



**US Army Corps  
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Development Center

# Military Training Lands Historic Context

Training Village, Mock Sites, and Large Scale Operations Areas

Dan Archibald, Adam Smith, Sunny Adams,  
and Manroop Chawla

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**Abstract:** This work provides an historic context for military training lands, written to satisfy a part of Section 110 of the National Historic Preservation Act (NHPA) of 1966 as amended. Cultural resources personnel at the installation level and their contractors will use this historic context to determine whether military training resources are eligible for the National Register of Historic Places (NRHP), and whether an adverse effect will take place. This overall project covered five types of military training: small arms ranges, large arms ranges, training villages and sites, bivouac areas, and large-scale operation areas. This document provides an historic context of training villages, mock sites, and large scale operations areas on military training lands for the U.S. Army, U.S. Navy, U.S. Army Air Corps/U.S. Air Force, and the U.S. Marines, with a focus on the landscape outside the developed core of military installations. This work determined that that military training lands are significant enough in our nation's history to be surveyed for eligibility to the NRHP. However, training lands must be viewed as a whole; individual buildings on a training range are rarely eligible for the NRHP; buildings in their larger context (and the integrity of that larger context) are important.

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## Preface

This study was conducted for the Legacy Resource Management Program, Cultural Resources Management, under project “Activity A1450-MIPR to ERDC PN05-265.” Funding was provided by Military Interdepartmental Purchase Request (MIPR) W31RYO51541162. The Legacy Resource Management Program technical monitor was Hillori Schenker, Cultural Resources Specialist.

The work was performed by the Land and Heritage Conservation Branch (CN-C) of the Installations Division (CN), Construction Engineering Research Laboratory (CERL). The CERL Project Manager was Adam Smith. Daniel Archibald, was primary compiler of the historical information; Sunny Adams was assistant architectural historian; Manroop Chawla was environmentalist, and Daniel Smith (IMCOM) was the military training history expert. Special thanks are owed to those that assisted with the development of this historic context: Holly Reed, Teresa Roy, and Donna Larker in the Still Pictures Room at the National Archives in College Park, Maryland; Andrew Knight, Priscilla Dyson, and Ivy Yarbough in the Cartographic and Architectural Record Room at the National Archives in College Park, Maryland; Pat Lacey, ERDC-CERL Librarian; Michelle Michael at Fort Bragg, NC; John Doss at Fort Bragg, NC; Laurie Rush at Fort Drum, NY; Ruth Lewis at Fort Gordon, GA; Pam Anderson at Naval Base, Norfolk, Virginia; Jim Dolph at Portsmouth Navy Yard; and Brian Lione, former Deputy Federal Preservation Officer, Office of the Secretary of Defense. Dr. Christopher White is Chief, CN-C, and Dr. John T. Bandy is Chief, CN. The Director of CERL is Dr. Ilker R. Adiguzel.

CERL is an element of the U.S. Army Engineer Research and Development Center (ERDC), U.S. Army Corps of Engineers. The Commander and Executive Director of ERDC is COL Gary E. Johnston, and the Director of ERDC is Dr. Jeffery P. Holland.

## Unit Conversion Factors

Multiply	By	To Obtain
acres	4,046.873	square meters
degrees Fahrenheit	$(F-32)/1.8$	degrees Celsius
feet	0.3048	meters
gallons (U.S. liquid)	3.785412 E-03	cubic meters
horsepower (550 foot-pounds force per second)	745.6999	watts
inches	0.0254	meters
miles (U.S. statute)	1,609.347	meters
square feet	0.09290304	square meters
square miles	2.589998 E+06	square meters
square yards	0.8361274	square meters
yards	0.9144	meters

# 1 Introduction

## Background

Through the years, laws have been enacted to preserve our national cultural heritage. The Antiquities Act of 1906, which was the first major Federal preservation legislation to be enacted, was instrumental in securing protection for archeological resources on Federal property. The benefits derived from this Act and subsequent legislation precipitated an expanded and broader need for the preservation of historic cultural resources. This growing awareness was codified in the most sweeping legislation to date, the National Historic Preservation Act of 1966 (NHPA).

The NHPA was created to provide guidelines and requirements aimed at preserving tangible elements of our past primarily through the creation of the National Register of Historic Places (NRHP). Contained within this piece of legislation (Sections 110 and 106) are requirements for Federal agencies to address their cultural resources, defined as any prehistoric or historic district, site, building, structure, or object. Section 110 requires Federal agencies to inventory and evaluate their cultural resources. Section 106 requires the determination of effect of Federal undertakings on properties listed on, deemed eligible for, or potentially eligible for the NRHP, and requires Federal agencies to take into account the effect of a project on a property and to afford the State Historic Preservation Officer/Tribal Historic Preservation Officer (SHPO/THPO) a reasonable opportunity to comment on the undertaking.

According to National Register Bulletin #15, "How to Apply the National Register of Criteria for Evaluation," and National Register Bulletin #16a, "How to Complete the National Register Registration Form define historic contexts," for a building, structure, object, or a district to be eligible for the National Register, it must:

represent a significant part of the history, architecture, archeology, engineering, or culture of an area, and it must have the characteristics that make it a good representative of properties associated with that aspect of the past. The significance of a historic property can be judged and explained only when it is evaluated within its historic context. ... Historic contexts are those patterns or trends in history by which a specific occur-

rence, property, or site is understood and its meaning (and ultimately its significance) within history or prehistory is made clear.

A historic context is necessary to help researchers and persons involved in inventorying buildings for eligibility to the National Register, address these five factors:

1. The facet of prehistory or history of the local area, State, or the nation that the property represents
2. Whether that facet of prehistory or history is significant
3. Whether it is a type of property that has relevance and importance in illustrating the historic context
4. How the property illustrates that history
5. Whether the property possesses the physical features necessary to convey the aspect of prehistory or history with which it is associated.

*National Register Bulletin #15*

This project work was undertaken to develop a historic context for the development of military training lands used by the U.S. Department of Defense (DOD) and its forerunners.

## Objectives

The initial objective of this project was to develop a historic context for the development of military training lands used by the DOD and its forerunners.

## Approach

This work was performed in four steps:

1. A literature review was done in the area of military training.
2. Original photographs and training plans were gathered from a variety of archival centers.
3. A site visit was made to a large-scale training installation to photograph extant training facilities.
4. Data was collected and analyzed, and conclusions were drawn.

### Literature review

The research team used secondary literature to determine the general history of military training throughout the development of War Department and the Navy Department (and subsequently the DOD—Army, Navy, and Air Force). The military literature review consisted of reading the various

training manuals pushed out by those departments and a variety of military training histories published by and for those departments.

### Archival research

The research team then located primary research materials and additional secondary materials to establish a strategy to best use these resources. The research team conducted four visits to the National Archives in Washington, DC and the National Archives at College Park, MD. They occurred during the weeks of 6 February 2006, 27 February 2006, 17 April 2006, and 22 May 2006. Other archival depositories visited were the Library of Congress, 27 February 2006; the Naval Photo Library at the Washington Navy Yard, 17 April 2006; the History Office at the Corps of Engineers, Alexandria, VA, 17 April 2006; and a variety of installation museums, cultural resources offices, and archives across the country.

### Site visits

Two members of the research conducted a site visit to Fort Bragg, NC. Fort Bragg was chosen for the site visit because it had one of the largest groupings of different training lands in the DOD; the complexity of its training lands; and the level of historical background that Fort Bragg had on its training lands.

### Analysis

After the initial research was complete, the team analyzed the gathered information. The researchers outlined the historical context for military training, identified changes in history and use over time, identified important chronological periods, established a geographical context, and identified historical themes. The analysis resulted in an outline of military training divided into eight significant periods:

- Pre-Civil War (up to 1861)
- Civil War (1861-1865)
- National Expansion (1865-1916)
- World War I (1917-1920)
- Interwar (1921-1940)
- World War II (1941-1945)
- Early Cold War (1946-1955)
- Late Cold War (1956-1989).

## Scope

Military training that occurred inside buildings and the Cold War missile programs are not part of this historic context.

The complexity of military training across the services required four historic contexts to be developed, each geared to a particular type of training:

1. Small arms ranges
2. Large arms ranges
3. Training villages, mock sites, and large-scale operation areas
4. Miscellaneous training sites.

This report details the history of training villages, mock sites, and large-scale operation areas.

## Mode of technology transfer

This report will be made accessible through the World Wide Web (WWW) at URL: <http://www.cecer.army.mil>



## 2 Training Villages, Mock Sites, and Large Scale Operation Areas

The U.S. military constructed a variety of training villages, mock sites, and courses in an effort to create realistic combat environments for training. Bivouac sites and large-scale operation areas were also utilized for realistic, multiple day training exercises and maneuvers. This volume contains descriptions, drawings, and historical photographs of many such training ranges and sites. Following some “General Information” that applies to many of these areas, individual ranges and sites are discussed under the categories of “Training Villages,” “Mock Sites,” “Courses,” and “Large Scale Operation Areas.” Present-day photographs and evaluation material follow the list of ranges.

### General Information

#### Purpose

“The primary purpose of this type of range was to train personnel in the use of organic weapons in a combat environment with a secondary purpose of mental conditioning. Every combat soldier was trained mentally for the shock of battle. So far as practicable, soldiers were subjected in training to the sights, sounds, and sensations of battle. Every opportunity was taken to subject personnel to overhead fire and fire at their flanks. So far as practicable, artillery service practice and exercises or drills of other troops were located and coordinated to provide troops with experience in undergoing overhead artillery fire. Individuals in entrenchments of their own construction were run over by tanks when practicable. Such training required men to throw or discharge practice grenades or simulated grenades at the tank. Troops were subjected to realistic simulated attack from the air at every available opportunity” (“RO-2” 13).

#### Terrain

“The terrain over which these ranges were constructed was selected in order to make available the varied terrain suitable for the employment of all of the weapons with which the units were to be trained and armed. Any ground satisfactory for maneuvers was suitable for tactical exercises involving field firing. The range areas varied in nearly every dimension de-

pending on the practice requirements. The amount of land required for the range was determined by calculating the length and breadth of the danger area required to fulfill the requirements of AR 750-10 as it related to the type of weapon, ammunition, and firing exercises to be fired on the range” (“RO-2” 14). “Multiple weapons type ranges could have been stand-alone ranges or shared with an artillery range, or other ranges on a Ground Forces Training Center” (“RO-2” ES2).

### Construction

“The multiple weapons type range often involved significant construction” (“RO-2” 11). For example, mock villages included multiple buildings, walls, and fences “to simulate an urban environment for training. Other facilities constructed on the various multiple weapons type courses included bunkers, foxholes, trenches, shell holes, slit trenches, wire entanglements, simulated mine fields, control towers, and machine gun platforms” (“RO-2” 11). “Some facilities, such as target butts, target pits, drainage channels and culverts, storerooms, range houses, and firing points supplemented range functions. If present, these buildings and facilities were centrally located beyond the firing range limits and impact areas” (“RO-2” 12). “The construction on each type of range covered in this report is discussed under the description of the range” (“RO-2” 11).

### Training procedures

“Either chosen personnel from the using unit or range control personnel prepared the range for use. This involved placing simulators, preparing and emplacing weapons integral to the range, and possibly positioning aggressor forces. After the range was prepared and the weapons serviced, the using unit was issued the ammunition to be used during the training” (“RO-2” 7-8). After firing exercises, troops cleaned their weapons and policed the training area, either taking the trash they gathered to a landfill, or putting it in a foxhole if they were on their way to do more training. Duds and other ammunition waste materials were either destroyed on site, or taken to the ordnance officer for disposal (“RO-2” 8-9).

### Weapons

“The ranges covered under this report may have been used in two ways, either live fire exercises or force-on-force exercises. For live fire exercises, conventional ammunition for every authorized type of weapon was poten-

tially used unless local regulations limited use of the range to specific types of ammunition. For force-on-force exercises, ammunition use was normally limited to blank ammunition, simulators, practice, pyrotechnics, etc. However, live ammunition was occasionally used in a very controlled manner, such as on the infiltration course" ("RO-2" ES2). "Although the actual weapons used on this type of range is site specific, these weapons may have included small arms, recoilless rifles, shoulder-launched rockets, hand and rifle grenades, and flame throwers" ("RO-2" 1-2).

## Training villages

"The mock village became common as a training area with the start of World War II (WWII) and is still in use today. The Mock Village was also known as a combat-in-cities course and more recently as Military Operations in Urbanized Terrain (MOUT). In each case, the mock village consisted of a simulated village designed to mimic the villages of the anticipated enemy. During WWII the village resembled European or Japanese villages, and during the Korean War, Korean villages. During the cold war the mock villages again resembled European villages, and during the Vietnam War, Vietnamese villages. The villages were designed to allow units to conduct various training problems in an urban environment and to employ the weapons available to them. The training situations may have been set up to allow live fire training or force-on-force training where ammunition would have been restricted to simulators and blanks. During 1942 and at least through 1951, an installation housing one or two divisions (a Division contains approximately 15,000 personnel) would have had one Mock Village training facility" ("RO-2" 15-16).

"Training Villages often involved significant construction. For example, the Combat-in-Cities Course involved the construction of multiple buildings to simulate an urban environment for training. The Course contained one, two, and three story buildings with fences and walls in between the back yards. At least one wall was 10 or 12 feet high to allow the use of hooks and toggle ropes. Windows were equipped with disappearing dummies and silhouette targets arranged on hinges and pulleys, and controlled by a control officer" ("RO-2" 11, 16, 26).

"This type of course may have included camouflage features in addition to simulated personnel, booby traps, land mines, etc. The Mock Village was to be installed where 180-degree field of fire could be provided. From 1944 through at least 1951, the range was to be restricted to the use of M2 .30

caliber or other ammunition not requiring a danger range exceeding 4,000 yards. In some instances, the mock village course was located on an artillery range. Artillery was allowed to fire over the heads of the troops using the Mock Village" ("RO-2" 16). Examples of several mock villages, combat in cities courses, and MOUT facilities are shown below.

### Mock villages

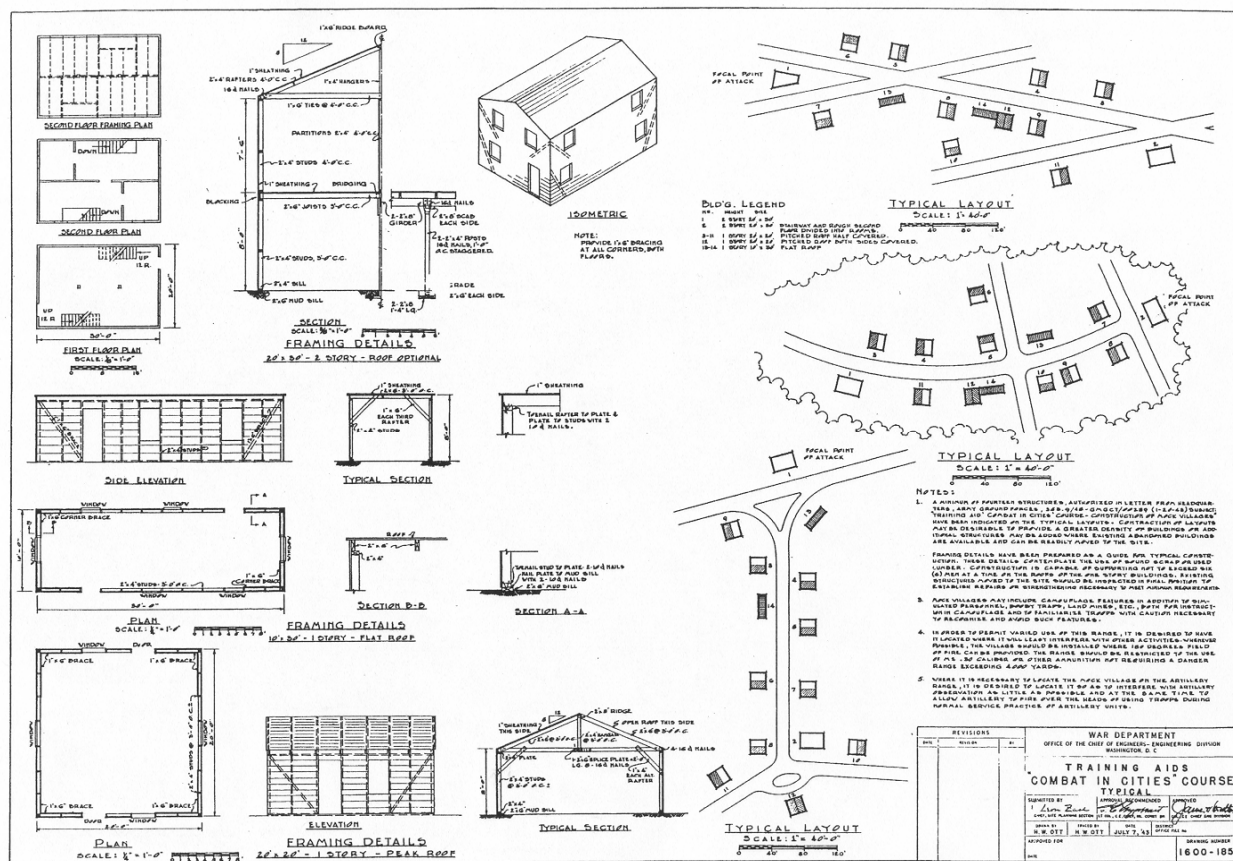


Figure 1. Mock village, circa 1943 (standard drawing no. 1600-185, combat in cities course, 7 July 1943).



Figure 2. An overall shot of the combat town built by the 7th Engineering Battalion at Camp Pendleton, CA, 19 January 1953 (NARA College Park, RG 127-GC, box 11, photo A177454).

*European*



Figure 3. "German Village" West of Pier "D" Reserve Basin, (circa 1917) (neg. No. 1367, Public Works Dept., U.S. Navy Yard, Philadelphia, PA. 4 April 1917).



Figure 4. Squad using hand grenades in clearing out enemy in house-to-house fighting at Fort Bliss, TX, 9 April 1943 (NARA College Park, RG 111-SC WWII, box 162, photo SC175736).



Figure 5. Members of the field artillery using live ammunition amidst live dynamite charges run through the "German Village" on the Ranger Course at Fort Jackson, SC, 22 April 1943 (NARA College Park, RG 111-SC WWII, box 159, photo SC174957).



Figure 6. Trainee peering through a window of a mined dummy house at Camp Peary, VA, 29 April 1944 (NARA College Park, RG 80-G, box 453, photo 170420).

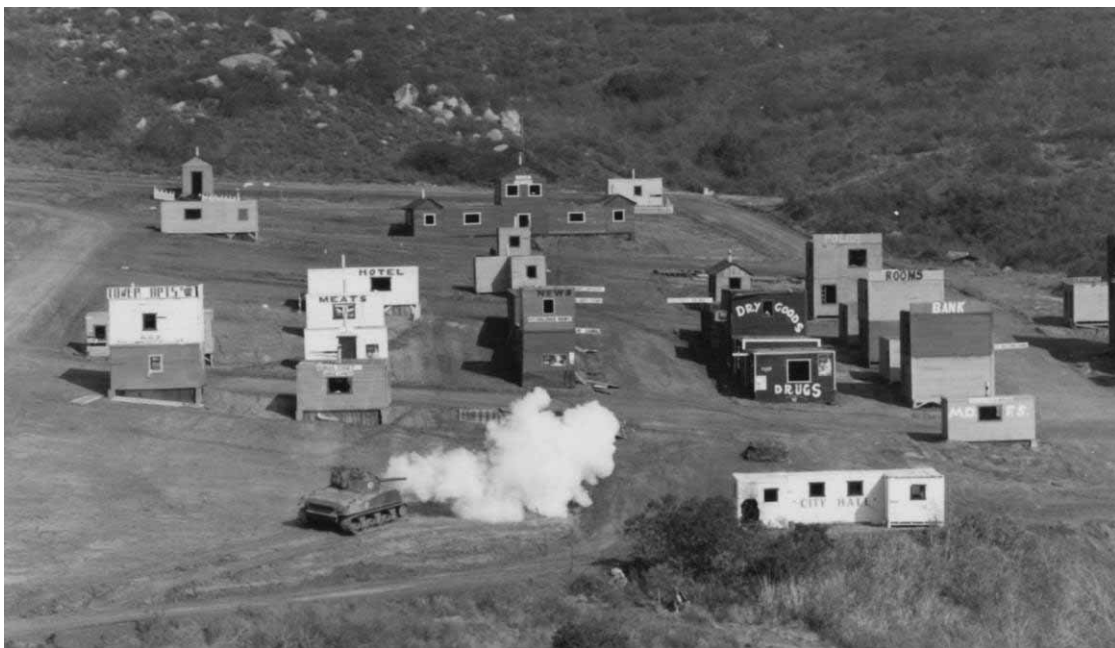


Figure 7. An M-26 tank of the 1st Tank Battalion is shown softening up the "enemy" in the mock town at Camp Pendleton, CA, 3 February 1950 (NARA College Park, RG 127-GC, box 11, photo A25737).





Figure 8. Soldiers undergo simulated combat training at the "Mock Village" at Fort Bliss, TX, 13 January 1951 (NARA College Park, RG 111-SC WWII, box 197, photo SC357878).



Figure 9. Soldiers undergo simulated combat training at the "Mock Village" at Fort Bliss, TX, 13 January 1951 (NARA College Park, RG 111-SC WWII, box 197, photo SC357878).





Figure 10. A building in the last stages of construction in the European section of combat town at Camp Pendleton, CA, 15 August 1952 (NARA College Park, RG 127-GC, box 11, photo A176775).



Figure 11. An instructor explains how to attack and enter Combat Village at Camp Lejeune, NC, 30 September 1952 (NARA College Park, RG 127-GC, box 26, photo A13710).



Figure 12. A European combat town at Camp Pendleton, CA, 16 December 1952 (NARA College Park, RG 127-GC, box 11, photo A350096).



Figure 13. A European combat town at Camp Pendleton, CA, 16 December 1952 (NARA College Park, RG 127-GC, box 11, photo A350095).



Figure 14. Two Marines lift another man to the rooftop while another Marine battles an aggressor from the roof at Camp Pendleton, CA, 3 July 1957 (NARA College Park, RG 127-GC, box 11, photo A367250).



Figure 15. Personnel of the 101st Airborne Division rappel from a UH-1 A/C into the training village at Fort Campbell, KY, 11 March 1963 (NARA College Park, RG 111-SC post-1955, box 380, photo SC603421).



Figure 16. Army UH-1 "Iroquois" helicopters descend into the training village at Fort Campbell, KY, 7 March 1963 (NARA College Park, RG 111-SC post-1955, box 379, photo SC601653).



Figure 17. Three men of a fire team assault a house with aggressors firing from the roofline in combat town at Camp Pendleton, CA, 30 April 1968 (NARA College Park, RG 127-GG, box 24, photo A620114).

*Japanese*

Figure 18. Japanese language drama when squad raids a Japanese hut at Camp Pendleton, CA, March 1944 (NARA College Park, RG 127-GC, box 11, photo 36472).



Figure 19. The result of opening a door without a thorough examination beforehand might result in three dead MPs as demonstrated to a class at unknown location, 15 February 1946 (NARA College Park, RG 342-FH, box 2214, photo 4A-19842).

*Korean/Oriental*

Figure 20. A shot showing construction work and buildings of combat town at Camp Pendleton, CA, 15 August 1952 (NARA College Park, RG 127-GC, box 11, photo A176772).



Figure 21. An Oriental section street scene in the "market" district of combat town at Camp Pendleton, CA, 15 August 1952 (NARA College Park, RG 127-GC, box 11, photo A176771).





Figure 22. A Marine decorates a cart with Oriental writing before placing it in the Oriental section of combat town at Camp Pendleton, CA, 21 August 1952 (NARA College Park, RG 127-GC, box 11, photo A176830).



Figure 23. House-to-house fighting in combat town at Camp Pendleton, CA, 4 August 1953 (NARA College Park, RG 127-GC, box 11, photo A351261).



Figure 24. A man falling from his position after supposedly being hit by a shell in a demonstration of an "Asiatic" combat town at Camp Pendleton, CA, 9 December 1952 (NARA College Park, RG 127-GC, box 11, photo A350089).



Figure 25. An Oriental combat town at Camp Pendleton, CA, 16 December 1952 (NARA College Park, RG 127-GC, box 11, photo A350100).





Figure 26. An Oriental combat town built by the Marines for the purpose of training men and giving them an idea of what kind of country they are entering at Camp Pendleton, CA, 16 December 1952 (NARA College Park, RG 127-GC, box 11, photo A350102).

*Vietnamese*



Figure 27. Asian Village at MCB Camp Pendleton, CA, 13 October 1964 (NARA College Park, RG 127-GG-957, box 34, photo A368699).



Figure 28. Marines clear and defend aggressors in the Asian Village at MCB Camp Pendleton, CA, 13 October 1964 (NARA College Park, RG 127-GG-957, box 34, photo A368695).



Figure 29. Construction site of Vietnamese village in "H" area at Fort Bragg, NC, 8 April 1966 (NARA College Park, RG 111-SC post-1955, photo SC628897).





Figure 30. Overall view of the Southeast Asian Village constructed at the Basic School at MCB Quantico, VA, 9 June 1966 (NARA College Park, RG 127-GG-957, box 34, photo A556414).

### Vietnamese house

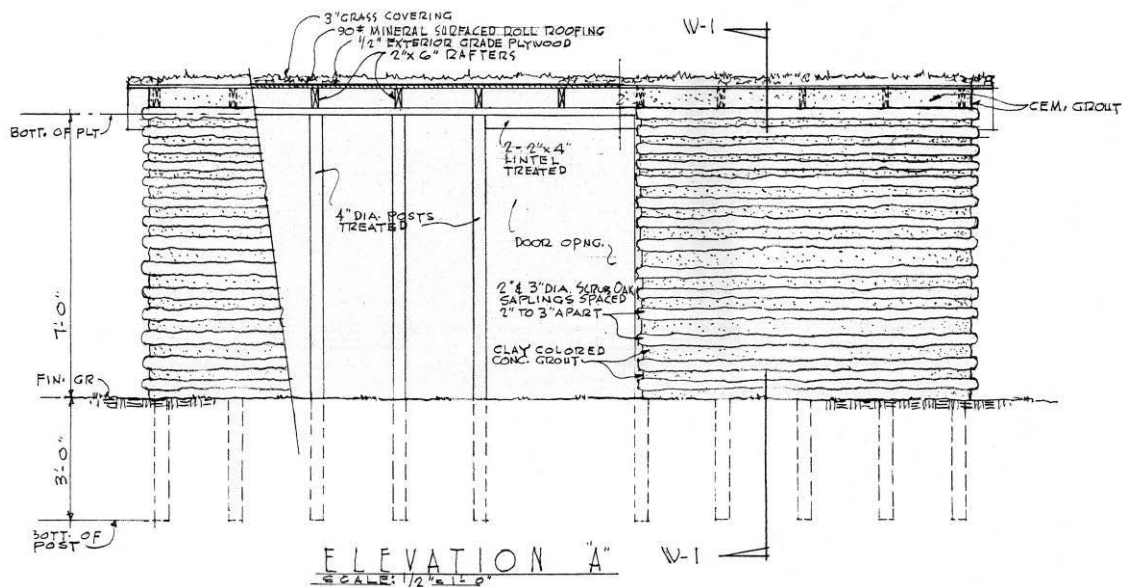


Figure 31. Vietnamese house elevation "A", Camp Gordon, 1966 (standard drawing GOR 28-13-09 sheet 16, Vietnamese and Montagnard houses plans, elevations, and sections, 1 April 1966).

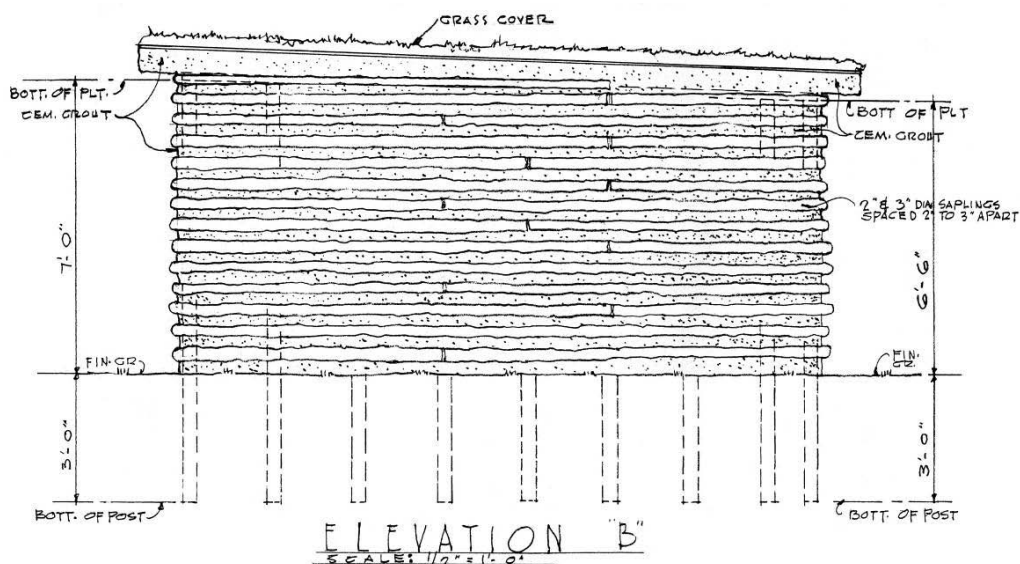


Figure 32. Vietnamese house elevation "B", Camp Gordon, 1966 (standard drawing GOR 28-13-09 sheet 16, Vietnamese and Montagnard houses plans, elevations, and sections, 1 April 1966).

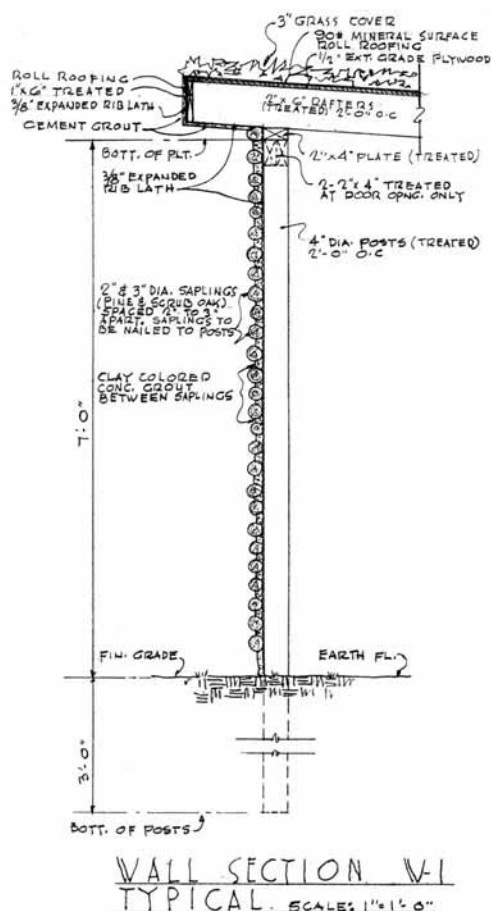


Figure 33. Vietnamese house typical wall section, Camp Gordon, 1966 (standard drawing GOR 28-13-09 sheet 16, Vietnamese and Montagnard houses plans, elevations, and sections, 1 April 1966).

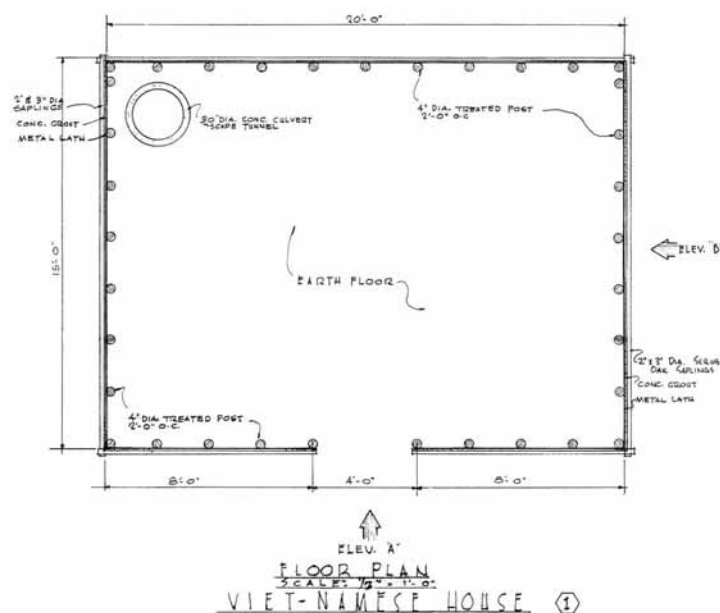


Figure 34. Vietnamese house floor plan, Camp Gordon, 1966 (standard drawing GOR 28-13-09 sheet 16, Vietnamese and Montagnard houses plans, elevations, and sections, 1 April 1966).

### Montagnard house

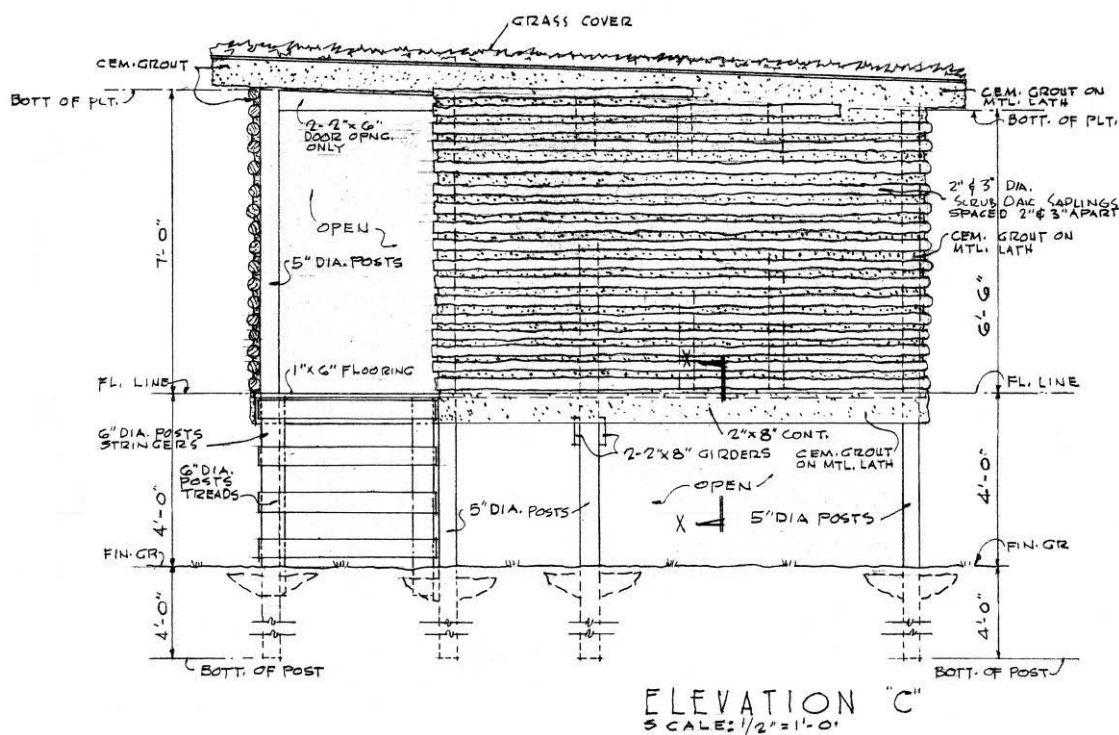


Figure 35. Montagnard house elevation "C", Camp Gordon, 1966 (standard drawing GOR 28-13-09 sheet 16, Vietnamese and Montagnard houses plans, elevations, and sections, 1 April 1966).

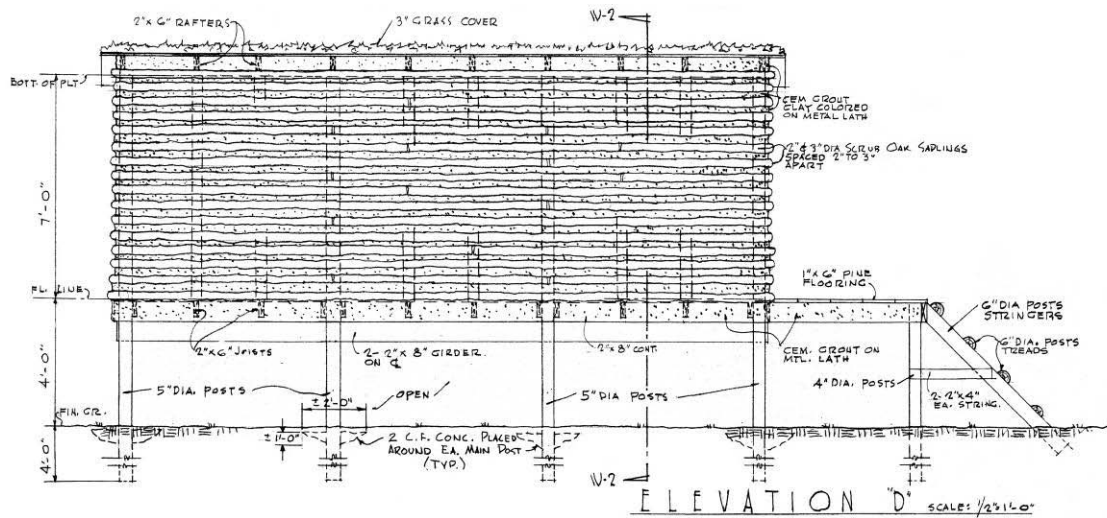


Figure 36. Montagnard house elevation "D", Camp Gordon, 1966 (standard drawing GOR 28-13-09 sheet 16, Vietnamese and Montagnard houses plans, elevations, and sections, 1 April 1966).

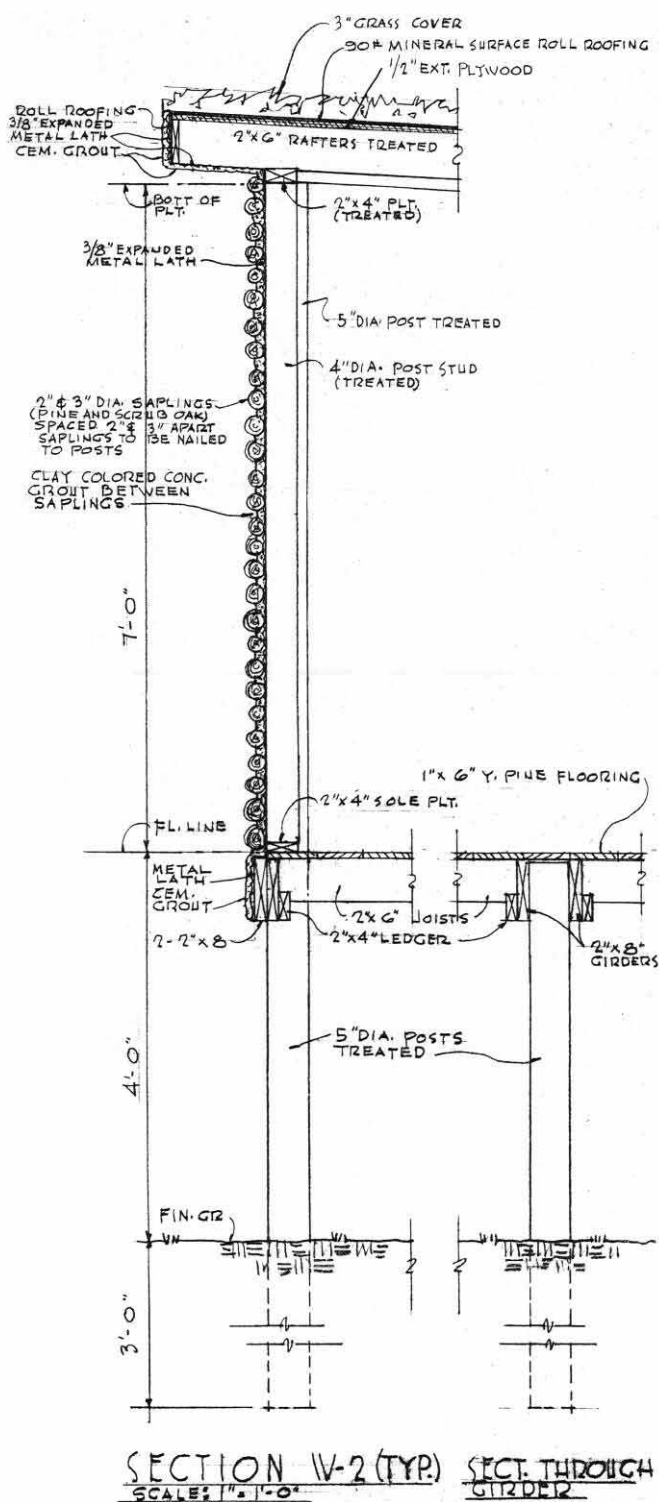


Figure 37. Montagnard house wall section, Camp Gordon, 1966 (standard drawing GOR 28-13-09 sheet 16, Vietnamese and Montagnard houses plans, elevations, and sections, 1 April 1966).

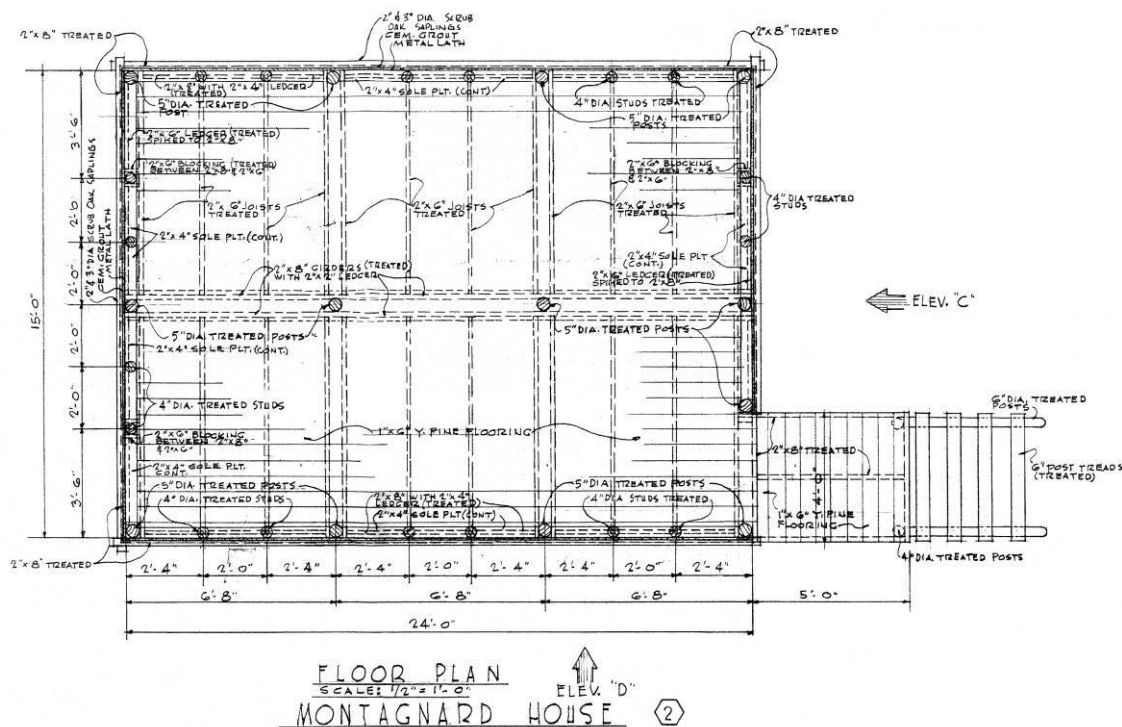


Figure 38. Montagnard house floor plan, Camp Gordon, 1966 (standard drawing GOR 28-13-09 sheet 16, Vietnamese and Montagnard houses plans, elevations, and sections, 1 April 1966).

### Combat in cities course



Figure 39. Mock-up table of "Combat in cities" course and surrounding terrain at Fort Leonard Wood, MO, 22 February 1952 (NARA College Park, RG 111-SC WWII, box288, photo SC396207).





Figure 40. Training at the "Combat in cities" course at Fort Leonard Wood, MO, 26 November 1951 (NARA College Park, RG 111-SC WWII, box 222, photo SC389142).

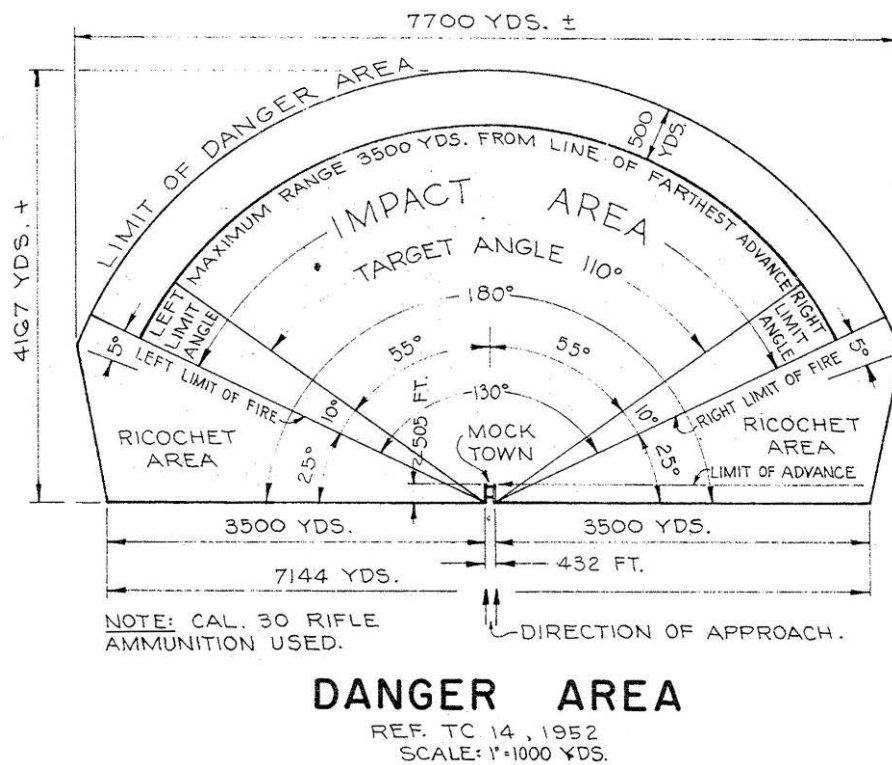


Figure 41. "Combat in cities" course danger area, 1952 (standard drawing No. 28-13-01, sheet 2 of 9, "Combat in cities" course, 20 June 1952).

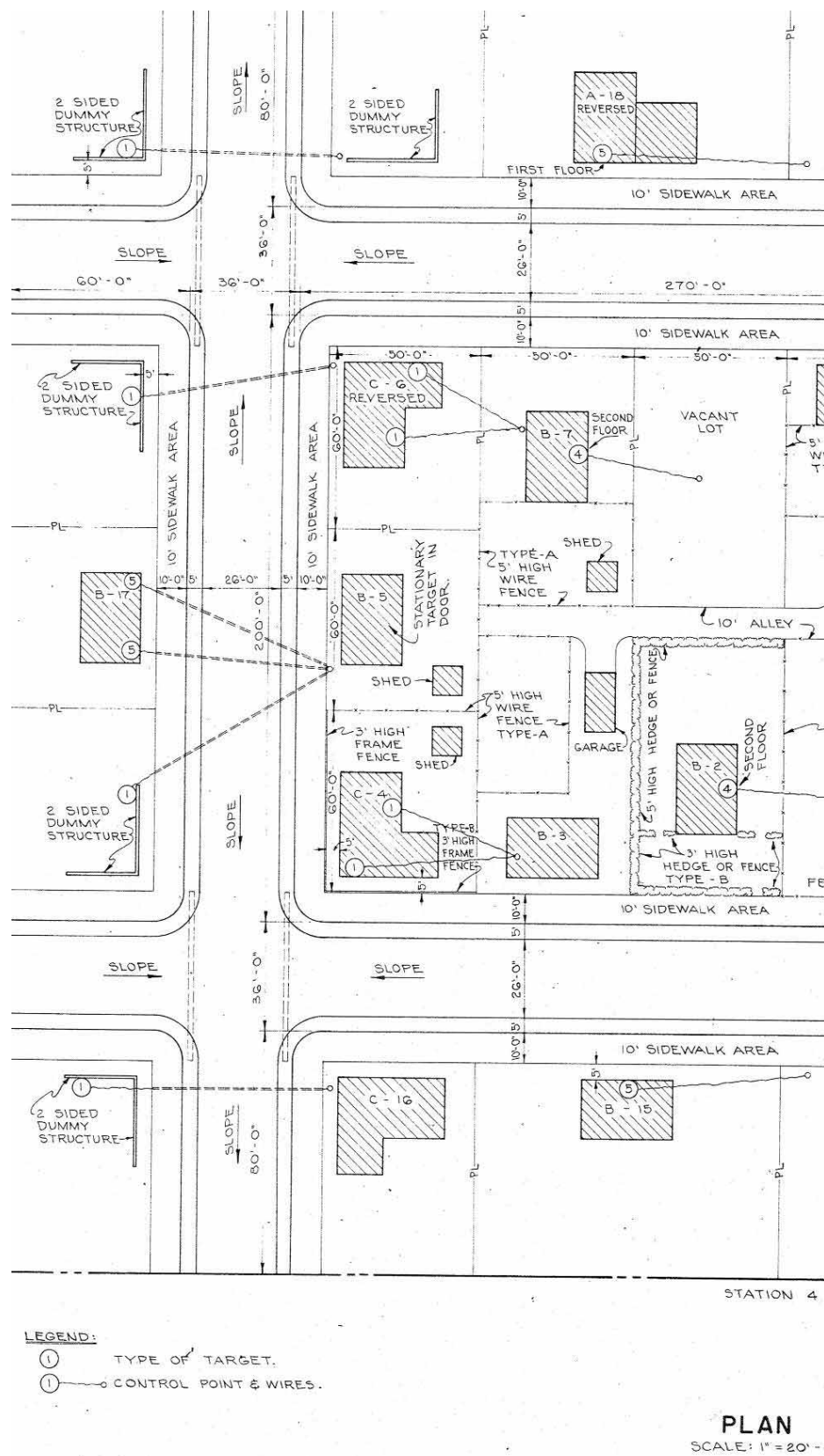
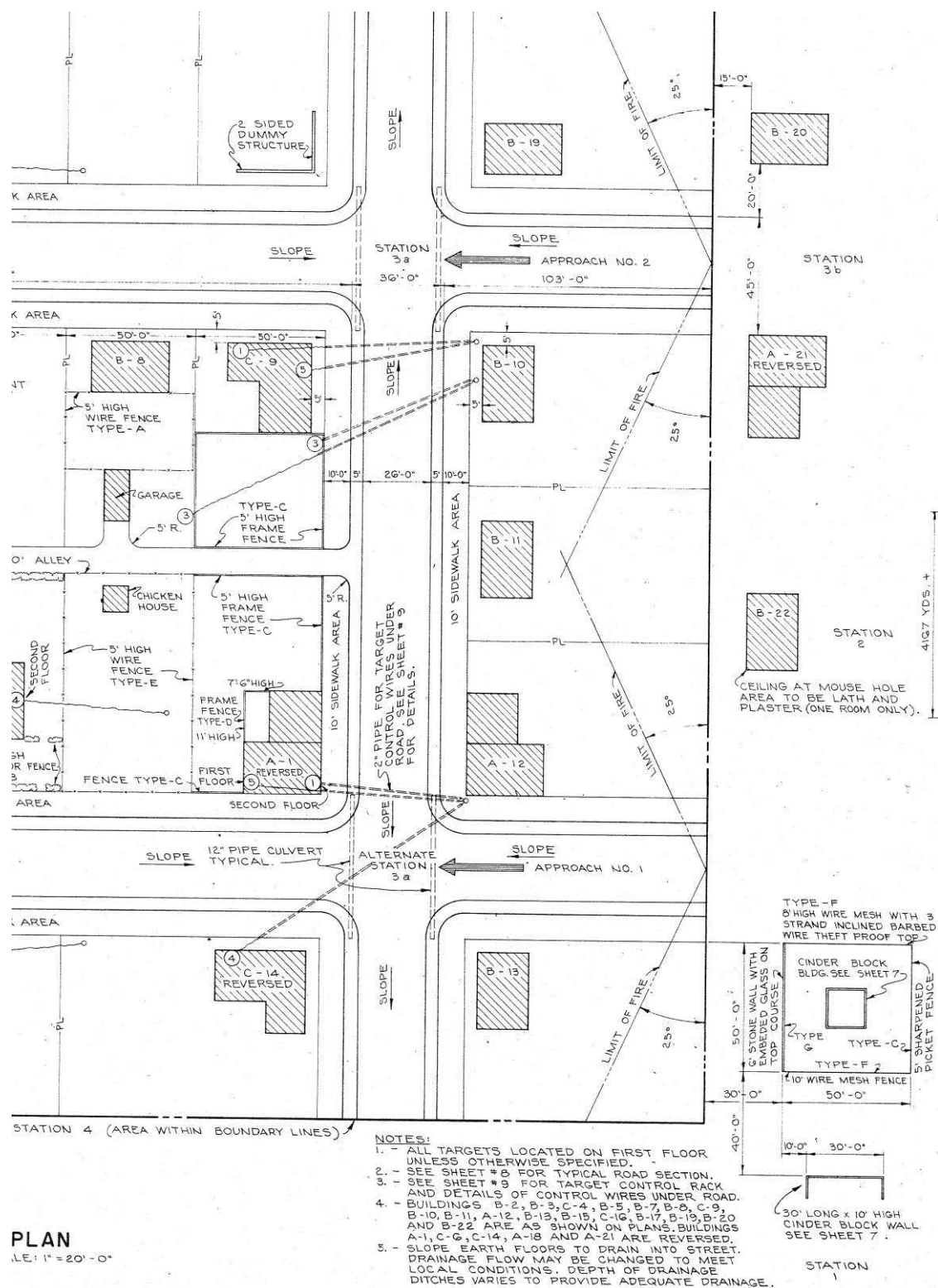


Figure 42. "Combat in cities" course plan, 1952 (standard drawing No. 28-13-01, sheet 2 of 9, "Combat in cities" course, 20 June 1952).



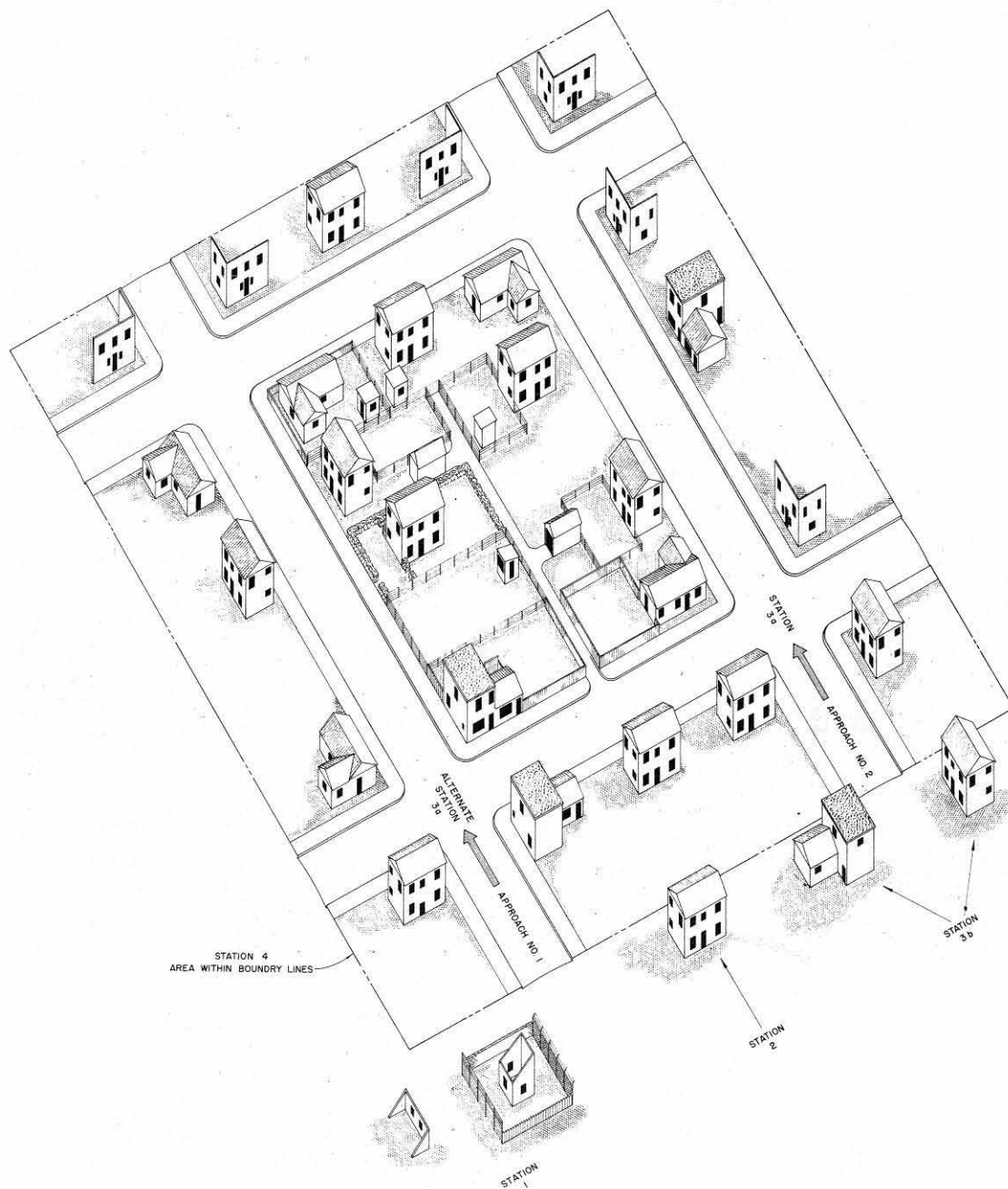


Figure 44. "Combat in cities" course, isometric view, 1952 (standard drawing 28-13-01 sheet 1 of 9; "Combat in cities" course, isometric view; 20 June 1952).

## Type "A" building

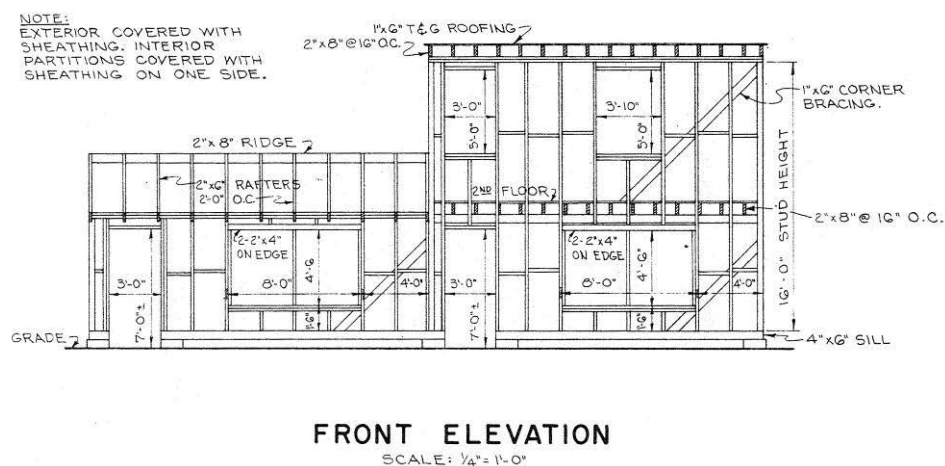


Figure 45. "Combat in cities" course type "A" building front elevation, 1952 (standard drawing 28-13-01 sheet 3 of 9; "Combat in cities" course, type "A" building, plans, elevations, and details; 20 June 1952).

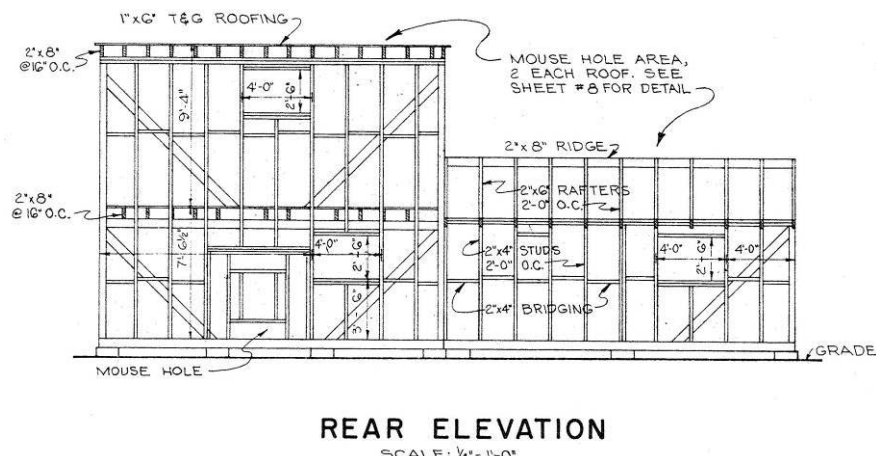


Figure 46. "Combat in cities" course type "A" building rear elevation, 1952 (standard drawing 28-13-01 sheet 3 of 9; "Combat in cities" course, Type "A" building, plans, elevations, and details; 20 June 1952).

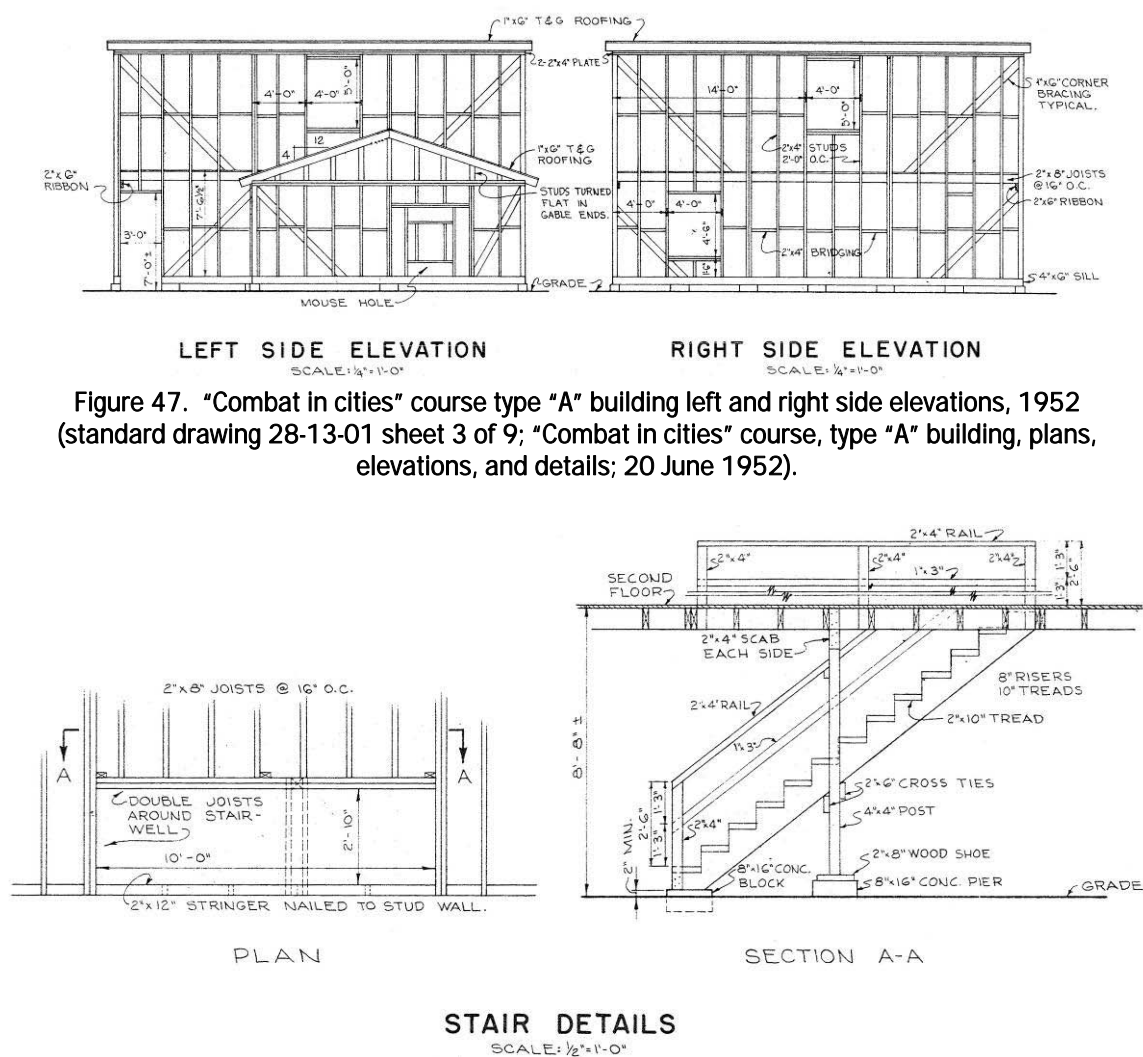


Figure 48. "Combat in cities" course type "A" building stairs details, 1952 (standard drawing 28-13-01 sheet 3 of 9; "Combat in cities" course, type "A" building, plans, elevations, and details; 20 June 1952).

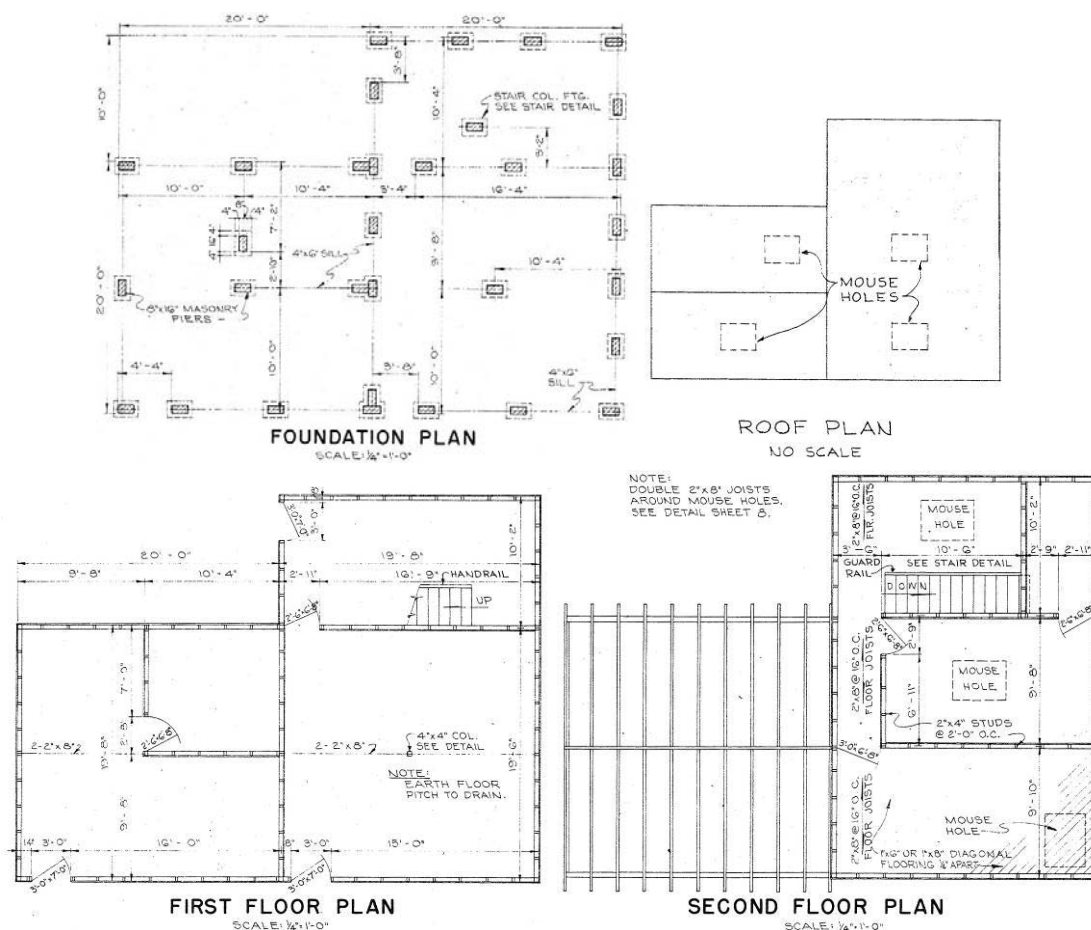


Figure 49. "Combat in cities" course type "A" building foundation, floor and roof plans, 1952 (standard drawing 28-13-01 sheet 3 of 9; "Combat in cities" course, type "A" building, plans, elevations, and details; 20 June 1952).

### Type "B" building

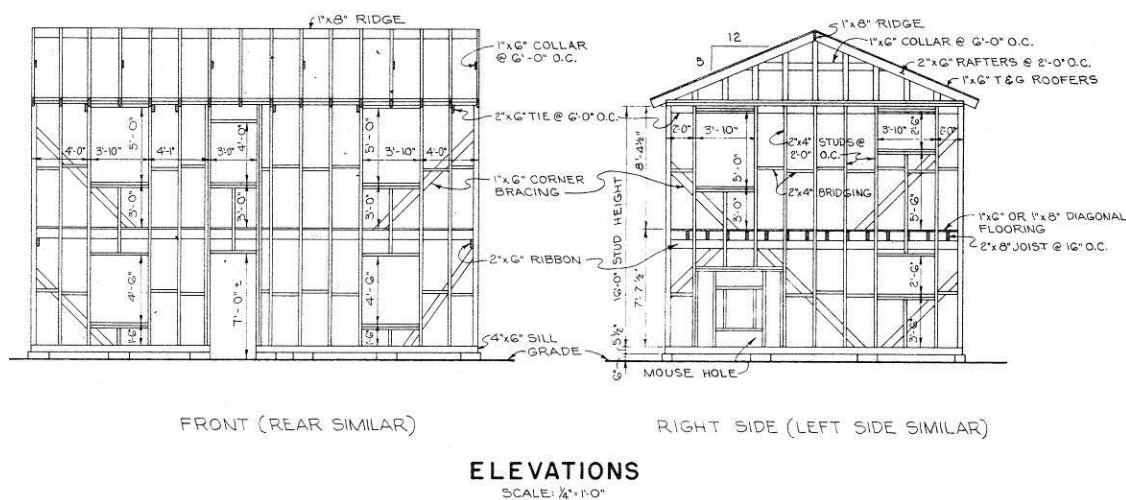


Figure 50. "Combat in cities" course type "B" building elevations, 1952 (standard drawing 28-13-01 sheet 4 of 9; "Combat in cities" course, type "B" building, plans, elevations, and details; 20 June 1952).

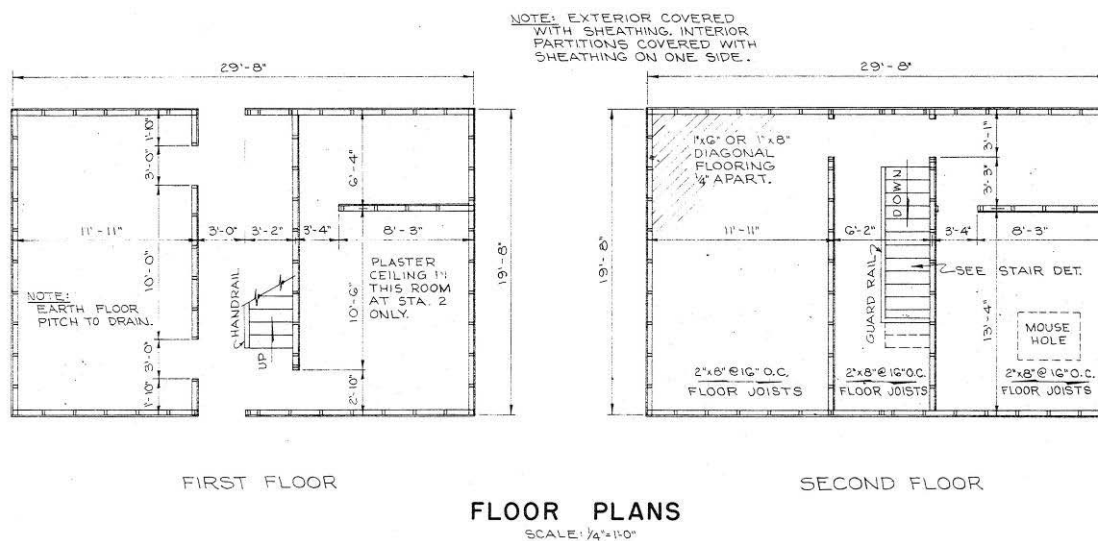


Figure 51. "Combat in cities" course type "B" building floor plans, 1952 (standard drawing 28-13-01 sheet 4 of 9; "Combat in cities" course, type "B" building, plans, elevations, and details; 20 June 1952).

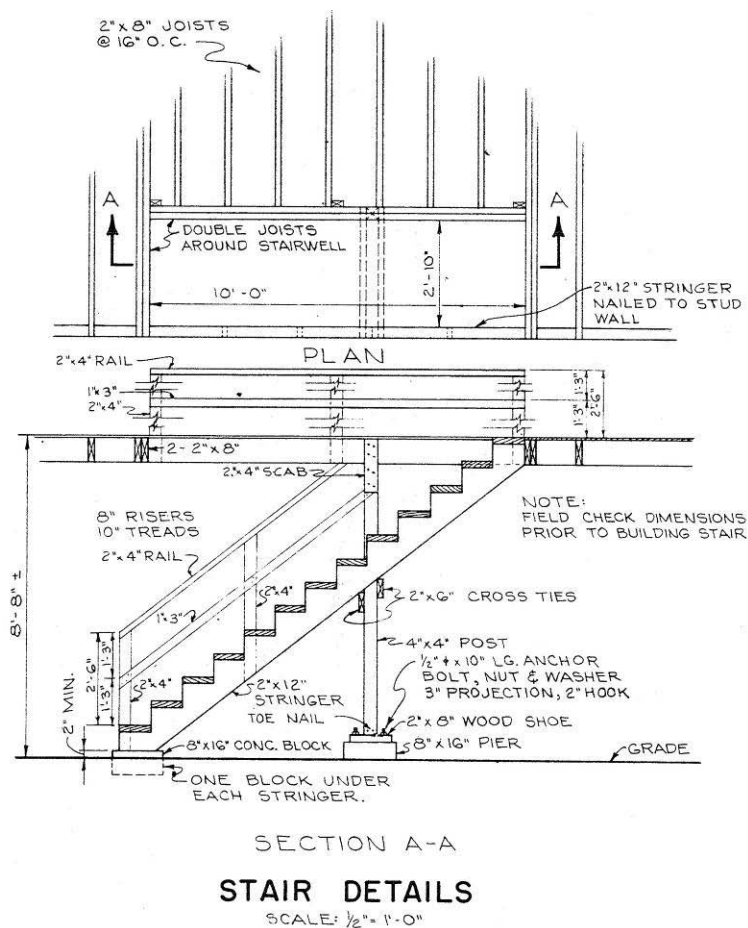
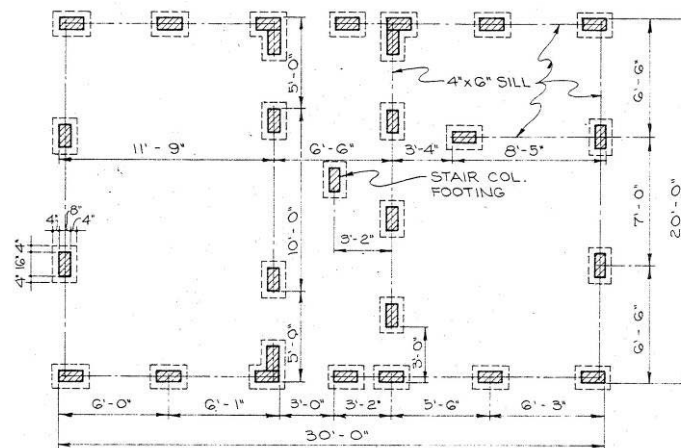


Figure 52. "Combat in cities" course type "B" building stairs details, 1952 (standard drawing 28-13-01 sheet 4 of 9; "Combat in cities" course, type "B" building, plans, elevations, and details; 20 June 1952).



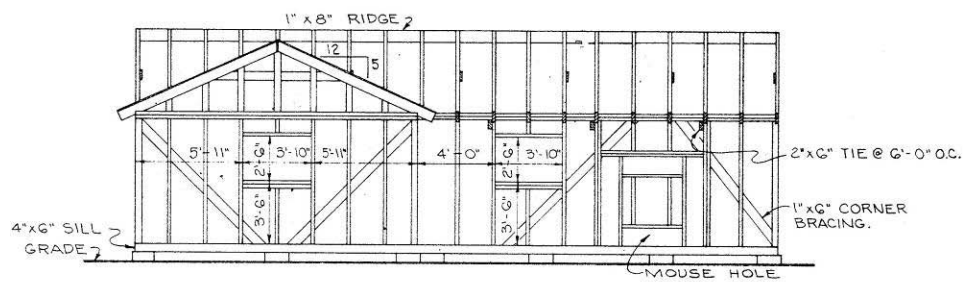


### FOUNDATION PLAN

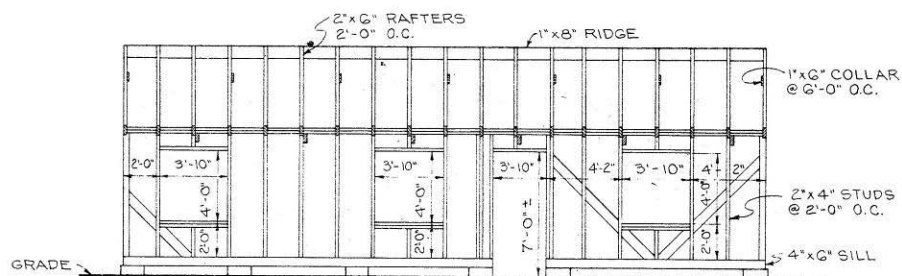
SCALE:  $\frac{1}{4}$ " = 1'-0"

Figure 53. "Combat in cities" course type "B" building foundation plan, 1952 (standard drawing 28-13-01 sheet 4 of 9; "Combat in cities" course, type "B" building, plans, elevations, and details; 20 June 1952).

### Type "C" building



### REAR ELEVATION



### FRONT ELEVATION

Figure 54. "Combat in cities" course type "C" building front and rear elevations, 1952 (standard drawing 28-13-01 sheet 5 of 9; "Combat in cities" course, type "C" building, plans, elevations; 20 June 1952).

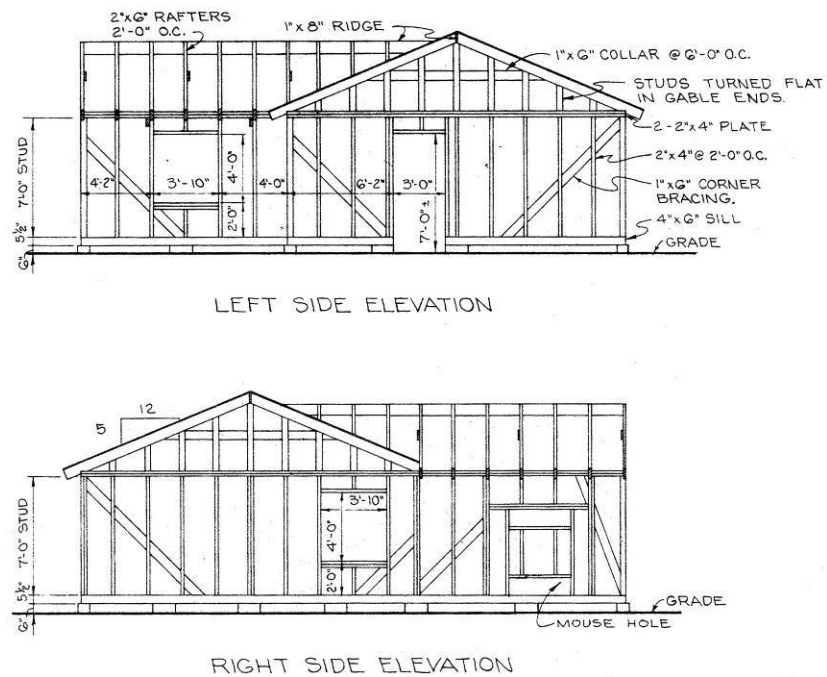


Figure 55. "Combat in cities" course type "C" building left and right elevations, 1952 (standard drawing 28-13-01 sheet 5 of 9; "Combat in cities" course, type "C" building, plans, elevations; 20 June 1952).

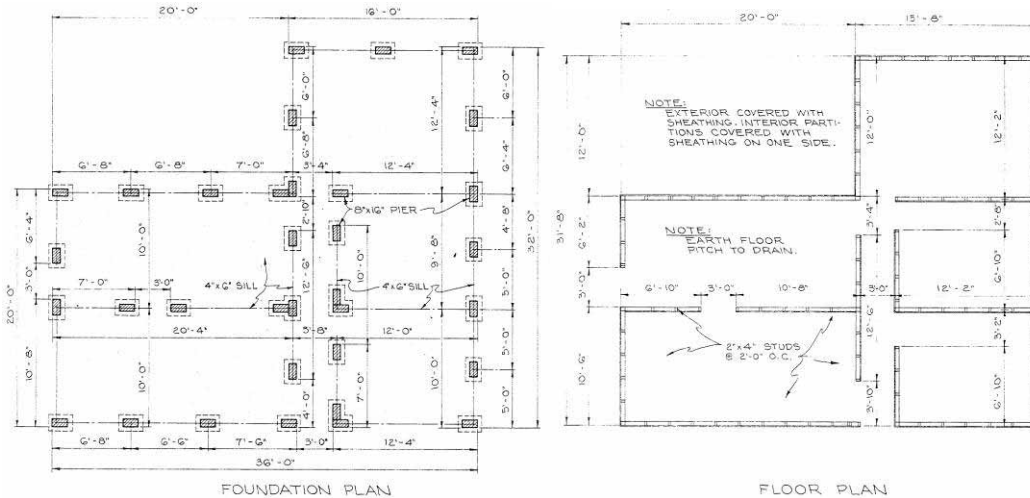


Figure 56. "Combat in cities" course type "C" building foundation and floor plan, 1952 (standard drawing 28-13-01 sheet 5 of 9; "Combat in cities" course, type "C" building, plans and elevations; 20 June 1952).

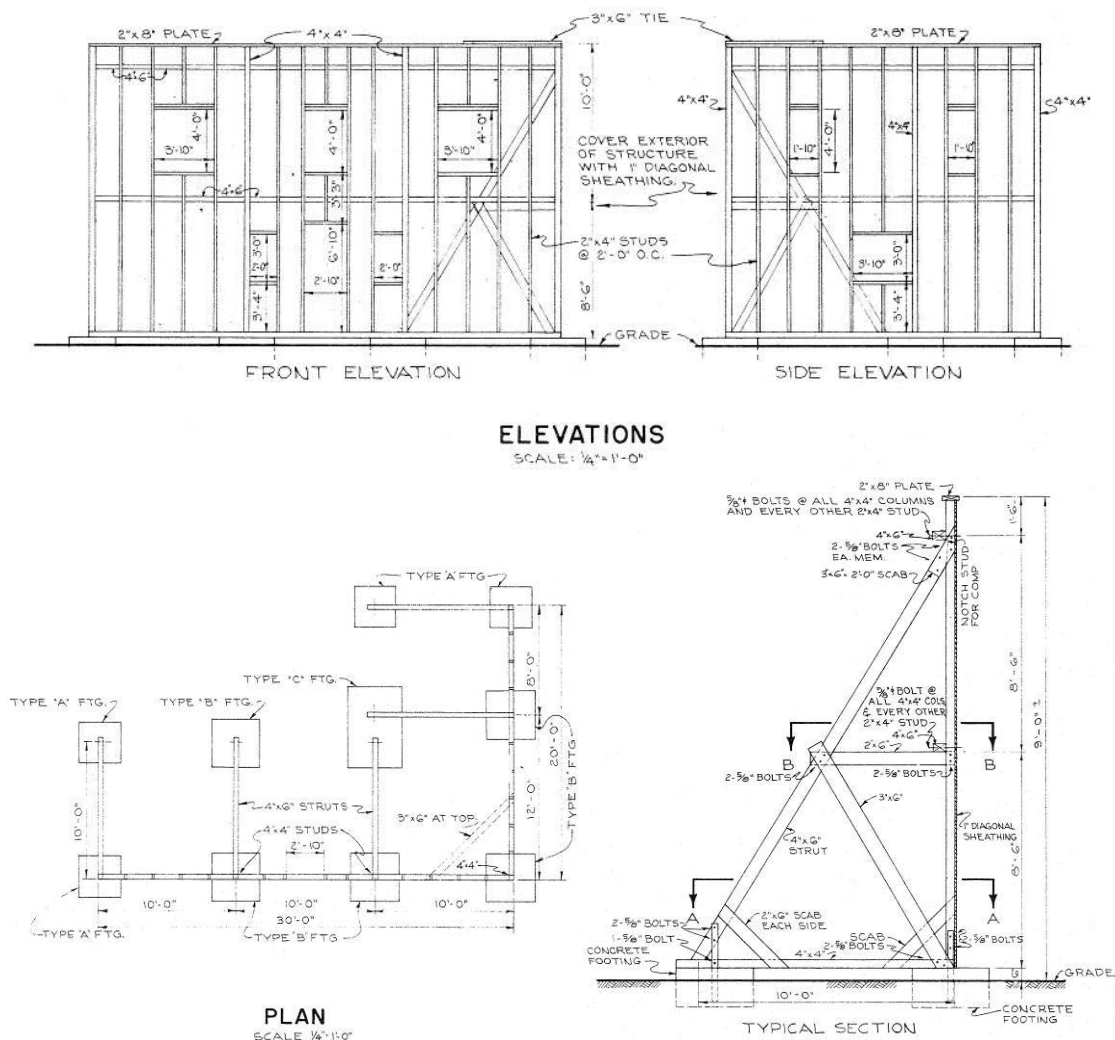
*Dummy building*

Figure 57. "Combat in cities" course dummy building elevations, plan, and section, 1952 (standard drawing 28-13-01 sheet 6 of 9; "Combat in cities" course, dummy building, plan, elevations, and details; 20 June 1952).

### Masonry building

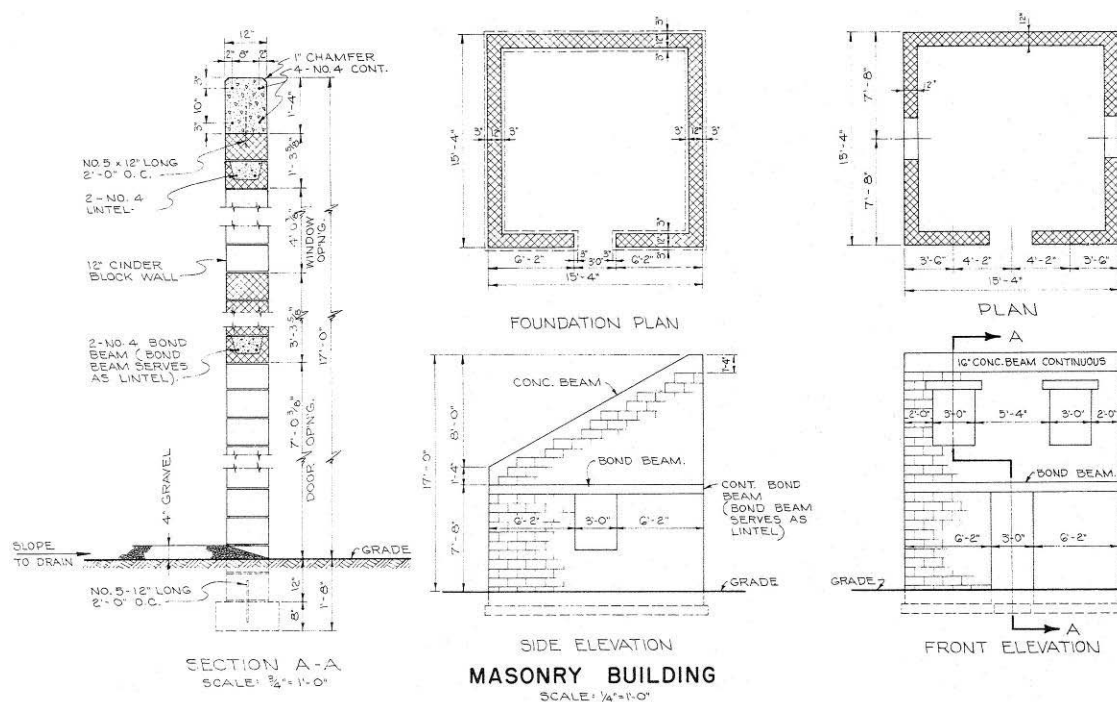


Figure 58. "Combat in cities" course masonry building at Section 1, 1952 (standard drawing 28-13-01 sheet 7 of 9; "Combat in cities" course, structures at Station 1; 20 June 1952).

### Masonry wall

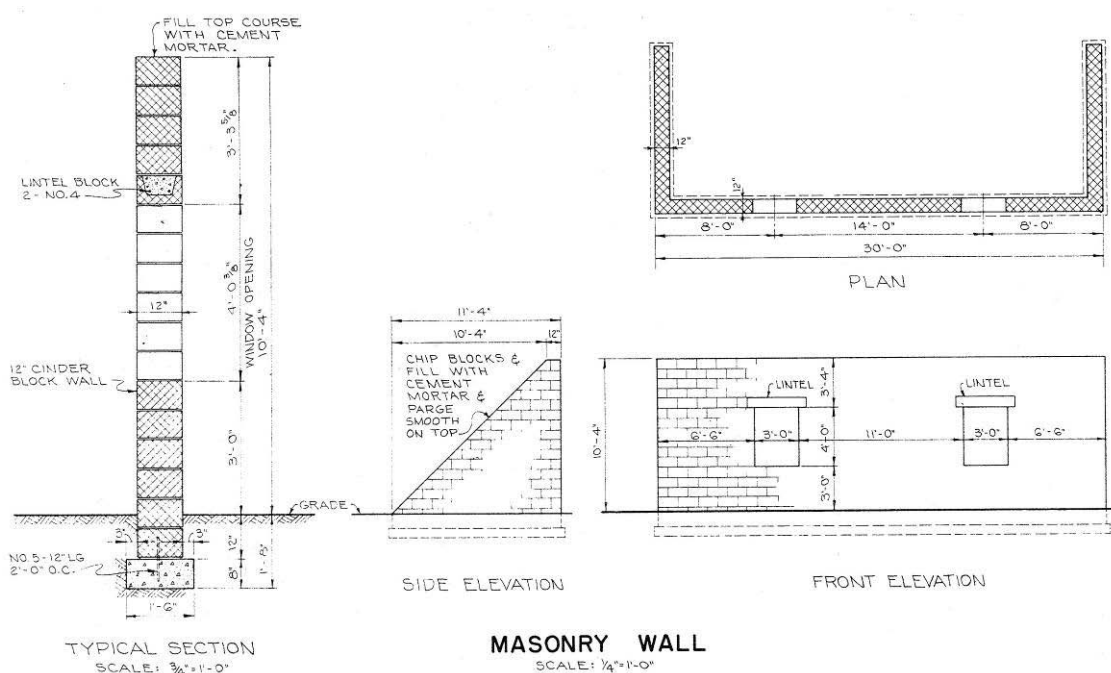


Figure 59. "Combat in cities" course masonry wall at Section 1, 1952 (standard drawing 28-13-01 sheet 7 of 9; "Combat in cities" course, structures at Station 1; 20 June 1952).

### Chicken house and shed

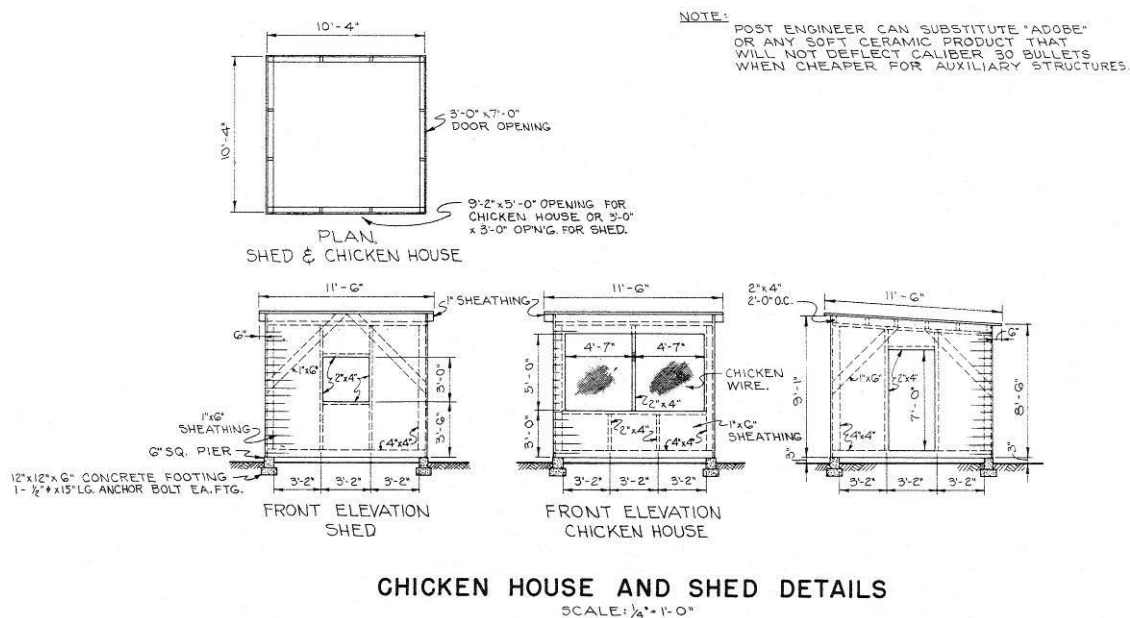


Figure 60. "Combat in cities" course chicken house and shed details, 1952 (standard drawing 28-13-01 sheet 8 of 9; "Combat in cities" course, details; 20 June 1952).

### Mouse hole

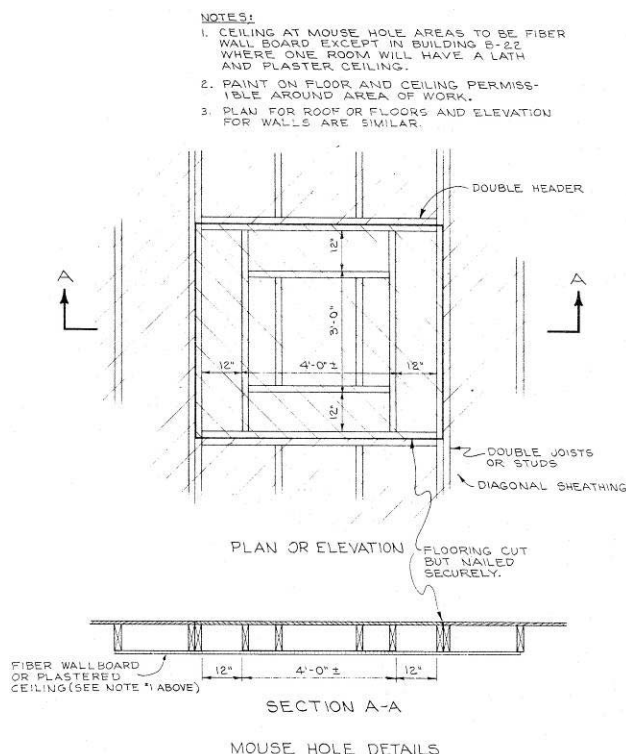
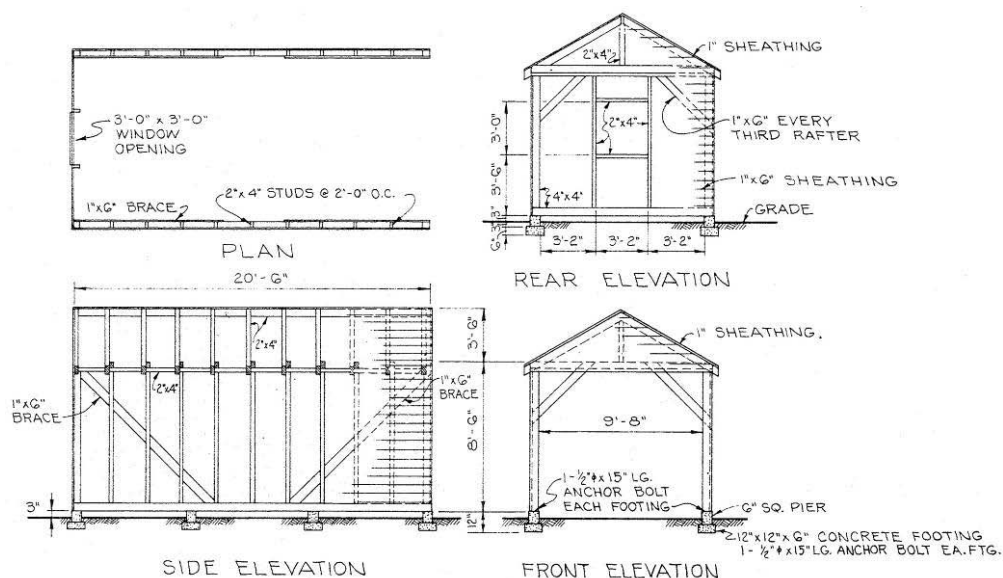


Figure 61. "Combat in cities" course mouse hole details, 1952 (standard drawing 28-13-01 sheet 8 of 9; "Combat in cities" course, details; 20 June 1952).

## Garage



### GARAGE DETAILS

SCALE: 1/4" = 1'-0"

Figure 62. "Combat in cities" course garage details, 1952 (standard drawing 28-13-01 sheet 8 of 9; "Combat in cities" course, details; 20 June 1952).

## Fences

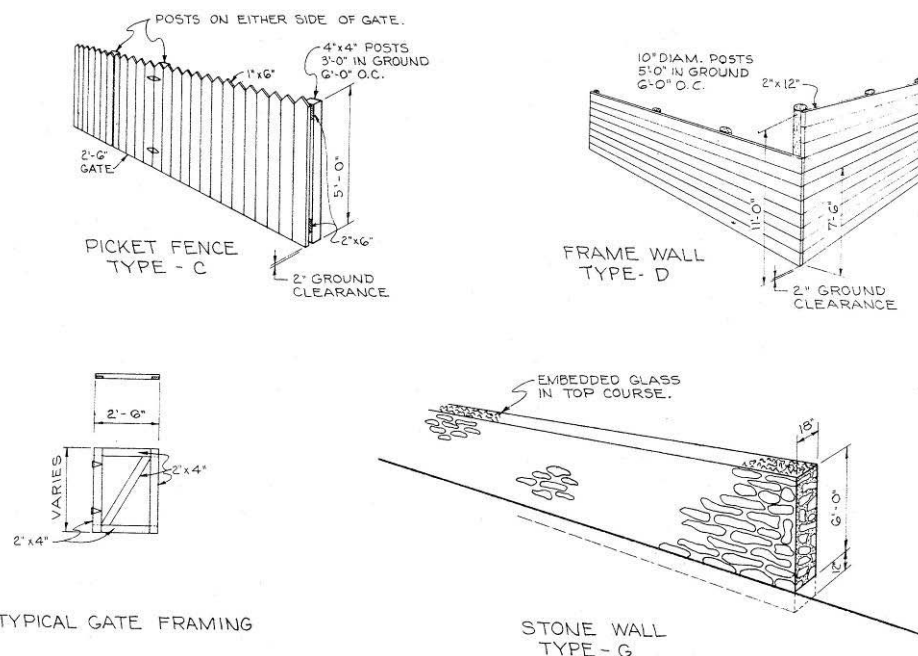


Figure 63. "Combat in cities" course fence details, 1952 (standard drawing 28-13-01 sheet 9 of 9; "Combat in cities" course, fence, wall and target details; 20 June 1952).

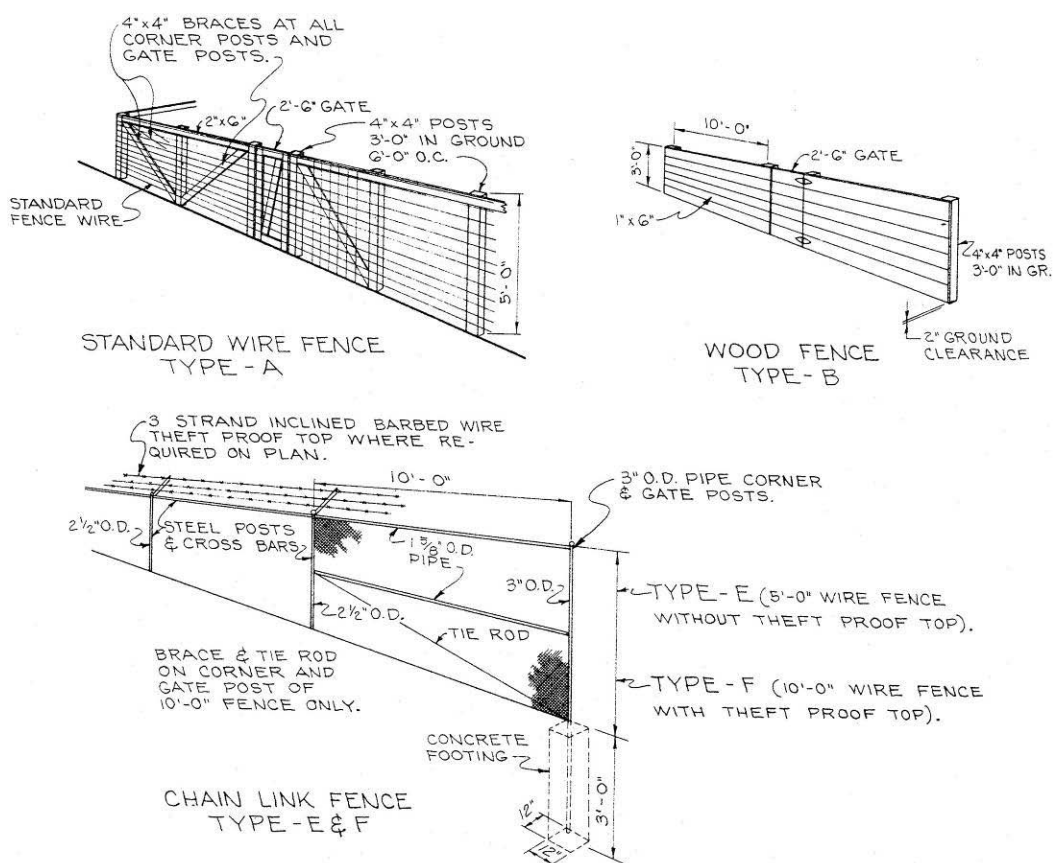


Figure 64. "Combat in cities" course fence details, 1952 (standard drawing 28-13-01 sheet 9 of 9; "Combat in cities" course, fence, wall and target details; 20 June 1952).

### Targets

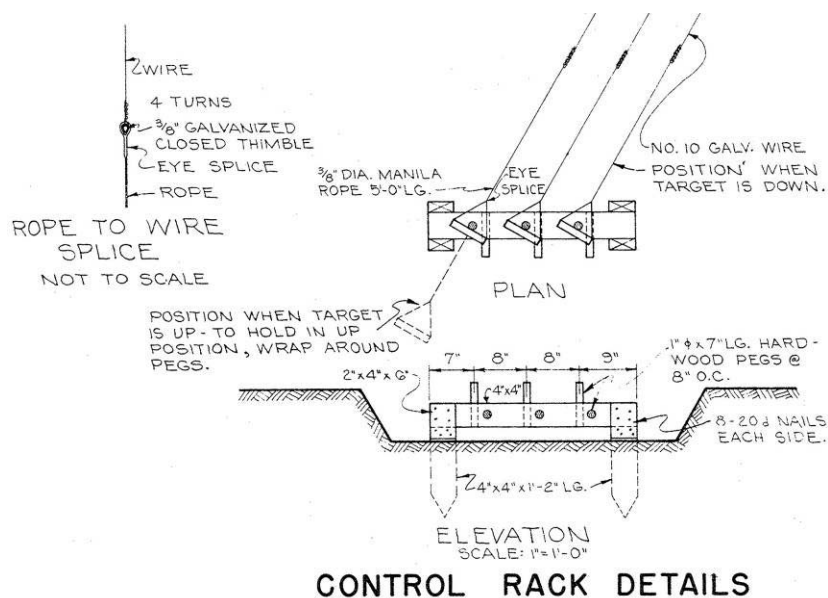


Figure 65. "Combat in cities" course target control rack details, 1952 (standard drawing 28-13-01 sheet 9 of 9; "Combat in cities" course, fence, wall and target details; 20 June 1952).

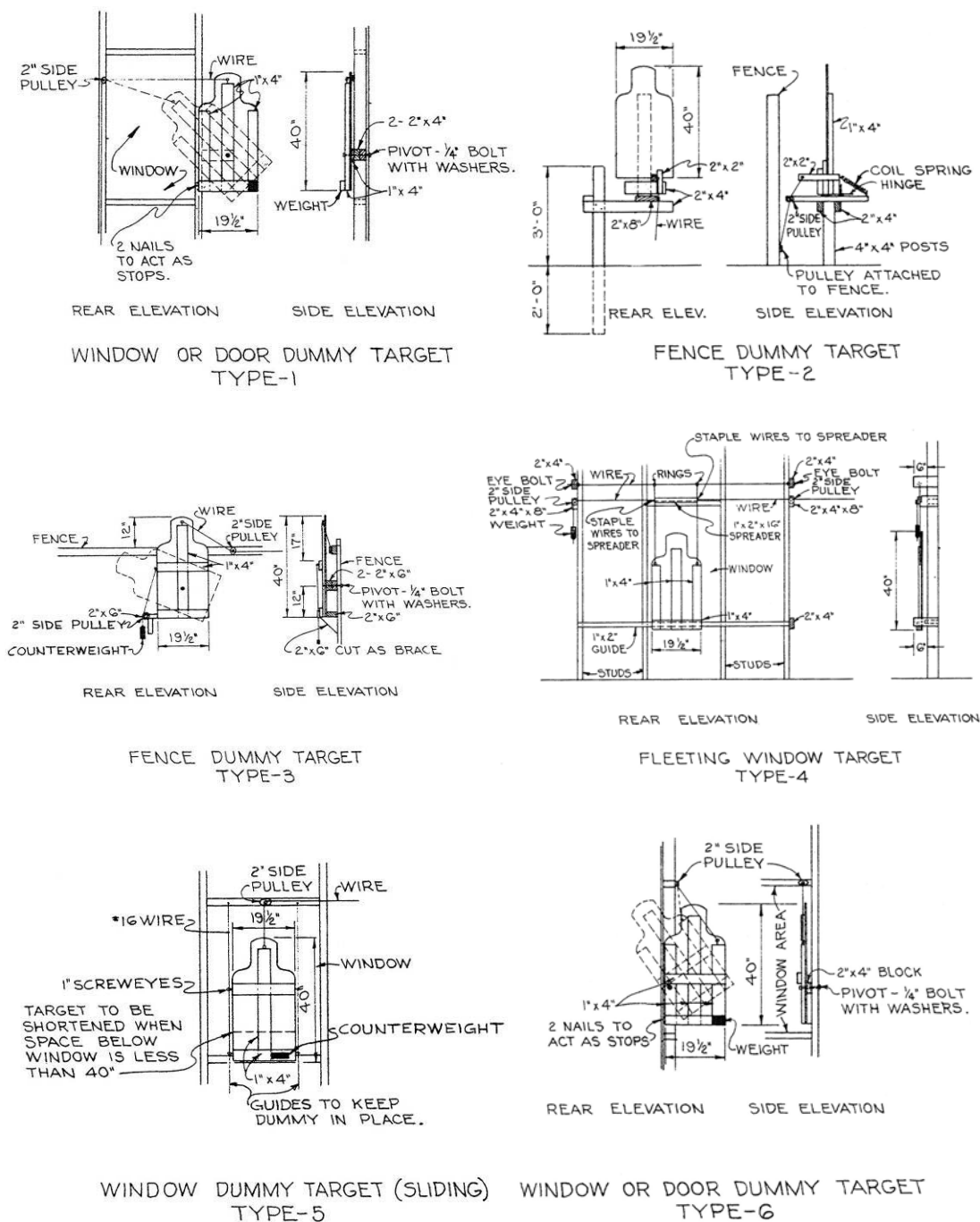


Figure 66. "Combat in cities" course, window, door and fence dummy targets, 1952 (standard drawing 28-13-01 sheet 9 of 9; "Combat in cities" course, fence, wall and target details; 20 June 1952).



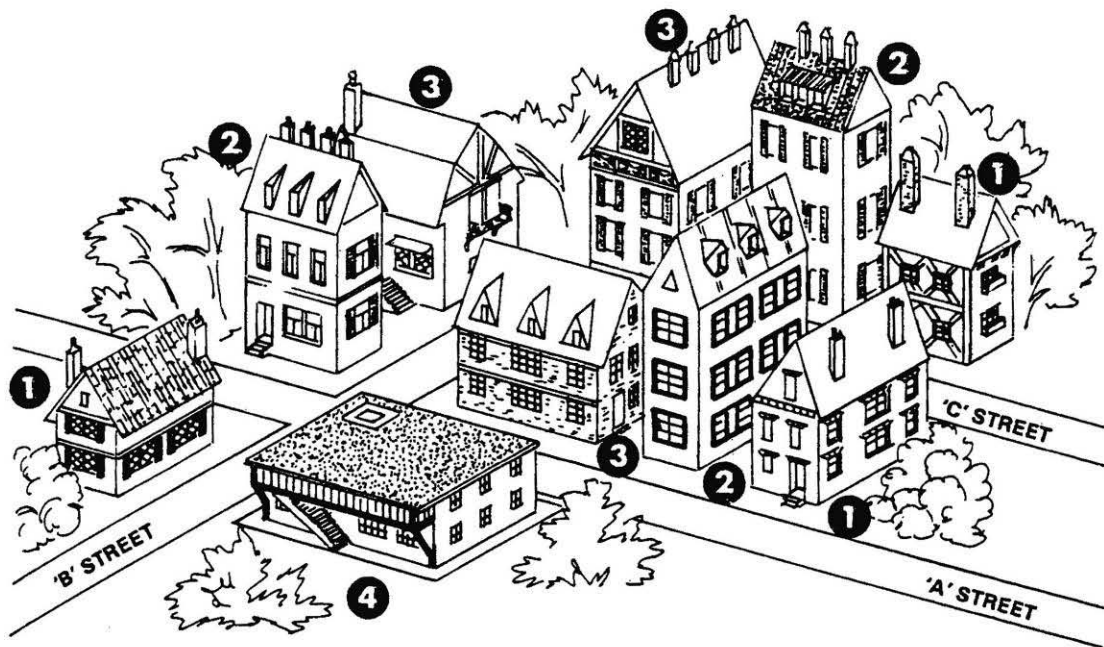
### Military operations in urban terrain (MOUT)



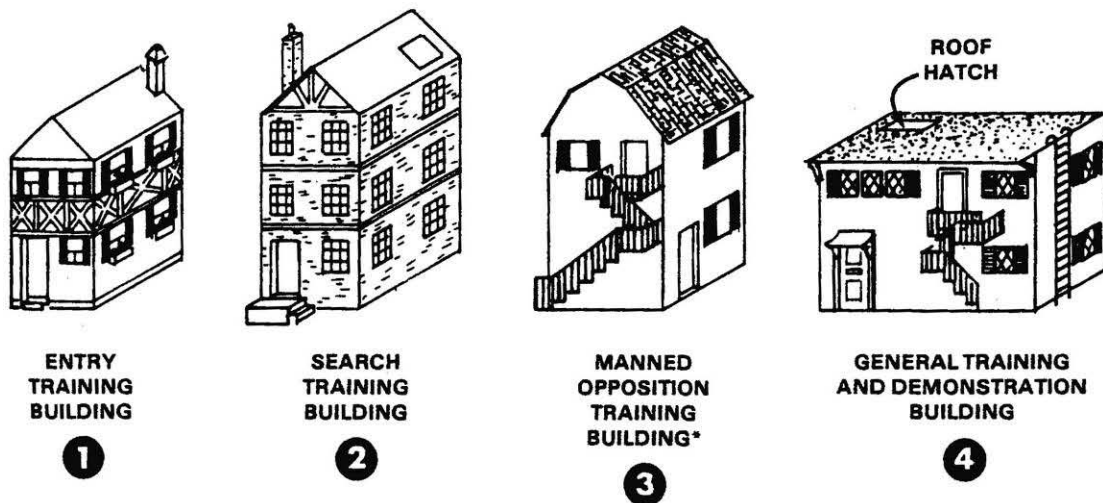
Figure 67. Marines attack aggressor forces in combat town at MCB Camp Lejeune, NC, 11 March 1977 (NARA College Park, RG 127-GG-970, box 35, photo A569115).



Figure 68. Marines rappel from a UH-1N Iroquois helicopter to an “enemy-held” building in combat town during hostage training for the Marine detachment from the guided missile cruiser USS Long Beach at Camp Pendleton, CA, 20 March 1979 (NARA College Park, RG 127-GG-603, box 24, photo A358416).



PLAN VIEW OF CITY



**\*STRUCTURE NEEDS SPECIAL SUPPORT ON FLOORS, ROOFS, AND AROUND WINDOWS FOR SAND-BAGS USED IN REINFORCED POSITIONS. STRUCTURE ALSO REQUIRES BASEMENT WITH CONNECTIONS TO ALL OTHER TYPE 3 BUILDINGS.**

Figure 69. Military operations in urbanized terrain (MOUT) facility, circa 1980 (TC 25-2, training ranges, 10 March 1980, p. 65).

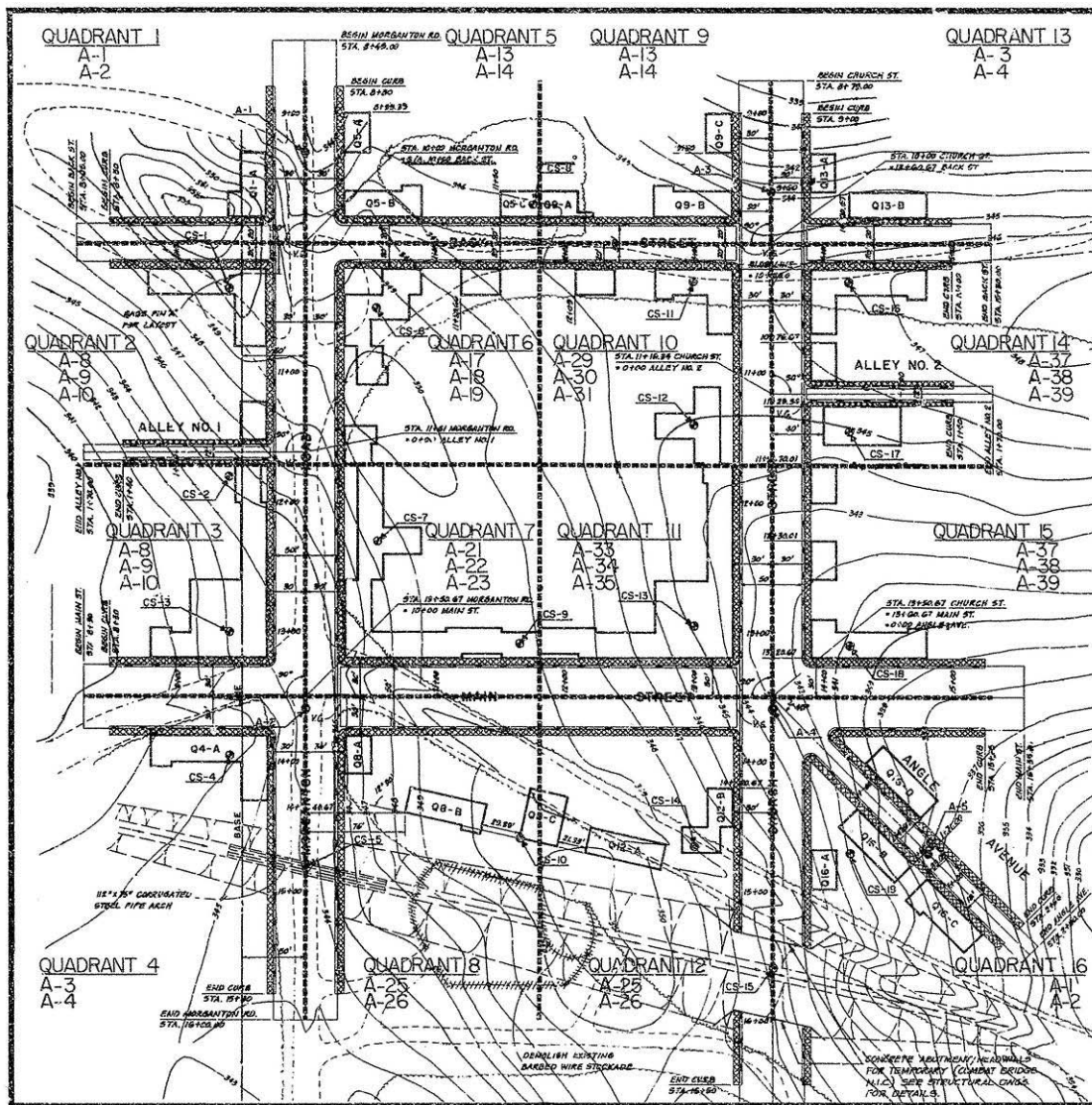
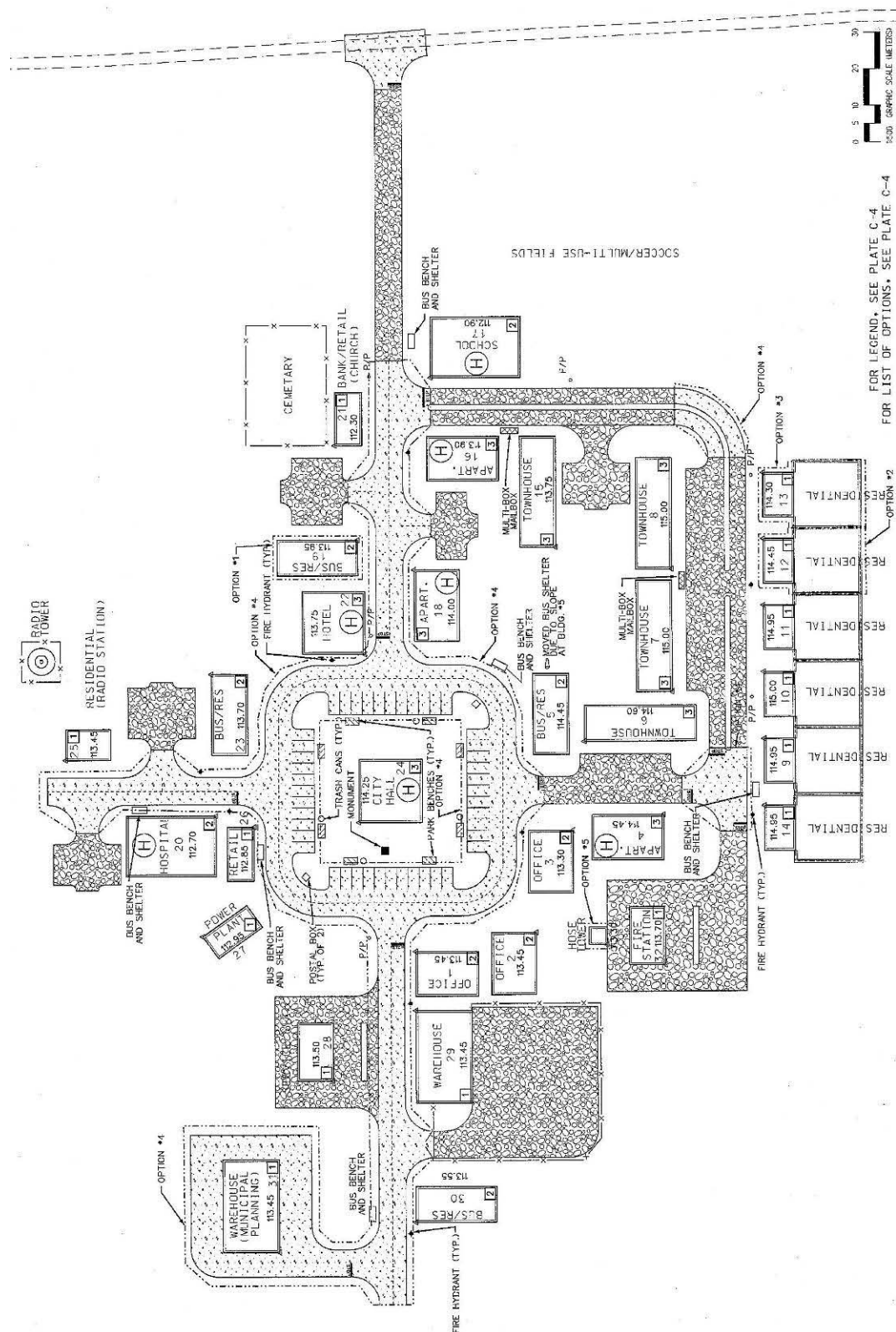


Figure 70. MOUT building location plan, Fort Bragg, NC, 1981 (CON28-09-04 sheet 2 of 55; military operations in urban terrain, building location plan and index of drawings; 8 June 1981).



## MOUT buildings

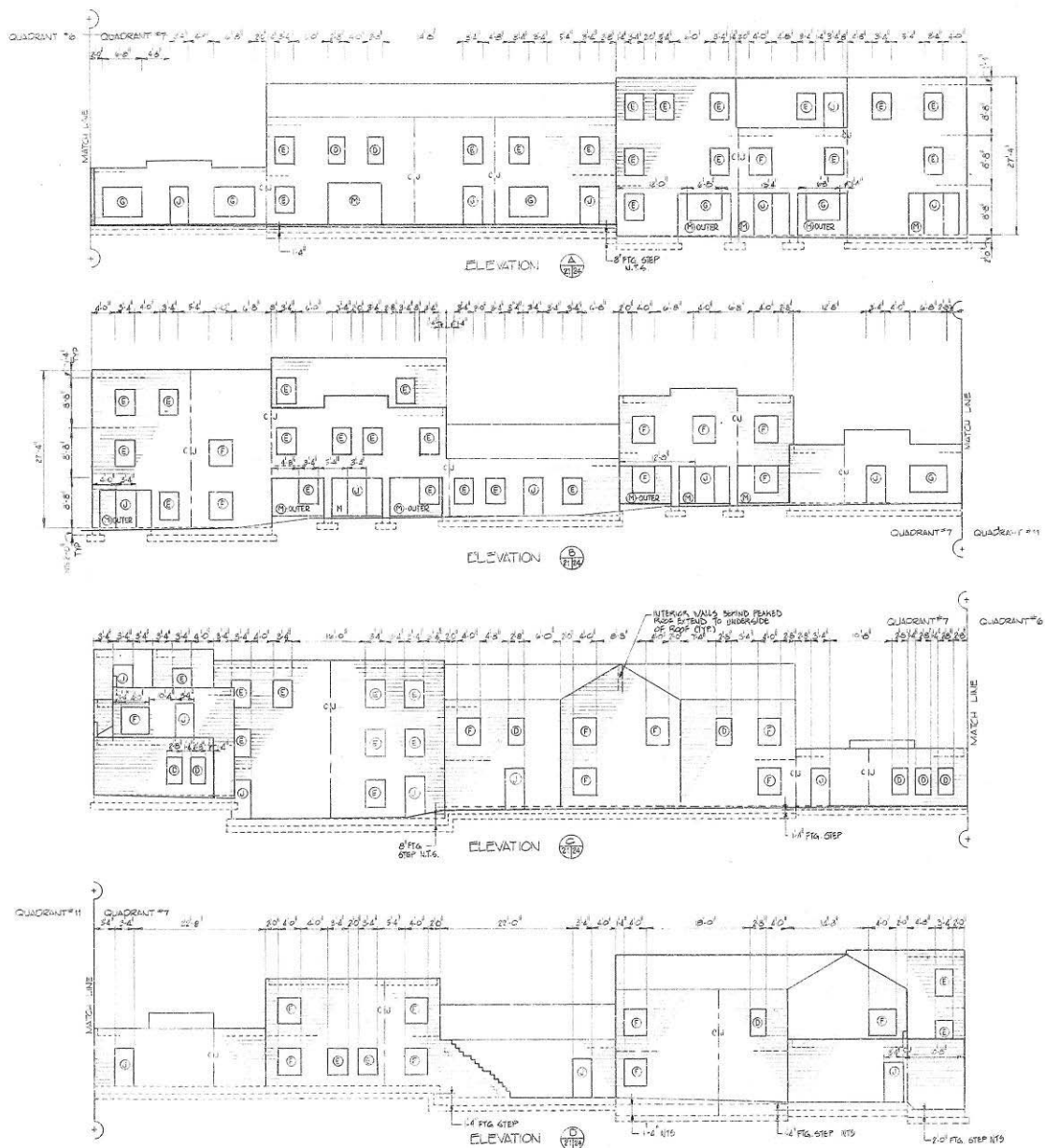


Figure 72. MOUT quadrant 7 building elevations, Fort Bragg, NC, 1982 (CON28-09-04 sheet 35 of 55; military operations in urban terrain, elevations, quadrant 7; 24 September 1982).

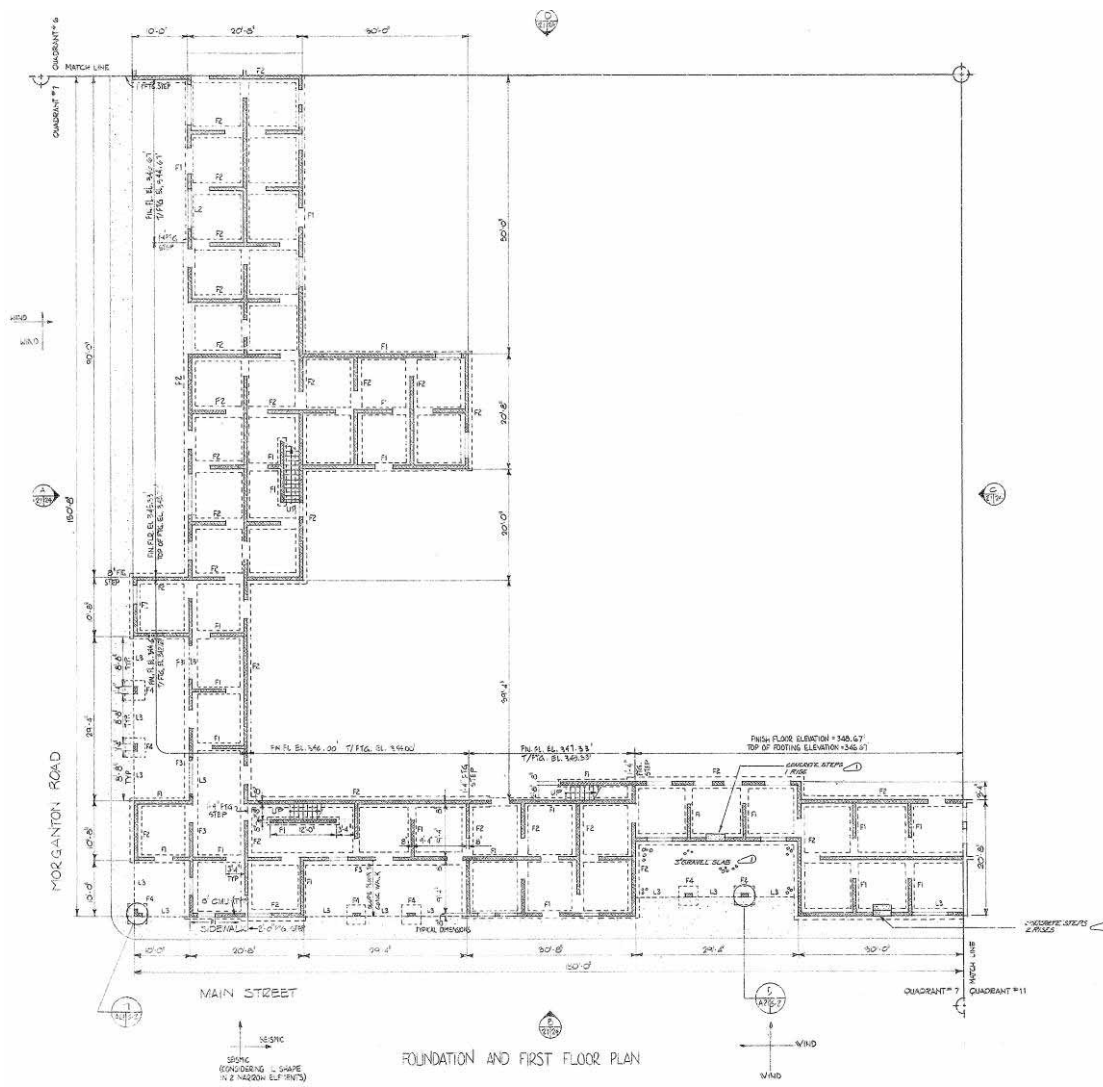
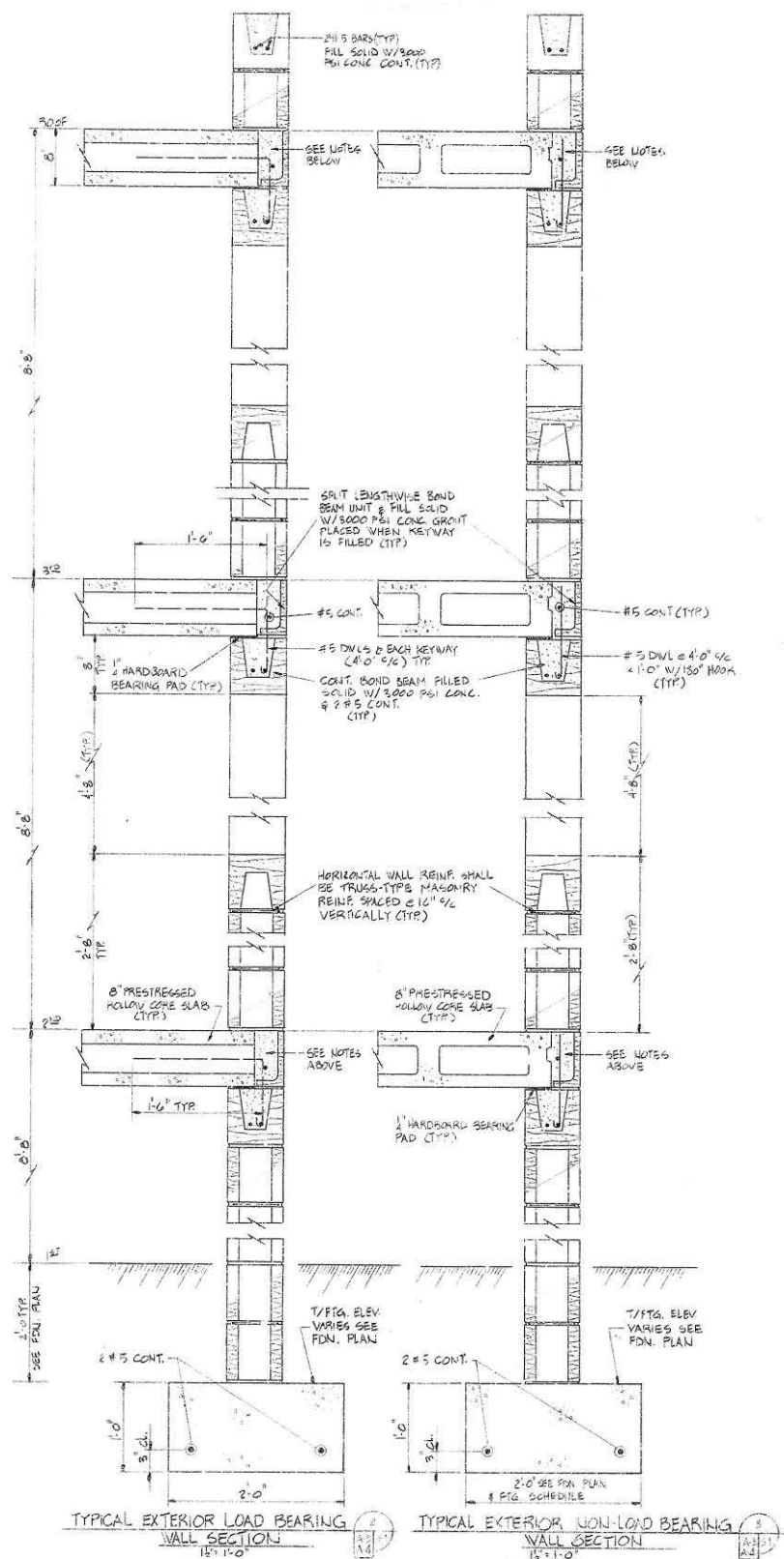


Figure 73. MOUT quadrant 7 buildings foundation and first floor plan, Fort Bragg, NC, 1982 (CON28-09-04 sheet 32 of 55; military operations in urban terrain, foundation and first floor plan, quadrant 7; 24 September 1982).







# School/hospital

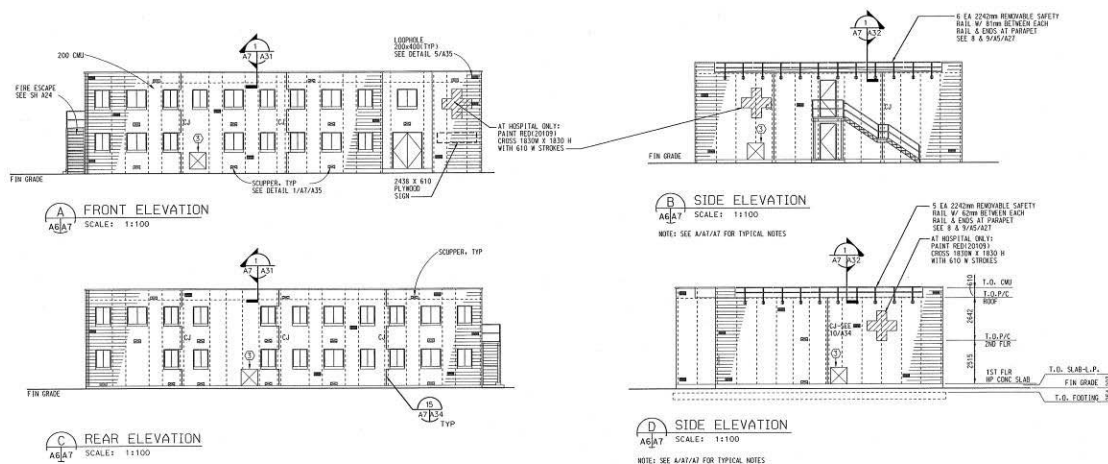


Figure 76. MOU training complex school building elevations, Fort Bragg, NC, 2002 (standard drawing 179-97-01 A-7 sheet 59; military operations in urban terrain, MOU training complex, school/hospital school elevations; 29 January 2002).

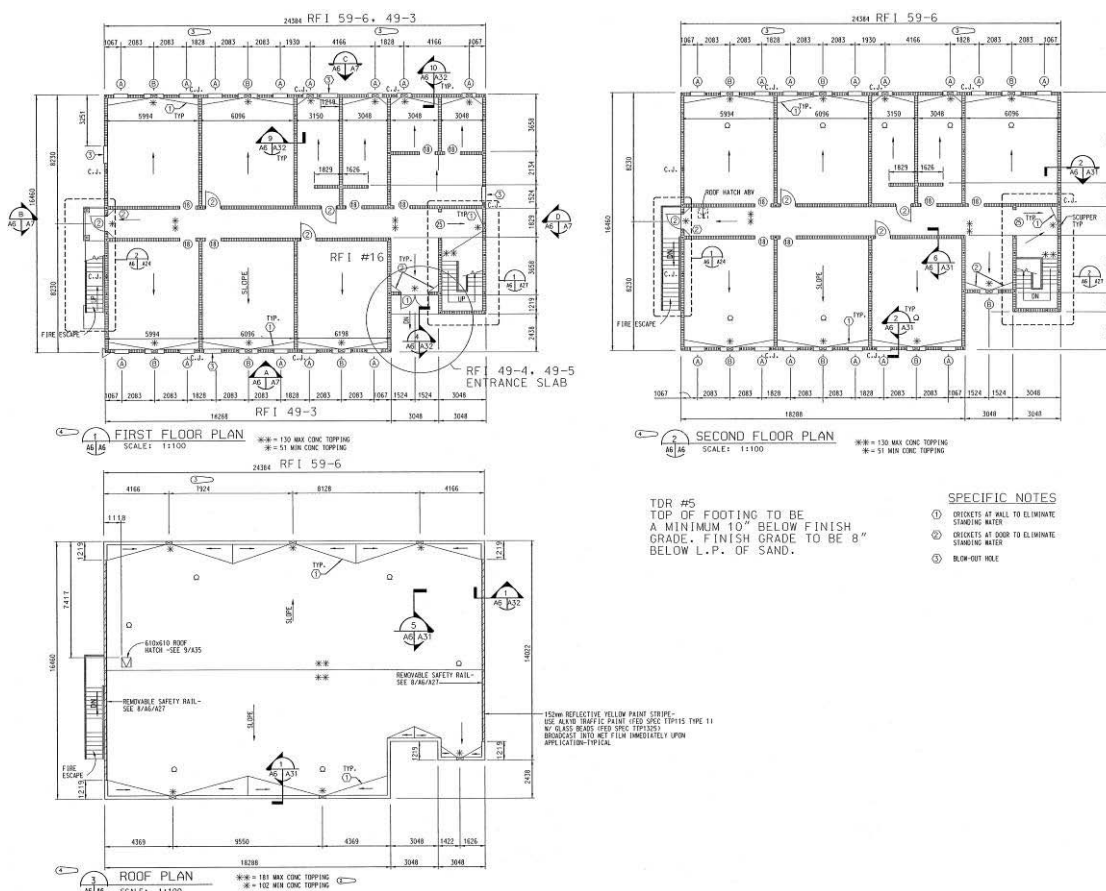


Figure 77. MOU training complex school/hospital building plans, Fort Bragg, NC, 2002 (standard drawing 179-97-01 A-6 sheet 58; military operations in urban terrain, MOU training complex, school/hospital plans; 29 January 2002).

## Radio station/tower

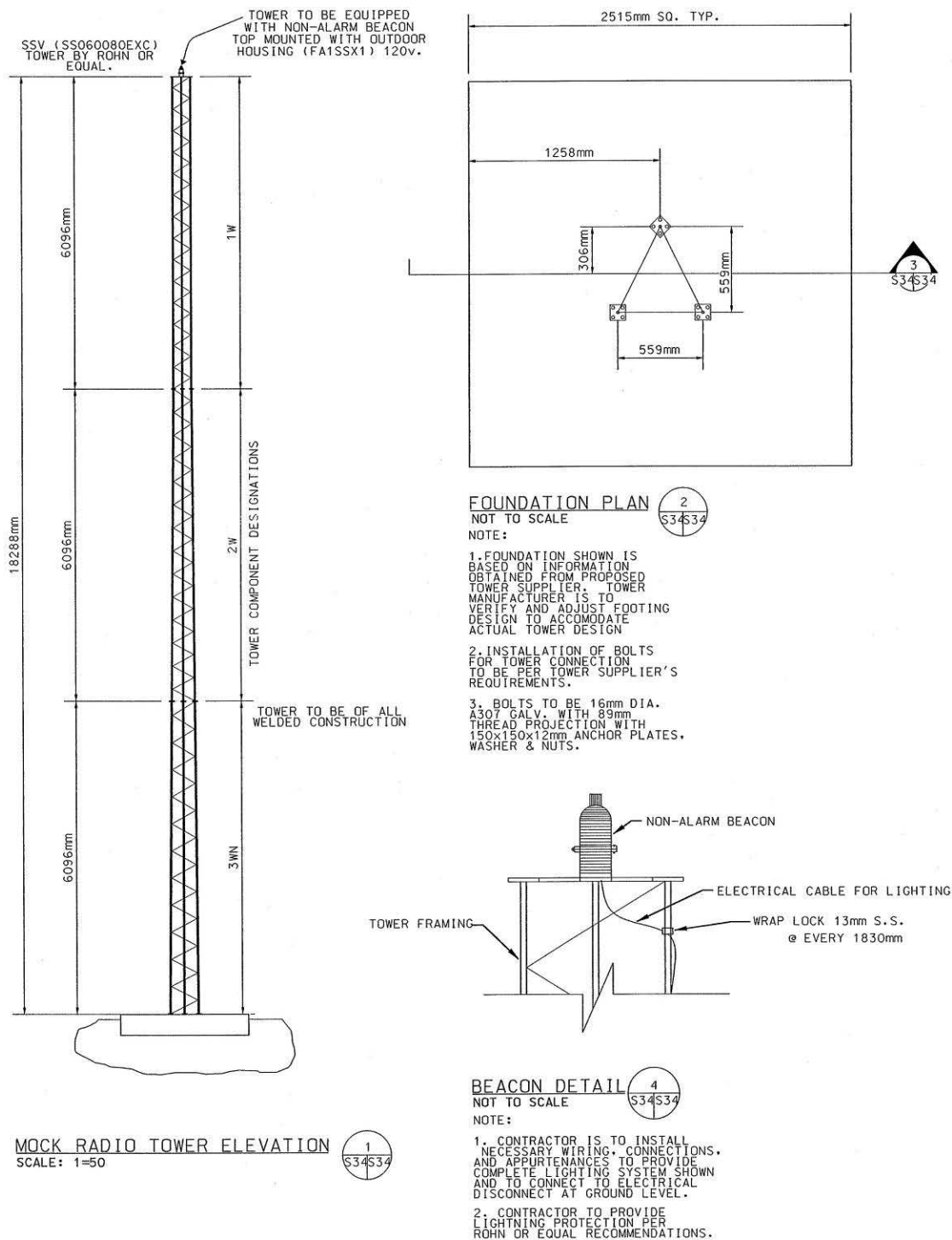


Figure 78. MOUT training complex mock radio tower foundation plan, elevation, and beacon detail, Fort Bragg, NC, 2002 (standard drawing 179-97-01 S-34 sheet 124; military operations in urban terrain, MOUT training complex, mock radio station tower foundation, elevation, and details; 29 January 2002).

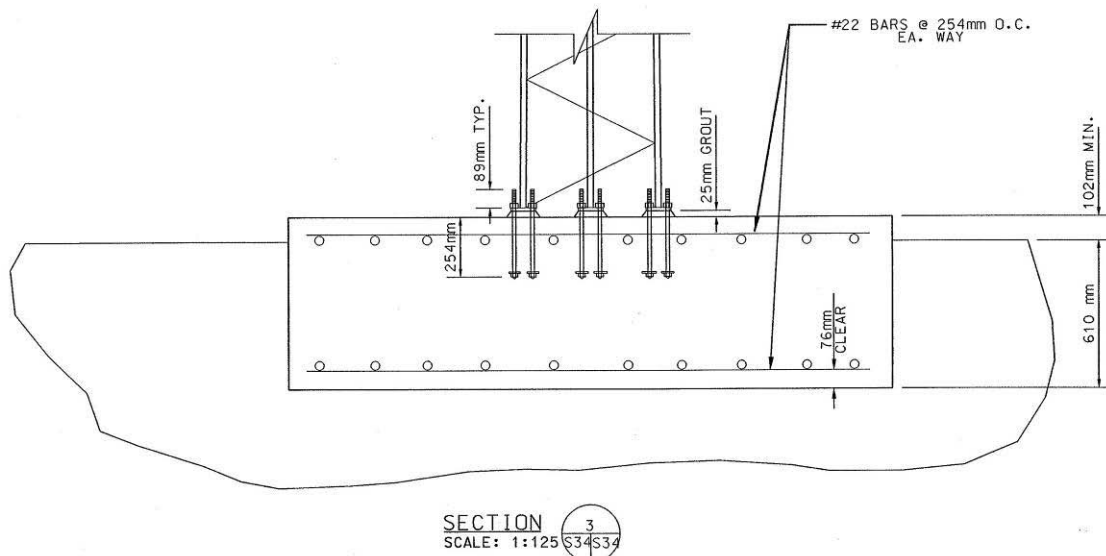


Figure 79. MOU training complex mock radio tower foundation section, Fort Bragg, NC, 2002 (standard drawing 179-97-01 S-34 sheet 124; military operations in urban terrain, MOU training complex, mock radio station tower foundation, elevation, and details; 29 January 2002).

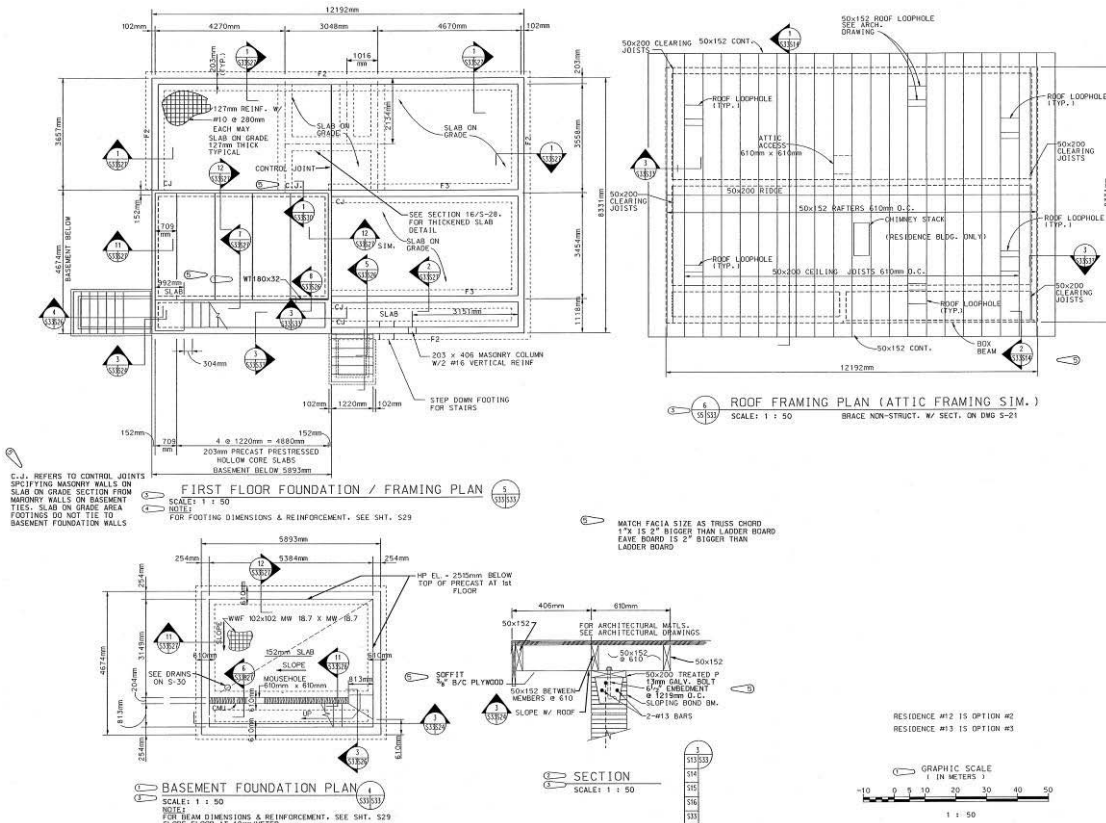


Figure 80. MOU training complex radio station foundation and framing plan, Fort Bragg, NC, 2002 (standard drawing 179-97-01 S-33 sheet 123; military operations in urban terrain, MOU training complex, radio station foundation and framing plan; 29 January 2002).

## Fences

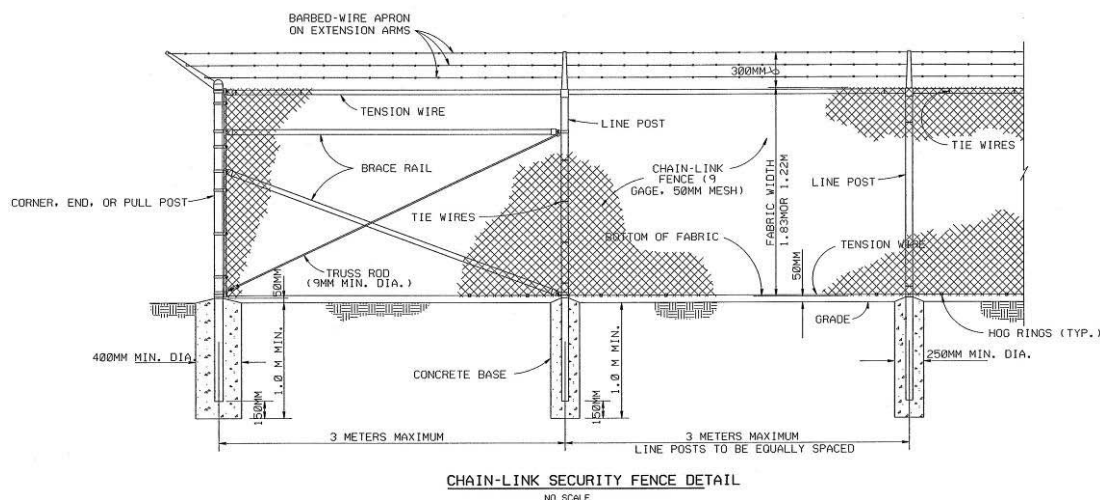


Figure 81. MOUT training complex chain link security fence, Fort Bragg, NC, 2002 (standard drawing 179-97-01 C-35 sheet 37; military operations in urban terrain, MOUT training complex, fence details; 29 January 2002).

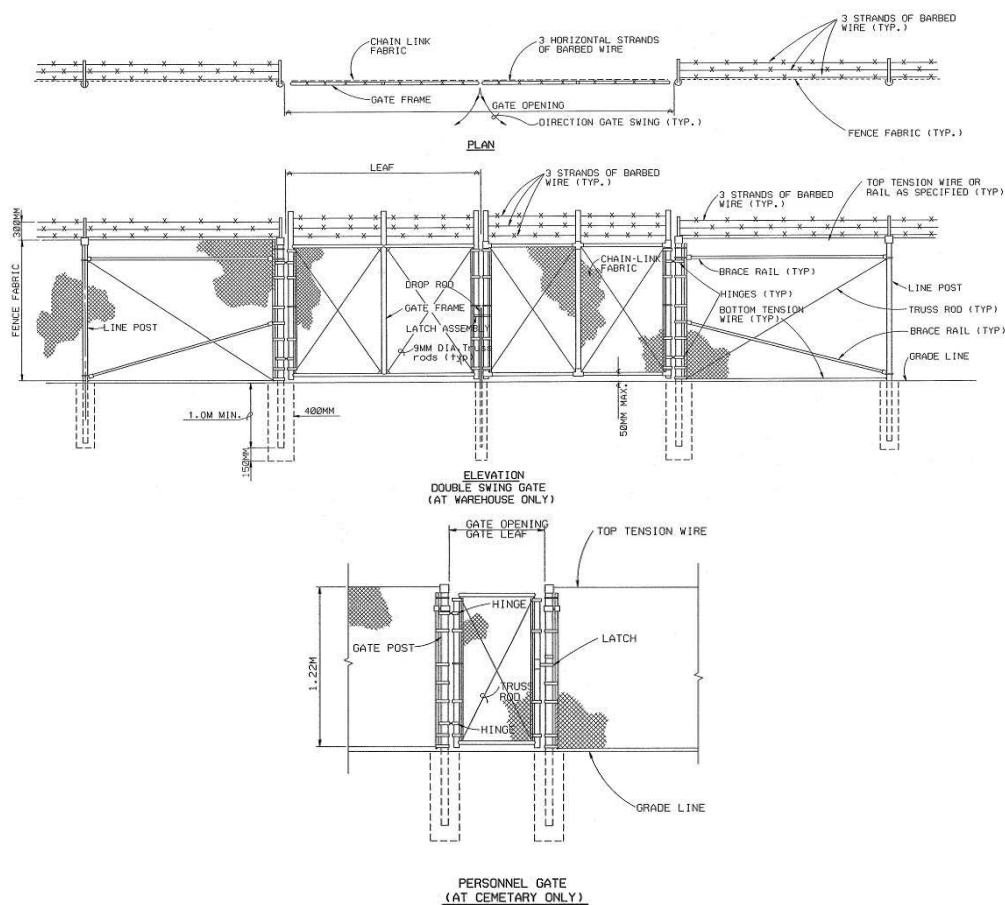


Figure 82. MOUT training complex double swing gate and personnel gate, Fort Bragg, NC, 2002 (standard drawing 179-97-01 C-36 sheet 38; military operations in urban terrain, MOUT training complex, fence gate details; 29 January 2002).

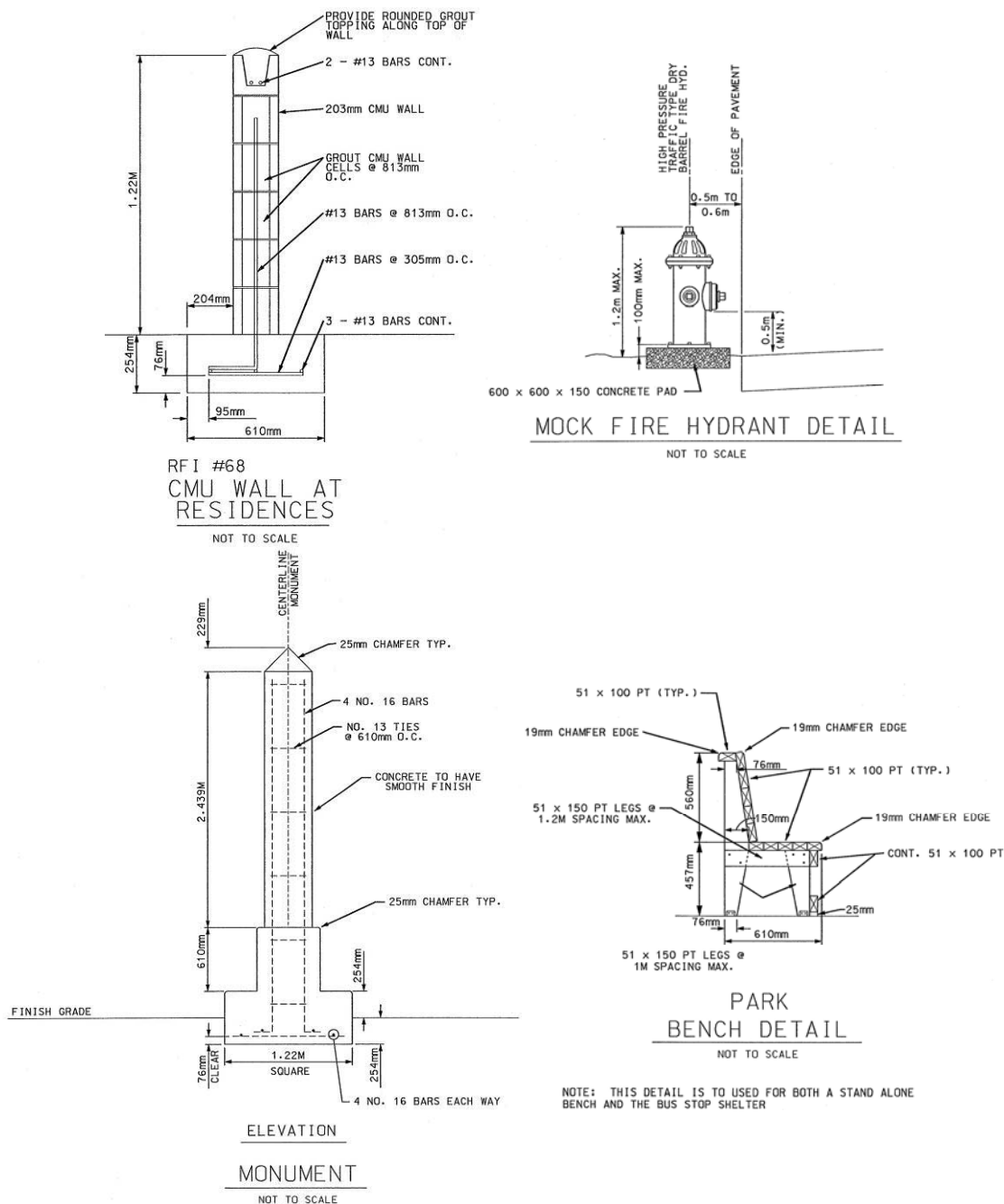
*Other accessories*

Figure 83. MOUT training complex CMU Wall at residences, mock fire hydrant detail, monument elevation, and park bench detail, Fort Bragg, NC, 2002 (standard drawing 179-97-01 C-18 sheet 20; military operations in urban terrain, MOUT training complex, accessory details; 29 January 2002).

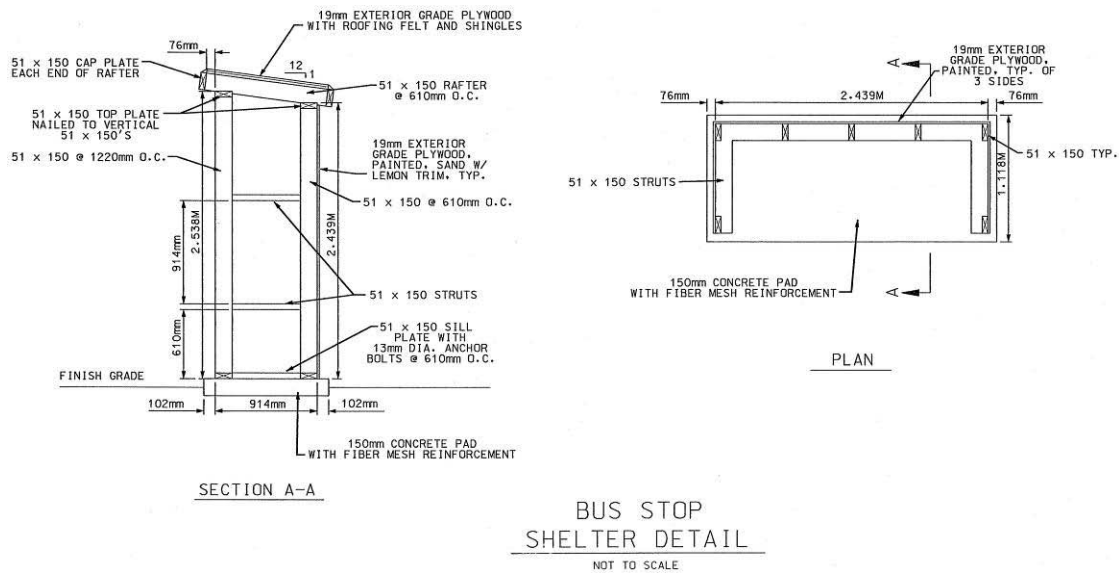


Figure 84. MOUT training complex bus stop shelter, Fort Bragg, NC, 2002 (standard drawing 179-97-01 C-18 sheet 20; military operations in urban terrain, MOUT training complex, accessory details; 29 January 2002).

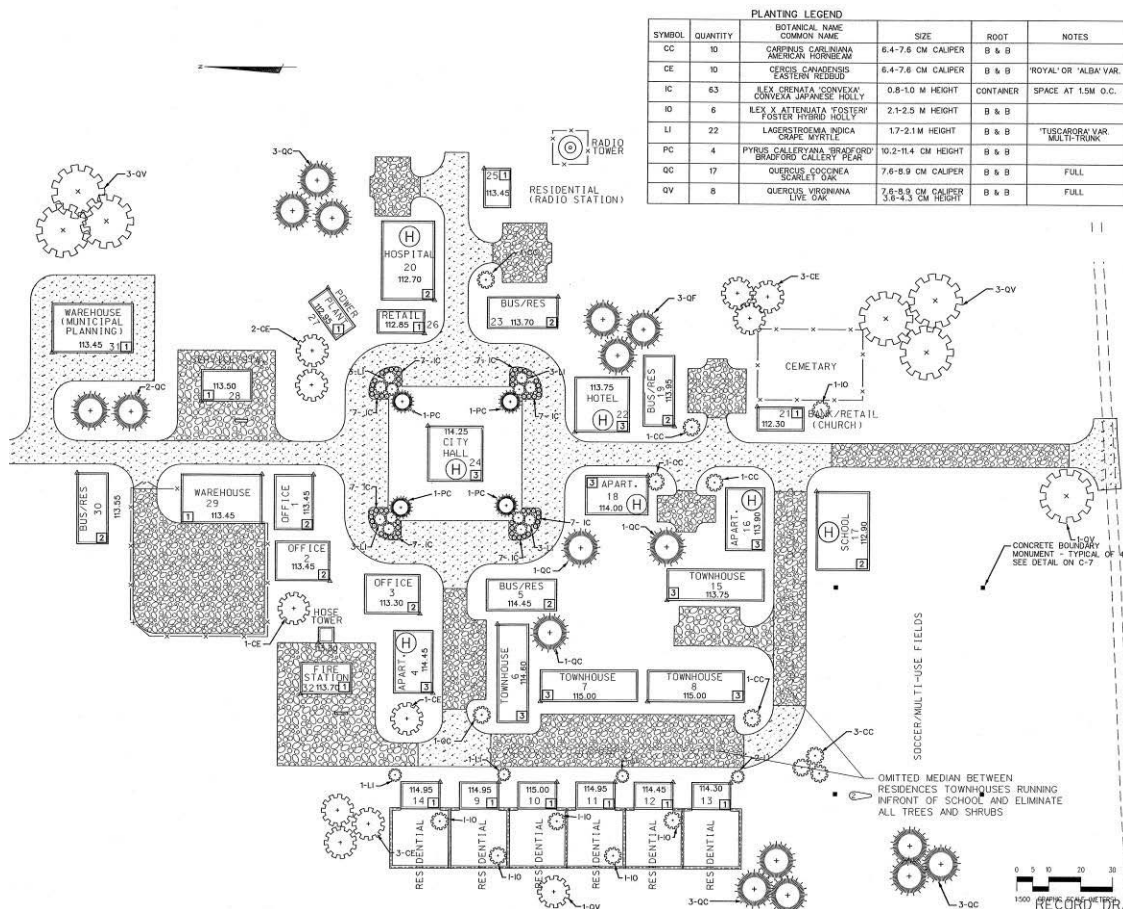


Figure 85. MOUT training complex landscaping, Fort Bragg, NC, 2002 (standard drawing 179-97-01 L-1 sheet 39; military operations in urban terrain, MOUT training complex, landscaping plan; 29 January 2002).

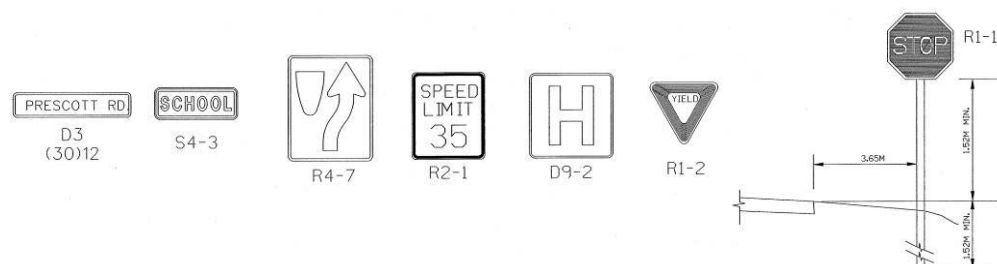


Figure 86. MOU training complex mock road signage, Fort Bragg, NC, 2002 (standard drawing 179-97-01 C-16 sheet 18; military operations in urban terrain, MOU training complex, signage and striping details; 29 January 2002).

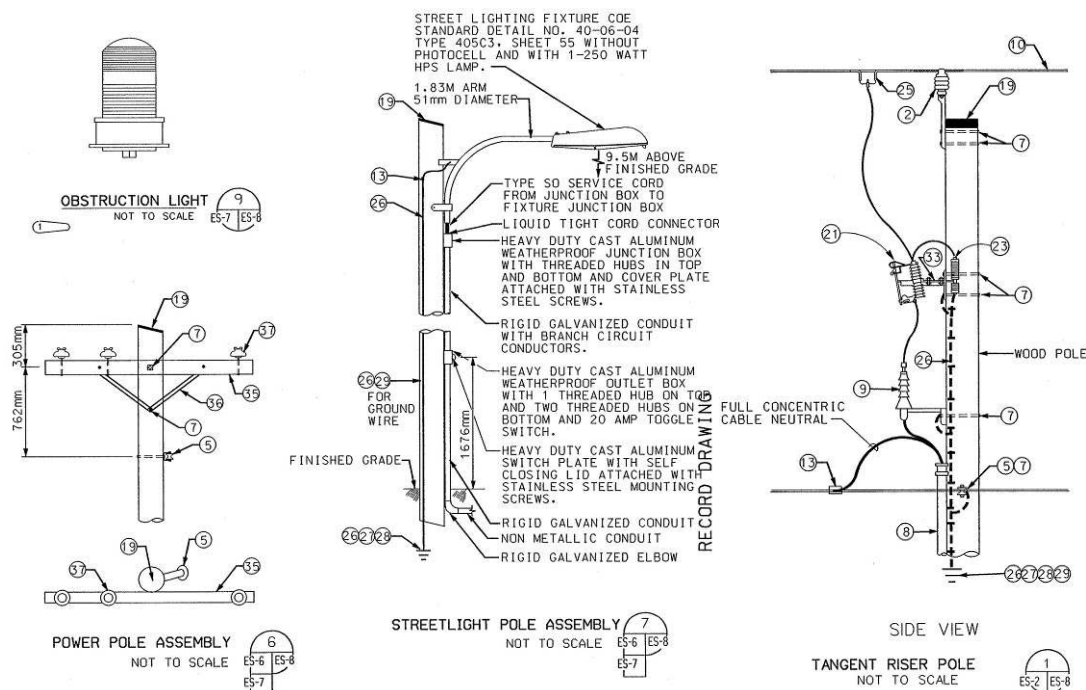


Figure 87. MOU training complex obstruction light, power pole and streetlight, tangent riser pole, Fort Bragg, NC, 2002 (standard drawing 179-97-01 ES-48 sheet 48; military operations in urban terrain, MOU training complex, exterior electrical details; 29 January 2002).

## Mock sites

### Air movement training mock-ups

Cargo crews and other soldiers were trained how to load and secure various cargo in air movement operations on a variety of mock-up planes. These mock-ups usually included loading ramps, plane floors with fasteners, and seating or other interior features (see examples below).

*R5D Cargo plane hatch and interior*



Figure 88. Mock up of cargo hatch and interior of R5D cargo plane at Camp Pendleton, CA, 23 March 1948 (NARA College Park, RG 127-GC, box 11, photo 407108).

*C-119 Mock-up for air movement training (frame construction)*

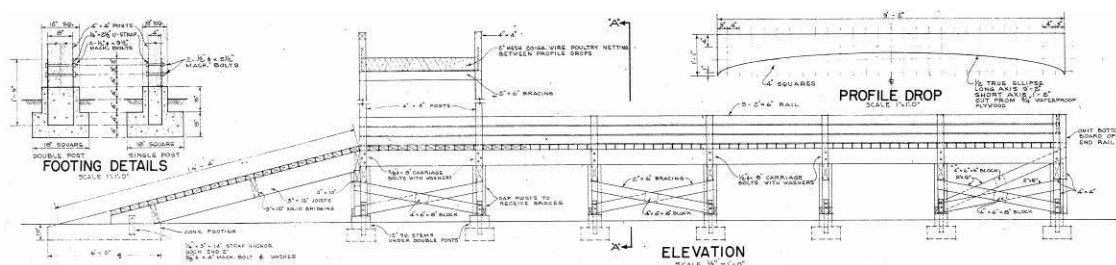


Figure 89. C-119 mock-up for air movement training, frame construction, elevation, and details, Fort Bragg, NC, 1951 (standard drawing 28-13-53 sheet 1 of 1; C-119 mock-up for air movement training, frame construction, plans, and details; 7 December 1951).



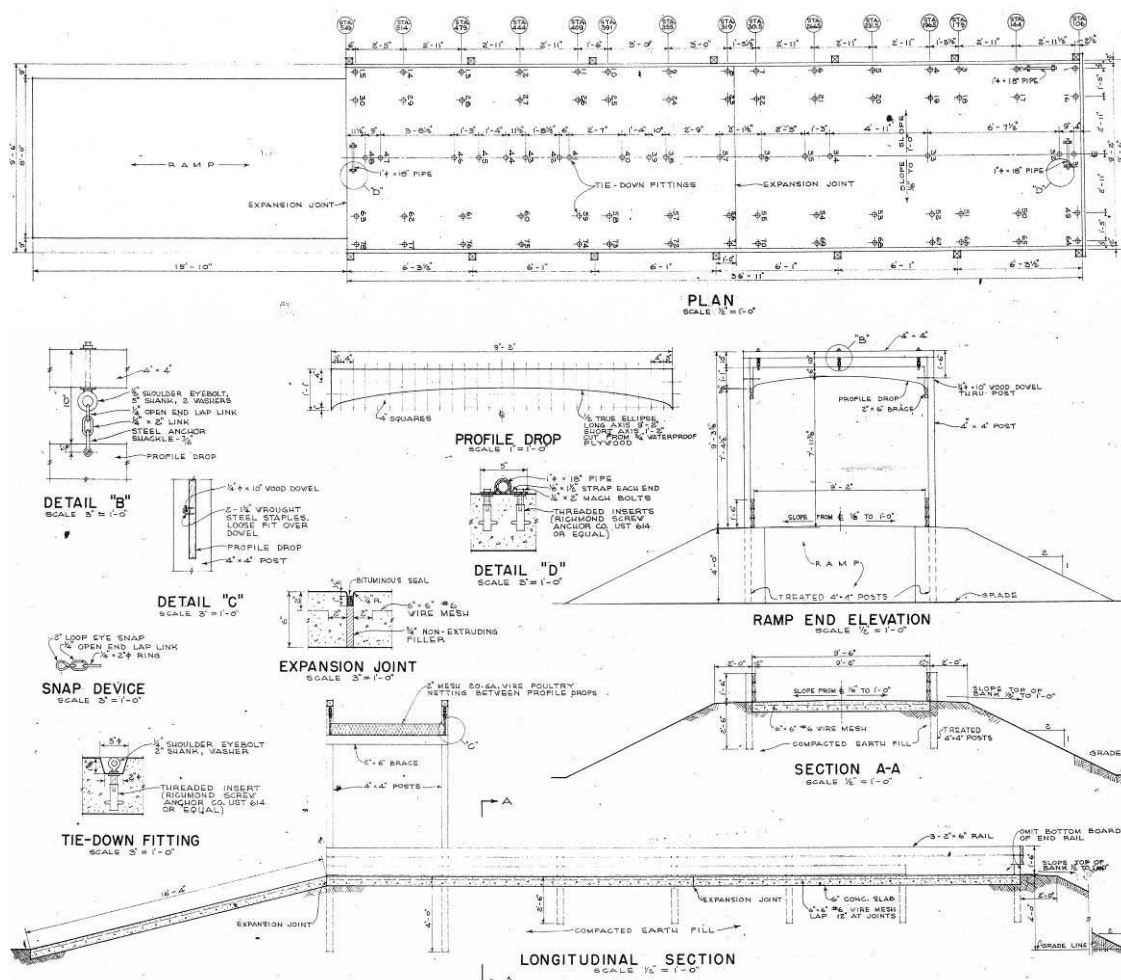


Figure 90. C-119 mock-up for air movement training, frame construction, framing plan, Fort Bragg, NC, 1951 (standard drawing 28-13-53 sheet 1 of 1; C-119 mock-up for air movement training, frame construction, plans, and details; 7 December 1951).

*C-123 Mock-up for air movement training (frame construction)*

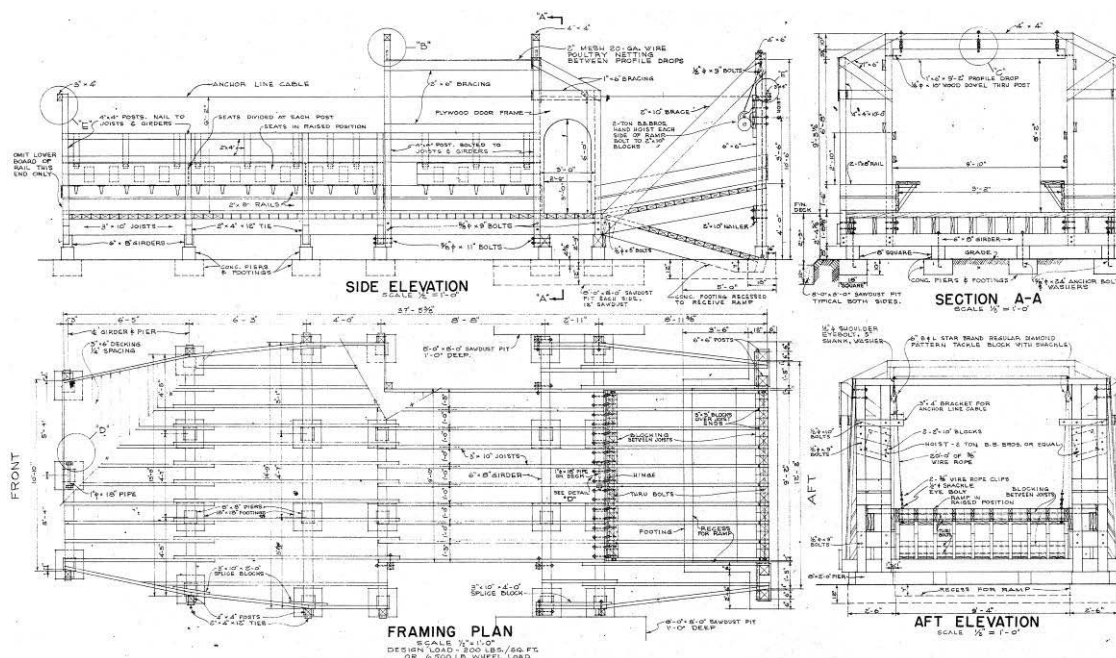


Figure 91. C-123 mock-up for airborne training, frame construction, framing plan, section, and elevations, Fort Bragg, NC, 1951 (standard drawing 28-13-58 sheet 1 of 2; C-123 mock-up for airborne training, frame construction, plans, elevations, and section; 7 December 1951).

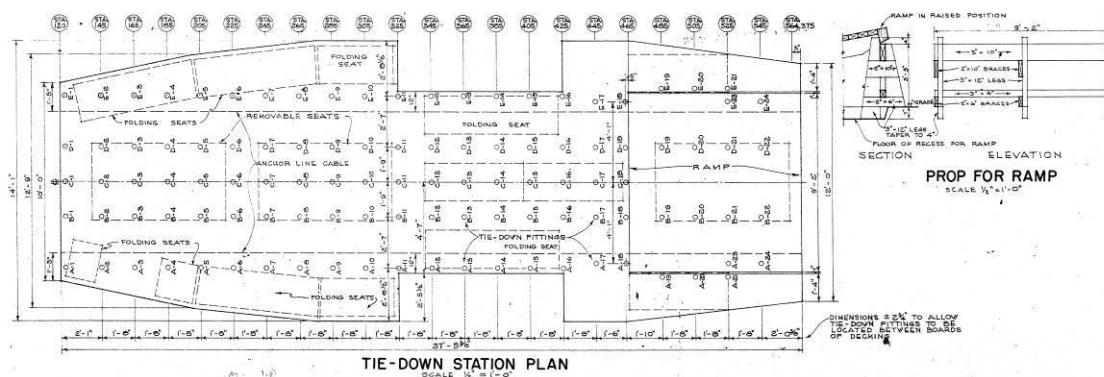


Figure 92. C-123 mock-up for airborne training, frame construction, tie-down station plan, section, and elevations, Fort Bragg, NC, 1951 (standard drawing 28-13-58 sheet 1 of 2; C-123 mock-up for airborne training, frame construction, plans, elevations, and section; 7 December 1951).

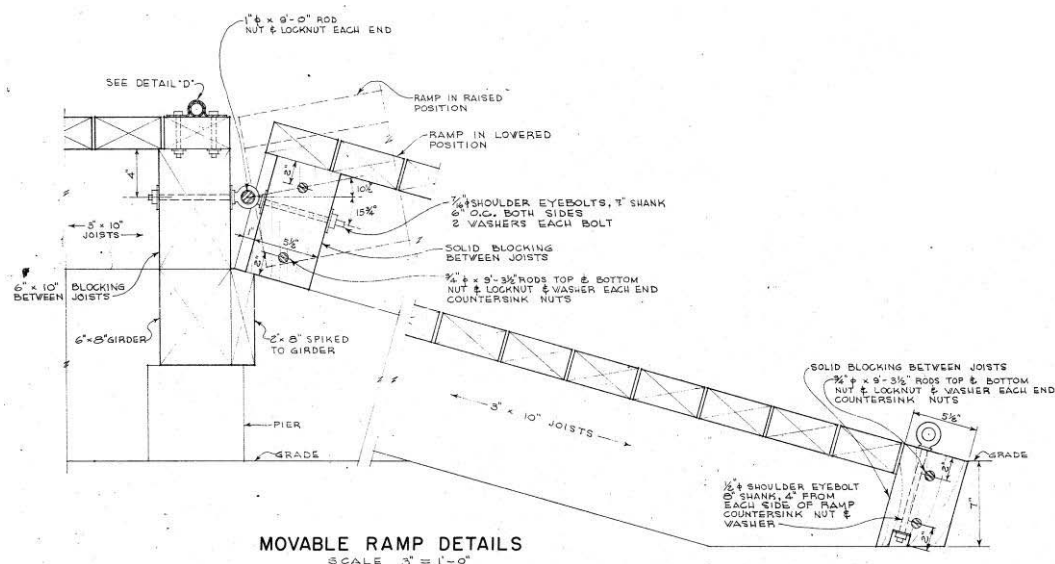


Figure 93. C-123 mock-up for airborne training, frame construction, movable ramp details, Fort Bragg, NC, 1951 (standard drawing 28-13-58 sheet 2 of 2; C-123 mock-up for airborne training, frame construction, details; 7 December 1951).

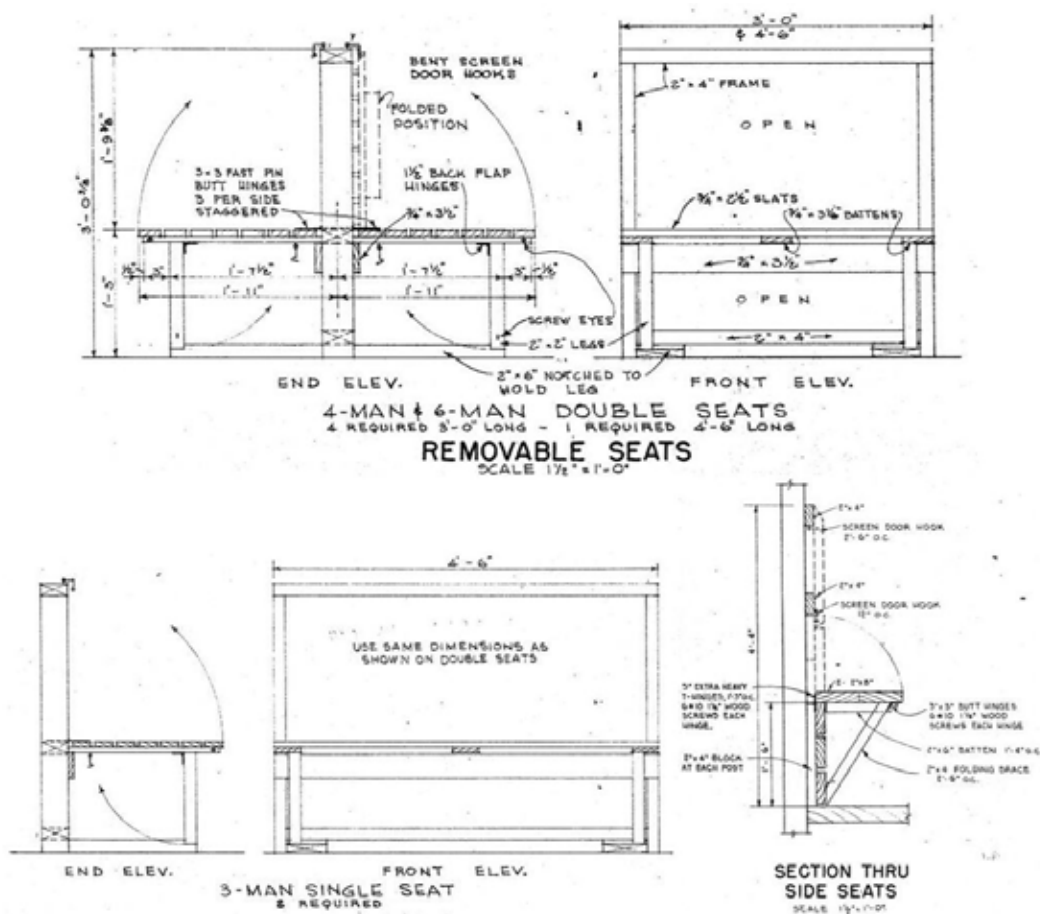


Figure 94. C-123 mock-up for airborne training, frame construction, removable seats, Fort Bragg, NC, 1951 (standard drawing 28-13-58 sheet 2 of 2; C-123 mock-up for airborne training, frame construction, details; 7 December 1951).

*C-123 Concrete mock-up for air movement training (concrete alternate)*

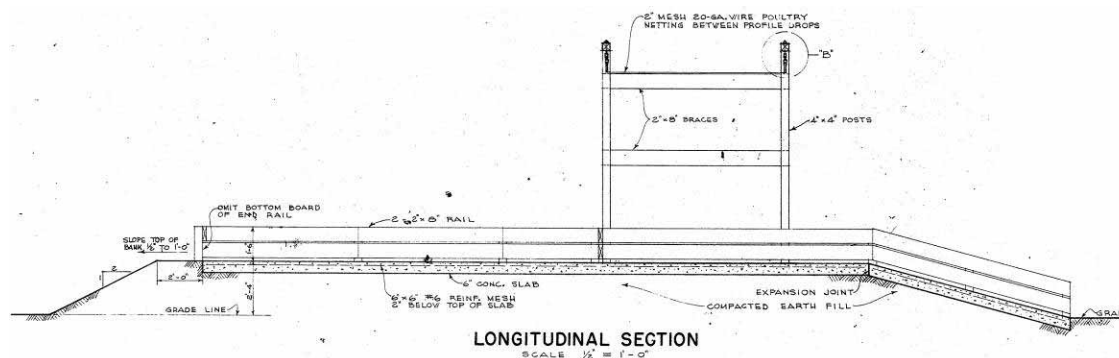


Figure 95. C-123 concrete mock-up for air movement training, ramp longitudinal section, Fort Bragg, NC, 1951 (standard drawing 28-13-57a sheet 1 of 1; C-123 mock-up for air movement training, concrete alternate, slab on fill; 7 December 1951).

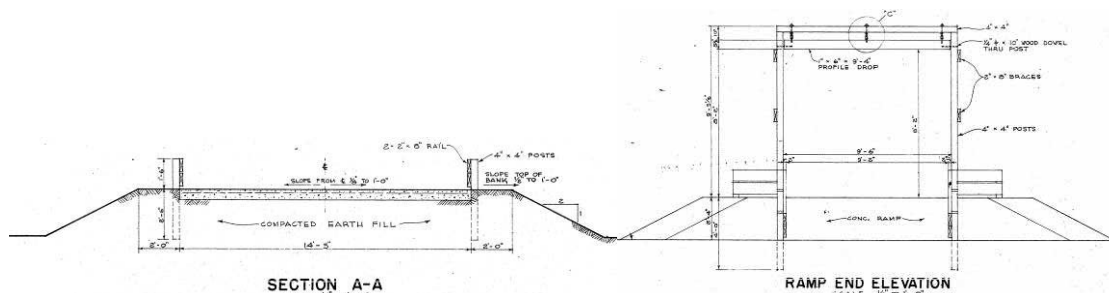


Figure 96. C-123 concrete mock-up for air movement training, ramp section a and end elevation, Fort Bragg, NC, 1951 (standard drawing 28-13-57a sheet 1 of 1; C-123 mock-up for air movement training, concrete alternate, slab on fill; 7 December 1951).

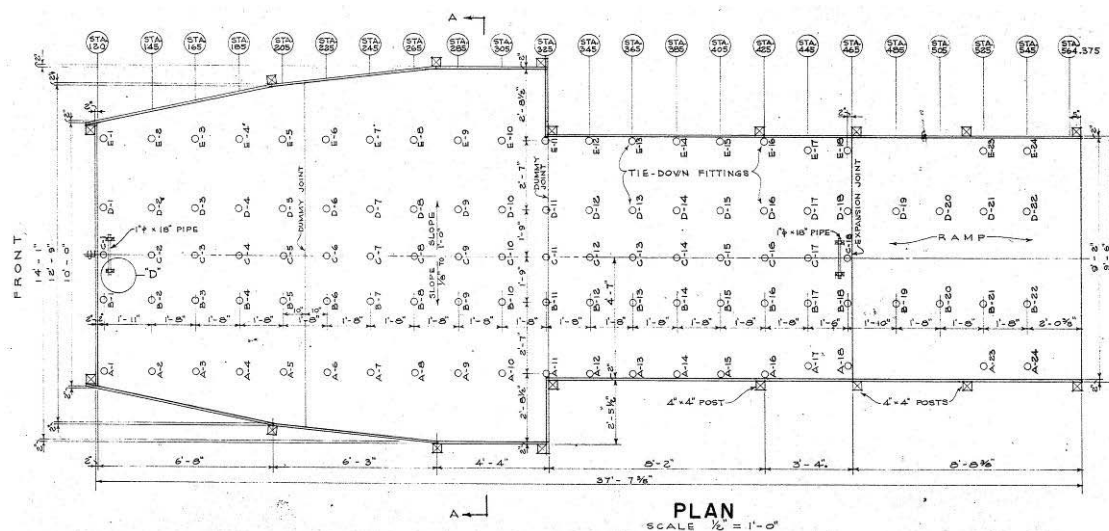


Figure 97. C-123 concrete mock-up for air movement training, ramp plan, Fort Bragg, NC, 1951 (standard drawing 28-13-57a sheet 1 of 1; C-123 mock-up for air movement training, concrete alternate, slab on fill; 7 December 1951).

### C-124 Concrete mock-up for air movement training

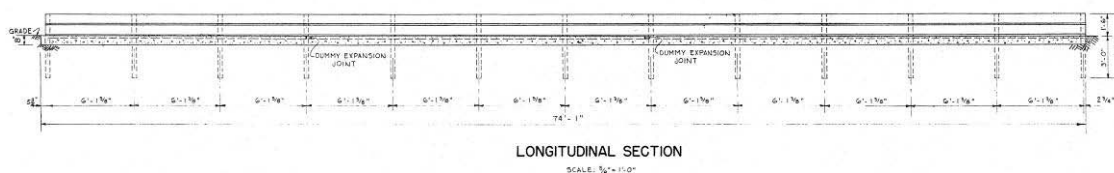


Figure 98. C-124 concrete mock-up for air movement training longitudinal section, 1951 (standard drawing 2-13-60 sheet 1; C-124 mock-up for air movement training, concrete plan, sections, and details; 7 December 1951). (NARA College Park, RG 111-SC WWII, box 241, photo SC413207).

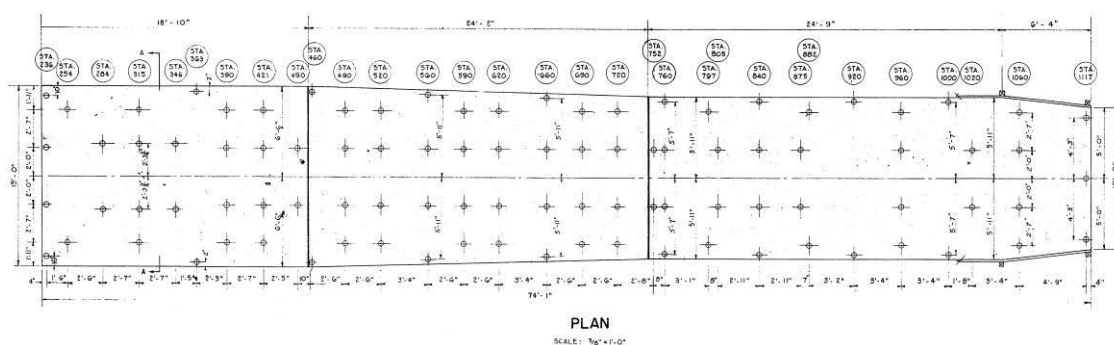


Figure 99. C-124 concrete mock-up for air movement training plan, 1951 (standard drawing 2-13-60 sheet 1; C-124 mock-up for air movement training, concrete plan, sections, and details; 7 December 1951). (NARA College Park, RG 111-SC WWII, box 241, photo SC413207).

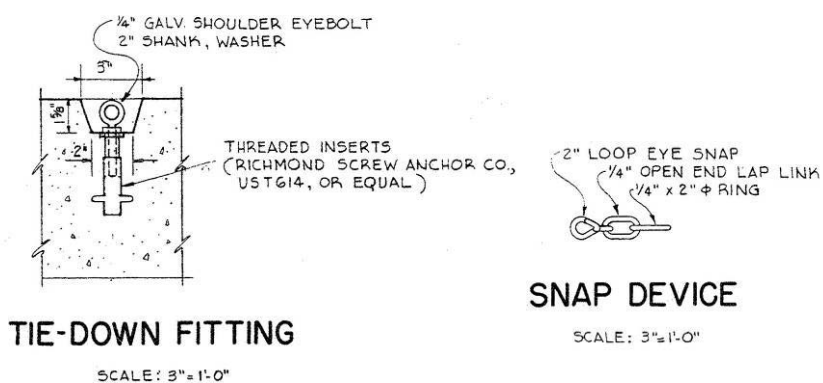


Figure 100. C-124 concrete mock-up for air movement training, snap device and tie-down fitting details, 1951 (standard drawing 2-13-60 sheet 1; C-124 mock-up for air movement training, concrete plan, sections, and details; 7 December 1951). (NARA College Park, RG 111-SC WWII, box 241, photo SC413207).

## Aerial Bombing Mock-Ups

Mock buildings, ships, and cities were built as realistic targets for bomber training.

*Target shack*

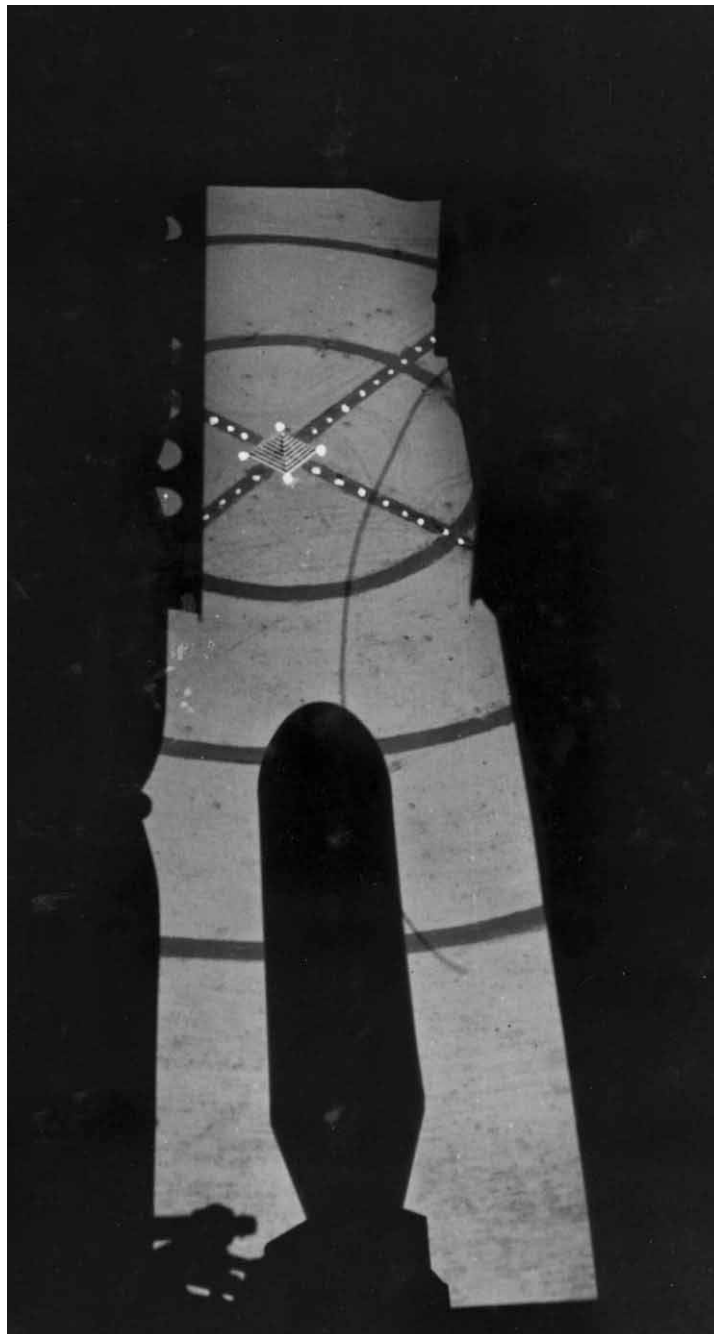


Figure 101. Bomb drops through the bomb-bay door and floats down toward the target with shack in the center; the wire is attached to the plane and releases the percussion cap that will explode on hitting the ground at Victorville Army Flying School, CA, 17 August 1942 (NARA College Park, RG 342-FH, box 2201, photo 4A-17048).



Figure 102. A bomb crashes down inside the inner circle just short of the shack at Midland Army Air Field, TX, 29 June 1942 (NARA College Park, RG 342-FH, box 2201, photo 4A-17087).

*Japanese freighter skip-bomb target (Eglin Field)*

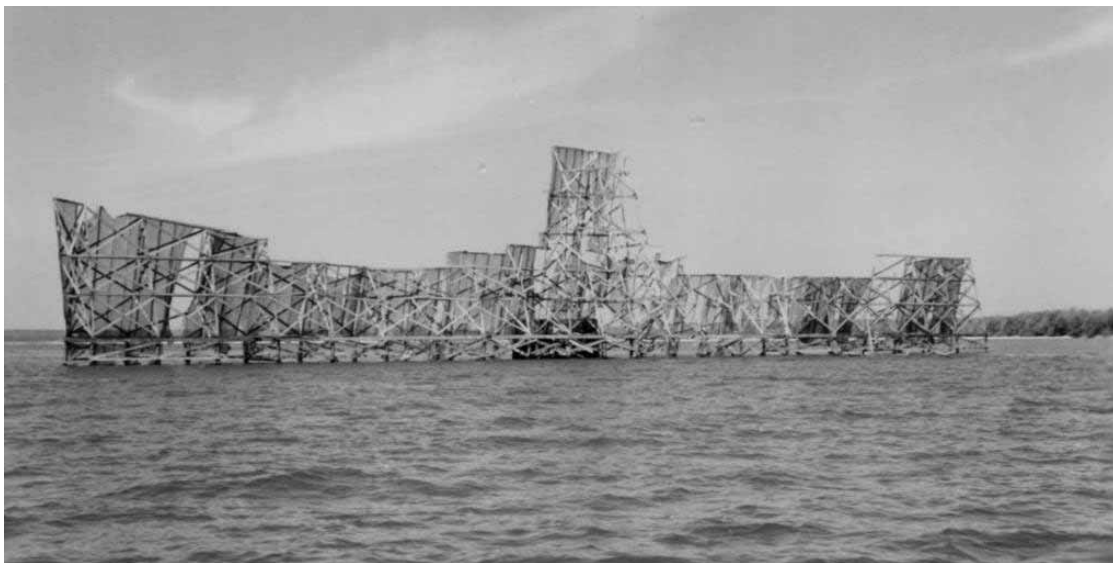


Figure 103. Skip-bomb target in silhouette of Japanese freighter at Eglin Field, FL, 30 July 1943 (NARA College Park, RG 342-FH, box 2202, photo 4A-17165).

*Mock German battleship (Midland Army Air Field)*

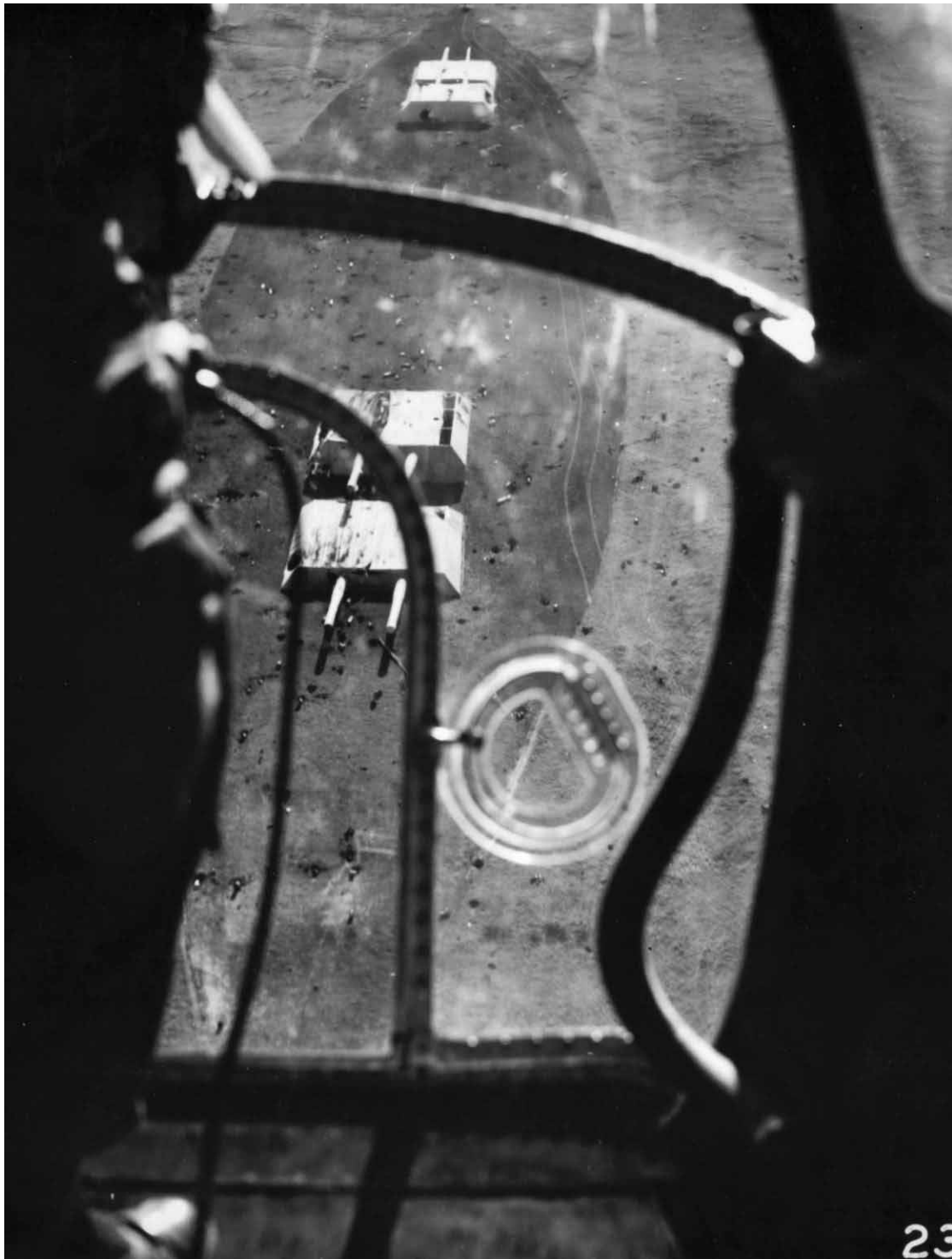


Figure 104. To give bombardier cadets added incentive in their training, a mock German battleship has been laid out with wooden replicas of gun turrets at Midland Army Air Field, TX, 26 April 1943 (NARA College Park, RG 342-FH, box 2201, photo 4A-17077).





Figure 105. To give bombardier cadets added incentive in their training, a mock German battleship has been laid out with wooden replicas of gun turrets at Midland Army Air Field, TX, 26 April 1943 (NARA College Park, RG 342-FH, box 2201, photo 4A-17081).

### *Mock Tokyo*

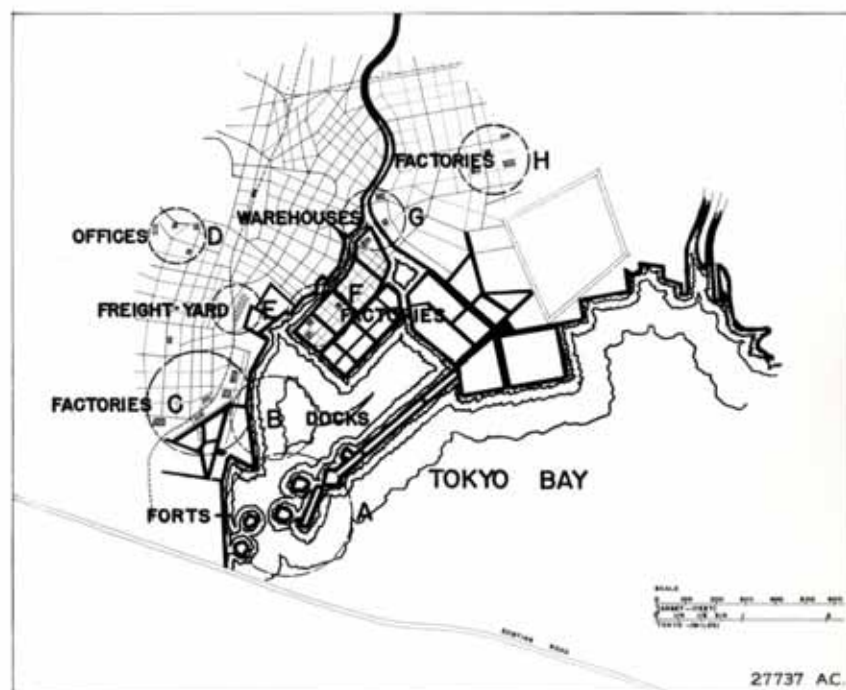


Figure 106. Layout of mock Tokyo at Midland Army Air Field, TX, 4 July 1942 (NARA College Park, RG 342-FH, box 2202, photo 4A-17188).



Figure 107. Mock Tokyo bombing range at Midland Army Air Field, TX, 4 July 1942 (NARA College Park, RG 342-FH, box 2201, photo 4A-17093).



Figure 108. Oil tanks in the mock Tokyo bombing range at Midland Army Air Field, TX, 4 July 1942 (NARA College Park, RG 342-FH, box 2202, photo 4A-17188).



Figure 109. Chemists created this simulated mock atom bomb with TNT, white phosphorus, jellied gasoline, and liquid smoke at Fort Bragg, NC, 16 October 1952 (NARA College Park, RG 111-SC WWII, box 241, photo SC413207).

## Bivouac

Bivouac areas gave all kinds of units practical experience in constructing temporary living quarters and practicing skills in the field.



Figure 110. Medical battalion train in bivouac area at Fort Jackson, SC, 28 April 1943 (NARA College Park, RG 111-SC WWII, box 155, photo SC137602).



Figure 111. Bivouac area during "Exercise Assembly" at Camp Campbell, KY, 27 January 1949 (NARA College Park, RG 111-SC WWII, box 659, photo SC351126).



Figure 112. Bivouac area during "Exercise Assembly" at Camp Campbell, KY, 27 January 1949 (NARA College Park, RG 111-SC WWII, box 659, photo SC351125).



Figure 113. Pitching a tent in the bivouac area at Fort Jackson, SC, 16 August 1962 (NARA College Park, RG 111-SC post-1955, box 376, photo SC598117).

### Ship Mock-Ups

Mock training ships were built on the ground and in the water to give soldiers training in all aspects of amphibious warfare. In addition to learning general sea duties on these mock ships, soldiers were also trained in rowing, gunnery, using signal flags, raising and lowering lifeboats, beach landings, underwater demolition, and other subjects. Some examples of mock ships are shown below.

*USS Electrician (Naval Training Station Norfolk)*

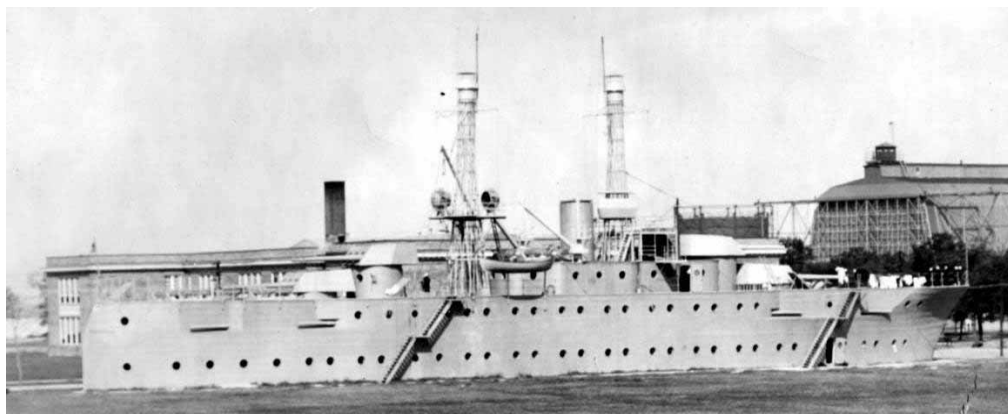


Figure 114. Mock training ship USS Electrician at Naval Training Station Norfolk, VA, 16 October 1918 (NARA College Park, RG 24-TC, box 4, folder C).



*Rowing machine (Camp Wissahickon)*



Figure 115. Rowing machine at Camp Wissahickon, New Jersey, no date (circa 1918) (NARA College Park, RG 24-TC, box 1, folder P).

*USS Dahlgren (USNTS Great Lakes, IL)*

Aboard the USS Dahlgren, the recruits stand watch, take a “turn” at the wheel, learn how to use signal flags, raise and lower the lifeboat, and practice gunnery in addition to learning general sea duties.



Figure 116. The USS Dahlgren which is a “dry-land ship” operated by recruits at USNTS Great Lakes, IL, August 1943 (NARA College Park, RG 80-G, box 193, photo 42896).

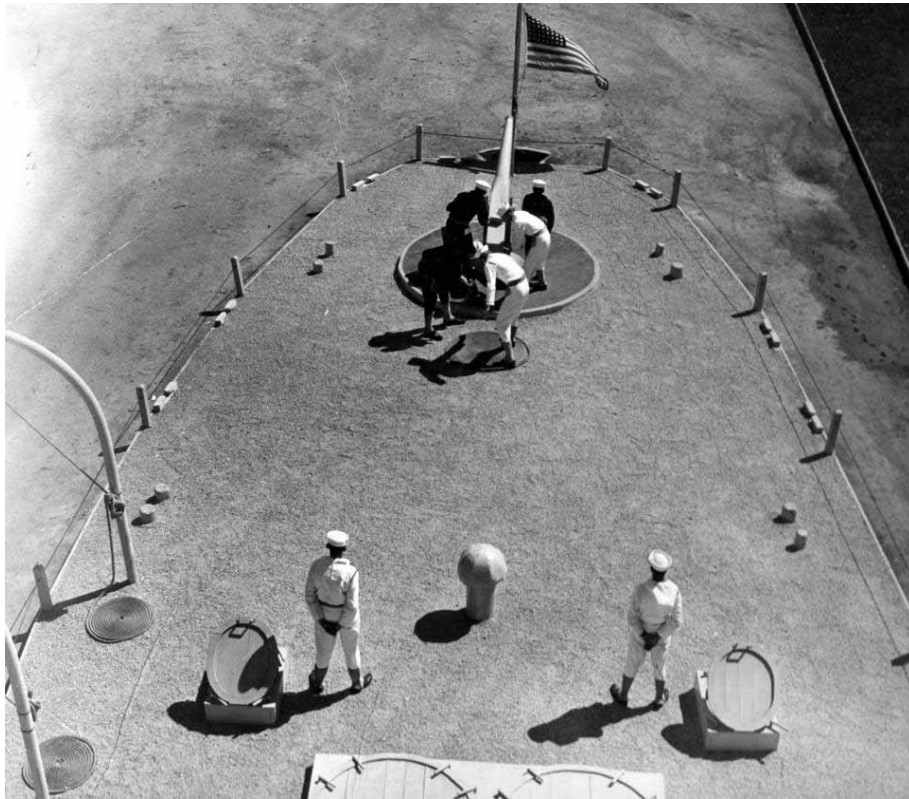


Figure 117. Gunnery practice on the USS Dahlgren at USNTS Great Lakes, IL, August 1943 (NARA College Park, RG 80-G, box 193, photo 42908).



Figure 118. A chief petty officer instructs two men on how to secure a line around a cleat on the USS Dahlgren at USNTS Great Lakes, IL, August 1943 (NARA College Park, RG 80-G, box 193, photo 42910).

*Abandon ship mock-up*

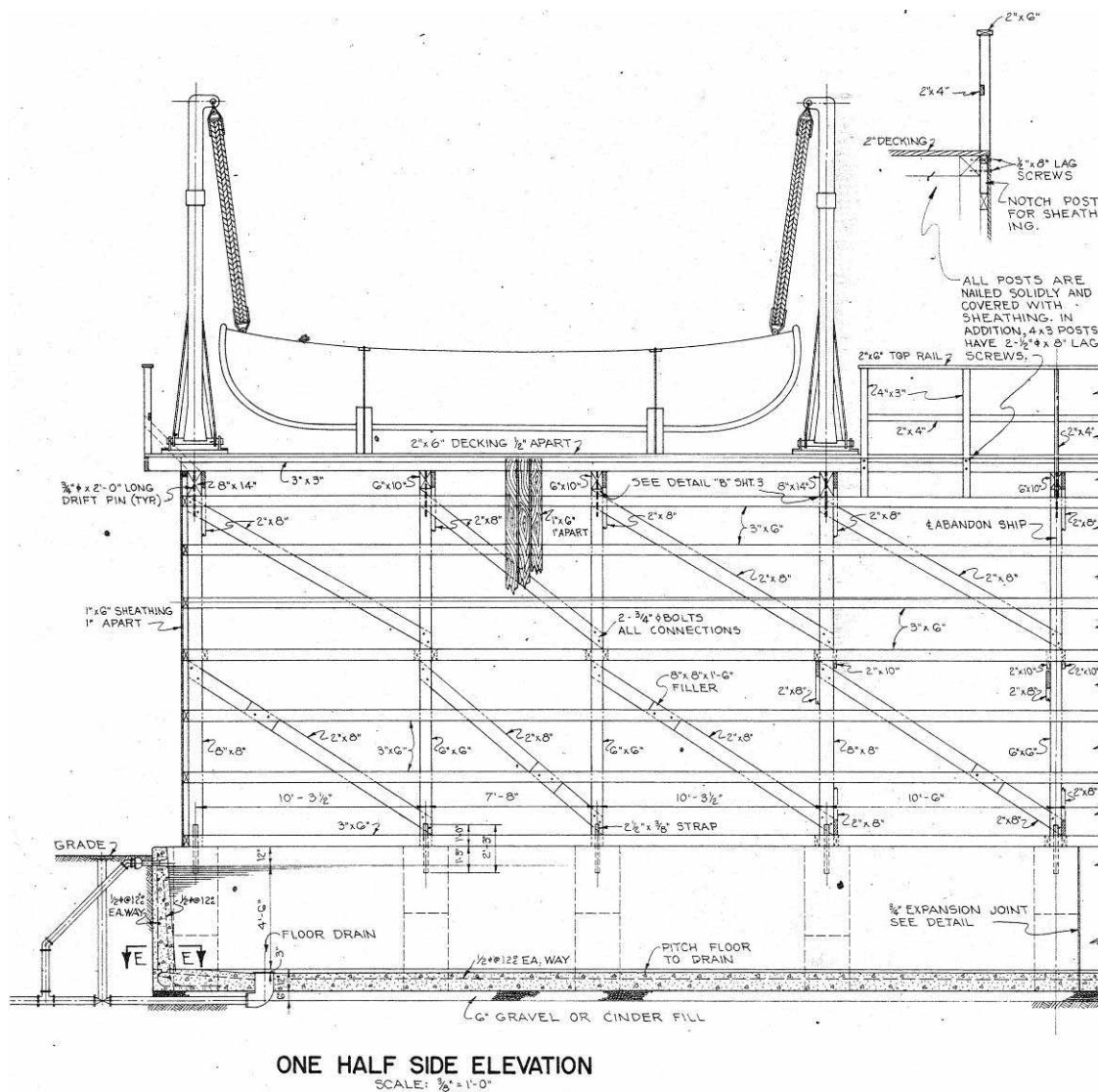
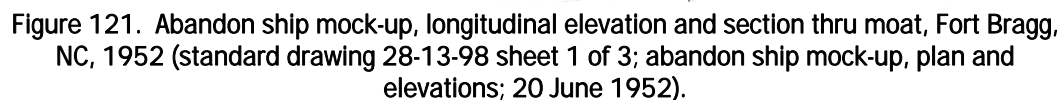
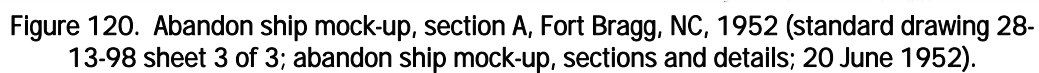


Figure 119. Abandon ship mock-up, one half side elevation, Fort Bragg, NC, 1952 (standard drawing 28-13-98 sheet 2 of 3; abandon ship mock-up, elevations and details; 20 June 1952).





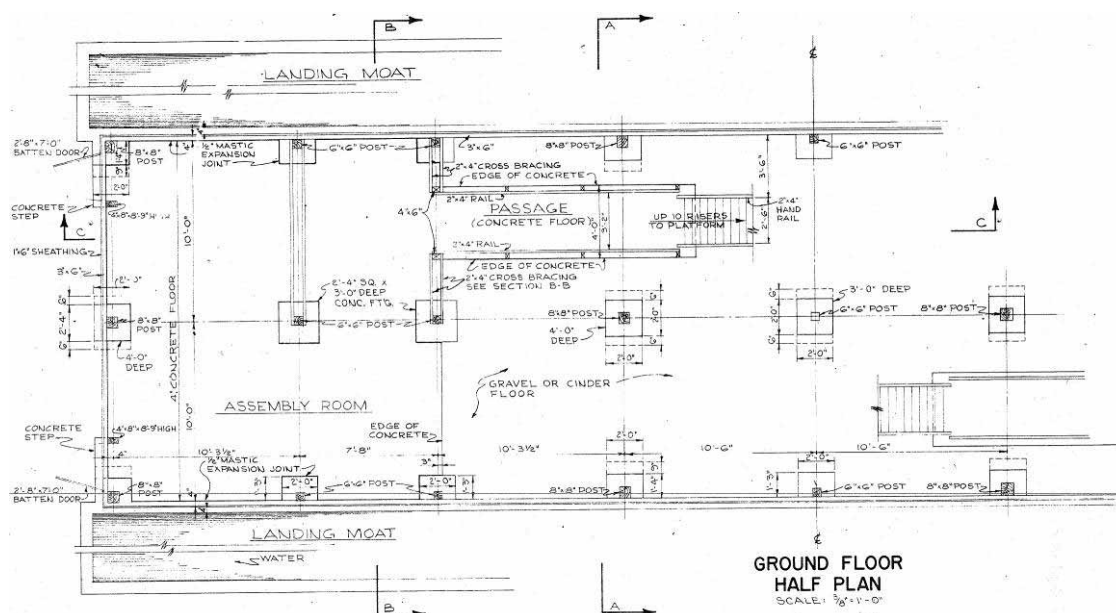


Figure 122. Abandon ship mock-up, ground floor half plan, Fort Bragg, NC, 1952 (standard drawing 28-13-98 sheet 1 of 3; abandon ship mock-up, plan and elevations; 20 June 1952).

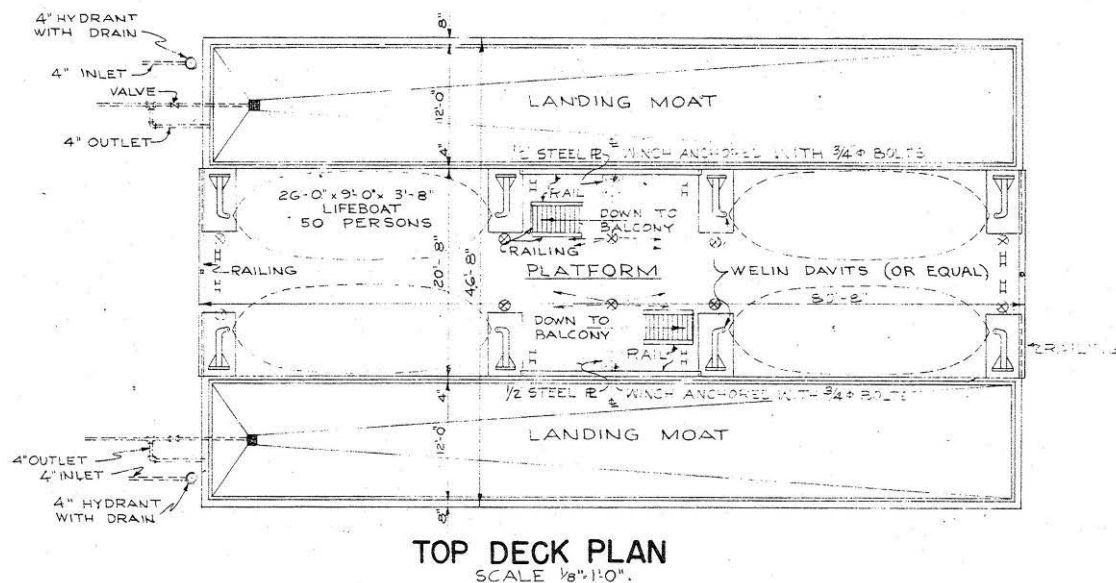


Figure 123. Abandon ship mock-up, top deck plan, Fort Bragg, NC, 1952 (standard drawing 28-13-98 sheet 1 of 3; abandon ship mock-up, plan and elevations; 20 June 1952).

*Assault transport mock-up (Fort Pierce)*



Figure 124. Training for amphibious operations where an Army duck receives its loading orders by wig-wag from atop mock-up of assault transport at Amphibious Training Base Fort Pierce, FL, 28 November 1943 (NARA College Park, RG 80-G, box 198, photo 43898).

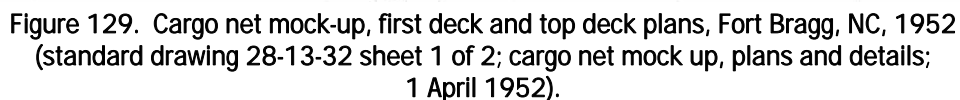
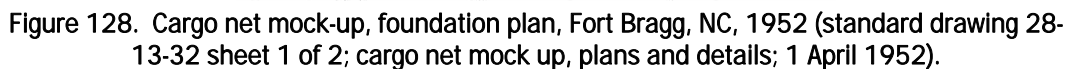
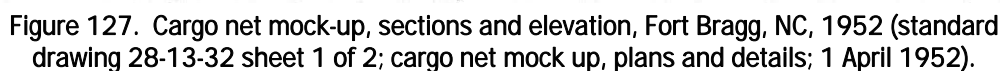
*Cargo net mock-ups*

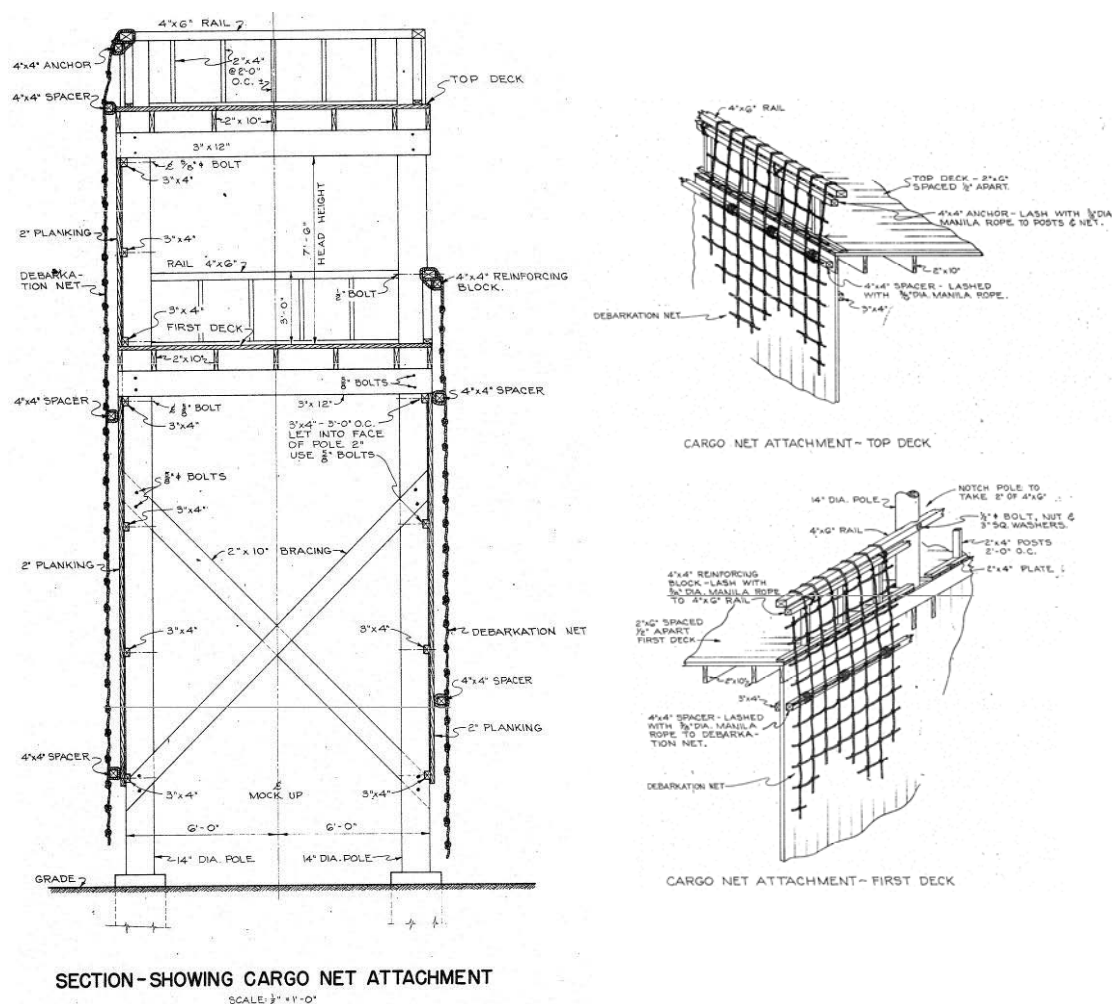


Figure 125. Dry net training mockups at Camp Pendleton, CA, 7 November 1949 (NARA College Park, RG 127-GC, box 5, photo 410897).



Figure 126. Marines at the individual combat training area #2 are climbing cargo nets during training at MCRD Parris Island, SC, 10 October 1975 (NARA College Park, RG 127-GG-915, box 32, photo A602637).

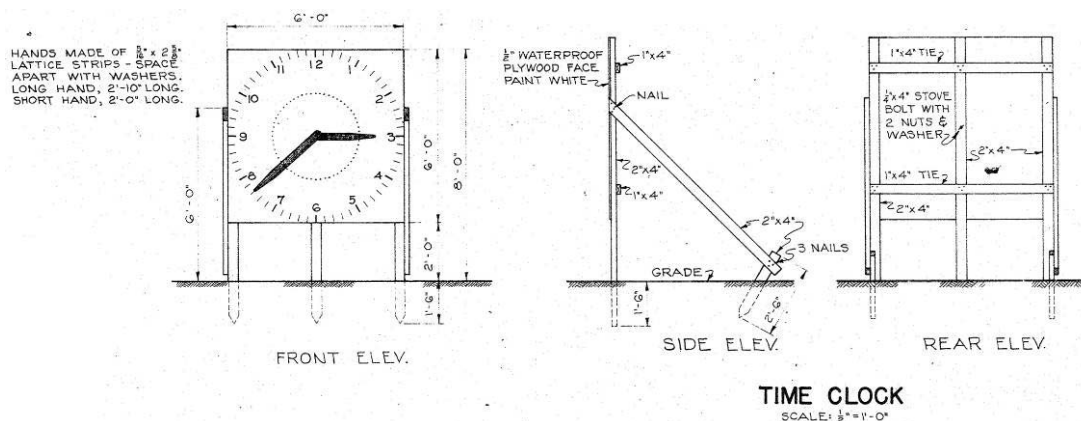




SECTION - SHOWING CARGO NET ATTACHMENT

SCALE:  $\frac{1}{2}" = 1'-0"$

Figure 130. Cargo net mock-up, section showing cargo net attachment, and details of top and first deck cargo net attachments, Fort Bragg, NC, 1952 (standard drawing 28-13-32 sheet 2 of 2; cargo net mock-up, plans and details; 1 April 1952).



TIME CLOCK

SCALE:  $\frac{1}{2}'' = 1' - 0$

Figure 131. Cargo net mock-up, time clock, Fort Bragg, NC, 1952 (standard drawing 28-13-32 sheet 2 of 2; cargo net mock-up, plans and details; 1 April 1952).

## Fortified areas

“Investigations performed at numerous closed and active installations indicate that the fortified area was an area where individuals and units learned how to construct, attack, and defend field fortifications. These facilities often consisted of bunkers, foxholes, and trenches. Operations in this area normally included small arms fire, flamethrowers, shoulder-launched rockets, grenades, and demolition materials. No targets were associated with the Fortified Area” (“RO-2” 19).



Figure 132. Digging foxhole for exposure problem at Adak Naval Air Station, Alaska, January 1947 (NARA College Park, RG 127-GC, box 1, photo 2105).

## Machine gun emplacement mock-up

Mock-ups such as the machine gun emplacement shown below were constructed to give soldiers the feel of combat conditions in the field.



Figure 133. Getting the feel of combat in a machine gun emplacement at MCRD Parris Island, SC, 28 May 1946 (NARA College Park, RG 127-GC, box 34, photo A600481).



## Mines and booby traps

Soldiers were trained to avoid and deal with mines and booby traps in buildings and areas such as those shown below.

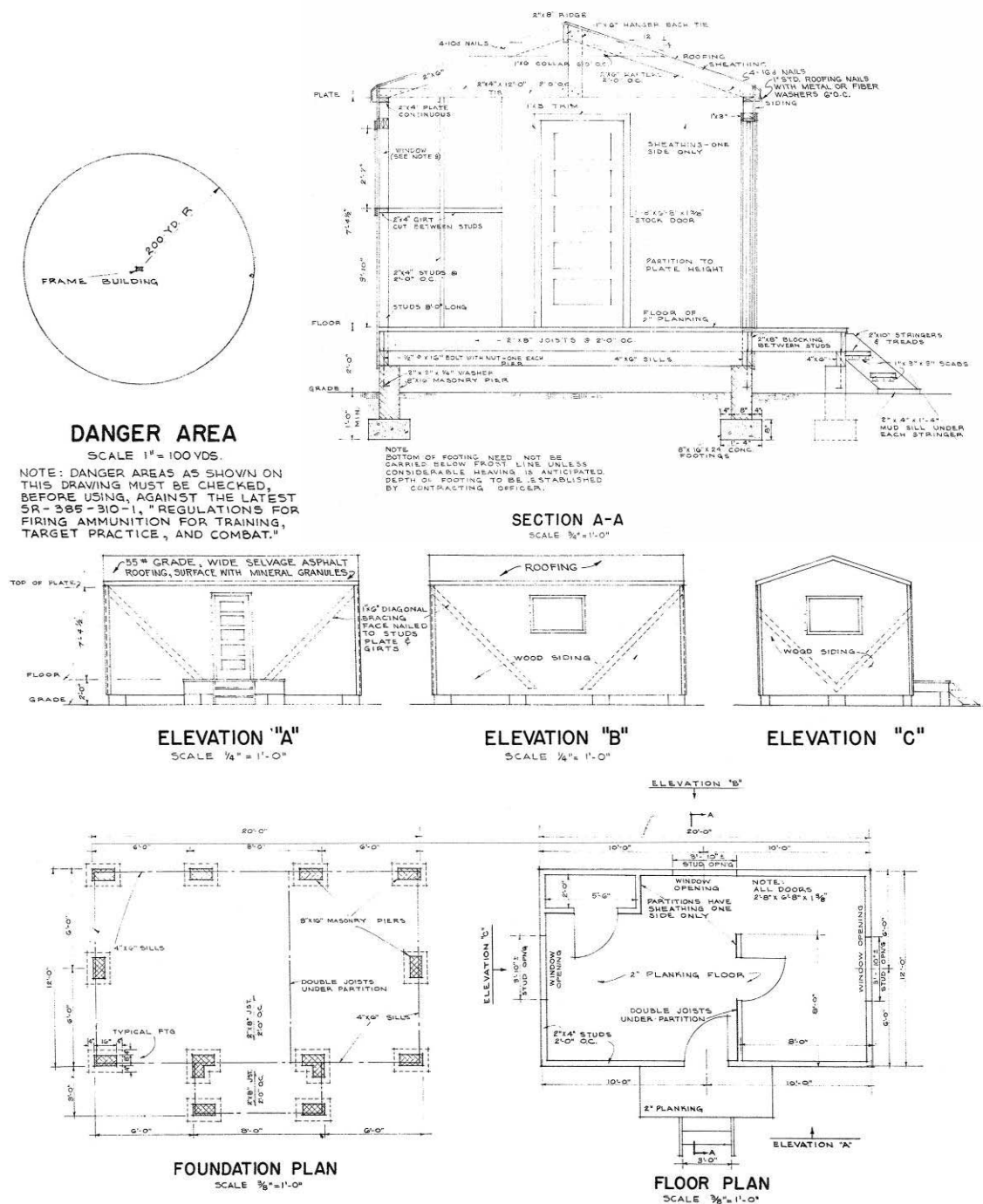


Figure 134. Mines and booby trap area, danger area and building section, elevations, and plans, Fort Bragg, NC, 1952 (standard drawing 28-13-36 sheet 1 of 1; mines and booby trap area, plans, elevations, and details; 11 November 1952).



## Parachute training mock-ups

A variety of mock-ups was used for parachute training, including landing fall platforms, jump towers, and swing parachute landing trainers. Some parachute training areas constructed at Fort Bragg are shown below as examples.

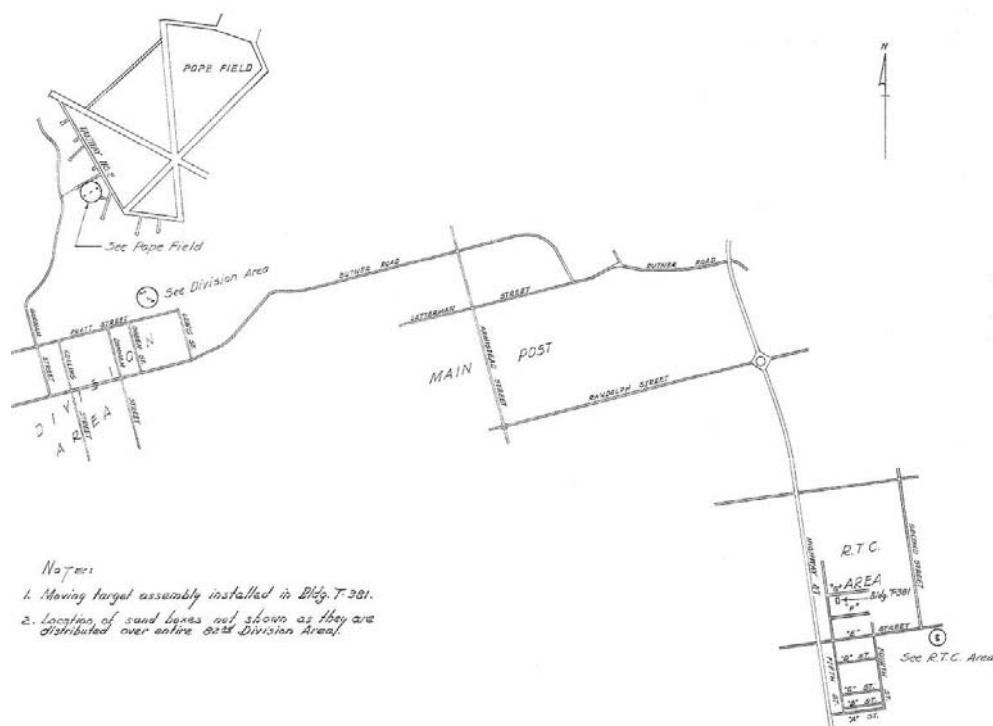


Figure 135. Vicinity map, Fort Bragg, NC, June 1949 (standard drawing 28-09-01 sheet 1 of 8; training aids, plot plans, Fort Bragg, NC; 6 June 1949).

## RTC Area

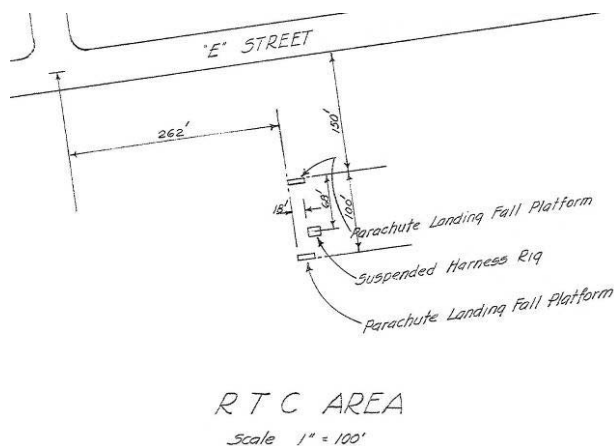


Figure 136. RTC Area, Fort Bragg, NC, June 1949 (standard drawing 28-09-01 sheet 1 of 8; training aids, plot plans, Fort Bragg, NC; 6 June 1949).

### Parachute landing fall platform



Figure 137. Jump training is practiced and perfected on the ground with soldiers waiting to board "aircraft" at Fort Bragg, NC, 29 November 1962 (NARA College Park, RG 111-SC post-1955, box 377, photo SC599313).

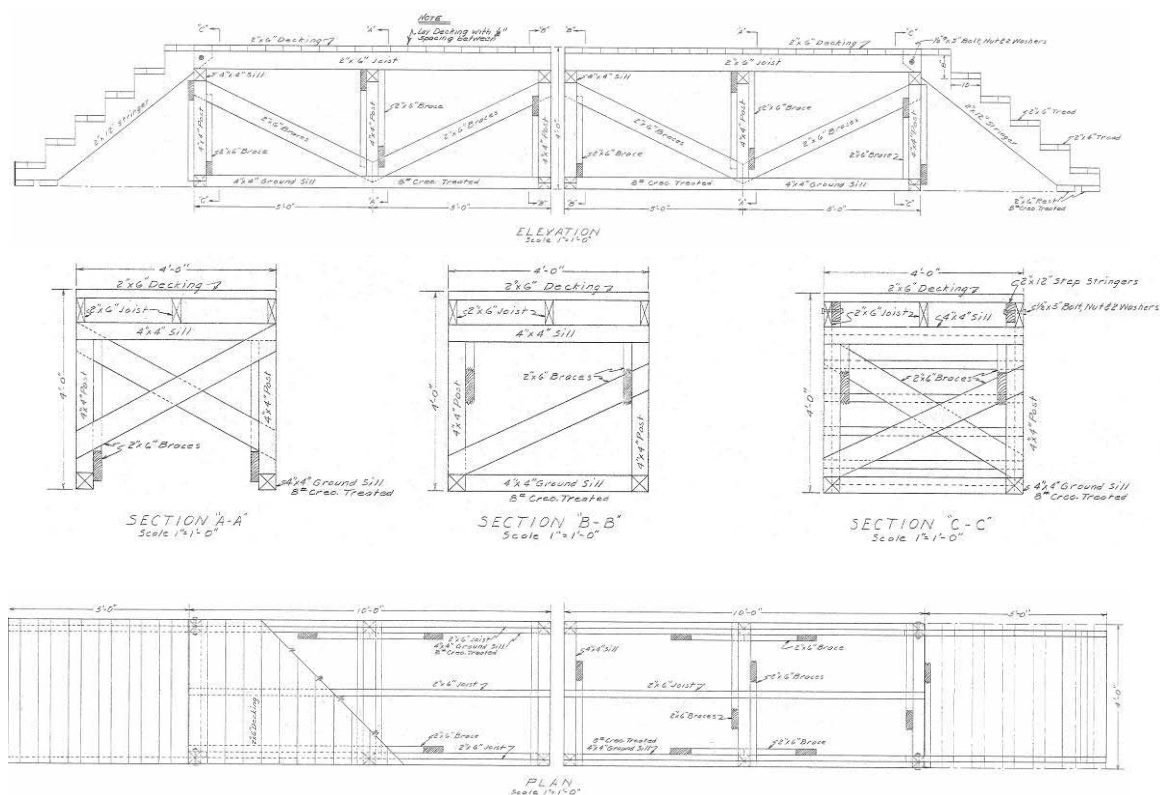


Figure 138. Parachute landing fall platform, Fort Bragg, NC, 1949 (standard drawing No. 28-09-01 Drawing 2 of 8, training aids, parachute landing fall platform, Fort Bragg, NC, 6 June 1949).



## Division Area, Fort Bragg

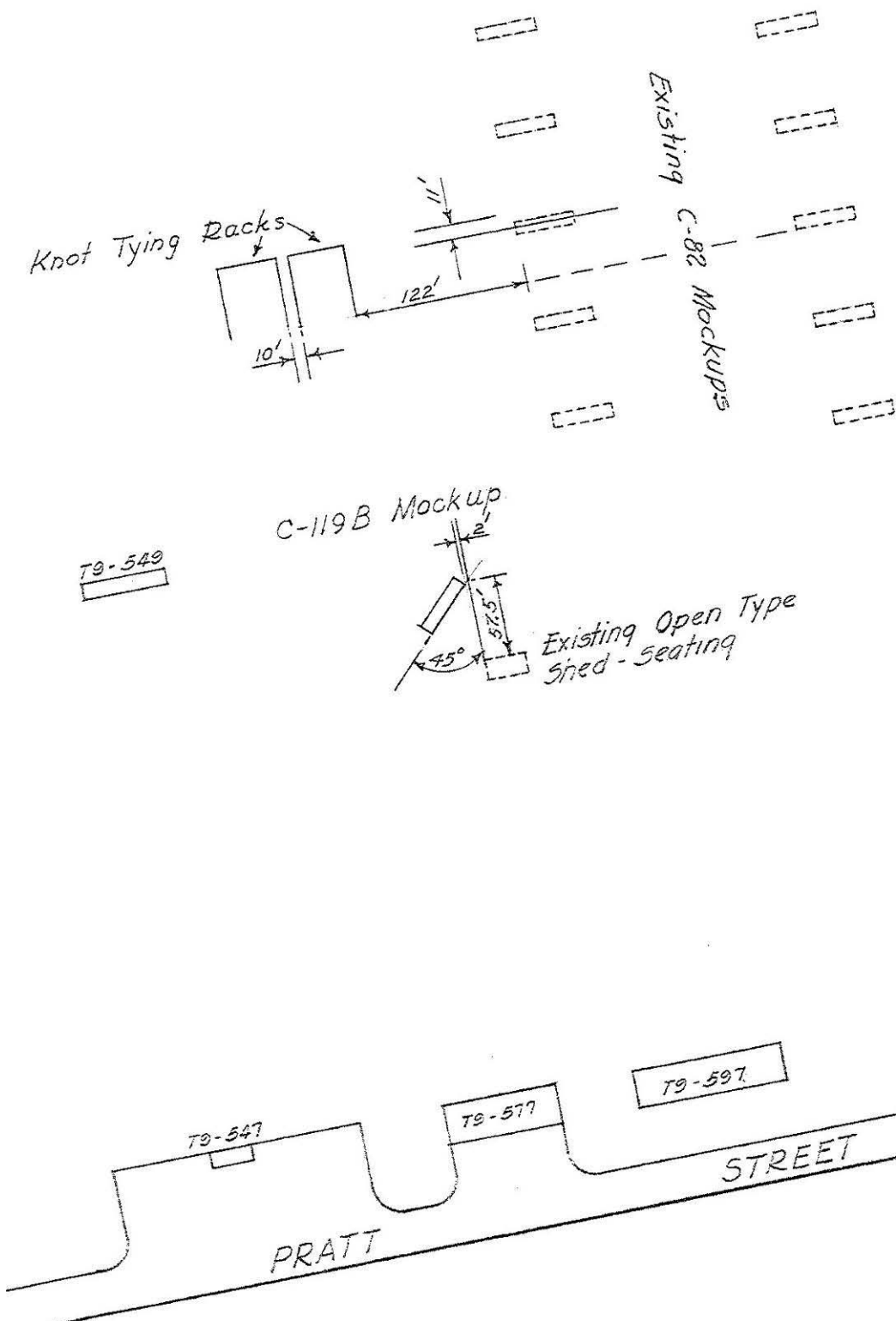


Figure 141. Division Area, Fort Bragg, NC, June 1949 (standard drawing 28-09-01 sheet 1 of 8; training aids, plot plans, Fort Bragg, NC; 6 June 1949).

### C-119B Mockup aircraft loading platform

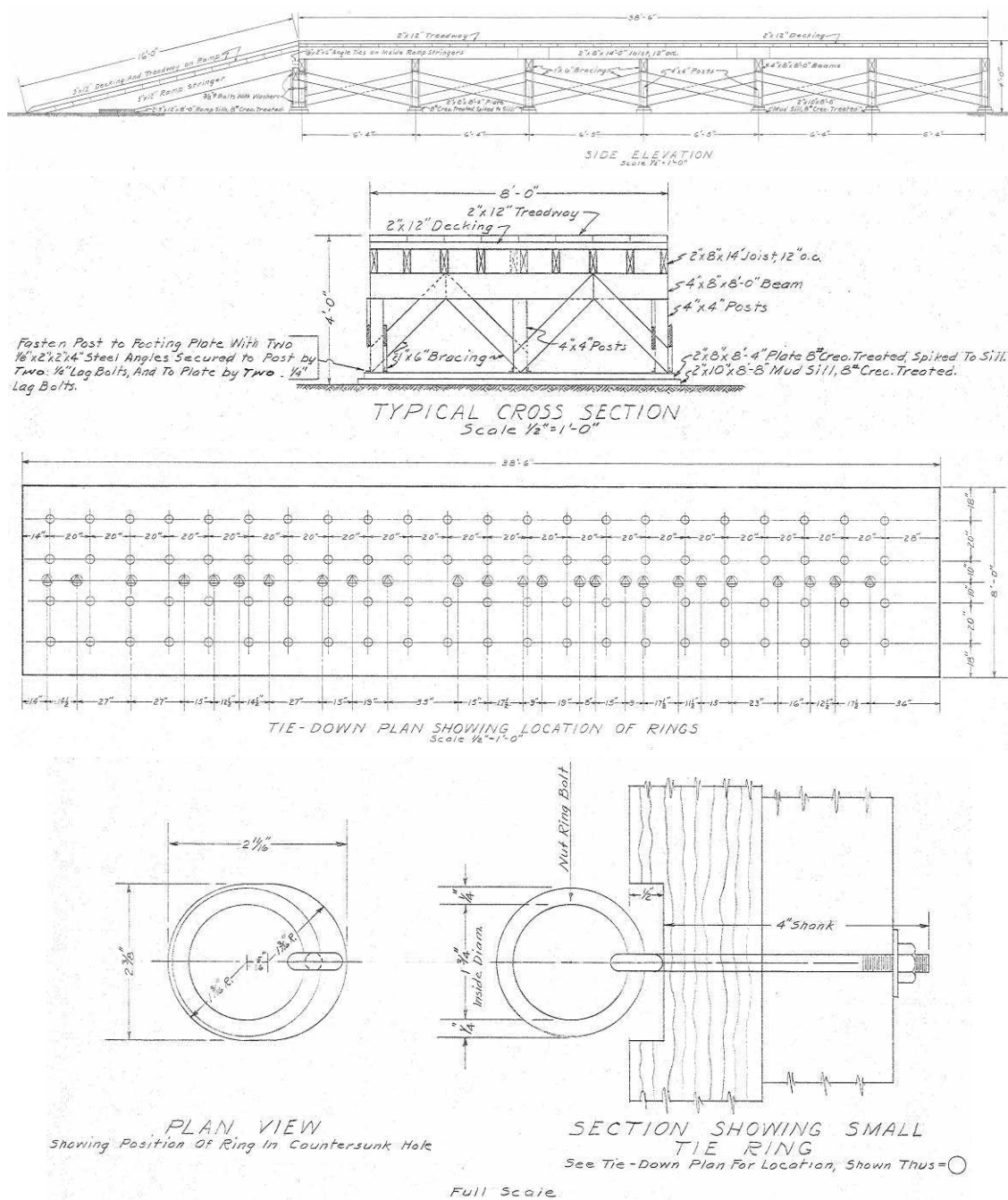


Figure 142. C-119B aircraft loading platform, side elevation, typical cross section, tie-down plan showing location of rings, and ring plan and section views, Fort Bragg, NC, June 1949 (standard drawing 28-09-01 sheet 6 of 8; training aids, c-119b loading platform (open type), 6 June 1949).

### Knot tying rack

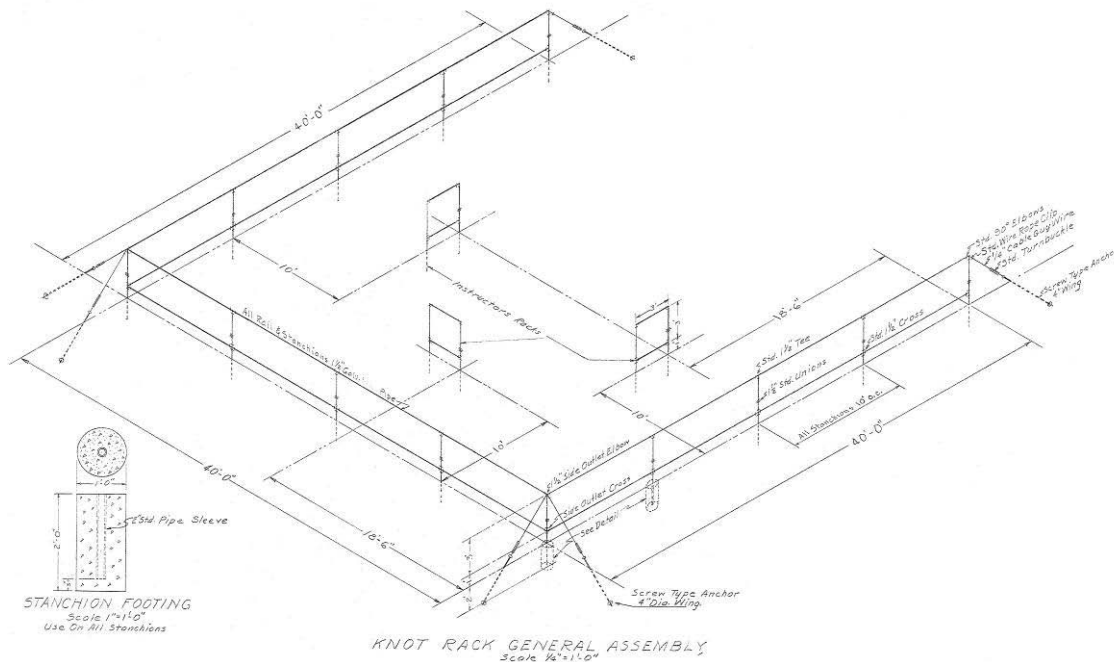


Figure 143. Knot rack general assembly, Fort Bragg, NC, June 1949 (standard drawing 28-09-01 sheet 3 of 8; training aids suspended harness rig and knot rack, Fort Bragg, NC; 6 June 1949).

*Pope Field*

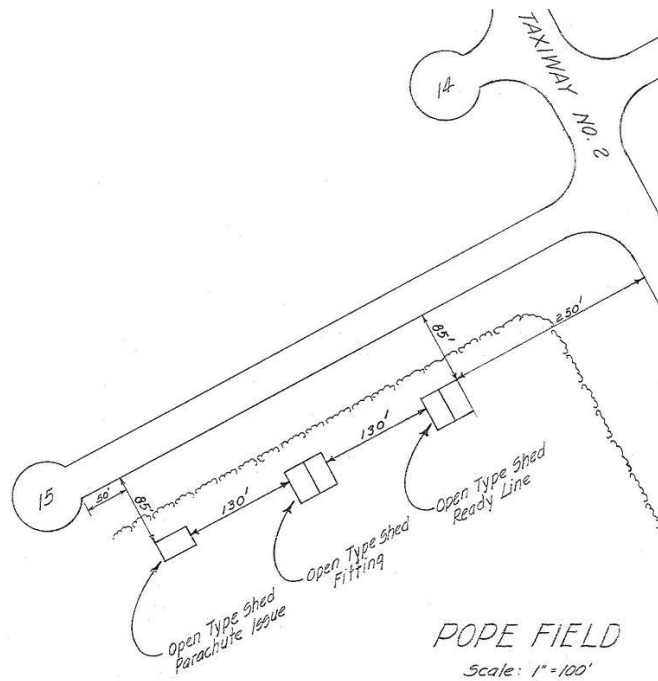


Figure 144. Pope Field, Fort Bragg, NC, June 1949 (standard drawing 28-09-01 sheet 1 of 8; training aids, plot plans, Fort Bragg, NC; 6 June 1949).

### Parachute issue shed

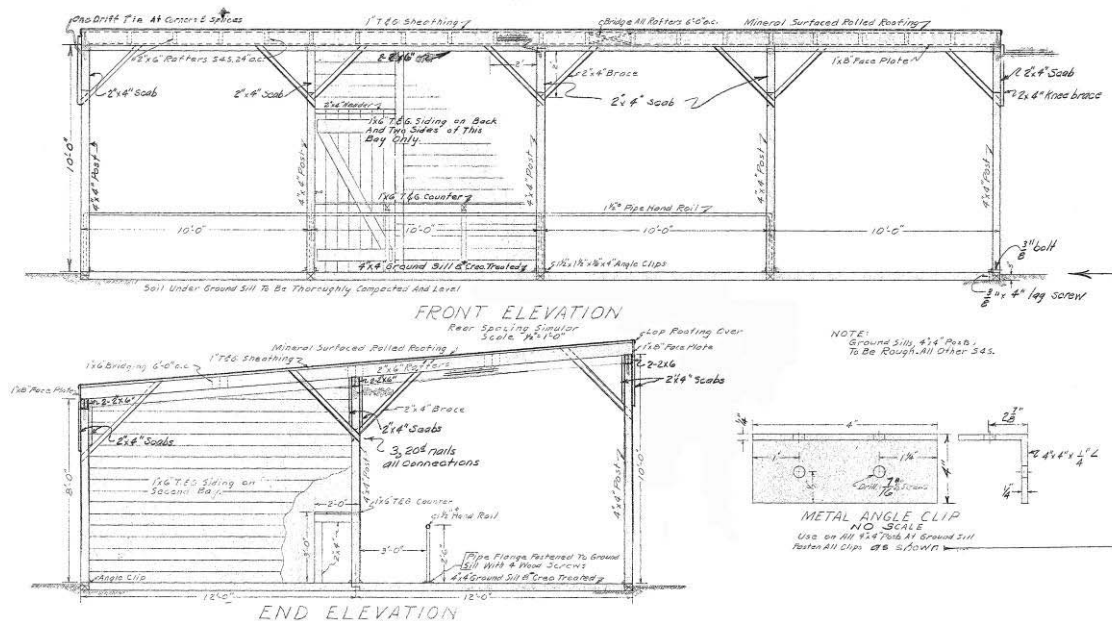


Figure 145. Parachute issue shed elevations, Fort Bragg, NC, June 1949 (standard drawing 28-09-01 sheet 4 of 8; training aids, parachute issue shed and sand table, Fort Bragg, NC; 6 June 1949).

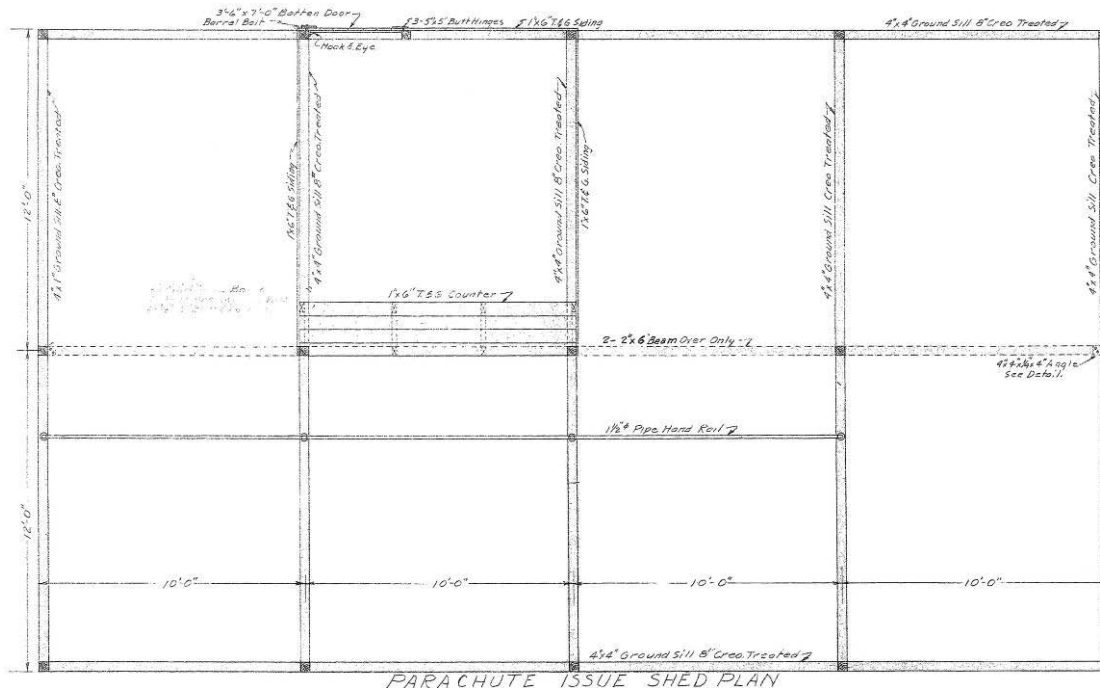


Figure 146. Parachute issue shed plan, Fort Bragg, NC, June 1949 (standard drawing 28-09-01 sheet 4 of 8; training aids, parachute issue shed and sand table, Fort Bragg, NC; 6 June 1949).

### Open type shed (ready line and fitting)

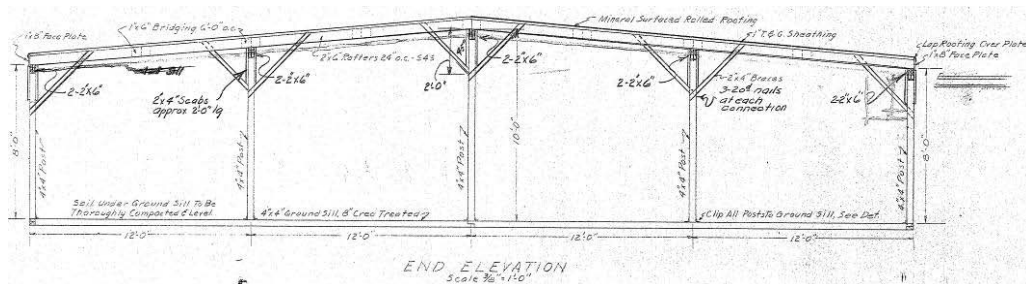


Figure 147. Open type shed (ready line and fitting), end elevation, Fort Bragg, NC, June 1949 (standard drawing 28-09-01 sheet 5 of 8; training aids, open type shed (ready line and fitting), Fort Bragg, NC; 6 June 1949).

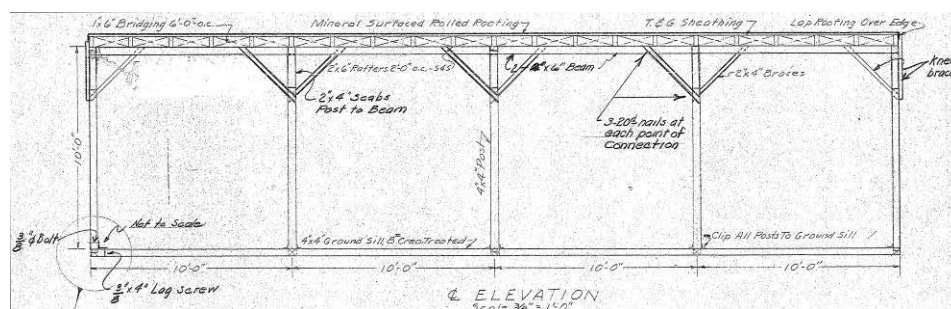


Figure 148. Open type shed (ready line and fitting), elevation, Fort Bragg, NC, June 1949 (standard drawing 28-09-01 sheet 5 of 8; training aids, open type shed (ready line and fitting), Fort Bragg, NC; 6 June 1949).

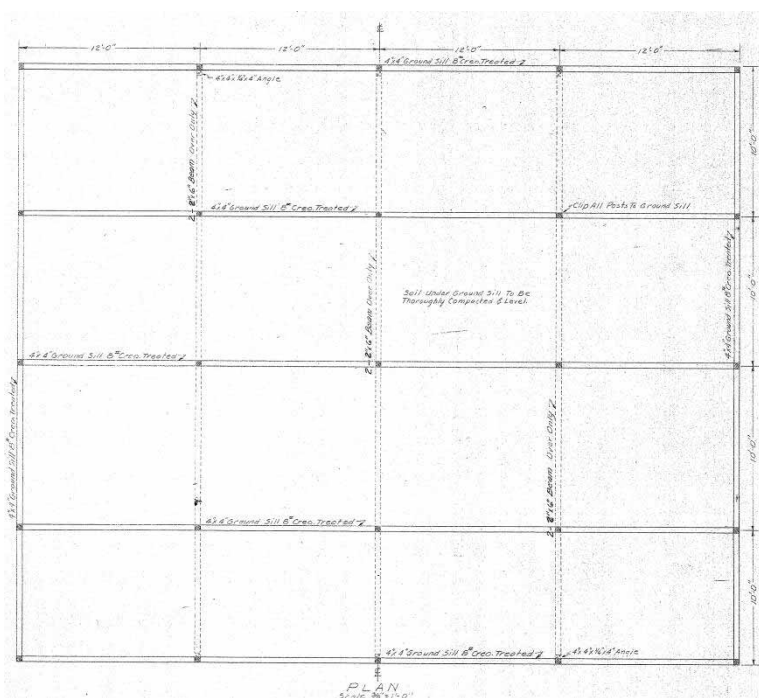
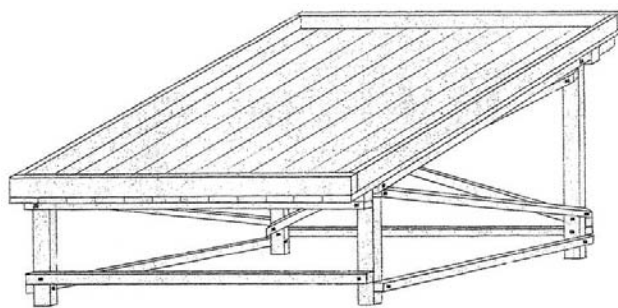


Figure 149. Open type shed (ready line and fitting), plan, Fort Bragg, NC, June 1949 (standard drawing 28-09-01 sheet 5 of 8; training aids, open type shed (ready line and fitting), Fort Bragg, NC; 6 June 1949).



## Sand table



SAND TABLE ASSEMBLY

Figure 150. Sand table stand assembly, Fort Bragg, NC, June 1949 (Standard drawing 28-09-01 sheet 4 of 8; training aids, parachute issue shed and sand table, Fort Bragg, NC; 6 June 1949).

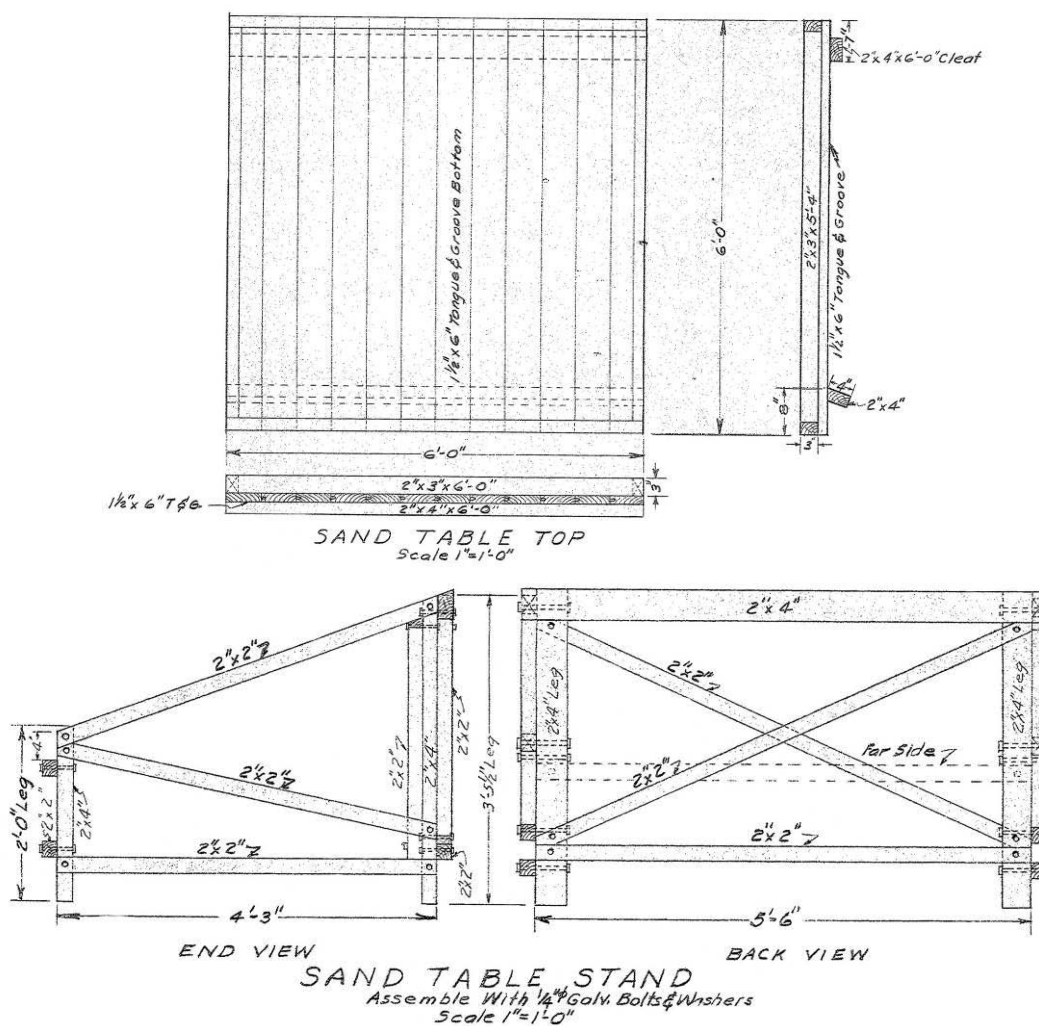


Figure 151. Sand table stand and top, Fort Bragg, NC, June 1949 (standard drawing 28-09-01 sheet 4 of 8; training aids, parachute issue shed and sand table, Fort Bragg, NC; 6 June 1949).

*Mock-up tower for airborne training*

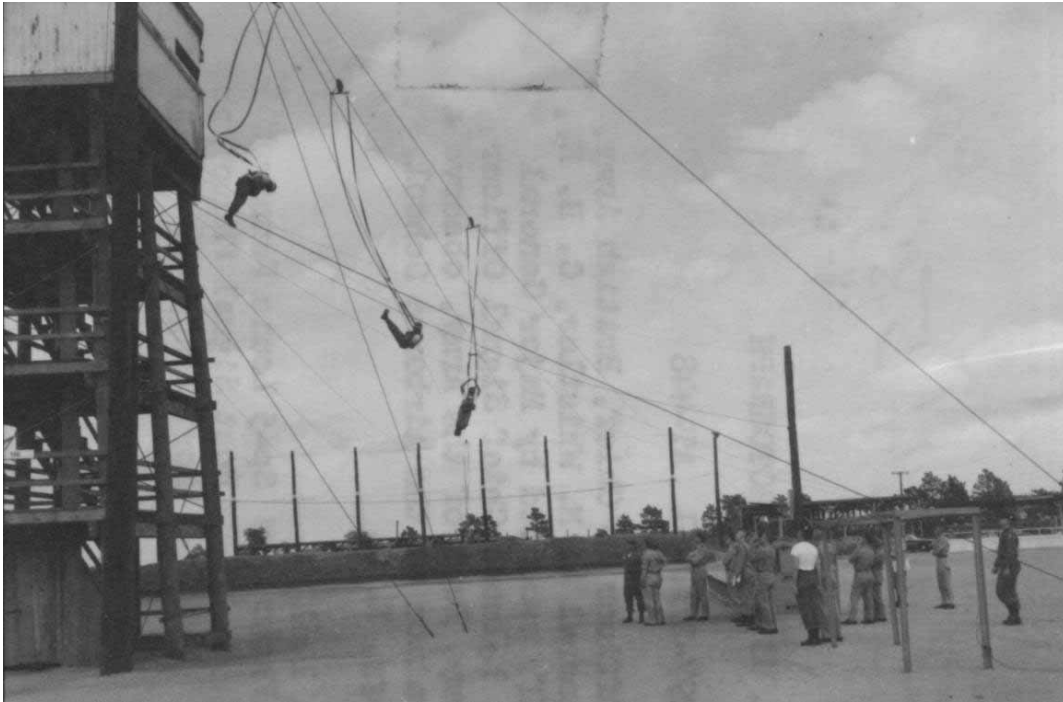


Figure 152. Mock jump tower at Fort Bragg, NC, 26 April 1961 (NARA College Park, RG 111-SC post-1955, box 365, photo SC584587).



Figure 153. ROTC cadets go through the paces of jump drill at the 82nd Airborne mock jump tower at Fort Bragg, NC, 18 June 1950 (NARA College Park, RG 111-SC WWII, photo SC345383).



Figure 154. Trainers practicing on the high tower drop to simulate opening shock at Fort Bragg, NC, December 1951 (NARA College Park, RG 111-SC WWII, box 224, photo SC391815).

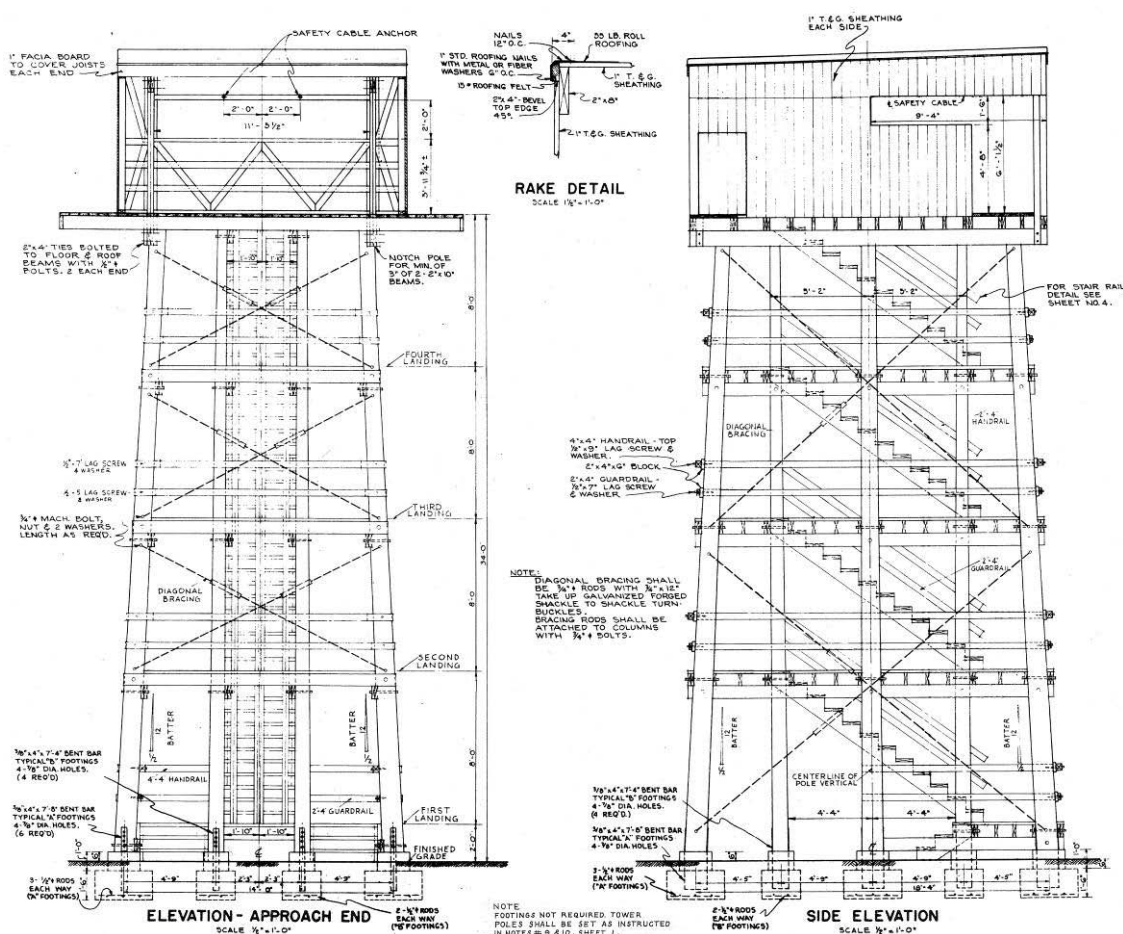


Figure 155. Mock-up tower for airborne training, elevations, Fort Bragg, NC, 1952 (standard drawing 28-13-59 sheet 5 of 6; mock-up tower for airborne training, elevations; 11 April 1952).

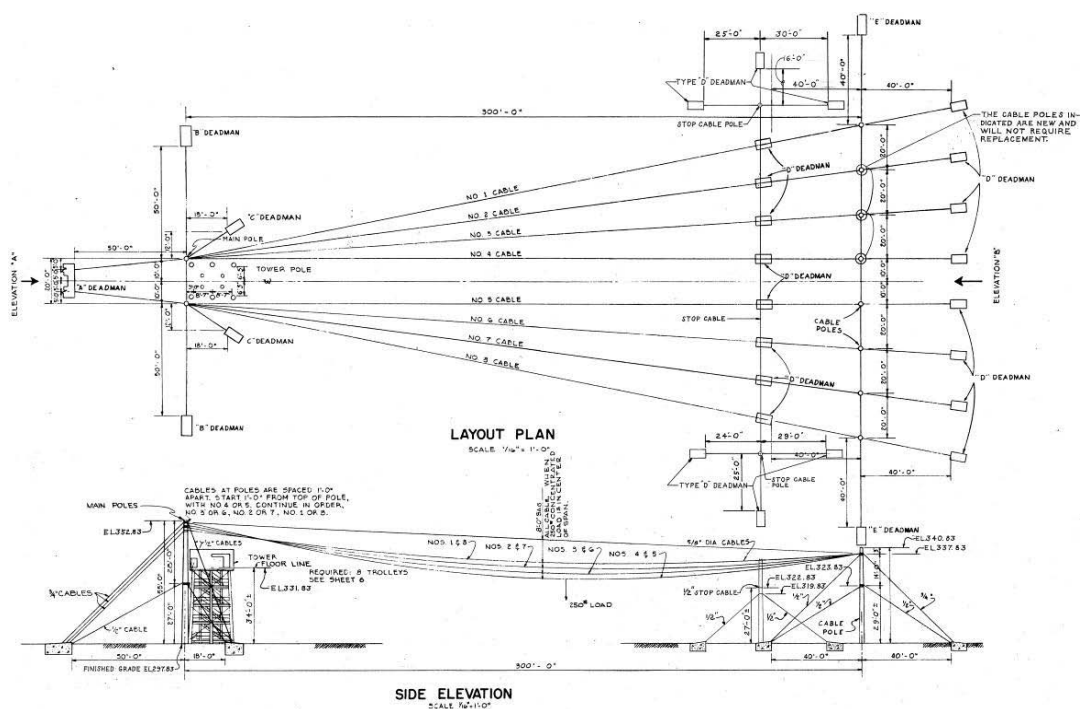


Figure 156. Mock-up tower for airborne training, layout plan and side elevation, Fort Bragg, NC, 1952 (standard drawing 28-13-59 sheet 1 of 6; mock-up tower for airborne training, layout plan and elevations; 11 April 1952).

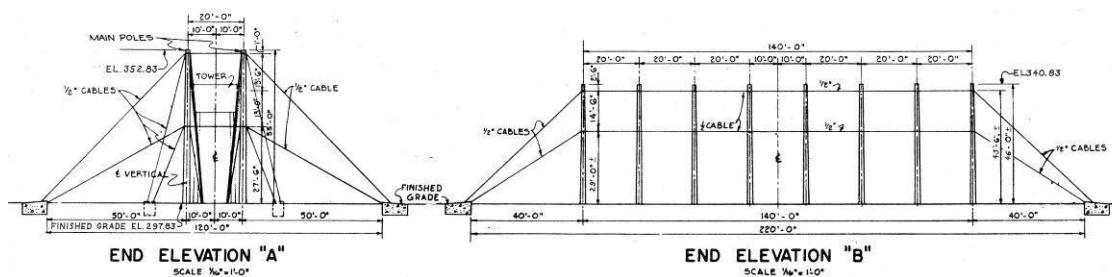


Figure 157. Mock-up tower for airborne training, elevations, Fort Bragg, NC, 1952 (standard drawing 28-13-59 sheet 1 of 6; mock-up tower for airborne training, layout plan and elevations; 11 April 1952).

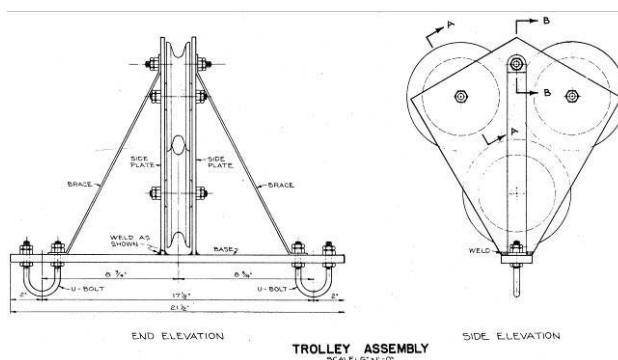


Figure 158. Mock-up tower for airborne training, trolley assembly, Fort Bragg, NC, 1952 (standard drawing 28-13-59 sheet 6 of 6; mock-up tower for airborne training, trolley assembly and details; 11 April 1952).

### Swing parachute landing trainer

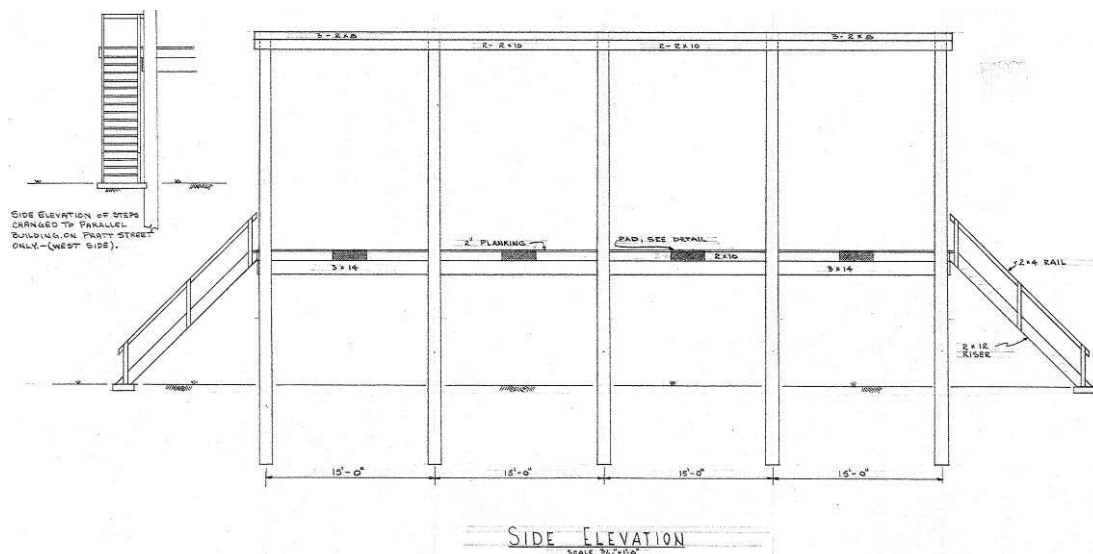


Figure 159. Swing parachute landing trainer, Canadian type, side elevation, Fort Bragg, NC, 1955 (standard drawing 28-13-109 sheet 2 of 2; swing parachute landing trainer, Canadian Type; 6 June 1955).

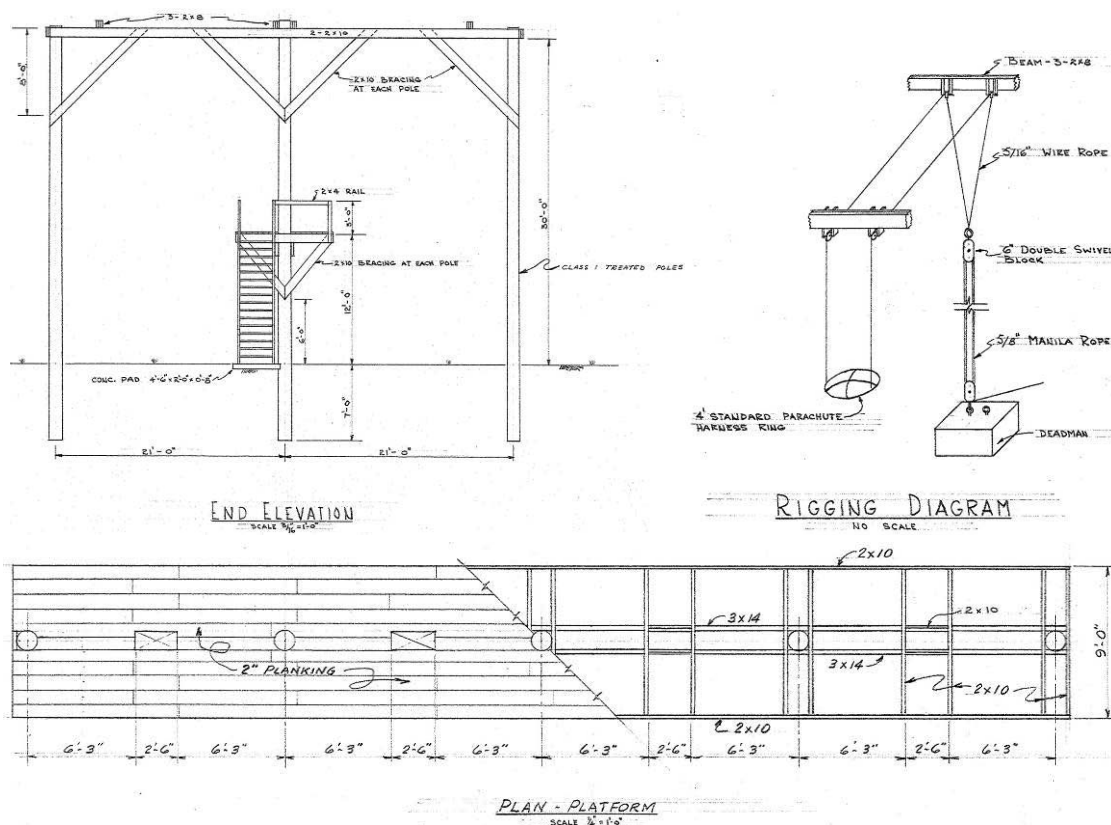


Figure 160. Swing parachute landing trainer, Canadian type, end elevation, rigging diagram, and platform plan Fort Bragg, NC, 1955 (standard drawing 28-13-109 sheet 2 of 2; swing parachute landing trainer, Canadian type; 6 June 1955).

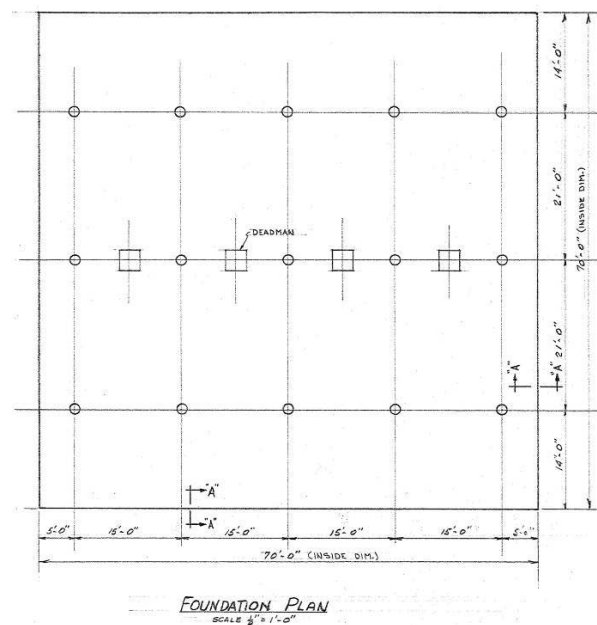


Figure 161. Swing parachute landing trainer, Canadian type, foundation plan, Fort Bragg, NC, 1955 (standard drawing 28-13-109 sheet 2 of 2; swing parachute landing trainer, Canadian type; 6 June 1955).

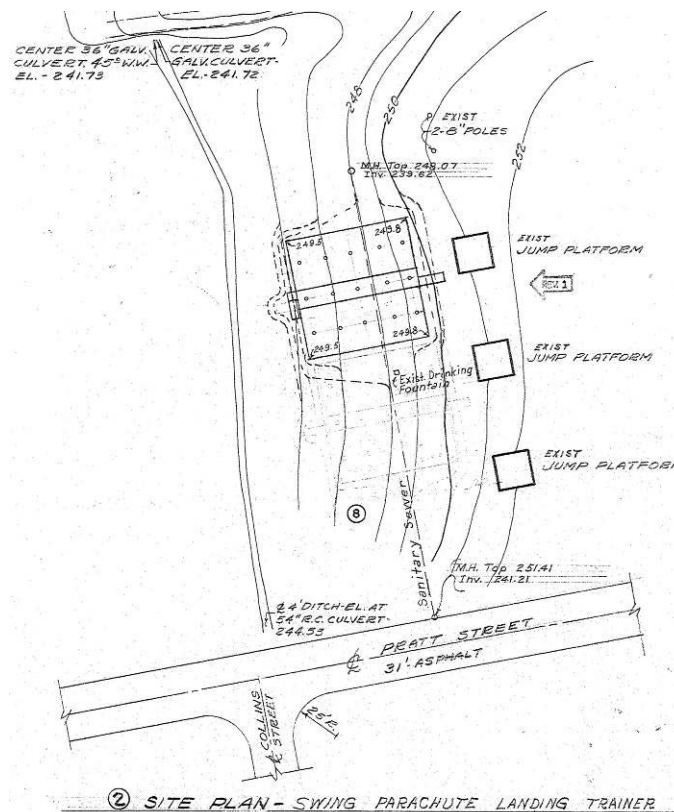


Figure 162. Swing parachute landing trainer, site plan 2, Fort Bragg, NC, 1955 (standard drawing 28-13-109 sheet 1 of 2; swing parachute landing trainer, site plan; 6 June 1955).

## Rail movement mock-ups

Cargo specialists and other soldiers were trained how to load wheeled and tracked vehicles onto flatcars on a rail movement mock-up. The mock-up consisted of simulated flatcars, loading ramps, and spanning platforms (used to bridge the distance between railcars and make one continuous roadbed of the train). Soldiers were trained to be both drivers and ground guides. Ground guides were stationed on the ramp and on flatcars to direct vehicles and aid drivers, and on each side of flatcars to adjust the spanners so that the distance between them conformed to the wheel width of the various vehicles. All crewmembers were trained in blocking, bracing, securing lashings, putting spanners into place, and other basic loading procedures for a variety of rail cargo ("Rail Movement").

### Simulated flatcars

#### Frame construction

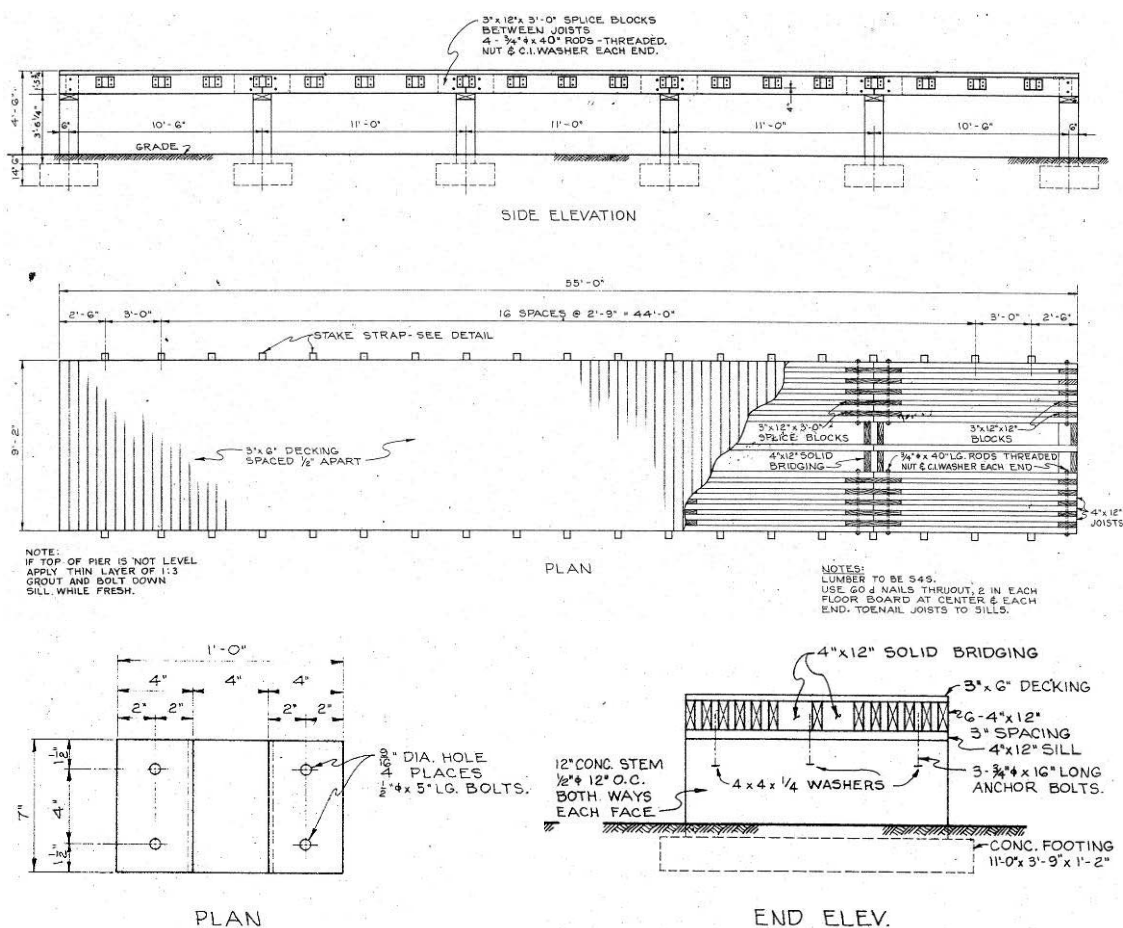


Figure 163. Rail movement mock-up, simulated flatcar (frame construction), Fort Bragg, NC, 1952 (standard drawing 28-13-52 sheet 1 of 4; rail movement mock-up, frame construction, plan, elevations, and details; 11 April 1952).

### Concrete alternate

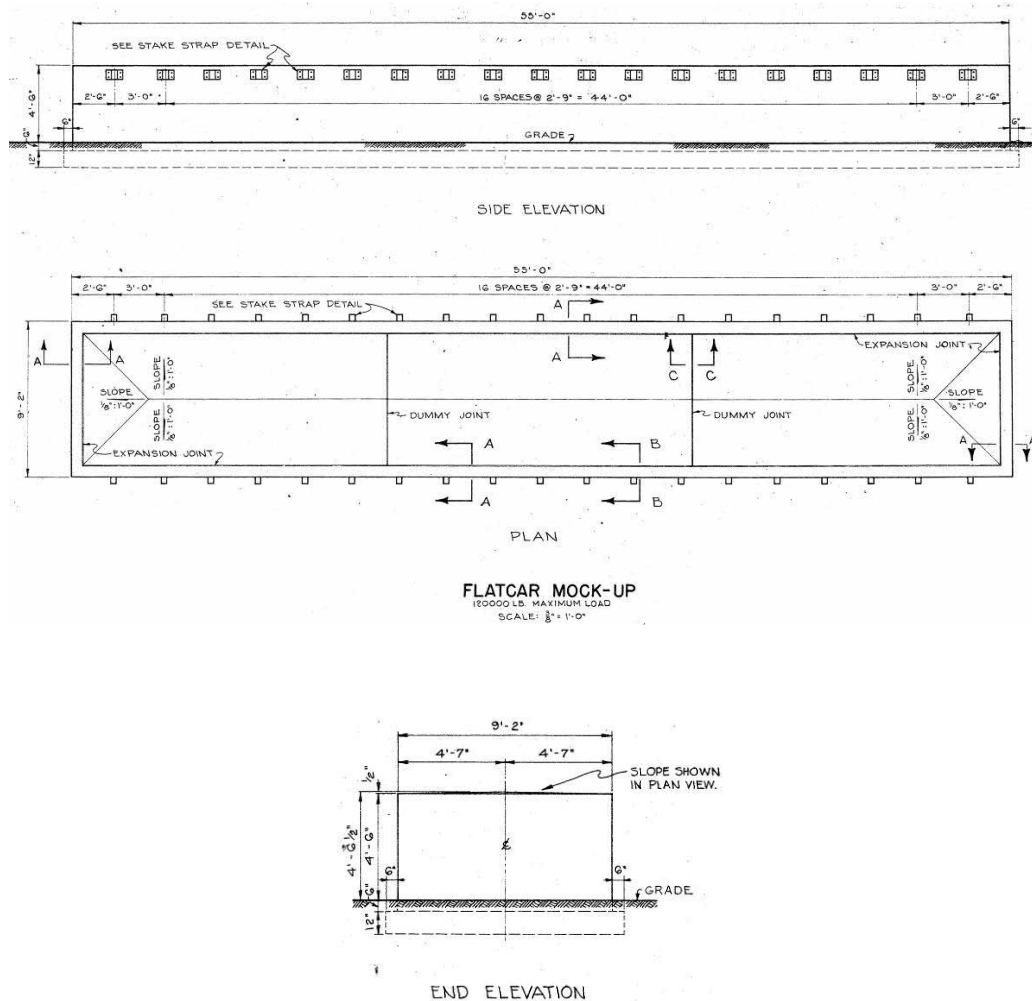


Figure 164. Rail movement mock-up, simulated flatcar (concrete alternate), Fort Bragg, NC, 1952 (standard drawing 28-13-100 sheet 1 of 4; rail movement mock-up, concrete alternate, plan, elevations, and details; 6 February 1952).

### Spanning platforms

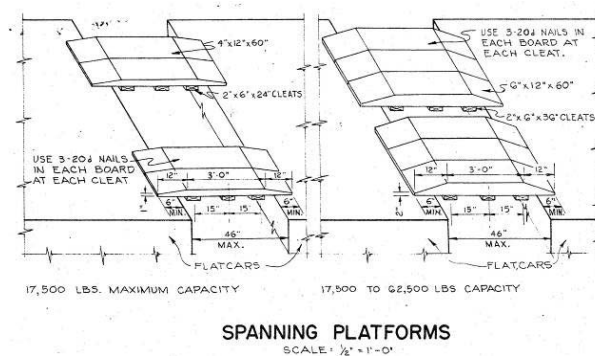


Figure 165. Rail movement mock-up, spanning platforms, Fort Bragg, NC, 1952 (standard drawing 28-13-100 sheet 1 of 4; rail movement mock-up, concrete alternate, plan, elevations, and details; 6 February 1952).



## Loading platforms

## Side-type P-1

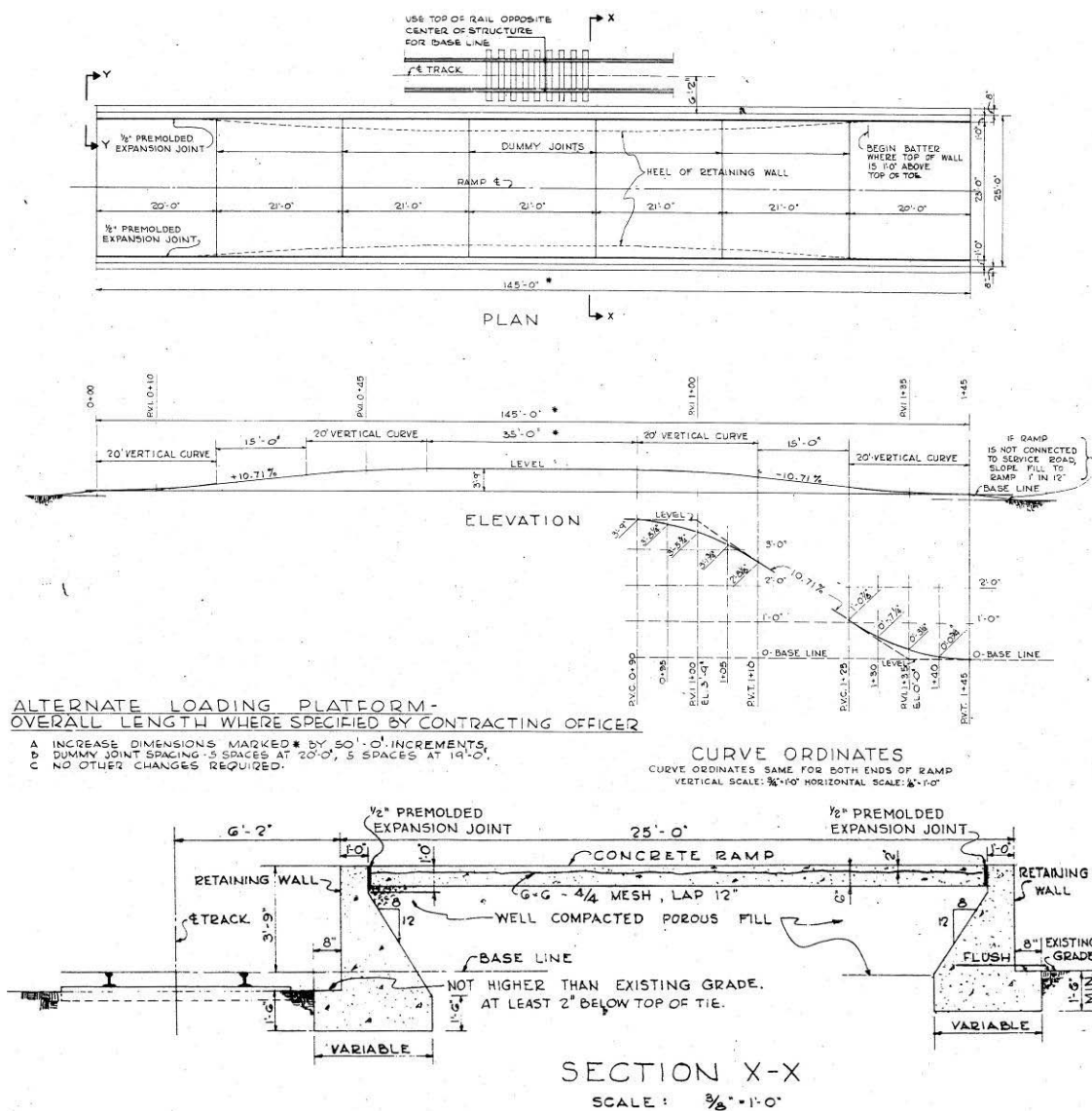


Figure 166. Rail movement mock-up, loading platform-side-type P-1, Fort Bragg, NC, 1952 (standard drawing 28-13-100 sheet 2 of 4; rail movement mock-up, loading platform-side-type p-1; 11 April 1952).

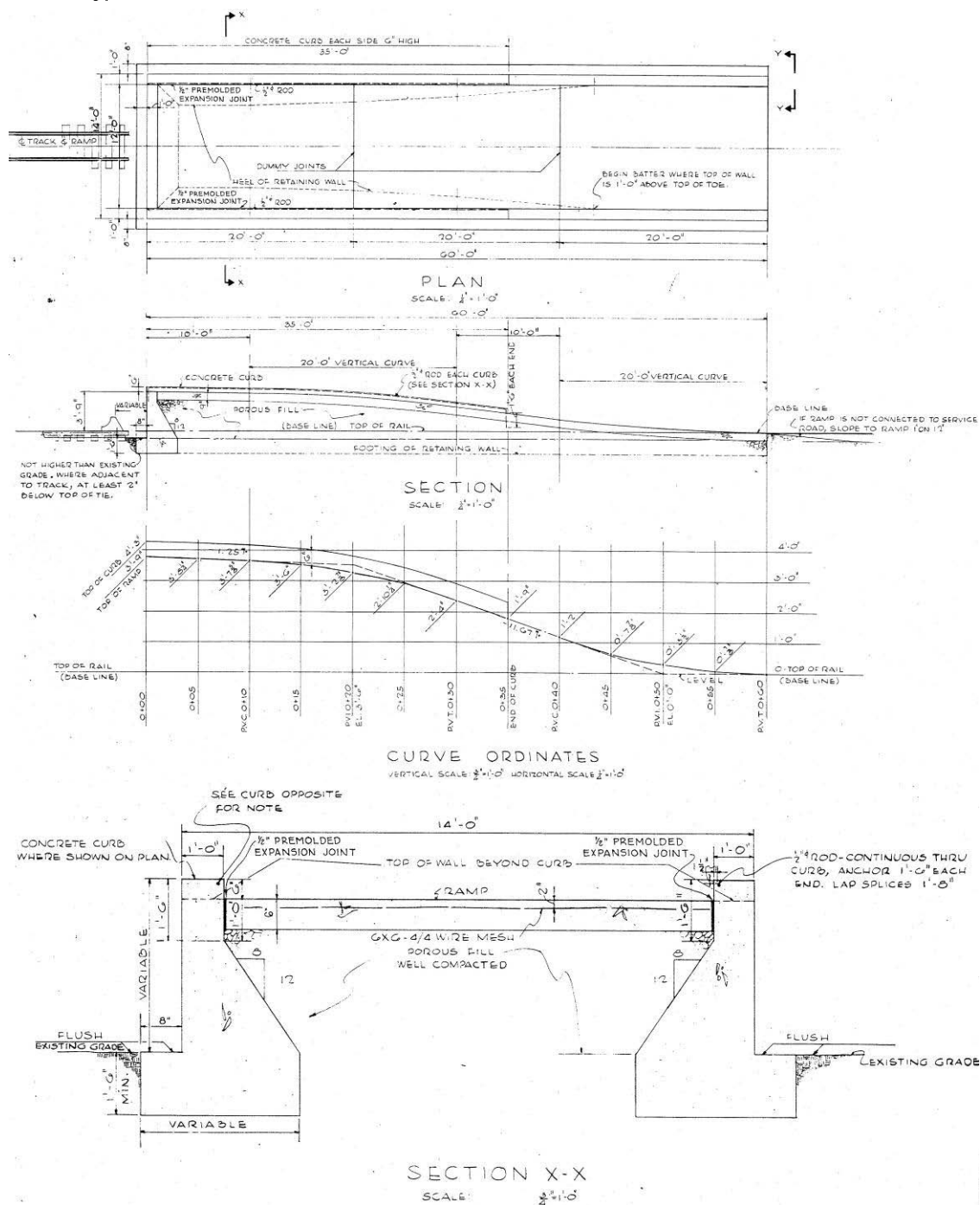
**End-type P-2**

Figure 167. Rail movement mock-up, loading platform-end-type P-2, Fort Bragg, NC, 1952 (standard drawing 28-13-100 sheet 3 of 4; rail movement mock-up, loading platform-end-type P-2; 11 April 1952).

### End and side-type-P-3

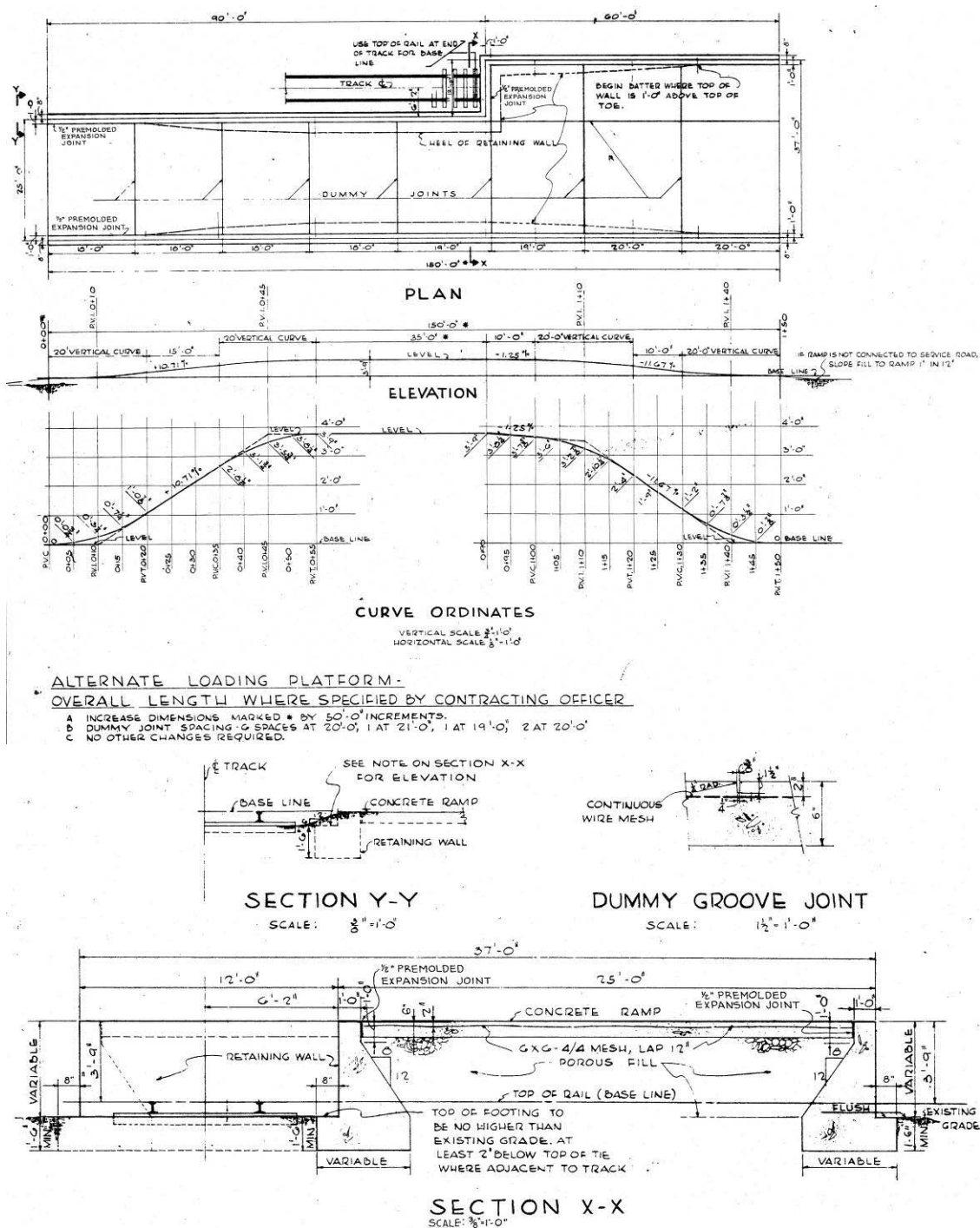


Figure 168. Rail movement mock-up, loading platform, end and side type P-3, Fort Bragg, NC, 1952 (standard drawing 28-13-100 sheet 4 of 4; rail movement mock-up, loading platform, end and side type P3; 11 April 1952).

## Trench training

“Investigations performed at numerous closed and active installations indicate that, during WWI, training requirements were developed to insure personnel knew how to conduct combat operations in the trench warfare environment of Europe. The military continued to train troops in trench warfare until the late 1930’s, when it appeared that the next war would not include trench warfare. Training in trench warfare involved learning how to prepare, defend, and attack trench type fortifications. Often, trench systems were constructed with two complete trench systems facing each other. Training on a trench system might have involved conducting attacks on a trench using rifles, machine guns, hand and rifle grenades, and trench mortars. Additionally, smoke and chemical weapons training may have been included in this type of training. Firing trenches were extensively used in hand grenade training. No targets were associated with the Trench System” (“RO-2” 14).

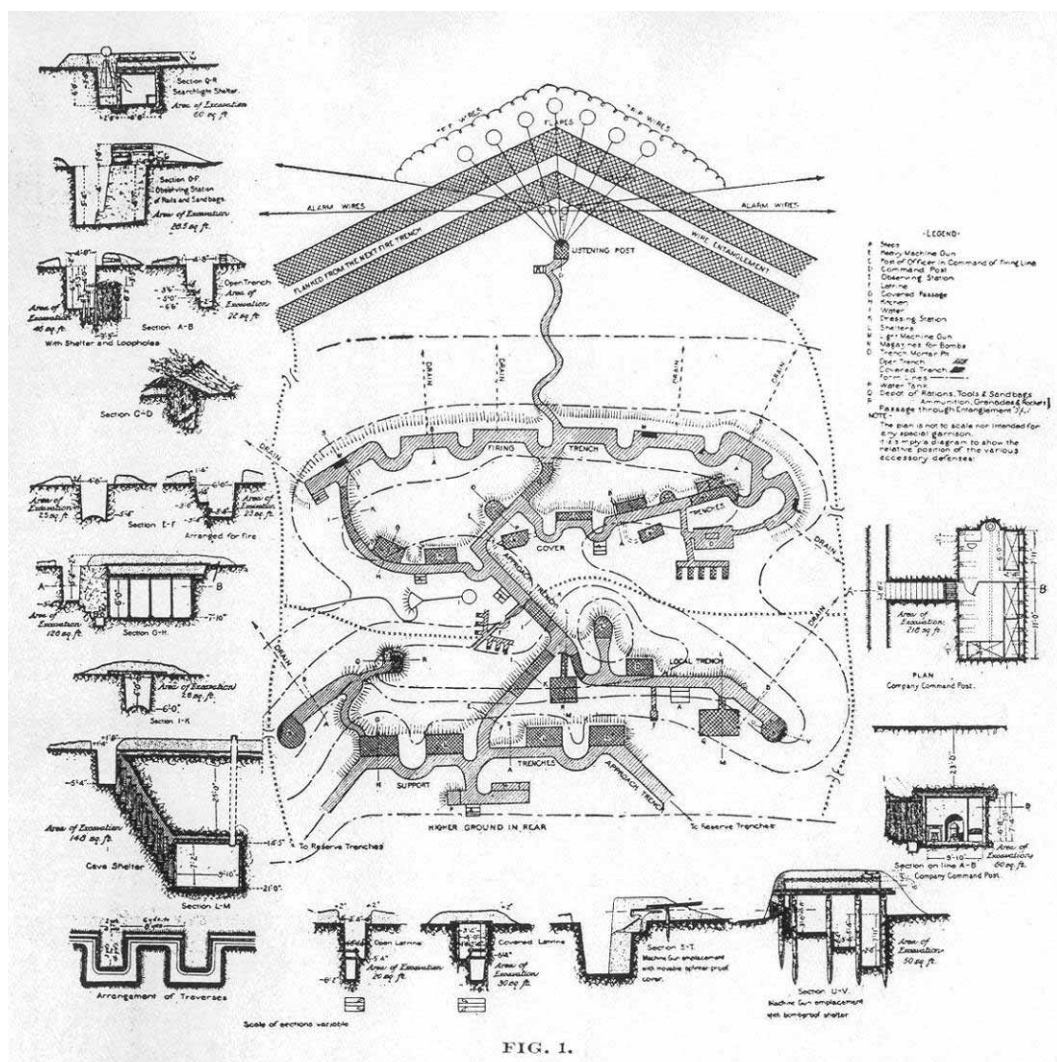


Figure 169. Typical trench system, circa 1917 (War Department document No. 355, Engineer Field Manual, Fifth Revision, 31 December 1917, p 300).



Figure 170. Trench training at Camp McClellan, AL, circa 1917 (New York Public Library, Digital Number 437646).



Figure 171. Trench firing line at Camp Wheeler, GA, 1918 (New York Public Library, digital number 117146).





Figure 172. Jumping into trenches at Camp Wheeler, GA, 1918 (New York Public Library, digital number 117149).



Figure 173. Trench training at unknown location, circa 1918 (New York Public Library, digital number 437675).

## Courses

### *Attack Course*

“The attack course was primarily designed for combined arms units to train on conducting attacks, retreats, and other similar tactical exercises. Although designed to support combined arms, this course was primarily used by a single combat arms unit. Additionally, this course was somewhat unique because it was supported by assets not organic to the unit conducting the training such as aerial bombing and strafing. Based upon training objectives and available terrain, the unit or range control would lay out targets and other training aids (such as mine fields or wire entanglements)” (“RO-2”). “Targets placed on the course included fixed personnel targets, simulated anti-tank gun targets, and towed armored vehicle targets. Remote-controlled simulators were used to simulate anti-tank gunfire. Enemy riflemen, gun crews, bazooka teams, and other personnel were represented by silhouette targets. Machine guns, tanks, antitank guns, and emplacements were represented by wooden models. Wooden frames covered with olive drab or other dark paper were placed behind targets for scoring. In problems involving only small arms ammunition, surprise targets were operated from pits or other shelters on the flanks of the course. The silhouette targets were constructed of one-eighth inch thick pasteboard with a wooden stave attached to the back. The targets were painted an olive drab color” (“RO-2” 29). “A formal layout of an attack course is shown in Figure 174 below (best available drawing). However, these courses may have been laid out differently based on a unit’s special mission” (“RO-2”).



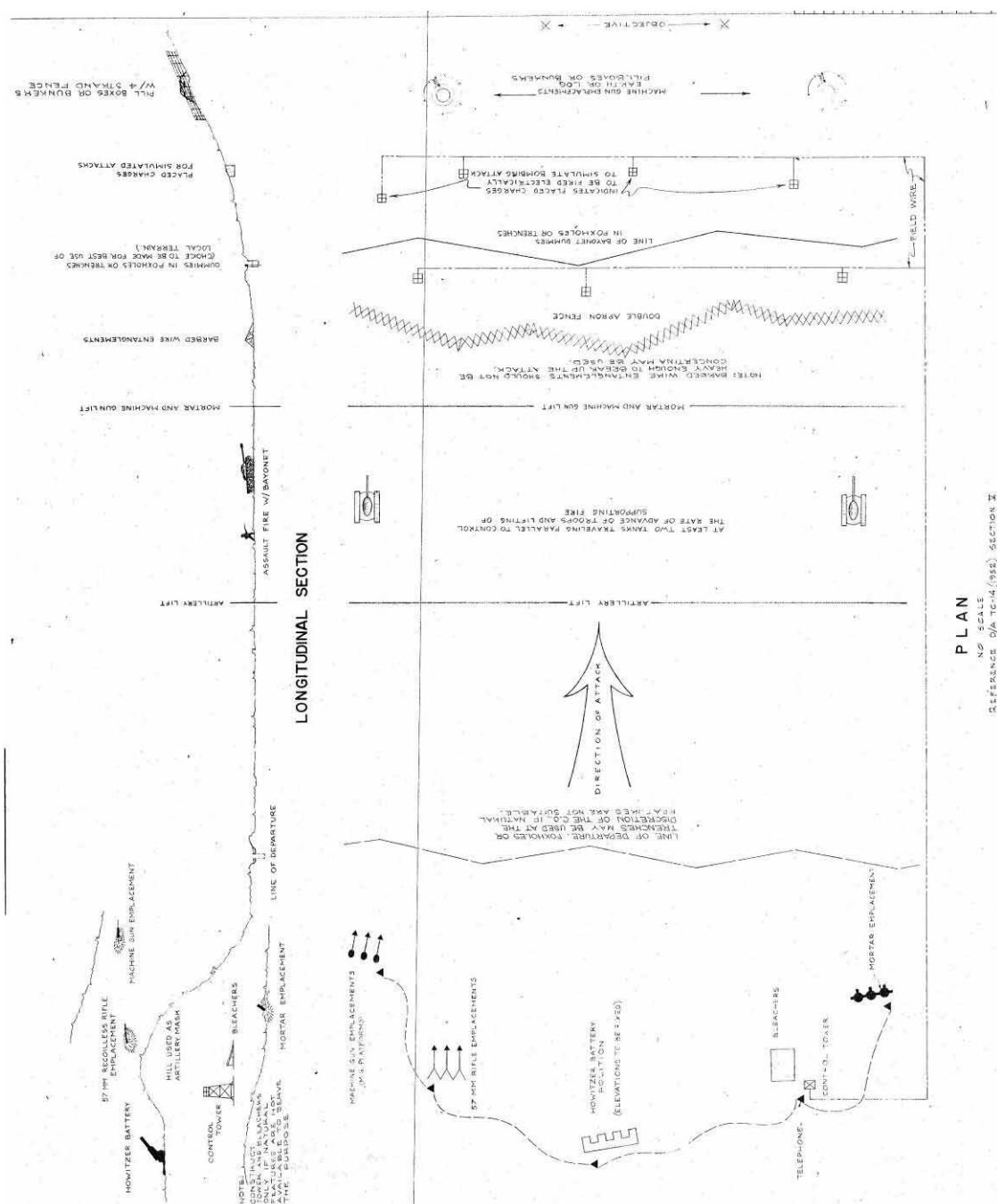


Figure 174. Attack course, circa 1952 (TM 9-855, standard drawing No 28-13-99, sheet 1 of 2, attack course, 27 May 1952).

## Targets

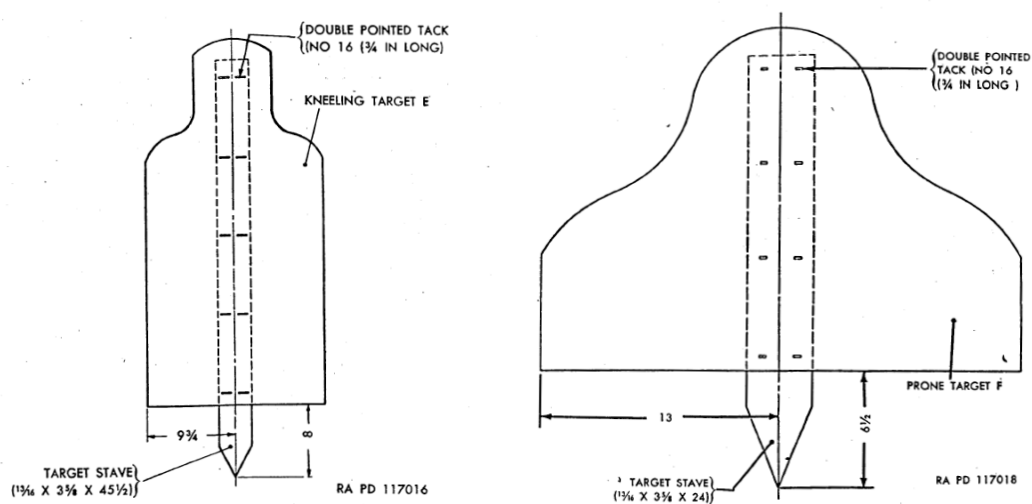


Figure 175. Kneeling and prone silhouette targets, circa 1951 (TM 9-855, targets, target materials, and rifle range construction, 1 November 1951, pp 168, 172, 174, 176).

## Pill box

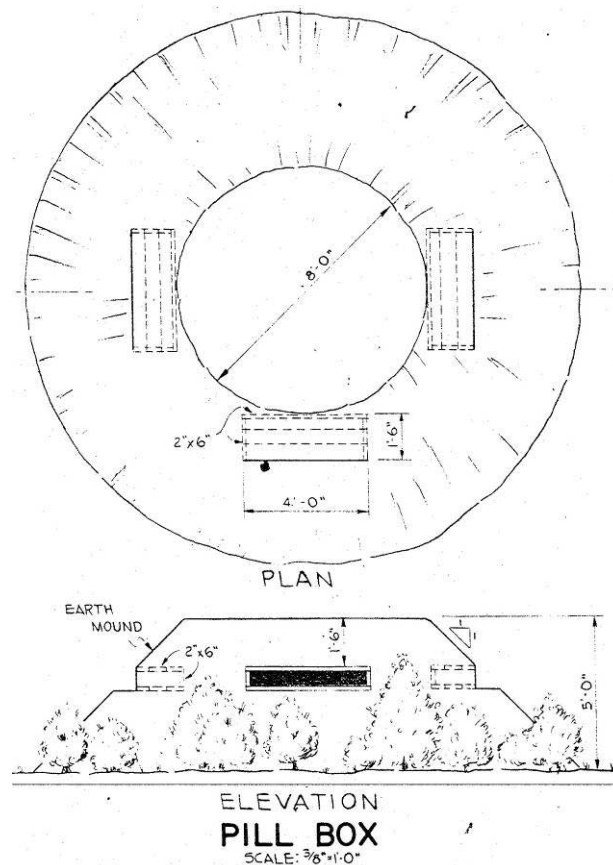


Figure 176. Attack course, pill box, Fort Bragg, NC, 1952 (standard drawing 28-13-99 sheet 2 of 2; attack course, details; 20 June 1952).

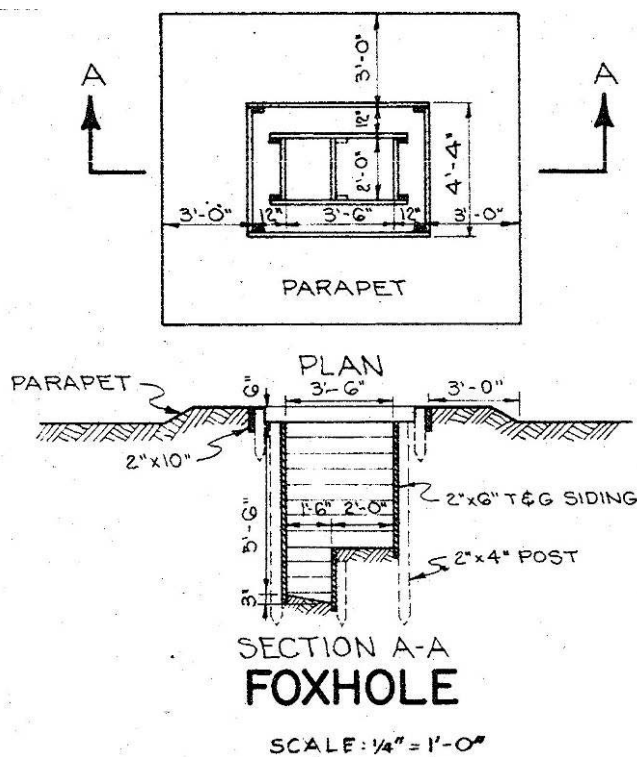
*Foxhole*

Figure 177. Attack course, foxhole, Fort Bragg, NC, 1952 (standard drawing 28-13-99 sheet 2 of 2; attack course, details; 20 June 1952).

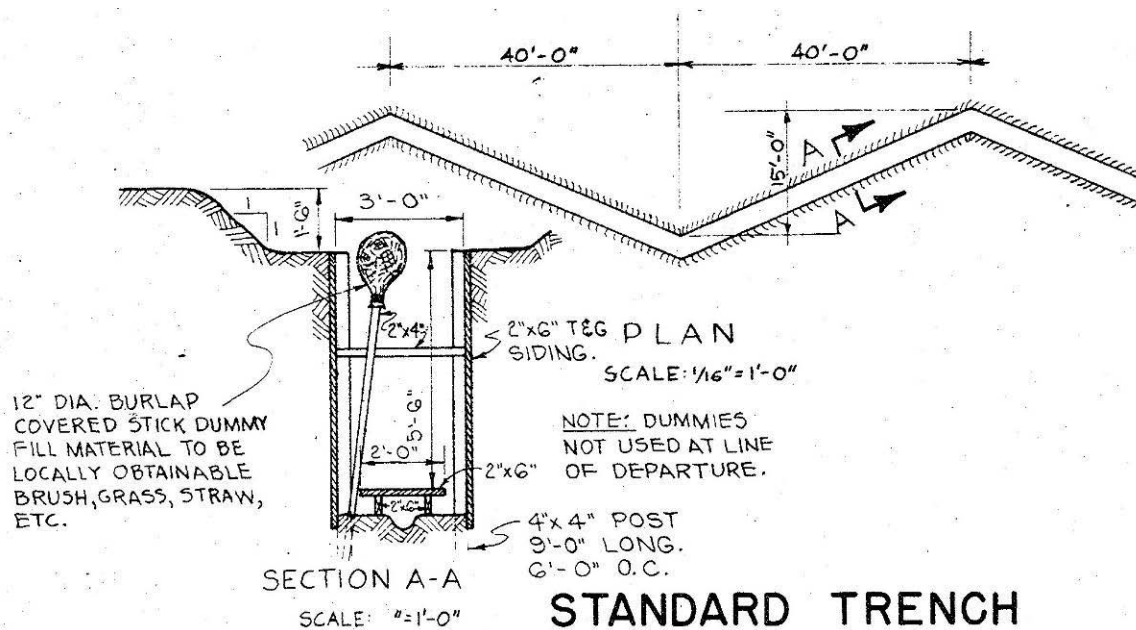
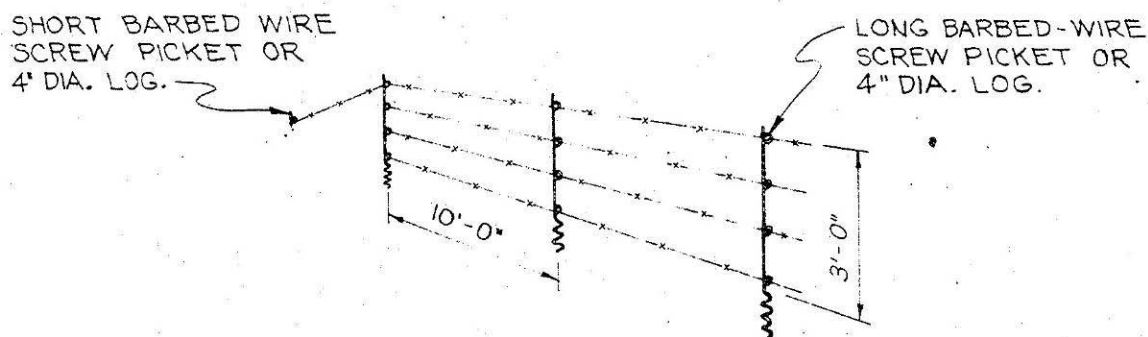
*Standard trench*

Figure 178. Attack course, standard trench, Fort Bragg, NC, 1952 (standard drawing 28-13-99 sheet 2 of 2; attack course, details; 20 June 1952).

## Fences



## BARBED WIRE FENCE

NO SCALE

Figure 179. Attack course, barbed wire fence, Fort Bragg, NC, 1952 (standard drawing 28-13-99 sheet 2 of 2; attack course, details; 20 June 1952).

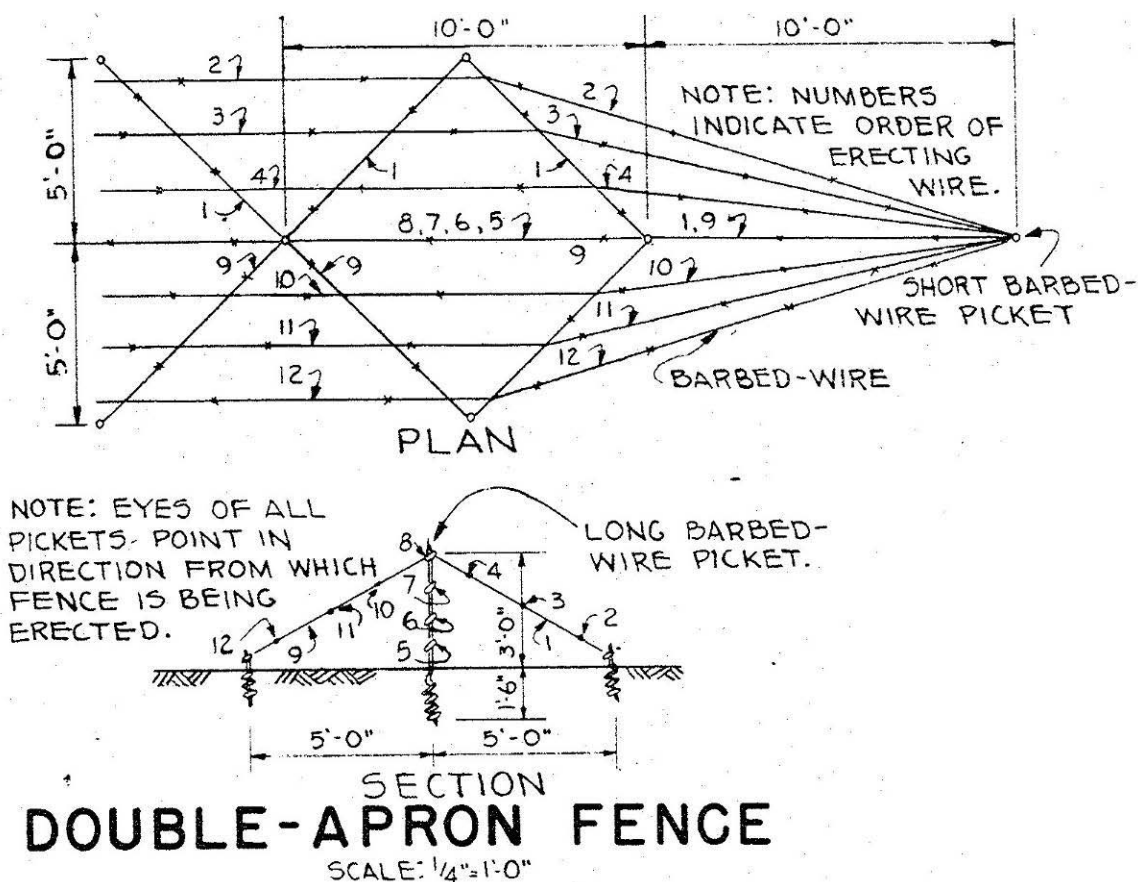


Figure 180. Attack course, double-apron fence, Fort Bragg, NC, 1952 (standard drawing 28-13-99 sheet 2 of 2; attack course, details; 20 June 1952).

## Control tower

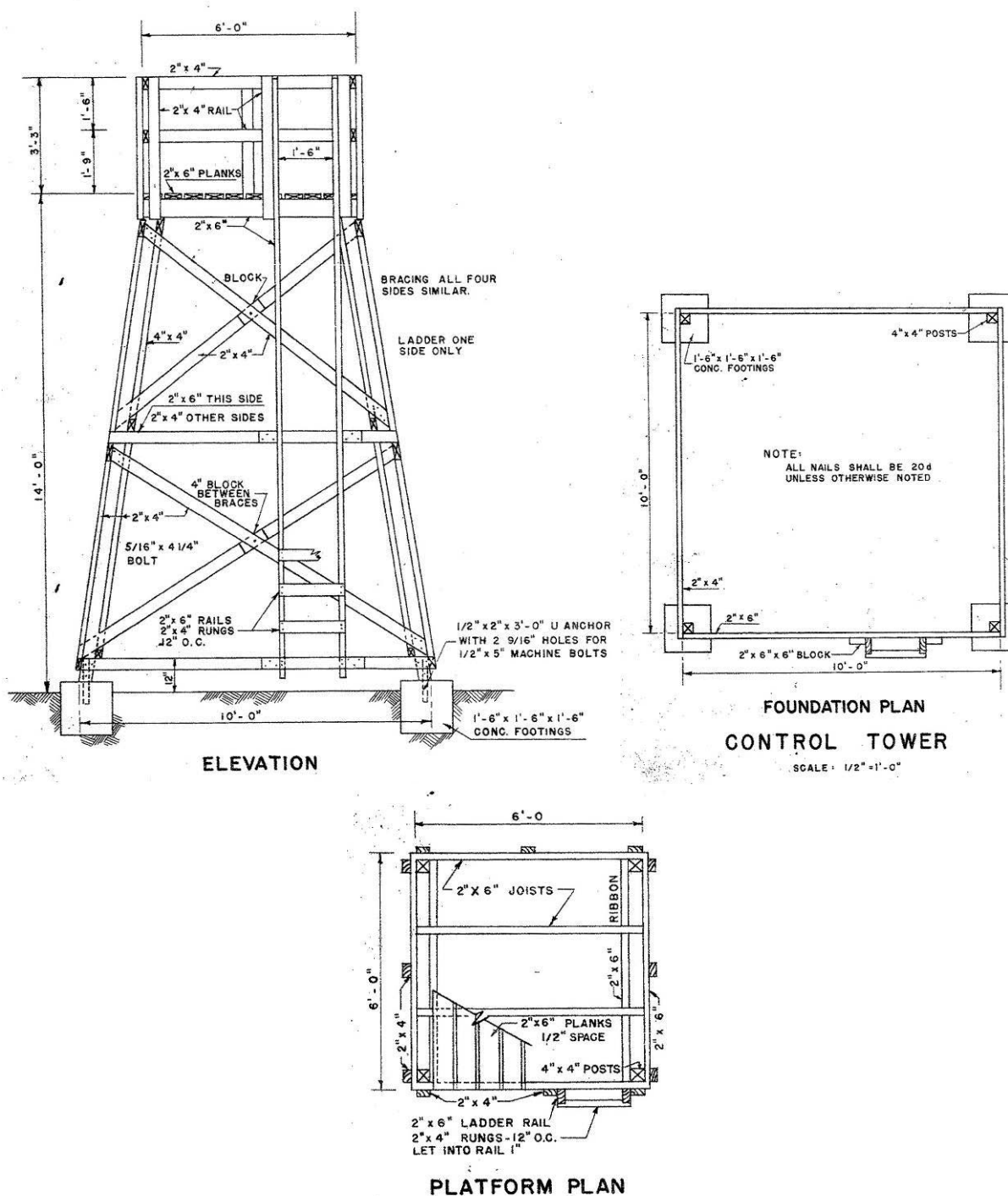


Figure 181. Attack course control tower (note that all exposed woodwork except creosoted poles were to be painted), Fort Bragg, NC, 1955 (standard drawing 28-13-105a sheet 1 of 1; attack course; 6 June 1955).

## Machine gun platform

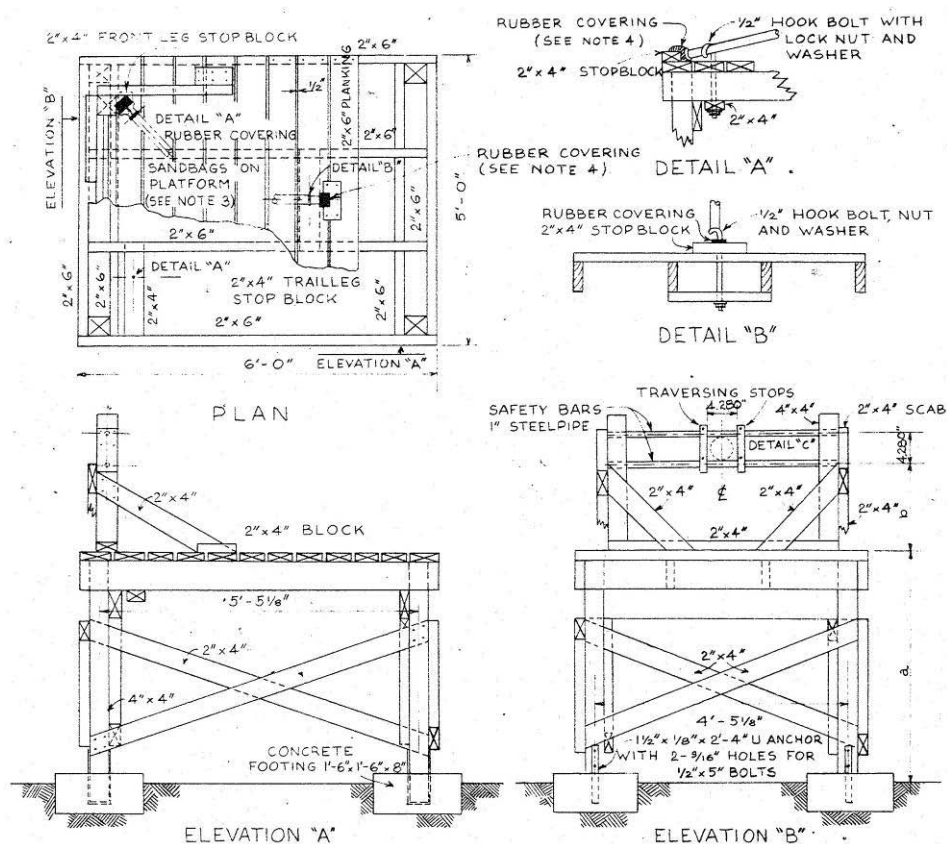


Figure 182. Attack course, machine gun platform, Fort Bragg, NC, 1952 (standard drawing 28-13-99 sheet 2 of 2; attack course, details; 20 June 1952).

## Bleachers

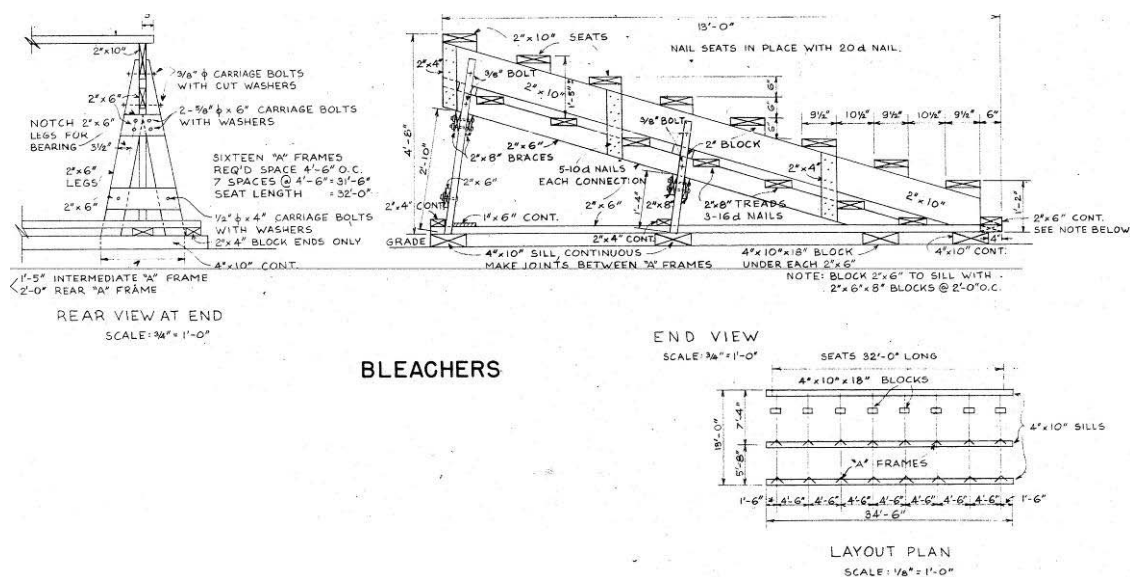


Figure 183. Attack course, bleachers, Fort Bragg, NC, 1952 (standard drawing 28-13-99 sheet 2 of 2; attack course, details; 20 June 1952).

### Close combat course

The purpose of this course was to teach men to fire small arms with speed and accuracy at surprise targets while negotiating broken terrain. Lanes were marked by colored posts or by wire with rag streamers. Blanks and simulators were used. At least one situation requiring the use of a practice grenade was incorporated into the course. Booby traps were also employed ("RO-2" 20, 28). If facilities were available, targets were constructed and painted to be as realistic as possible (aggressor soldiers in standing, kneeling, and sitting positions). One or two moving targets were to be included to add interest to the exercise. Targets were arranged on hinges and pulleys, and activated by the control officer or men in pits on the signal of the control officer ("RO-2" 20, 28).

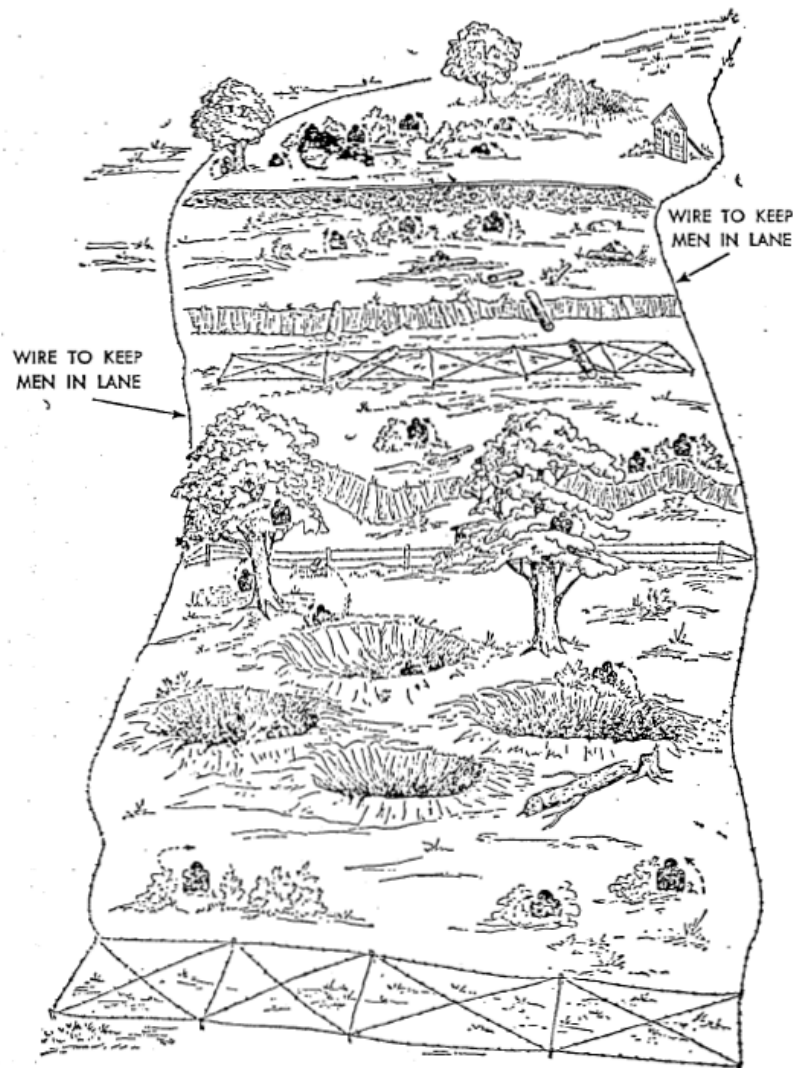
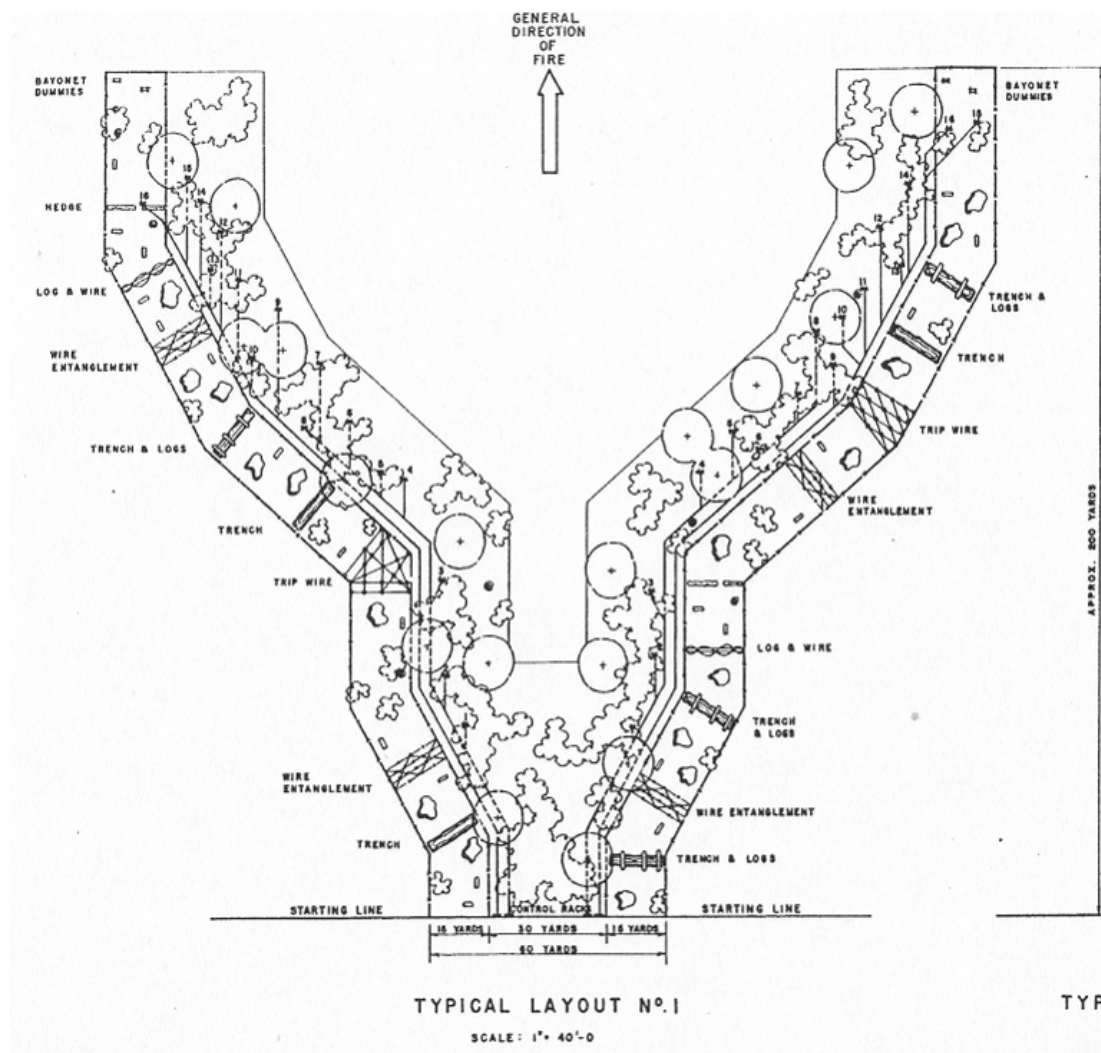


Figure 184. Close combat course, pictorial view, circa 1951 (TM 9-855, targets, target materials, and rifle range construction, 1 November 1951, p. 108).



## OPERATION NOTES:

1. THE PURPOSE OF THIS COURSE IS TO TEACH MEN TO FIRE SMALL ARMS WITH SPEED AND ACCURACY AT SURPRISE TARGETS WHILE NEGOTIATING BROKEN TERRAIN.
2. TARGETS SHOULD BE ARRANGED ON HINGES AND PULLEYS AND ACTIVATED BY THE CONTROL OFFICER OR BY OTHER PERSONNEL ON A SIGNAL BY THE CONTROL OFFICER.
3. WHERE CONSTRUCTION NOTE NO 4 IS NOT APPLICABLE, ADVANCE OF PERSONNEL SHOULD BE COORDINATED SO THAT FORWARD MOVEMENT IN EACH LANE OF THE COURSE WILL BE SIMULTANEOUS.
4. TARGETS SHOULD BE VISIBLE FOR A MINIMUM TIME CONSISTENT WITH THE RANGE. IN ADDITION, THEY SHOULD DISAPPEAR IMMEDIATELY AFTER THE SHOT IS FIRED.
5. SUFFICIENT TARGETS SHOULD BE PROVIDED SO THAT THE CONTROL OFFICER WILL HAVE AN ADEQUATE SELECTION IN EACH SITUATION. THIS OFFICER, BY CONTROLLING THE NUMBER OF TARGETS PRESENTED IN EACH RUN, SHOULD INSURE THAT THE FIRER HAS ONE REMAINING ROUND TO FIRE AT ONE BAYONET DUMMY AND THAT HE THEN ASSAULTS THE OTHER DUMMY WITH THE BAYONET.
6. LANES SHOWN IN LAYOUT NO. 1 MAY BE USED AT THE SAME TIME PROVIDING NECESSARY SAFETY PRECAUTIONS ARE OBSERVED.

## CONSTRUCTION NOTES:

1. SURPRISE TARGETS SHOULD APPEAR AT VARIOUS RANGES FROM 5 TO 50 YARDS.
2. IF PRACTICABLE, EXPLOSIVES OR BLANKS SHOULD BE FIRED IN THE CLOSE VICINITY OF THE FIRERS. BOOBY TRAPS SHOULD BE EMPLOYED. IN THE ABSENCE OF EXPLOSIVES, OTHER DISTRACTING NOISES SHOULD BE MADE.
3. LOCATION OF INDIVIDUAL TARGETS SHOULD TAKE ADVANTAGE OF LOCAL COVER FOR PURPOSE OF CONCEALMENT. SKETCHES "A", "B" AND "C" SHOW POSSIBLE LOCATION AND CONSTRUCTION FOR TARGETS. TARGETS SHOULD BE CONTROLLED BY WIRES FROM A POINT IN REAR OF STARTING LINE. (SEE "D" AND "E" AND DRAWING 1600-160 FOR TYPICAL CONSTRUCTION.)
4. WHERE MULTIPLE LANE COURSES, TYPICAL LAYOUT NO. 1, ARE USED, LOCATE OR SCREEN TARGETS IN ADJACENT LANES TO MINIMIZE PROBABILITY OF FIRE ON THEM FROM ADJACENT LANES.

Figure 185. Close combat course, circa 1943 (standard drawing no 1600-195, close combat course – typical, 10 August 1943).



**TYPICAL LOCATION AND CONCEALMENT  
FOR INDIVIDUAL TARGETS**



SKETCH A

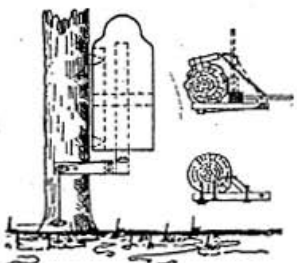


SKETCH B

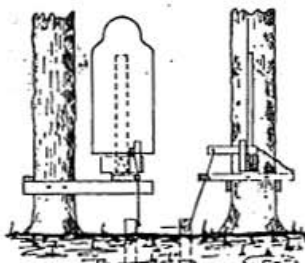


SKETCH C

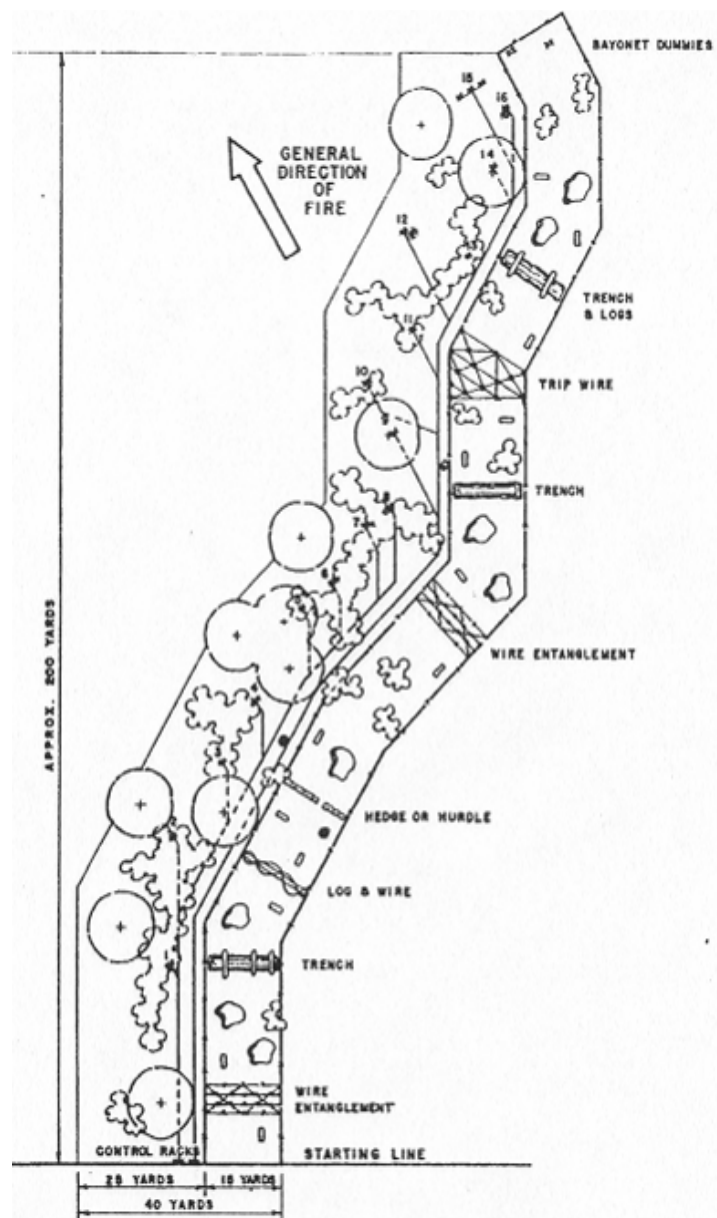
**TYPICAL CONSTRUCTION DETAILS  
FOR ACTIVATING TARGETS**



SKETCH D



SKETCH E



**TYPICAL LAYOUT NO. 2**

SCALE: 1" = 40'-0"

Figure 186. Close combat course, circa 1943 (standard drawing no 1600-195, close combat course – typical, 10 August 1943).

*Surprise targets*

Figure 187. As the trainee goes through the course, targets are suddenly raised at appropriate moments, and he must snap fire at them at Camp Fannin, TX, 1 April 1944 (NARA College Park, RG 111-SC WWII, box 681, photo SC324450).



Figure 188. Another view of the enemy combatant course at Camp Fannin, TX, 1 April 1944 (NARA College Park, RG 111-SC WWII, box 681, photo SC324449).

*Individual tactical training areas*

Individual Tactical Training (ITT) courses or areas were constructed to teach “individual battlefield skills, combat movement techniques, and procedures necessary for subsequent tactical training at the squad and platoon level” (“Individual Tactical Training”). An example from Heard Park, Fort Knox is shown below.

**Infiltration course**

A 1943 letter from Headquarters, Army Ground Forces directed units, replacement training centers, and unit training centers to construct infiltration courses. The course was to be generally level and contain both obstacles and dummy targets. Obstacles included shell holes, trenches, slit trenches, wire entanglements, logs, stumps, and sparse brush. Machine guns were placed in position, test fired, and fitted with depression stops so that their fire was grazing and insured a three-foot clearance over crawling troops. This document further stated that reduced charges of explosives representing artillery fire, mines, and booby traps could be placed throughout the course. Embankments were constructed into which machine guns fired. These embankments were 30 feet thick at the base, 5 feet thick at the top, 15 feet high, and long enough to provide safety to the flanks of the infiltration course (“RO-2” 19). The course may have had range lights, machine gun platforms, control towers, bleachers, latrines, and other range buildings.



Figure 189. Heard Park (individual tactical training) fire and movement at Fort Knox, KY, 5 May 1966 (NARA College Park, RG 111-SC post 1955, box 400, photo SC628844).



Figure 190. Crawling through the infiltration course at Fort Bragg, NC, 9 August 1950 (NARA College Park, RG 111-SC WWII, box 189, photo SC348205).



Figure 191. Poorman range (infiltration course) located on Range and Poorman Roads at Fort Knox, KY, 5 May 1966 (NARA College Park, RG 111-SC post 1955, box 400, photo SC628843).



Figure 192. Poorman Range (infiltration course) located on Range and Poorman Roads at Fort Knox, KY, 5 May 1966 (NARA College Park, RG 111-SC post 1955, box 400, photo SC628846).

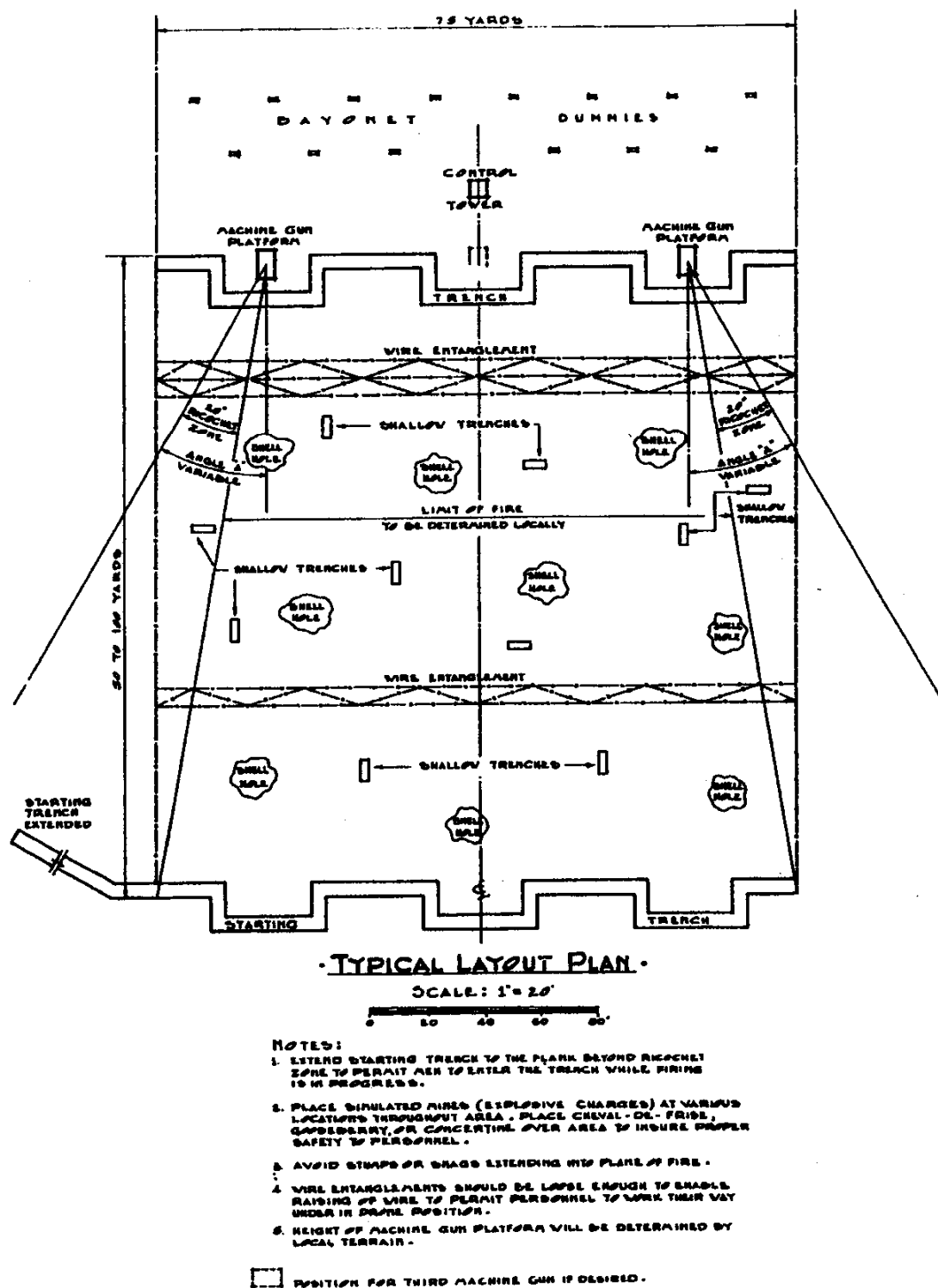


Figure 193. Infiltration course, circa 1943 (standard drawing No. 1600-190, infiltration course – typical, 1 July 1943).

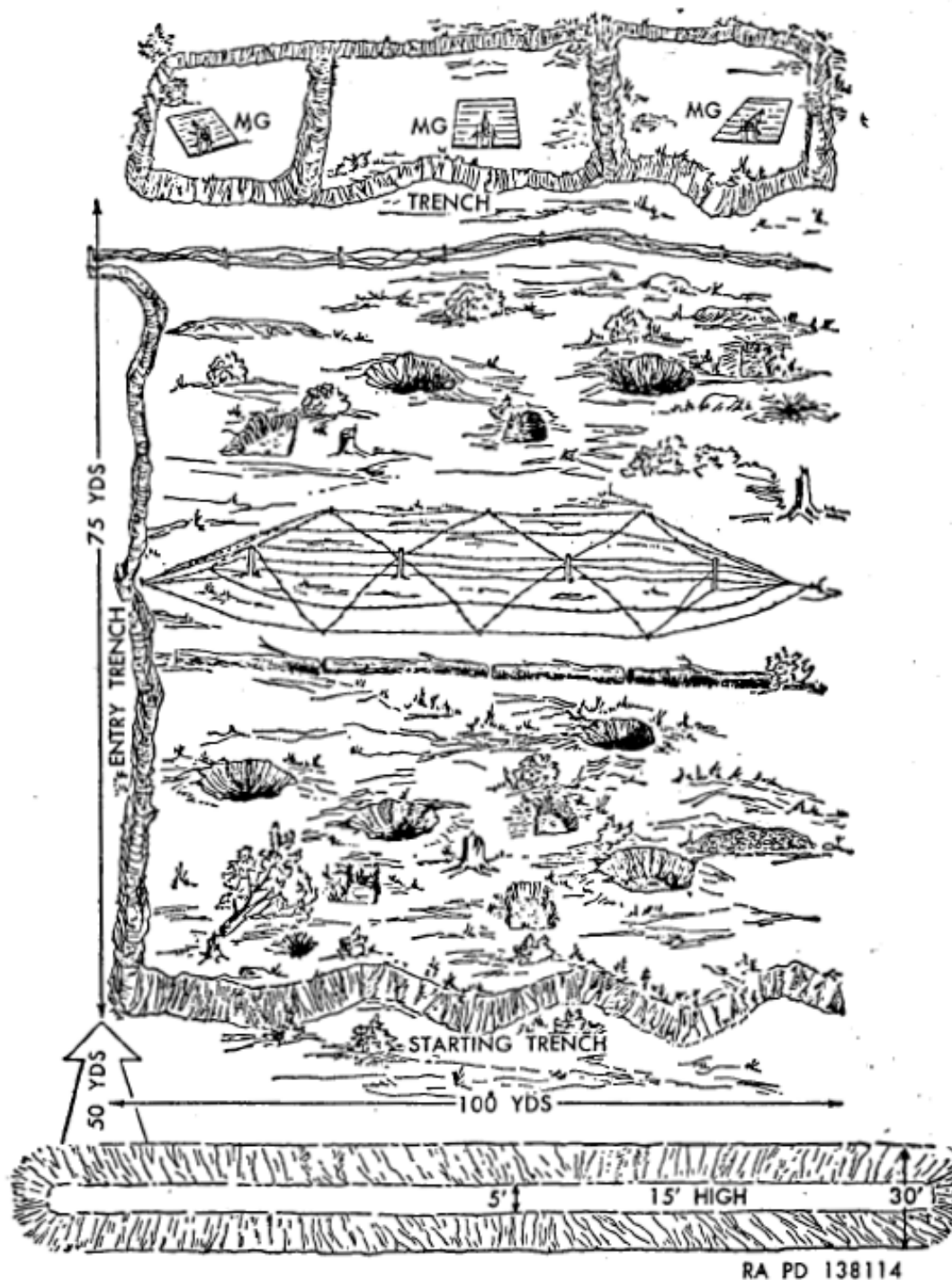


Figure 194. Pictorial view, infiltration course, circa 1951 (tm 9-855, targets, target materials, and rifle range construction, 1 November 1951, pp. 9, 113, 129).



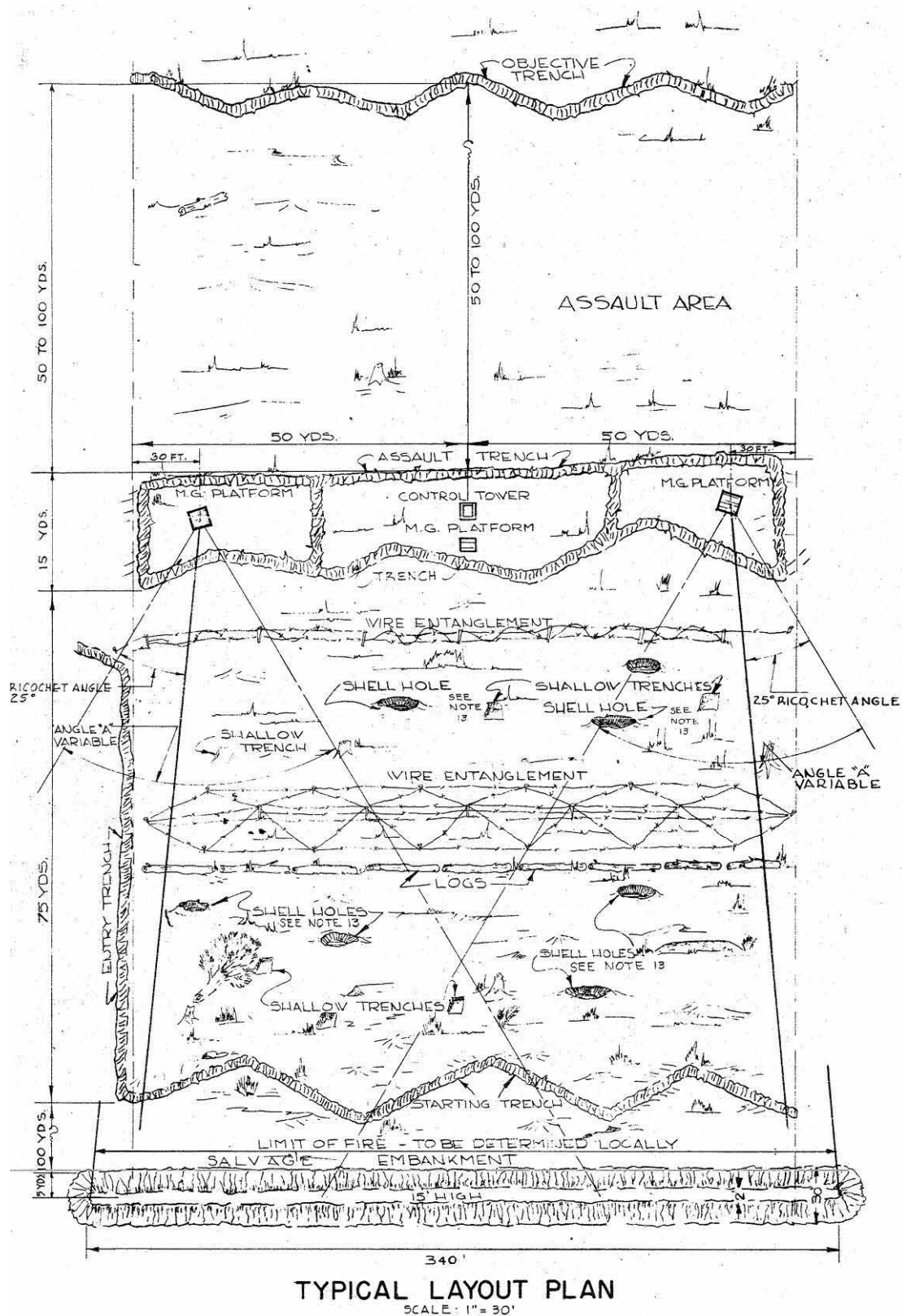


Figure 195. Infiltration course, typical layout plan, Fort Bragg, NC, 1951 (standard drawing 28-13-34 sheet 1 of 1; infiltration course, typical layout and details; 21 November 1951).



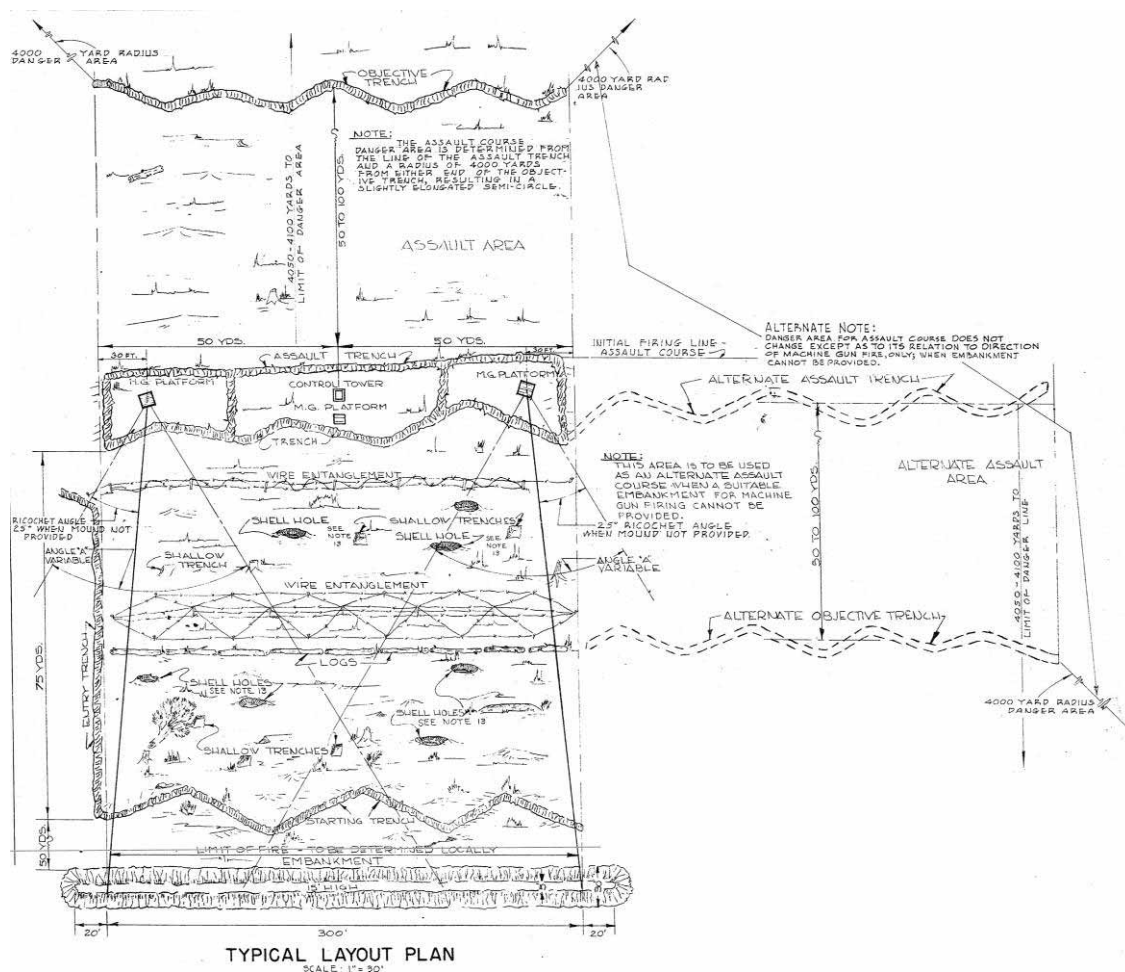


Figure 196. Infiltration course, alternate typical layout plan, Fort Bragg, NC, 1951 (standard drawing 28-13-34A sheet 1 of 1; Infiltration course, typical layout and details; 21 November 1951).

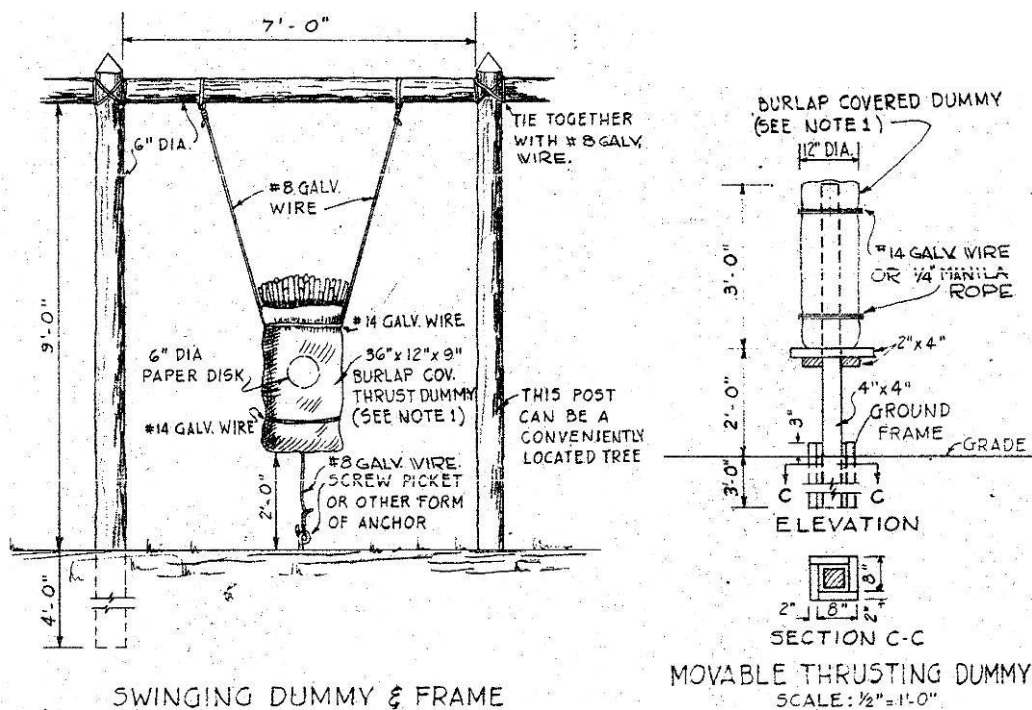
*Targets and obstacles*

Figure 197. Infiltration course, swinging dummy and frame, and movable thrusting dummy, Fort Bragg, NC, 1951 (standard drawing 28-13-34 sheet 1 of 1; infiltration course, typical layout and details; 21 November 1951).

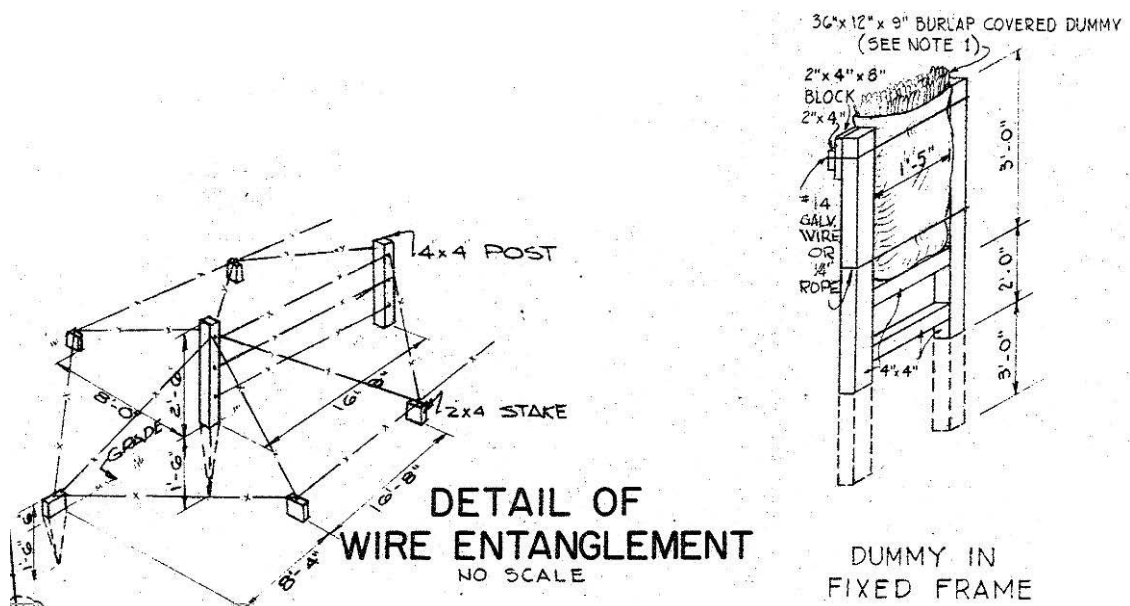


Figure 198. Infiltration course, detail of wire entanglement and dummy in fixed frame, Fort Bragg, NC, 1951 (standard drawing 28-13-34 sheet 1 of 1; infiltration course, typical layout and details; 21 November 1951).

### Control tower

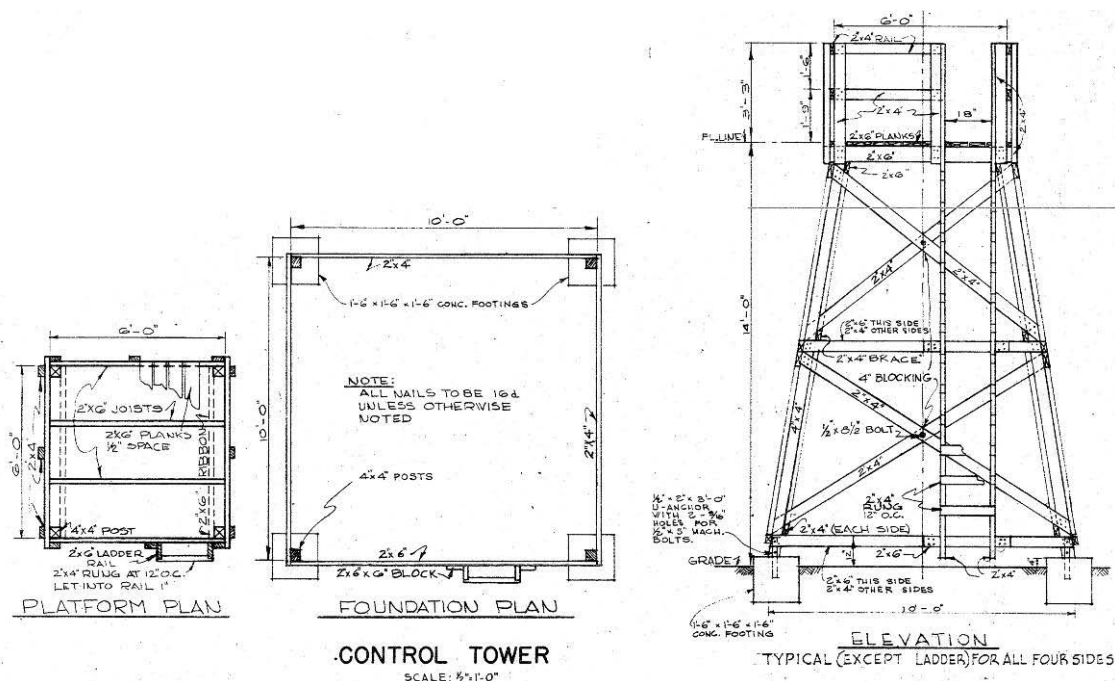


Figure 199. Infiltration course, control tower, Fort Bragg, NC, 1951 (standard drawing 28-13-34 sheet 1 of 1; infiltration course, typical layout and details; 21 November 1951).

### Machine gun platform

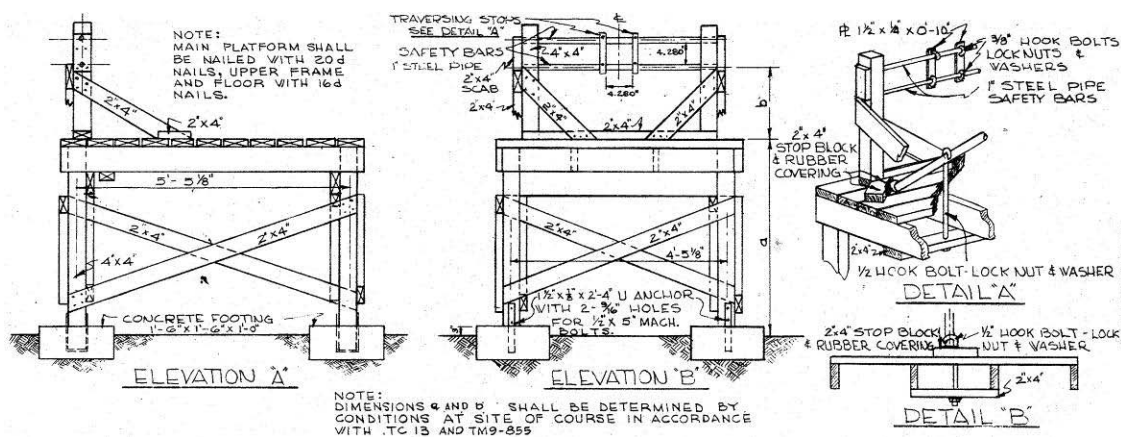


Figure 200. Infiltration course, machine gun platform, elevations A & B, and details A & B, Fort Bragg, NC, 1951 (standard drawing 28-13-34 sheet 1 of 1; infiltration course, typical layout and details; 21 November 1951).

## Large scale operation areas

Advanced phases of training for most soldiers included participation in large-scale operations and maneuvers as combat teams or divisions. This kind of training typically required vast areas of land suited to particular

training requirements. Several examples of large-scale operation areas are shown below, followed by descriptions of major training centers established during World War II for specialized training in large-scale airborne, amphibious, and mountain operations.

## World War II

### *Army*



Figure 201. Infantry advancing behind an M-3 tank through a smoke screen at Fort Knox, KY, August 1942 (NARA College Park, RG 111-SC WWII, box 85, photo SC144300).



Figure 202. M-4 tanks each with a 75 mm gun at Fort Knox, KY, December 1942 (NARA College Park, RG 111-SC WWII, box 107, photo SC150392).



Figure 203. Medium M-3 tanks attack "enemy" machine gun nests after a bombardment by heavy artillery at Fort Jackson, SC, 24 June 1942 (NARA College Park, RG 111-SC WWII, box 61, photo SC137588).



Figure 204. Parachutists and Airborne infantry carrying machine guns, rifles, and field pieces about to board planes and take off in staged attack on an airport in North Carolina at Fort Bragg, NC, WWII (NARA College Park, RG 111-SC WWII, box 95, photo SC147012).



Figure 205. After landing among trees, these parachutists rush to the attack in preparing to clear way for Airborne troops at Fort Bragg, NC, WWII (NARA College Park, RG 111-SC WWII, box 95, photo SC147006).

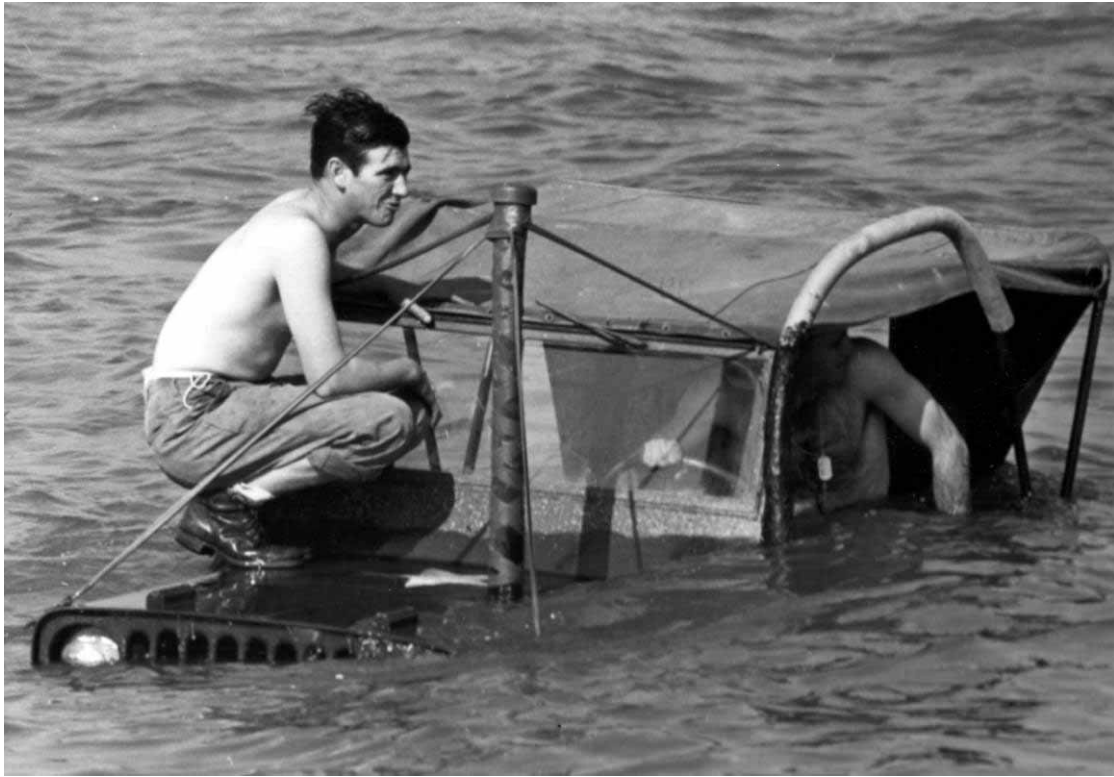
*Navy*

Figure 206. Amphibious training with a partly submerged truck at NOB Norfolk, VA, 31 October 1943 (NARA College Park, RG 80-G, box 472, photo 20091).

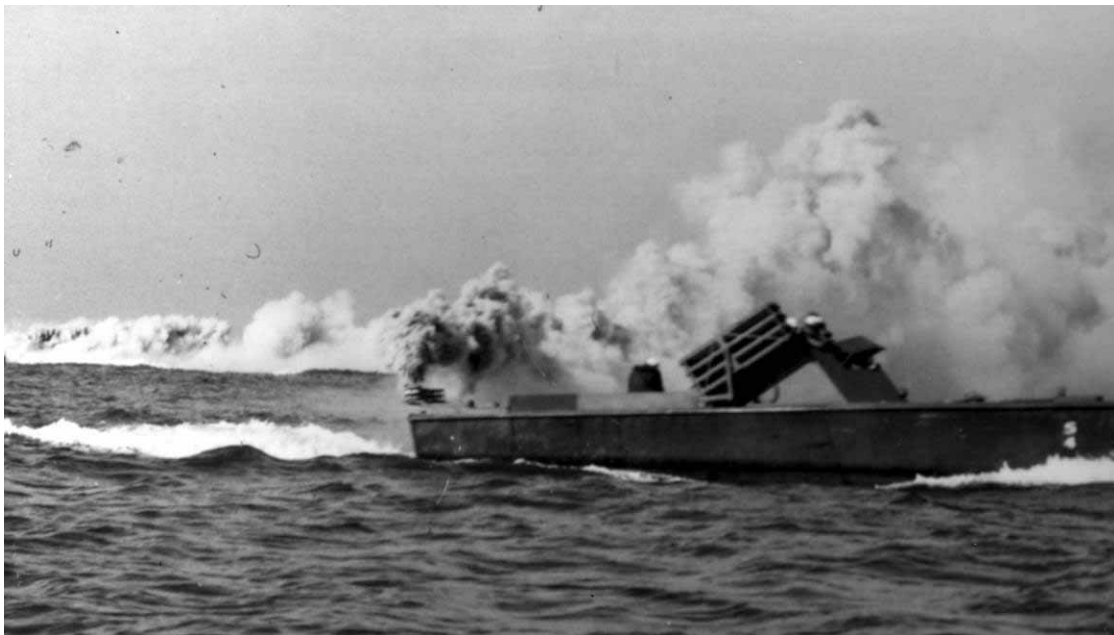


Figure 207. Amphibious training with a smoke screen laid by small craft to cover landing operation at NOB Norfolk, VA, 30 October 1943 (NARA College Park, RG 80-G, box 472, photo 20092).





Figure 208. Seabees at machine gun training during a maneuver at Camp Peary, VA, 28 September 1943 (NARA College Park, RG 80-G, box 194, photo 43129).



Figure 209. Amphibious maneuvers with an open bow door of LST and a Sherman Tank rolling down the ramp at Camp Bradford (now Naval Amphibious Base Little Creek), VA, 20 December 1943 (NARA College Park, RG 80-G, box 199, photo 44030).





Figure 210. Amphibious maneuvers with an amphibious training force filling into LST at Camp Bradford (now Naval Amphibious Base Little Creek), VA, 20 December 1943 (NARA College Park, RG 80-G, box 199, photo 44027).



Figure 211. Crews of two landing craft rubber (LCR) bring their vessels onto the beach at Amphibious Training Base Fort Pierce, FL, 28 November 1943 (NARA College Park, RG 80-G, box 198, photo 43902).



Figure 212. Seabees in a chow line after a practice invasion at unknown location, 8 October 1943 (NARA College Park, RG 80-G, box 377, photo 82511).



Figure 213. Seabees training with men laying a landing strip from boat to beach for unloading tanks at unknown location, 8 October 1943 (NARA College Park, RG 80-G, box 377, photo 82513).



Figure 214. An LCVP loaded with rifle squad ready for disembarking in training operations on the Atlantic coast at unknown location, 1 August 1943 (NARA College Park, RG 80-G, box 392, photo 85064).



Figure 215. Seabees in landing boats prior to an invasion scene at unknown location, 8 October 1943 (NARA College Park, RG 80-G, box 377, photo 82524).



Figure 216. Seabees leap from their boats in an invasion scene at unknown location, 8 October 1943 (NARA College Park, RG 80-G, box 377, photo 82518).



Figure 217. Seabees leave the boats and fall flat on the sand in an invasion scene at unknown location, 8 October 1943 (NARA College Park, RG 80-G, box 377, photo 82516).



Figure 218. Troops learn how to load casualties in a DUKW at Camp Bradford (now Naval Amphibious Base Little Creek), 3 August 1943 (NARA College Park, RG 80-G, box 392, photo 85055).



Figure 219. Seabees during practice landing from an LST with a bulldozer pulling a RADAR trailer overland to the airport at Point Mugu, CA, 13 September 1943 (NARA College Park, RG 80-G, box 404, photo 86806).



Figure 220. Mock invasion with a F4U strafing beach operation at Camp Bradford (now Naval Amphibious Base Little Creek), 9 February 1945 (NARA College Park, RG 80-G, box 1108, photo 30542).

### *Marine Corps*



Figure 221. A landing craft, personnel (LCP) with full infantry load (38 men) in training operations on the Atlantic coast with Mark 21-30 caliber machine guns, 21 August 1943 (NARA College Park, RG 80-G, box 393, photo 85163).





Figure 222. A landing craft, mechanized (LCM) with a load of one truck in training operations on the Atlantic coast with Mark 21-30 caliber machine guns, 21 August 1943 (NARA College Park, RG 80-G, box 393, photo 85158).



Figure 223. An LCI with full infantry load (38 men) in training operations on the Atlantic coast with Mark 21-30 caliber machine guns, 21 August 1943 (NARA College Park, RG 80-G, box 393, photo 85147).



Figure 224. Training of marines in the field at NAS Jacksonville, 20 May 1942 (NARA College Park, RG 80-G, box 291, photo 66014).



Figure 225. Training of marines in the field at NAS Jacksonville, 20 May 1942 (NARA College Park, RG 80-G, box 283, photo 64647).





Figure 226. Night landing operations from LST #498 at San Clemente Island, CA, 16 February 1944 (NARA College Park, RG 80-G, box 629, photo 224349).

## Post-WWII

### *Army*



Figure 227. West Point cadets observe a jump by the 2nd Battalion Combat Team, 505th Airborne Infantry Regiment at Fort Bragg, NC, 20 July 1949 (NARA College Park, RG 111-SC WWII, box 677, photo SC322649).



Figure 228. Members of the Royal Egyptian military witness a jump by members of the 82nd Airborne at the D-Z Ray Jump Field at Fort Bragg, NC, 7 May 1947 (NARA College Park, RG 111-SC WWII, box 669, photo SC319380).



Figure 229. Demonstration jump for the officers of the ORC Contact Camp at Fort Bragg, NC, 2 October 1948 (NARA College Park, RG 111-SC WWII, box 641, photo SC309922).



Figure 230. Mock war with helicopters (for the first time), smoke bombs, and infantry at Fort Bragg, NC, 17 September 1952 (NARA College Park, RG 111-SC WWII, box 249, photo SC423557).



Figure 231. Assault troops crossing the river in assault craft and by pontoon bridge at Fort Bragg, NC, September 1952 (NARA College Park, RG 111-SC WWII, box 236, photo SC406848).



Figure 232. After assault troops have been landed and established a beachhead, a battalion crosses the river in assault craft and by pontoon bridge at Fort Bragg, NC, September 1952 (NARA College Park, RG 111-SC WWII, box 236, photo SC406849).



Figure 233. A 105 mm recoilless rifle mounted on a jeep during Exercise Flashburn at Fort Bragg, NC, 22 April 1954 (NARA College Park, RG 111-SC WWII, box 277, photo SC457838).

#### Operation Tarheel

In April 1949, a relatively obscure milestone took place on the training ranges near Fort Bragg, NC. Operation Tarheel, a month-long tactical exercise marked the final operational use of gliders by the 325th Glider Infantry: the last such regiment retained on active duty.



Figure 234. Operation Tarheel with a patrol of aggressor soldiers led by scout dog "Rex" at Fort Bragg, NC, 11 April 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333552).



Figure 235. Operation Tarheel with 82nd Airborne troops attacking an objective at Fort Bragg, NC, 11 April 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333505).



Figure 236. Operation Tarheel with troops of a 75 mm battery firing on the "enemy" at Fort Bragg, NC, 9 January 1950 (NARA College Park, RG 111-SC WWII, box 701, photo SC333503).





Figure 237. Operation Tarheel with three aggressor soldiers fire on a position at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 673, photo SC320913).



Figure 238. Operation Tarheel with artillery battalion ready to fire after personnel jump and monorail drop of airborne artillery at Fort Bragg, NC, 5 May 1949 (NARA College Park, RG 111-SC WWII, box 702, photo SC333669).



Figure 239. Operation Tarheel with aggressor soldiers putting up field wire at Fort Bragg, NC, 7 May 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333567).





Figure 240. Operation Tarheel with aggression soldiers capture mixed recon squad of U.S. troops at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333573).

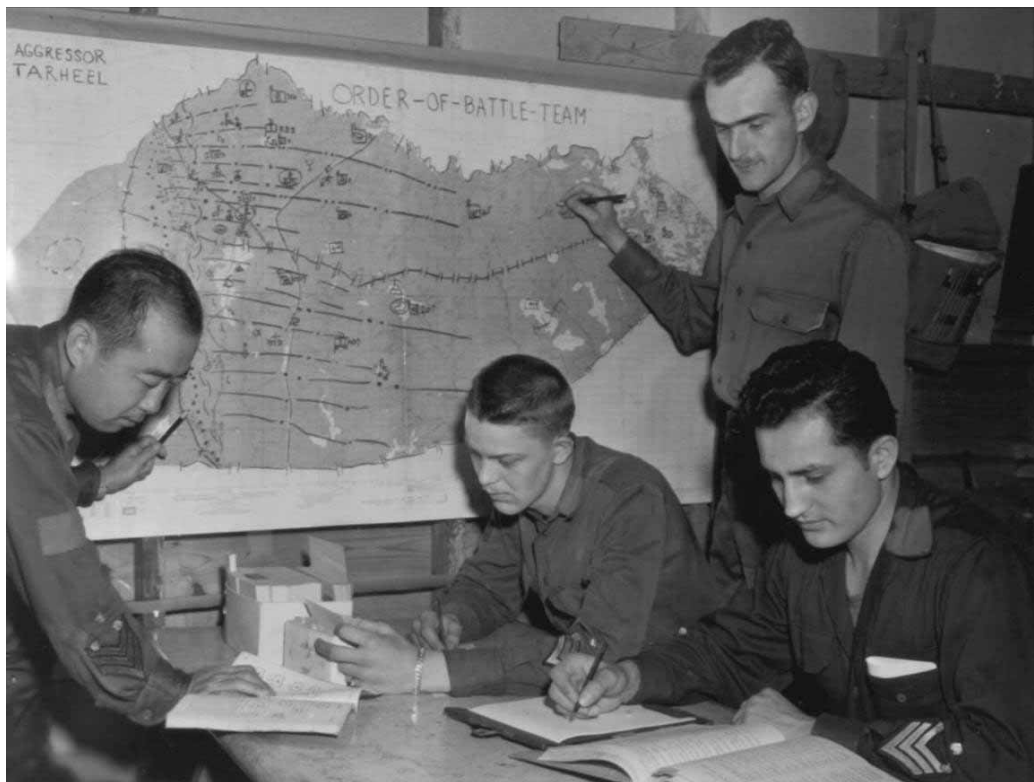


Figure 241. Operation Tarheel at aggressor headquarters at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333566).



Figure 242. Operation Tarheel with a public address unit used to produce sounds for the maneuvers at Fort Bragg, NC, May 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333561).



Figure 243. Operation Tarheel with aggressor soldiers viewing aerial photos for enemy intelligence at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333557).



Figure 244. Operation Tarheel with addressor tank going on a 3-day problem at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 701, photo SC333554).



Figure 245. Operation Tarheel with BAR gunner emplaced on roadblock overlooking strategic crest in battle area at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 703, photo SC334455).



Figure 246. Operation Tarheel with 82nd Airborne retreating across Rockfish Creek when attacked by the aggressor at Fort Bragg, NC, 12 May 1949 (NARA College Park, RG 111-SC WWII, box 703, photo SC334407).



Figure 247. Operation Tarheel with 82nd Airborne in full retreat across Rockfish Creek after rout by aggressor at Fort Bragg, NC, 12 May 1949 (NARA College Park, RG 111-SC WWII, box 703, photo SC334411).



Figure 248. Operation Tarheel with U.S. troops ambushed by aggressor forces during recon patrol with prisoners are taken in for interrogation at Fort Bragg, NC, 18 May 1949 (NARA College Park, RG 111-SC WWII, box 702, photo SC333673).

### *Navy*



Figure 249. Troops practice the "gung-ho" charge in preparation for maneuvers in the Caribbean Sea at NAB Little Creek, VA, 1947 (NARA College Park, RG 127-GR, box 9, folder A, photo 304540).



*Marine Corps*

Figure 250. Assault troops of the 2nd Marine Division come ashore at Onslow Beach, NC during the opening phase of Exercise Quick Kick, 7 May 1962 (NARA College Park, RG 111-SC post-1955, box 373, photo SC593548).



Figure 251. Marines launch an assault by land, sea, and air during Operation Kinel Eagle at Montague Island, Alaska, 5 January 1976 (NARA College Park, RG 127-GG-591, box 24, photo A357934).



Figure 252. A tank infantry team moves out during training exercises at MCB Camp Lejeune, NC, 8 April 1959 (NARA College Park, RG 127-GG-598, box 24, photo A18040).



Figure 253. Marine Riflemen move in for the final phase of the assault demonstration at MCB Camp Lejeune, NC, 21 May 1969 (NARA College Park, RG 127-GG-601, box 24, photo A704412).



Figure 254. Camouflaged Marine recruits from MCRD San Diego practice the low crawl with M-16 rifles during infantry training at MCB Camp Pendleton, CA, 17 October 1974 (NARA College Park, RG 127-GG-601, box 24, photo A230807).

### Airborne Command and Center

The airborne effort got started as the world saw the effectiveness of Germany and other countries dropping airborne troops into areas to take over and secure them. The War Department initially created a test platoon (at Lawson Field, Fort Benning, under the command of the Infantry School) to develop the methods, equipment, and training of airborne troops. The initial success of early training efforts and maneuvers exceeded the expectations of high-ranking officers, and the War Department began the creation of mobile and self-sustaining Parachute Battalions filled with some of the best officers and troops in the Army Ground Forces. The Provisional Parachute Group Headquarters was activated on 10 March 1941, and was charged with developing a permanent structure for training, organization, budget, and staff of the expanding parachute arm (Ellis 1-8).

Initial training of parachute troops included regular infantry training, with the addition of instruction in compass and map reading, maintenance of parachute equipment, and jump and landing training. Troops also underwent additional physical toughening, including stress on calisthenics, long marches, daily three-mile runs, and other exercises. Squad, platoon, and company training was performed first, then battalions performed combat training in large exercises. Parachute troops were frequently requested to participate in maneuvers and demonstrations, which made sticking to a



training program difficult. Parachute shortages also hampered early training. In January 1942, the existing Parachute Battalions were made into two Parachute Regiments, and two additional Parachute regiments were created when enough troops finished their parachute training shortly thereafter (Ellis 8-12).

In order to ensure proper equipment, uniformity, and high quality training for all parachute troops, the Airborne Command was activated in March 1942 and moved to Fort Bragg in May 1942. Much work was done to develop service units (particularly signal), to perfect supply by air (glider training centers were established and gave advanced training to airborne troops), to enhance equipment (lightweight weapons and vehicles were developed), and to improve and expand training (Parachute school at Fort Benning was expanded and many other facilities for air training were built) (Ellis 12-26). In March 1944, the Airborne Command was renamed the Airborne Center. The Center was less extensive than the Command because of the reduction of troops due to overseas shipments, and the focus on training of replacement crews (Ellis 26-32).

Airborne Training was done in phases. First was individual training, which consisted of mental and physical hardening of troops by teaching them to withstand fatigue, limited rations, and loss of sleep, using only minimal equipment, and participating in long, timed marches with heavy equipment. Traditional training was also performed on "obstacle courses, night firing courses, street fighting courses, etc., with emphasis on the method of the airborne soldier's entry into combat" (Ellis 54). Unit training was conducted in platoons, companies, and battalions, individually and as a combat team with the emphasis on careful preparation before and teamwork after landing. Signal, Engineer, and other units were trained in preparation for air transportation and operating with minimal equipment. Phase three was combined training, where combat team and divisional tactical exercises were performed. Ground cooperation and operation were stressed, and troops were subject to overhead fire. Phase four was airborne training, which consisted of three phases. The first was final instruction and training in preparation for performing airborne operations. The second was training at glider airbases, where loading, unloading, test flights for critical loads, and orientation flights for all personnel were performed. The final phase was a flying command post exercise, where each headquarters took off and landed at specific times and places, and were then flown back to centers in gliders (Ellis 54-56).

During WWII, “the doctrine of employment gradually developed from the initial thought of small combat groups landing within enemy territory under cover of darkness for the purpose of sabotage and espionage, to mass landings in daylight of two or more reinforced divisions in the face of determined enemy resistance.” Training evolved over time to achieve such goals (Ellis 1).

### **Amphibious training center**

Shortly after the U.S. entered WWII, it became apparent that large-scale landings on enemy shores would have to be planned and executed effectively in order to win the war. The combined Army-Marine units under Navy control, who were trained in amphibious operations at the time, were too small in number and insufficiently trained (Becker 1). On 22 May 1942, the War Department charged the Army Ground Forces with the creation of an Amphibious Training Center, to train twelve divisions in shore-to-shore amphibious operations by 1 February 1943. “The general plan was to establish three amphibious training centers, located at Camp Edwards, Massachusetts, Carrabelle, Florida, and Fort Lewis, Washington. Divisions were to be rotated through these centers to receive shore-to-shore training” (Becker 5).

Due to the unsettled status on amphibious training in higher headquarters, the War Department reduced the twelve division requirement to five divisions, and broadened the mission of the Amphibious Training Center to include more diversified training at Carrabelle, “comparable to a well-established service school” (Becker 9). Training never reached Fort Lewis, Washington, and due to battles in higher headquarters with Navy officials over whose responsibility amphibious training was, the school was disbanded on 10 June 1943, and all facilities were turned over to the Navy (Becker 1-17).

The difficulty in obtaining training equipment and materials, the lack of trained officers to conduct training, and the lack of boats and trained boat operators of the Engineer Amphibian Command were sources of constant trouble to the Amphibian Training Center, and were only overcome by endless improvising and working long hours. For example, loading and debarking were taught using mock-up boats built on dry land, and soldiers jumped over a rifle held two feet above ground to simulate jumping off a boat. Vehicle drivers learned how to maneuver trucks inside of a boat using logs set up with the same dimensions of the inside of boats. Men hold-

ing different colored flags were used to represent tanks, mortar squads, or whatever feature was needed. Moving boats and the rolling sea were simulated with jeeps made to look like boats driving on a rolling roadway, allowing soldiers to practice firing machine guns from a boat rocking on waves. Other improvisations included using wooden rifles to teach battle firing positions, and using dummy dynamite and detonators to teach preparation of explosive charges (Becker 31-48).



Figure 255. Improvised mock-ups took the place of boats (Becker, 1946, p 41).



Figure 256. Debarkation over a simulated ramp (Becker, 1946, p 47).



Figure 257. Drivers were trained in outline boats (Becker, 1946, p 43).



Figure 258. Simulated rolling sea boat firing course (Becker, 1946, p 62).



Figure 259. Improvised outdoor classrooms (Becker, 1946, p 33).

At Camp Edwards, three regimental combat teams and their officers were trained in three ten-day periods in a large number of practical amphibious operations. A Special Commando Task Force with its own officers was also trained in all aspects of raiding operations. Training culminated in a three-day mock invasion of an island occupied by German troops, completely planned and executed by the Division as a whole. Two more Divisions followed, with their training and Division tasks being improved by the experience gained from previous Divisions (Becker 49-56).





Figure 260. Maneuver area (Becker, 1946).



Figure 261. Offshore sandbars interfered with training (Becker, 1946).



Figure 262. Barrage balloons were used in the exercises (Becker, 1946, p 68).

At Camp Gordon Johnston (Carrabelle, FL), more intense training in a broader range of activities was possible with an increase in experience, instructors, equipment, and land. Army Ground Forces wanted more hardened troops that could work in harmony with Navy operations. Discipline and organization in boat and beach operations, often lacking at Camp Edwards, were stressed. Training of whole Divisions replaced combat team training, and realism was improved in every stage of training. Nazi cities were constructed for training in rooftop combat, wall climbing, and use of live ammunition and explosives. Hand-to-hand combat including Judo was taught, and troops were better prepared for all aspects of battle (Becker 57-70).





Figure 263. The commandos were tough (Becker, 1946, p 51).



Figure 264. Hip-firing of a light machine gun on battle course (Becker, 1946, p 64).



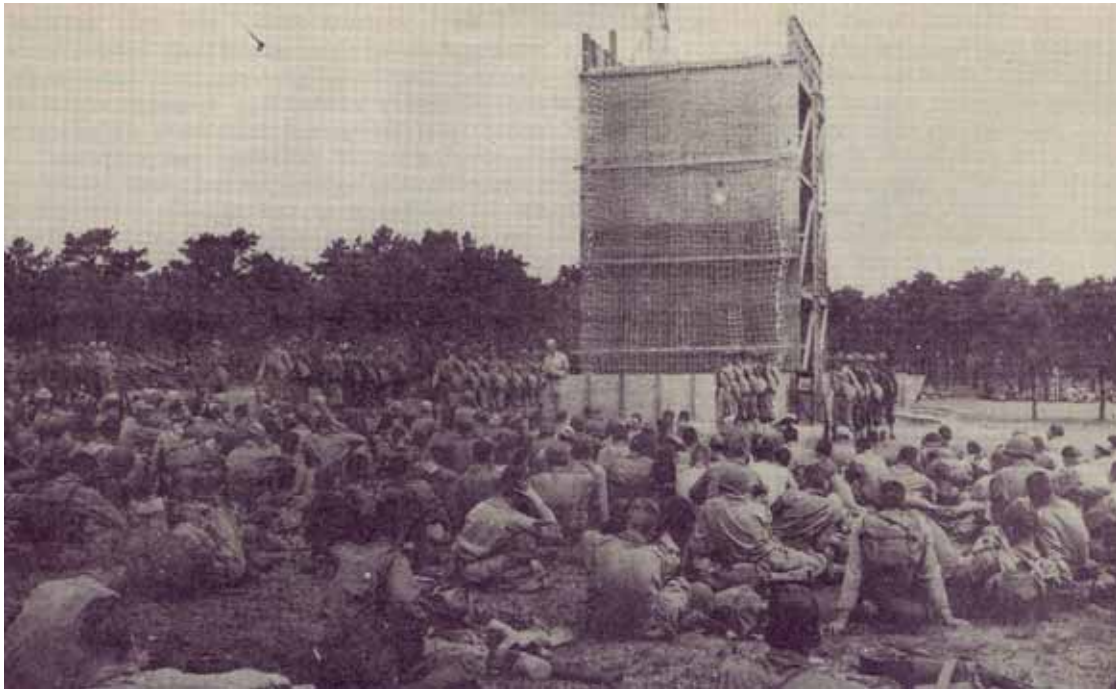


Figure 265. Instruction in cargo-net scaling (Becker, 1946, p 51).



Figure 266. The Infiltration course (Becker, 1946, p 59).

*Scout and raider training*

“Before there were Navy SEALs or Underwater Demolition Teams (UDT) or Naval Combat Demolition Units (NCDU), there were Scouts and Raiders. Formed as a joint Army-Navy beach recon unit eight months after Pearl Harbor, the first S & R boat crews underwent intense training at Amphibious Training Base (ATB) Little Creek in Virginia before deploying to North Africa where they earned eight Navy Crosses. This was just the first of many wartime missions for the versatile Scouts and Raiders.

In January 1943, the Scouts and Raiders School moved to Fort Pierce, FL. Until December of 1943 when the school became all Navy, the instructor cadre and the trainees were both Army and Navy men. The training course included running, swimming, obstacle course, log PT, hand-to-hand combat, and classes in Signaling, Radio, Gunnery, etc. According to John "Barry" Dwyer in his comprehensive book SCOUTS AND RAIDERS, "When LT Draper Kauffman was sent to Fort Pierce in July 1943 to form the first NCDUs, he adopted and condensed the S & R PT course in what his men called "Hell Week", which evolved into the physically and psychologically demanding ordeal known as BUD/S, Basic Underwater Demolition / SEAL Training, which must be survived by anyone wishing to become a Navy SEAL."

The first ten volunteers for S & R were big, athletic men from the Navy's Physical Training Program headed up by Commander Gene Tunney. Among them was Phil H. Bucklew who would earn two Navy Crosses and go on to become the recognized "father of U S Naval Special Warfare". Another S & R veteran, Richard Lyon, would become Rear Admiral and the first designated Special Warfare Officer to attain flag rank. Today Admiral Lyon is mayor of Oceanside, CA.

After North Africa, the Scouts and Raiders participated in landings in Sicily, Salerno, Anzio, the Adriatic, Normandy, and Southern France. They also served in the Pacific on a variety of assignments, as Beachmasters, UDTs, and even helped train Nationalist Chinese guerrillas for operations against Japanese forces" ("Scouts and Raiders").



Figure 267. Phase of raider training at Amphibious Training Base Fort Pierce, FL, 10 December 1943 (NARA College Park, RG 80-G, box 862, photo 264404).



Figure 268. Log PT phase of raider training at Amphibious Training Base Fort Pierce, FL, 10 December 1943 (NARA College Park, RG 80-G, box 862, photo 264408).



Figure 269. Seven-man rubber boat phase of raider training at Amphibious Training Base Fort Pierce, FL, 10 December 1943 (NARA College Park, RG 80-G, box 862, photo 264395).



Figure 270. Seven-man rubber boat phase of raider training at Amphibious Training Base Fort Pierce, FL, 10 December 1943 (NARA College Park, RG 80-G, box 862, photo 264398).





Figure 271. Navigation class phase of raider training at Amphibious Training Base Fort Pierce, FL, 9 December 1943 (NARA College Park, RG 80-G, box 862, photo 264385).



Figure 272. Radio class phase of raider training at Amphibious Training Base Fort Pierce, FL, 9 December 1943 (NARA College Park, RG 80-G, box 862, photo 264386).



Figure 273. Gunnery phase of raider training at Amphibious Training Base Fort Pierce, FL, 9 December 1943 (NARA College Park, RG 80-G, box 862, photo 264384).



Figure 274. Obstacle course phase of raider training at Amphibious Training Base Fort Pierce, FL, 9 December 1943 (NARA College Park, RG 80-G, box 862, photo 264392).





Figure 275. Obstacle course phase of raider training at Amphibious Training Base Fort Pierce, FL, 9 December 1943 (NARA College Park, RG 80-G, box 862, photo 264391).



Figure 276. Training of Scouts and raiders for hand-to-hand combat at Amphibious Training Base Fort Pierce, FL, 10 December 1943 (NARA College Park, RG 80-G, box 539, photo 210908).



Figure 277. Training of Scouts and raiders for hand-to-hand combat at Amphibious Training Base Fort Pierce, FL, 20 December 1943 (NARA College Park, RG 80-G, box 539, photo 210912).



Figure 278. Training of scouts and raiders for hand-to-hand combat at Amphibious Training Base Fort Pierce, FL, 20 December 1943 (NARA College Park, RG 80-G, box 539, photo 210909).

*Amphibious jeep training*



Figure 279. Amphibious jeep demonstration at Camp Blanding, FL, 10 February 1943 (NARA College Park, RG 111-SC WWII, box 131, photo SC166880).



Figure 280. Men on jeep entering water during amphibious jeep demonstration at Camp Blanding, FL, 10 February 1943 (NARA College Park, RG 111-SC WWII, box 131, photo SC166878).

*Reconnaissance training*

Figure 281. A reconnaissance is shown crossing a stream on raft constructed for recon type training at MCB Camp Lejeune, NC, no date (NARA College Park, RG 127-GG-616, box 25, photo A450580).



Figure 282. Fixing an outboard motor on a rubber reconnaissance boat at MCB Camp Lejeune, NC, 4 October 1962 (NARA College Park, RG 127-GG-620, box 25, photo A341958).

*Scuba training*

Figure 283. SCUBA training at MCB Camp Lejeune, NC, 4 October 1962 (NARA College Park, RG 127-GG-620, box 25, photo A341963).



Figure 284. Checking SCUBA equipment before entering the waters of the Atlantic at MCB Camp Lejeune, NC, 30 April 1975 (NARA College Park, RG 127-GG-620, box 25, photo A452532).

### Desert Training Center and California-Arizona Maneuver Area (C-AMA)

“Shortly after the United States entered WWII, the War Department fore-saw the possibility of our Army fighting in the deserts of Africa. The Desert Training Center was instituted under the Army Ground Forces for the special purposes of training mechanized units to live and fight in the desert, to test and develop suitable equipment, and to develop tactical doctrines, technique, and training methods” (Meller Prefatory Note). Maj. Gen. George S. Patton selected the Arizona/California site for the Center, and trained the I Armored Corps under Spartan conditions until he and his troops were hastily withdrawn in 1942 (Meller 12-18).

Maj. Gen. Alvan C. Gillem, Jr., and the II Armored Troops replaced them soon after, and “encountered confused conditions...because no link held administrative matters together between commands” (Meller 31). In an effort to overcome this confusion, train all types of units, and increase realism, the center was expanded to create a simulated overseas theater of operations in early 1943. The Center was renamed the California-Arizona Maneuver Area in October 1943 to reflect the change from being a desert training facility to a more broad ranged combat training center. With the increased shipment overseas of service units that could not be replaced at the Center, General McNair recommended that the C-AMA be closed in December 1943. The War Department accepted this recommendation as the number of Divisions and air units remaining in the United States was also dwindling (Meller Prefatory Note).

“General McNair and others considered combat training in the Desert Training Center to be the best in the United States” (Meller 44). General Walker, who commanded the XX Corps in Germany, said the center was even more valuable than his previous war experience. “The top command had benefited most, gaining confidence and perspective from the direction of large operations in the desert,” he said (Meller 44). The spacious and varied terrain with no population permitted exercises to be conducted over wide expanses as would have to be carried out overseas. The toughness of conditions in nature and weather proved invaluable in the hardening of troops, and preparing them for realistic and varied war conditions. “Men learned not only how to fight other men but nature also. As soon as they had defeated nature a few times – as by enduring some thirst, getting lost and finding themselves, fixing up a car that had broken down on a desert trail – they gained confidence in themselves, and that spirit remained with them” (Meller 50).

Training activities at the Desert Training Center and C-AMA included movement across country, navigation, reconnaissance, combat intelligence, counterintelligence and liaison, dispersion of vehicles during the march, halts and in bivouac, aggressive action by dismounted individuals and small units against armored vehicles, laying and removal of mine fields, antiaircraft defenses with both organic and task weapons and units, rapid close-in air support of ground units, artillery observation by liaison planes, camouflage, night operations, battlefield recovery and evacuation of armored vehicles and other heavy equipment, day-by-day maintenance of motor vehicles, driver training with emphasis on night driving and driver maintenance, realistic supply of all classes, including ammunition, with actual tonnage, especially at night, and supply by air (Meller 48-50).

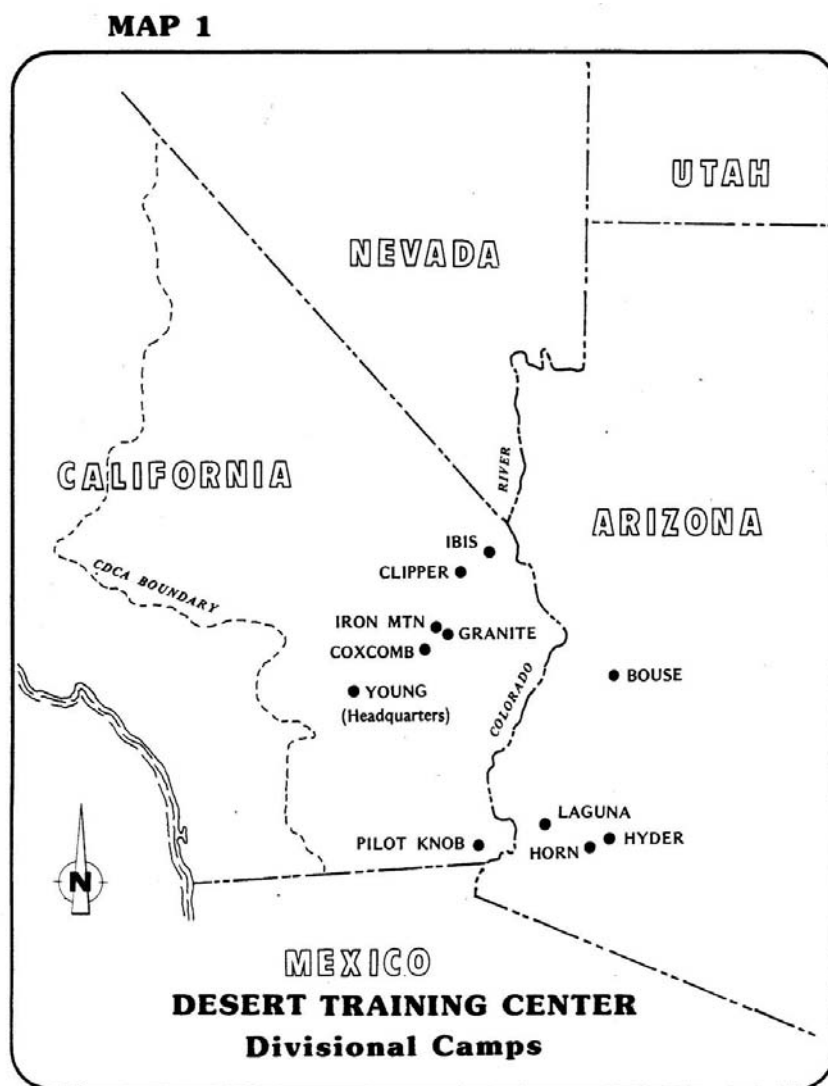


Figure 285. Desert Training Center divisional camps map (Meller, 1946).



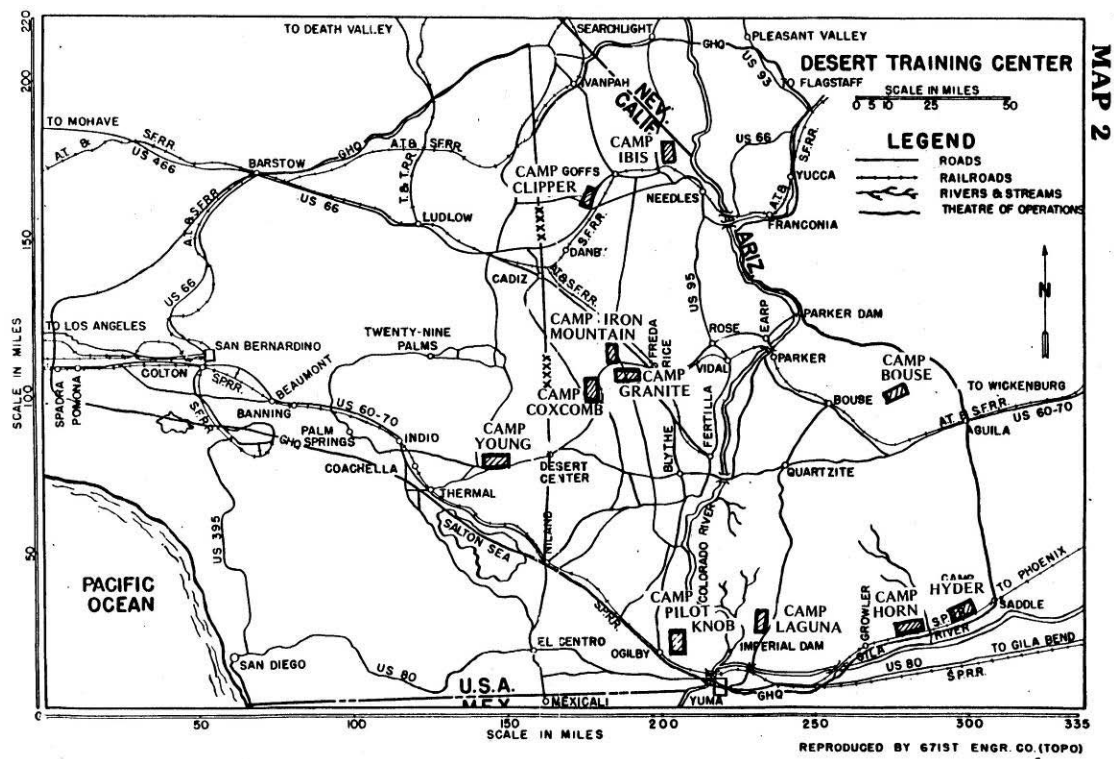


Figure 286. Desert Training Center map (Meller, 1946).



Figure 287. Tank commanders man anti-aircraft guns while planes drop sacks of flour-simulating bombs (Meller, 1946, p 45).



Figure 288. Night firing at aerial targets with automatic weapons, and rocky terrain north of Ogilby, CA (Meller, 1946, p 49).

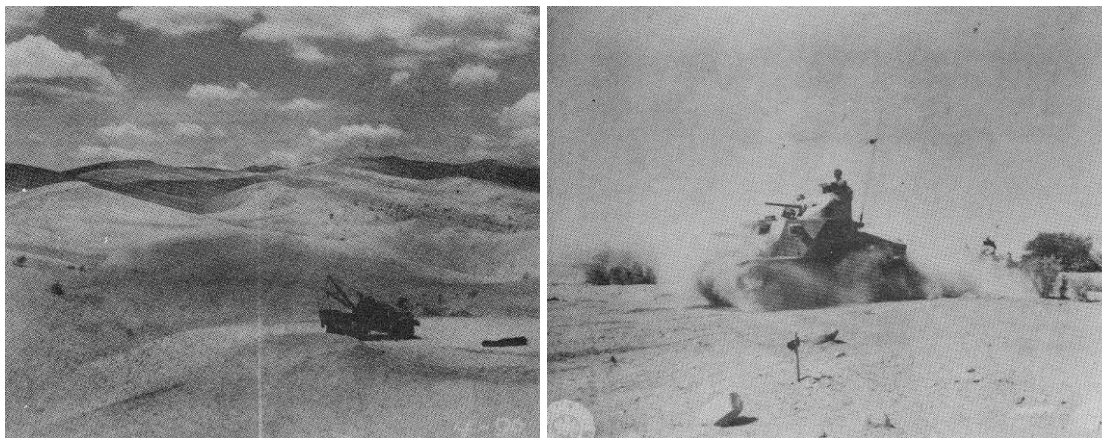


Figure 289. Desert terrain—sand dunes NW of Yuma, AZ, and column of M-3 tanks (Meller, 1946, p 49).

### Mountain and winter training

In the 1939 conflict between Finland and the Soviet Union, tiny Finland with “Ski troops, clothed in white to mask their moves, disrupted Russian supply columns and won victory after victory” (Govan 1). America, already trying to make advances in food, clothing, equipment, and transportation for troops in severe winter conditions, learned much from Finland, and saw that such preparation could be decisive in the battles of WWII (Govan 1-3). While resources were not available and troops were not sufficiently trained in any form of combat to establish a group of specialized winter troops in 1940, a foundation was laid by Army Ground Forces for future winter training. The army allotted each commander \$12,000 for the special instruction of individuals at ski centers, and for the hire of civilian instructors. The National Ski Association also volunteered Ski Patrols to help instruct, develop winter training, and to become expert assistants in dif-

ferent winter regions of the country. A small force in high altitudes was developed to test materials and be available to instruct if the mountain training program was expanded (Govan 1-4).

The need for troops specially trained in mountain operations was again seen in 1941 by the success of the Germans in the Balkans with their armored and other units specially trained in mountain operations, and the failure of the British in Norway and the Italians in Albania, having no troops sufficiently trained or equipped to operate in mountain terrain. General McNair resisted the development of a special mountain division, preferring the training of infantry and artillery battalions to operate effectively in mountainous terrain. With his recommendation, the small test force was expanded to an infantry and pack artillery battalion led by Colonel Rolfe at Fort Lewis, Washington, under little supervision from the war department. Two motels were rented at Mount Rainier, Washington, and each unit was given regular training in addition to two months of intense ski training from a group that included many of the famous skiers in America (Govan 4-5).

Increased concern by the War Department about the lack of troops trained in mountain operations led to the activation of the Mountain Training Center at Camp Carson, Colorado on 3 September 1942, to be moved to the newly constructed Camp Hale, Colorado on 16 November. New recruits received basic training, while older recruits learned how to ski, snowshoe, and take care of themselves under mountain conditions. Lack of experience among officers, inadequate supervision by higher headquarters, and indefiniteness of the mission led to inadequate and confused training at the Center. Battalion maneuvers of the 87th Infantry in February of 1943 were reported to be a miserable failure. However, officers and enlisted men from the Center were also asked to assist in the mountain training of the 36th and 45th Divisions at the West Virginia Maneuver Area. This training was very valuable in their mission of invading Sicily (Govan 4-9).

Interest in training troops for both jungle and mountain conditions led to the activation of the 10th Light Division (Alpine) at Camp Hale in June 1943. The Mountain Training Center was continued to keep a staff of instructors in mountain training ready, and to train the new Light Division (Govan 10). The 10th Light Division was later made into a standard Division and transferred to Fort Swift, TX, due to lack of proper organization

and equipment, and because “combat reports from Italy had indicated that a standard division could be adapted to service in mountainous terrain with comparatively little difficulty, while it was still questionable whether a mountain division could operate effectively outside of its special mission” (Govan 11-12). The new plan was for specialists to train individual units, which had already received basic training, in mountain warfare as needed. The supplies and equipment developed, and knowledge of first aid and care in extreme conditions that came from mountain training were invaluable to troops in the European theater. The 10th Mountain Division, and the campaign of standard trained units in France, Germany, and Italy, proved that the Mountain Training Center was successful in helping troops win crucial battles in the winter of 1944-1945 (Govan 12-13).

#### *Mountain Training Center*

The Mountain Training Center was often a center of conflict between the civilians who had come into the army with superior skills and knowledge of mountaineering, and the military officials over the Center who wanted to achieve army discipline. Skiers, muleskinners, forest rangers, trappers, prospectors, and all types of men used to living and working in the mountains came largely as a result of the National Ski Patrol’s recruiting efforts. To the extent that the two groups worked together, success in the Center was achieved (Jay Prefatory Note). Eventually, officers and personnel from the MTC became invaluable, as they taught mountaineering skills like rock climbing to troops in West Virginia, and across the globe (Jay 75-84).

“No specific directive on mountain training was issued from Army Ground Forces,” and AGF directives were often inapplicable due to the unique nature of the training, so “it was left to the Mountain Training Center Headquarters Staff to formulate their own training policy” (Jay 63).

In January 1943, MTC Headquarters issued a directive for winter and mountain training that included training in skiing, snowshoeing, preparation of rations, using various types of tents, trail hygiene, avalanche precautions, marching technique, and freighting supplies over snow with toboggans, snow motor vehicles, and other means. This training was later extended to include installation and operation of tramways, ice climbing, rock climbing, scouting, patrolling, camouflage discipline, belaying ropes and climbing, “intensive training in packing, saddling, and general management of mules,” and other activities. Dogs were also trained to be sled and sentry dogs, and men and dogs were trained to work together as messengers. The training time was also later lengthened to allow soldiers to

acclimatize to the elevation. Maneuvers and tactics were always difficult to pull off due to weather and terrain challenges, and the lack of uniformity of circumstances in which a real operation might take place (Jay 63-74, 85-86).

### Ski training

The Ski and Mountaineering Schools were the most successful of the many schools developed for the Mountain Training Center. Skiing was the main training activity. "For eight weeks, six days a week, eight hours a day, snow or shine, the troopers learned skiing the military way (designed for safety and endurance while carrying heavy packs). All military training was temporarily set aside to leave time for this important task." The training ended in the running of an intensive course with a heavy pack (Jay 16-21).



Figure 290. Troopers going through phases of the military ski qualification course on Mt. Rainier. March 1942 (Jay, 1948, p 19).





Figure 291. Knees bent, ski tips together (Jay, 1948, p 18).



Figure 292. Mountain troopers receive ski instruction on Mt. Rainier, winter 1942 (Jay, 1948, p 17).



THE COOPER HILL SKI AREA



Figure 293. Cooper Hill ski lift and area (Jay, 1948).





Figure 294. A private instructing an officer in the correct way of using wax on skis at Mt. Rainier. February 1942 (Jay, 1948).

#### Transporting loads

In January 1943, MTC Headquarters issued a directive for winter and mountain training that included freighting supplies over snow with toboggans, snow motor vehicles, and other means. This training was later extended to include “intensive training in packing, saddling, and general management of mules,” and other activities (Jay, 1948, pp.63-74, 85-86).



Figure 295. A T-28 towing a load on a trail traversing a steep slope (Jay, 1948).



Figure 296. Members of the pack artillery on snowshoes dragging part of the 75MM pack howitzer on a sledge with special harnesses (Jay, 1948).





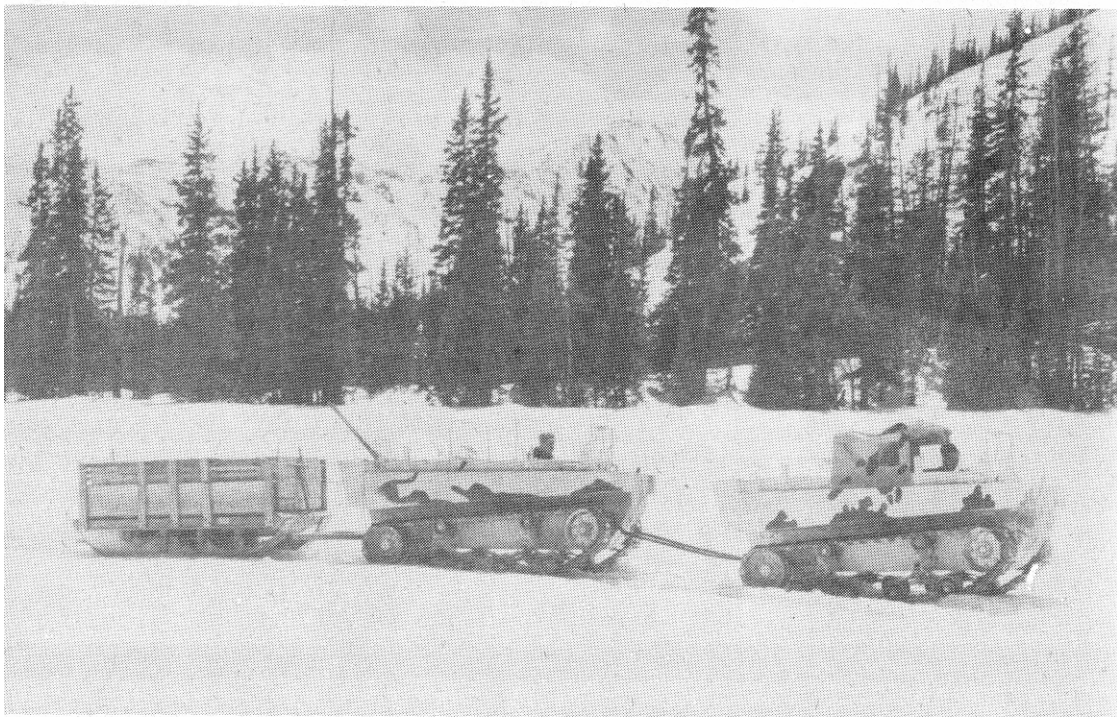
Figure 297. Troop hiking (Jay, 1948, p 20).



Figure 298. Exchanging lash ropes while learning to lash mule loads at the packing school, Fort Lewis. July 1942 (Jay, 1948, p 67).



THE ELIASON MOTOR TOBOGGAN TESTED ON MT. RAINIER. THOUGH SPEEDY ON PACKED SNOW, THIS MACHINE PROVED UNSATISFACTORY IN HEAVY POWDER. IT WAS LATER REPLACED BY THE M-28 AND THE M-29.



THE M-28 HITCHED IN TANDEM

Figure 299. Training with snow machines (Jay, 1948).



### Mountain obstacle course

A mountain obstacle course, which contained all elements of a normal obstacle course in addition to advanced elements of mountain engineering, was constructed at Camp Hale, and became a model for future army training (Jay 73).



Figure 300. The mountain obstacle course at Camp Hale (Jay, 1948, p 66).



Figure 301. Troopers going through the mountain obstacle course (Jay, 1948, p 67).

### Climbing

Many aids were developed for training in the Mountain Training Center. “At Fort Lewis, Captain Woodward ordered the construction of three 30-foot high wooden walls in an old sand and gravel pit near the stables. Hand and footholds were notched in the logs, and the men were taught the use of ropes, pitons, and repelling” (Jay 26). At Camp Hale, Colorado, engineers constructed an artificial glacier to aid in the training of ice climbing (Jay 73). Eventually, officers and personnel from the MTC became invaluable, as they taught mountaineering skills like rock climbing to troops in West Virginia, and across the globe (Jay 75-84).

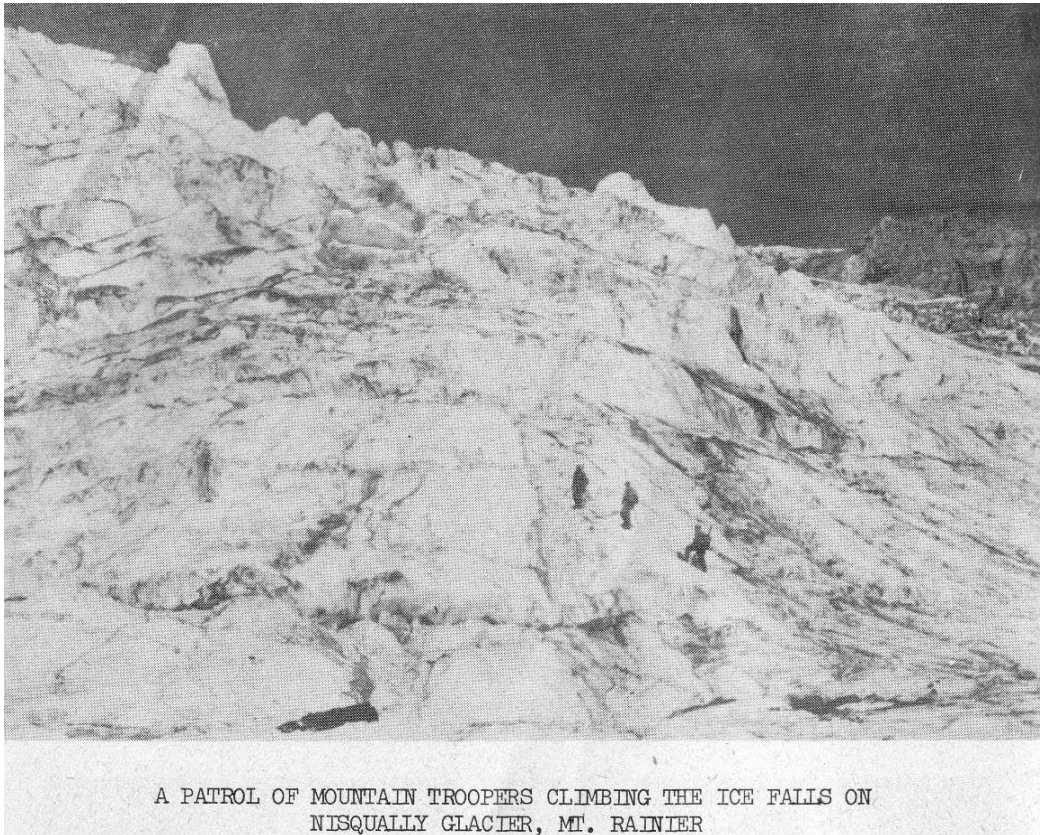


Figure 302. A patrol of mountain troopers climbing the ice falls on Nisqually Glacier, Mt. Rainier (Jay, 1948, p 68).



Figure 303. Practice climbing course held in an old gravel pit, Fort Lewis. A wooden climbing wall is at the right, summer 1942 (Jay, 1948, p 24).





Figure 304. Mountain troopers using relaying ropes on the climbing wall, August 1942 (Jay, 1948, p 25).

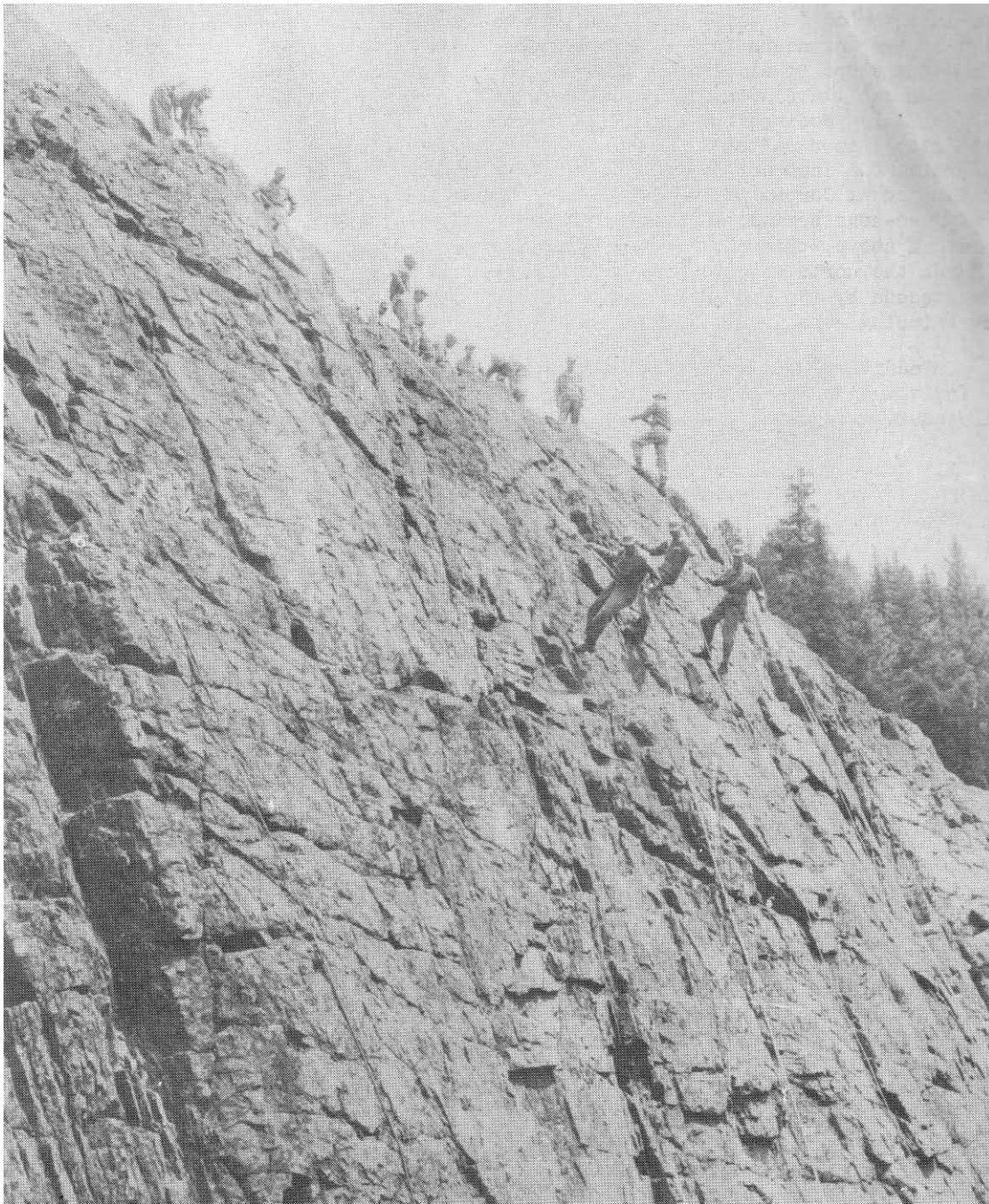


Figure 305. The rock climbing school at camp hale taught the fundamentals of mountaineering (Jay, 1948, p 65).

#### Maneuvers/operations

“The battalion maneuvers of the 87th Infantry in February 1943 were a miserable failure” (Govan 4-9). Maneuvers and tactics were always difficult to complete due to weather and terrain challenges, and the lack of uniformity of circumstances in which a real operation might take place (Jay 63-74, 85-86).





MOUNTAIN TROOPERS PRACTICING SKI MANEUVERS NEAR FORT LEWIS



Figure 306. Mountain troopers practice ski maneuvers on Mt. Rainier, Near Fort Lewis, April 1942 (Jay, 1948, p 69).

### Dog training

Dogs also were trained to be sled and sentry dogs, and men and dogs were trained to work together as messengers (Jay 63-74, 85-86).



Figure 307. Experimenting with dog teams at Camp Hale. The use of sled dogs for military operations proved inadvisable (Jay, 1948, p 72).





Figure 308. An "attack dog" lunging at the padded arm of his instructor (Jay, 1948, p 71).



Figure 309. Putting a message on the collar of a messenger dog. Camp Hale (Jay, 1948, p 71).

### Survival training

In January 1943, MTC Headquarters issued a directive for winter and mountain training that included training in preparation of rations, using

various types of tents, trail hygiene, avalanche precautions, and marching technique (Ray 63-74, 85-86).



Figure 310. Mountain troops drilling in the cleared area in front of paradise lodge, which was their barracks on Mt. Rainier from February to June 1942 (Jay, 1948, p 14).



Figure 311. Mountain troops on overnight bivouac, Camp Hale, Winter 1943 (Jay, 1948, p 20).





Figure 312. Colonel Rolfe tried out the one-man tent, ski, sectional, at Mt. Rainier, April 1942 (Jay, 1948).



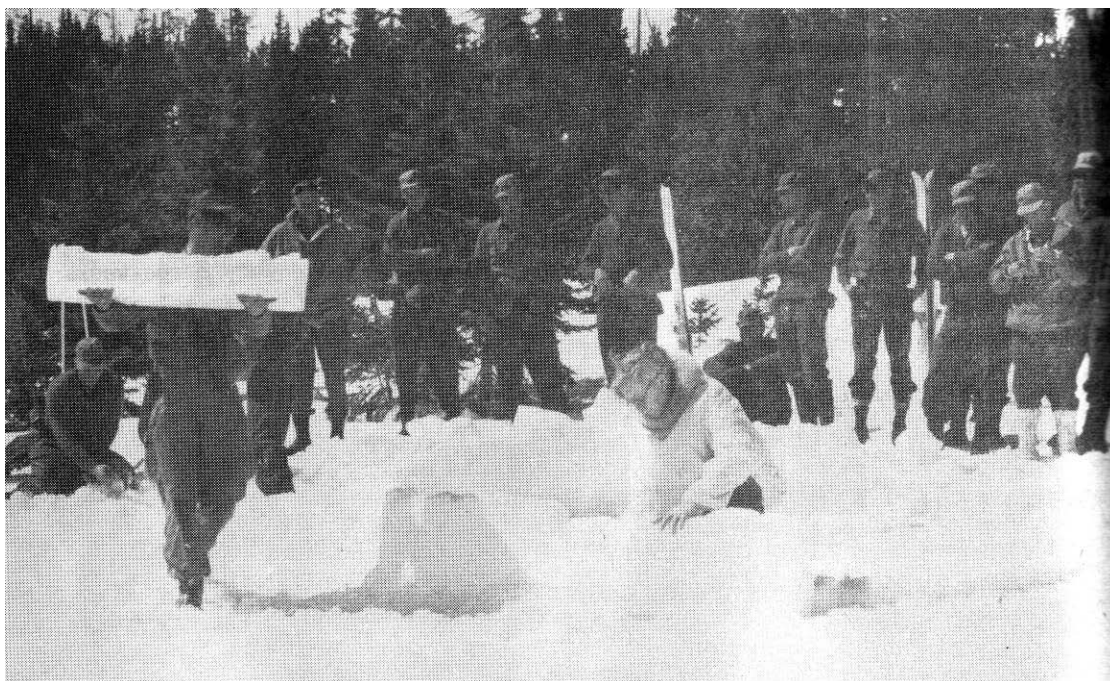


Figure 313. Dr. Vilejalmur Stefansson demonstrating the correct way of building an igloo at Camp Hale (Jay, 1948, p 110).

*Marine Corps Mountain Warfare Training Center, Pickel Mountain*

“The Marine Corps Mountain Warfare Training Center (MCMWTC) is one of the Corps' most remote and isolated posts. The center was established in 1951 as a Cold Weather Battalion for providing cold weather training for replacement personnel bound for Korea. After the Korean Conflict, the name was changed to the Marine Corps Cold Weather Training Center. In 1963, the center was renamed to its present name. MCMWTC operated on a full-time basis until 1967, when it was placed on a caretaker status, as a result of the Vietnam War. The training center was reactivated as a full-time command 19 May 1976.

The center is located on California Highway 108 at Pickel Meadows, 21 miles northwest of Bridgeport, CA, and 17 miles south of Walker, CA. The approximately 46,000 acres are under the management of the U.S Forest Service in the Toniya National Forest. A letter of agreement between the forest service and the Marine Corps permits use of the area for training Marines in mountain and cold weather operations. Formal schools for individuals and battalions are offered in summer and winter operations. The training emphasizes both individual and unit mountain skills and overall combat capability. Marines at the center also test cold weather clothing

and equipment, and develop doctrine and concepts for enhancing the Corps' ability to perform in harsh environments" ("Mountain Warfare").



Figure 314. Crossing a creek on a rope bridge during snow fox at Pickel Meadows Marine Corps Cold Weather Training Center, CA, 29 January 1960 (NARA College Park, RG 127-GG-590, box 24, photo A368056).



Figure 315. Rifleman with crossed ski poles for rifle support during operations at Pickel Meadows Marine Corps Cold Weather Training Center, CA, 29 January 1960 (NARA College Park, RG 127-GG-590, box 24, photo A368049).



Figure 316. Marines on maneuvers at Pickel Meadows Marine Corps Cold Weather Training Center, CA, 4 December 1972 (NARA College Park, RG 127-GG-586, box 24, photo A374544).



Figure 317. Using rope bridge for crossing creek during Snow Fex operation at Pickel Meadows Marine Corps Cold Weather Training Center, CA, 29 January 1960 (NARA College Park, RG 127-GG-590, box 24, photo A368045).



Figure 318. Rappelling on the cliffs at Pickel Meadows Marine Corps Cold Weather Training Center, CA, 24 June 1975 (NARA College Park, RG 127-GG-595, box 24, photo A374754).



Figure 319. Marines traveled on skis during a training exercise at Pisgah National Forest, NC, February 1977 (NARA College Park, RG 127-GG-586, box 24, photo A454243).

*Cold Weather Marine Training at Camp Drum*



Figure 320. Marines try out the M-16 during cold weather training at Camp Drum, NY, 2 March 1973 (NARA College Park, RG 127-GG-586, box 24, photo A343350).





Figure 321. An M-60 gunner signals that he is ready to fire during live firing exercises while on cold weather training at Camp Drum, NY, 2 March 1973 (NARA College Park, RG 127-GG-586, box 24, photo A343349).



Figure 322. A Marine uses a yukon stove to heat chow and warm bodies during training at Snow Fex at Camp Drum, NY, no date (NARA College Park, RG 127-GC-590, box 24, photo A451002).



Figure 323. Marines experimenting with the snowmobile for possible use on the snow bound battlefield during cold weather exercises at Fort Drum, NY, January 1978 (NARA College Park, RG 127-GG-589, box 24, photo A454357).

### 3 Evaluating Properties Under the Military Training Lands Historic Context

Cultural resources are identified and managed within the Department of Defense (DoD) in accordance with Federal laws and military regulations. The identification of historically significant properties and resources can be achieved only through evaluation of their position within the larger historic context. According to the NRHP, historic contexts are defined as “... the patterns, themes, or trends in history by which a specific occurrence, property, or site is understood and its meaning (and ultimately its significance) within prehistory or history is made clear” (NRB #15, 7). A historic property is determined to be significant or not significant based on the application of standardized National Register Criteria within the property’s historical context.

#### Criteria for evaluation

The NRHP Criteria for Evaluation (36 CFR Part 60.4) describe how properties and districts are significant for their association with important events or persons (Criterion A and Criterion B), for their importance in design or construction (Criterion C), or for their information potential (Criterion D). The following is a brief description of each of the four NRHP Criteria for Evaluation (excerpted from National Register Bulletin #15: How to Apply the National Register Criteria for Evaluation):

- A. Event**—associated with events that have made a significant contribution to the broad patterns of our history; or
- B. Person**—associated with the lives of persons significant in our past; or
- C. Design/Construction**—embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or
- D. Information Potential**—yielded, or is likely to yield, information important in prehistory or history.

#### Criterion consideration G

Generally, buildings, structures, landscapes, etc. constructed within the last 50 years are not eligible for the National Register unless they can be

classified as exceptionally important under Criterion Consideration G in the National Register Bulletin #15. “The National Register Criteria for Evaluation excludes properties that achieved significance within the past 50 years unless they are of exceptional importance. Fifty years is a general estimate of the time needed to develop historical perspective and to evaluate significance. This consideration guards against the listing of prosperities of passing contemporary interest and ensures that the National Register is a list of truly historic places.”

Although the National Register Criteria do not explicitly define the term exceptional importance, National Register Consideration G and the National Register Bulletin #22: *Guidelines for Evaluating and Nominating Properties that have Achieved Significance within the Past Fifty Years* offers guidance for identifying and evaluating properties that have achieved significance in the past 50 years. Both of these sources stress that, for such properties, sufficient historical perspective must exist to make justifiable determinations of exceptional importance. Proof that sufficient historical perspective exists usually comes in the form of scholarly research and other sources of historical evidence associated with a particular historic context. The significance of Cold War era properties may lie at the national level in association with military themes directly tied to the Cold War, or at the state or local level under other themes.

The Army and Air Force have all issued interim guidelines for managing Cold War resources. The Navy is still working on draft version of guidance. These guidelines are not meant to replace the NHPA and its implementing regulations (Sections 106 and 110). The intent of the guidance is to set up an initial framework for the inventory and evaluation of the Cold War historic properties.

#### **Army cold war guidelines and contexts**

The Army developed its “interim Policy for Cold War Era Properties” in 1995. Applying to Army, Army National Guard, and Army Reserve installations, this policy stated that in applying the criteria of exceptional importance, the Army would “focus on the production and combat subsystems of the Army and their associated Real Property and technology that is of unmistakable and extraordinary importance by virtue of a direct and influential relationship to Cold War tactics, strategy, and events” (Department of the Army Cultural Resources Interim Policy Statements, 1995).

The Interim Policy was set into guidance with *The Thematic Study and Guidelines: Identification and Evaluation of U.S. Army Cold War Era Military-Industrial Historic Properties* in 1997. This guidance is a thematic study on historic properties associated with the military-industrial theme of the Cold War and provides guidelines for the identification and evaluation of Cold War era military-industrial historic properties in the Army. The context focuses in on what the Army did in direct response to the Cold War and directly associated with a major Army mission.

The Cold War context states that only “properties that are directly related to the Cold War military-industrial context” are exceptionally important. They must meet “any or all” of the following conditions:

1. They were specifically constructed or used prior to 1989 to:
  - a. Meet the perceived Soviet/communist military threat;
  - b. Project a force designed to influence Soviet policy; and
  - c. Affect global opinion of the relationship between the superpowers.
2. Through the architectural or engineering design, they clearly reflect one of the Cold War themes:
  - a. Basic Scientific Research (Laboratories)
  - b. Materiel Development (Research, Development, Engineering Centers, and Proving Grounds)
  - c. Wholesale Logistical Operations (Ammunition Production Facilities)
  - d. Air Defense, Ballistic Missile Defense, and Army Missiles
  - e. Command and Control, Communications, Computer, and Intelligence
  - f. Army School System
  - g. Operational Forces
  - h. Army Medical Activities
  - i. Miscellaneous (Nuclear and Aviation).
3. They are directly related to the United States/Soviet relationship through association with a milestone event of the period.
4. They are directly related to the United States/Soviet relationship through association with the life of a person during the Cold War period.

#### Air Force cold war guidelines and context

The U.S. Air Force recognizes five property type groups in the Interim Guidance that may convey important aspects of the Cold War. These five properties include:

1. Operational and Support Installations
  - a. Air Force bases, including Command Centers

- b. Missile Stations
  - c. Launch Complexes
- 2. Combat Weapons Systems and Combat Support Systems
  - a. Missiles
  - b. Aircraft (Fixed Wing and Rotary)
  - c. Ground Vehicles and Equipment
- 3. Training Facilities
  - a. Warfighting, Combat Support, and Intelligence Schools
  - b. Launch Complexes
  - c. Combat Training Ranges
  - d. Impact Areas; Targets
  - e. POW (Prisoner of War) Training Camps
- 4. Materiel Development Facilities
  - a. Research Laboratories
  - b. Manufacturing Sites
  - c. Test Sites
  - d. Proving Grounds
- 5. Intelligence Facilities
  - a. Radar Sites
  - b. Listening Posts.

## Significance

Military training ranges need to be researched and evaluated as a whole landscape, including all the buildings/structures, firing lines, target mechanisms, etc. and not evaluated as individual elements that sit on the range. Military training ranges were originally designed and intended to be utilized as a whole complex. Each structure/element provides a vital role in the functioning of the range and the overall effectiveness of the training procedures for the soldiers.

The overall importance of particular ranges depends on the mission of whichever installation the research is focusing on. The mission critical ranges are what is important and need to be evaluated as a historic district. For example, a large arms range like a tank range needs to be examined and evaluated from the parking lot all the way out to the target butt, regardless of individual building or range element construction date. Thus just looking at an individual observation tower, latrine, firing targets, etc. should not be done. Look at the entire range. But go one step further and look at all of the ranges and training lands on the installation as one large group to see if there is even information for a large district. No individual building/structure/element will ever be individually significant.



Once the training range is inventoried and evaluated as a complex, the next step is to determine if a particular range/buildings are significant to the individual installation being researched. For example, all ranges at Fort Jackson, SC could possibly be evaluated as one large district because Fort Jackson is the home of basic training; whereas the tank ranges located at Fort Knox, KY would be important to the mission because Fort Knox was the home of the Armor division. Ultimately, the researcher needs to look at the overall mission of the installation before deciding what is important on the ranges.

For instance, a large arms range, like the field artillery range, may have been constructed in 1944 but may contain buildings and structures from the entire stretch of the Cold War. As individual building elements and training mechanisms wore out they typically were replaced with new materials and technologies. The ranges will always be ranges and used for training, therefore, continue use of the landscape and structures are important. It is important to evaluate the location of replacement elements. Is the newer observation tower in the same location as the original? Are the replacement latrines, bleachers, and storage buildings located in the same spot on the range landscape?

Properties considered under the Large Arms Range Context are training ranges that the War Department, Navy Department, and Department of Defense constructed for their personnel and are associated with one of the following military training periods:

- Pre-Civil War (up to 1861)
- Civil War (1861-1865)
- National Expansion (1865-1916)
- World War I (1917-1920)
- Interwar (1921-1940)
- World War II (1941-1945)
- Early Cold War (1946-1955)
- Late Cold War (1956-1989).

The researcher still has to be able to identify that firing range to what period it is significant for no matter if there are replacement structures or elements located on the range.

## Aspects of integrity

In addition to possessing historical significance, training ranges must also retain sufficient physical integrity of the features that convey their significance to be eligible to the NRHP (NRB #15, 44).

Training lands/ranges will either retain integrity (that is, convey their significance) or they will not. Within the concept of integrity, the National Register criteria recognize seven aspects or qualities that, in various combinations, define integrity.

To retain historic integrity a property will always possess several, and usually most, of the aspects. The retention of specific aspects of integrity is paramount for training lands/ranges to convey their significance. Determining which of these aspects are most important to a particular training land/range requires knowing which association is significant.

Although some training lands/ranges may not meet integrity standards for individual eligibility to the National Register, they may meet a standard as a contributing resource to a larger training district. Training lands/ranges are considered to be significant if they possess a majority of the following Seven Aspects of Integrity (NRB #15, 44-45):

1. **Location.** Location is the place where the historic property was constructed or the place where the historic event occurred.
2. **Design.** Design is the combination of elements that create the form, plan, space, structure, and style of a property. It results from conscious decisions made during the original conception and planning of a property (or its significant alteration) and applies to activities as diverse as community planning, engineering, architecture, and landscape architecture. Design includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials.
3. **Setting.** Setting is the physical environment of a historic property. Setting refers to the character of the place in which the property played its historical role. It involves how, not just where, the property is situated and its relationship to surrounding features and open space.
4. **Materials.** Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
5. **Workmanship.** Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.

6. **Feeling.** Feeling is a property's expression of the aesthetic or historic sense of a particular time period.
7. **Association.** Association is the direct link between an important historic event or person and a historic property.

## Character defining features

The character defining features of a range depend on the associated NRHP Criteria and the associated property type. A large arms range typically was designed and constructed with the following:

- a set of cleared and leveled firing points laid out on a firing line and associated features (foxholes, trenches, sandbags, embankments, etc)
- stationary or moving targets (cables, pulleys, tracks, pop-up targets, miniature airplanes, etc)
- embankments or walls (built up behind targets to catch ammunition, in front of targets for concealment and protection, at firing lines for firing support, between ranges to protect from adjacent fire)
- buildings (control or observation tower, bleachers, latrines, target storage houses, ammunition storage buildings)
- typical features include multiple range layouts, firing lines, targets, embankments/trenches, and buildings.

## Context example photographs

Two members of the research team conducted a site visit to Fort Bragg, NC. Fort Bragg was chosen for the site visit because it had one of the largest groupings of different training lands in the Department of Defense; the complexity of its training lands; and the level of historical background that Fort Bragg had on its training lands. There are few examples gathered from other installations. In addition to the photographs taken at Fort Bragg, the researchers searched the previous ERDC/CERL pertaining to training lands and used some of these for examples in the evaluation chapter.

When the researcher is tasked to research and inventory items on a military training range, the researcher is going to find things that are on the real property list, items that are not listed on the real property list, abandoned structures, and foundations. It is the task of the researcher to inventory and document all elements of the range, the role of the elements and the condition of the elements.

Below are photographic representations of a variety of examples of training villages, mock sites, and large scale operation area elements. The examples should be used as a guide to help identify key character defining features which will ultimately help determine the integrity of each range.

### Vietnamese training village



Figure 325. Remains of Vietnamese training village (center of village), Fort Gordon, January 2004.



Figure 324. Remains of Vietnamese training village (hut), Fort Gordon, January 2004.



Figure 325. Remains of Vietnamese training village (entrance gate), Fort Gordon, January 2004.



Figure 326. Remains of Vietnamese training village (entrance to tunnels), Fort Gordon, January 2004.



Figure 327. Remains of Vietnamese training village (torture pit), Fort Gordon, January 2004.



## Military operations in urban terrain (MOUT)



Figure 328. MOUT Area, Fort Bragg, NC, 17 May 2006.



Figure 329. MOUT Area, Fort Bragg, NC, 17 May 2006.



Figure 330. MOUT Area, Iraqi adaptation, Fort Bragg, NC, 17 May 2006.





Figure 331. MOUT Area, Korean signage, Fort Bragg, NC, 17 May 2006.



Figure 332. MOUT Area, Fort Bragg, NC, 17 May 2006.



Figure 333. MOUT Area, Fort Bragg, NC, 17 May 2006.

## Parachute jump tower



Figure 334.  
Parachute jump  
tower, Fort Bragg,  
NC, 18 May 2006.



Figure 335.  
Parachute jump  
tower, Fort Bragg,  
NC, 18 May 2006.

## Parachute landing areas



Figure 336.  
Parachute landing  
area, Fort Bragg, NC,  
17 May 2006.



Figure 337.  
Parachute landing  
area, Fort Bragg, NC,  
17 May 2006.



Figure 338.  
Parachute landing  
area, Fort Bragg, NC,  
17 May 2006.



Figure 339.  
Parachute landing  
area, Fort Bragg, NC,  
17 May 2006.



Figure 340.  
Parachute landing  
area, Fort Bragg, NC,  
17 May 2006.



Figure 341.  
Parachute landing  
area, Fort Bragg, NC,  
17 May 2006.





Figure 342.  
Parachute landing  
area, Fort Bragg, NC,  
18 May 2006.



Figure 343.  
Parachute landing  
area, Fort Bragg, NC,  
18 May 2006.



Figure 344.  
Parachute landing  
area, Fort Bragg, NC,  
18 May 2006.





## 4 Conclusions

This work developed a historic context for the development of military training lands used by the DOD and its forerunners. This overall project covered five types of military training:

1. Small arms ranges
2. Large arms ranges
3. Training villages and sites
4. Bivouac areas
5. Large-scale operation areas.

This document provides an historic context of training village, mock sites, and large scale operations areas on military training lands for the U.S. Army, U.S. Navy, U.S. Army Air Corps/U.S. Air Force, and the U.S. Marines, with a focus on the landscape outside the developed core of military installations. This work concludes that military training lands are significant enough in our nation's history to be surveyed for eligibility to the NRHP. However, training lands must be viewed as a whole; individual buildings on a training range are rarely eligible for the NRHP; buildings in their larger context (and the integrity of that larger context) are important.

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