenance Of Trackage
TM 5-628	4/8/1991	Railroad Track Standards

Figure L-1 continued

TM 5-629	5/24/1989	Weed Control And Plant Growth Regulation
TM 5-630	7/1/1982	Natural Resources - Land Management
TM 5-631	12/15/1981	Natural Resources - Forest Management
TM 5-633	2/1/1982	Natural Resources - Fish And Wildlife Management
TM 5-634	5/1/1990	Solid Waste Management
TM 5-642	8/30/1990	Operator And Maintenance, Small Heating Systems
TM 5-682	11/8/1999	Facilities Engineering: Electrical Facilities Safety
TM 5-683	12/15/1995	Facilities Engineering Electrical Interior Facilities
TM 5-684	11/29/1996	Facilities Engineering - Electrical Exterior Facilities
TM 5-685	8/26/1996	Operation, Maintenance And Repair And Repair Of Auxiliary Generators
TM 5-686	11/16/1998	Power Transformer Maintenance And Acceptance Testing
TM 5-688	11/12/1999	Foreign Voltages And Frequencies Guide
TM 5-692-2	12/9/2005	Maintenance Of Mechanical And Electrical Equipment At Command, Control, Communications, Computers, Intelligence, Surveillance, And Reconnaissance (C4ISR) Facilities
TM 5-698-5	7/22/2006	Survey Of Reliability And Availability Information For Power Distribution, Power Generation, And Heating, Ventilating & Air Conditioning (HVAC) Components For Commercial, Industrial, And Utility Installations
TM 5-800-4	5/1/1994	Programming Cost Estimates For Military Construction
TM 5-803-1	6/13/1986	Installation Master Planning
TM 5-803-11	5/30/1997	Children's Outdoor Play Areas
TM 5-803-12	9/3/1986	Planning Of Outdoor Recreation Areas
TM 5-803-13	8/6/1988	Landscape Design And Planting Criteria
TM 5-803-14	10/14/1994	Site Planning And Design
TM 5-803-5	3/1/1981	Installation Design
TM 5-809-12	8/25/1987	Concrete Floor Slabs On Grade Subjected To Heavy Loads
TM 5-809-3	10/30/1992	Masonry Structural Design For Buildings
TM 5-809-6	12/6/1991	Structural Design Criteria For Structures Other Than Buildings
TM 5-811-1	2/28/1995	Electric Power Supply And Distribution
TM 5-811-3	3/29/1985	Electrical Design: Lightning And Static Electricity Protection
TM 5-811-5	12/13/1991	Army Aviation Lighting
TM 5-811-6	1/20/1984	Electric Power Plant Supply
TM 5-811-7	4/22/1985	Electrical Design, Cathodic Protection
TM 5-813-1	6/4/1987	Water Supply: Sources And General Considerations
TM 5-813-3	9/16/1985	Water Supply, Water Treatment
TM 5-813-4	9/20/1985	Water Supply, Water Storage

Figure L-1 continued

TM 5-813-5	11/3/1986	Water Supply, Water Distribution
TM 5-813-7	9/2/1986	Water Supply For Special Projects, Volume (Vol) 7
TM 5-813-8	9/15/1986	Water Desalination
TM 5-813-9	10/1/1992	Water Supply: Pumping Stations
TM 5-814-1	3/4/1985	Sanitary And Industrial Wastewater Collection; Gravity Sewers And Appurtenances
TM 5-814-2	3/15/1985	Sanitary And Industrial Wastewater Collection - Pumping Stations And Force Mains
TM 5-814-3	8/31/1988	Domestic Wastewater Treatment
TM 5-814-5	1/15/1994	Sanitary Landfill
TM 5-814-7	11/29/1984	Hazardous Waste Land Disposal/Land Treatment Facilities
TM 5-814-9	2/8/1992	Central Vehicle Wash Facilities
TM 5-818-1	10/21/1983	Soils And Geology Procedures For Foundation Design Of Buildings And Other Structures (Except Hydraulic Structures)
TM 5-818-4	6/1/1983	Backfill For Subsurface Structures
TM 5-818-5	11/15/1983	Dewatering And Groundwater Control (Incl C1)
TM 5-818-6	2/27/1970	Grouting Methods And Equipment (Incl C1)
TM 5-818-7	9/1/1983	Foundations In Expansive Soils (Incl C1)
TM 5-818-8	7/20/1995	Engineering Use Of Geotextiles
TM 5-820-1	8/20/1987	Surface Drainage Facilities For Airfields And Heliports
TM 5-820-3	6/3/1991	Drainage And Erosion Control Structures For Airfields And Heliports
TM 5-820-4	10/14/1983	Drainage For Areas Other Than Airfields (Incl C1)
TM 5-822-10	8/26/1988	Standard Practice For Pavement Recycling
TM 5-822-11	6/11/1993	Standard Practice For Sealing Joints And Cracks Rigid And Flexible Pavements
TM 5-822-12	9/28/1990	Design Of Aggregate Surfaced Roads And Airfields Areas, Elastic Layered Methods
TM 5-822-13	10/24/1994	Pavement Design For Roads, Streets, And Open Storage
TM 5-822-14	10/25/1994	Soil Stabilization For Pavements
TM 5-822-5	6/12/1992	Pavement Design For Roads, Streets, Walks And Open Storage Areas (Incl C1)
TM 5-822-7	8/16/1987	Standard Practice For Concrete Pavements
TM 5-822-9	1/20/1989	Repair Of Rigid Pavements Using Epoxy Resin Grouts, Mortars And Concretes
TM 5-823-4	7/7/1987	Marking Of Army Airfield-Heliport Operational And Maintenance Facilities (Incl C1)
TM 5-826-6	7/5/1989	Procedures For U.S. Army And U.S. Air Force Airfield Pavement Condition Surveys
TM 5-830-3	9/30/1987	Dust Control For Roads, Airfields And Adjacent Areas
TM 5-840-2	10/7/1994	Storage Depots
TM 5-850-1	2/15/1983	Engineering And Design Of Military Ports (Incl C1)

Figure L-1 continued

TM 5-852-1	9/4/1987	Arctic And Subarctic Construction - General Provisions, Vol 1
TM 5-852-2	5/21/1990	Arctic And Subarctic Construction, Site Selection And Development
TM 5-852-3	10/29/1954	Arctic And Subarctic Construction For Runway And Road Design
TM 5-852-4	10/15/1983	Arctic And Subarctic Construction: Foundations For Structures
TM 5-852-5	8/31/1987	Arctic And Subarctic Construction: Utilities
TM 5-852-6	1/25/1988	Arctic And Subarctic Construction: Calculation Methods For Determination Of Depths Of Freeze And Thaw In Soils

Figure L-1 continued

APPENDIX M
Work Flow

The following work flow will be used for all projects that cannot be handled by Post internal assets and require Corps level coordination.

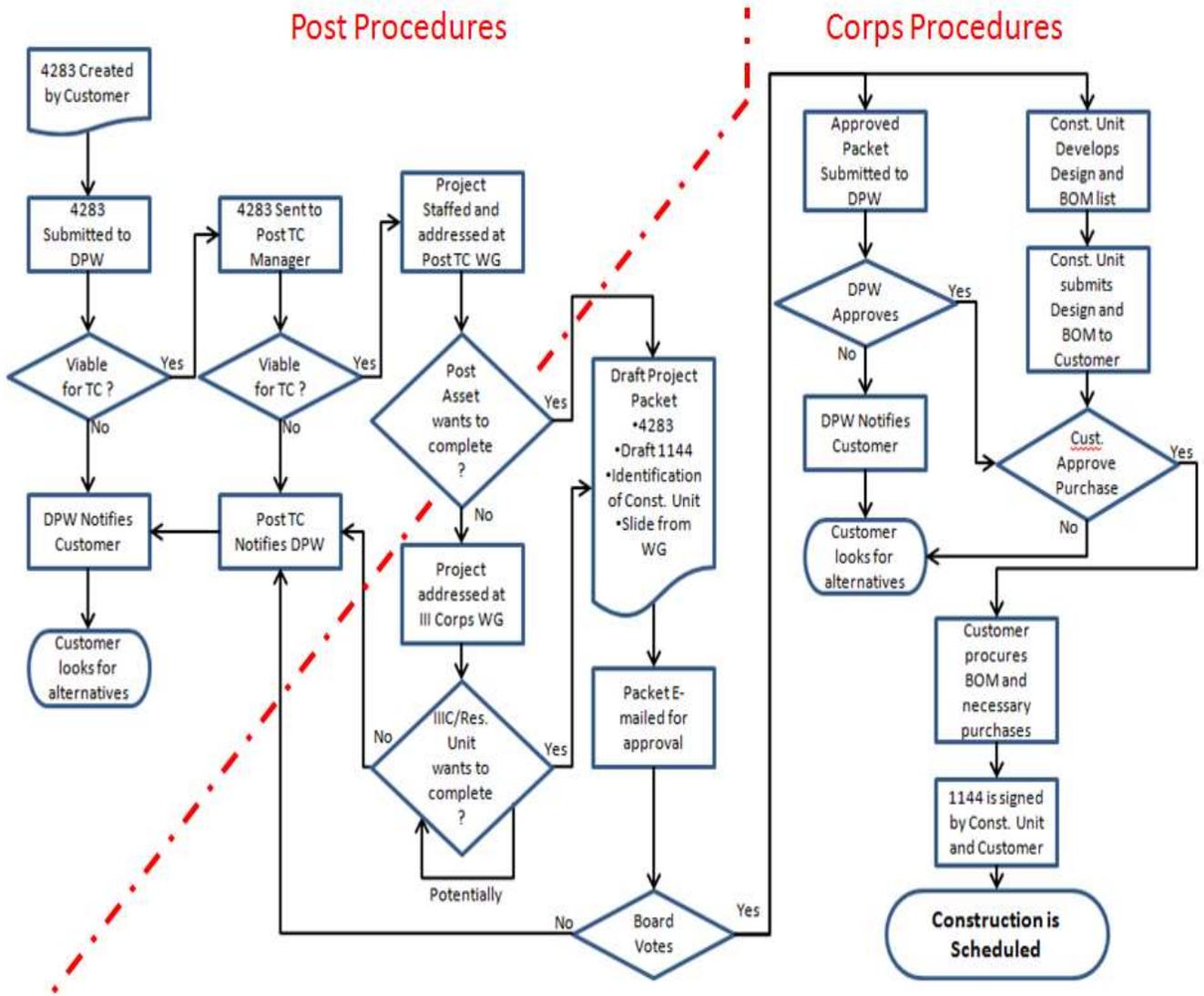


Figure M-1

APPENDIX N

Fort Hood Specific Procedures

1. **Purpose.** Fort Hood presents unique challenges and requires small adjustments to procedures due to the CTCM also being the PTCM and the external separate brigades that reside on Fort Hood and report directly to III Corps.
2. **Responsibilities.** In addition to the PTCM/CTCM, 1st Cavalry Division and 36th Engineer Brigade will designate individual Troop Construction Managers. 1st Cavalry Division's TCM will function in the role of the Post TCM on Division internal project requests and 36th Engineer Brigade TCM will serve as the Post TCM for any separate brigade project requests.
3. **Process.** When a project is received by the CTCM from DPW, the CTCM will forward the work request to the respective Troop Construction Manager to determine the feasibility of project completion. Projects will be reviewed by the respective TCM and discussed at the monthly Fort Hood Troop Construction Working Group. Projects that cannot be completed by 1st Cavalry Division or 36th Engineer Brigade, respectively, will be reevaluated to determine if a post-level asset can complete the project. Finally, if no post-level asset is willing or can complete the project, the project will be addressed at the III Corps TCWG.
4. **Meetings.** Fort Hood will have a separate Fort Hood Troop Construction Working Group. This working group will typically be held prior to the III Corps TCWG and is meant to address issues that are post-specific.

Glossary

AAR

After Action Review

ABCT

Armored Brigade Combat Team

ADP

Army Doctrine Publications

AR

Army Regulation

BEB

Brigade Engineer Battalion

BOM

Bill of Materials

C1

Change 1

C4ISR

Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance

CD

Compact Disk

COR

Contracting Officer Representative

CPCL

Corps Project Candidate List

CPR

Construction Progress Report

CQM

Construction Quality Management

CTCM

Corps Troop Construction Manager

DA

Department of the Army

DPTMS

Director of Plans, Training, Mobilization, and Security

DPW

Directorate of Public Works

EA

Environmental Assessment

EN BDE

Engineer Brigade

HHC

Headquarters Company

HVAC

Heating, Ventilating and Air Conditioning

IAW

In Accordance With

ICW

In Conjunction With

INCL

Enclosure

IPR

In Process Review

ITAM

Integrated Training Area Management

KO

Contracting Officer

MATES

Mobilization and Training Equipment Site

MDD

Material Delivery Date

METL

Mission Essential Task List

MICC

Mission and Installation Contracting Command

MOS

Military Occupational Specialty

MOA

Memorandum of Agreement

NCO

Noncommissioned Officer

NCOIC

Noncommissioned Officer In Charge

NEPA

National Environmental Policy Act

NG
National Guard

NTP
Notice to Proceed

OIC
Officer in Charge

PCL
Project Candidate List

PMMP
Project Material Management Plan

PTCM
Post Troop Construction Manager

QA
Quality Assurance

QC
Quality Control

RC
Reserve Component

REC
Record of Environmental Consideration

S3
Operations Officer

SF
Standard Form

SJA
Staff Judge Advocate

SOP
Standing Operating Procedures

SRM
Sustainment, Restoration and Modernization

SRP
Sustained Readiness Program

TCM

Troop Construction Manager

TCWG

Troop Construction Working Group

UMC

Unit Materials Coordinator

Vol

Volume