COMPLETION REPORT

COVERING THE DESIGN OF

CAMP LEJEUNE
U. S. MARINE BARRACKS
NEW RIVER, NORTH CAROLINA

FOR THE

U. S. NAVY
Bureau of Yards and Docks
CONTRACTS NOy 6006 and 7795
OCTOBER 1, 1942 - DECEMBER 18, 1943

PREPARED BY

CARR AND J. E. GREINER COMPANY

ARCHITECT

G. W. CARR, ARCHITECT
DURHAM, NORTH CAROLINA

ENGINEERS

J. E. GREINER COMPANY
BALTIMORE, MARYLAND

VOL. III

COPY Nº 22

Office of the Camp Engineer
S. A. Munch, Supt.
Plumbing and Heating
Camp Lejeune, N. C.

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CARR AND J. E. GREINER COMPANY
ARCHITECT ENGINEERS
DURHAM, N. C. BALTIMORE, MD.

GEO. WATTS CARR, A. I. A.
JOHN E. GREINER, HON. M. AM. SOC. C. E.
HERSCHEL H. ALLEN, M. AM. SOC. C. E.

REPLY TO
MARINE BARRACKS
NEW RIVER, N. C.

Baltimore, Maryland
December 18, 1943

Officer-in-Charge, Contracts NOy-6006 and NOy-7795
Camp Lejeune, New River, North Carolina

Dear Sir:

We submit herewith, Volume III of our Completion Report covering Architectural and Engineering services rendered at Camp Lejeune, New River, North Carolina.

The report covers the interim between the termination of Contract NOy-4751 on September 30, 1942 and the beginning of Contract NOy-6006 on March 3, 1943; Contract NOy-6006 which was terminated on September 25, 1943 and Contract NOy-7795 which was terminated December 18, 1943.

Facilities designed were located in most of the areas discussed in Volumes I and II of the completion report and in addition, important installations were designed for Montford Point, Women's Reserve, Rifle Range, Labor Battalion, and Beach Areas.

All design work was performed at the site under the general supervision and direction of the Officer-in-Charge, representing the Chief of the Bureau of Yards and Docks.

The work was performed under the supervision of Mr. B. Everett Beavin, Project Manager, representing the Architect-Engineers.

During the period covered by this report, the Officer-in-Charge was Commander Richard A. Williams. Colonel W. P. T. Hill was the Liaison Officer of the U. S. Marine Corps until March, 1943, at which time he was succeeded by Lt. Col. "A" "E" Dubber.

We would like to take this occasion to express our sincere appreciation of the assistance and cooperation which has been extended to us by the Navy and Marine Corps personnel.

Respectfully submitted,

CARR AND J. E. GREINER COMPANY

By G. W. Carr
G. W. Carr

By H. H. Allen
H. H. Allen

HHA:MW

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CHAPTER A - PART I

PURPOSE AND SCOPE OF THE REPORT

The purpose of the volume is twofold; namely, (a) to pick up the thread of Volumes I and II which covered Contract NOy-4751, which was terminated on September 30, 1942 and to delineate the changes and modifications made to the various facilities during construction, and (b) to present a record of the engineering procedure and design of those parts of Camp Lejeune which the Architect-Engineers were directed to consider after September 30, 1942.

In reading this report it should be realized that construction of the original project was not completed on September 30th, 1942, and some parts of the original project were modified and enlarged, also, that new areas were laid out and developed.

Part I covers generally the events leading up to the design of the various activities, fundamental engineering data, and a summary of the facilities provided, including those listed in Volumes I and II of the Architect-Engineers' report.

Part II covers the work involved in the actual design of the activities. This part is subdivided so as to present the work of the various departments into which the Architect-Engineers' organization was divided. Part II also contains lists of the drawings and specifications prepared and not listed in Volume II of the previous report.

In order to have a continuous record covering the engineering work at Camp Lejeune, this report covers not only the work done by Carr and J. E. Greiner Company under Contracts NOy 6006, and NOy 7795, but also the work done between October 1, 1942 and April 5, 1943, while its employees were on the payroll of Contract NOy 4750.

There have been included in this Volume, reproductions of certain progress photographs which were not available at the time Volumes I and II were issued.

CHAPTER B - PART I

ARCHITECT-ENGINEERS' CONTRACTS

B-1. Architect-Engineers' services were performed in three distinct phases as follows:

October 1, 1942 to March 13, 1943 - The personnel of the Architect-Engineers was left at New River under the direction of the Officer-in-Charge to do certain work uncompleted at the closeout of Contract NOy-4751. In addition, new work of an estimated value of $1,481,000, was designed, consisting mainly of sweeping and drainage of New River, finger piers, additional roads and sidewalks, Mark I gunnery trainer, athletic and recreational facilities, additional wells and pumps, gun emplacements, dog training camp, Naval Hospital diesel plant and garage, and miscellaneous small projects. During this period the employees were carried on the payroll of the CPFF general contractor, Contract NOy-4750.

March 13, 1943 to September 25, 1943 - During this period Carr and J. E. Greiner Company functioned under CPFF Contract NOy-6006.

September 25, 1943 to December 18, 1943 - The Architect-Engineers operated under lump-sum Contract NOy-7795.

B-2. Under the terms of Contract NOy-6006, H. H. Allen, Engineer, of Baltimore, Maryland, doing business under the name of J. E. Greiner Company and G. W. Carr, Architect, of Durham, North Carolina, were associated as Architect-Engineers to prepare plans and specifications for work to be constructed under Contract NOy-6007, with an estimated value of $5,588,500. This contract involved generally, work at Montford Point Camps 2-A and 3, rehabilitating Camp Knox, the Women's Reserve Area, additional facilities in the Industrial Area, additional facilities in the regimental and administrative area, facilities for colored messmen at Paradise Point and facilities for 1,000 colored men at the Rifle Range.

Change Order "A" authorized additional work made up principally of additional funds for changes in scope of dispensaries, facilities for 1,000 Negro Marines in the Industrial Area, office building, increase in capacity for electrical distribution system and miscellaneous small parts.

Change Order "B" authorized additional work consisting mainly of thirty school buildings, a bus terminal, auxiliary steam and water lines, Lighter-than-air facilities, additional railroad facilities and an additional B.O.Q. for the Women's Reserve Area.

Change Order "C" authorized the carrying of Navy Auditing and Inspection personnel on payroll of the Architect-Engineers.

B-3. Under the terms of lump-sum Contract NOy-7795, H. H. Allen, Engineer, of Baltimore, Maryland, doing business under the name of J. E. Greiner

Company, and G. W. Carr, Architect, of Durham, North Carolina were associated as the Architect-Engineers to prepare plans and specifications for the work remaining to be completed as of September 25, 1943, consisting mainly of swimming pools, signal school barracks, mess halls, schools, heating plant and utilities, addition to Central Heating Plant, dispensaries, etc. Also included was the work of completing hard copy record maps, furnishing photact and blueprint service, furnishing supplies and carrying on the Architect-Engineers' payroll the Auditing and Inspection forces of the Officer-in-Charge.

The Navy Department furnished office and drafting room supplies and equipment, office space, heat, light and furniture.

Inspection work was under the direction of the Officer-in-Charge, the Architect-Engineers handling the preparation of plans and specifications.

Marine Barracks

New River, N. C.
October 1941
River Road At E Street
Regimental Area

CHAPTER C - PART I

REPORT OF THE U. S. MARINE BOARD

No changes or additions were made to the report of the U. S. Marine Board which served as the fundamental basis for the layout of Camp Lejeune. This report is reproduced in Volume I of the Completion Report of the Architect-Engineers.

CHAPTER D - PART I

CHANGES OF SITES FOR VARIOUS ACTIVITIES

No major changes were made in sites described in the original Marine Board report other than those listed in Chapter D, Part I of Volume I.

It is understood that artillery, impact and firing areas have been changed from those shown in the original report.

Barrage Balloon and Parachute Training have been discontinued.

A labor camp for 1,000 men was located adjoining the Industrial and Supply Area.

CHAPTER E - PART I

DESIGN CONSIDERATIONS AND RESTRICTIONS

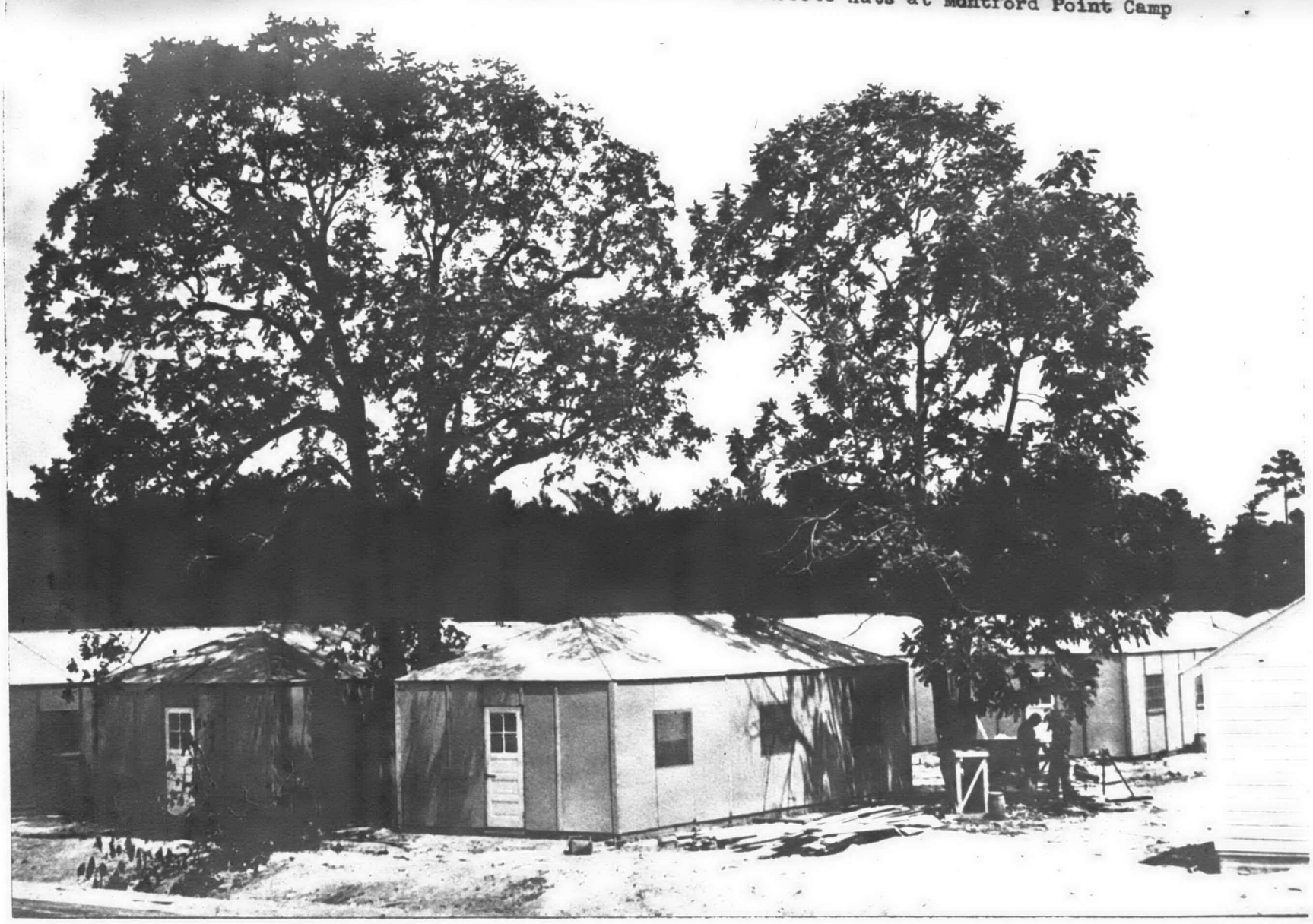
E-1. The type of architecture for Montford Point, Rifle Range, Labor Battalion and other areas was changed to achieve low costs and maximum comfort for the troops to be housed. It is believed that the new barracks of tile and stucco construction represent a very economical, semi-permanent type of housing.

E-2. Signal School facilities were arranged to avoid interference by tall structures.

E-3. The controlled materials plan and other directives concerning critical materials had a very far reaching effect on the design of the structures.

E-4. Exceptions necessarily were made to the previously reported spacing of 60 feet between buildings at the B.O.Q., Married Officers' Quarters, Midway Park and the new school buildings which were not contemplated when the regimental areas were laid out.

Marine Barracks
New River, N. C.
July 1942
Homosote Huts at Montford Point Camp



CHAPTER F - PART I

ENGINEERING DATA

F-1. In addition to the engineering data given in Volume I, the following data were obtained:

Rainfall: Maximum rainfall (total)

15 minutes	-	1.6 inches
30 minutes	-	2.6 inches
60 minutes	-	3.0 inches
72 hours	-	9.3 inches

Annual rainfall driest year - 28 inches
Annual rainfall wettest year - 80 inches
Annual rainfall average - 50 inches

F-2. Sunshine. Percentages of possible time - 64%

F-3. Temperature. Monthly average temperature

January	-	47° F.
February	-	49° F.
March	-	55° F.
April	-	62° F.
May	-	70° F.
June	-	76° F.
July	-	80° F.
August	-	79° F.
September	-	74° F.
October	-	64° F.
November	-	55° F.
December	-	48° F.

F-4. New River. Dissolved Oxygen, pH, B.O.D., temperature, chlorides, bacteria counts and other data showing the effect of sewage discharged into New River were made the subject of various reports and are summarized on P. W. Drawing No. 93, Y. & D. 228429.

F-5. Tides. The range of tides at various locations along New River was observed and the data are on record in the Public Works Office. See also Tidal Bench Marks, North Carolina, U. S. Coast and Geodetic Survey publication No. T-18, June 1939. Tide gauges were established at Wallace Creek Boat Basin and at the Ponton Bridge.

F-6. Chemical and bacteriological tests of the performance of the water and sewage treatment plants were made regularly and are on file in the Camp Engineer's Office.

CHAPTER G - PART I

SUMMARY OF FACILITIES PROVIDED

As of December 18, 1943, the Architect-Engineers had designed improvements with an estimated cost of $ 70,000,000. In order that the extent of the work may be visualized, the following statistics are given:

1743	Buildings.
1050	Hut Buildings.
50,000	Troops Housed.
900	Dwellings.
2	Hospitals.
10	Infirmaries and despensaries.
2	Incinerators.
13	Theaters.
4	Churches.
17	Central Heating Plants.

Electrical

29,259,246	KW installed load.
15	Substations.
100.7	Miles Pole Line.
16.7	Miles Underground Distribution.
771	Transformers.

Communications

75.3	Miles Cable.
32.5	Miles Telephone Pole Line.
7	Exchanges.
2507	Telephones.

Roads

127	Miles of Roads.
0.29	Miles of Bridges

Railroads

15.6	Miles Track
0.17	Miles of Trestle

Airports

3	5000 foot runways

Water

98 Miles Water Lines.
58 Wells with Pumping Stations.
3 Water Treatment and Pumping Plants.

Sewerage

62 Miles Sewers.
13 Sewage Pumping Stations.
6 Sewage Treatment Plants.

Surveys and Record Maps

354 Permanent Bench Marks.
452 Permanent Coordinate Stations.
136 Hard Copy Record Maps

Mechanical

25 Miles Steam Mains
6 Miles Gas Mains

Over Size Form

☐ Too Large ☑ Bound Book

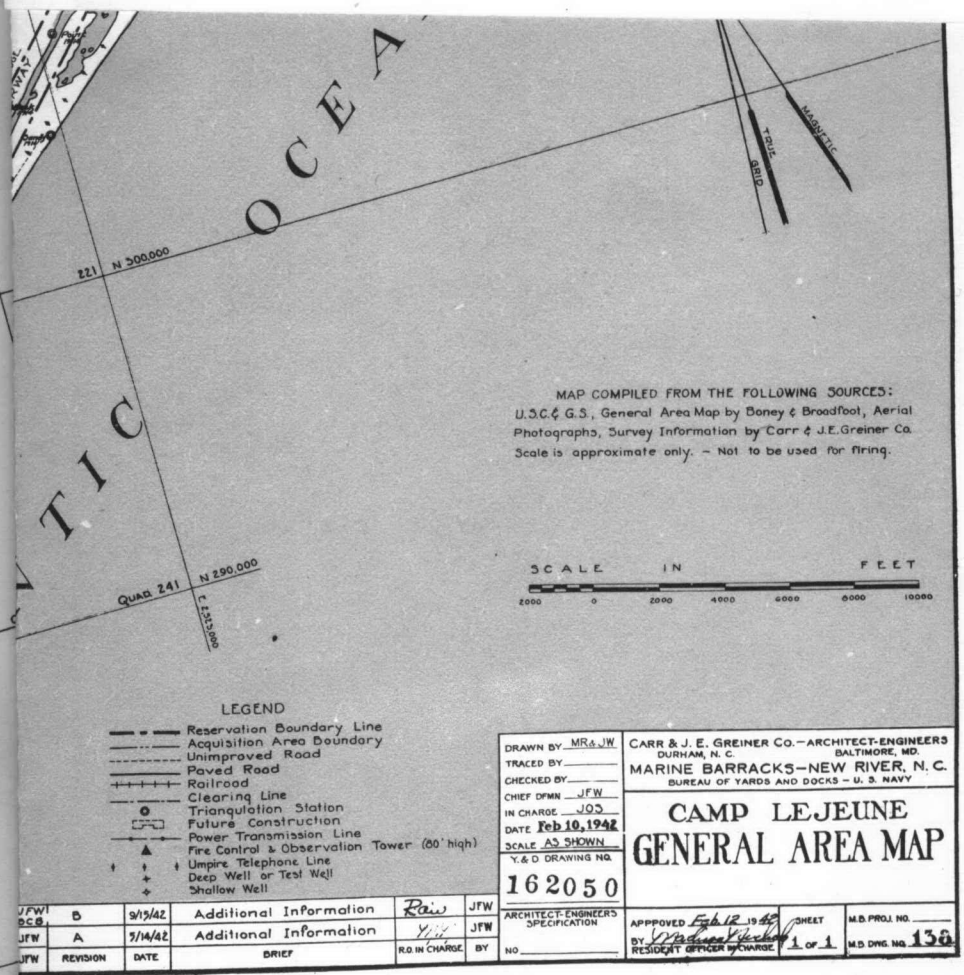
☐ Fragile ☐ Other_____

Sheet Number: _____

Drawing/NAVFAC Number: 162050

Title

Camp Lejeune
General Area Map



DRAWN BY	MR & JW
TRACED BY	
CHECKED BY	
CHIEF DFMN	JFW
IN CHARGE	JOS
DATE	Feb 10, 1942
SCALE	AS SHOWN
Y. & D. DRAWING NO.	162050
ARCHITECT-ENGINEERS SPECIFICATION NO.	

CARR & J. E. GREINER CO. — ARCHITECT-ENGINEERS
DURHAM, N. C. BALTIMORE, MD.

MARINE BARRACKS — NEW RIVER, N. C.
BUREAU OF YARDS AND DOCKS — U. S. NAVY

CAMP LEJEUNE
GENERAL AREA MAP

APPROVED Feb 12 1942
BY Madison Richter
RESIDENT OFFICER IN CHARGE

SHEET 1 OF 1

M.B. PROJ. NO.

M.B. DWG. NO. 136

JFW	B	9/15/42	Additional Information	Rais	JFW
JFW	A	5/14/42	Additional Information	Y.i.i.	JFW
JFW	REVISION	DATE	BRIEF	R.O. IN CHARGE	BY

CHAPTER A - PART II

PROJECT MANAGER'S OFFICE

A-1. Introduction. The work of the Project Manager's office was continued on the same basis as outlined in Volume I. Breifly, the problem was to make surveys and studies for authorized projects and to prepare specifications and working drawings in the shortest possible time.

A-2. Offices. Offices occupied by the company were as follows:

From October 1, 1942 to July 10, 1943, the offices were located in Barracks 205, Division Training Area.

From July 10, 1943 to the termination of the work the offices were located in the Public Works office, Building 1005, Industrial and Supply Area.

A-3. Organization. Shown hereinafter is the arrangement of the organization.:

The Project Manager reported to the Naval Officer representing the Chief of the Bureau of Yards and Docks. Commander R. A. Williams was Officer in Charge of Construction during the entire period.

The Project Manager was responsible for the building up of the organization, securing equipment,obtaining necessary typical plans, specifications and shop drawings from the Navy Department, handling the funds of the company and making decisions concerning important design features. During the period under discussion Mr. B. Everett Beavin of Annapolis, Maryland, served as project manager.

Reporting directly to the project manager were the heads of the following departments:

Reproduction Department. This department assumed many of the duties formerly carried out by the office engineer. Mr. Creston E. Funk was in charge during the entire period.

Auditing Department. Auditing Work was under the direction of Mr. Howard W. Law.

Site Planning Department. The work of this department was carried on by Mr. A. E. Ellington until September 6,1943, at which time the department was combined with the Civil Engineering Department in charge of Mr. George E. Taylor, Jr.

Architectural Department. The work of this department was in charge of Mr. Joseph D. Rivers. Due to the serious illness of Mr. Rivers, Mr. Vernon W. Harrison acted as chief architect from October 23, to December 18, 1943

No. 1 Marine Barracks
New River, N. C.
27 April 1941
Breaking ground for Building No. B-1-3
First operation of project
Tent Camp Area
Contract NOy-4750

Structural Department. Work of this department was under the direction of Mr. Hugh L. Waugh until September 25, 1943, at which time the work was placed under the direction of Mr. John J. Jenkins, Jr.

Mechanical Department. The work of this department was headed by Mr. Clifton N. Nilson.

Electrical Department. This department was headed by Mr. Joseph G. Thompson.

Plumbing Department. Plumbing work was under the direction of the mechanical department during this period.

Central Heating Plant. (Division Training Area) This work was under the direction of Mr. J. M. Shutt. Outlying plants were designed by the Mechanical Department.

Communications. Work of this department was under the direction of Mr. H. B. D'Oyley until September 25, at which time the work was assumed by the Navy Personnel.

Roads, Railroads, Drainage and Airports. Mr. A. E. Ellington was in charge of this work until Sept. 6, 1943, at which time it was placed under the Civil Engineering Department headed by Mr. G. E. Taylor, Jr.

Water Supply and Distribution. Mr. F. D. Kramer was in charge of this department until September 25, 1943 at which time it was combined with the Civil Engineering Department under the direction of Mr. G. E. Taylor, Jr.

Sewage Collection and Treatment. Mr. G. E. Taylor, Jr. was in charge of this work.

Surveys. Mr. William R. Cook was in charge of this work.

Record Mapping. This work was in charge of Mr. W. R. Cook, assisted by Mr. J. F. Wilson, Jr.

A-4. Personnel. Difficulties expercienced during the early part of the project were alleviated somewhat during the period under discussion. However, there always was a shortage of experienced personnel, particularly in the mechanical department. A tabulation of the number of employees at monthly intervals follows:

Month	Number of Employees
October, 1942	58
November, 1942	48
December, 1942	48
January, 1943	44
February, 1943	39
March, 1943	45
April, 1943	51

Month	Number of Employees
May, 1943	74
June, 1943	69
July, 1943	70
August, 1943	69
September, 1943	60
October, 1943	57
November, 1943	50
December, 1943	50

A-5 Office Procedure. Office procedure was very similar to that outlined in Volume I. The weekly status of plans and specifications file, the estimate file, the advance planning and design data file, and the follow-up file were not kept active during this period.

A-6. Administration of Project. Administration of the project followed closely the outline given in Volume I except that the coordination of design formerly done by the office engineer was handled by the project manager.

A-7. Narrative. In order that a clear picture may be had of the work performed during this period, a brief outline, arranged in chronological order, is given below:

October 1, 1942	Design work continued as before except that employees were transferred to the payroll of the General Contractor.
October 2, 1942	Began preparation of plans for finger piers, gun emplacements, additional water supply for Montford Point. Site for Post Theater building approved. Began studies of boiler feed-water treatment.
October 5, 1942	Submitted tracings for Tent Camp Water Treatment Plant (construction deferred). Began preparation of diagrams for collection and ash handling at Central Heating Plant, began plans and specification for loading ramp, Industrial Area.
October 7, 1942	Plans completed for communications cable between Tent Camps, Montford Point and Paradise Point.
October 8, 1942	Started work on service drives, Officers' Quarters Area.
October 11, 1942	Began systematic sampling of New River to provide data for pollution studies.
October 12, 1942	Began design for standby generator, Naval Hospital.

October 19, 1942	Started work on surveys of reservation boundry for permanent records.
October 22, 1942	Issued plans for Duck Creek-Starling Road. Began work on Courthouse Bay Road.
November 16, 1942	Mr. John E. Greiner, member of the firm passed away.
November 20, 1942	Public Works Record Office began operations.
November 24, 1942	Notified to prepare for operation under the control materials plan.
November 25, 1942	Began preparation of plans for athletic fact-ivities.
December 8, 1942	Began preparation of plans for new garage at Naval Hospital.
December 16, 1942	Started preparation of plans for corrosion pre-vention, condensate return systems.
December 17, 1942	Began preparation of plans for dog hospital and training camp.
January 1, 1943	Site plan approved for dog training area.
January 8, 1943	Began work on Montford Point Camp No 2.
January 20, 1943	Site plan approved, Montford Point Camp No. 2.
January 23, 1943	Preparation of horizontal and vertical control data, to be used by the Marine Corps in mapping the reservation, started.
January 28, 1943	Plans for Radar Area near Wallace Creek authorized.
February 1, 1943	Surveys for Women's Reserve Area started.
February 5, 1943	Surveys for Grade and High School Started.
February 16, 1943	Began preparation of plans for Mark I Gunnery Trainer and gun sheds at Montford Point.
February 25, 1943	Surveys for rehabilitation of Camp Knox started.
March 1, 1943	Started preliminary surveys for camp for Negro Troops at Rifle Range. Began preparation of plans for storehouse for each post exchange.

March 13, 1943	Following Projects authorized to be designed: (a) Montford Pt. Camp 2A, P-1100. (b) Montford Pt. Camp 3, P-1101. (c) Rehabilitation of Camp Knox, P-1102. (d) Women's Reserve Area, P-1200 (e) Industrial Area, P-1300 to P-1307, incl. (f) Reg. and Admin. Area, P-1500 to P-1503, incl. (g) Paradise Pt. Colored Camp, P-1600
March 20, 1943	Prepared estimates for Grade and High School; inspected test borings for this building.
March 24, 1943	Submitted recommendations as to Sewage Treatment at Montford Point.
March 26, 1943	Site Plan approved for Montford Pt. Camp 2A. Submitted sketches and estimates covering Headquarters for American Red Cross.
March 27, 1943	Received instructions to design secondary water line to Naval Hospital.
March 29, 1943	Site plan approved for Montford Pt. Camp NO. 3.
March 30, 1943	Completed soil borings at Montford Pt.
March 31, 1943	Site plan approved for rehabilitation of Camp Knox and sidewalks, Industrial Area.
April 1, 1943	Site plan approved for Women's Reserve Area.
April 6, 1943	Site plan approved for Post Dispensary Warehouse, and Paradise Pt. Colored Camp.
April 19, 1943	Began preparations of preliminary sketches and estimates for Lighter-than-Air Facilities.
April 24, 1943	Received instructions to design an artillery park.
April 29, 1943	Installation of Photact equipment authorized.
May 3, 1943	Site plan for new Public Works office building approved.
May 4, 1943	Site plan approved for Grade and High School.
May 8, 1943	Notified that name of Reservation had been changed from Marine Barracks to Camp Lejeune.
May 11, 1943	Began preliminary studies for Bus Terminal.

June 2, 1943	Site plan approved for two warehouses, Ind. Area.
June 4, 1943	Instructed to begin preliminary studies for swimming pools.
June 11, 1943	Began studies for increasing capacity of electrical distribution.
June 24, 1943	Began preliminary sketches and estimates for Guard House, also Signal School Facilities, Onslow Beach.
July 6, 1943	Instructed to proceed with plans for Bus Terminal also steam line to Naval Hospital. Site plans approved for two paint and oil storage sheds, post communications facilities and two motor storage sheds.
July 10, 1943	Moved into new Public Works Building in Ind. Area.
July 19, 1943	Began work on steam line connecting Naval Hospital to Division Training Area.
August 6, 1943	Site plan approved for Uniform Shop.
September 25, 1943	Site for Signal School Selected.
September 25, 1943	Contract NOy-6006 terminated and Contract NOy-7795 started. Major items of new contract are four swimming pools, addition to Central Heating Plant, chemical storage building, and Signal School facilities. Included also is the completion of work under way on old projects, field surveys and drafting to complete hard copy record maps, and various completion reports.
October 11, 1943	Completed plans for Signal School tank and foundation.
October 14, 1943	Completed plans and specifications for piling and foundations for Signal School Facilities.
November 6, 1943	Began preparation of plans for Red Cross Building.
November 6, 1943	Plans and specifications completed for three large swimming pools.
November 13, 1943	Began preparations of plans for Photographic Facilities.
November 18, 1943	Completed plans and specifications for buildings and utilities at Signal School.

December 2, 1943	Completed plans and specifications for Paradise Pt. Swimming Pool.
December 4, 1943	Completed plans and specifications, Red Cross Building, Photographic Facilities, Office and Storage Space Central Heating Plant, Chemical Storage Building, Water Treatment Plant.
December 5, 1943	Completed plans and Specifications, B. O. Q., Balloon Barrage Area.
December 18, 1943	Contract NOy-7795 terminated.

Marine Barracks
New River, N. C.
October 1942

Midway Park Defense Housing Project

CHAPTER B - PART II

REPRODUCTION DEPARTMENT

B-1. General. The work of this office consisted of the following:

(a) The arrangement and charge of drawing and specification numbering systems and the filing of the drawings and specifications for all departments.

(b) Maintaining adequate blue printing and mimeographing departments.

(c) Making recommendations for types of foundations for various structures.

(d) Handling many of the matters pertaining to personnel difficulties after their employment.

(e) Maintaining janitor service.

(f) Acting as safety engineer.

(g) Reproduction of working drawing tracings by the Photact process.

B-2. Public Works Office. In order to anticipate the time when the work of the Architect-Engineers would be assumed by the Public Works Office and to enable the duties to be transferred without too much difficulty, the Officer in Charge retained Mr. R. A. Kotasek to take charge of the Public Works records. The work of issuing and indexing drawing and specification numbers gradually was transferred to the Public Works Office, also all tracings and engineering equipment were placed under the custody of the Public Works office.

B-3. Tracing Reproductions. By means of the Photact process, linen tracings of approximately 3800 drawings were prepared and turned over to the Public Works office to be filed with the Bureau of Yards and Docks. Photact tracings by the reflex method were made of hard copy record drawings, eliminating the necessity for many thousand man hours of work which would have been required if these drawings were traced in the usual way.

B-4. Foundation Recommendations. Approximately 500 soil borings were made during this period. In order to expedite the work, borings were examined at the site.

CHAPTER C - PART II

AUDITING DEPARTMENT

C-1. The Audit Office combined three functions, namely: Accounting and Auditing, Time and Payroll, and Purchasing. The combination of these duties has proven very satisfactory for a contract of moderate size.

C-2. Accounting and Audit. All accounts and records, both general and cost were established and maintained in accordance with the procedure as outlined in "Manual for Accounting, Auditing, and Control", published by the Bureau of Yards and Docks of the Navy Department. The records and accounts for the Employees' War Bond Payroll deductions also were maintained by this office, independently of the General Books.

A detailed and comprehensive cost record was maintained. Each project was charged daily with the time as recorded on the daily time sheet. The weekly payroll was supported by a summary of these charges. All invoices or other costs were distributed directly to the applicable Project or Account from the Disbursement Register, immediately on payment.

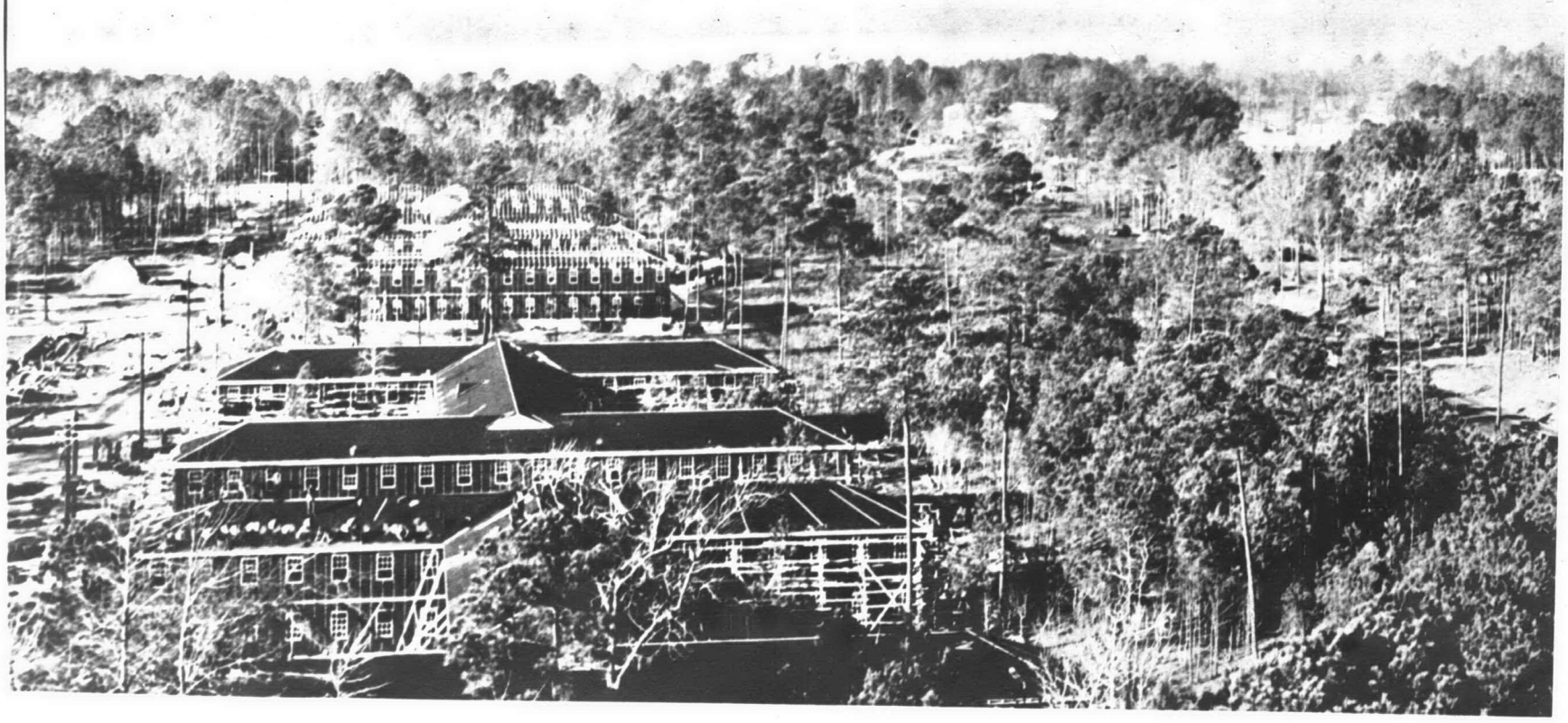
C-3. Time and Payroll. A daily register sheet was maintained, onto which each employee affixed his signature, opposite his typed badge number and typewritten name, the time that he started to work and on leaving, the employee initialed the time of departure and the projects to be charged with his time. Each department head was held responsible for the accuracy of both time and project charges. The Auditor also checked the presence of the employees. Leave slips were prepared for all absences and a proper charge made on the Employee's Leave Record.

Payrolls were prepared and paid by check and submitted to the Navy Auditor with the cancelled checks as evidence of payment.

C-4. Purchasing. In accordance with Bureau practice, written or verbal bids were requested on all materials, supplies or equipment that were required. The bids were tabulated and the lowest bidder awarded the sale and notified by a purchase order bearing complete shipping and billing instructions. All invoices were in quadruplicate and were paid immediately after complete verification as to quantity, extension and accuracy of the invoices. All items were verified as received by a Receiving and Inspection report signed by the receiving clerk and a Navy Inspector.

C-5. Detailed reports of financial and cost data may be obtained from the Audit Completion Reports for the Contracts. These reports were prepared in accordance with the Navy Manual and are a part of the permanent records of the contracts.

Marine Barracks
New River, N. C.
January 1942
View of Regimental Area No. 1
Taken from Elevated Water Tower



CHAPTER D - PART II

SITE PLANNING

D-1 Introduction. Site planning generally followed the principles outlined in Volume I. The chief innovation was the use of Montford Point type tile and stucco platoon barracks in several areas and the later combination of platoon type barracks and wash rooms into a one-story H-type building. This type of troop housing requires a somewhat different site arrangement from that adopted for the Division Training Area.

D-2 Montford Point Area.

D-2,01. Camps 2, 2A, and 3 were laid out for this area, together with school buildings, gun sheds, infirmary, administration building, theater, hostess house and the new brig. Camp Knox was rehabilitated. The entire area including Camp No, 1 now provides for the housing of approximately 8100 troops.

D-2.02. Swimming Pool. A swimming pool was located in the eastern corner of the Parade Ground.

D-3. Women's Reserve Area. Site selected for this activity immediately adjoins the Camp Troops Area and required only nominal extensions of water, sewerage, steam and other utilities. This group as designed provides for housing of 2000 enlisted Women Reserves and 208 Women Reserve Officers.

D-4. Division Training Area.

D-4.01. School Buildings. Twenty-six school buildings were located in Regimental Areas 3, 4, and 5. By direction, the previously observed minimum building clearance of 60 feet was disregarded and tile and stucco construction adopted.

D-4.02. Mark I Gunnery Trainer Building was located adjoining the existing Waller Gunnery Trainer building.

D-4.03. Artillery Park. An artillery park 600ft. x 400 ft. was located on an extension to the Service Road south of "O" Street.

D-4.04. Post Exchange and Service Club Storehouses, were located at the rear of all service clubs and post exchanges.

D-4.05. Swimming Pools. Swimming pools were located in Regimental Areas 2 and 5.

D-4.06. Bus Terminal. This building was located centrally on a site between "F" and "G" Streets near the Service Road. It is designed to accommodate eight normal size and two trailer type buses.

No. 40 Marine Barracks
New River, N.C.
24 October 1941
Clearing operation in Housing Project,
Looking North East
Defense Housing Area
Contract NOy-4750

D-4.07. Red Cross Building is located near the intersection of Service Road and "B" Street.

D-4.08. Grade and High School. A new school providing accommodations for 600 pupils was located on the south side of Paradise Point road west of Holcomb Boulevard.

D-5 Supply and Industrial Area.

D-5.01. Labor Camp. Housing for 1,000 Negro troops was located on the southeast side of Michael Road between Birch and Cedar Streets.

D-5.02. Public Works Office. This building provides office space for Public Works Officer, general contractors and architect-engineers. It is located in the east corner of the Industrial Area and a cafeteria is located nearby.

D-5.03. Warehouses. Two additional large warehouses were located in this area.

D-5.04. Miscellaneous Buildings. Paint and oil storage, telephone andcommunications, lumber drying kiln, reclamation and other buildings were added to this area.

D-6. Rifle Range. A camp providing housing for 1,000 colored troops is located about 2,000 feet south of the existing ranges.

D-7. Barrage Balloon Area. A B. O. Q. building was located in this area.

D-8. Residential Area. Quarters for 180 Negro messmen were provided near the Officers' Mess, also an open swimming pool was located between the Officers' Mess and New River. A Radar area was laid out near Wallace Creek.

D-9. Naval Hospital Area. The new garage was located in this area.

D-10. Beach Area. Signal School facilities provided housing, mess and training facilities for 750 troops. It is located in the beach area between the dunes and Intracoastal Waterway, opposite the Mock-up ship. Gun emplacements for training purposes were laid out along the dunes.

D-11. Lighter-than-Air Facilities. A layout with two mooring circles and other facilities was made for a site near the present landing field. Construction has been deferred.

CHAPTER E PART II

ARCHITECTURAL DEPARTMENT

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E-21	Schedule of Buildings by Types

E-1. Introduction

The Architectural Department under the direction of Joseph D. Rivers, Chief Architect, and Vernon W. Harrison, Assistant Chief Architect, designed all the buildings erected at Camp Lejeune, New River, North Carolina, since October 1, 1942.

The rapid expansion of the Marine Corps, leading to the formation of the Women's Reserve, the admittance of Negroes into the Corps, and the establishment of a Dog Training Detachment, presented varied and unusual problems. In diversity and magnitude, the design problems encountered were the equivalent of providing the multitude of advantages usually found in a city. Facilities were provided for housing, feeding, clothing, training, instructing, entertaining, disciplining, hospitalization and administration; for the reception of visitors; for decontamination of clothing and bedding; for incineration of wastes; for kiln-drying lumber; for photographic and transportation services.

Development of designs was influenced by a number of factors. In general, the military nature of the project, the necessity for general economy, the limitations on the use of strategic materials, and the shortage of craftsmen, dictated a simplicity and severity of treatment. Allotment and distribution of space were determined with the aid of directives from the Officer in Charge, thru conferences with prospective users, from standard drawings obtained from various governmental agencies, or from designs of similar structures erected elsewhere. Style precedents established by buildings previously built influenced exterior designs. The use of the modified early American Colonial style of former work in the Regimental Areas was continued in the buildings for the Women's Reserve; but, since they were to be used by women, buildings in this area were given a more domestic character. New construction in the Supply and Industrial Area followed the quasi-functional style of existing structures nearby. At Montford Point, the type of design developed owes its character largely to the materials and skills which were available for the project; the scarcity of wood for framing, sheathing and siding led to the selection of hollow tile for walls; the walls were stuccoed to improve weathering qualities; all openings were trimmed with exposed brickwork to simplify the application of stucco - forming of exterior angles was reduced to a minimum.

Members of the department exhibited ingenuity in the origination of substitutes for strategic materials and in the promotion of economies. Asbestos downspouts, wood gutters, and tile gravel stops were used instead of metal; rigid asbestos board was used as a substitute for marble, plaster, plywood and presdwood; fiber tile ceilings replaced plaster; "perforated" brick walls obviated metal grilles for ventilation; curtains instead of doors for bedroom closets saved millwork, hardware, and labor; brick cornices also reduced the cost of millwork, labor, and maintenance; bathroom floors were sloped to depressed shower stalls, thereby eliminating floor drains; concrete floors on the ground were poured integrally with foundations, enabling the builders to use a roadway paving machine for pouring such floor slabs.

Descriptions of individual buildings, including floor areas, cubage, listings of Structural Systems and construction materials, finishes, etc., are given in the Sections to follow. In the data listed, the cubic contents of all buildings are figured from average finish grade; porches are included at half their actual cubic contents.

Additional utility buildings are covered under the reports of the various departments.

E-2. Division Training Area.

E-2.01 Location. The area is located on the east bank of New River near the center of the reservation. The following number and types of buildings have been designed in this area since October 1, 1942:

10 Post Exchange and Service Club Storehouses	(E-2.02)
26 School Buildings - 6 with 2 rooms & 20 with 3 rooms	(E-2.03)
1 Bus Terminal	(E-2.04)
2 Swimming Pools	(E-2.05)
Alterations to Mess Hall No. 107	(E-2.06)
Alterations to Battalion Warehouse No. 133	(E-2.07)

E-2.02 Post Exchange and Service Club Storehouses. One-story rectangular building

Ground Area Covered	13' x 17'
Floor Area	156 sq. ft.
Cubic Contents	1337 cu. ft.
Clear Ceiling Height	8'-0"

General Construction. Wood roof on 8' brick bearing walls. Concrete floor slab on ground.

Foundations: Concrete foundation walls and footings.

Finishes: Asbestos shingle roof, unfinished brick walls, cement floors.

Design Loads: Roof-Live load 20 lbs. per sq. ft.
Wind - 30 lbs. per square foot.

E-2.03 School Buildings. One-story rectangular shaped buildings

Ground Area Covered	121' x 31'
Floor Area	3055 sq. ft.
Cubic Contents	42,235 cu. ft.

Design data as follows:

(a) 3-Class room - type	1014 sq. ft. each room
(b) 2-Class room - type - 1 @	1014 sq. ft. 1 @ 2028 sq. ft.

General Construction:

Wood roof frame, 8" brick bearing walls, or 8" hollow tile, stuccoed. Concrete floors.

Marine Barracks
New River, N. C.
January 1942
View of Regimental Area No.1
Taken from Elevated Water Tower

Foundations:

Concrete foundation walls & footings.

Finishes:

Concrete floors, wall exposed brick or hollow tile, ceiling fiber board, wood sash and doors, asbestos shingle roof.

Design Loads:

Roof-Live load 20 lbs. per sq. ft.
Wind - 30 lbs. per sq. ft.

E-2.04 Bus Terminal. One-story rectangular building with Bay Windows at 2 sides

Ground Area Covered	85' x 78'
Floor Area	3,213 sq. ft.
Cubic Contents (including 1/2 volume of loading spaces)	63,766 cu. ft.
Clear Ceiling Height	11' - 0"

Design data as follows:

Railway Ticket Office	108 sq. ft.
Entry	252 sq. ft.
Waiting Room	1,365 sq. ft.
Baggage & Ticket Office	324 sq. ft.
Office	126 sq. ft.
Drivers' Room	153 sq. ft.
Men's Toilets (2)	216 sq. ft.
Women's Toilets (2)	185 sq. ft.
Private Toilet	27 sq. ft.
Phone Booth	9 sq. ft.
Gear Room	8 sq. ft.
Landing Platforms	2,575 sq. ft.

2 Men's Toilets: - 3 Water Closets, 3 Lavatories, 2 Urinals
2 Women's Toilets: 3 Water Closets, 3 Lavatories
Private Toilet: 1 Water Closet, 1 Lavatory
Gear Room: 1 Slop Sink
Waiting Room: 15 Wood Benches, 2 Drinking Fountains

General Construction:

Concrete slab roof on 12 1/2" brick bearing walls. Concrete floor slab on fill. Concrete slab exterior loading platforms on fill.

Foundations:

Concrete foundation walls and footings. Soil pressure of 2,000 lbs. per sq. ft.

Marine Barracks
New River , N. C.
January 1942
View of Regimental Area Taken from
Elevated Water Tower

Finishes:

Concrete roof, unfinished brick walls with cement plaster wainscots in Toilet Rooms only, cement floors.

Design Loads:

Roof-live load 20# per square foot
Wind - 30# per square foot

E-2.05 Swimming Pool. Rectangular shaped building, generally one story with filter room below main floor at one end, and concrete diving platform over locker rooms.

Ground Area Covered	106' x 215'
Main Floor Area	16,090 sq. ft.
Filter Room Floor Area	3,420 sq. ft.
Total Floor Area	19,510 sq. ft.
Cubic Contents	461,971 cu. ft.

Design data as follows:

Main Floor:

Pool 150'-1" x 60'-0" x 11'-8" at deepest part	9005 sq. ft.
Pool Deck	5320 sq. ft.
Office	181 sq. ft.
Locker Rooms (2) 96 Lockers each	830 sq. ft.
Toilet Rooms (2)	312 sq. ft.
Shower Rooms (2)	192 sq. ft.
Foot Baths (2)	104 sq. ft.
Diving Platforms (3)	726 sq. ft.
Circulation Platform (1)	660 sq. ft.
Entrance Deck	576 sq. ft.

Filter Room Floor:

Filter Room	2377 sq. ft.
Chlorinator Room	87 sq. ft.
Ammoniator Room	109 sq. ft.
Storage Area	310 sq. ft.
Transformer & Electrical Service Area	410 sq. ft.

Toilets:

Toilets: 4 Water Closets, 3 Urinals, 3 Lavatories, each
Showers: 6 Shower Heads each
2 Service Sinks

General Construction:

Reinforced concrete diagrid roof, 16" bearing pilasters with

Marine Barracks
New River , N. C.
January 1942
View of Regimental Area Taken from
Elevated Water Tower

8" brick curtain walls between pilasters; floors, decks, pool, basement walls are concrete.

Foundations:

Reinforced concrete foundation walls and footings.

Soil pressure 1,500# per square foot

Finishes:

Floors, concrete non-slip finish around pool, in showers. Walls exposed brick or concrete. Ceilings, exposed concrete. Steel sash. Wood doors. Builtup roof over 2" rigid insulation; 2 corrugated glass skylights, each 15'-0"x 84'-0".

NOTE: Roof designed by American Diagrid Corporation for U. S. Navy, modified by Bureau of Yards and Docks.

E-2.06 Alterations to Mess Hall No. 107. A portion of the dining hall in this building was partitioned off to serve as a uniform shop for women, providing the following facilities:

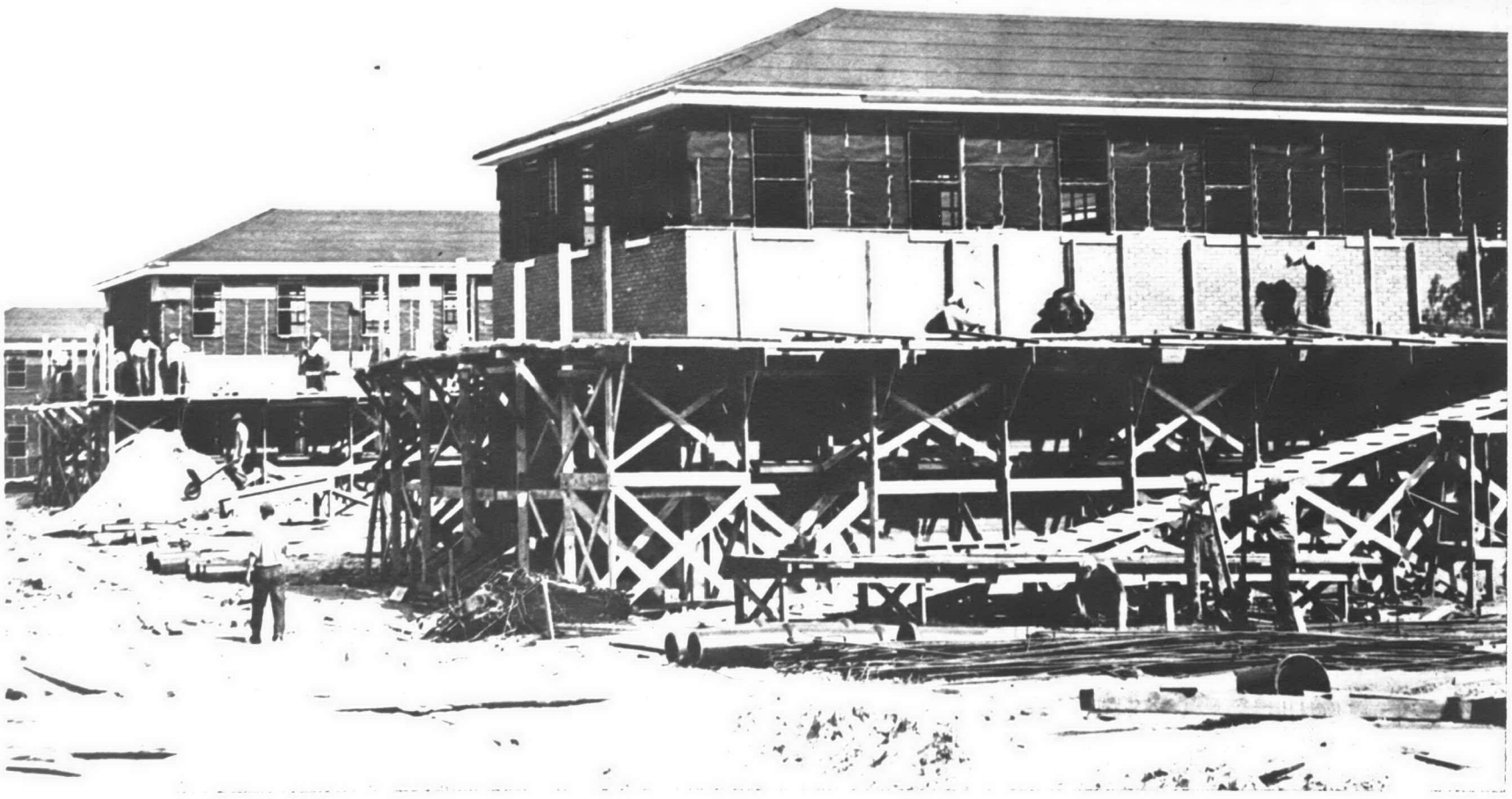
Sales Room	1473 sq. ft.
Suit & Coats Hanging Room	1319 sq. ft.
Issue Room	435 sq. ft.
Assembly Room	574 sq. ft.
Fitting Room	689 sq. ft.
Storage Room	438 sq. ft.
Checking Office	259 sq. ft.
Hall & Corridor	854 sq. ft.
Total Floor Area	6041 sq. ft.

Partitions were of wood studs, covered with fiber board on exposed sides.

E-2.07 Alterations to Battalion Warehouse 133. A standard Battalion Warehouse was altered to serve as an Alterations Shop for women, providing the following facilities:

Waiting Room	130 sq. ft.
Receiving Room	148 sq. ft.
Delivery Room	222 sq. ft.
Sewing & Work Room	2427 sq. ft.
Repair & Storage Room	222 sq. ft.
Men's Toilet Room	149 sq. ft.
Women's Toilet Room	125 sq. ft.
Gear Closet	52 sq. ft.
Corridor	31 sq. ft.

Marine Barracks
New River, N. C.
January 1942
Regimental Area
View taken of Barracks showing Typical
Brick Veneer



E-3. Camp Troops Activities:

E-3.01. Location. These activities extend over the entire reservation. Most of the buildings are in an area which adjoin and is northwest of the Regimental Areas. Since October 1, 1942, the following buildings have been designed in connection with Camp activities:

1 Mark I Gunnery Trainer	(E-3.02)
1 Uniform Shop	(E-3.03)
1 Dispensary Warehouse	(E-3.04)
1 Grade and High School	(E-3.05)
1 Photographic Shop - Conversion of Warehouse No. '27	(E-3.06)
1 Post Exchange Storehouse	(E-3.07)
1 Hostess House Storehouse	(E-3.08)
1 American Red Cross Building	(E-3.09)
1 Chemical Storage Building, Water Treatment Plant	(E-3.10)
Gate House - Repairs and Additions	(E-3.11)

E-3.02. Mark I Trainer Building. (Plans by the Bureau of Yards & Docks).

Ground Area Covered	32' x 59'
Floor Area	1587 sq. ft.
Cubic Contents	41,758 sq. ft.

Design Data as follows:

Lecture Hall	1260 sq. ft.
Projection Booth	158 sq. ft.
Toilet	34 sq. ft.
Light Trap	25 sq. ft.
Closets (3)	49 sq. ft.

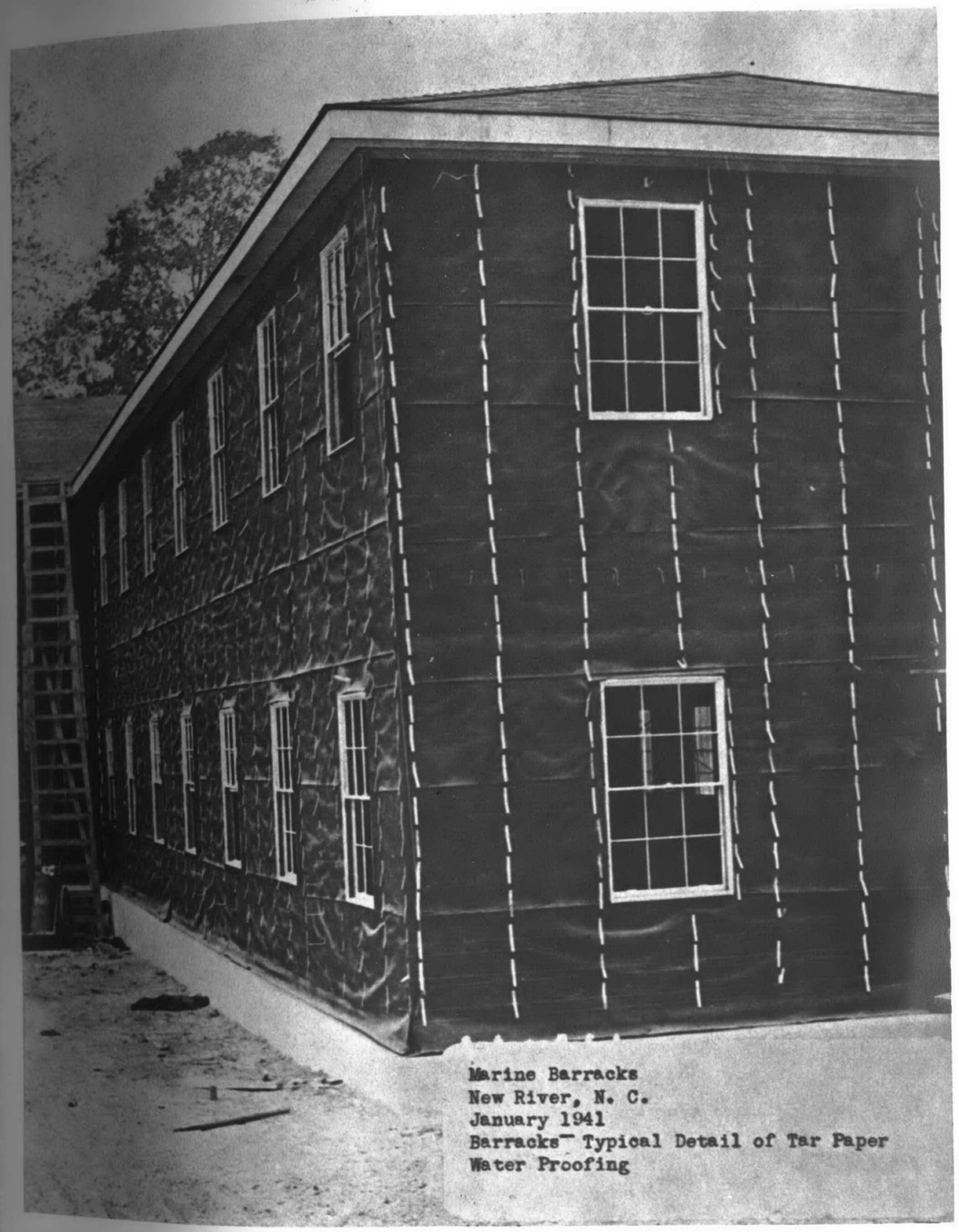
Toilet: 1 Water Closet, 1 Urinal, 1 Lavatory

General Construction: Principally wood frame with part brick. Concrete floor slab on fill.

Foundations: Concrete foundation walls & Footings. Soil pressure - 2,000 lbs. per sq. ft.

Finishes: Shingle roof, side walls & ceiling wood, painted, brick walls unfinished. Asphalt tile floor in Lecture Hall, Granolithic concrete floor in Projection Booth.

Design Loads: Roof - live load 20 lbs. per sq. ft. Wind - 30 lbs. per sq. ft.



Marine Barracks
New River, N. C.
January 1941
Barracks— Typical Detail of Tar Paper
Water Proofing

E-3.03. Uniform Shop. One-story rectangular building.

Ground Area Covered	62' x 192'
Floor Area	9,360 sq. ft.
Cubic Contents ~	171,880 cu. ft.

Design Data as follows:

Work Room	1,581 sq. ft.
Uniform Sales Room	1,139 sq. ft.
General Sales Room	2,679 sq. ft.
Storage Rooms (2)	2,643 sq. ft.
Offices (2)	397 sq. ft.
Men's Toilet Rooms (2)	122 sq. ft.
Women's Toilet Rooms (2)	95 sq. ft.
Gear Rooms (2)	31 sq. ft.
Dressing Rooms (4)	65 sq. ft.
Vestibule & Hall	272 sq. ft.

4 Toilets: 5 Water Closets, 4 Lavatories
2 Gear Rooms: 2 Slop Sinks

General Construction:

Wood roof on 12 1/2" brick bearing walls. Concrete floor slab on ground.

Foundations:

Concrete foundation walls & Footings. Soil pressure - 2,000# per square foot.

Finishes:

Asbestos shingle roof, unfinished brick walls except Toilet rooms where cement plaster is used.

Design Loads:

Roof-live load 20# per square foot. Wind - 30# per square foot.

E-3.04. Post Dispensary Warehouse. One story, rectangular building.

Ground Area Covered	34' x 111'
Floor Area	3,441 sq. ft.
Cubic Contents	52,345 cu. ft.
Clear Ceiling Height	9' - 0"

General Construction: Wood roof trusses on 8" brick bearing walls. Concrete Floor slab on ground.

Foundations: Concrete foundation walls and footings. Soil pressure 2000 lbs per sq. ft.

Finishes:

Asbestos shingle roof, unfinished brick walls, cement floors, wood windows.

Design Loads:

Roof-Live load 20 lbs. per sq. ft. Wind - 30 lbs. per sq. ft.

E-3.05. Grade and High School Building. One story rectangular shaped building with central projections front and rear.

Ground Area Covered	397' x 119'
Floor Area	28,383 sq. ft.
Cubic Contents	673,112 cu. ft.

Design data as follows:

Class Rooms (First through Eleventh Grades)	8,488 sq. ft.
Science and Laboratory Room	768 sq. ft.
Home Economics Room	760 sq. ft.
Kindergarten	840 sq. ft.
Manual Training Room	1,357 sq. ft.
Boy's Toilet Rooms (2)	582 sq. ft.
Girl's Toilet Rooms (2)	668 sq. ft.
Faculty Toilet Rooms (2)	52 sq. ft.
Kindergarten Toilet Room	34 sq. ft.
Gear Rooms	51 sq. ft.
Principal's Offices	340 sq. ft.
Nurse's Office	153 sq. ft.
Teachers' Room	282 sq. ft.
Book Room	279 sq. ft.
Store Room	196 sq. ft.
Auditorium (Seating capacity 650)	4,349 sq. ft.
Stage	752 sq. ft.
Dressing Rooms	459 sq. ft.
Boiler Room	726 sq. ft.
Corridors	5,918 sq. ft.

Toilets:

Boys Toilets: 12 water closets, 10 urinals, 10 lavatories
Girls Toilets: 18 water closets, 10 lavatories
Faculty Toilets: 2 water closets, 2 lavatories
Kindergarten Toilet: 1 water closed, 1 lavatory
Gear: 2 service sinks

General Construction:

Wood roof frame, 8" hollow tile bearing walls, 4" brick veneer,

concrete floors laid over hollow tile. Corridor ceilings reinforced concrete slab.

Foundations:

Concrete foundation walls and footings. Soil pressure 1,000 lbs. per square foot.

Finishes:

Floors: Asphalt tile in Auditorium, corridors, principal's and Nurse's offices and teacher's rooms; Wood in dressing rooms and stage; Tile in toilets; concrete elsewhere; Class rooms, auditorium and offices, walls gypsum plaster; Keene's cement in toilets and gear rooms; exposed masonry in manual training, store & boiler room. Portland cement wainscot in corridors, class rooms and principals offices.

Ceilings: in corridors, accoustic tile; closets, plaster; boys' and girls' toilets and gear rooms, asbestos board; small toilets and alcove, Keene's cement; all others, 1/2" fiber board. Roof is asbestos shingles, sash are wood.

Design Loads:

Roof-Live load 20 lbs. per square foot. Wind - 30 lbs. per square foot.

E-3.06. Photographic Shop - Conversion of Warehouse No. 27. The interior of Building No. 27 in the Division Training Area has been altered to serve as a Photographic Shop providing the following facilities:

Office	117 sq. ft.
Studio	720 sq. ft.
Developing Room	220 sq. ft.
Printing Room	620 sq. ft.
Enlarging Room	326 sq. ft.
Dog Tag Office	173 sq. ft.
Finishing Room	500 sq. ft.
Chemical Room	119 sq. ft.
Store Room	220 sq. ft.
Film Drying Room	74 sq. ft.
Lobby & Corridor	445 sq. ft.

Partitions are of hollow clay tile; ceilings of asbestos board; with 2" of mineral wool insulation over floors, existing concrete; doors, wood. Wall finishes, exposed masonry, painted.

E-3.07. Post Exchange Storehouse. This building is the same as the Post Exchange and Service Club Storehouses; for complete data, see Section E-2.02.

E-3.08. Hostess House Storehouse. This building is the same as the Post Exchange and Service Club Storehouses; for complete data, see Section E-2.02.

E-3.09. American Red Cross Building: One story rectangular building with a projecting wing at each side.

Ground Area Covered	66' x 105'
Floor Area	3,221 sq. ft.
Cubic Contents	59,557 cu. ft.

Design data as follows:

Reception Room	440 sq. ft.
Lecture Room	741 sq. ft.
General Office	389 sq. ft.
Offices (3)	482 sq. ft.
Work Rooms (2)	790 sq. ft.
Storage Rooms (2)	103 sq. ft.
Women's Toilet	143 sq. ft.
Men's Toilet	54 sq. ft.
Front Terrace	195 sq. ft.

Women's Toilet: 3 water closets, 2 lavatories, 1 slop sink
Men's Toilet: 1 water closet, 1 lavatory

General Construction:

Wood roof frame on 12 1/2" tile & brick veneer bearing walls. Concrete floor slab on fill.

Foundations:

Concrete foundation walls & footings
Soil pressure 2,000# per square foot

Finishes:

Asbestos shingle roof; asbestos board ceilings in toilet rooms, fiberboard ceilings elsewhere; cement plaster walls in toilet rooms & gypsum plaster walls elsewhere; cement floors thruout; wood sash.

Design Loads:

Roof -live load 20# per square foot
Wind - 30# per square foot

E-3.10. Chemical Storage Building. One story, rectangular - shaped building.

Ground Area Covered	22' x 30'
Floor Area	594 sq. ft.
Cubic Contents	7,722 cu. ft.

General Construction:

Wood frame roof on 8" brick bearing walls. Concrete floor slab on ground.

Foundations:

Concrete foundation walls.

Finishes:

Asbestos shingle roof; underside of roof sheathing is ceiling; unfinished brick walls; cement floor.

Design Loads:

Roof - Live load 20# per square foot
Wind - 30# per square foot

E-3.11. Gate House - Repairs and Addition. This project involved repairs to the existing Gate House, made necessary by the explosion of a boiler; and an addition consisting of a one-story, rectangular-shaped boiler room.

Ground Area Covered	13' x 21'
Floor Area	240 sq. ft.
Cubic Contents of Stack	486 cu. ft.
Cubic Contents of Building	3,243 cu. ft.
Total Cubic Contents	3,729 cu. ft.

General Construction:

Wood frame roof on 8" brick bearing walls.
Concrete floor on ground

Foundations:

Concrete foundation walls and footings
Soil pressure 2000 lbs. per sq. ft.

Finishes:

Asbestos shingle roof; asbestos board ceiling; unfinished brick walls, cement floor.

Design Loads:

Roof - Live load 20 lbs. per square foot
Wind - 30 lbs. per square foot

E-4. Industrial & Supply Area:

E-4.01. Location. Situated east of the Division Training Area. Since October 1, 1942, the following buildings have been designed in this area:

1 Warehouse No. 1108	(E-4.02)
1 Warehouse No. 1606	(E-4.03)

1 Lumber Drying Kiln	(E-4.04)
2 Paint & Oil Storage	(E-4.05)
1 Camp Communications Warehouse & Cable Platform	(E-4.06)
1 Camp Communications Storage Shed	(E-4.07)
1 Reclamation Storage Building	(E-4.08)
1 Reclamation Decontamination Building	(E-4.09)
4 Labor Battalion Barracks	(E-4.10)
1 Labor Battalion Mess Hall	(E-4.11)
1 Labor Battalion Administration Bldg.	(E-4.12)
1 Labor Battalion Post Exchange	(E-4.13)
1 Public Works Office Building	(E-4.14)
1 Cafeteria Building	(E-4.15)
3 Truck Loading Sheds	(E-4.16)
Extension to Laundry	(E-4.17)
Additional Toilets - Warehouses Nos. 1101, 1201, 1402, 1501	(E-4.18)
Office & Storage Space (additional) Central Heating Plant	(E-4.19)

E-4.02. Warehouse - Building No. 1108. Part two-story rectangular shaped building with loading platform on both long sides.

Ground Area Covered	200' x 367'
Floor Area - 1st & 2nd Floors	69,024 sq. ft.
Cubic Contents	1,479,750 cu. ft.

Design data as follows:

First Floor:

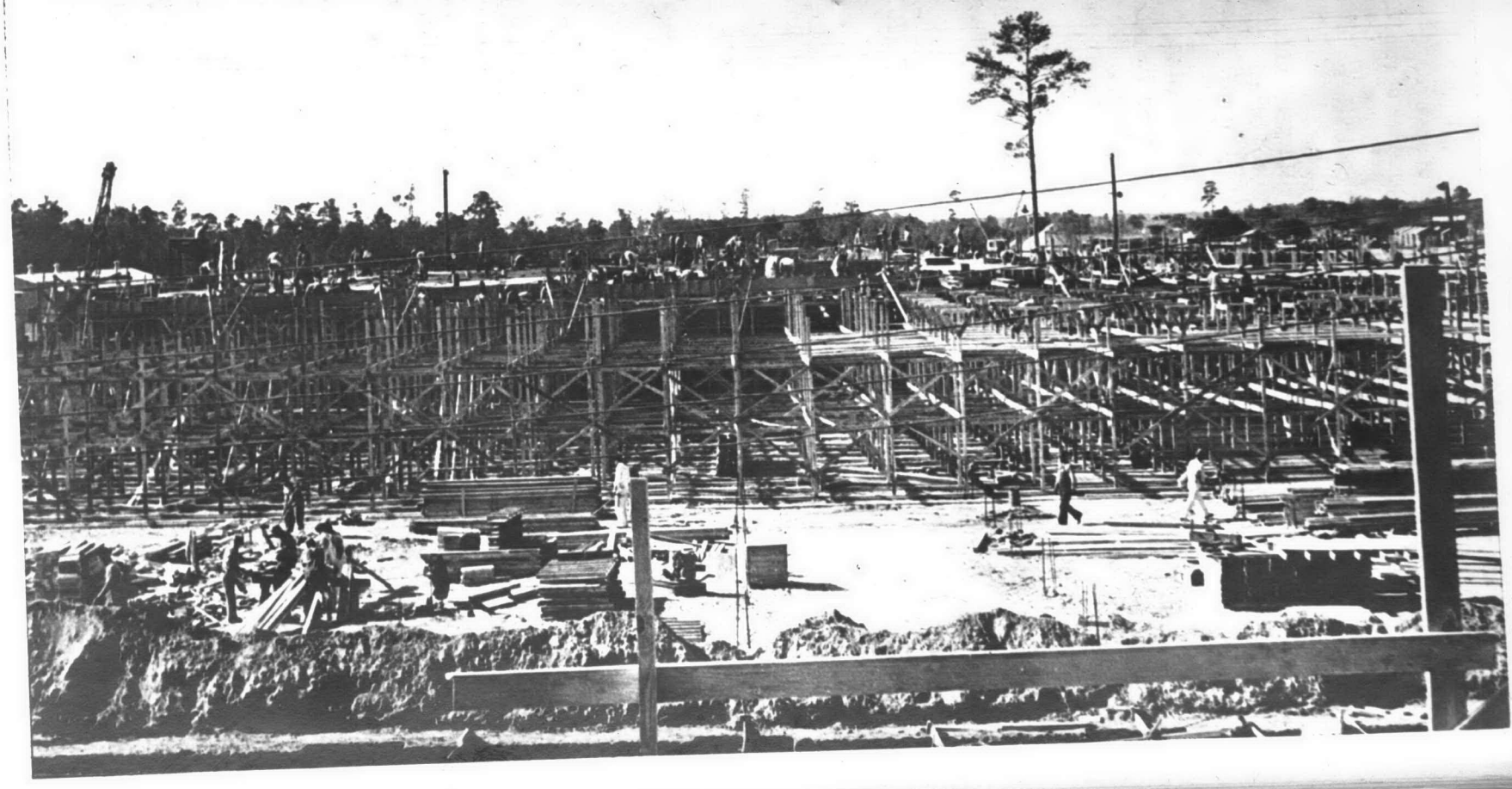
Loading Platforms	7,200 sq. ft.
Warerooms	58,400 sq. ft.
Valuable Small Stores Rooms	3,480 sq. ft.
Supply Room	300 sq. ft.
Mimeo. Room	210 sq. ft.
Toilets	731 sq. ft.
Lounge & Corridor	389 sq. ft.

Second Floor:

Offices	4393 sq. ft.
Toilet	30 sq. ft.
Corridor & Stairway	690 sq. ft.

Officers' Toilet: 2 water closets, 1 urinal, 2 lavatories
Enlisted Men's Toilet: 2 showers, 2 water closets, 1 urinal, 2 lavatories
Colored Men's Toilet: 2 showers, 2 water closets, 1 urinal, 2 lavatories
Women's Toilet: 4 water closets, 4 lavatories

Marine Barracks
New River, N.C.
January 1942
Construction of Post Garage Building



General Construction:

Monitor type building with concrete columns and roof, 12 1/2" brick walls, stuccoed outside; concrete floor slab & loading platforms.

Foundation:

Concrete foundation walls on piles with concrete caps. Soil pressure 2000# per square foot; pile capacities 15 & 20 tons.

Finishes:

Cement floors, unfinished brick walls & concrete ceiling, built-up roof over rigid insulation.

Design Loads:

Live load on loading platform 250# per square foot. Live load on 1st floor 600# per square foot. Wind - 30# per square foot.

E-4.03. Warehouse - Building No. 1606. One story rectangular shaped building with loading platform on both long sides.

Ground Area Covered	200' x 364'
Floor Area	65,724 sq. ft.
Cubic Contents	1,445,660 cu. ft.

Design data as follows:

Loading Platforms	7200 sq. ft.
Warerooms	52,260 sq. ft.
Office	684 sq. ft.
Toilets	524 sq. ft.
Corridor	100 sq. ft.

Officers' Toilet: 1 water closet, 1 urinal, 1 lavatory
Enlisted Men's Toilet: 2 water closets, 2 urinals, 2 lavatories
Men's Toilet: 2 water closets, 2 urinals, 2 lavatories
Women's Toilet: 1 water closet, 1 lavatory

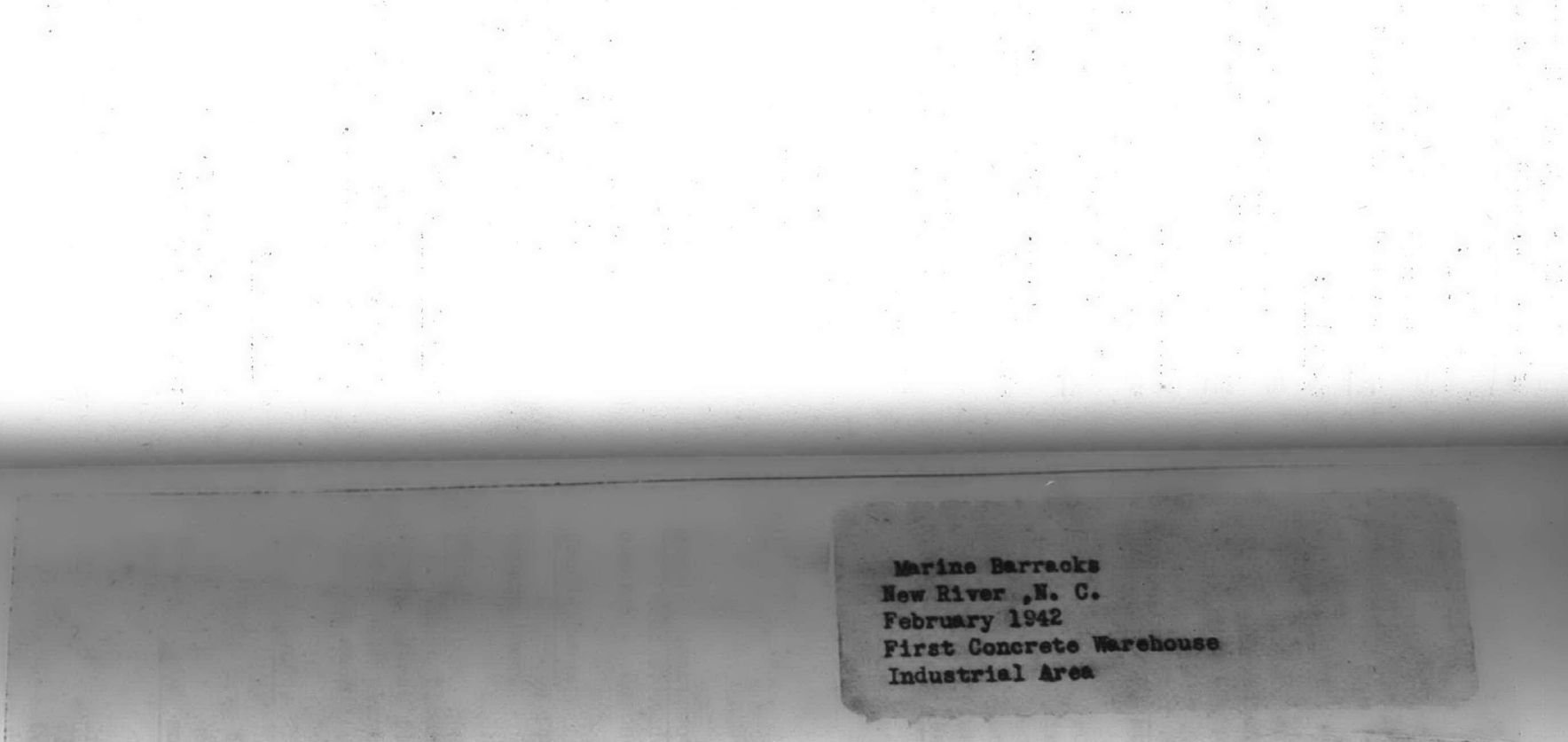
General Construction:

Monitor type building with concrete columns and roof, 12 1/2" brick bearing walls, stuccoed outside; concrete floor slab & loading platforms.

Foundation:

Concrete foundation walls on piles with concrete caps. Soil pressure 2000 lbs. per square foot; pile capacities 15 and 20 tons.

Marine Barracks
New River ,N. C.
February 1942
First Concrete Warehouse
Industrial Area



Finishes:

Cement floor, unfinished brick walls & ceiling. Built-up roof over rigid insulation.

Design Loads:

Live Load on loading platform 250# per square foot.
Live load on floor 600# per square foot.
Wind - 30# per square foot.

E-4.04. Lumber Drying Kiln: Two story rectangular shaped building. with small one story wing.

Ground Area Covered	44' x 40'
First Floor Area	1,298 sq. ft.
Second Floor Area	1,178 sq. ft.
Total Floor Area	2,476 sq. ft.
Cubic Contents	33,469 cu. ft.

Design data as follows:

First Floor:	
Kiln Room	1,178 sq. ft.
Control Room	120 sq. ft.
Second Floor:	
Machine Room	1,178 sq. ft.

General Construction:

Wood framed roof, 12" brick bearing walls, stuccoed. First floor concrete. Second floor, wood, supported on bottom chord of trusses.

Foundations:

Concrete foundation walls and footings. Soil pressure 2,000 lbs. per square foot.

Finishes:

First floor concrete. Second floor 1-5/8" plank. Walls, exposed brick. First floor ceiling, asbestos board. Second floor ceiling, exposed roof plank. Built-up roof. Frieze below roof, asbestos board betewwn wood louvers, wood sash and metal doors.

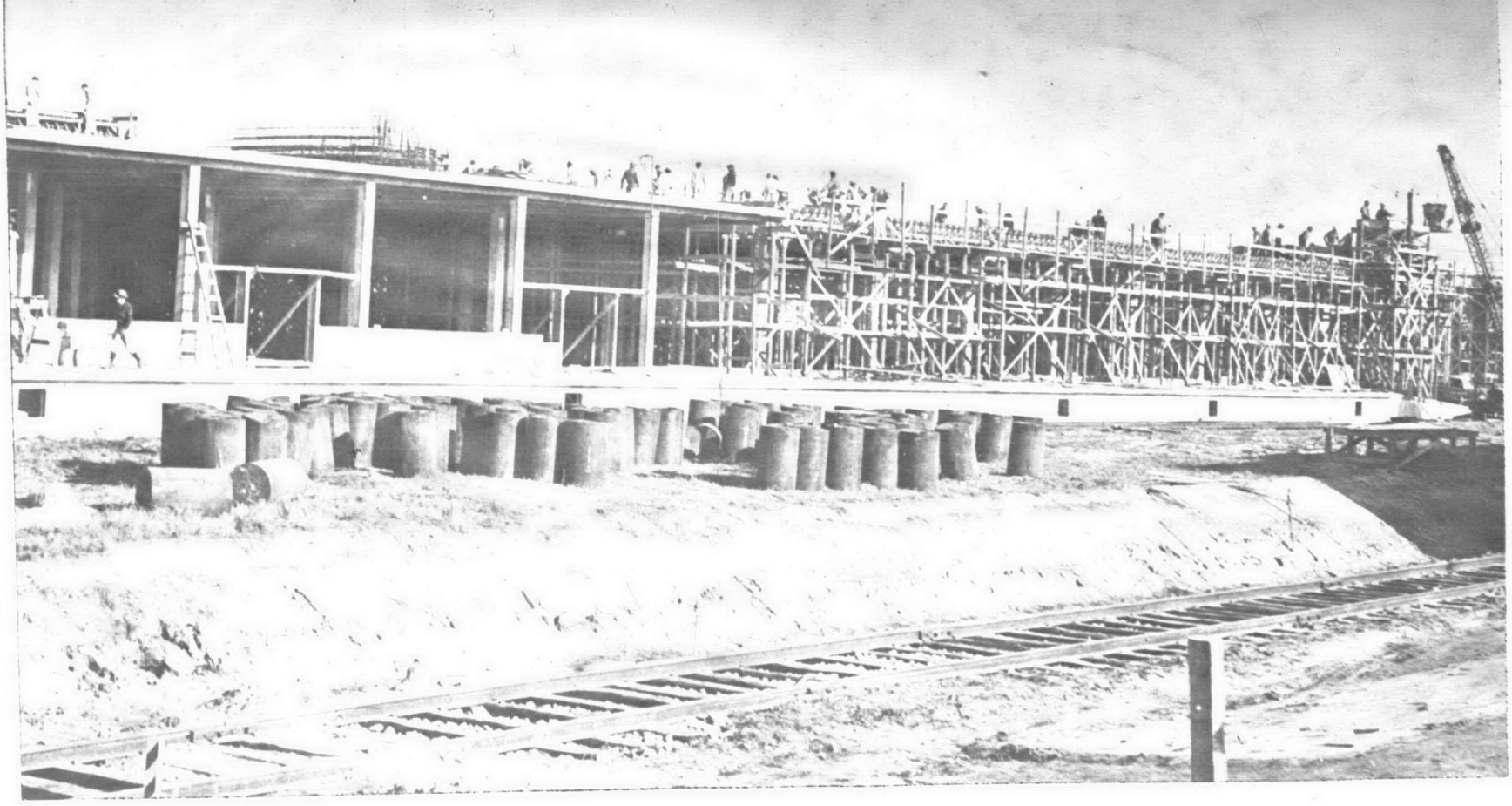
Dosign Loads:

Roof-Live load 20 lbs. per square foot. Wind-30 lbs. per square foot.

E-4.05 Paint and Oil Storage Houses. One story rectangular shaped buildings.

Ground Area Covered	28' x 157'
Floor Area	4,136 sq. ft.
Cubic Contents	59,709 cu. ft.

Marine Barracks
New River , N. C.
February 1942
Concrete Warehouse - Industrial Area



Clear Ceiling Height	9' - 11"

Design data as follows.

Storage rooms (3)	4,118 sq. ft.

General Construction:

Wood roof frame, 8" concrete block bearing walls, stuccoed. Concrete floor slab on fill.

Foundations:

Concrete foundation walls and footings.
Reinforced concrete mat under whole building.

Finishes:

Cement floor, wood windows & doors, asbestos shingle roof.

Design Loads:

Roof-live load 20 lbs. per square foot. Wind-30 lbs. per sq. ft.

E-4.06. Camp Communications Warehouse & Cable Platform. One story L-shaped building.

Ground Area Covered	89' x 82'
Floor Area	4,163 sq. ft.
Cubic Contents	62,350 cu. ft.
Clear Ceiling Height	9' - 0"

Design data as follows:

Heavy Storage	1709 sq. ft.
Signal Storage	1037 sq. ft.
Corridor	143 sq. ft.
Store Keepers Office	182 sq. ft.
Telephone Rapair	450 sq. ft.
Instruction	429 sq. ft.
Duty N.C.O.	103 sq. ft.
Head	162 sq. ft.

General Construction:

Wood framed roof. Concrete block bearing walls, stuccoed. Reinforced concrete floor slab.

Foundations:

Reinforced concrete mat under the whole building.

Finishes:

Concrete floors. Storage rooms walls, exposed block. All other walls, gypsum plastered; cement plaster in head. Storage rooms open to roof. Head ceiling, asbestos board; all others, fiber board. Wood sash & doors. Asbestos shingle roof.

Design Loads:

Roof Live load 20 lbs per sq. ft.
Wind Load - 30 lbs. per square foot.

Communications Cable Platform: Rectangular shaped platform

Ground Area Covered	33' x 68'
Floor Area	2249 sq. ft.
Cubic Contents	7575 cu. ft.

Design data as follows:

Cable Storage 2249 sq. ft.

General Construction:

Concrete walls. Reinforced concrete slab on fill

Foundations:

Concrete walls and footings

Finishes:

Concrete floor. Wood bumper strips.

E-4.07. Camp Communications Storage Shed. One story rectangular shaped building, open one side.

Ground Area Covered	31' x 157'
Floor Area	4200 sq. ft.
Cubic Contents	76,346 cu. ft.
Clear Ceiling Height	13' - 10"

Design data as follows:

Storage Spaces (3)	4162 sq. ft.

General Construction:

Wood roof frame. Concrete block bearing walls. Wood girder and pipe columns, open side. Reinforced concrete floor.

Foundations:

Reinforced concrete mat under the whole building.

Finishes:

Floors concrete. Walls exposed concrete block. Wood sash. Asbestos shingle roof.

Design Loads:

Roof-Live load. 20 lbs. per sq. ft.
Wind load - 30 lbs. per sq. ft.

E-4.08. Reclamation Storage Building. One story rectangular shaped building.

Ground Area Covered	28' x 157'
Floor Area	4,136 sq. ft.
Cubic Contents	59,709 cu. ft.
Clear Ceiling Height	9' 1 11"

Design data as follows:

Storage rooms (3)	4,116 sq. ft.

General Construction:

Wood roof frame, Concrete block bearing walls, stuccoed. Concrete floor slab on fill.

Foundations:

Concrete foundation walls & footings
Soil pressure 2,000 lbs. per sq. ft.

Finishes:

Cement floor, wood windows & doors, asbestos shingle roof.

Design Loads:

Roof - Live load 20 lbs. per sq. ft.
Wind - 30 lbs. per sq. ft.

E-4.09 Reclamation Decontamination Building. One story rectangular shape.

Ground Area Covered	28' x 157'
Floor Area	4,136 sq. ft.
Cubic Contents	59,709 cu. ft.
Clear Ceiling Height	9' - 11"

Design data as follows:

Storage rooms (2)	4,118 sq. ft.

Two fumigating tanks, wall seperating sterile from unsterile room.

General Construction:

Wood roof frame, 8" concrete block bearing walls, stuccoed. Concrete floor slab on fill.

Foundations:

Concrete foundation walls & footings
Soil pressure 1,000 lbs. per sq. ft.

Finishes:

Cement floor, wood windows & doors asbestos shingle roof.

Design Loads:

Roof - Live load 20 lbs. per sq. ft.
Wind - 30 lbs. per sq. ft.

E-4.10 Labor Battalion Barracks - One story "H" type.

4 Buildings

Ground Area Covered	201' x 206'
Floor Area	14,162 sq. ft.
Cubic Contents	189,634 cu. ft.

Design data as follows:

Dormitories (2, with 116 bed spaces each)	9900 sq. ft.
N.C.O's Rooms (4)	1120 sq. ft.
Toilet Rooms (4)	512 sq. ft.
Wash Rooms (4)	558 sq. ft.
Shower Rooms (2)	441 sq. ft.
Drying Rooms (2)	226 sq. ft.
Scrub Deck	447 sq. ft.
Gear Rooms (2)	105 sq. ft.
Entries & Corridors	583 sq. ft.

General Construction:

Wood roof on 8" tile bearing walls, with concrete pilasters, stuccoed on the outside. Concrete floor slab on ground.

Foundations:

Concrete foundation walls & footings.
Soil pressure of 2000# per square foot.

Finishes:

Roll roofing; unfinished tile walls, with cement plaster in shower rooms only; no ceilings, except in showers & toilets.

Design Loads:

Roof-live load 20# per square foot
Wind - 30# per square foot

E-4.11 Labor Battalion Mess Hall. Same as at Montford Point Camp No. 3. For complete data, see Section E-13.18.

E-4.12 Labor Battalion Administration Building. Same as at Rifle Range; for complete data, see Section E-7.06.

E-4.13 Labor Battalion Post Exchange. Same as at Rifle Range; for complete data, see Section E-7.07.

E-4.14 Public Works Office Building. This building was not designed by Carr and J. E. Greiner company.

E-4.15 Cafeteria. This building was not designed by Carr and J. E. Greiner Company.

E-4.16 Truck Loading Sheds.

These structures, used to protect fuel trucks while they are being filled, consist of platforms 3'-0" x 12'-0", over which are roofs 10'-0" x 12'-0" (projected area). The platforms are of wood on concrete piers; the roofs are of asbestos shingles over wood framing, supported on 8" x 8" wood columns.

E-4.17 Laundry Extension. One story rectangular shaped extension to existing laundry building.

Ground Area Covered	79' x 73'
Floor Area	5048 sq. ft.
Cubic Contents	115,897 cu. ft.

Design data as follows:

Delivery space	5048 sq. ft.

General Construction:

Steel frame, trusses & purlins. Wood plank roof sheathing. 13" hollow tile walls stuccoed. Concrete floor.

Foundations:

Concrete foundation walls & footings
Soil pressure 2000 lbs,per square foot.

Finishes:

Floor concrete, walls hollow tile, exposed. Built-up roof. Steel sash & doors. 1" roof insulation. Wood monitor.

Design Loads:

Storage & loading platform 300 lbs per square foot
All other floors 100 lbs. per square foot
Roof Live load 20 lbs. per square
Wind load - 30 lbs per square foot

E-4.18 Additional Toilet Facilities Warehouses, Nos. 1101, 1201, 1402, 1501.

In the above buildings, additional toilet facilities were provided by constructing new rooms (of wood studs and plaster) adjacent to existing toilet rooms. The new rooms were each about 9'-0" x 9'-0". Each women's toilet provided a lavatory and a water closet; each men's toilet, two lavatories, two water closets and two urinals.

E-4.19 Addition to Central Heating Plant. A three story rectangular addition to the Central Heating Plant to provide additional office & storage space.

	19' x 33'
Ground Area Covered	495 sq. ft.
Ground Floor Area	495 sq. ft.
Mezzanine Floor Area	500 sq. ft.
Operating Floor Area	1,490 sq. ft.
Total Floor Area	16,368 cu. ft.
Cubic Contents	

Design data as follows:

Ground Floor:

Storage Room	495 sq. ft.

Mezzanine Floor:

Locker Rooms	302 sq. ft.
Toilet Room	151 sq. ft.
Corridor	38 sq. ft.

Operating Floor:

Offices	500 sq. ft.

Toilet Room: 1 shower, 1 water closet, 1 urinal, 1 lavatory

General Construction:

Built up roof over wood sheathing on wood joists; 12 1/2" brick bearing walls; operating floor wood; Mezzanine & Ground floors concrete slabs.

Foundations:

Concrete foundation walls & footings, on creosoted timber piles. Pile bearing capacity 20 tons each.

Finishes:

Built up roofing; fiberboard ceiling in offices, asbestos board ceiling in toilets & locker rooms and cement ceiling in storage space; painted brick walls in offices, cement wainscot in toilet & locker rooms, and cement & unfinished brick walls in storage space; wood floor in offices, and cement in toilets, locker rooms and storage space.

Design Loads:

Roof-live load 20 lbs. per sq. ft.
Operating floor - live load 50 lbs. per sq. ft.
Mezzanine Floor - live load 50 lbs. per sq. ft.

E-5. Naval Hospital Area.

E-5.01 Location. Situated on Hadnot Point, northwest of the Division Training Area. Since October 1, 1942, the following Buildings have been built in this area:

1 Storage Garage	(E-5.02)
Alterations to Corpsmen's Barracks	(E-5.03)
Acoustical Treatment (Auditorium, Recreation Area, Scullleries)	(E-5.04)
Alterations to Ward 8	(E-5.05)

E-5.02 Naval Hospital Storage Garage. One story, rectangular-shaped building.

Ground Area Covered	46' x 96'
Floor Area	3,665 sq. ft.
Concrete Ramp	478 sq. ft.
Cubic Contents	63,812 cu. ft.

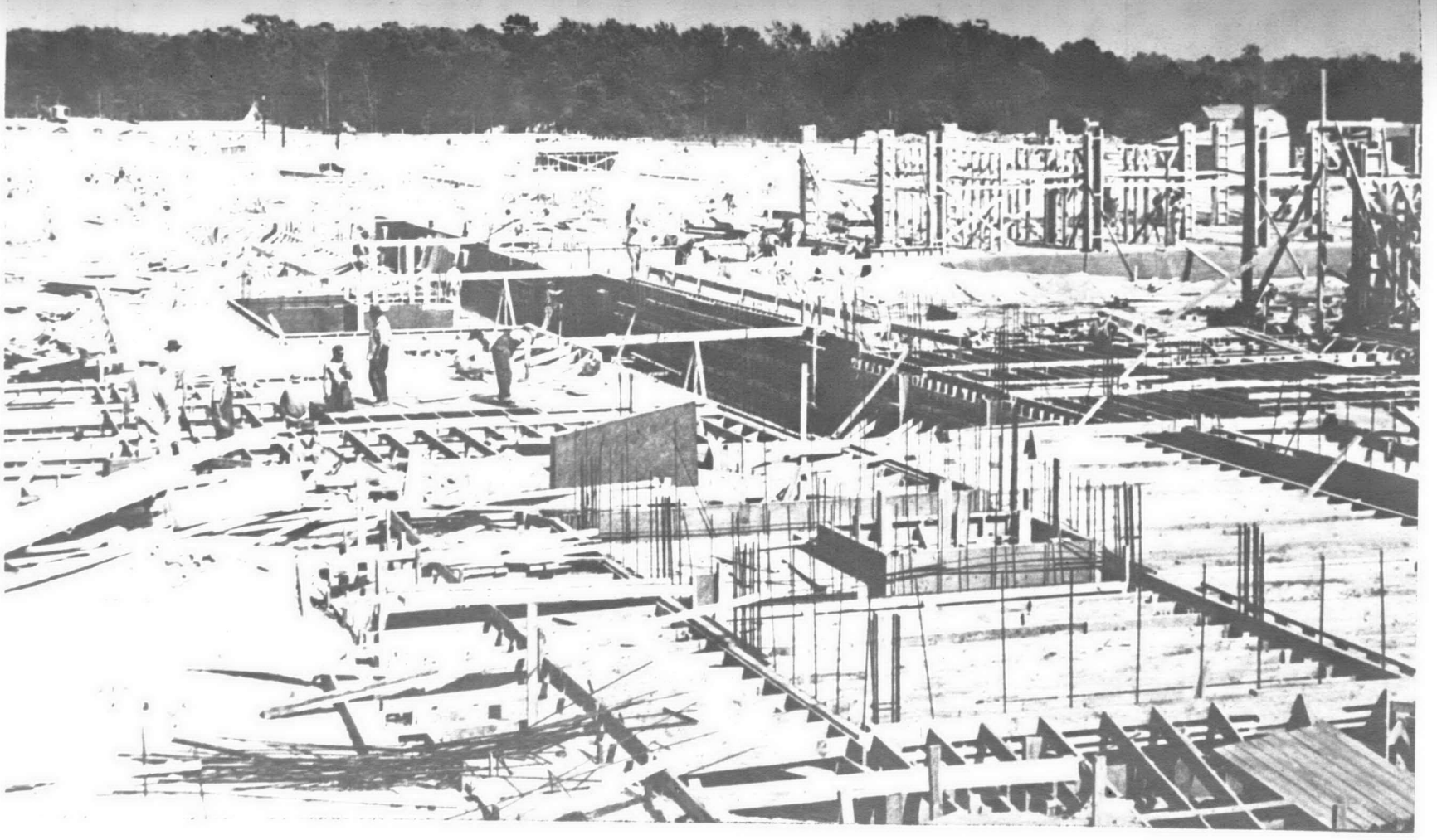
General Construction:

Wood frame roof on 12 1/2" brick bearing walls on three sides & brick piers at the front. Concrete slab floor on ground.

Foundations:

Concrete foundation walls & footings.

Marine Barracks
New River ,N. C.
February 1942
Foundations — U. S. Naval Hospital



Finishes:

No ceiling; unfinished brick walls; cement floor.

Design Loads:

Roof - Live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-5.03 Alterations to Corpsmen's Barracks.

A corpsmen's barracks was modified to provide facilities for WAVES. This work consisted of: replacement of scrub benches with laundry trays and addition of ironing boards on scrub deck; removal of urinals in toilets; installation of partitions around water closets and showers.

E-5.04 Acoustical Treatment

Acoustical treatment was provided for the following spaces: Auditorium (side and rear walls, ceiling over balcony); Recreation, Refreshment and ship store areas (ceilings only); Scullories for central Mess Hall (ceilings only).

The material used for the treatment was type V (Federal Specifications), 3/4" thick for all areas except Scullories and 1¼" thick in Scullories. In the Auditorium the perforated tiles were applied over fiber furring strips; in all other locations the tiles were cemented directly to existing plaster.

E-5.05 Alterations to Ward 8

Ward 8 of the Naval Hospital has been altered to provide the following additional facilities:

Room No 1	180 sq. ft.
Room No. 2	405 sq. ft.
Room No. 3	398 sq. ft.
Room No. 4	345 sq. ft.
Room No. 5	969 sq. ft.
Room No. 6	570 sq. ft.
Bath and Toilet Rooms	700 sq. ft.
Closets (5)	114 sq. ft.
Lobby and Corridor	1,516 sq. ft.
Total floor area	5,197 sq. ft.

Each Bath and Toilet Room: 1 shower, 1 water closet and 1 lavatory.

E-6 Residential Area.

E-6.01 Location: This area is situated northwest of the Division Training Area beyond Hadnot Point, the site of the Naval Hospital. Since October 1, 1942 the following buildings have been designed in this area:

3 Platoon Barracks for Messmen	(E-6.02)
1 Washroom for Messmen	(E-6.03)
1 swimming Pool	(E-6.04)
2 Radar Tower Foundations	(E-6.05)
1 Radar Operating House Foundation	(E-6.06)
1 Heating Plant	(E-6.07)

E-6.02 Platoon Barracks for Messmen,

Same as at Montford Point Camp No. 2; for complete data see section E-13.02.

E-6.03 Wash Room for Messmen:

Same as at Montford Point Camp No. 2; for complete data, see Section E-13.03

E-6.04 Swimming Pool: Open air swimming pool and Wading pools, walks and addition to B. O. Q. Mess and Recreation Building for dressing and filter rooms.

Ground Area Covered	242' x 150'
Area of swimming Pool	4,211 sq. ft.
Area of Wading Pool	700 sq. ft.
Area of walks	8,433 sq. ft.
Floor area of building	2,711 sq. ft.
Cubic Contents of building	44,377 cu. ft.

Design of data as follows:

Swimming Pool 100' -1" x 42' - 1"	
Wading Pool 30'-0" x 25'-0"	
Women's Locker Room	660 sq. ft.
Men's Locker Room	660 sq. ft.
Men's Shower Room	150 sq. ft.
Filter Room	980 sq. ft.
Ammoniator Room	54 sq. ft.
Chlorinator Room	70 sq. ft.

Toilet Facilities:

Women's locker room, 5 water closets, 3 lavatories, 4 showers 1 foot bath.
Men's Locker Room: 4 water closets, 4 urinals, 4 lavatories 6 shower heads, 1 foot bath.

General Constructions:

Pool reinforced concrete; walks concrete; roof of building wood frame, 8" hollow tile and 4" brick veneer bearing walls, Concrete floors, laid on hollow tile.

Foundations:

Concrete foundation walls and footing. Soil pressure 2,000# per. sq.ft

Finishes:

Building floors, concrete. Walls exposed hollow tile. Shower room, cement plaster 7'-0" high. Ceilings asbestos board, except filter room, which is open to roof. Roof, clay tile. Wood sash and doors.

Design Loads:

Roof - live load 20 per square foot.
Wind - 30 lbs. per square foot.

E-6.05 Radar Tower Foundation, Winch Foundation and Fuel Tank Hold Down Mat.

General Construction:

Radar Tower Foundation consists of reinforced concrete slab 24'0"x24'0" x1'6"thick, buried 4'-0" in ground with 4 pedestals for tower legs 2'-0" x 2'-0" x 3'-0" high.

Design Loads:

Wind velocity 90 mi. per hour. Soil pressure 1,500 lbs. per sq. ft. Winch foundation is concrete 3'-0" x 4'-0" x 3'-0" high, with 4 anchor bolts top 6" above ground. Fuel tank hold down mat is 26'-0" x 7'-6" x 12" thick. Reinforced concrete with 12 anchor bolts, buried about 7'-6" below grade. Soil pressure is 2,000 lbs. per square foot.

E-6.06 Radar Operating House Foundation:

Ground Area Covered	20' x 23'
Floor Area	413 sq. ft.
Cubic Contents	619 cu. ft.

The operating house was not designed by Carr and J. E. Greiner Co.

General Construction:

Concrete floor slab, foundation walls and footings.

E-6.07 Heating Plant: One-story rectangular building with covered passage to Operating House.

Ground Area Covered	20' x 37'
Floor Area	534 sq. ft.
Cubic Contents	7,173 cu. ft.

Design data as follows:

Engine Room	456 sq. ft.
Covered Passage	78 sq. ft.

General Construction:

Wood roof frame. 2" x 4" stud walls. Concrete floor slab.

Foundations:

Concrete foundation: walls and footings. Soil pressure 2,000 lbs. per square foot.

Finishes:

Floor, concrete. Walls, sheathing and wood siding. Roll roofing. Wood sash, doors and louvers.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-7 Rifle Range Area.

E-7.01 Location: This area is situated across New River and southwest of the Division Training Area. Since October 1, 1942, the following buildings have been built in this area:

16 Colored Troop Platoon Barracks	(E-7.02)
1 Colored Troops Mess Hall	(E-7.03)
1 Colored Troops Administration Building	(E-7.04)
1 Colored Troops Post Exchange and Barber shop	(E-7.05)
6 Colored Troops Washrooms	(E-7.06)
1 Colored Troops Warehouse	(E-7.07)
1 Colored Troops Heating Plant	(E-7.08)
4 School Buildings	(E-7.09)
1 Post Exchange Storehouse	(E-7.10)
2 Well Houses Nos. S-1 & T-1	(E-7.11)

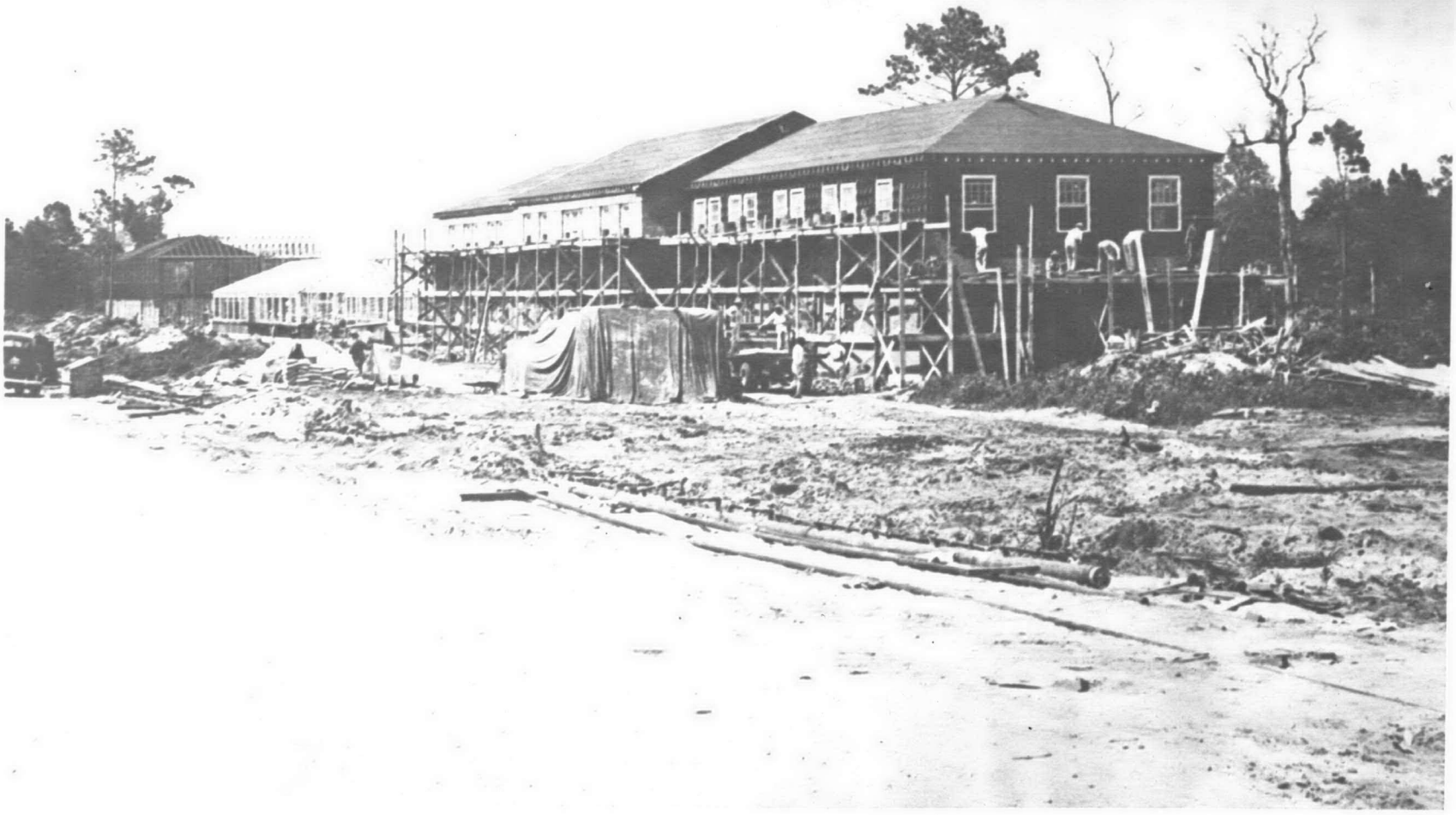
E-7.02 Colored Troops Platoon Barracks. These buildings are the same as the platoon barracks at Montford Point No. 2; for complete data see E-13.02.

E-7.03 Colored Troops Mess Hall: Same as at Montford Point Camp No. 2, except size of garbage room increased from 101 sq. ft. to 216 sq. ft. See E-13.04

E-7.04 Colored Troops Administration Building: One-story rectangular building. (Modified Platoon Barracks)

Ground Area Covered:	31' x 121'
Floor Area:	3,055 sq. ft.
Cubic Contants	36,388 cu. ft.

Marine Barracks
New River, N. C.
September 1942
Bachelor Officers Quarters-Rifle Range



Design data as follows:

Work Space	2,502 sq. ft.
Office	308 sq. ft.
Toilet Rooms	245 sq. ft.

Toilets:

Officers:1 water closet, 1 urinal, 1 lavatory.
White N. C. O.: 1 water closet, 2 urinals, 1 lavatory.
Colored: 1 water closet, 2 urinals, 1 lavatory.

General Consrtuction:

Wood roof on 8" tile bearing walls stuccoed on outside, concrete pilasters, wood interior columns, concrete floor slab on ground.

Foundations:

Concrete foundation walls.

Finishes:

Roll roofing, unfinished tile walls, wood windows, cement floors,.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-7.05 Colored Troops Post Exchange and Barber Shop. One-story rectangular building (Modified Platoon Barracks)

Ground Area Covered:	31' x 121'
Floor Area	3,055 sq. ft.
Cubic Contents:	36,388 cu. ft.

Design data as follows:

Storage	308 sq, ft.
Sales space	182 sq. ft.
Toilet Rooms	2,565 sq.ft.

Toilets:
White: 1 water closet, 2 urinals, 1 lavatory.
Colored: 1 water closet 2 urinals, 1 lavatory.

General Construction:

Wood roof on 8" tile bearing walls stuccoed on outside, Concrete pilasters, wood interior columns, concrete floor slab on ground.

Foundations: Concrete foundation walls.

Finishes:

Roll roofing, unfinished tile walls, wood windows, cement floors.

Dosign Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-7.06. Colored Troops Wash Room: Same as at Montford Point Camp No. 2; for complete data, see section E-13.03.

E-7.07. Warehouse (Colored Troops) Similar to the Platoon Barracks buildings at Montford Point Camp No. 2; for data, see section E-13.02.

E -7.08 Colored Troops Central Heating Plant. Except for the foundations the building is the same as the heating plant at Montford Point Camp No. 2. For complete data see section E-13.08.

E-7.09 School Buildings One-story rectangular-shaped buildings with either 2 or 3 class rooms, similar to those at the Division Training Area except the walls are of concrete block, stuccoed outside. See E-2.03 for detailed description.

E-7.10 Post Exchange Storehouse.

Similar to those at the Division Training Area. For complete data, see E-2.02.

E-7.11 Well Houses Nos. S-1 and T-1 One-story rectangular buildings.

No. S-1.

Ground Area Covered	11' x 13'
Floor Area	74 sq. ft.
Cubic Contents	1,200 cu. ft.

No. T-1

Ground Area Covered	13' x 16'
Floor Area	136 sq. ft.
Cubic Contents	1,776 cu. ft.

General Construction: (both types)

Built-up flat roof on 13" brick bearing walls. Concrete floor slab on ground.

Foundations: (both types)

Concrete foundation walls.

Finishes: (both types)

Built-up roof; no ceiling; unfinished brick walls, cement floor.

Design Loads: (both types)

Roof - 20 lbs. per square foot.
Wind 30 lbs. per square foot.

E-8 Barrage Balloon and Amphibian Base Area.

E-8.01 Location: the area is situated south of the Division Training Area at the site of the former village of Marines. Since October 1, 1942 the following buildings have been designed in this area:

1 Bachelor Officers' Quarters	(E-8.02)
1 Post Exchange Storehouse	(E-8.03)
Alterations to Houses No. BB-40 and BB-42	(E-8.04)

E-8.02 Bachelor Officers' Quarters.

This building is a duplication of the B. O. Q. at Montford Point Camp No. 2-A. For complete data, See Section E-13.13.

E-8.03 Post Exchange Storehouse.

This building is a duplication of the P. X. Storehouses built in the Regimental Areas. For complete data, see section E-2.02.

E-8.04 Alterations to Houses Nos. BB-40 and BB-42

Measurements were taken from existing buildings and working drawings were prepared for interior alterations.

E-9 Parachute Training Area

E-9.01 Location: The area is situated northwest of the Division Training Area. Since October 1, 1942 no buildings have been designed in this area.

E-10. Landing Field and Seaplane Base.

E-10.01. Location. The base is located on the west side of New River west of the Residential Area. Since October 1, 1942, the following building has been designed in this area:

E-10.02 Lighter-Than-Air Facilities - Quarters and Storage Building. One story rectangular-shaped building.

Ground Area Covered	46' x 174'
Floor Area	4,936 sq. ft.
Cubic Contents (incl. Vault)	80,290 cu. ft.
Design Data as follows:	
Store Room	1,599 sq. ft.
Officers' Bed Room	410 sq. ft.
Enlisted Men's Bed Room	410 sq. ft.
Shed	1,599 sq. ft.
Fuel Truck Room	396 sq. ft.
Boiler Room	161 sq. ft.
Toilet and Bath Rooms	152 sq. ft.
Entry	75 sq. ft.
Tramsformer Vault	81 sq. ft.
Concrete Aprons	969 sq. ft.
Officers' Toilet:- 1 shower, 1 water closet, 2 lavatories.	
Enlisted Men's Toilet:- 1 shower, 1 water closet, 2 lavatories.	

General Construction:

Wood frame roof on 8" tile bearing wall stuccoed outside; Concrete floor slabs on fill.

Foundations:

Concrete foundation walls and footings. Soil Pressure - 2,000 lbs. per sq. ft.

Finishes:

Roll roofing; no ceiling in storage room, shed and fuel truck room; fiberboard ceiling in Officers' and Enlisted Men's Bed Rooms; asbestos ceilings in toilet rooms; and cement ceiling in Boiler Room and Entry; cement plaster walls in toilets, unfinished masonry elsewhere; cement floor.

Design Loads:

Roof - live load - 20# per square feet.
Wind - 30# per square feet.

No. 9 Marine Barracks
New River, N. C.
11 June 1941
View of Test on Stran-Steel Roof Truss for Tent Camp Mess Hall. Supports failed at 7800 lbs. No failure of welds.

E-11 Tent Camp No. 1

E-11.01 Location. This camp is located in the northwestern corner of the reservation on Highway No. 17 about 2 miles southwest of Jacksonville, N. C. Since October 1, 1942, no buildings have been designed in this area.

E-12. Tent Camp No. 2

E-12.01 Location. This camp is located south of and adjacent to Tent Camp No. 1. Since October 1, 1942 no buildings have been designed in this area.

E-13 Montford Point Area including Camp Knox.

E-13.01 Location.

This area is located south of Highway No. 24 about 3 miles east of Jacksonville, N. C. Since October 1, 1942 the following buildings have been designed in this area:

(a) Montford Point Camp No. 1

1 Post Exchange Storehouse	(E-13.02)
1 Officers' Washroom	(E-13.03)
1 Office and Tool Building	(E-13.04)

(b) Montford Point Camp No. 2.

19 Platoon Barracks	(E-13.05)
1 Enlisted Men's Mess Hall	(E-13.06)
1 Officers' Mess and Demonstration Building	(E-13.07)
6 Washrooms	(E-13.08)
1 Administration Building	(E-13.09)
1 Heating Plant	(E-13.10)
2 Gun Sheds	(E-13.11)
2 Warehouses	(E-13.12)

(c) Montford Point Camp No. 2A.

5 Platoon Barracks	(E-13.13)
1 Mess Hall and Post Exchange	(E-13.14)
2 Washrooms	(E-13.15)
1 Bachelor Officers' Quarters	(E-13.16)
1 Heating Plant	(E-13.17)
2 Well Houses No.s Z-2 and Z-3	(E-13.18)

(d) Montford Point Camp No. 3

68 Platoon Barracks	(E-13.19)
2 Mess Halls	(E-13.20)
24 Washrooms	(E-13.21)
1 Administration Building	(E-13.22)

Marine Barracks
New River, N. C.
Wash Rooms, Tent Camp No. 2

1	Infirmary	(E-13.23)
1	Theatre, Post Exchange and Barber Shop	(E-13.24)
1	Brig	(E-13.25)
2	Warehouses	(E-13.26)
1	Hostess House	(E-13.27)
1	Decontamination Building	(E-13.28)
4	School Buildings	(E-13.29)
1	Personnel Classification Building	(E-13.30)
2	Gun Sheds	(E-13.31)
1	Heating Plant	(E-13.32)
1	Swimming Pool	(E-13.33)
2	Well Houses Nos. Z-4 and Z-5	(E-13.34)

(c) Camp Knox.

1	Mess Hall	(E-13.35)
1	Dog Hospital	(E-13.36)
1	Dog Kennels	(E-13.37)
1	Dog Hospital Heating Plant	(E-13.38)
1	Dog Kennels Heating Plant	(E-13.39)
	Renovation of Existing Buildings	(E-13.40)

Montford Point Camp No. 1.

E-13.02 Post Exchange Storehouse.

Similar to those at Division Training Area. For complete Data, see E-2.02.

E-13.03 Officers' Washroom

This building was not designed by Carr and J. E. Greiner Company.

E-13.04 Office and Tool Storage Building (at Sewage Disposal Plant)

One story rectangular-shaped building.

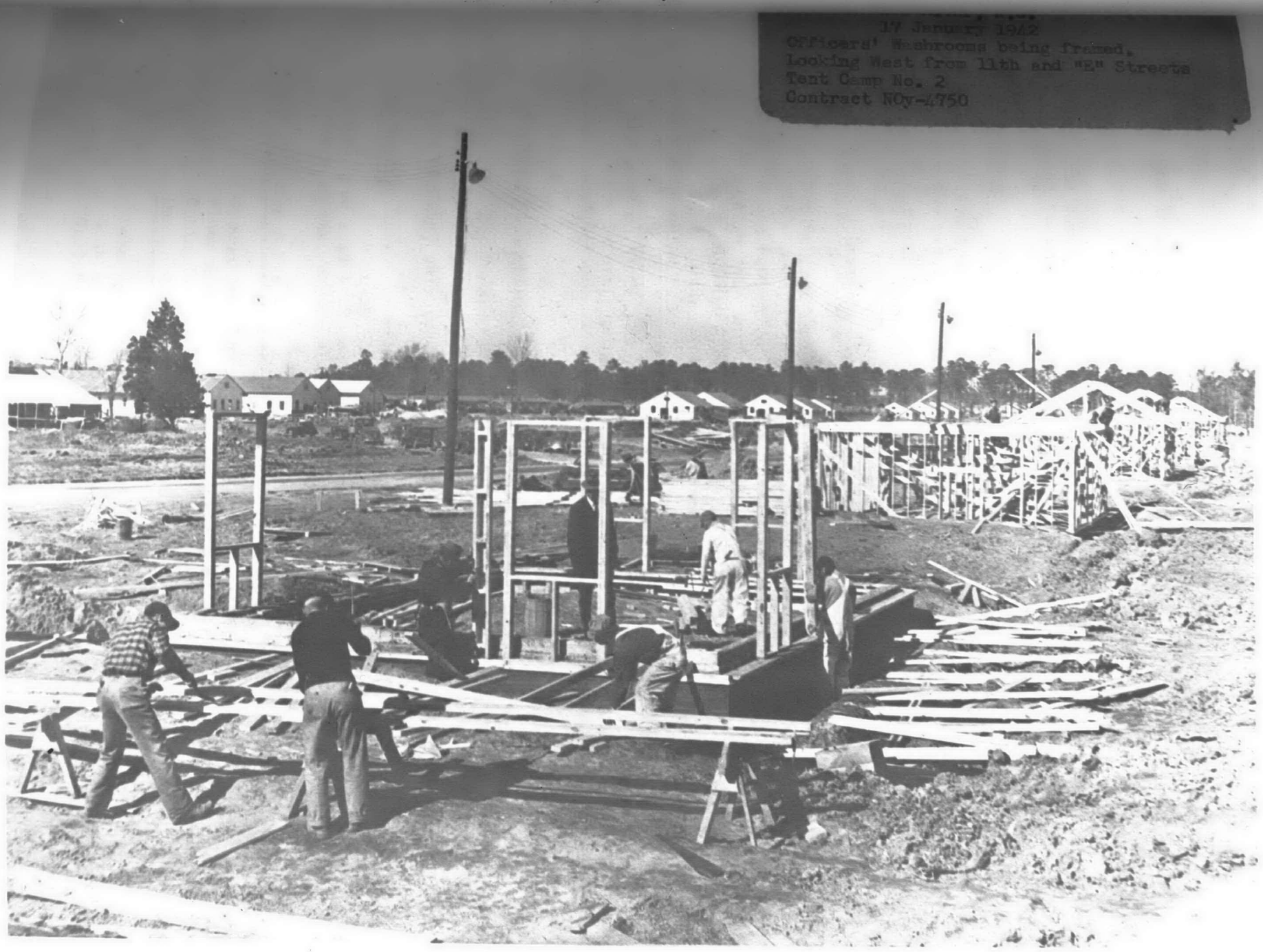
Ground Area Covered	21' x 30'
Floor Area	424 sq. ft.
Cubic Contents	5,280 cu. ft.
Design Data as follows:	
Office	209 sq. ft.
Tool Room	135 sq. ft.
Toilet and Wash Room	79 sq. ft.

Toilet: 1 shower, 1 water closet, 1 lavatory.

General Construction:

Wood frame roof on 8" tile bearing walls, stuccoed. Concrete floor slab on fill.

17 January 1942
Officers' Washrooms being framed.
Looking West from 11th and "E" Streets
Tent Camp No. 2
Contract NOy-4750



Foundations:

Concrete foundation walls.

Finishes:

Asbestos board ceiling in wash room, no ceiling elsewhere; cement plaster walls in washroom and unfinished tile walls elsewhere; cement floor.

Design Loads:

Roof - live load - 20# per square foot
Wind - 30# per square foot

Montford Point Camp No. 2.

E-13.05 Platoon Barracks: One story rectangular building.

Ground Area Covered:	31' x 121'
Floor Area:	3,055 sq. ft.
Cubic Contents:	36,388 cu. ft.
Design data as follows:	
Squad Room (32 Bed Spaces)	2,726 sq. ft.
Instructors Room (2 bed spaces)	329 sq. ft.

General Construction

Wood roof on 8" tile bearing walls, stuccoed on outside. Concrete pilasters, wood interior columns, concrete floor slab on ground.

Foundations:

Concrete foundation walls; building on concrete slab.

Finishes:

Roll roofing, unfinished tile walls, wood windows, cement floors.

Design Loads:

Roof- live load - 20 lbs. per square foot
Wind - 30 lbs. per square foot.

E-13.06 Enlisted Men's Mess Halls

Ground Area Covered	122' x 246'
Floor Area	11,989 sq. ft.
Cubic Contents	211,992 cu. ft.
Design data as follows:	
Mess Hall	7,162 sq. ft.
Seating 576 men or 12.4 sq. ft. per man	
Galley	1,806 sq. ft.

No. 29 Marine Barracks
New River, N. C.
30 September 1941
View of S-3 Mess Hall,
Looking South West
Contract NOy-4750

Scullery	759 sq. ft.
Storage	303 sq. ft.
Refrigerator Rooms	337 sq. ft.
Machinery Room	119 sq. ft.
Preparation Rooms	669 sq. ft.
Garbage	101 sq. ft.
Toilet Rooms	144 sq. ft.
Office	125 sq. ft.
Corridors	464 sq. ft.

Toilets: 3 water closets, 2 urinals, 3 lavatories.

General Construction :

Wood roof trusses on 8" tile bearing walls stuccoed on outside. Concrete floor slab on ground.

Foundations:

Concrete foundation walls and footings.

Finishes:

Roll roofing, unfinished tile walls and partitions, wood windows, cement floors, asbestos board ceiling.

E-13.06 Mess Hall.

In scullery, galley, garbage room and toilets;
Design Loads: Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.07 Officers Mess Hall (Demonstration Building) One story rectangular building.

Ground Area Covered:	121' x 41'
Floor Area:	4,244 sq. ft.
Cubic Contents:	63,667 cu. ft.

Design data as follows:

Mess Hall	923 sq. ft.
Galley	2,407 sq. ft
Officers Quarters Kitchen	232 sq. ft.
Vegetable Preparation Room	232 sq. ft.
Store Room	450 sq. ft.

General Construction.

Wood roof trusses on 8" tile bearing walls stuccoed on outside. Concrete pilasters. Concrete Floor slab on ground.

Foundations:

Concrete foundation walls on wall footings spread footings under interior columns.

Finishes:

Roll roofing, unfinished tile walls and partitions, wood windows, cement floors.

Design Loads:

Roof- live load - 20 lbs. per square foot.
Wind- 30 lbs. per square foot.

E-13.08 Wash Rooms: One story rectangular building.

Ground Area Covered:	43' x 55'
Floor Area:	1,831 sq. ft.
Cubic Contents:	29,600 cu. ft.
Design data as follows:	
Wash Room	588 sq. ft.
Toilet Room	435 sq. ft.
Shower Room	201 sq. ft.
Drying Room	223 sq. ft.
Scrub Deck Room	384 sq. ft.

Fixtures:

Wash Room: 36 positions at wash sinks, 4 drinking fountains.
Toilet Room: 18 water closets, 17 urinals.
Shower Room: 12 heads.
Scrub Deck Room: 16 positions at scrub decks.

General Construction:

Wood roof trusses on 8" tile bearing walls stuccoed on outside. Concrete floor slab on ground.

Foundations:

Concrete foundation walls and footings; Concrete slab under building.

Finishes:

Roll roofing, unfinished tile walls except in shower room. Plaster walls in shower room. Asbestos board ceilings, cement floors, wood windows.

Design Loads:

Roof - live load - 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.09 Administration Building. One story rectangular building.

Ground Area Covered:	31' x 76'
Floor Area:	1,806 sq. ft.
Cubic Contents:	25,313 cu. ft.
Design data as follows:	
Corridors	420 sq. ft.
Offices (7)	1,178 sq. ft.
Toilets	208 sq. ft.

Toilets:
White: 2 water closets, 2 urinals, 2 lavatories.
Colored: 2 water closets, 2 urinals, 2 lavatories.

General Construction:

Wood roof trusses on 8" tile bearing walls stuccoed on outside. Concrete floor slab on ground.

Foundations:

Concrete foundation walls; Concrete slab under building.

Finishes:

Roll roofing, unfinished tile walls and partitions, wood windows, cement floors.

Design Loads:

Roof - live loads - 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.10 Heating Plant. One story rectangular building.

Ground Area Covered:	32' x 60'
Floor Area:	1,022 sq. ft.
Cubic Contents:	25,809 cu. ft.
Design data as follows:	
Boiler Room	1,022 sq. ft.

General Consrtuction:

Wood roof trusses on 12" tile bearing walls stuccoed on outside. Concrete pilasters, Concrete floor slab on ground. 70' free standing brick chimney.

Foundations:

Concrete foundation walls on wall footings.

Finishes:

Roll roofing, unfinished tile walls, wood windows, cement floors.

Design Loads:

Roof - live loads - 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.11 Gun Sheds. One story rectangular-shaped open sheds with enclosed bay at each end.

Ground Area Covered:	50' x 133'
Floor Area:	5,795 sq. ft.
Cubic Contents:	85,456 cu. ft.
Design Data as follows:	
Open Area	4,752 sq. ft.
Enclosed bays	986 sq. ft.
Concrete Ramps	796 sq. ft.

General Construction:

Wood frame roof on 2" x 6" stud walls at the ends and 6" x6" columns at the sides. Concrete slab floor on ground.

Foundations:

Concrete foundation walls and footings. Soil pressure 1500# per sq. ft.

Finishes:

Roll roof. T. and G. sheathing for ceiling, and walls; cement floor.

Design Loads:

Roof - live loads 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.12 Warehouses: One story, rectangular building.

Ground Area Covered:	62' x 154'
Floor Area:	8,984 sq. ft.
Cubic Contents:	148,269 cu. ft.
Clear Ceiling Height:	9 ft. 11 in.

General Construction:

Wood roof on 8" tile bearing walls stuccoed on outside. Concrete pilasters, wood interior columns. Concrete floor slab on ground.

Foundation:

Concrete foundation walls, concrete slab under building.

Finishes:

Roll roofing, unfinished tile walls, wood doors and windows, cement floors.

Design Loads:

Roof - live loads - 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

Montford Point Camp No. 2A

E-13.13 Platoon Barracks

Similar to those at Montford Point Camp No. 2 See E-13.02

E-13.14 Mess Hall and Post Exchange. One story irregular shape building.

Ground Area Covered:	104' x 256'
Floor Area:	10,831 sq. ft.
Cubic Contents:	197,735 cu. ft.

Design data as follows:

Mess Hall	3,922 sq. ft.
Seating 296 men or 13.25 sq. ft. per man.	
Galley	1,591 sq. ft.
Scullery	324 sq. ft.
Storage (Mess Hall)	373 sq. ft.
Refrigerator Rooms	264 sq. ft.
Machinery Room	99 sq. ft.
Gear Room	18 sq. ft.
Garbage Room	95 sq. ft.
Toilet Room (Mess Hall)	84 sq. ft.
Office (Mess Hall)	95 sq. ft.
Recreation Hall	2,568 sq. ft.
Storage (P. X.)	157 sq. ft.
Office (P.X.)	118 sq. ft.
Receiving Room (P. X.)	139 sq. ft.
Toilet Room (P.X.)	106 sq. ft.
Barber Shop	475 sq. ft.
Corridors	403 sq. ft.

Toilets: 5 water closets, 3 urinals, 3 lavatories

General Constructions:

Wood roof on 8" tile bearing walls stuccoed on outside. Concrete pil-

asters, concrete floor slab on ground.

Foundations:

Concrete foundation walls and footings. Soil pressure 2,000 lbs. per square foot.

Finishes:

Roll roofing, unfinished tile walls and partitions, asbestos ceiling in scullery, galley toilets, garbage and gear rooms, cement floors, wood windows.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13. 16 Wash Rooms.

Similar to those at Montford Point Camp No. 2. See E-13.03

E-13.16 Bachelor Officers' Quarters. Two-story irregular shape building.

Ground Area Covered:	92' x 229'
First Floor Area	10,542 sq. ft.
Second Floor Area:	8,926 sq. ft.
Total Floor Area:	19,468 sq. ft.
Cubic Contents:	283,346 cu. ft.

Design data as follows:

First Floor:

Corridors, Entries and Halls	1,708 sq. ft.
Toilets, Wash Rooms and Gear	768 sq. ft.
Trunk Room	118 sq. ft.
Linen Closet	45 sq. ft.
Public Lounge	1,100 sq. ft.
Private Lounge	208 sq. ft.
Bed Rooms (11 Officers and 1 steward's)	2,227 sq. ft.
Bed Room Closets	264 sq. ft.
Dining Room	2,028 sq. ft.
Seating 96 men or 21.1. sq. ft. per man.	
Galley	906 sq. ft.
Scullery	182 sq. ft.
Preparation Room	206 sq. ft.
Storage Room	325 sq. ft.
Refrigerator Rooms	180 sq. ft.
Machinery Room	55 sq. ft.
Garbage Room	222 sq. ft.

Second Floor	
Corridors and Stairs	1,982 sq. ft.
Toilets, Wash Rooms and Gear	564 sq. ft.
Linen Closet	83 sq. ft.
Trunk Rooms	241 sq. ft.
Bed Rooms (29 Officers')	5,412 sq. ft.
Bed Room closets	644 sq. ft.

General Construction:

Wood roof on 12" tile bearing walls stuccoed on outside. Second floor concrete slab on ground or fill.

Foundations:

Concrete foundation walls and footings. Soil pressure 2,000# per sq. ft.

Finishes:

Roll roofing on two story portions, built up roof on one story portions. Plaster, fiberboard or asbestos board ceiling, plaster walls. Wood or Cement floors. Wood windows with brick outside trim.

Design Loads:

Roof - live load - 20 lbs. per sq. foot
Wind - 30 lbs. per sq. ft.

E-13.17 Central Heating Plant. One-story rectangular building.

Ground Area Covered	41' x 51'
Floor Area	988 sq. ft.
Cubic Contents	26,544 cu. ft.

Design data as follows:

Boiler Room	988 sq. ft.

General Construction:

Wood roof trusses on 12" tile bearing walls stuccoed on outside. Concrete pilasters Concrete floor slab on ground. 70' free standing brick chimney.

Foundations:

Concrete foundation walls and footings. Soil pressure 2,000 lbs. per square foot.

Finishes:

Roll roofing, unfinished tile walls, wood windows, cement floors.

Design Loads:

Roof - live load - 20 lbs, per square foot.
Wind - 30 lbs. per square foot.

E-13.18 Well Houses Nos. Z-2 and Z-3

Similar to Well House no. S-1 at the Rifle Range Area. For complete Data, see E-7.11

E-13.19 Platoon Barracks -Montford Point Camp No. 3

Similar to those at Montford Point Camp #2. See E-13.02

E-13.20 Mess Hall - Montford Point Camp No.3. One-story irregular H shape Building.

Ground Area Covered:	199' x 226'
Floor Area:	21,280 sq. ft.
Cubic Contents:	391,862 cu. ft.

Design data as follows:

Mess Halls	13,826 sq. ft.
Seating 992 men or 14.0 sq. ft. per man.	
Galley (Capacity 2000)	2,738 sq. ft.
Sculleries	1,672 sq. ft.
Storage	574 sq. ft.
Refrigerator Rooms	410 sq. ft.
Machinery Rooms	164 sq. ft.
Preparation Rooms	556 sq. ft.
Garbage Room	279 sq. ft.
Toilet Rooms	155 sq. ft.
Office	127 sq. ft.
Gear Room	95 sq. ft.
Corridors	684 sq. ft.

Toilets: 4 water closets, 2 urinals, 2 lavatories

General Construction:

Wood roof trusses on 8" and 12" tile bearing walls stuccoed on outside. concrete columns. Concrete floor slab on ground.

Foundations:

Concrete foundation: walls and footings. Soil pressure 2,000 lbs. per square foot.

Finishes:

Roll roofing, unfinished tile walls and partitions. Asbestos ceiling in Galley, Scullery, Toilets, Garbage Room and Gear Room. Wood Windows, brick trim around windows cement floors.

Design Loads:

Roof - live loads - 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.21 Wash Rooms.

Similar to those at Montford Point Camp No. 2. See E-13.03

E-13.22 Administration Building. One-story U Shape Building.

Ground Area Covered:	62' x 138'
Floor Area:	5,553 sq. ft.
Cubic Contents:	90,440 cu. ft.

Design data as follows:

Lobby and Corridors	1,039 sq. ft.
Offices (16)	3,743 sq. ft.
Toilet Rooms	447 sq. ft.
Storage Rooms	158 sq. ft.
Gear Room	28 sq. ft.
Telephone Office	138 sq. ft.

Toilets:
White: 4 water closets, 4 urinals, 6 lavatories.
Colored: 3 water closets, 2 urinals, 4 lavatories.

General Construction:

Wood roof on 8" tile bearing walls stuccoed on outside. Concrete floor slab on ground.

Foundations:

Concrete foundation walls and footings. Soil pressure 2,000 lbs. per square foot.

Finishes:

Roll roofing, unfinished tile walls, fiberboard or asbestos ceilings, cement floors. Wood windows with brick trim.

Design Loads:

Roof - live load - 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.23 Infirmary. One-story building in 2 rectangular units connected by a corridor and with projections at the front near the ends.

Ground Area Covered	163' x 270'

Floor Area	20,179 sq. ft.
Cubic Contents	408,744 cu. ft.

Design data as follows:

Information Room	416 sq. ft.
Physiotherapy Room	320 sq. ft.
Doctor's Offices	1094 sq. ft.
X-Ray and Dark Room	291 sq. ft.
Future Dental Rooms	576 sq. ft.
Dental Rooms	960 sq. ft.
Dental X-Ray and Operating Room	332 sq. ft.
Waiting Rooms	813 sq. ft.
O. O. D. Bed Room and Toilet	213 sq. ft.
Storage Rooms	447 sq. ft.
Locker Room	138 sq. ft.
Toilets	564 sq. ft.
Pharmacy and Storage Rooms	373 sq. ft.
Laboratory	251 sq. ft.
Corp. Bed Room and Toilet	259 sq. ft.
Venereal Treatment Rooms	392 sq. ft.
Examination Rooms	375 sq. ft.
Admit and Exam Room	206 sq. ft.
Surgical Dressing Room	275 sq. ft.
Sterlizer Room	73 sq. ft.
Scrub Room and Closet	57 sq. ft.
Surg. Work Room	180 sq. ft.
Senior M. O. Room	270 sq. ft.
Board Room	157 sq. ft.
Physical Exam. Room	327 sq. ft.
Sick Call Room and Toilet	514 sq. ft.
Refraction Room	130 sq. ft.
E. E. N. T. and Audio. Rooms	676 sq. ft.
Main Ward	4,247 sq. ft.
4-Bed Ward Room	286 sq. ft.
2-Bed Ward Room	186 sq. ft.
Patient Room	127 sq. ft.
Diet Kitchen	180 sq. ft.
Quiet Rooms Toilet	430 sq. ft.
Wash up Room	97 sq. ft.
Utility and Gear Room	224 sq. ft.
Soil Linen Room and Closets	88 sq. ft.
Lobby, Entries and Corridors	5,253 sq. ft.

Enlisted Men's Toilet: 3 water closets, 2 urinals, 2 lavatories.
Officers' Toilet: 2 water closets, 2 urinals, 2 lavatories.
Men's Toilet: 1 water closet, 1 urinal, 1 lavatory.
Women's Toilet: 2 water closets, 1 lavatory.
Main Ward Toilet: 3 water closets, 2 urinals, 1 lavatory.
Main Ward Bathroom: 1 shower, 1 water closet.
Quiet Room Bath: 1 shower, 1 water closet. 1 lavatory.

4-Bed Ward Toilet: 1 shower, 1 water closet, 1 lavatory.
2-Bed Ward Toilet: 1 shower, 1 water closet, 1 lavatory.
Patient Room Toilet: 1 shower, 1 water closet, 1 lavatory.
Exam Room Toilet: 1 water closet, 1 lavatory.
Corp. Bed Room Toilet: 1 shower, 1 water closet, 1 lavatory.
Sick Call Room Toilet: 1 shower, 1 water closet, 1 lavatory.
O. O. D. Room Toilet: 1 shower, 1 water closet, 1 lavatory.

General Construction:

Wood roof on 8" tile block bearing walls, stuccoed outside, concrete floor slab on tile base.

Foundation:

Concrete foundation walls and footings. Soil pressure 2000# per. sq.ft..

Finishes:

Cement floors, plastered walls; fibre board ceilings except toilets, bath rooms, gear and utility rooms, surgical rooms, dark room, venereal treatments where cement plaster is used; wood windows and roll roofing.

E-13.24 Theatre, Post Exchange and Barber Shop. One-story, rectangular shape building with mezzanine across front and projecting wing at each side.

Ground Area Covered	131' x 157'
Seating Capacity	1000 Seats
First Floor Area	12,292 sq. ft.
Mezzanine Floor Area	2,356 sq. ft.
Total Area	14,648 sq. ft.
Cubic Contents	407,358 cu.ft.

Design data as follows:

First Floor Mezzanine-	
Auditorium	7,100 sq. ft.
Stage	1,249 sq. ft.
Stage dressing room & Toilet	237 sq. ft.
Store and Storage Rooms	939 sq. ft.
Sales Room	1,380 sq. ft.
Barber Shop	954 sq. ft.
Offices	379 sq. ft.
Receiving Room	271 sq. ft.
Projection & Winding Rooms	509 sq. ft.
Public and Barbers' Toilets	589 sq. ft.
Air Conditioning Room	434 sq. ft.
Ticket Booth, Closets, & Gear Room	139 sq. ft.
Lobby, Vestibule, Entries, Exit Halls, Corridors, stairs, Halls	1,407 sq. ft.

Arcade	1,103 sq. ft.
Dressing Room Toilets (2)	2 water closets, 4 showers, 4 lavatories
Men's Toilet:	4 water closets, 3 urinals, 5 lavatories.
Barbers' Toilet:	1 water closet, 1 urinal, 1 lavatory.
Ladies' Toilet:	2 water closets, 4 lavatories.

General Construction:

Structural steel frame; concrete floor slab on fill; 12½" tile and cinder block walls around Auditorium and 8" tile walls for side wings, stuccoed outside.

Foundation:

Concrete foundation walls and footings. Soil pressure 2000# per. sq.ft.

Finishes:

Cement and wood floors, wood wainscot, unfinished tile and cinder block walls, acoustical fiber borad ceilings, wood windows and roll roofing.

Design Loads:

Roof - live loads- 20 lbs. per sqaure foot.
Wind - 30 lbs. per sqaure foot.

E-13.25 Brig. One-story rectangular building with projection at front and rear.

Ground Area Covered	67' x 147'
Floor Area	5,471 sq. ft.
Cubic Contents	78,048 cu. ft.

Design Data as follows:

Dormitories	3,117 sq. ft.
Cells	540 sq. ft.
Toilet Rooms	459 sq. ft.
Shower and Drying Room	204 sq. ft.
Turnkey	90 sq. ft.
Vestibule and Corridors	821 sq. ft.

Main Toilet Room: 5 water closets, 5 urinals, 8 lavatories.
Vestiblue Toilet: 1 water closet, 1 lavatory.

General Construction:

Wood roof on 8" tile bearing walls,stuccoed; concrete floor slab on fill.

Foundation: Concrete foundation walls and footings. Soil pressure 2000 lbs. per square foot.

Finishes:

Cement floors, unfinished tile walls except in shower room and vestibule Toilet which have cement plaster; asbestos board ceiling in all rooms and corridors except dormitories which have roof sheathing roll roofing.

Design Loads:

Roof - live loads 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.26 Warehouses

Similar to those at Montford Point Camp No. 2. See E-13.05.

E-13.27 Hostess House- One-story T shaped building with projection at end in the front.

Ground Area Covered	145' x 190'
Floor Area	9,475 sq. ft.
Cubic Contents	153,173 cu. ft.

Design data as follows:

Bed Rooms	3,537 sq. ft.
Hostess' Bed Room	176 sq. ft.
Assistants' Bed Room	165 sq. ft.
Office	114 sq. ft.
Bath and Toilet Rooms	771 sq. ft.
Dining Room	1,985 sq. ft.
Galley	650 sq. ft.
Scullery	90 sq. ft.
Storage Rooms	256 sq. ft.
Gear Rooms	81 sq. ft.
Linen Storage Rooms	80 sq. ft.
Lobby, Corridors, Entries and Telephone Booths	2,697 sq. ft.

General Construction:

Wood roof on 8" tile bearing walls, stucced; concrete floor slab on tile base.

Foundations:

Concrete outside foundation walls and all footings, other foundation walls brick. Soil bearing pressure 2,000 pbs. per square foot.

Finishes:

Roll roofing, plastered walls, fiber board ceilings, wood windows and cement floors.

Dosign Loads:

Roof - live loads - 2,000 lbs. per sq.uare foot.
Wind - 30 lbs. per square foot.

E-13.28 Decontamination Building. One-story rectangular-shaped building.

Ground Area Covered	37' x 150'
Floor Area	5,162 sq. ft.
Cubic Contents	83,250 cu. ft.

Design data as follows:

Sterile Storage Area	3,071 sq. ft.
Unsterile Storage Room	2,066 sq. ft.
Concrete Platforms Outside	192 sq. ft.

General Construction:

Wood frame roof on 12½" tile bearing wall, stuccoed outside. Concrete floor slab on ground.

Foundations:

Concrete foundation walls and roofings. Soil bearing pressure 2000 lbs. per square foot.

Finishes:

Roll roofing, underside of roof sheathing for ceiling; unfinished tile walls; cement floor.

Design Data:

Roof - live loads - 20lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.29 School Buildings: One-story rectangular buildings. Four of these modified platoon barracks buildings were built at Montford Point Camp No. 3. Three are identical and the fourth is further modified to provide toilet facilities in place of one class room.

Ground Area Covered:	31' x 121'
Floor Area:	3,055 sq. ft.
Cubic Contents:	36,388 cu. ft.

Design data as follows:

Instructors Office (all buildings)	321 sq. ft.
Class Rooms (3 buildings)	2,734 sq. ft.
Class Rooms (1 building)	2,041 sq. ft.
Toilet Rooms (1 building)	693 sq. ft.

General Construction:

Wood roof trusses on 8" tile bearing walls stuccoed on outside. Concrete pilasters concrete floor slab on ground.

Foundations:

Concrete foundation walls. Soil pressure 2,000 lbs. per square foot.

Finishes:

Roll roofing, unfinished tile walls. Wood windows cement floors.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.30 Personnel Classification Building: This one-story rectangular building is a modification of a standard platoon barracks building.

Ground Area Covered:	31' x 121'
Floor Area:	3,055 sq. ft.
Cubic Contents:	36,388 cu. ft.

Design data as follows:

Office	329 sq. ft.
Classification Room	2,726 sq. ft.

General Construction:

Wood roof on 8" tile bearing walls stuccoed on outside. Concrete pilasters concrete floor slab on ground.

Foundations:

Concrete foundation walls. Soil pressure 2,000 lbs. per square foot.

Finishes:

Roll roofing, unfinished tile walls, wood windows, cement floors.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.31 Gun Sheds.

Similar to those at Montford Point Camp No. 2. For complete data see E-13.11

E-13.32 Central Heating Plant

Ground Area Covered	59' x 115'
Floor Area	5,505 sq. ft.
Cubic Contents	196,445 cu. ft.

Design data as follows:

Boiler Room	5,101 sq. ft.
Office	81 sq. ft.
Toilet Rooms	98 sq. ft.
Hopper Tower	225 sq. ft.

Toilets: 2 water closets, 2 urinals, 2 shower heads

General Construction:

Steel roof trusses on 12" brick bearing walls stuccoed on outside. Brick pilasters, concrete floor slab on ground. 115' free-standing radial brick stack.

Foundations: Concrete foundation walls and footings. Concrete slab boiler foundations. Soil pressure 2,000 lbs. per square foot.

Finishes: Corrugated asbestos roofing, unfinished walls, steel windows, cement floors.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.33 Swimming Pool:

Similar to those at the Division Training Area. See E-2.05.

E-13.34 Well Houses Nos. Z-4 and Z-5.

No. Z-4 is similar to well House No. T-1 at the Rifle Range Area. For complete data see E-7.11.

No. Z-5 is similar to well House No. S-1 at the Rifle Range Area. For complete data, see E-7.11.

Camp Knox

E-13.35 Mess Hall: One-story T-shaped building.

Ground Area Covered:	79' x 111'
Floor Area:	3,053 sq. ft.
Cubic Contents:	36,060 cu. ft.

Design data as follows:

Mess Hall	1,957 sq. ft.

Seating 156 men or 12.5 sq. ft. per man

Galley	754 sq. ft.
Storage Room	342 sq. ft.

General Construction:

Wood roof with monitor on 8" tile bearing walls stuccoed on outside. Concrete floor slab on ground.

Foundations:

Concrete foundation walls.

Finishes:

Roll roofing unfinished tile walls, wood windows with brick trim. Cement floors.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.36 Dog Dispensary : One-story T-shaped building.

Ground Area Covered:	35' x 79'
Floor Area:	1,494 sq. ft.
Cubic Contents:	19,163 cu. ft.

Design data as follows:

Hall	28 sq. ft.
Office	77 sq. ft.
Store Room	77 sq. ft.
Examination Room	208 sq. ft.
Treatment Rooms	153 sq. ft.
Sick Bay Corridor	157 sq. ft.
Sick Bay Stalls	340 sq. ft.
Isolation Corridor	56 sq. ft.
Isolation Stalls	85 sq. ft.
Exercise Room	156 sq. ft.
Quarters	114 sq. ft.
Toilet and Gear	43 sq. ft.

Toilet: 1 water closet, 1 lavatory, 1 shower.

General Construction:

Wood frame and siding, wood floors.

Foundations:

Wood piers (creosoted pile cut-offs)

Finishes:.

Roll roofing, presdwood partitions, presdwood ceiling over isolation stalls, wood windows, wood floors.

Design Loads:

Roof - 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.37 Kennel House: One-story rectangular building with roofless dog runs along each side.

Ground Area Covered:	79' x 250'
Floor Area:	17,040 sq. ft.
Cubic Contents:	105,253 cu. ft.
Design data as follows:	
Entry	160 sq. ft.
Aisles	1,940 sq. ft.
Kennels (80)	1,803 sq. ft.
Kitchen	171 sq. ft.
Bath and Grooming Room	210 sq. ft.
Quarters	185 sq. ft.
Toilet Room	38 sq. ft.
Equipment Room	161 sq. ft.
Passages	364 sq. ft.
Runways	3,958 sq. ft.
Runs (80)	8,050 sq. ft.
Toilet: 1 water closet, 1 lavatory, 1 shower	

General Construction:

Wood roof trusses on 8" brick bearing walls. Wood floors in kennels, concrete slab on fill in runs and runways.

Foundations:

Concrete foundation walls and footings.

Finishes:

Roll roofing, unfinished brick walls, brick or plywood partitions. Wood and cement floors, wood windows.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.38 Dog Dispensary Heating Plant: One-story rectangular building.

Ground Area Covered:	15' x 22'
Floor Area:	180 sq. ft.
Cubic Contents:	3,050 cu. ft.

General Construction:

Wood roof on 8" brick bearing walls, concrete floor slab on ground. 30' free standing brick stack.

Foundations:

Concrete foundation walls and footings.

Finishes:

Roll roofing, unfinished brick walls, cement floors, wood windows.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.39 Kennel House Heating Plant: One-story rectangular building.

Ground Area Covered:	15' x 24'
Floor Area:	192 sq. ft.
Cubic Contents:	3,260 cu. ft.

General Construction:

Wood roof on 8" brick bearing walls, concrete floor slab on ground. 40' free standing brick stack.

Foundations:

Concrete foundation walls and footings.

Finishes:

Roll roofing, unfinished brick walls, cement floors, wood windows.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-13.40 Renovation of Existing Buildings at Camp Knox

Specifications were prepared to cover the renovation of buildings formerly used by the CCC; no drawings were made for this work.

E-14 Peterfield Point Camp:

E-14.01 Location. This camp is located about two miles from and east of Tent Camp No. 2. Since October 1, 1942, no buildings have been designed in this area.

E-15 Tank Battalion Camp.

E-15.01 Location. This camp is located about two miles southwest of Tent Camp No. 2, east of Highway No. 17. Since October 1, 1942, no buildings have been designed in this area.

E-16 Midway Park Residential Area.

E-16.01 Location: The area is located north of Highway No. 24 across from the Main Entrance to the Camp. Since October 1, 1942, no buildings have been designed in this area by Carr and J. E. Greiner Co. Additional white and colored housing, including a sewage pumping station, school, Post Office, administration office, clinic, library, auditorium, and other buildings were designed by others.

E-17 Marine Corps Women's Reserve Area.

E-17.01 Location: The area is located on the northeast of and adjacent to the Post Troops Area. Since October 1, 1942 the following buildings have been designed in this area:

8 Barracks Buildings	(E-17.02)
1 Mess Hall	(E-17.03)
1 Administration Building	(E-17.04)
1 Infirmary	(E-17.05)
1 Post Exchange and Service Club	(E-17.06)
2 Bachelor Officers' Quarters	(E-17.07)
4 Warehouses	(E-17.08)

E-17.02 Barracks: Two-story H-shaped Building.

Ground Area Covered:	138' x 186'
First Floor Area:	11,196 sq. ft.
Second Floor Area	11,253 sq. ft.
Cubic Contents:	299,820 cu. ft.

Design data as follows:

First Floor:	
Dormitories	6,674 sq. ft.
Lounge	982 sq. ft.
Toilet Rooms	772 sq. ft.
Shower Rooms	409 sq. ft.
N. C. O. Room	106 sq. ft.
Men's Toilet	94 sq. ft.
Gear Rooms	42 sq. ft.

Wash and Ironing Rooms	836 sq. ft.
Corridors, Halls and Stairways	1,281 sq. ft.

Second Floor:

Dormitories	6,752 sq. ft.
Recreation Room	982 sq. ft.
Toilet Rooms	772 sq. ft.
Shower Rooms	409 sq. ft.
N. C. O. Room	274 sq. ft.
Gear Rooms	42 sq. ft.
Wash and Ironing Rooms	836 sq. ft.
Storage Rooms	163 sq. ft.
Corridors, Halls and Stairways	1,023 sq. ft.

First Floor:

Toilet Rooms: 20 water closets, 20 lavatories.
Shower Rooms: 14 heads, 2 tubs.
Wash and Ironing Room: 10 laundry sinks.
Gear Rooms: 2 slop sinks.
Mens Toilet: 1 water closet, 1 urinal, 1 lavatory.

Second Floor:

Toilet Rooms: 20 water closets, 20 lavatories.
Shower Rooms: 14 heads, 2 tubs.
Wash and Ironing Room: 10 laundry sinks.
Gear Rooms: 2 slop sinks.

General Construction:

Wood roof trusses on 12½" tile and brick veneer bearing walls. Second floor, wood in dormitories, concrete slab elsewhere. First floor concrete slab on fill.

Foundations:

Concrete foundation walls and footings. Soil pressure 1,500 lb. per square foot.

Finishes:

Asbestos shingle roof. Fibre board ceilings in dormitories, Recreation rooms. Corridors, etc. asbestos board ceilings in Toilets, showers etc. Portland cement plaster in Toilets, showers etc. Gypsum plaster walls elsewhere. Floors, wood in second floor dormitories cement elsewhere. Wood windows.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-17.03 Mess Hall: One-story, irregular shaped building.

Ground Area Covered	239' x 208'
Floor Area	21,429 sq. ft.
Cubic Contents	415,114 cu. ft.

Design data as follows:

Mess Hall (4) 972 seats.	11,926 sq. ft.
Sculleries (2)	1,668 sq. ft.
Cafeteria (2)	1,916 sq. ft.
Galley (Capacity 2000)	2,729 sq. ft.
Corridors	700 sq. ft.
Refrigerated Storage	465 sq. ft.
Mechanical Room	180 sq. ft.
Storage Rooms	592 sq. ft.
Preparation Room	278 sq. ft.
Garbage Room	278 sq. ft.
Butchers Room	290 sq. ft.
Office	118 sq. ft.
Toilets and Gear	248 sq. ft.

Toilets:
White: 2 water closets, 1 urinal, 1 lavatory.
Colored: 2 water closets, 1 urinal, 1 lavatory.

General Construction:

Wood frame roof 8" hollow tile bearing walls with reinforced concrete pilasters and brick veneer, concrete floor slabs.

Foundations:

Concrete foundation walls and footings. Soil pressure 1,500 lbs. per square foot.

Finishes:

Concrete floors, plaster walls, fiber board and asbestos board ceilings, asbestos shingle roof, wood sash.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-17.04 Administration Building: One-story T-shape.

Ground Area Covered:	128' x 70'
Floor Area	4,836 sq. ft.
Cubic Contents	79,016 cu. ft.

Design data as follows:

Lobby	182 sq. ft.
Offices (14)	3,135 sq. ft.
Corridors	670 sq. ft.
Storage and Closets	135 sq. ft.
Officers Toilet	121 sq. ft.
Enlisted Women's Toilet	134 sq. ft.
Gear	49 sq. ft.
Recessed Entries (2)	103 sq. ft.

Toilets:

Officers Toiler: 4 water closets, 3 lavatories.
Enlisted Women's Toilet: 4 water closets, 3 lavatories.
Gear: 1 service sink.

General Construction:

Wood roof frame, 8" hollow tile and 4" brick veneer bearing walls, Concrete floor slab.

Foundations:

Concrete foundation walls and footings for exterior walls, brick walls and concrete footings for interior walls. Soil pressure 1,500 lbs. per sq.ft.

Finishes:

Concrete floors, plaster walls, fiber board ceilings, asbestos shingle roof, wood sash.

Design Loads:

Roof - live load 20 pounds per square foot.
Wind - 30 pounds per square foot.

E-17.05 Infirmary. One-story, irregular U-shaped building.

Ground Area Covered:	145' x 228'
Floor Area:	14,967 sq. ft.
Cubic Contents:	272,043 cu. ft.

Design data as follows:

Information Room	297 sq. ft.
Examination and Treatment Rooms	800 sq. ft.
Refraction Room	96 sq. ft.
E. E. N. and T. Rooms	227 sq. ft.
Chief Nurse's Bed and Bath Rooms	189 sq. ft.
Senior Med. Office and Toilet	277 sq. ft.
Physiotherapy Room	282 sq. ft.
Surgical Work Room	118 sq. ft.

Sick Call Room	238 sq. ft.
Doctors' Offices (3)	644 sq. ft.
Pharmacy Room	183 sq. ft.
X-Ray and Dark Rooms	288 sq. ft.
O. O. D. Bed and Bath Rooms	412 sq. ft.
Dental Offices	367 sq. ft.
Nurse's Room	122 sq. ft.
Waiting Rooms	301 sq. ft.
Laboratory	157 sq. ft.
Ward and Porch	3,884 sq. ft.
Quiet Rooms and Bath	434 sq. ft.
Diet Kitchen	222 sq. ft.
Storage Rooms	313 sq. ft.
Linen Rooms and Closets	176 sq. ft.
Gear and Utility Rooms	203 sq. ft.
Ladies Toilet and Lounge	210 sq. ft.
Men's Toilet	77 sq. ft.
Ward Toilet and Bath Rooms	308 sq. ft.
Sitz Room	51 sq. ft.
Lobby, Entries and Corridors	3,350 sq. ft.
Portico	200 sq. ft.

Ladies' Toilet: 3 water closets, 2 lavatories.
Men's Toilet: 1 water closet, 1 urinal, 1 lavatory.
Ward Toilet and Bath Rooms: 6 water closets, 1 bath tub, 2 showers, 8 lavatories.
Sitz Room: 1 lavatory, 1 sitz tub.
O. O. D. Toilet and Bath Rooms: 2 showers, 2 water closets, 2 lavatories.
Treatment Room Toilet: 1 water closet, 1 lavatory.
Chief Nurse's Toilet: 1 water closet, 1 lavatory.
Senior Med. Office Toilet: 1 water closet, 1 lavatory.
Quiet Room Bath and Toilet: 1 shower, 1 water closet, 1 lavatory.
Doctor's Office Toilet: 1 water closet, 1 lavatory.

General Construction:

Wood roof trusses on 12½" tile and brick veneer bearing walls. Concrete floor slab on tile base.

Foundations:

Concrete foundation walls and footings. Soil pressure 1,500# per sq.ft.

Finishes:

Asbestos shingle roof, Keene Cement ceilings in all bath, toilet, Utility, gear rooms etc. fiber board ceilings elsewhere. Plaster walls, and cement floor.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-17.06 Service Club and Post Exchange; Two-story central portion with one-story wings; building of irregular T shape.

Ground Area Covered	205' x 86'
First Floor Area	10,169 sq. ft.
Second Floor Area	2,848 sq. ft.
Total Floor Area	13,017 sq. ft.
Cubic Contents	209,629 cu. ft.

Design data as follows:

First Floor:

Lobby	653 sq. ft.
Corridor and Stair halls	612 sq. ft.
Sales space	2,538 sq. ft.
Recreation Room	2,590 sq. ft.
Office	175 sq. ft.
Storage Rooms (3)	693 sq. ft.
Men's Toilet	100 sq. ft.
Women's Toilets (3) and Gear	405 sq. ft.
Beauty Parlor	1,845 sq. ft.
Receiving Room	301 sq. ft.

Second Floor:

Library	2,686 sq. ft.
Stairs	162 sq. ft.

Toilets:

Men's Toilet: 1 water closet, 2 urinals, 2 lavatories.
Women's Toilet: 6 water closets, 3 lavatories.
Women's Toilet: 1 water closet, 1 lavatory, 1 service sink.
Women's Toilet: 1 water closet, 1 lavatory.

General Construction:

Wood roof frame, 8" hollow tile and 4" brick veneer bearing walls. Second floor reinforced concrete diagrid system, first floor concrete slab.

Foundations:

Concrete foundation walls and footings. Soil pressure 1,500# per sq.ft.

Finishes:

Concrete floors, plaster walls, fiber board ceilings, asbestos shingle roof, wood sash.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.
Second Floor - 75 lbs. per square foot.

E-17.07 Bachelor Officers Quarters: Two-story irregular-shaped building.

Ground Area Covered	109' x 259'
First Floor Area	14,550 sq. ft.
Second Floor Area	13,320 sq. ft.
Total Floor Area	27,870 sq. ft.
Cubic Contents	395,084 cu. ft.

Design data as follows:

First Floor:

Public Lounge	1,515 sq. ft.
Private Lounge	297 sq. ft.
Bed Rooms (16 officers and 1 cook's & 1 stewardess')	3,654 sq. ft.
Trunk Room	145 sq. ft.
Dining Room 128 seats	2,569 sq. ft.
Galley and Scullery	1,317 sq. ft.
Preparation Room	213 sq. ft.
Refrigeration Rooms	188 sq. ft.
Garbage Room	160 sq. ft.
Storage Room	232 sq. ft.
Mechanical Rooms	103 sq. ft.
Laundry, Bath, Toilet, and Gear Rooms	1,236 sq. ft.
Coat & blanket closets and phone booths	138 sq. ft.
Vestibule, Lobby, corridors, Stairs and Halls,	2,285 sq. ft.
Rear Porch	338 sq. ft.

Officers' Bath and Toilet Room: 2 bath tubs, 3 showers, 7 water colsets, 7 lavatories.
Public Toilet: 1 water closet, 1 lavatory.
Stewardess' Bath Room: 1 shower, 1 water closet, 1 lavatory.
Women's Galley Toilet: 1 water closet, 2 lavatories.
Men's Galley Toilet: 1 water closet, 1 urinal, 2 lavatories.
Laundry Room: 6 laundry sinks, Gear Rooms: 1 slop sink each.

Second Floor:

Bed Rooms (36)	7,743 sq. ft.
Trunk and storage Rooms	358 sq. ft.
Linen and blanket closets	130 sq. ft.
Laundry, Bath, Toilet and Gear Rooms	1,801 sq. ft.
Mechanical Room	70 sq. ft.

Corridors, stairs and halls 2,827 sq. ft.
Officers' toilet and bath rooms (each): 2 bath tubs,
3 showers, 7 water closets, 7 lavatories.
Laundry Rooms(each): 6 laundry sinks.
Gear Rooms: 1 slop sink each.

General Construction:

Wood roof trusses on 12½" tile and brick veneer bearing walls. Wood floor for second floor except laundry, bath, and toilet and gear rooms, which have concrete slab. First floor, concrete slab on fill.

Concrete slab roof over public lounge (diagrid system).

Foundations:

Concrete foundation walls and footings.. Soil pressure 1,500# per sq. foot.

Finishes:

Built-up roof on rigid insulation over public lounge and asbestos shingle roof elsewhere.

First Floor: Cement ceilings in laundry, bath and toilet room, preparation room and men's galley toilet. Flexboard ceilings in garbage and mechanical rooms and mechanical closets. Fiberboard ceilings elsewhere. Cement plaster walls in laundry, bath and toilet rooms etc. Gypsum plaster elsewhere. Cement floor.

Second Floor: Flexboard ceilings in laundry, bath and toilet rooms, etc. fiberboard elsewhere. Cement floor in laundry bath and toilet rooms etc., wood elsewhere. Wall finishes same as first floor.

Design Loads:

Roof - live load 20 lbs. per square foot;
Wind - 30 lbs. per square foot.

E-17.08 Warehouses: One-story rectangular shape.

Ground Area Covered	110' x 33'
Floor Area	3,440 sq. ft.
Cubic Contents	49,005 cu. ft.
Clear Ceiling Height	9 ft. 0 in.

General Construction:

Solid 8" brick bearing walls wood roof trusses spaced 6'-0" O.C., concrete floor slab fill.

Foundations:

Concrete walls and footings. Soil pressure 1,500# per square foot.

Finishes:

Cement floor, asbestos shingle roof, wood windows.

Design Loads:
Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

E-18. Beach Area.

E-18.01 Location: The area is located along the Atlantic Ocean, in the southeastern part of the reservation. Since October 1, 1942, the following types and numbers of buildings have been designed in this area.

3 "H" Type Barracks	(E-18.02)
1 Mess Hall	(E-18.03)
2 School Buildings	(E-18.04)
1 Heating Plant	(E-18.05)
1 Chlorinator House	(E-18.06)
2 Well Pump Houses	(E-18.07)

All of these buildings, with the exception of the two well pump houses, are on creosoted timber pile foundations. The piles are at 20 tons bearing value each. The floor system is of reinforced concrete beams and slabs.

E-18.02 "H" Type Barracks:
These buildings are the same as the "H" Type Labor Battalion Barracks in the Industrial Area, with the exception that they are on creosoted timber pile foundations, and the steam pits are in a different location. See E-4.14 for complete data.

E-18.03 Mess Hall

Same as Mess Hall at the Rifle Range except on creosoted timber pile foundations. See section E-13.04 for complete data.

E-18.04 School Buildings: One-story, rectangular-shaped buildings, one with 2 class rooms and the other with three. Similar to the 30 school buildings in the Division Training Area, except the walls are of tile, stuccood outside, and the whole building is on pile foundations. See E-2.02 for detailed description.

E-18.05 Heating Plant: One-story rectangular shaped building.

Ground Area Covered	44' x 46'
Floor Area	976 sq. ft.
Cubic Contents	12,146 cu. ft.

Design data as follows:

Boiler room 976 sq. ft.

General Construction:

Wood roof frame, 12" brick bearing walls with brick pilasters and concrete tie beam at top of wall, stuccoed outside, reinforced concrete floor slab and beams. Free standing brick stack.

Foundations:

Reinforced concrete beams on creosoted wood piles; the piles have a bearing value of 20 tons each.

Finishes:

Concrete floor, brick walls, ceiling open to roof, wood windows, roll roofing. Wood siding at gables.

Design Loads:

Roof - live load 20 lbs. per sq. ft.
Wind - 30 lbs. per square foot.

E-18.06 Chlorinator House. One-story, rectangular building on piles.

Ground Area Covered	11' x 16'
Floor Area	120 sq. ft.
Cubic Contonts	1,500 cu. ft.
Concrete Platform	19 sq. ft.

General Construction:

Wood frame roof on 8" tile bearing walls stuccoed. Concrete floor slab on creosoted timber piles.

Foundations:

Concrete beams and slab on timber piles; bearing capacity of piles 20 tons each.

Finishes:

Roll roofing; under side of roof sheathing as ceiling, unfinished tile walls, cement floor.

Design Loads:

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

B-18.07 Well Pump Houses.

Type "C-I"
One-story rectangular building.

Ground Area Covered	14' x 16'
Floor Area	148 sq. ft.
Cubic Contents	1,915 cu. ft.

Type "H-I"
One-story rectangular building.

Ground Area Covered	11' x 14'
Floor Area	81 sq. ft.
Cubic Contents	1,293 cu. ft.

General Construction: (both types:)

Built-up roof on 13" brick bearing walls; concrete floor slab.

Foundations: (both types)

Concrete foundation walls.

Finishes: (both types)

Built-up roof; no ceiling, unfinished brick walls and cement floor.

Design Loads: (both types)

Roof - live load 20 lbs. per square foot.
Wind - 30 lbs. per square foot.

B-19 Miscellaneous:

This section includes the Magazine Area and the Cemetery; no buildings have been designed in these areas during the period covered in this report.

E-20 - SCHEDULE OF BUILDINGS BY AREAS

			Totals
E-20.01	Regimental Area No. 1		
P-234-A	Service Club Storehouse	1	
P-234-A	Post Exchange Storehouse	1	
P-1505	Revisions to Mess Hall, Bn. Whse. for M. C. W. R.	0	2
E-20.02	Regimental Area No. 2		
P-234-A	Service Club Storehouse	1	
P-234-A	Post Exchange Storehouse	1	
P-1510	Swimming Pool	1	
P-1509	Bus Terminal	1	4
E-20.03	Regimental Area No. 3		
P-234-A	Service Club Storehouse	1	
P-234-A	Post Exchange Storehouse	1	
P-1506	School Buildings	10	12
E-20.04	Regimental Area No. 4		
P-234-A	Service Club Storehouse	1	
P-234-A	Post Exchange Storehouse	1	
P-1506	School Buildings	11	13
E-20.05	Regimental Area No. 5		
P-234-A	Service Club Storehouse	1	
P-234-A	Post Exchange Storehouse	1	
P-1506	School Buildings	5	
P-1510	Swimming Pool	1	8
E-20.06	Division Activities		
	None		
E-20.07	Camp Troops Activities		
P-153	Mark I Gunnery Trainer	1	
P-1503	Uniform Shop	1	
P-1501	Post Dispensary Warehouse	1	
P-1500	Grade and High School	1	
P-1507	Plans prepared changing Bn. Whse. No. 27 into Photographic Shop	0	
P-234-A	Post Exchange Storehouse	1	
P-234-A	Hostess House Storehouse	1	
P-1500-14	Sewage Pumping Station No. 13	1	
P-235	Addition to Gate House	0	
P-234-1	Radar Facilities Operating House	1	
P-234-1	Radar Facilities Heating Plant	1	
P-1513	American Red Cross Building	1	
P-1511	Chemical Storage Building - Water Treatment Plant	1	11

E-20.08	Supply and Industrial Area		Totals
P-1305	Warehouse No. 1108	1	
P-1305	Warehouse No. 1606	1	
P-1301	Lumber Drying Kiln	1	
P-1302	Paint and Oil Storage	2	
P-1303-D) P-1303-B)	Camp Communications Warehouse and Cable Platform	1	
P-1303-C	Camp Communications Storage Shed	1	
P-1306	Reclamation Storage Building	1	
P-1306	Reclamation Decontamination Building	1	
P-1308-1	Labor Battalion Barracks	4	
P-1308-2	Labor Battalion Mess Hall	1	
P-1308-3	Labor Battalion Administration Building	1	
P-1308-4	Labor Battalion Post Exchange	1	
P-1309-1	Office Building*	1	
P-1309-2	Cafeteria*	1	
P-108-11	Truck Loading Sheds	3	
P-1304	Extension to Laundry	0	
P-108-2A) P-208-1A)	Whse. #1101, 1201,1402 & 1501, Toilets added	0	
P-1312	Central Htg. Plant, Office & Storage Space Addition	0	21
E-20.09	Naval Hospital		
P-410	Storage Garage	1	
P-400-1-22	Transformer House	1	
P-2101	Acoustical Treatment - Naval Hospital	0	
P-2102	Alterations to Ward 8	0	
P-2100	Facilities for Waves, Rev. to Corps. Bks.	0	2
E-20.10	Residential Area		
P-1600-1	Barracks for Mess Men	3	
P-1600-2	Washrooms for Mess Men	1	
P-1601	Swimming Pool	1	5
E-20.11	Rifle Range		
P-1900-1	Colored Troops Barracks	16	
P-1900-4	Colored Troops Mess Hall	1	
P-1900-5	Colored Troops Administration Bldg.	1	
P-1900-7	Colored Troops Post Exchange & Barber Shop	1	
P-1900-2	Colored Troops Washrooms	6	
P-1900-3	Colored Troops Warehouse	1	

E-20.11	Rifle Range (Cont'd.)		Totals
P-1900-11	Colored Troops Heating Plant	1	
P-1901	School Buildings	4	
P-234-A	Post Exchange Storehouse	1	
P-1900-13	Well No. S-1 and T-1 Houses	2	
P-1900-14	Sewage Pumping Station No. 11	1	35
E-20.12	Barrage Balloon and Amphibian Base		
P-234-A	Post Exchange Storehouse	1	
P-2400	Bachelor Officers' Quarters	1	2
E-20.13	Parachute Training Area		
	None		
E-20.14	Airport		
P-2200	Lighter-Than-Air Facilities Building (Construction Deferred)	1	1
E-20.15	White Cemetery		
	None		
E-20.16	Tent Camp No. 1		
	None		
E-20.17	Tent Camp No. 2		
	None		
E-20.18	Montford Point Area (Including Camp Knox)		
	Montford Point No. 1		
P-234-A	Post Exchange Storehouse	1	
P-500-14	Officers Washroom *	1	
P-500-2	Office and Tool Building (Sewage Treatment Plant)	1	3
	Montford Point Camp No. 2		
P-501-8	Platoon Barracks	19	
P-501-4-2	Enlisted Men's Mess Hall	1	
P-501-4-1	Officers' Mess and Demonstration Building	1	

	Montford Point Camp No. 2 (Cont'd.)		Totals
P-501-14	Washrooms	6	
P-501-15	Administration Building	1	
P-501-16	Heating Plant	1	
P-502	Gun Sheds	2	
P-501-7	Warehouses	2	
P-501-2	Sewage Pumping Station No. 10	1	34
	Montford Point Camp No. 2A		
P-1100-1	Platoon Barracks	5	
P-1100-4	Mess Hall and Post Exchange	1	
P-1100-2	Washrooms	2	
P-1100-9	Bachelor Officers' Quarters	1	
P-1100-11	Heating Plant	1	
P-1100-13	Well No. 2-2 and 2-3 Houses	2	12
	Montford Point Camp No. 3		
P-1101-1	Platoon Barracks	68	
P-1101-4	Mess Halls	2	
P-1101-2	Washrooms	24	
P-1101-5	Administration Building	1	
P-1101-6	Infirmary	1	
P-1101-8	Theater, Post Exchange and Barber Shop	1	
P-1101-10	Brig	1	
P-1101-3	Warehouses	2	
P-1101-19	Hostess House	1	
P-1101-22	Decontamination Building	1	
P-1101-21	School Building	4	
P-1101-20	Personnel Classification Building	1	
P-1101-23	Gun Sheds	2	
P-1101-11	Heating Plant	1	
P-1103	Swimming Pool	1	
P-1101-13	Well No. 2-4 and No. 2-5 Houses	2	113
	Camp Knox		
P-1102-4	Mess Hall	1	
P-236-3	Dog Hospital	1	
P-236-2	Dog Kennels	1	
P-1102-14	Sewage Pumping Station No. 12	1	
P-236-3	Dog Hospital Heating Plant	1	
P-236-2	Dog Kennels Heating Plant	1	6
B-20.19	**Peterfield Point Camp**		
	None		

			Totals
E-20.20	Tank Battalion Camp		
	None		
E-20.21	Midway Park Residential Area		
	None		
E-20.22	C.C.C.		
	None		
E-20.23	Magazine Areas		
	None		
E-20.24	Mock-up		
	None		
E-20.25	Marine Corps Women's Reserve		
P-1200-1	Barracks	8	
P-1200-4	Mess Hall	1	
P-1200-5	Administration Building	1	
P-1200-6	Infirmary	1	
P-1200-7	Post Exchange and Service Club	1	
P-1200-9	Officers' Quarters	1	
P-1200-3	Warehouses	4	
P-1200-9A	Officers' Quarters	1	18
E-20.26	Beach Area - Signal School Facilities		
P-2300	Well No. 22 and 23 Houses	2	
P-2302-1	Barracks	3	
P-2302-4	Mess Hall	1	
P-2302-11	Heating Plant	1	
P-2302-21	School Buildings	2	
P-2302-14	Sewage Treatment Plant -Chlorination House	1	10
	Total Buildings		312
	Total Reported in Chapter E, Part 11, Volume 1.		1431
	Grand Total		1743

Homosote huts are not included.
* Indicates buildings partially or wholly designed by others.
Numerals preceded by "P" are Accounting Project Numbers.

CHAPTER E - PART II

E-21 - SCHEDULE OF BUILDINGS BY TYPES

E-21.01	Barracks		Totals
P-1308-1	Labor Battalion - Supply & Ind. Area	4	
P-1600-1	Mess Men -Residential Area	3	
P-1900-1	Colored Troops - Rifle Range	16	
P-2200	Lighter-Than-Air Facilities Building (Construction Deferred)	1	
P-501-8	Montford Point Area No. 2 - Platoon	19	
P-1100-1	Montford Point Area No. 2A - Platoon	5	
P-1101-1	Montford Point Area No. 3 - Platoon	68	
P-1200-1	Marine Corps Women's Reserve	8	
P-2302-1	Signal School Facilities - Beach Area	3	
P-2100	Facilities for Waves - Revision to Corpsmen's Barracks	0	127
E-21.02	Mess Halls		
P-1308-2	Labor Battalion Supply & Ind. Area	1	
P-1900-4	Colored Troops - Rifle Range	1	
P-501-4-2	M. P. Area No. 2 - Enlisted Men's	1	
P-501-4-1	Montford Point Area No. 2 - Officers' Mess & Demonstration Bldg.	1	
P-1100-4	M. P. Area No. 2A - Mess Hall & P.X.	1	
P-1101-4	Montford Point Area No. 3 - Mess Halls	2	
P-1102-4	Camp Knox	1	
P-1200-4	Marine Corps Women's Reserve	1	
P-2302-4	Signal School Facilities - Beach Area	1	10
E-21.03	Warehouses		
P-234-A	Reg. Area No. 1 Service Club Storehouse	1	
P-234-A	Regimental Area No. 1-P.X. Storehouse	1	
P-234-A	Reg. Area No. 2 - Service Club Storehouse	1	
P-234-A	Regimental Area No. 2 - P.X. Storehouse	1	
P-234-A	Reg. Area No. 3 - Service Club Storehouse	1	
P-234-A	Regimental Area No. 3 - P.X. Storehouse	1	
P-234-A	Reg. Area No. 4 - Service Club Storehouse	1	
P-234-A	Regimental Area No. 4 - P.X. Storehouse	1	
P-234-A	Reg. Area No. 5 - Service Club Storehouse	1	
P-234-A	Regimental Area No. 5 - P.X. Storehouse	1	
P-1501	Post Dispensary Warehouse	1	
P-234-A	Camp Troops Activities - P.X. Storehouse	1	
P-234-A	Camp Troops Activities - Hostess House Storehouse	1	
P-1305	Supply & Industrial Area - Warehouse No. 1108	1	

			Totals
B-21.03	Warehouse (Cont'd.)		
P-1305	Supply and Industrial Area - Warehouse No. 1606	1	
P-1302	Supply and Industrial Area - Paint and Oil Storage	2	
P-1303-D) P-1303-B)	Supply and Industrial Area-Camp Communications Warehouse & Cable Platform	1	
P-1303-C	Supply and Industrial Area-Camp Communications Storage Shed	1	
P-1306	Supply and Industrial Area-Reclamation Storage Building	1	
P-1900-3	Rifle Range Colored Troops Warehouse	1	
P-234-A	Rifle Range Post Exchange Storehouse	1	
P-234-A	Balloon Barrage Post Exchange Storehouse	1	
P-234-A	Montford Point Camp No 1 - Post Exchange Storehouse	1	
P-501-7	Montford Point Camp No. 2 - Warehouses	2	
P-1101-3	Montford Point Camp No. 3 - Warehouses	2	
P-1200-3	Marine Corps Women's Reserve Warehouses	4	
P-106-2A) P-206-1A)	Whse. Nos. 1101, 1201, 1402, and 1501, Toilets Added	0	32
B-21.04	Infirmaries		
P-1101-6	Montford Point Camp No. 3 - Infirmary	1	
P-1200-6	Marine Corps Women's Reserve - Infirmary	1	2
B-21.05	Post Exchanges		
P-1900-7	Rifle Range Colored Troops Post Exchange and Barber Shop	1	
P-1308-4	Supply & Industrial Area - Labor Battalion Post Exchange	1	2
B-21.06	Theaters		
P-1101-8	Montford Point Camp No. 3, Theater, Post Exchange & Barber Shop	1	1
B-21.07	Service Clubs		
P-1200-7	Marine Corps Women's Reserve - Post Exchange & Service Club	1	1
B-21.08	Brigs		
P-1101-10	Montford Point Camp No. 3 - Brig	1	1

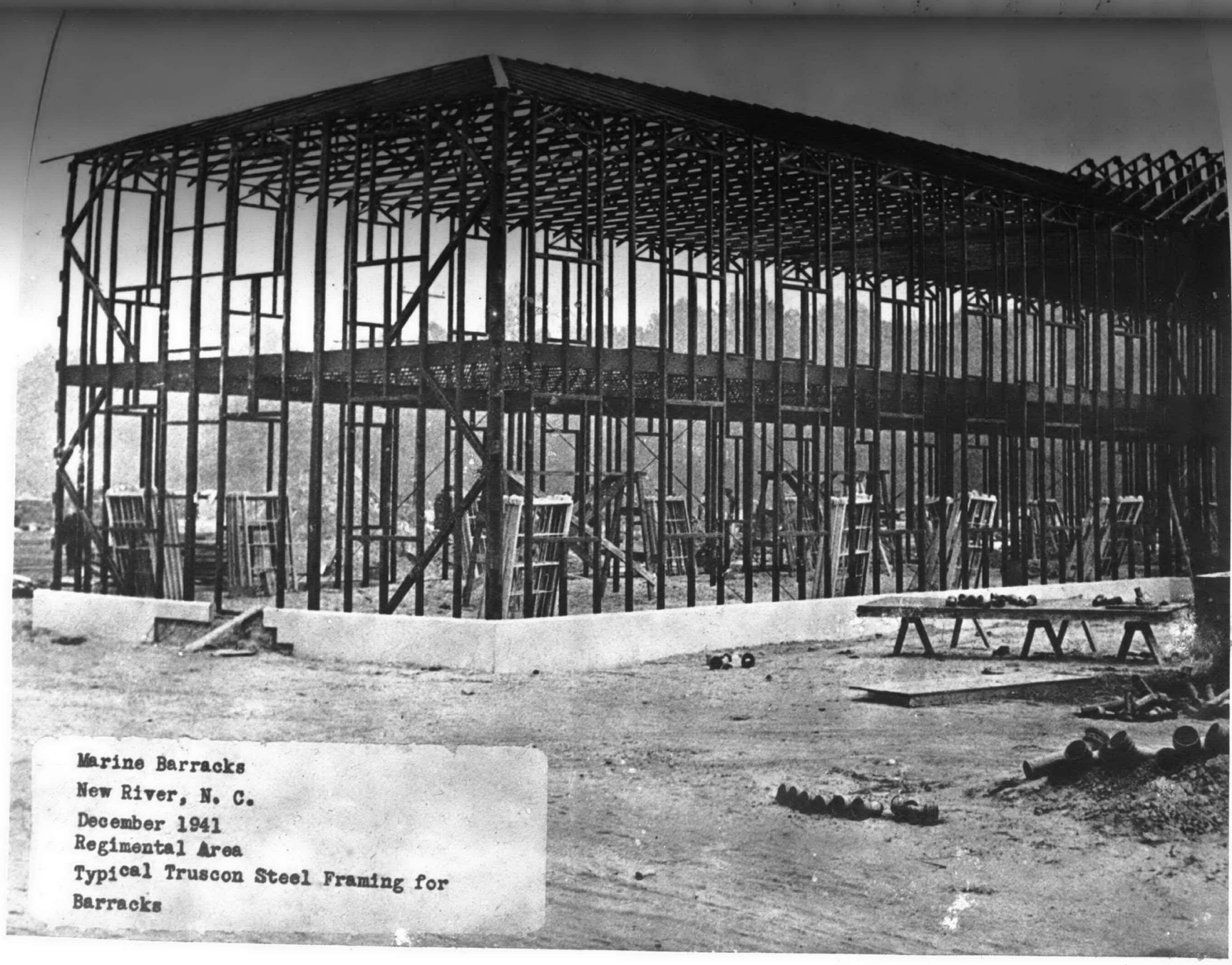
			Totals
B-21.09	Garages		
P-410	Naval Hospital Storage Garage	1	1
B-21.10	Bachelor Officers Quarters		
P-1100-9	Montford Point Camp No.2A - Bachelor Officers Quarters	1	
P-1200-9	Marine Corps Women's Reserve Officers' Quarters	1	
P-1200-9A	Marine Corps Women's Reserve Officers' Quarters	1	
P-2400	Barrage Balloon Area	1	4
B-21.11	Hostess House		
P-1101-19	Montford Point Camp No. 3 - Hostess House	1	1
B-21.12	Sewage Pumping Stations		
P-1500-14	Camp Troop Activities - Grade and High School Station No. 13	1	
P-1900-14	Rifle Range Colored Troops Station No. 11	1	
P-501-2	Montford Point Camp No. 2 Station No. 10	1	
P-1102-14	Camp Knox Station No. 12	1	4
B-21.13	Sewage Treatment Plants		
P-500-2	Montford Point Camp No. 1 - Office and Tool Building	1	
P-2302	Beach Area Signal School F cilities - Chlorination House	1	2
B-21.14	Well Pump Houses		
P-1900-13	Rifle Range Colored Troops Wells Nos. S-1 and T-1 Houses	2	
P-1100-13	Montford Point Camp No. 2A Wells Nos Z-2 and Z-3 Houses	2	
P-1101-13	Montford Point Camp No. 3 Wells Nos. Z-4 and Z-5 Houses	2	
P-2300	Beach Area Signal School Facilities Wells Nos. 22 and 23 Houses	2	8
B-21.15	Transformer Houses		
P-400-1-22	Naval Hospital Transformer House	1	1

			Totals
E-21.16	Central Heating Plants		
P-1900-11	Rifle Range Colored Troops Heating Plant	1	
P-501-16	Montford Point Camp No. 2 Heating Plant	1	
P-1100-11	Montford Point Camp No. 2A Heating Plant	1	
P-1101-11	Montford Point Camp No. 3 Heating Plant	1	
P-236-3	Camp Knox Dog Hospital Heating Plant	1	
P-236-2	Camp Knox Dog Kennels Heating Plant	1	
P-2302-11	Beach Area Signal School Facilities Heating Plant	1	
P-234-1	Radar Facilities - Heating Plant	1	
P-1312	C. H. P. - Office & Storage Space Addition	0	8
E-21.17	Enlisted Men's Washrooms		
P-1600-2	Residential Area Washroom for Mess Men	1	
P-1900-2	Rifle Range Colored Troops Washrooms	6	
P-501-14	Montford Point Camp No. 2 Washrooms	6	
P-1100-2	Montford Point Camp No. 2A Washrooms	2	
P-1101-2	Montford Point Camp No. 3 Washrooms	24	39
E-21.18	Officers' Washrooms		
P-500-14	Montford Point Camp No. 1 Officers' Washroom	1	1
E-21.19	Swimming Pools		
P-1510	Regimental Area No. 2	1	
P-1510	Regimental Area No. 5	1	
P-1601	Residential Area	1	
P-1103	Montford Point Camp No. 3	1	4
E-21.20	Bus Terminal		
P-1509	Regimental Area No. 2	1	1
E-21.21	School Buildings		
P-1506	Regimental Area No. 3	10	
P-1506	Regimental Area No. 4	11	
P-1506	Regimental Area No. 5	5	
P-1901	Rifle Range	4	
P-1101-21	Montford Point No. 3	4	
P-2302-21	Beach Area Signal School Activities	2	36
E-21.22	Mark 1 Gunnery Trainer Buildings		
P-153	Camp Troops Activities	1	1

B-21.23	Uniform Shop		Totals
P-1503	Camp Troop Activities	1	1
B-21.24	Grade and High School		
P-1500	Camp Troop Activities	1	1
B-21.25	Photographic Shop		
P-1507	Plans Prepared Changing Battalion Warehouse No. 27 into Photographic Shop		
B-21.26	Lumber Drying Kiln		
P-1301	Supply and Industrial Area	1	1
B-21.27	Decontamination Buildings		
P-1306	Supply and Industrial Area - Reclamation	1	
P-1101-22	Montford Point Camp No. 3	1	2
B-21.28	Administration Buildings		
P-1308-3	Supply and Industrial Area - Labor Battalion	1	
P-1900-5	Rifle Range - Colored Troops	1	
P-501-15	Montford Point Camp No. 2	1	
P-1101-5	Montford Point Camp No. 3	1	
P-1200-5	Marine Corps Women's Reserve	1	5
B-21.29	Office Building		
P-1309-1	Supply and Industrial Area *	1	1
B-21.30	Cafeteria		
P-1309-2	Supply and Industrial Area *	1	1
B-21.31	Truck Loading Sheds		
P-108-11	Supply and Industrial Area	3	3
B-21.32	Gun Sheds		
P-502	Montford Point Camp No. 2	2	
P-1101-23	Montford Point Camp No. 3	2	4

No. 6 Marine Barracks
New River, N. C.
4 June 1941
View of Saw Yard Fabricating Tent Decks
Contract NOy-4750

			Totals
E-21.33	Personnel Classification Building		
P-1101-20	Montford Point Camp No. 3	1	1
E-21.34	Dog Hospital		
P-236-3	Camp Knox	1	1
E-21.35	Dog Kennels		
P-236-2	Camp Knox	1	1
E-21.36	Operating House		
P-234-1	Radar Facilities Operating House	1	1
E-21.37	Additions		
P-235	Addition to Gate House, Camp Troops Activities	0	
P-1304	Laundry Extension Supply & Ind. Area	0	0
E-21.38	American Red Cross Building		
P-1513	Camp Troop Activities	1	1
E-21.39	Revisions		
P-1505	Revisions to Mess Hall and Battalion Whses. in Reg. Area No. 1 for M.C.W.R.	0	0
P-2101	Acoustical Treatment for N. Hosp.	0	
P-2102	Alterations to Ward 8, N. Hospital	0	0
E-21.40	Chemical Storage Building		
P-1511	Chemical Storage Building - Water Treatment Plant	1	1
			312
	Total Reported in Chapter E, Part II, Volume I		1431
		Grand Total	1743



Marine Barracks
New River, N. C.
December 1941
Regimental Area
Typical Truscon Steel Framing for
Barracks

CHAPTER F - PART II

STRUCTURAL DEPARTMENT

The functions and responsibility of this department were outlined in Volume I of this report. The structural design work conformed to the specifications and directives enumerated in Volume I with the following modifications due to directives received subsequent to the time that report was written:

In conformity with the Bureau of Yards and Docks circular letter 355-42, dated December 12, 1942, the " W.P.B. National Emergency Specifications for the design of Reinforced Concrete Buildings" was adopted as the design specification for subsequent reinforced concrete work.

On November 1, 1943, in conformity with W. P. B. directive No. 29, the "National Emergency Specifications for the Design Fabrication and Erection of Stress Grade Lumber and its Fastening for Buildings" were adopted as the standard of design for timber structures.

The A. N. M. B. "List of Prohibited Itemsfor Construction Work" was followed for conservation of critical materials.

Marine Barracks
December 1941
Mess Hall_ Regimental Area
Typical Truscon Steel Framing

CHAPTER G - PART II

MECHANICAL DEPARTMENT

G-1. Heating.

G-1.01. General. The same design standards and considerations as were applicable in Chapter G-1 of Part II, Volume I of this report apply to the portion of the work covered by this chapter.

G-1.02. Heating of Buildings. During the period covered by Volume III of the report, the restrictions placed on critical materials became a very weighty factor in the design of heating of buildings. Many buildings had to be treated in the light of what articles of equipment were readily available at the time of design and contemplated installation; and as a result many of the designs reflect a compromise between the method of approach we would have liked to use and that permitted by conditions beyond our control. The basic fundamentals as set forth in Chapter G-1.02 of Part II, Volume I of this report apply to the work covered by this section. The major innovations introduced in the heating of buildings constructed during the period covered by this volume include the introduction of thermostatic control to prevent the over heating of such hot water generators as are installed in conjunction with condensation coolers and economizers; also the introduction of modulating type thermostatic control in conjunction with forced hot water heating systems. By using the type of control, wherein the temperature of the water is modulated in accordance with the action of an outdoor thermostat, we have been enabled to complete one radiator emissivity on the basis of 235 b.t.u. per square foot of surface, thereby effecting a real saving in installed radiation as well as a reduction in steam consumption.

Due to Bureau directives, scarcity of various critical items, economy programs, etc., we have been forced under this program to open up our specifications to admit the installation of some articles of equipment excluded by the specifications written under the program covered by Volumes I and II. Such changes in policy as have been made have in all cases been prompted by necessity or in the interest of the speedy completion of the work.

A study of the plans and specifications will disclose that in many of the buildings served with steam from a central heating plant, the return of condensate to the boiler house has been effected by means of the impulse of the traps connected to the various pieces of steam using equipment, and no condensation pumps have been installed. This type of installation was first made to expedite the completion of Montford Point Camp No. 2 and was continued after a successful trial period in the interest of economy and to expedite the work at hand.

G-1.03. Heating of Hot Water. In the program covered by this

volume of the report, we called for the installation of instantaneous heaters in practically all instances where the cooling of high temperature drips was not a factor. This selection in design was prompted by the ready availability of the heaters and in the interest of conservation of critical materials. Where the cooling of high temperature drips was a factor to be considered, we called for storage type water heaters, provided with an external condensate cooler. In this design we have provided thermal control to protect the hot water generator against overheating.

G-1.04. Heat for Process Use. Steam for process use has in general been supplied to galley equipment, sterilizers, decontaminators, the dry kiln, etc. The pressure at which the steam is furnished has been determined by manufacturers recommendation if available or by computed thermal requirements if no specific recommendations have been available.

G-1.05. Summary. A tabular summary follows which sets forth in detail, by project number, the buildings treated in our design, the number of buildings covered by each project, the type of heat supplied, the amount of heat in each building, and the amount of hot water and process load handled. This tabular summary also includes any changes made to work done in the period covered by Volumes I and II.

ORIGINAL TENT CAMP # 1

No changes or additions have been made to installations as covered by the tabular summary on pages #188 and #189 of Volume I except that we have under this portion of the program reversed the connections to the instantaneous water heaters. By passing the steam through the tube bundle and water through the shell, we have to a large extent remedied the rapid scaling condition which had been causing trouble. Insofar as we have been able to determine no loss in heater capacity has resulted from this change.

TENT CAMP # 2

No changes or additions have been made to installations as covered by the tabular summary on pages #189 and #190 of Volume I.

DIVISION TRAINING AREA

The following have been added to the installations covered by the summary on pages #190 through #197:

Project No.	Building Type	Building No.	BTU Requirements Per Building		Lbs. of Steam Per Bdg.	Type of System
153	Mark I Gunnery	1	Heating	216,320		
			Total	216,320	238	Central Heating Plant

Project No.	Building Type	No.	BTU Requirements Per Building		Lbs. of Steam Per Bdg.	Type of System
1200-1	Barracks M.C.W.R.	8	Heating	1,225,490		Central Heating Plant
			Hot Water	1,660,000		
			Process	182,000		
			Total	3,067,490	3409	
1200-4	Mess Hall M.C.W.R.	1	Heating	1,800,000		
			Hot Water	2,390,400		
			Process	1,294,000		
			Total	5,484,400	6020	"
1200-5	Administration M.C.W.R.	1	Heating	238,800		
			Hot Water	49,800		
			Total	288,600	300	"
1200-6	Infirmary M.C.W.R.	1	Heating	780,000		
			Hot Water	456,500		
			Process	240,000		
			Total	1,476,500	1607	"
1200-7	Service Club & Post Exchange M.C.W.R.	1	Heating	516,500		
			Hot Water	199,200		
			Total	715,700	745	"
1200-9	B. O. Q. M.C.W.R.	2	Heating	718,500		
			Hot Water	498,000		
			Process	136,500		
			Total	1,353,000	1485	"
1301	Dry Kiln	1	Heating	3,282,000		
			Total	3,282,000	3830	"
1303-B	Post Communication Facilities	1	Heating	124,740		
			Hot Water	250,000		
			Total	374,740	382	"
1304	Laundry Extension	1	Heating	377,000		
			Total	377,000	394	"
1305	Warehouse #1108	1	Heating	1,273,804		
			Hot Water	75,600		
			Total	1,349,404	1463	"
	Warehouse #1101	1	Installed by Marine Corps		Estimated 1549	"
1306	Storage Building No. 1409 Decontamination	1	Heating	184,000		
			Process	1,028,000		
			Total	1,212,000	1342	"

Project No.	Building Type	No.	BTU Requirements Per Building		Lbs. of Steam Per Bdg.	Type of System
1308-1	Barracks "H" Type Labor Batt.	4	Heating Hot Water Total	1,359,360 622,500 1,981,860	2140	Central Heating Plant
1308-2	Mess Hall Labor Batt.	1	Heating Hot Water Process Total	1,782,500 2,390,400 1,294,000 5,466,900	5990	"
1308-3	Administration Labor Batt.	1	Heating Hot Water Total	226,400 19,934 246,334	271	"
1308-4	Post Exchange Labor Batt.	1	Heating Hot Water Total	223,200 29,866 253,066	276	"
1309	Office Bldg.	1	Heating Hot Water Total	1,628,000 60,000 1,688,000	1854	"
1309	Cafeteria	1	Designed and Built by Contractors		Estimated 958	"
1312	Addition to Central Heating Plant	1	Heating Total	13,442 13,442	143	"
1500	Grade & High School	1	Heating Hot Water Total	2,074,600 70,550 2,145,150	Hot Water Boiler Hot Water Heater	
1503	Uniform Shop	1	Heating Hot Water Total	435,000 100,000 535,000	558	Central Heating Plant
1505	Warehouses Area No. 1	11	Installed by Contractors		Estimated 176	"
1506	Schools	26	Heating - Estimated 50,000		Oil Circulators	
1501	Schools	4	Heating - Estimated 50,000		Oil Circulators	
1507	Photographic Facilities	1	Heating Hot Water Total	179,600 316,800 496,400	545	Central Heating Plant
1509	Bus Terminal	1	Heating Hot Water Total	410,640 380,970 791,610	824	"

Project No.	Building Type	No.	BTU Requirements Per Building		Lbs. of Steam Per Bdg.	Type of System
1510	Swimming Pool	2	Heating	3,048,400		Central
			Hot Water	1,485,000		Heating
			Total	4,533,400	4615	Plant
1513	Red Cross Bldg.	1	Heating	188,542		
			Hot Water	115,200		
			Total	303,742	316	"
1600-1	Barracks Paradise Point	2				Stoves
1600-2	Wash Room Paradise Point	1	Heating	136,500		Central
			Hot Water	910,000		Heating
			Total	1,046,500	1150	Plant
1601	Swimming Pool Paradise Point	1	Heating	75,000		
			Hot Water	45,650		
			Total	120,650	132	"
1900-1	Barracks Rifle Range Colored Camp	16				Stoves
1900-2	Wash Room Rifle Range Colored Camp	6	Heating	136,500		Central
			Hot Water	910,000		Heating
			Total	1,046,500	1150	Plant
1900-4	Mess Hall Rifle Range Colored Camp	1	Heating	803,000		
			Hot Water	1,365,000		
			Process	592,000		
			Total	2,760,000	3028	"
1900-5	Administration Rifle Range Colored Camp	1				Stove
1900-7	Post Exchange & Barber Shop Rifle Range Colored Camp	1				Stove
1900-14	Sewage Treatment Plant, Rifle Range Colored Camp	1				Oil Space Heater

HOSPITAL AREA

No changes or additions have been made to installation as covered by

the tabular summary on pages #197, #198 and #199 of Volume I except the following - Heat installed in Boiler House:

Project No.	Building Type	No.	BTU Requirements Per Building		Lbs. of Steam Per Bdg.	Type of System
Work Order No. 19	Boiler Plant	1	Heating	289,000		
			Total	289,000	294	Central Heating Plant

MONTFORD POINT TENT CAMP NO. 1

No changes or additions have been made to installations as covered by the tabular summary on page #199 of Volume I.

GLIDER TRAINING BASE

No changes or additions have been made to installations as covered by the tabular summary on page #200 of Volume I. The following Lighter-Than-Air-Facilities were designed but not constructed.

Project No.	Building Type	No.	BTU Requirements Per Building		Lbs. of Steam Per Bdg.	Type of System
2200	Lighter-Than-Air Facilities	1	Heating	175,900		Hot
			Hot Water	50,000		Water
			Total	225,900	-	Boiler

Construction of This Project Deferred

PETERFIELD POINT CAMP

No changes or additions have been made to installations as covered by the tabular summary on page #200 of Volume I.

MONTFORD POINT CAMP NO. 2

The following summary covers installations made in the above camp and not included in Volumes I and II:

Project No.	Building Type	No.	BTU Requirements Per Building		Lbs. of Steam Per Bdg.	Type of System
501-4-1	Officer's Mess (Demonstration Bldg.)	1	Heating	148,000		
			Hot Water	809,250		Central
			Process	145,800		Heating
			Total	1,103,050	1210	Plant

Project No.	Building Type	No.	BTU Requirements Per Building		Lbs. of Steam Per Bdg.	Type of System
501-4-2	Mess Hall	1	Heating	803,000		Central Heating Plant
			Hot Water	1,365,000		
			Process	592,000		
			Total	2,760,000	3028	
501-8	Barracks	19				Stoves
501-14	Wash Room	6	Heating	136,500		Central Heating Plant
			Hot Water	910,000		
			Total	1,046,500	1150	
501-15	Administration	1	Heating	199,800		
			Hot Water	83,100		
			Total	282,900	310	"

MONTFORD POINT CAMP NO. 2A

The following summary covers installations made in the above camp and not included in Volumes I and II,

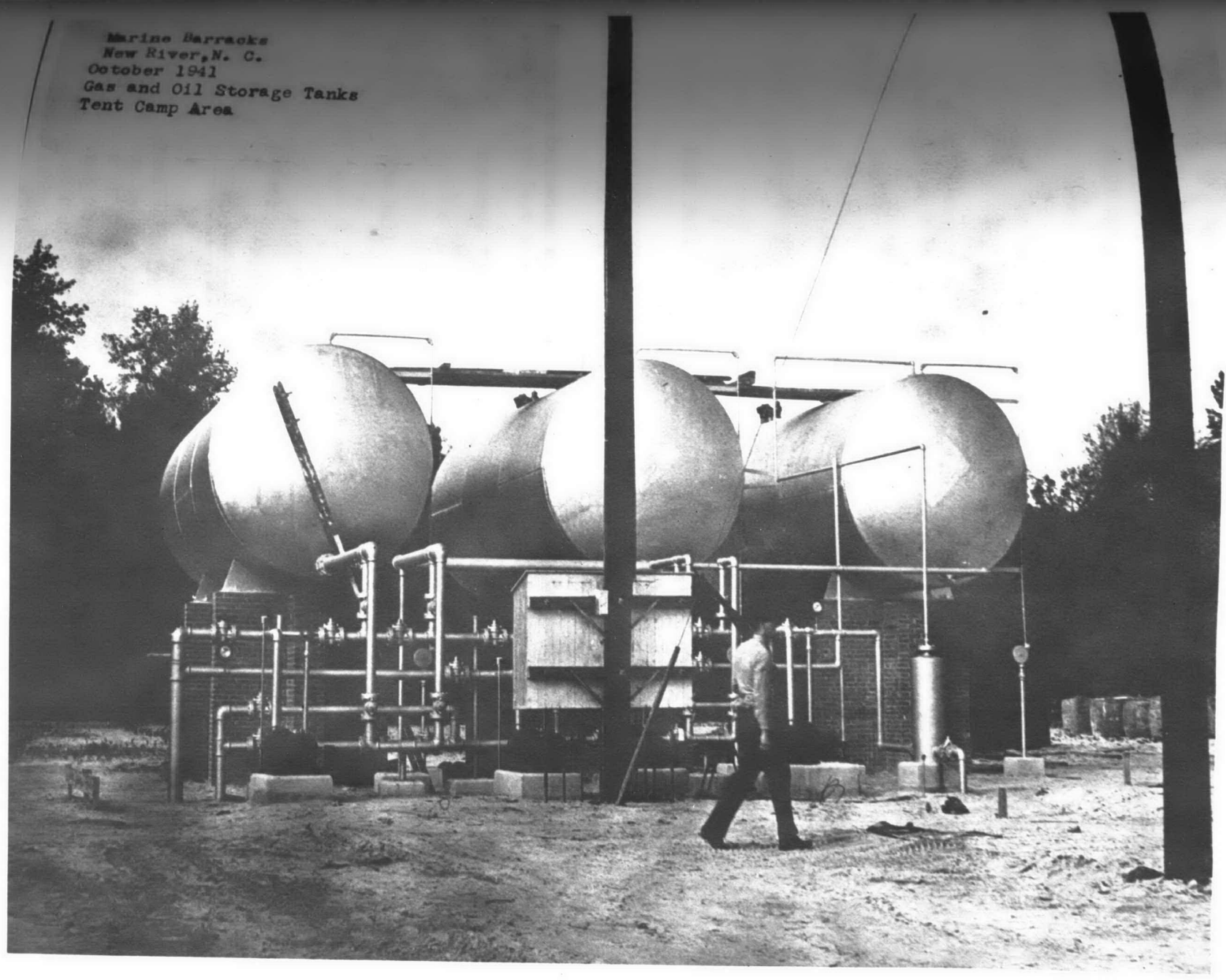
Project No.	Building Type	No.	BTU Requirements Per Building		Lbs. of Steam Per Bdg.	Type of System
1109-1	Barracks	5				Stoves
1100-2	Wash Room	2	Heating	136,500		Central Heating Plant
			Hot Water	910,000		
			Total	1,046,500	1150	
1100-4	Mess Hall	1	Heating	880,890		
			Hot Water	996,000		
			Process	209,600		
			Total	2,086,490	2295	"
1100-9	B. O. Q.	1	Heating	629,600		
			Hot Water	539,500		
			Process	127,300		
			Total	1,296,400	1422	"

MONTFORD POINT CAMP NO. 3

The following summary covers installations made in the above camp and not included in Volumes I and II:

Project No.	Building Type	No.	BTU Requirements Per Building		Lbs. of Steam Per Bdg.	Type of System
1101-1	Barracks	68				Stoves
1101-2	Wash Room	24	Heating	136,500		Central Heating
			Hot Water	910,000		
			Total	1,046,500	1150	Plant
1101-4	Mess Hall	2	Heating	1,782,500		
			Hot Water	2,390,400		
			Process	1,294,000		
			Total	5,466,900	5990	"
1101-5	Administration	1	Heating	303,700		
			Hot Water	59,760		
			Total	363,460	397	"
1101-6	Infirmary	1	Heating	1,163,900		
			Hot Water	639,730		
			Process	427,700		
			Total	2,231,330	2448	"
1101-8	Theatre, Post Exchange & Barber Shop	1	Heating	1,851,200		
			Hot Water	460,800		
			Total	2,312,100	2320	"
1101-10	Brig	1	Heating	408,900		
			Hot Water	747,000		
				1,155,900	1271	"
1101-14	Sewage Treatment Plant	1				Space Heater
1101-19	Hostess House	1	Heating	465,000		Central Heating
			Hot Water	261,000		
			Process	362,500		
			Total	1,088,500	1195	Plant
1101-20	Personnel Classification Bldg.	1	Heating	255,000		
			Hot Water	20,950		
			Total	275,950	302	"
1101-21	Schools	4	Heating	255,000		
			Total	255,000	275	"
1101-22	Decontamination	1	Heating	202,000		
			Process	55,000		
			Total	257,000	287	"

Marine Barracks
New River, N. C.
October 1941
Gas and Oil Storage Tanks
Tent Camp Area



Project No.	Building Type	No.	BTU Requirements Per Building		Lbs. of Steam Per Bdg.	Type of System
1103	Swimming Pool	1	Heating	3,048,400		Central Heating Plant
			Hot Water	1,485,000		
			Total	4,533,400	4715	

DOG TRAINING AREA

The following summary covers installations made in the above Area and not included in Volumes I and II:

236-2	Kennel	1	Heating	321,660		Hot Water Boiler Electric
			Hot Water	36,520		
			Total	358,180		
236-2	Infirmary	1	Heating	115,200		Hot Water Boiler Electric
			Hot Water	36,520		
			Total	151,720		
1102-4	Mess Hall	1	Process	48,100	50	Steam Boiler

SIGNAL SCHOOL FACILITIES

The following summary covers installations made in connection with the above project and not included in Volumes I and II:

2302-1	Barracks "H"	3	Heating	1,359,360		Central Heating Plant
			Hot Water	1,141,250		
			Total	2,500,610	2746	
2302-4	Mess Hall	1	Heating	803,000		
			Hot Water	1,365,000		
			Process	592,000		
			Total	2,760,000	3028	"
2302-21	School	2				Stoves

G-2. Steam Distribution System.

G-2.01. General. Under the program covered by this volume of the report, extensive additions have been made to the existing steam distribution system in the Industrial Area and the Regimental Areas, as well as the addition of 5 entirely new systems located as follows: One to serve Montford Point Camp No. 2; one for Montford Point Camp No. 2A; one for Montford Point Camp No. 3; one for the Rifle Range Colored Camp and one for the Signal School Facilities.

G-2.02. Industrial Area: In the Industrial Area the existing line was reinforced and extended to serve a new Labor Camp consisting of 1 Mess Hall, 4 Barracks, 1 Post Exchange and 1 Administration building and to serve as well, an Office building, a Cafeteria, two Warehouses, a Dry Kiln, a Communication building and a Decontamination building. The line as now installed is sufficient in size to permit the future addition of considerable load. The actual future load which could be added depends on the point along the line where it might be added. It is safe to say however that a distributed load of up to 50,000 pounds can be added without effecting a critical pressure drop.

There follows in tabular form a compilation of figures showing the estimated pressure drop, the estimated head against which the condensate return pumps may have to operate in the event of 100% pump operation at one time, and, an estimate of the losses occasioned by line condensation.

We have converted the line loss figure into a cash amount per year based on an assumed cost of steam of 35¢ per 1,000 pounds to show the importance of maintaining the lines in a good state of repair. In that one estimate is based on lines in a state of excellent repair, it can readily be seen that laxity in maintenance can cause the cost of distribution to rise tremendously.

STEAM PRESSURE DROP STUDY

Run From	To	Load lbs. per hour	Length	Size	Final Pressure Initial	Resultant
CHP	MH 131	74020	173	8	175	171.1
MH 131	MH 133	65034	943	8	171.1	154.4
MH 133	MH 135	31367	293	8	154.4	153.1
MH 135	MH 136	29748	643	8	153.1	150.5
MH 136	MH 138	20258	338	8	150.5	149.8
MH 138	Whse. No. 1108	19511	321	8	149.8	149.2
Whse. No. 1108	MH 140	18048	325	8	149.2	148.7
MH 140	MH 141	18048	305	8	148.7	148.2
MH 141	Office Pit	16499	1175	8	148.2	146.7
Office Pit	MH 142	14645	134	8	146.7	146.5
MH 142	Branch 1	13687	223	6	146.5	145.6
Branch 1	Branch 2	9407	580	6	145.6	144.5
Branch 2	Branch 3	8860	195	6	144.5	144.2
Branch 3	MH 144	4280	335	6	144.2	144.0
MH 144	Barrack #1313	4280	161	4	144.0	143.4
Barrack #1313	Barrack #1314	2140	445	2½	143.4	137.3
MH 131	MH 130	8986	194	8	171.1	171.0
MH 130	MH 139	8632	435	4	171.0	165.6
MH 139	Comm. Bldg.	382	387	2½	165.6	165.4

Run From	To	Load lbs. per hour	Length	Size	Final Pressure Initial	Resultant
MH 133	Anchor Laundry	33667	214	8	154.4	153.3
Laundry	MH 134	6850	233	4	153.3	151.3
MH 134	Anchor	6850	218	4	151.3	149.4
Anchor	Reclamation	2082	92	2½	149.4	148.3
Reclamation	Decontam.	1511	165	2½	148.3	147.2
Decontam.	P.X. Whse.	169	165	2½	147.2	147.2
MH 136	Cold Storage	9490	75	4	149.8	148.5
Cold Stg.	MH 137	9423	255	4	148.5	144.2
MH 137	Anchor	7874	312	4	144.2	140.4
Anchor	Dry Kiln	3820	301	4	140.4	139.5
Branch 1	Anchor	4280	161	4	145.6	145.0
Anchor	Barrack #1109	2140	445	2½	145.0	139.1
Branch 3	Mess Hall	4580	493	4	144.2	142.1
MH 142	Cafe	958	367	2½	146.5	145.5

CONDENSATE RETURN FRICTION LOSS STUDY

Run From	To	Amount of Condensate Lbs. per hr.	GPM	Length	Size	Static	Total Head in Feet
CHP	MH 131	73578	147.1	173	4	75.5	79.86
MH 131	MH 133	64433	128.8	943	4	77.7	100.63
MH 133	MH 135	31367	62.7	293	4	79.7	104.15
MH 135	MH 136	29748	59.5	643	4	77.0	104.47
MH 136	MH 138	20258	40.6	338	4	78.0	106.42
MH 138	Whse. #1108	19511	39.2	321	4	67.0	96.16
Whse.#1108	MH 140	18048	36.1	325	4	75.6	105.38
MH 140	MH 141	18048	36.1	305	4	73.2	103.56
MH 141	Office Pit	16499	33.0	1175	4	76.0	108.24
Office Pit	MH 142	14645	29.3	134	4	72.8	105.21
MH 142	Branch 1	13687	27.4	223	3	73.5	106.96
Branch 1	Branch 2	9407	18.8	580	3	76.0	110.81
Branch 2	Branch 3	8860	17.7	195	3	71.7	106.92
Branch 3	MH 144	4280	8.5	335	3	70.7	106.12
MH 144	Barrack #1313	4280	8.5	161	2½	75.0	110.71
Barrack #1313	Barrack #1314	2140	4.3	445	2½	76.0	112.02
MH 131	MH 130	8986	17.9	194	2½	74.3	79.92
MH 130	MH 139	8632	17.2	435	2½	77.0	85.23
MH 139	Comm. Bldg.	382	0.8	387	2½	77.0	85.27

Run From	To	Amount of Condensate Lbs. per hr.	GPM	Length	Size	Static	Total Head in Feet
MH 133	Laundry	33066	6611	214	3	79.0	106.88
Laundry	MH 134	5249	1015	233	2½	76.0	104.35
MH 134	Anchor	5249	10.5	218	2½	77.5	106.28
Anchor	Reclamation	471	0.9	92	2½	79.7	108.54
MH 136	Cold Storage	9490	19.0	75	2½	77.5	105.42
Cold Stg.	MH 137	9423	18.8	255	2½	67.2	96.62
MH 137	Anchor	7874	15.7	312	2½	75.3	106.06
Anchor	Dry Kiln	3830	7.6	301	2½	69.0	100.09
Branch 1	Anchor	4280	8.5	161	2½	75.5	109.17
Anchor	Barrack #1109	2140	4.3	445	2½	75.0	108.94
Branch 3	Mess Hall	4580	9.2	493	2½	75.5	111.46
MH 142	Cafe	958	1.9	367	2½	75.7	108.22

STEAM DISTRIBUTION LOSSES

Run of Pipe Includes:

5,058 Lineal Ft. - 8"
1,333 " " - 6"
3,089 Lineal Ft. - 4"
1,621 " " - 2½"

Losses:

50.58 x 27 = 1365.66
13.33 x 21 = 279.93
30.89 x 14 = 432.46
16.21 x 9 = 145.89
Total 2223.94 Lbs. per hour

2223.94 x 24 = 53374.56 Lbs per day x 365 = 19,481,714.4 Lbs. per Year

19,481.71 x .35 = $6,818.60

G-2.03. Regimental Areas and Hospital Area. In the regimental areas underground lines have been extended to serve the Red Cross Building, a Swimming Pool in Area #2, a Swimming Pool in Area #5, the Mark I Gunnery Trainer Building, the Bus Terminal, 11 Warehouses in Area #1 and the Marine Corps Women's Reserve Area comprising 8 Barracks, 1 Mess Hall, 2 B. O. Q. Buildings, 1 Administration Building, 1 Service Club and 1 Infirmary. The main trunk line which formerly terminated in Area #1 has been extended to supply the Naval Hospital Area with steam from the Central Heating Plant.

There follows in tabular form a compilation of figures showing the estimated pressure drop to each of the newly added buildings, the estimated head against which the condensate return pumps in the Naval Hospital Area will have to operate in the event of 100% pump operation at any one given

time and an estimate covering the total distribution throughout the Division Training Area including the Industrial Area. The same comments as were made in Section G-2.02 as to the importance of proper maintenance of lines apply.

It will be noted in scanning the pressure drop study on the line leading to the Swimming Pool in Area #5 that a diversity or load factor of 60% has been used. At the time the swimming pool was located, it was brought out that the added load so located would overload the distribution mains. It was decided after consultation that the changing of water in the pool could be effected at night and that the pool would be in active use during periods when the remainder of the area was under light load conditions. In other words, men could not be using the pool and their other regimental facilities at the same time. Under this premise we have computed the pressure at the pool figuring on a 60% load factor which it will be noted results in a terminal pressure of 108.4 p.s.i. This pressure is more than ample and a further study has shown that a critical drop in pressure will not occur until a condition of approximately 80% full connected load is reached.

In the Condensation Return Friction Loss Study applying to the line from the Naval Hospital Area, it should be noted that in the event that all pumps operate at one instant the pumps in the Naval Hospital Area will have to operate against a head of 87.1 p.s.i. If this condition should ever exist, the house pumps in the Naval Hospital Area would be overloaded as they were specified to operate against 75 p.s.i. We, therefore, have augmented the installation in the Naval Hospital Boiler Plant to the end that the present boiler feed pumps will function automatically as the condensate return pumps for the entire hospital area.

TRUNK MAIN
STEAM PRESSURE DROP STUDY

Run From	To	Load lbs. per hour	Length	Size	Final Pressure Initial	Resultant
CHP	TL 4	337568	1383	2-14	175	163.8
TL 4	TL 5	298654	439	2-14	163.8	160.8
TL 5	TL 6	296388	519	2-14	160.8	157.3
TL 6	TL 7	181224	446	14	157.3	152.7
TL 7	Anchor	162421	246	14	152.7	150.8
Anchor	TL 8	161473	196	14	150.8	149.1
TL 8	TL 9	144073	494	12	149.1	143.5
TL 9	TL 10	127523	390	12	143.5	139.9
TL 10	Branch	110621	87	12	139.9	139.3
Branch	TL 12	106731	331	12	139.3	137.1
TL 12	TL 13	102337	397	12	137.1	134.6
TL 13	TL 14	91222	386	12	134.6	132.7
TL 14	TL 15	86828	345	12	132.7	131.1
TL 15	TL 16	84638	177	12	131.1	130.3
TL 16	TL 17	74726	400	10	130.3	126.7
TL 17	TL 18	60537	316	10	126.7	124.8

Run From	To	Load Lbs. per hour	Length	Size	Final Pressure Initial	Resultant
TL 18	Branch	53746	210	10	124.8	123.8
Branch	TL 19	51901	255	10	123.8	122.6
TL 19	B.O.A.-Hosp.	46758	2261	10	122.6	114.2
B.O.Q. Hosp.	Anchor-Hosp.	45702	1526	10	114.2	108.4
Anchor Hosp.	MH 153-Hosp.	42126	314	8	108.4	104.9
TL 6	TL 20	114141	360	12	157.3	154.9
TL 20	TL 21	88919	246	12	154.9	153.8
TL 21	Branch	88600	297	12	153.8	152.5
Branch	TL 23	88018	463	12	152.5	150.6
TL 23	TL 24	62357	388	10	150.6	148.5
TL 24	TL 25	48341	195	8	148.5	146.4
TL 25	TL 27	46151	724	8	146.4	139.0
TL 27	End of Trunk	31058	659	8	139.0	135.8

MARINE CORPS WOMEN'S RESERVE AREA
STEAM PRESSURE DROP STUDY

TL 4	MHW 1	35505	579	6	163.8	150.1
MHW 1	B # 65	16949	305	6	150.1	148.3
B #65	B # 63	13540	295	6	148.3	147.2
B #63	P.X. #62	10131	223	6	147.2	146.7
P.X.#62	B #60	9386	381	6	146.7	145.9
B #60	B # 59	5977	310	6	145.9	145.6
B # 59	MHW 2	2568	265	6	145.6	145.5
MHW 1	BA #50	16949	349	6	150.1	148.0
BA #50	B #51	16649	176	6	148.0	147.0
B #51	B #53	13240	255	6	147.0	146.1
B #53	M # 54	9831	350	6	146.1	145.5
M #54	B #55	3811	205	6	145.5	145.5
B #55	MHW 2	402	265	6	145.5	145.5
MHW 2	B.O.Q. #58	2970	286	4	145.5	145.0
B.O.Q.#58	B.O.Q. #67	1485	537	4	145.0	144.7

NORTH SIDE OF AREA #1
STEAM PRESSURE DROP STUDY

MHTL 17	B-13	11673	261	5	126.7	124.4
B-13	B-14	9728	475	5	124.4	121.5
B-14	B-15	7431	90	4	121.5	120.4
B-15	Anchor	5486	170	4	120.4	119.2
Anchor	Anchor	674	510	$2\frac{1}{2}$	119.2	118.4
Anchor	Red Cross	316	492	$2\frac{1}{2}$	118.4	118.2

Run From	To	Load Lbs. per hour	Length	Size	Final Pressure Initial	Final Pressure Resultant
		Area No. 2				
MHTL 13	TL 29	11115	230	4	134.6	128.7
TL 29	Swimming Pool	4615	87	4	128.7	128.3
Anchor	MA-20	1002	250	2½	150.8	150.1
MA-20	Bus Station	842	482	2½	150.1	149.1
MHTL 24	Mark 1	238	365	2½	148.5	148.4

SOUTH SIDE OF AREA #5
STEAM PRESSURE DROP STUDY

Run From	To	Load Lbs. per Hour	Diversity Load - 60%	Length	Size	Final Pressure Initial	Final Pressure Resultant
Trunk	M-17	31058	18600	120	6	135.8	134.9
M-17	M-16	30157	18090	415	6	134.9	131.9
M-16	M-15	28212	16930	217	6	131.9	130.5
M-15	M-14	26267	15750	356	6	130.5	128.5
M-14	M-13	19928	11950	217	5	128.5	126.6
M-13	M-12	17973	10780	515	5	126.6	122.8
M-12	M-11	16028	9625	217	5	122.8	121.5
M-11	M-9	14083	8450	277	5	121.5	120.2
M-9	M-8	7744	4640	217	3	120.2	115.5
M-8	Branch	5799	3478	30	3	115.5	115.1
Branch	Branch	5480	3290	535	3	115.1	109.0
Branch	Swimming Pool	4615	2770	292	4	109.0	108.4

CONDENSATE RETURN FRICTION LOSS STUDY

Run From	To	Amount of Condensate Lbs. per hr.	GPM	Length	Size	Static	Total Head in Feet
CHP	TL 4	337160	674.0	1383	8	73.6	93.5
TL 4	TL 5	298246	597.5	439	8	74.4	99.4
TL 5	TL 6	295980	592.0	519	8	74.8	105.6
TL 6	TL 7	181158	362.5	446	6	75.5	114.7
TL 7	Anchor	162355	325.0	246	6	76.1	119.0
Anchor	TL 8	161407	323.0	196	6	76.5	122.3
TL 8	TL 9	144007	288.0	494	6	78.2	129.9
TL 9	TL 10	127457	255.0	390	6	79.2	134.7
TL 10	Branch	110555	221.0	87	6	79.4	135.4
Branch	TL 12	106665	213.0	331	5	79.8	141.2
TL 12	TL 13	102271	204.5	397	5	81.3	148.9
TL 13	TL 14	91156	182.2	386	5	80.0	152.4

From	To	Amount of Condensate Lbs. per hr.	GPM	Length	Size	Static	Total Head in Feet
TL 14	TL 15	86762	173.5	345	5	76.7	153.0
TL 15	TL 16	84572	169.0	177	5	75.0	153.2
TL 16	TL 17	74660	149.3	400	5	78.1	159.8
TL 17	TL 18	60471	120.8	316	5	79.0	162.5
TL 18	Branch	53680	107.2	210	5	78.6	163.1
Branch	TL 19	51835	103.5	255	5	78.0	163.7
TL 19	B.O.A.-Hosp.	46692	93.3	2261	5	76.2	170.0
B. O. Q. Hosp.	Anchor-Hosp.	45636	91.3	1526	5	89.4	188.5
Anchor Hosp.	MH 153-Hosp.	42060	84.0	314	3	90.5	201.0

REGIMENTAL AREA
STEAM DISTRIBUTION LOSSES

Run of Pipe Includes:

3,787 Lineal Ft. - 10"
2,492 " " - 6 "
830 Lineal Ft. - 4"
2649 " " - 2½"
2546 " " - 2"

Losses:

37.87 x 34.0 = 151.48
8.30 x 14.0 = 116.20
26.49 x 9.0 = 238.41
25.46 x 7.1 = 180.77
24.92 x 21.0 = 523.32
1210.18 Lbs. per hour

1210.18 x 24 hrs. = 29044.32 Lbs. per day = 10,601,176.8 Lbs. per Year

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Hospital (from original report)	562	=	4,940,000
Reg. Area (from original report)	11194 Lbs. per hr.	=	98,000,000
Additional	1210	=	10,601,177
Total -	12966 Lbs. per Hr.		113,541,177 Lbs. per Year

113,541,177 x .35 = $39,739.41

Total

Regimental Area	$39,739.41
Industrial Area	6,818.60
	$46,658.01

G-2.04. All Areas. In all cases where connection or addition has been made to existing distribution systems the same type of material and construction has been used as that which constitutes the original installation. The line to the Naval Hospital Area is the only exception to the

above general statement. In designing the line to the Hospital Area we diverged from the general rule in the interest of economy, and ran that portion of the line which is concealed by shrubs or trees on piers and poles.

G-2.05. Montford Point Camp No. 2. The distribution system serving Montford Point Camp No. 2 is a new system serving 1 Mess Hall, 1 Demonstration Building, 6 Washrooms and 1 Administration Building.

The system is of aerial construction, pole line type, and serves the buildings with steam at nominally 50 p.s.i. pressure. The returning condensate line discharges into a vented receiver in the boiler plant and is therefore under only the static head pressure plus such additional pressure as is caused by line friction.

There follows in tabular form a compilation of figures showing the estimated pressure drop to each of the buildings served, the total head against which the return traps must operate and an estimate of the line losses throughout the system. The line losses are again resolved into a cash figure to show the importance of maintaining the lines in a state of perfect repair.

STEAM PRESSURE DROP STUDY

Run From	To	Load Lbs. per Hour	Length	Size	Final Pressure Initial	Resultant
CHP	Branch	6900	134	5	55	54.2
Branch	207 WR	3450	87	4	54.2	53.7
207	206	2300	174	4	53.7	53.4
206	205	1150	111	2½	53.4	52.4
Branch	WR 208	3450	108	4	54.2	53.6
208	209	2300	174	4	53.6	53.2
209	210	1150	111	2½	53.2	52.3
CHP	Branch	4548	99	5	55	54.7
Branch	Adm.	1520	10	2½	54.7	54.59
Adm.	Demonstration	1210	181	2½	54.6	52.9
Branch	Mess	3028	241	4"	54.7	53.6

CONDENSATE RETURN FRICTION LOSS STUDY

Run From	To	Amount of Condensate Lbs. per hr.	GPM	Length	Size	Static	Total Head in Feet
CHP	Branch	6900	13.8	111	2½	0.5	0.75
Branch	WR 207	3450	6.9	174	2½	19.5	19.93
207	206	2300	4.6	87	2½	20.0	20.49
206	205	1150	2.3	134	2½	20.0	20.54

Run From	To	Amount of Condensate Lbs. per hr.	GPM	Length	Size	Static	Total Head in Feet
Branch WR 208 209	208	3450	6.9	111	2½	18.5	18.86
	209	2300	4.6	174	2½	19.0	19.48
	210	1150	2.3	111	2½	19.0	19.54
CHP Branch Adm.	Branch	4548	9.09	99	2½	0.5	0.65
	Adm.	1520	3.04	10	2½	10.5	10.66
	Demonstration	1210	2.42	181	2½	15.8	16.02
Branch	Mess Hall	3028	6.07	241	2½	15.1	15.47

STEAM DISTRIBUTION LOSSES

Run of Pipe Includes:

233 Lineal Ft. - 5"
784 " " - 4"
413 Lineal Ft. - 2½"

Losses:

2.33 x 13 = 30.29
7.84 x 11.2 = 87.81
4.13 x 8.0 = 33.04
151.14 Lbs. per Hour

151.14 x 24 = 3627.36 Lbs per Day

3627.36 x 365 = 1,323,986.4 Lbs. per Year

1,323.99 x $.35 = $463.40

G-2.06. Montford Point Camp No. 2A. The distribution system serving Montford Point Camp No. 2A is a new system serving 1 Mess Hall and Post Exchange Building, 2 Washrooms and 1 B. O. Q. Building.

The system is of aerial construction, pole line type, and serves the buildings with steam at nominally 50 p.s.i. pressure. The returning condensate line discharges into a vented receiver in the boiler plant and is therefore under only the static head pressure plus such additional pressure as is caused by line friction.

There follows in tabular form a compilation of figures showing the estimated pressure drop to each of the buildings served, the total head against which the return traps must operate and an estimate of the line losses throughout the system. The line losses are again resolved into a cash figure to show the importance of maintaining the lines in a state of perfect repair.

STEAM PRESSURE DROP STUDY

Run From	To	Load Lbs per Hour	Length	Size	Final Pressure Initial	Resultant
CHP	Branch	4595	257	4	55	52.68
Branch	WR 238	2300	81	3	52.7	51.84
WR 238	WR 239	1150	197	3	51.8	51.31
Branch	Mess Hall	2295	228	3	52.7	50.35
CHP	B. O. Q.	1422	354	2½	125	122.7

CONDENSATE RETURN FRICTION LOSS STUDY

Run From	To	Amount of Condensate Lbs. per hr.	GPM	Length	Size	Static	Total Head in Feet
CHP	Branch	4595	9.2	257	2½	0.8	1.16
Branch	WR 238	2300	4.6	81	2½	8.8	9.22
WR 238	WR 239	1150	2.3	197	2½	9.3	9.79
Branch	Mess Hall	2295	4.6	228	2½	14.8	15.32
CHP	B.O.Q.	1422	2.8	354	2½	23.25	23.39

STEAM DISTRIBUTION LOSSES

Run of Pipe Includes:

257 Lineal Feet - 4"
506 " " - 3"
354 Lineal Feet - 2½"

Losses:

2.57 x 11.2 = 28.78
5.06 x 9.2 = 46.55
3.54 x 10.6 = 37.52
112.85 Lbs. per Hour

112.85 x 24 = 2812.16 Lbs per Day

2812.16 x 365 = 1026438.4 Lbs. per Year

1026.44 x $.35 = $359.25

G-2.07. Montford Point Camp No. 3. The distribution system serving Montford Point Camp No. 3 is a new system serving 24 Washrooms, 2 Mess Halls, 1 Administration Building, 1 Infirmary, 1 Theater and Post Exchange, 1 Brig, 1 Hostess House, 1 Personnel Classification Building, 4 Schools, 1 Decontamination Building and 1 Swimming Pool.

The system is of aerial construction, pole line type, and serves the buildings with steam at nominally 125 p.s.i. The returning condensate line discharges into a vented receiver and is therefore under only the static head pressure plus such additional pressure as is caused by line friction.

There follows in tabular form, a compilation of figures showing the estimated pressure drop to each of the buildings served, the total head against which the return traps and pumps must operate and an estimate of the line losses throughout the system. The line losses are again resolved into a cash figure to show the importance of maintaining the lines in a state of perfect repair.

In reviewing the Steam Pressure Drop Study, it will be noted that a diversity or load factor has been used. This was done as in Regimental Area No. 5 due to the location of and the character of the load in the Swimming Pool. We wish here to state that without the Swimming Pool the lowest estimated pressure in the Montford Point Camp No. 3 Area is estimated to be 93 p.s.i.

Under this program a tie line has been installed to connect the Montford Point #1 camp to the Montford Point No. 3 distribution system. It is likely with normal present load conditions that the Montford Point No. 1 boiler plant can be closed down and held as a standby unit.

STEAM PRESSURE DROP STUDY

Run From	To	Load Lbs. per Hour	Diversity Load 62%	Length	Size	Final Pressure Initial	Resultant
CHP	Branch	37731	23400	120	6	125	123.4
Branch	WR 613	35431	21980	243	6	123.4	120.6
613	612	34281	21250	143	6	120.6	119.0
612	606	33131	20520	139	6	119.0	117.5
606	601	31981	19820	169	6	117.5	115.8
601	Mess Hall	30831	19100	138	6	115.8	114.5
Mess Hall	419	26251	16280	407	6	114.5	111.7
419	415	25101	15560	162	6	111.7	110.7
415	414	23951	14850	133	5	110.7	108.6
414	408	22801	14120	138	5	108.6	106.6
408	402	21651	13420	165	5	106.6	104.4
402	401	20501	12700	122	5	104.4	102.9
401	Brig	19351	11990	518	5	102.9	97.2
Brig	Branch	18080	11210	454	5	97.2	92.7
Branch	Theater	16488	10220	137	4	92.7	88.5
Theater	Branch	14168	8780	694	4	88.5	72.9
Branch	Branch-MP 1	10318	6400	557	4	72.9	65.1
Branch	Mess Hall 1	10153	6300	117	4	65.1	63.4
Mess Hall	Inf. 1	6823	4240	285	3	63.4	54.7
Inf.	Boiler Plant	6474	4020	190	3	54.7	48.9
Boiler Plant	Swim. Pool	4970	3080	614	4	48.9	46.1

Run From	To	Load Lbs. per hour	Diversity Load-62%	Length	Size	Final Pressure Initial	Final Pressure Resultant
Branch	Inf. MP 3	3850	2385	106	4	72.9	72.6
Inf.	School	1402	869	449	4	72.6	72.5
School	School	1127	698	92	4	72.5	72.48
School	School	852	528	97	4	72.48	72.47
School	School	550	341	104	4	72.47	72.46
School	School	275	171	90	4	72.46	72.45
Branch	Hostess H.	2592	1607	199	2½	92.7	90.5
Hostess House	Adm.	397	246	340	2½	90.5	90.4
Branch	Mess Hall	4580	2840	159	3	114.5	113.1
Branch	WR 619	2300	1425	47	2½	123.4	123.1
619	620	1150	713	119	2½	123.1	122.9
CHP	WR 502	11767	10950	310	5	125	122.6
502	Branch	16517	10250	72	5	122.6	122.1
Branch	Mess Hall	10767	6680	629	4	122.1	115.8
Mess Hall	WR 319	6187	3840	134	4	115.8	115.3
319	315	5037	3120	165	4	115.3	114.9
315	314	4887	3030	136	3	114.9	113.6
314	308	3737	2318	138	3	113.6	112.8
308	302	2587	1608	161	3	112.8	112.3
302	301	1437	890	126	3	112.3	112.2
301	Decontam.	287	178	125	3	112.2	112.19
Branch	Mess Hall	4580	2840	162	3	115.8	114.4
Branch	WR 501	5750	3565	23	3	122.1	121.8
501	506	4600	2850	175	3	121.8	120.4
506	512	3450	2139	133	2½	120.4	118.3
512	513	2300	1425	163	2½	118.3	117.2
513	520	1150	714	179	2½	117.2	116.9

CONDENSATE RETURN FRICTION LOSS STUDY

Run From	To	Amount of Condensate Lbs. per Hr.	GPM	Length	Size	Static	Total Head in Feet
CHP	Branch	23400	46.8	120	4	0.37	0.74
Branch	WR 613	21980	43.9	243	4	18.35	19.38
613	612	21250	42.6	143	4	18.35	19.74
612	606	20520	41.1	139	4	17.85	19.57
606	601	19820	39.8	169	4	17.85	19.94
601	Mess Hall	19100	38.2	138	4	2.74	5.12
Mess Hall	419	16280	32.6	407	3	17.85	23.19
419	415	15560	31.1	162	3	17.35	23.63

Run From	To	Amount of Condensate Lbs. per Hr.	GPM	Length	Size	Static	Total Head in Feet
415	414	14850	29.7	133	3	17.85	24.84
414	408	14120	28.2	138	3	17.85	25.50
408	402	13420	26.4	165	3	17.85	26.21
402	401	12700	25.4	122	3	17.85	26.67
401	Brig	11990	24.0	518	3	17.35	28.04
Brig	Branch	11210	22.4	454	3	9.08	21.22
Branch	Theatre	10220	20.4	137	2½	28.27	41.34
Theatre	Branch	8780	17.5	694	2½	8.76	25.37
Branch	Branch MF 1	6400	12.8	557	2½	8.77	26.95
Branch	Mess Hall M.F. #1	6300	12.6	117	2½	29.55	48.05
Mess Hall	Inf. MF 1	4240	8.5	285	2½	27.95	46.85
Inf.	Boiler Plt. M.F. #1	4020	8.0	190	2½	7.49	26.62
Boiler Plant	Swim. Pool	3080	6.2	614	2½	33.60	53.28
Branch	Inf. MF 3	2385	4.8	106	2½	34.05	40.73
Inf.	School	869	1.7	449	2½	19.35	36.27
School	School	698	1.4	92	2½	19.35	36.19
School	School	528	1.1	97	2½	19.35	36.21
School	School	341	0.7	104	2½	18.85	35.72
School	School	171	0.3	90	2½	18.35	35.23
Branch	Hostess H.	1607	3.2	199	2½	21.85	34.09
Hostess House	Adm.	246	0.5	340	2½	21.85	34.12
Branch	Mess Hall	2840	5.7	159	2½	22.35	24.87
Branch	WR 619	1425	2.8	47	2½	20.85	21.24
619	620	713	1.4	119	2½	20.85	21.26
CHP	WR 502	10950	21.9	310	3	16.85	17.78
502	Branch	10250	20.6	72	3	4.39	5.51
Branch	Mess Hall	6680	13.4	629	2½	6.29	9.36
Mess Hall	WR 319	3840	7.7	134	2½	17.85	21.07
319	315	3120	6.2	165	2½	17.35	20.73
315	314	3030	6.1	136	2½	16.85	20.35
314	308	2318	4.6	138	2½	16.35	19.95
308	302	1608	3.2	161	2½	17.35	21.03
302	301	890	1.8	126	2½	17.85	21.57
301	Decontam.	178	0.4	125	2½	17.35	21.08
Branch	Mess Hall	2840	5.7	162	2½	22.35	25.58
Branch	WR 501	3565	7.1	23	2½	17.35	18.50
501	506	2850	5.7	175	2½	18.35	19.66
506	512	2139	4.3	133	2½	19.35	20.74
512	513	1425	2.8	163	2½	19.35	20.81
513	520	714	1.4	179	2½	18.35	19.85

STEAM DISTRIBUTION LOSSES

Run of Pipe Includes:

1,521 Lineal Feet	- 6"	1,915 Lineal Feet	- 3"
1,912 " "	- 5"	1,535 " "	- 2½"
3,985 " "	- 4"		

Losses:

15.21 x 20 = 304.20
19.12 x 17.7 = 338.46
39.85 x 15 = 597.75
19.15 x 12.4 = 237.46
15.35 x 10.6 = 162.71
1640.58 Lbs. per Hour

1640.58 x 24 = 49373.92 Lbs. per Day

49373.92 x 365 = 18,021,480.8 Lbs. per Year

18,021.48 x $.35 = $6,307.52

G-2.08. Rifle Range Colored Camp. The distribution system serving the Rifle Range Colored Camp is a new system serving 6 Washrooms and 1 Mess Hall.

The system is of aerial construction, pole line type, and serves the buildings with steam at nominally 50 p.s.i. The returning condensate lines discharge into a vented receiver and is therefore under only the static head plus such additional pressure as is caused by line friction.

There follows in tabular form a compilation of figures showing the estimated pressure drop to each of the buildings served, the total head against which the return traps must operate and an estimate of the line losses throughout the system. The line losses are resolved into a cash figure to show the importance of maintaining the lines in a state of perfect repair.

STEAM PRESSURE DROP STUDY

Run From	To	Load Lbs. per Hour	Length	Size	Final Pressure Initial	Resultant
CHF	WR-RR-213	3450	303	4	55.0	53.48
RR-213	RR-212	2300	120	3	53.5	52.25
RR-212	RR-211	1150	139	3	52.3	51.88
CHF	Branch	6478	192	5	55.0	54.0
Branch	WR-RR-215	3450	110	5	54.0	53.83
RR 215	RR 216	2300	120	3	53.8	52.61
RR 216	RR 217	1150	139	3	52.6	52.22
Branch	Mess Hall	3028	157	4	54.0	53.39

CONDENSATE RETURN FRICTION LOSS STUDY

Run From	To	Amount of Condensate Lbs. per Hr.	GPM	Length	Size	Static	Total Head in Feet
CHP	WR-RR-213	3450	6.9	303	2½	5.0	5.31
RR 213	RR 212	2300	4.6	120	2½	5.0	5.39
RR 212	RR 211	1150	2.3	139	2½	5.5	5.94
CHP	Branch	6478	16.2	192	2½	0.19	1.04
Branch	WR-RR-215	3450	6.9	110	2½	8.00	8.96
RR-215	RR 216	2300	4.6	120	2½	8.00	9.04
RR 216	RR 217	1150	2.3	139	2½	9.00	10.09
Branch	Mess Hall	3028	6.0	157	2½	12.00	12.86

STEAM DISTRIBUTION LOSSES

Run of Pipe Includes:

302 Lineal Feet - 5" 518 Lineal Feet - 3"
460 " " - 4"

Losses:

3.02 x 13.0 = 39.26
4.60 x 11.2 = 51.52
5.18 x 9.2 = 47.66
138.44 Lbs. per Hour

138.44 x 24 = 3322.56 Lbs. per Day

3322.56 x 365 = 1212734.4 Lbs. per Year

1212.73 x $.35 = $423.46

G-2.09. Signal School Facilities. The distribution system serving the Signal School Facilities is a new system serving 3 Barracks and 1 Mess Hall.

The system is of aerial construction suspended from piles, and serves the buildings with steam at nominally 100 p.s.i. The returning condensate line discharges into a vented receiver and is therefore only under the static head pressure plus such additional pressure as is caused by line friction.

There follows in tabular form a compilation of figures showing the estimated pressure drop to each of the buildings served, the total head against which the return traps must operate and an estimate of the line losses throughout the system. The line losses are resolved into a cash figure to show the importance of maintaining the lines in a state of perfect repair.

STEAM PRESSURE DROP STUDY

Run From	To	Load Lbs. Per Hour	Length	Size	Final Pressure Initial	Resultant
CHP	Branch	8235	103	4	100	98.1
Branch	Branch A	2745	305	3	98.1	95.3
Branch A	BA 102	2745	120	3	95.3	94.1
Branch	Branch B	5490	220	3	98.1	90.2
Branch B	Branch C	2745	295	3	90.2	87.3
Branch B	BA 104	2745	87	3	90.2	89.3
Branch C	BA 105	2745	65	3	87.3	86.6
CHP	Mess Hall	3028	105	3	100	98.9

CONDENSATE RETURN FRICTION LOSS STUDY

Run From	To	Amount of Condensate Lbs. per Hr.	GPM	Length	Size	Static	Total Head in Feet
CHP	Branch	8235	16.5	103	2½	13.33	13.80
Branch	Branch A	2745	5.5	315	2½	15.6	16.32
Branch A	BA 102	2745	5.5	120	2½	18.0	18.82
Branch	Branch B	5490	11.0	220	2½	13.9	14.86
Branch B	Branch C	2745	5.5	295	2½	14.6	15.80
Branch B	BA 104	2745	5.5	87	2½	17.6	18.63
Branch C	BA 105	2745	5.5	65	2½	17.1	18.35
CHP	Mess Hall	3028	6.06	105	2½	15.6	15.69

STEAM DISTRIBUTION LOSSES

Run of Pipe Includes:

103 Lineal Feet - 4" 1,207 Lineal Feet - 3"

Losses:

1.03 x 14 = 14.42
12.07 x 11.6 = 140.01
154.43 Lbs. per Hour

154.43 x 24 = 3706.32 Lbs. per Day

3706.32 x 365 = 1352806.8 Lbs. per Year

135.28 x $.35 = $47.35

G-3. Propane Gas System.

G-3.01. General. Under the program covered by this volume of the report, eleven propane gas installations were installed. Some of these were of the type covered by Section G-3 of Volume I; that is, they were served by Flasks, or by underground mains connected to the central propane gas plant. Other of the new installations are served by large underground or above ground storage tanks.

To all of these systems the general statements in Volume I as to the properties of the gas, its pressure reduction before use, etc., apply.

The greatest basic difference in the new system lies in the fact that the storage tanks installed under this program are filled by tank truck which in turn is charged at the central gas storage plant.

A tabular summary follows which shows in detail the buildings equipped with gas, their location, the use to which the gas is put and the provision made to supply the gas.

Building	Location	Use	Supplied By
Infirmary	M. C. W. R.	Dental Chair & Laboratory	2 - Flasks
Mess Hall	Labor Battalion	Cooking	1,000 Gal. underground tank
Grade & High School	Paradise Point	Laboratory	2 - Flasks
Mess Hall	M. P. Camp No. 2A	Cooking	2 - 200 Gal. underground tanks
B. O. Q.	M. P. Camp No. 2A	Cooking	200 Gal. underground tank
2-Mess Halls	M. P. Camp No. 3	Cooking	Each - 1,000 Gal. underground tank
Hostess House	Montford P. Camp #3	Cooking	2 - Flasks
Infirmary	M. P. Camp No. 3	Dental Chair & Laboratory	2 - Flasks
Mess Hall	Rifle Range Colored Camp	Cooking	500 Gal. Underground Tank.
Mess Hall	Signal School Facilities	Cooking	500 Gal. Above ground Tank.

G-4. Gasoline and Oil Storage & Distribution.

G-4.01. Storage: Additional construction necessitated the installation of the following storage facilities for # 3 fuel oil, for use with galley equipment.

Montford Point # 2 Mess Hall, 1-1000 gallon tank
Montford Point # 2 Demonstration Bldg., 1-560 gal tank
Individual space heaters using # 3 fuel oil were installed in thirty school buildings throughout the base and in two sewage treatment plants at Montfort Point # 3 and the Rifle Range.

G-4.02. Distribution. Due to the excessive demand of gasoline at the pumps in front of the Post and Division garages and at the request of the Marine Corps, a 3 " pipe line was installed from the tank farm to the garages with 2 meter and deaeration pits. The gasoline is pumped from storage by existing 100 g.p.m. pumps through meters located in pits where it is manifolded to any one of the eight 1000 gallon tanks in front of the garages.

G-5. Regrigeration.

G-5.01 General. The selection of regrigeration equipment covered in this section includes installations not covered in volumes I and II of the completion report.

G-5.02 Loads. Refrigeration loads were calculated in accordance with Section G-5.02 of Volume #I.

G-5.03. Unit Coolers. Fan type unit coolers only were used in these installations.

Defrosting Equipment.

(a) water type defrosting was installed in each unit in each low temperature (32°F and lower temperatures) room.

(b) Each defrosting hook-up was provided with two valves, one located on the water supply, and the other permitting, when open, water from the supply to pass directly to the sewer, by passing the unit. The by-pass valve permits all water from a leak in the supply or from the unit and pipes located in the regrigerated room to drain to the sewer.

(c) The by-pass valve must be open at all times except when the defrosting process is in operation. Failure to observe this instruction will result in frozen defrosting lines.

G-5.04 Compressors.

(a) Three self contained compressors were provided for each installation except the mess hall in Montford Point Camp Number 2 (P-501-4-2), and the Grade and High School Building (P-1500).

(b) The installation in the enlisted men's mess hall in Montford Point Camp #2 is a duplicate of the installation in the officer's mess in Tent Camp #2 and the enlisted men's mess hall in Montford Point #1 except that due to scarecity, and water cooled condensers were substituted for the evaporative type condenser specified for those installations.

(c) Three compressors, one a complete stand by unit, each a complete unit, and each equal to at least one-half the total calculated load were provided for each installation. Compressors were of the self contained type complete with the compressor, motor, and combined condensor and liquid receiver mounted on the same base plate. Lines, with proper valves for isolating any machine from the others were provided for equalizing the suction, liquid, hot gas, oil level and crank case pressures.

(d) The standby compressor should have the disconnect switch open and all valves closed.

(e) Instructions should be issued to stewards and other mess-hall personnell to call the camp refrigeration mantainance department for any refrigeration service except defrosting. Under no circumstance should an unauthorized person cut in a standby compressor.

G-5.05. Condensers. Condensers in these installations except on Project P-501-4-2 are of the shell and tube a shell and coil type. Condensers were selected to use not more than 3 gallons of water per minute per ton of refrigeration produced.

G-5.06. Service. The service instructions in G-5.08, Vol. I, shall apply.

G-5.07. Water Cooling. Two indentical water coolers are installed in the Grade and High School and located in opposite ends of the building, Coolers are of the remote type, using water cooled condensors located in gear rooms, with chillers located in attic above the drinking fountains.

Each installation has a storage capacity of 11.6 gallons and a recovery capacity of 11.3 gallons per hour from 85 to 45°F. No standby equipment was specified for these installations.

G-5.08. Summary of Installations.

Location	Installations.	Spec. No.	No. Comp. Installed.	Type of Condenser.	Tonnage Installed.
Montford P. Mess Hall	1	153	2	Evap. Cond. Shell & Coil	2.47
Montford P. 2A Mess Hall & P.X.	1	1024	3	"	1.72
Montford P. 2A B.O.Q.	1	1024	3	"	1.72
Montford P. #3 Mess Hall	2	1024	3	"	3.33
Womans Reserve Mess Hall	1	1024	3	"	3.33
Womans Reserve B.O.Q.	2	1024	3	"	2.03
Labor Bn. Indus. Mess H.	1	1024	3	"	3.33
Colored Camp Rifle Range	1	1024	3	"	2.5
Sig. School Facilities	1	1024		"	3.33
Grade H.S. (water cooling only)	2	1024	1	"	0.61

G-6. Air Conditioning.

No Air-conditioning installations were made during the period covered by this volume of the report.

A report of all the airconditioning installed will be found in section G-6 of volume # I.

G-7. Ventilation.

G-7.01. General. This section covers the mechanical ventilation of the several buildings designed and ventilated since volumes # I and II were published.

Basic computations, design standards and formula closely follow recommendations and data of the most recent edition of the "Guide" as published by the American Society of Heating and Ventilating Engineers. Air quantities were selected for removal of heat and odors with the idea of providing healthful and comfortable conditions for occupants.

Ventilation was provided for 45 buildings with facilities to handle 814,700 cubic feet of air per minute, of which amount 51,600 C.F.M. was tempered, and 763.100 was exhausted. Tempered air was either 100% outside air or a mixture of inside and outside air, proportionate to the temperature, and was admitted to the building through tempering coils. Excess air was exhausted, or was permitted to diffuse through corridors or building openings.

6. The lumber kiln. In lieu of the convertional for commonly used in installations of this type, unit heaters were used for introducing the heated air into the processing chambers.

G-7.02. Ventilation by Projects.

The following table lists the several buildings provided with ventilation, type of system and air quantities.

Location & Type	No. Bldgs. Erected	Type of System	C. F. M. Ea. Bldg.	Total Air C. F. M.
Barracks - M.C.W.R. Area	8	Exhaust	8260	66,080
Mess Hall - M.C.W.R. Area	1	"	38000	38,000
Infirmary - M.C.W.R. Area	1	"	43800	43,800
B.O.Q. - M.C.W.R. Area	2	"	17420	34,840
Service Club M.C.W.R. Area	1	"	12200	12,200
Office Bldg. Inds. Area	1	Exhaust	49500	49,500
Cafeteria Inds. Area	1	"	15000	15,000
H. Type Brks. Inds. Area	4	"	2600	10,400
Mess Hall Inds. Area	1	"	38000	38,000
Lumber drying Kiln Inds. Area	1	Tempered	17100	17,100
Grade & High School	1	Exhaust	38800	38,800
Uniform Shop-Post Troop Area	1	Exhaust	500	500
Photographic Facilities	1	Exhaust	5000	5,000
Mess Hall Dog Training Facilities	1	Gravity	1500	1,500
H. Type Brks.-Signal School Facilities	3	Exhaust	7800	23,400
Mess Hall Signal School Facilities	1	Exhaust	24500	24,500
Swimming Pools D.T.A.	2	Exhaust	45370	90,740
Red Cross Bldg. D.T.A.	1	Exhaust	4680	4,680
Brks. Montford Pt. 2A	1	Exhaust	18000	18,000
B.O.Q. Montford Pt. 2A	1	Exhaust	9130	9,130
Demonstration Bldg. M. P. #2	1	Exhaust	8000	8,000
Mess Hall M. P. # 2	1	Exhaust	24500	24,500
Mess Hall M. P. 3-	2	Exhaust	38000	76,000
Infirmary M. P. #3	1	(Tempered	900	
		(Exhaust	67100	68,000
Theater P.X. Barber Shop M.P. #3	1	(Tempered	33600	
		(Exhaust	49000	82,600
Brig. M.P. #3	1	Exhaust	1030	1,030
Hostess House M.P. #3	1	Exhaust	8000	8,000
Swimming Pools M. P. #3	1	Exhaust	45400	45,400
Mess Hall Colored Troops	1	Exhaust	24500	24,500
		Total		814,700

G-8 Equipment.

G-8.01- General. Most of the collateral equipment installed under the program covered by this volume of the report was furnished directly by either the Navy Department or by the Marine Corps. Some few notable exceptions wherein we specified the equipment are hereinafter listed. We are also listing the basis of design and some of design data.

G-8.02 Messhalls. Eight in number; project numbers- 1200-4; 1308-2; 1900-4; 501-4-2; 1100-4; 1101-4; and 2302-4. In these buildings we covered by specification the cafeteria counters, and thescullery tables. The basic requirement were set forth by the Marine Corps.

G-8.03. Infirmaries. Two in number; project numbers 1200-6 and 1101-6. In these buildings we covered by specification the sterilizers and fixed hospital equipment such as Leg Baths, Arm Baths, Prophylactic urinals, Water Sterilizers, Stills etc. The requirements of the building were given us by representatives of the Navy MedicalCorps who also assisted in the selection of specific items.

G-8.04. Service Club & Post Exchange. One in number; project number 1200-7. In this building we covered by specification the beauty-shop and fountain equipment. The requirements were set forth by the Marine Corps.

G-8.05. Bachelor Officers Quarters. Three in number; project numbers 1200-9 and 1100-9. In these buildings we covered by specification the scullery tables. Requirements were set forth by the Marine Corps.

G-8.06. Dry Kiln. One in number; project number 1301. In this building we covered by specification the entire equipment including the automatic control devices. The process requirements of the building together with the availability of materials governed our selection of equipment.

G-8.07. Theater, Post Exchange and Barber Shop. One in number; project number 1101-8. In this building we covered by specification the barber-shop and fountain equipment. The requirements of the building were set forth by the Marine Corps.

G-8.08. Hostess House. One in number; project number 1101-19. In this building we covered by specification the scullery tables. The layout was furnished by the Marine Corps.

CHAPTER H - PART II

ELECTRICAL DEPARTMENT

H-1. Introduction.

H-1.01. It is the intent of this supplementary report to cover in general, with essential details where necessary, the changes, alterations and additions made prior to October 1, 1942 to the existing electrical installations, together with those made after that date. It covers outside distribution and interior wiring for lighting, power, and other electrical systems throughout the different areas including recommendations for future improvements when materials are available.

H-2. Power Source.

H-2.01. The interconnection with the local power companies, consisting of a 5,000 KW sub-station located near Jacksonville and a 33,000 volt overhead transmission line, was replaced by a 110,000 volt transmission line connected ahead of the Jacksonbille sub-station and directly to their Abbottsville - La Grange line.

H-2.02. The 33,000 volt interconnecting line with the steam plant at Cherry Point was replaced by a 110,000 volt transmission line.

H-2.03. The 5,000 K.V.A. 33,000/ 7,200/ 12,470 volt transformer bank at the Diesel Plant located on the Marine Barracks property was replaced by a 7,500 K.V.A. 110,000 /7,200 /12,470 volt transformer bank. This bank is fed from a bus supplied by feeders from the Tidewater Power Company and Cherry Point steam plant, respectively, each controlled by an oil circuit breaker.

H-2.04. The Diesel Plant was enlarged and an additional 2,500 KW, 2,400 volt unit installed. This unit was connected to the 12.5 KV bars on the switchboard through a 3,000 K.V.A. step up transformer bank. The two existing 1,300 KW, 6,600 volt units were connected to the 12.5 KV bus through the existing step up transformers.

H-2.05. The 250,000 C M cables from the switchboard to both stations Nos. 1 and 6, comprising the ends of Loop No. 1, were replaced with 500,000 C M cables.

H-3 Marine Barracks Main Supply Feeders.

H-3.01. At the time the original report was made the connected load on Loop No. 1 was approximately 17,500 KW including a load of 1,350 KW on Loop No. 2. By reason of the fact that the disconnecting switch at Dixon, which completes Loop No. 2 by connection with R. E. A. lines, was locked out for emergency use only; Loop No. 2 is operating as a radial line from Loop

No. 1 with a connection at Station No. 2. The main load of 16,150 KW was connected through radial feeders from Loop No. 1 at the various stations.

H-3.02. By March 1, 1942 the connected load on Loop No. 1 had been increased to 18,395 KW with additional loads contemplated to serve the Women Marine Area, Grade and High School and Montford Point.

H-3.03. At the end of June 1942 with the addition of a Labor Battalion at the Industrial Area, the total future connected load on Loop No. 1 was estimated at 22,000 KW.

H-3.04. Underbuilt lines consisting of 3 #4 B & S gauge wires had been installed part way along the loop feeder from and between Stations 1 and 2 to supply the loads adjacent to these stations. These portions of the underbuilt lines were replaced with #0 B & S gauge wire and the gap between the ends of these runs was completed, making it continuous between Stations 1 and 2. This line was disconnected at Station No. 2, the Grade and High School, the Industrial Area and the Parachute Training Area were connected to it and controlled from a breaker at Station No. 1 ahead of the loop feeder breaker. The short runs of cable from both Stations No. 1 and 6 to the plant switchboard were replaced with 500 MCM cable.

H-3.05. These changes materially reduced the line loss and improved the regulation on Loop No. 1 and also provided an individual breaker on Station No. 2 to control Loop No. 2.

H-3.06. As additional loads were contemplated along Loop No. 2, mainly at Onslow Beach bringing the connected load on this line up to approximately 2,000 KW, a 156 KVA voltage regulator with 10% "buck" or "boost" was installed in this feeder at the point where it leaves the Industrial Area. This compensated for the voltage drop along this feeder and eliminated, up to 10% above or below normal, the voltage fluctuations due to variations of loads on both loop feeders.

The same type of construction as the original installation was used.

H-4. Distribution Systems.

H-4.01. Onslow Beach. The distribution system for this area is by means of an overhead line connected to Loop No. 2 through open type fuse cutouts serving a 450 KW substation, at which point the voltage was reduced to 2,400 volts in order to meet local conditions of atmospheric moisture, salt spray from the ocean and also because of the submerged cable crossing the Inland Waterway. After crossing the waterway the line runs overhead to serve the activities on the Beach. Construction details including insulators, spacing, etc. are for 12,470 volts, using flat construction in lieu of triangular construction with pole toppins. This type of construction reduces the possibility of a flash over the insulators and electrical stress on the submarine cable.

H-4.02. The submarine cable crossing the Inland Waterway was specified

to be of the non-metallic sheathed type, rated for 5,000 volts, and protected against mechanical injury by spirally wound round steel wire overall. Due to the critical material involved and the time required to deliver this short piece of cable, a stock piece of 3 conductor paper shielded lead, 15,000 volt cable was installed. Lightening arresters were installed at both ends of the cable which terminate in pot heads for connections to the overhead lines. Hurst Beach and the existing buildings on Onslow Beach, which are now fed from R. E. A. lines, will be connected to the new system in the future.

H-5 Street Lighting Systems.

H-5.01. The street lighting system along Holcomb Boulevard, consisting of concrete standards with luminaries, was extended along the Boulevard and then along Lucy Brewer Road of the Women Marine Area.

H-5.02. Where extensions were made in other areas the same type of fixtures used at present were installed. These consisted of pole mounted brackets with globe and reflector or radial wave reflectors as the case might be.

The new street lighting units were all connected to the existing street lighting circuits.

H-6. General Notes on Interior Design.

H-6.01. Due to the continued shortage of steel conduit, the interior wiring of buildings, constructed of wood and those with wood joists, was installed with non-metallic sheather cable similar to "Romex" secured to the building structure with straps or clips.

H-6.02. Where exposed on the side walls, such as drops to switches and receptacles, the cable is protected by short pieces of conduit extending from the box containing the device to the ceiling or floor line.

H-6.03. Where the wiring in concealed in concrete buildings, concrete floors and masonry walls, it was installed in rigid steel conduit or electric metallic tubing.

The same general design as to illumination, wattage per circuit, etc. as outlined in the original report was followed.

H-7. Electrical Features of Buildings.

Bus Terminal located at "F" Street near the Main Service Road is fed from the overhead distribution lines through pole mounted transformers and thence by underground secondary cables down the pole and into the building. The Terminal is equipped with a complete announcing system consisting of a microphone, amplifier, two speaker units in the waiting room and two on the platform.

H-8. Swimming Pools.

H-8.01. There are four pools; three covered units located one each in Regimental Areas 2 and 5 and one unit at Montford Point primarily for training purposes and one open unit located in the B. O. Q. Area.

H-8.02. In the covered pools the lighting is by means of Dome Type RLM reflectors with swivel type hangers for vertical hanging from the arched roof. The outlets were placed at the beam intersections and provide an intensity of approximately five-foot candles on the water. These outlets are 500 watt size and are wired two to a circuit. Lighting over the mezzanine floor is by the same type of units of 200 watt size. The units under the concrete diving platform are recessed type of 200 watts each.

H-8.03. All the lighting over the pool proper, the interior and exterior exit lights, unit heaters in the main ceiling and the ventilating units of the large area is controlled direct from a circuit breaker type flush panel in the office.

H-8.04. The lighting in the locker rooms and machine room is basement is controlled by local switches all fed from a switch and fuse type panel located in the machine room in the basement.

H-8.05. Power for the pumps and machinery is direct from the service entrance assembly.

H-8.06. Current is supplied to the building in Area No. 5, Area No. 2, and Montford Point by means of an underground cable from pole mounted transformers in the overhead distribution system.

H-8.07. The open pool is lighted by means of "Play-Area" floodlights, 750 watts each for the main pool, 500 watts size for the wading pool and a 500 watt "Column-Lite" for the concrete walkway between. These are all controlled from a panel board located in the locker room which also controls the lighting in the locker and machinery rooms.

H-8.08. The pumps and machinery are controlled from safety switches located in the machinery room.

H-8.09. The panel and safety switches are all fed by a main from the secondary side of the transformers in the Bachelor Officers' Mess.

H-10. Grade and High School.

The Grade and High School located on Paradise Point Road has all the appointments and facilities (electrical) to provide for all grades from Kindergarten to High School. It includes school and classrooms, home economics, domestic science laboratory, manual training room and a large auditorium with stage.

H-10.01. The class rooms are lighted using recessed lighting units giving an intensity of approximately 12-foot candles on the desks. These are installed and controlled in two rows permitting the illumination to progress

toward the windows as the daylight recedes. Wall receptacles are installed in the rear of each class room for the use of small stereopticon or motion picture machines and on the front wall for the teachers' use.

H-10.02. The manual training room is lighted by means of ceiling dome type RLM reflectors giving an intensity of approximately 15-foot candles on the working plane of 30 inches above the floor. Power lines are run for the customary machine tools and electrical bench used in class rooms of this type.

H-10.03. In the Home Economics and Science laboratory class rooms, small fuse panels are installed in the closets with branch circuits supplying refrigerator, ironing boards, sewing machines, laboratory tables and ranges.

H-10.04. The auditorium is wired so it can be used for small theatrical presentations with footlights, one border light trough, two stage floor pockets and two rear wall stage pockets.

H-10.05. All stage wiring is controlled from a panel on the stage side of the proscenium wall. The "house lighting" is controlled from a panel in the auditorium located adjacent to one of the doors leading to the corridor to provide handy control of the lighting in this room for assembly purposes without the stage. A remote control of the ceiling lighting from this panel is provided for on the stage at the side of the stage panel.

H-10.06. All corridor lighting is controlled direct from the respective corridor panels with the exception of the two short front - rear corridors which are controlled by lock type tumbler switches located at the front and rear door, each switch controlling every alternate light. The connecting corridor lighting is controlled alternately one half on each corridor panel.

H-10.07. Exit lights are placed over each door of the auditorium to the corridors and over each corridor door to the outside.

H-10.08. A complete system of program bells is installed, one in each class room, one in teachers study, one in each corridor and three yard gongs. These are operated by a master clock and program machine in the Principal's office and also by individual push buttons located adjacent to the master clock and program machine.

H-10.09. The program machine is provided with four separate programs and arranged by the use of clips so that the bells and gongs can be placed on any program and the program changed as desired. Push buttons provide for individual manual operation.

H-10.10. A fire alarm system of the open circuit, break glasstype is installed with stations at the exit doors and gongs in the corridors.

H-11 Labor Battalion Barracks.

H-11.01. The Labor Battalion Barracks building being a combination of

four standard barracks and two wash room buildings with the thought in mind that the plans would be considered as standard plans for use in other sections of the country with possibilities of changes due to different requirements, terrain and current characteristics, the interior wiring was designed on a unit system.

H-11.02. Each section of the barracks portion and each washroom section was wired as a unit to permit the elimination of any one section with a minimum of changes required to the drawings. Provisions were shown on the plans for alternate service entrances at either end of the building and a schedule on the drawings show the number and size of conductors together with the number of poles and size of the main switch for the six most common current characteristics.

H-11.03. Lighting panels were placed in each end of the building using "Romex" or similar non-metallic sheather cables for branch circuits. The main feeders were installed in conduit.

H-12. Lighter-than-air Building.

Complete plans have been prepared for this project but its construction has been deferred. This building is located at the Airport and is supplied from the three phase wires of the 4,160 volt, 3 phase, 4 wire bus in the Transformer building by means of a 5,000 volt, 3 wire underground cable and a subway type transformer located in a vault outside the Lighter-than-air Building.

H-12.01. The transformer is 15 KVA, 3 phase, 3 wire, 4,160 volt primary to 120/208 volt, 3 phase, 4 wire secondary. Primary connections to the incoming service cable are made in a splice box with lead covered cable and wiping sleeves at the box and transformer to permit the removal of the transformer without disturbing the primary cable.

H-12.02. The underground cable is of the non-metallic parkway type with shielding copper tape and rubber jacket. The shielding tape is grounded at each end of the cable run and expanded in the potheads forming stress cones, permitting continuous operation of the cable at full rated voltage without detrimental effects. This cable is connected to the bus in the Transformer building through single pole enclosed type primary cutouts.

H-12.03. The interior wiring in the building is with non-metallic sheathed cables secured to the building structure by means of straps or clips.

H-13. Montford Point Infirmary.

The Montford Point Infirmary at present consists of one administration wing, one ward wing and connecting corridor with the possible future addition of two ward wings with connecting corridors.

H-13.01. Service for this building and future additions is brought into a transformer house underground at 12,470 volts, 3 phase, 3 wire. An incoming service cubicle containing externally operated disconnects, oil

breaker and tripping transformers together with three 50 KVA, single phase, 12,470 volt primary to 120/208 volt secondary transformer are installed in this house. Three phase, four wire mains were extended underground from this transformer bank to the present building and sleeves set in the wall for extension to the future buildings.

H-13.02. With the exception of individual sterilizers, electric range and plate warmer in the diet kitchen the main load is lighting. Two branch lighting panels are installed in the administration wing and one in the ward wing.

H-13.03. Two complete nurses' call systems are installed, one for the large ward and connecting corridor and one for the isolation ward. These two systems are each complete in themselves, consisting of nurses' call annunciator at the respective nurses stations and calling buttons with pilot lamps at each bed. Quiet rooms and isolation wards are also equipped with calling stations and dome type corridor lamps over the doors to the rooms.

Operation of each system is by means of 24 volt A.C. current obtained through dry type transformers installed adjacent to the nurses station annunciator.

H-14. Women's P. X. and Service Club.

The Women's P. X. and Service Club in the Marine Corps Women's Res. Area contains a modern and completely equipped beauty parlor. Each booth and each chair has two types of convenience outlets in the wall, one type for the use of permanent wave machines and the other for the use of dryers.

Manicure tables are supplied from water proof receptacles in the floor under the tables.

H-14.01. An annunciator installed at the desk is operated from push buttons located in each booth at each chair and at each manicure table. This system is operated at low voltage through a small dry type transformer located adjacent to the annunciator.

H-15. Women's Infirmary.

The Women's Infirmary consists, at present, of two wings, one administration wing and one ward wing, with a connecting corridor with the possibility of one additional ward wing and connecting corridor in the future.

H-15.01. Service to this building is brought in underground from a pole mounted transformer bank, sized for the future load, at 120/208 volt, 3 phase, 4 wire. With the exception of individual sterilizers, range and plate warmer in the diet kitchen, the main load is lighting.

H-15.02. Two branch lighting panels are installed in the administration wing, and one in the ward wing.

A complete nurses call system is installed in the ward wing and the connecting corridor with nurses call annunciator at the nurses call station in the ward. This is operated from calling buttons with pilot lamps at each bed. Quiet rooms are also equipped with calling stations with the addition of dome type corridor lamps over the doors to the rooms.

H-15.-3. Operation of the system is by means of 24 volt AC current obtained through a dry type transformer installed adjacent to the nurses station annunciator.

H-16. Post Shop.

Two complete sawdust removal plants were installed in this building each operated by a 20 H.P. motor. The control wiring for these motors is installed and connected so that they will automatically start on the starting of any individual motor in the system and continue running as long as any machine in the system is operating irrespective of whether it was the machine that started the plant. To provide for cleaning purposes with all machines shut down, start and stop buttons were installed for manual operation.

H-16.01. This was accomplished with relays, one on each machine, energized from the load side of the motor switch or contactor closing the control of the contactor of the sawdust removal motor.

H-17. Maintenance Suggestions.

H H-17.01. No attempt has been made to recommend any particular procedure as to maintenance except to call attention to the Voltage Regulator and the insulators on Onslow Beach.

H-17.02. Voltage Regulator. The voltage regulator installed in Loop No. 2 at the point where it leaves the Industrial Area should be given periodical inspections at least once a year.

The motor brake should be inspected to make sure that the tapchanger is stopping on position. If the mechanism is drifting past position the brake springs should be tightened until the tap changer again stops on position.

There is no voltage across the reversing switch contacts or the preventive auto-transformer bus contacts so that these contacts will require no maintenance but the transfer switch contacts should be inspected at the time of periodical inspection and replaced should they show evidence of pitting or excessive arcing.

The manufacturer's instruction book should be carefully read before any changes in adjustments are made.

H-17.03. Overhead Distribution - Onslow Beach. The insulators on the overhead distribution along the Beach should be inspected at least twice a year and each insulator cleaned of all salt deposit by wiping clean with a

quick drying alcohol solution. All cracked, chipped or broken insulators should be replaced.

H-18. Restrictions of the use of critical materials narrowed the choice of lighting fixtures to a marked extent. When these materials are released for commercial use, it is advisable to make gradual replacing of lighting fixtures to those of more efficient type, especially to those using fluorescent lamps giving increased illumination with no increase in the wattage per outlet.

H-19. Pertinent Facts.

Power Service.

Plant 1 - 2700 KVA, 2400 volt, 3 phase, diesel electric unit, 2 - 1625 KVA, 6600 volt, 3 phase diesel electric units, 1 - 7500 KVA, 110/12.5 KV transformer bank, connected star-delta and fed from the 110 KV lines of the Tidewater Power Company and the 6000 KVA steam plant at Cherry Point.

Sub Stations	15
Overhead Distribution	100.7 Pole line miles
Underground Distribution	16.74 System miles
No. of Transformers	771
Total KVA	31,311
Number of Poles	5,702
Outside Wire	767.3 Miles
Inside Wire	1,654.2 Miles
Conduit	420.5 Miles
Lighting Outlets	112,625
Switch Outlets	29,321
Convenience Outlets	39,911
Street Lighting Outlets	449

Maximum Demand - 15 Min.

Hadnot Point -	August 1941	40 KW
	November 1943	5675 KW
Midway Park -	April 1942	144 KW
	November 1943	1368 KW

Energy

Hadnot Point -	August 1941	6,000 KWH
	November 1943	2,629,000 KWH
Midway Park	April 1942	50,400 KWH
	November 1943	320,400 KWH

H-20. Additional Buildings, Showing Connected Loads and Service Voltage.

H-20.01. Division Training Area.

NO. UNIT	TYPE OF BUILDING	INSTALLED LIGHTING IN WATTS	INSTALLED HEATING IN WATTS	INSTALLED POWER IN WATTS	TOTAL LOAD IN WATTS	SERVICE VOLTAGE
1	Gate House (Additions)	560	-	1,056	1,616	120/240 1Ø
1	Grade & High School Bldg.	85,060	40,480	25,267	150,807	120/208 3Ø
1	Sewage Pumping Station No. 13	1,840	-	6,870	8,710	120/208 3Ø
1	Parachute Building	1,040	-	-	1,040	120/208 3Ø
1	Parachute Training Bldg.	320	-	-	320	120/208 3Ø
1	Sewage Pumping Station No. 9	1,820	-	2,534	4,354	120/208 3Ø
1	Gas & Oil Storage Distribution	600	-	-	600	120/208 3Ø
1	Pump House Labor Camp in Ind. & Supply Area	380	-	-	380	120/208 3Ø
1	Post Exchange	8,410	-	-	8,410	120/240 1Ø
1	Administration	4,350	-	1,210	5,560	120/240 1Ø
1	Mess Hall	30,810	37,500	51,969	120,279	120/208 3Ø
4	"H" Type Barracks	60,720	-	15,852	76,572	120/208 3Ø
1	Storage Bldg. 1704	2,400	-	-	2,400	120/240 1Ø

NO. UNIT	TYPE OF BUILDING	INSTALLED LIGHTING IN WATTS	INSTALLED HEATING IN WATTS	INSTALLED POWER IN WATTS	TOTAL LOAD IN WATTS	SERVICE VOLTAGE
1	Storage Bldg. 1705	2,400	-	-	2,400	120/240 1Ø
1	Telephone Storage Bldg.	2,640	-	-	2,640	120/240 1Ø
1	Communications Bldg.	6,960	-	1,048	8,008	120/240 1Ø
1	Warehouse 1606	25,200	-	1,910	27,110	120/208 3Ø
1	Laundry Extension	2,380	-	-	2,380	120/240 1Ø
1	Storage Bldg. 1410	3,160	-	-	3,160	120/240 1Ø
1	Storage Bldg. 1409	2,820	-	14,511	17,331	120/208 3Ø
1	Lumber Kiln	2,520	-	8,440	10,960	120/208 3Ø
1	Warehouse 1108	36,780	-	1,910	38,690	120/208 3Ø
1	Office Building	31,840	19,000	18,385	69,225	120/208 3Ø
1	Mess (Cafeteria)	6,080	-	15,040	21,120	120/240 1Ø
1	Bakery	-	40,500	955	41,455	120/208 3Ø
1	Heating Plant at Parachute Training School	-	-	9,163	9,163	120/208 3Ø
1	Central Heating Plant	-	-	5,389	5,389	120/208 3Ø
1	Med. Warehouse	2,000	-	-	2,000	120/240 1Ø
4	Battalion Warehouse	8,000	-	-	8,000	120/240 1Ø

NO. UNIT	TYPE OF BUILDING	INSTALLED LIGHTING IN WATTS	INSTALLED HEATING IN WATTS	INSTALLED POWER IN WATTS	TOTAL LOAD IN WATTS	SERVICE VOLTAGE
1	Battalion Headquarters	13,165	-	4,491	17,656	120/208 3Ø
8	Barracks	433,040	-	46,984	480,024	120/208 3Ø
1	Mess Hall	30,810	37,500	51,969	120,278	120/208 3Ø
1	Service Club	43,254	-	8,333	51,587	120/208 3Ø
1	Infirmary	34,545	32,400	7,663	74,608	120/208 3Ø
2	B. O. Q.	69,090	13,500	55,396	137,986	120/208 3Ø
1	Uniform Shop	15,100	2,250	4,589	21,939	120/208 3Ø
1	Bus Terminal	7,530	-	1,627	9,157	120/208 3Ø
26	School	81,460	-	-	81,460	120/240 1Ø
1	By Pass Pumping Station	260	-	-	260	120/240 1Ø
1	Mark I Gunnery Trainer	11,323	-	20,365	31,688	120/208 3Ø
1	Fresh Water Supply System	-	-	47,734	47,734	208 3Ø
11	Barracks Alterations 1st Reg. Area	4,200	136,500	-	140,700	120,208 3Ø
6	Warehouse Alterations 1st Reg. Area	41,040	-	-	41,040	120/240 1Ø
1	Uniform Shop in Mess Hall 1st Reg. Area	2,475	-	-	2,475	120/208 3Ø

NO. UNIT	TYPE OF BUILDING	INSTALLED LIGHTING IN WATTS	INSTALLED HEATING IN WATTS	INSTALLED POWER IN WATTS	TOTAL LOAD IN WATTS	SERVICE VOLTAGE
1	Beauty Shop in Battalion Warehouse	9,950	-	-	9,950	120/208 3Ø
1	Alterations Shop in Battalion Warehouse	1,460	8,250	19,797	29,507	120/208 3Ø
1	Sewage Treatment Plant	-	9,000	-	9,000	120/208 3Ø
1	Tailor & Cobbler Shop	3,370	1,500	7,591	12,461	120/208 3Ø
12	Storehouse for PX Hostess House & Service Club	1,200	-	-	1,200	120/1Ø
2	Swimming Pool	46,980	-	124,912	171,892	120/208 3Ø
1	Red Cross	9,809	-	1,788	11,597	120/208 3Ø
	Total for Division Training Area				2,154,278	

H-20.02. Naval Hospital.

1	Storage Garage	1,680	-	-	1,680	120/208 3Ø
1	Central Heating Plant	460	-	19,547	20,007	120/208 3Ø
1	Corpsmen's Barracks	-	3,000	-	3,000	120/208 3Ø
1	B. O. Q.	100	-	1,260	1,360	120/208 3Ø

NO. UNIT	TYPE OF BUILDING	INSTALLED LIGHTING IN WATTS	INSTALLED HEATING IN WATTS	INSTALLED POWER IN WATTS	TOTAL LOAD IN WATTS	SERVICE VOLTAGE
1	Garage	-	-	735	735	120/208 3Ø
1	Gas Pump	-	-	1,056	1,056	208 3Ø
	Total for Naval Hospital				27,838	
H-20.03.	Officers' Quarters Area.					
1	Signal School	-	-	50,000	50,000	120/208 3Ø
1	Bachelor Officers' Mess	12,600	-	23,486	46,086	120/208 3Ø
3	Barracks	4,800	-	-	4,800	120/240 1Ø
1	Wash Room	2,380	-	594	2,974	120/240 1Ø
2	Finger Piers	1,000	-	-	1,000	120/240 1Ø
	Total for Officers' Quarters Area				104,860	
H-20.04.	Signal School Area.					
1	Mess Hall	22,030	48,000	39,803	109,833	120/208 3Ø
3	Barracks	45,540	-	11,883	57,429	120/208 3Ø
2	Schools	6,220	-	-	6,220	120/240 1Ø
1	Water Tank	1,620	1,000	-	2,620	120/240 1Ø
2	Wells	-	-	16,802	16,802	120/208 3Ø
1	Heating Plant	5,360	-	19,857	25,217	120/208 3Ø
	Total for Signal School Area				218,121	

H-20.05. Barrage Balloon Area.

No. UNIT	TYPE OF BUILDING	INSTALLED LIGHTING IN WATTS	INSTALLED HEATING IN WATTS	INSTALLED POWER IN WATTS	TOTAL LOAD IN WATTS	SERVICE VOLTAGE
1	P.X. Storehouse	100	-	-	100	120 1ø
1	Gas Generator Shed	11,040	-	-	11,040	120/240 1ø
1	Boiler House	-	-	2,291	2,291	120/208 3ø
1	Heating Plant	-	-	10,821	10,821	120/208 3ø
			Total for Barrage Balloon Area		24,252	

H-20.06. Amphibian Base.

1	Carpenter Shop	-	-	2,291	2,291	120/208 3ø

H-20.07. Rifle Range Area.

1	Mess Hall	22,030	48,000	39,803	109,833	120/240 1ø 240 3ø
6	Wash Rooms	14,280	-	3,654	17,844	120/240 1ø
16	Platoon Barracks	25,600	-	-	25,600	120/240 1ø
1	Heating Plant	1,160	-	4,583	5,743	120/208 3ø
1	Administration	3,770	-	-	3,770	120/240 1ø

NO. UNIT	TYPE OF BUILDING	INSTALLED LIGHTING IN WATTS	INSTALLED HEATING IN WATTS	INSTALLED POWER IN WATTS	TOTAL LOAD IN WATTS	SERVICE VOLTAGE
1	Post Exchange	3,250	-	10,000	13,250	120/240 1Ø
1	Warehouse	1,600	-	-	1,600	120/240 1Ø
1	Well	-	-	10,311	10,311	120/208 3Ø
1	Sewage Pumping Station #11	440	-	6,870	7,310	120/208 3Ø
	Street Lights	600	-	-	600	120 1Ø
4	Schools	12,440	-	-	12,440	120/240 1Ø
1	Heating Plant for White Troops	-	-	10,821	10,821	120/208 3Ø
1	P.X. Storehouse	100	-	-	100	120 1Ø
		Total for Rifle Range Area			219,222	

H-20.08. Dog Training Area.

1	Sewage Pumping Station No. 12	1,830	-	10,120	11,950	120/240 1Ø
1	Kennel	7,260	37,500	1,738	46,498	120/208 3Ø
1	Dispensary	3,560	19,800	1,738	25,098	120/208 3Ø
3	Mess Hall	13,050	-	-	13,050	120/240 1Ø
83	Buildings	128,300	-	-	128,300	120/240 1Ø

NO. UNIT	TYPE OF BUILDING	INSTALLED LIGHTING IN WATTS	INSTALLED HEATING IN WATTS	INSRALLED POWER IN WATTS	TOTAL LOAD IN WATTS	SERVICE VOLTAGE
2	Wells	-	-	9,661	9,661	120/208 3Ø
2	Mess Halls	-	-		6,400	
	Total for Dog Training Area				240,957	

H-20.09. Montford Point No. 1

	Obstruction lights for water tank	100	-	-	100	120 1Ø
1	Heating Plant	-	-	5,728	5,728	240 3Ø
1	P.X. Storehouse	100	-	-	100	120 1Ø
	Total for Montford Point No. 1				5,928	

H-20.10. Montford Point NO. 2.

1	Mess Hall	22,030	48,000	39,803	109,833	120/240 1Ø L. 240 3Ø P.
2	Gun Sheds	1,320	-	-	1,320	120/240 1Ø
2	Warehouses	4,040	-	-	4,040	120/240 1Ø
1	Administration	6,320	-	891	7,211	120/240 1Ø

NO. UNIT	TYPE OF BUILDING	INSTALLED LIGHTING IN WATTS	INSTALLED HEATING IN WATTS	INSTALLED POWER IN WATTS	TOTAL LOAD IN WATTS	SERVICE VOLTAGE
1	Central Heating Plant	1,480	-	4,582	6,062	120/208 3Ø
1	Demonstration	5,920	65,500	13,440	84,860	120/208 3Ø
6	Wash Rooms	14,280	-	3,564	17,844	120/240 1Ø
19	Platoon Barracks	30,400	-	-	30,400	120/240 1Ø
2	Wells	-	-	16,802	16,802	120/208 3Ø
	Obstruction Lights for Water Tank	100	-	-	100	120 1Ø
	Street Lights	1,500	-	-	1,500	120 1Ø
	Total for Montford Point No. 2 -				279,970	

H-20.11. Montford Point No. 2A

1	B. O. Q.	34,680	14,100	27,698	76,478	120/208 3Ø
1	Heating Plant	660	-	8,401	9,061	120/208 3Ø
5	Platoon Barracks	8,000	-	-	8,000	120/240 1Ø
2	Wash Rooms	4,720	-	1,188	5,908	120/240 1Ø
1	P.X. & Mess	18,810	12,600	22,560	53,970	120/208 3Ø

NO. UNIT	TYPE OF BUILDING	INSTALLED LIGHTING IN WATTS	INTALLED HEATING IN WATTS	INSTALLED POWER IN WATTS	TOTAL LOAD IN WATTS	SERVICE VOLTAGE
	Street Lights	750	-	-	750	120 1Ø
1	Sewage Pumping Station	420	-	6,870	7,290	120/208 3Ø
		Total Montford Point No. 2A			161,457	

H-20.12 Montford Point No. 3

2	Mess Hall	61,620	75,000	100,738	237,358	120/208 3Ø
2	Warehouses	4,040	-	-	4,040	120/240 1Ø
24	Wash Rooms	57,120	-	14,256	71,376	120/240 1Ø
68	Platoon Barracks	108,800	-	-	108,800	120/240 1Ø
1	Central Heating Plant	5,020	-	109,979	114,999	120/208 3Ø
1	Brig	5,530	-	528	6,058	120/208 3Ø
1	Administration	11,740	-	-	11,740	120/208 3Ø
1	Hostess House	15,765	12,600	13,500	41,865	120/208 3Ø
1	Theatre	75,810	-	33,878	109,688	120/208 3Ø
1	Decontamination	2,760	-	19,814	22,574	120/208 3Ø
1	Infirmary	38,560	41,800	11,755	92,115	120/208 3Ø

NO. UNIT	TYPE OF BUILDING	INSTALLED LIGHTING IN WATTS	INSTALLED HEATING IN WATTS	INSTALLED POWER IN WATTS	TOTAL LOAD IN WATTS	SERVICE VOLTAGE
1	Sewage Treatment Plant	5,750	5,000	-	10,750	120/240 1Ø
2	Wells	-	-	17,147	17,147	120/208 3Ø
2	Gun Sheds	1,320	-	-	1,320	120/240 1Ø
3	Schools, M-123, 125 & 126	9,960	-	-	9,960	120/240 1Ø
1	School M-124	3,960	-	-	3,960	120/240 1Ø
1	Personnel Class. Bldg.	3,840	-	-	3,840	120/240 1Ø
1	Swimming Pool	23,490	-	64,318	87,808	120/208 3Ø
		Total for Montford Point No. 3			955,398	
	H-20.13. Tent Camp No. 1.					
1	Boiler House	-	-	2,094	2,904	120/240 1Ø L. 240 3Ø P.
	H-20.14. Tent Camp No. 2.					
1	Boiler House	-	-	11,405	11,405	120/240 3Ø
	H-20.15. Glider Base.					
1	Heating Plant	-	-	4,583	4,583	120/208 3Ø

H-20.16.

SUMMARY OF ADDITIONAL LOADS

Division Training Area	2,142,681	Watts.
Naval Hospital	27,838	"
Officers' Quarters Area	104,860	"
Signal School Area	218,121	"
Balloon Barrage Area	24,252	"
Amphibian Base	2,291	"
Rifle Range Area	219,222	"
Dog Training Area	240,957	"
Montford Point No. 1	5,928	"
Montford Point No. 2	279,970	"
Montford Point No. 2A	161,457	"
Montford Point No. 3	955,398	"
Tent Camp No. 1	2,904	"
Tent Camp No. 2	11,405	"
Glider Base	4,583	"
Total	4,401,867	"
Reported in Volume I, P. 309 -	24,857,379	"
Total Load - - -	29,259,246	"

CHAPTER I - PART II

PLUMBING

I-1. Drainage and Vent Systems. In general all drainage and vent systems installed under the program covered by this volume of the report were designed in accordance with the standards set forth in Section I-1 of Volume No. I. We have however, under this program, wherever structures would allow, installed individual vents on all plumbing fixtures to assure the best possible evacuation of the lines. Due to the national program instituted in the interest of the conservation of critical materials we revised our specification procedure to admit the use of "Victory" cast iron soil pipe in lieu of the "Extra Heavy" pipe formerly used.

I-2. Water Services. The general statements set forth in Section I-2 of Volume I apply to the work covered by this volume except that in the latter designs we have provided separate control of the water lines for fire protection service by means of "Underwriters" approved lock-type valves.

I-3. Fire Protective Systems. Section I-3 of Volume I applies to the work done under the program covered by this volume.

I-4. Hot and Cold Water Piping. Section I-4 of Volume I applies to the work done under the program covered by this volume.

I-5. Hot Water Storage Tank and Generator. The hot water requirements of the buildings constructed under the program covered by this volume were set up by careful scrutiny of the probable use to which the fixtures in the buildings might be put in light of the number of inhabitants and the function of the building. The answers thus arrived at were checked against the table appearing in Section I-5 of Volume I and in some cases a mean between the two methods of approach was taken.

I-6. Hot Water Circulating Pumps. Hot water circulating pumps have been installed in a few buildings where length of run and type of load have dictated there use. They have in all cases have been thermally controlled.

I-7. Plumbing Fixtures. Under the program covered by this volume of the report the restrictions imposed on critical material have practically eliminated from the market such items as Enameled Iron Ware, Brass Fixtures, Galvanized Galley and Scullery Sinks and we have had to substitute in their stead Vitreous China or Vitrified Clay Ware, Cast Iron Fixtures and Galley and Scullery sinks constructed of black steel with wood drains. Numerous other substitutions of material have had to be made in accordance with emergency directives issued by the Bureau of Yards and Docks, The War Department, and The War Production Board.

CHAPTER J - PART II

CENTRAL HEATING PLANTS

J-1. Design and Performance Data.

J-1.01 Since completion of the Central Heating Plant, additional military units and facilities have been constructed and connected with the steam system as follows: The buildings in the Women's Area, photo shop, bus station, Mark I gunnery, swimming pools, and a uniform shop in the Regimental area; a dry kiln, commissary warehouse, post warehouse, decontamination building, laundry extension, buildings for labor camp, Public Works office and mess hall in the Industrial Area; will be supplied by steam from the Central Heating Plant.

Following a recent decision to serve the Naval Hospital and the Naval Hospital B. O. Q. from the Central Heating Plant, a steam transmission main to this area is now under construction.

J-1.02. Total Connected Load. Since the addition of the above units the total steam demand has been materially increased. A complete tabulation of heat requirements in B.T.U's per hour, revised to include all of the units and facilities connected to date is shown below.

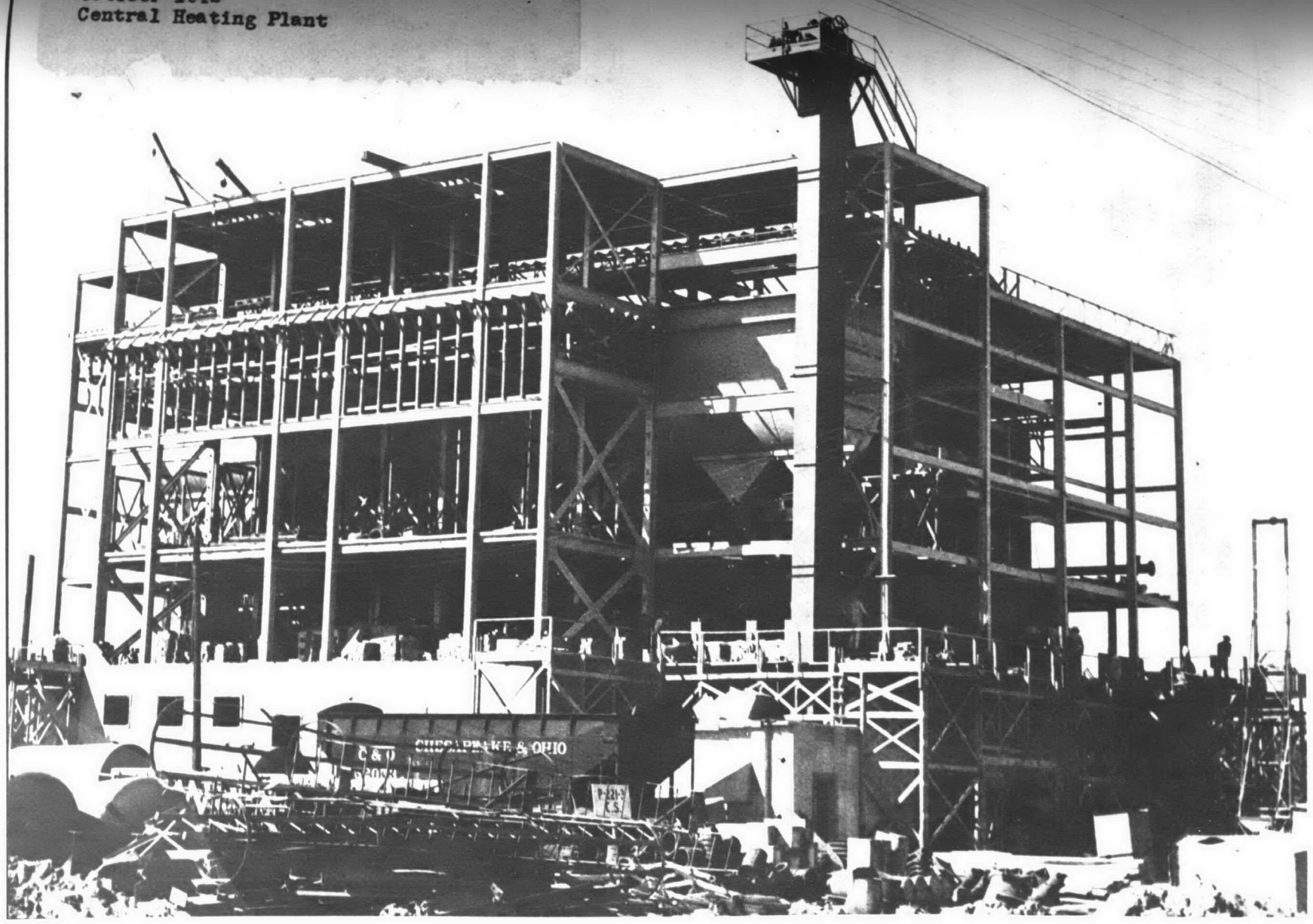
	Heating	Hot Water	Process
Industrial (incl. Labor Camp & P.W. Office)	27,452,000	22,672,860	12,816,500
Post Troop & Women's Area	23,808,820	24,544,700	6,257,000
Regimental Area #1	18,552,280	14,236,200	8,140,000
Regimental Area #2	23,852,400	15,378,000	8,140,000
Regimental Area #3	17,748,640	15,756,960	8,250,000
Regimental Area #4	16,528,320	13,893,000	8,140,000
Regimental Area #5	15,974,000	13,893,000	8,140,000
Naval Hospital	23,878,066	7,995,181	8,459,150
B. O. Q. Hospital	516,520	472,940	
	168,311,050	128,842,840	68,342,650

J-1.03. Maximum Steam Demand. The maximum steam under the revised load conditions is estimated to be.

Heating	169,100	Lbs. per hr.
Hot Water	88,200	" " "
Process	68,300	" " "
Distribution Losses	12,966	" " "
Boiler House Auxiliaries & Feed Water Heating	19,000	" " "
Total	357,566	Lbs. per hr.

This load can be carried by three boilers each generating 120,000 pounds of steam per hour. However, it will be necessary to use four boilers for safe operation under maximum load conditions.

Marine Barracks
New River, N. C.
October 1942
Central Heating Plant



J-2. Estimated Fuel Requirement.

J-2.01. Estimated Fuel Requirement. The annual fuel requirements, revised to include the additional loads with overall plant efficiencies as stated elsewhere herein, are as follows:

J-2.02. Heating. The heating connected load at 168,311,050 B.T.U. per hour will require, on the basis of 70°F inside and 10°F outside, design temperature with a total of 2300 degree days, 7175 tons of coal per year.

$$\frac{168,311,050 \times 24 \times 2300}{(70-10) \times 13,500 \times .80 \times 2000} = 7175 \text{ tons of coal per yr.}$$

J-2.03. Hot Water. The hot water heating connected load at 128,842,840 B.T.U. per hour will require, on the basis of 6 hours average use per day, 13,050 tons of coal, estimated as follows:

$$\frac{128,842,840 \times 6 \times 365}{13,500 \times .80 \times 2000} = 13,050 \text{ tons of coal per year}$$

J-2.04. Process Steam. The process steam connected load at 68,342,650 B.T.U. per hour will require, on the basis of 7 hours average use per day, 8,070 tons of coal per year, estimated as follows:

$$\frac{68,342,650 \times 7 \times 365}{13,500 \times .80 \times 2000} = 8070 \text{ tons of coal per yr.}$$

J-2.05. Distribution Losses. The steam distribution losses at 12,740,000 B.T.U. per hour will require 5160 tons of coal per year estimated as follows:

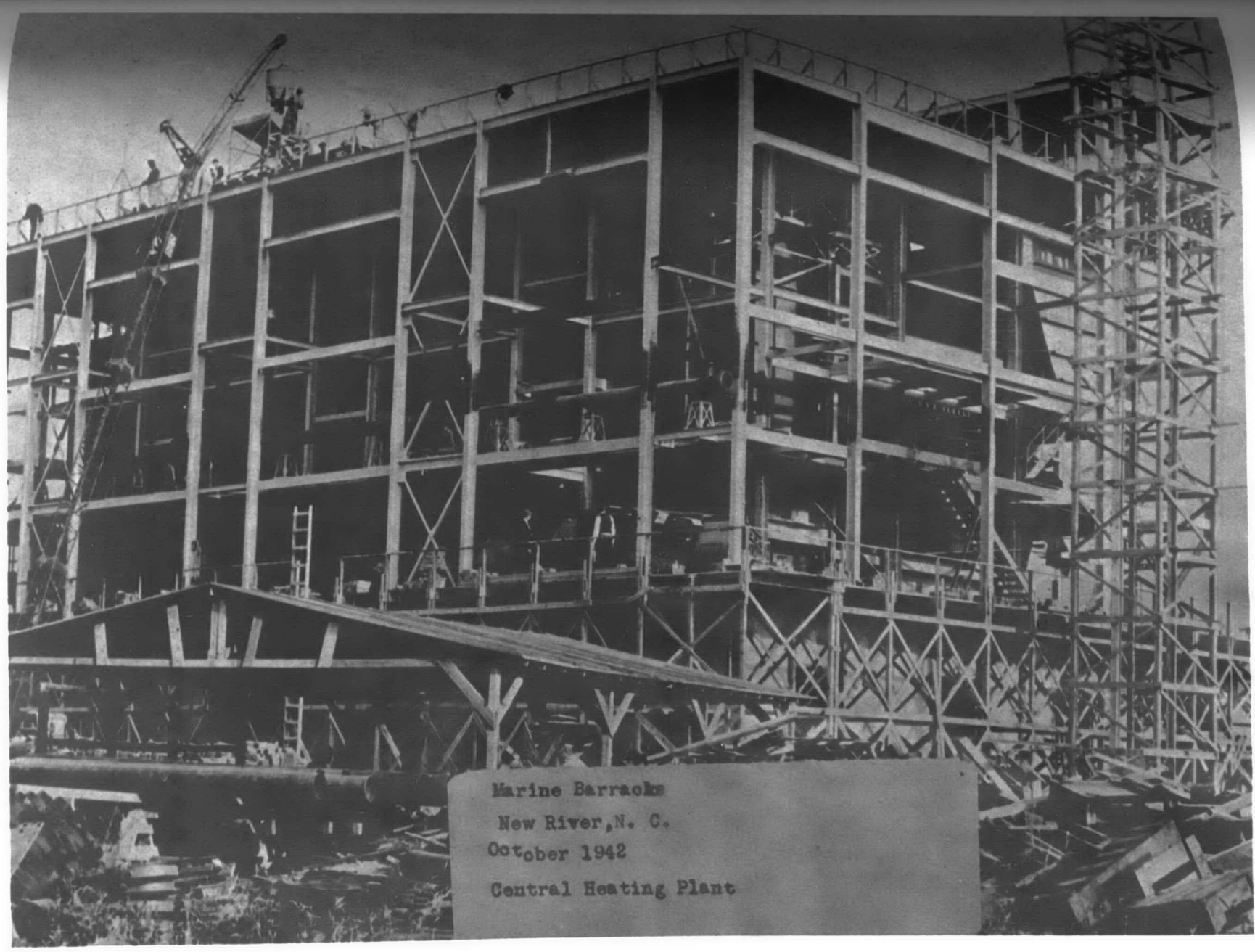
$$\frac{12,740,000 \times 365 \times 24}{13,500 \times .80 \times 2000} = 5160 \text{ tons of coal per yr.}$$

J-2.06. Feed Water Heating. The feed water heating will require on the basis entering temperature of water 143°F, approximately 3139 tons of coal per year estimated as follows:

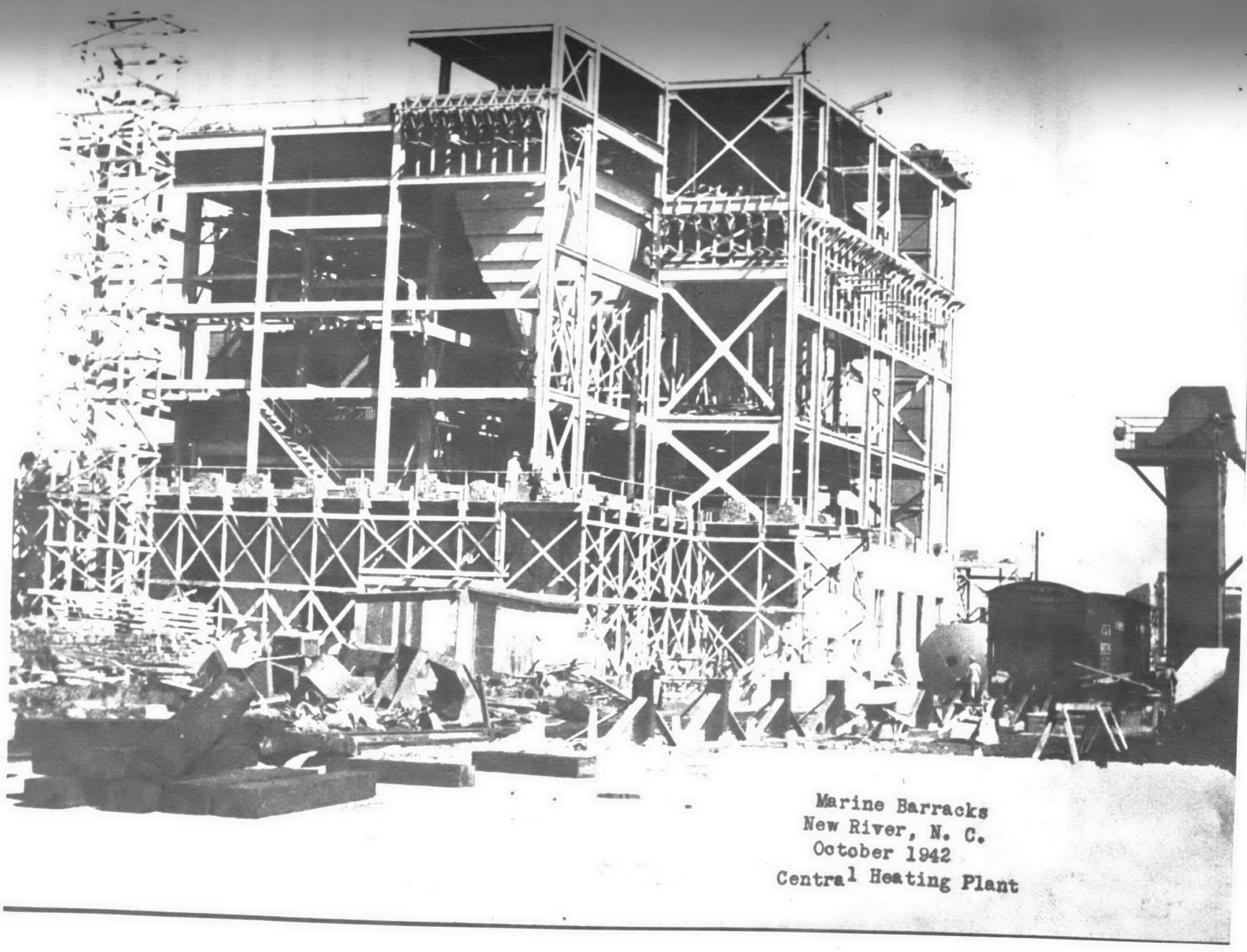
Heating	7,175 Tons
Hot Water	13,050 "
Process	8,070 "
Losses	5,160
Total	33,455 Tons

$$\frac{33,455 \times 75 \text{ B.T.U.}}{.80 \times 1000} = 3139 \text{ tons of coal per year for feed water heating.}$$

J-2.07. Annual Fuel Consumption.



Marine Barracks
New River, N. C.
October 1942
Central Heating Plant



Marine Barracks
New River, N. C.
October 1942
Central Heating Plant

Heating, hot water, process, losses	= 33,455 tons
Feed water heating	= 3,329 tons
Total annual fuel consumption	= 36,784 tons

J-2.08. Minimum Loads With Oil Fuel. The summer and winter minimum load conditions will be the same as indicated in the original report and the fuel oil consumption will be approximately the same amount.

J-2.09. Tabulation of Monthly Fuel Consumption. The revised tabulation of fuel consumption due to increased load conditions is as follows:

	Oil	Coal
January	540 bbls	4594 tons
February	540	3888
March	540	4242
April	1360	2827
May	1360	2120
June	1360	2121
July	1360	2122
August	1360	2121
September	1360	2120
October	1360	2475
November	540	2827
December	540	3888
	12,220 bbls.	35,345 tons

J-3. Feed Water Treatment.

J-3.01. Chemical Treatment. In the "Report on Feedwater Treatment for the various Heating Plants of the U. S. Marine Barracks" prepared by Sheppard T. Powell; he recommended that disodium phosphate be fed to the boiler drums for the prevention of scale, sodium sulphite for the removal of traces of oxygen, also that sodium hydroxide be injected into the boiler feed water for the correction of P.H., as a secondary treatment to the Zeolite water softener already provided.

Chemical feed pumps, solution tanks, and all other necessary equipment for treating the feedwater as outlined in the report was purchased from Proportioneers Inc. and installed in the plant.

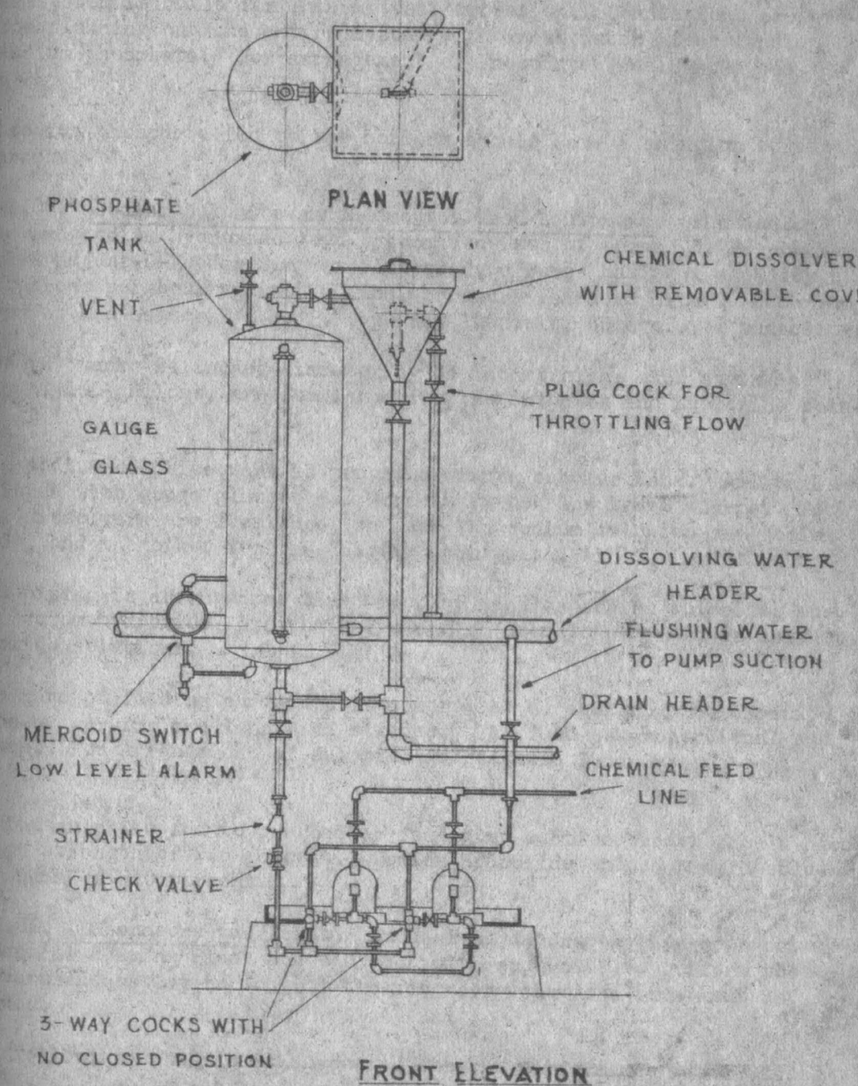
J-3.02. Phosphate Feed Equipment. The phosphate feed equipment consists of three (3) Proportioner 2 x Series Adjust-O-Feeder Simplex Plunger Type chemical pumps driven by General Electric 1 H.P. Type K 208 volt, 60 cycle, 3 phase, 1725 R.P.M. motors through #5B Winfield Smith, oil enclosed speed reducers.

Pumps have a capacity of from 5 to 51.4 g.p.h. against a maximum discharge pressure of 350 p.s.i.

One phosphate solution tank 42 inches diameter by 54 inches, 300 gallons capacity is provided.

ARRANGEMENT OF CHEMICAL DISSOLVER, SOLUTION TANKS AND PUMPS FOR FEEDING PHOSPHATE

DIAGRAM 1



FRONT ELEVATION
No Scale

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MARINE BARRACKS
NEW RIVER, N.C.

The pumps and piping are arranged so that either one or all pumps can be used at one time.

The rate of feed of phosphate is controlled to each boiler by a Hancock Flocontrol valve.

The system is built for intermittent operation. Connections are provided for flushing out the entire system with fresh water after feeding the disodium phosphate. For arrangement of Phosphate Feed System see Diagram 2.

Disodium phosphate fed to the boilers should have a solution strength of 3 percent.

J-3.03. Sodium Sulphite and Hydroxide Feed Equipment. The sodium sulphite and sodium hydroxide feed system consists of three (3) Proportioner 1 X Series Adjust-O-Feeder Simplex Plunger Type Pumps having a capacity of 3 to 5 gallons per hour against 50 lbs. pressure gearhead drive. Each pump is driven with a Master 1/4 H. P. Type RA. 120 volt, 60 cycle, 1 phase motor.

Two (2) tanks 24 inches diameter by 54 inches high; each having a capacity of 100 gallons, are furnished for the sulphite and hydroxide solutions.

The sodium sulphite tank is provided with a bubbler tank. All tanks are equipped with gauge glasses and Mercoid switch low level alarms. Two chemical dissolvers are furnished, one for the sodium sulphite and sodium hydroxide, and the other for the disodium phosphate.

The piping is arranged so that one pump handles sodium sulphite, one handles sodium hydroxide, and the third can be used to pump either sulphite or hydroxide solutions.

The rate of feeding chemicals is controlled by changing the capacity of the pumps by varying the length of strokes. The feed is proportional and continuous. For Arrangement of Sulphite and Caustic Feed Systems see Diagram 2.

Sodium sulphite fed to the boiler feed pump suction header should have a solution strength of 2.5 percent. Sodium hydroxide should have a solution strength of 5.0 percent.

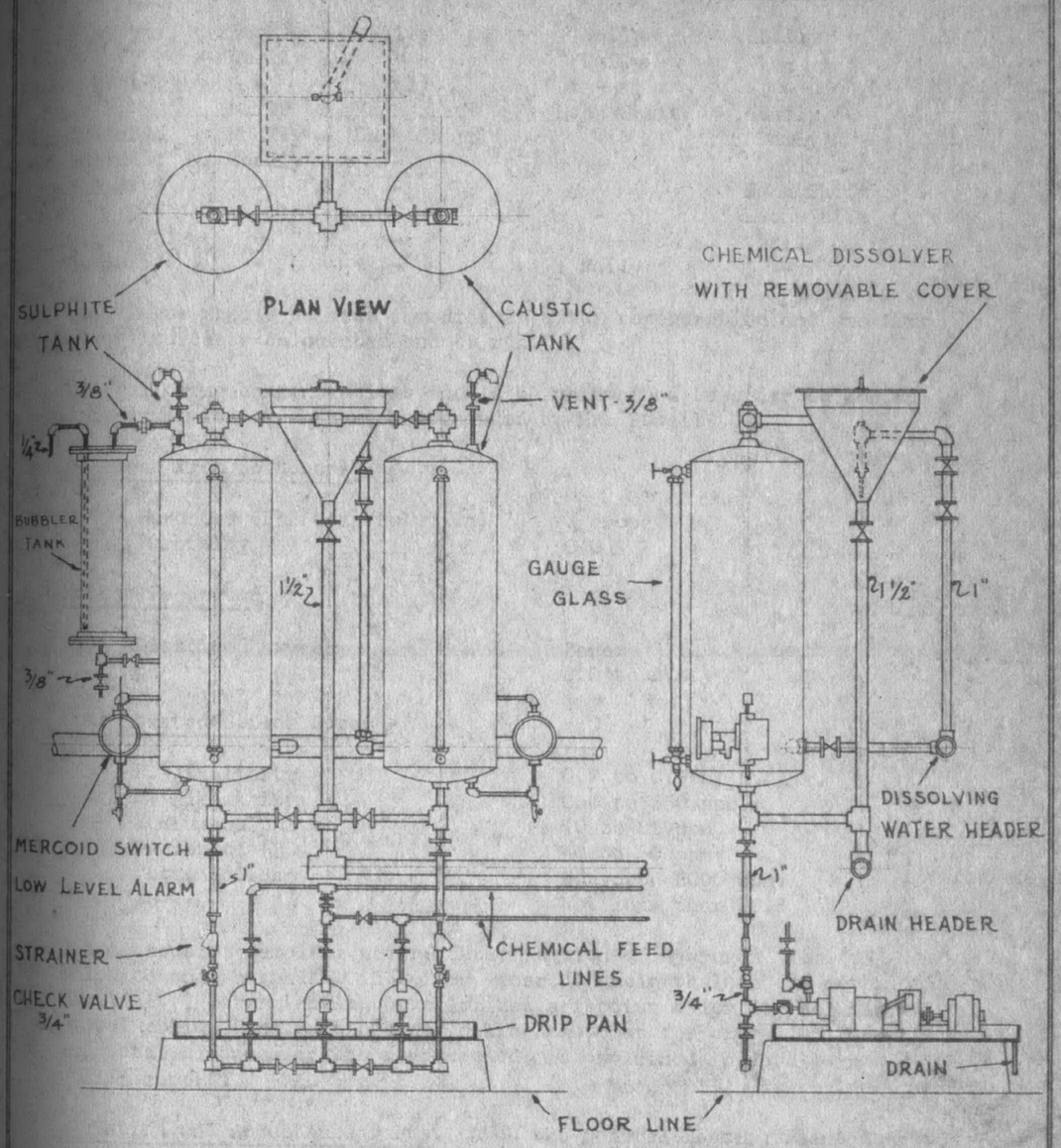
J-3.04. Laboratory and Tests. A chemical laboratory has been set up in the Central Heating Plant and equipped with apparatus to perform the routine tests necessary to control the secondary chemical treatment as recommended.

The following schedule is suggested for the performance of the tests in the Central Heating Plant.

	Raw Water	Effluent from Softeners	Boiler Feed Water	Concentration Boiler Water
P. Alkalinity	-	Daily	Daily	Daily

ARRANGEMENT OF CHEMICAL DISSOLVER, SOLUTION TANKS AND PUMPS FOR FEEDING SULPHITE AND CAUSTIC

DIAGRAM 2



No Scale

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	Raw Water	Effluent from Softeners	Boiler Feed Water	Concentration Boiler Water
M. Alkalinity	Weekly	Daily	Daily	Daily
Hardness	Weekly	"	Daily	-
Hardness (B & B)	-	(1)	-	-
pH	Daily	Each Shift	Each Shift	Daily
Sodium Chloride	Weekly	Each Shift	-	Daily
Sodium Sulphate	Weekly	-	-	Daily
Sodium Sulphite	-	-	-	Each Shift
Phosphate	-	-	-	Each Shift
Total Solids	-	-	-	Daily
Dissolved Solids	-	-	Daily	-

(1) Tests should be made immediately after regeneration and one hour before meter indicates calculated end of run.

The following concentrations should be maintained in order to control the secondary chemical treatment recommended by Mr. Powell:

Effluent from Softeners -

Hardness (B&B Soap Solution)	3 drops
Turbidity	0.0

Boiler Feedwater -

Dissolved oxygen	Zero
pH	8.0 to 8.5

Concentrated Boiler Water -

P. Alkalinity	0.7 to 0.9 of M. Alk.
M. Alkalinity	250 to 350 ppm.
Sodium Sulphite	10 to 20 ppm.
Phosphate (PO4)	40 to 50 ppm.
Total Solids	Not over 2000 ppm.
pH	Not less than 10.6

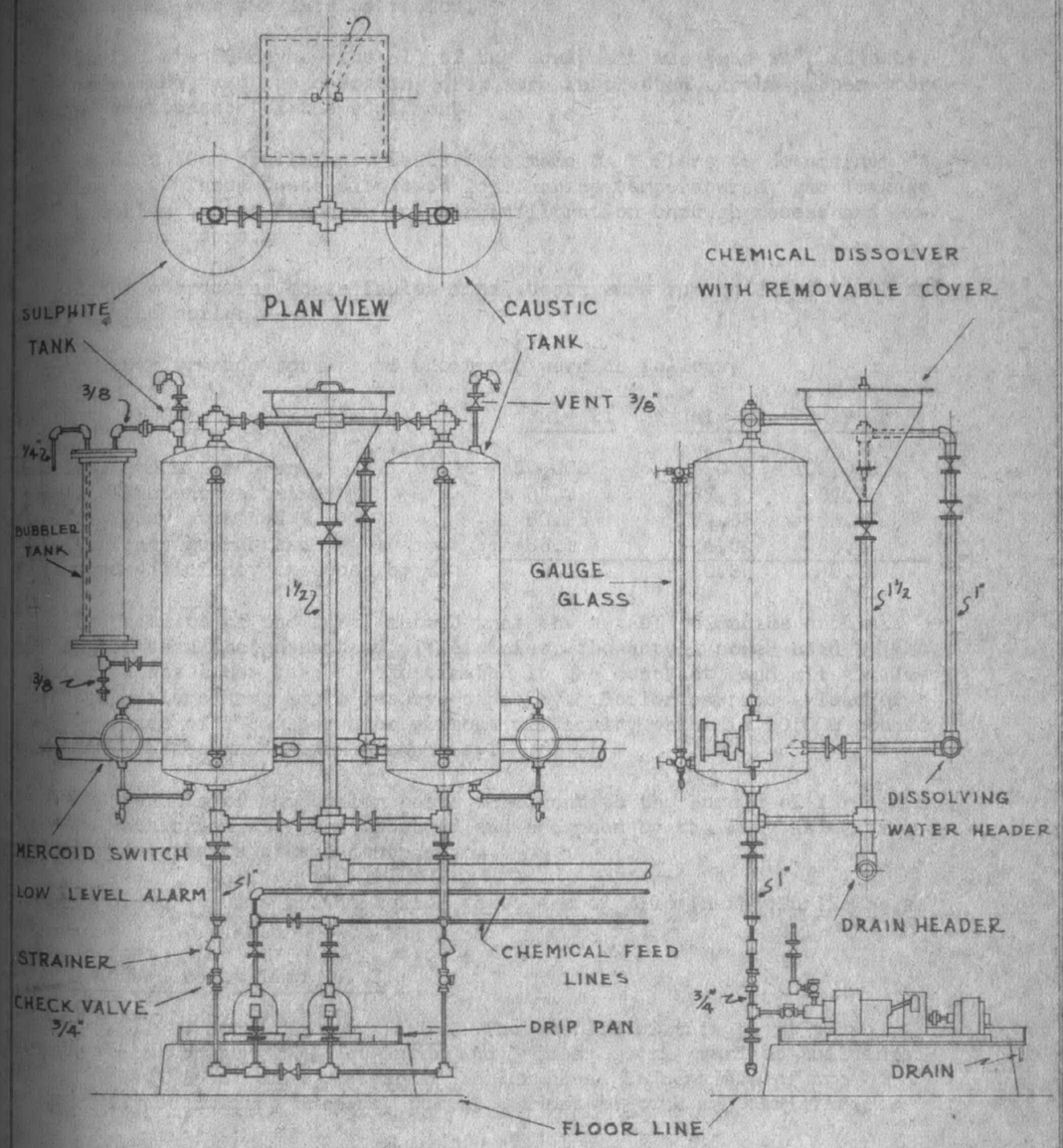
The methods of sampling water; determination of hydrogen ion (pH), sodium sulphite and phosphates in boiler water, phenolphthalein and methyl orange alkalinity, determination of chlorides as sodium chloride, soluble solids, total solids; instructions for making the test for oxygen in feedwater, and total hardness by the soap method; is explained in detail in Mr. Powell's report.

J-4. Completion and Acceptance Tests. When the Central Heating Plant neared completion an agreement was made between the General Contractors, Officer in Charge and the Marine Corps, that the plant would be operated for sixty (60) days by the Contractors before turning the plant over to the Marine Corps.

A representative engineer from the Architect-Engineers was appointed

ARRANGEMENT OF CHEMICAL DISSOLVER, SOLUTION TANKS AND PUMPS FOR FEEDING SULPHITE AND CAUSTIC

DIAGRAM 3



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as supervisor, an experienced operating engineer was procured from the Riley Stoker Corporation, an operating crew was organized and on May 10, 1943 the plant was put into operation.

During the 60-day period all of the equipment was "run in", adjustments were made, and the operating crew were instructed in the proper operation and maintenance of the equipment.

On June 10th preliminary tests were made on boilers to determine efficiencies. These tests disclosed low furnace temperatures, gas leakage through boiler bypass dampers, and air infiltration through access and explosion relief doors.

After correcting these faults final tests were run on July 21, 23 and 28th., on one boiler.

The performance results of the tests were as follows:

Date of Test	July 21	July 23	July 28
Load lbs. steam per hour	50,000	75,000	100,000
Overall efficiency attained %	88.2	87.8	87.1
Net efficiency attained %	83.91	84.38	83.67
Net efficiency guaranteed %	83.1	84.0	83.0
Guaranteed efficiency exceeded by %	0.81	0.38	0.67

The results of the tests showed that the net efficiencies attained were higher than the guaranteed efficiencies, the actual power used by the auxiliaries was lower than that estimated in the contract, and all auxiliaries and boilers have ample reserve capacity. Boiler carried a load of 130,000 pounds of steam per hour without difficulty which is 10,000 pounds more than the designed maximum capacity.

The results of the boiler tests were sent to the Bureau of Yards and Docks in Washington and were approved and accepted by the Navy as meeting all the requirements of the contract.

Complete results of the boiler tests are on file in the Public Works Office.

J-5. Montford Point Camp No. 2.

J-5.01. Central Heating Plant. The purpose of this plant is to provide steam for heating, hot water and process to the various buildings in this area. Located in a separate boiler house it consists of two mechanically coal fired boilers, pumps, condensate tank and auxiliaries.

J-5.02. Total Connected Load. In the following tabulation the total heat requirements for each building is given in Btu per hour.

Building	Heating	Hot Water	Process	Total
Mess Hall	803,000	1,365,000	592,000	2,760,000
Wash Rooms (6)	819,000	5,460,000	-	6,279,000
Administration	199,800	83,100	-	282,900
Demonstration	148,000	809,250	145,800	1,103,050
Total	1,969,800	7,717,350	737,800	10,424,950

Distribution Losses - 131,100 Btu per hour.

Total Connected Load - 10,556,050 Btu per hour.

J-5.03. Estimated Fuel Requirements. The annual fuel requirements have been estimated and tabulated below. The overall boiler efficiency is estimated to be 60% average with coal having a heating value of 13,500 Btu per pound as fired.

Heating $\frac{1,969,880 \times 24 \times 2,300}{60 \times 13,500 \times 0.6 \times 2,000}$ = 112 tons per year

Hot Water $\frac{7,717,350 \times 6 \times 365}{13,500 \times 0.6 \times 2,000}$ = 1041 tons per year

Process $\frac{737,800 \times 7 \times 365}{13,500 \times 0.6 \times 2000}$ = 116 tons per year

Distribution Losses $\frac{131,100 \times 24 \times 365}{13,500 \times 0.6 \times 2000}$ = 71 tons per year

Total Coal Required thus = 1,340 tons per year

J-5.04. Boilers. There are two portable, return tubular, fire box boilers manufactured by Farrar & Trefts Company and designated as Bison No. 574, they are fired by mechanical coal stokers, rated at 89 H. P. with a heating surface of 893 sq. ft. and built for 125 p.s.i. working pressure. Standard trim, including water column, gauge glass, pressure gauge, injector and blow-off connections is provided.

J-5.05. Breechings and Chimney. The boilers are connected with the chimney by a 35 x 42 inch breeching, the brick chimney is 3'-0" x 3'-10" inside by 70 feet high.

J-5.06. Combustion Equipment. The boilers are fired by two Iron Fireman Corporation No. 4 Coal Stokers of the worm feed type and hopper capacity of 750 pounds each. They are driven by 2 H. P. electric motors. The operation of the stokers is fully automatic, regulated by steam pressure actuated controls with Johnson feedwater controls providing cut-off switches at low-water level.

J-5.07. Boiler Feedwater System.

The Condensate Receiver of 560 gallons capacity has two submerged heaters; one unit is a heater coil supplied by exhaust steam from the boiler feed pumps; the other consists of a perforated tube element discharging high pressure drip returns into the receiver water. Low pressure condensate is returned to the receiver through the condensate return system from the various buildings. Raw water make-up is automatically controlled by an electrically operated Johnson make-up valve on the receiver.

Boiler Feedwater Pumps are Worthington Pump & Machinery Corporation Model VC, steam driven reciprocating pumps of 13 g.p.m. capacity each. Boiler feed water level is maintained by a Johnson feed water control.

J-5.08. Boiler House Piping is installed in accordance with Navy Specification 66-P1a and 21Yc. Piping is welded wherever practicable in lieu of flanged and screwed fittings.

J-5.09. Coal Storage Yard of approximately 450 tons or two months supply at full load is provided.

J-6. Montford Point Camp No. 2A.

J-6.01. Central Heating Plant. The purpose of this plant is to provide steam for heating, hot water and process to the various buildings in this area. Located in a separate boiler house it consists of a mechanically fired coal burning boiler with condensate receiver, boiler feed pump and accessories.

Steam distribution and condensate return systems are overhead on wood poles and are described in Section G-2 of the former report and supplements thereto.

J-6.02. Total Connected Load. In the following tabulation the total heat requirements for each building are given Btu per hour:

Building	Heating	Hot Water	Process	Total
Mess Hall & PX	880,890	996,000	209,600	2,086,490
B. O. Q.	629.600	539,500	127,300	1,296,400
Wash Rooms (2)	273,000	1,820,000	-	2,093,000
Total	1,783,490	3,355,500	336,900	5,475,890

Distribution Losses	97,900 Btu per hour.
Total Connected Load	5,573,790 Btu per hour.

J-6.03. Estimated Fuel Requirements. The annual fuel requirements have been estimated and tabulated below. The overall boiler efficiency is estimated to be 60% average with coal having a heating value of 13,500 Btu per pound as fired.

Heating	$\frac{1,783,490 \times 24 \times 2,300}{60 \times 13,500 \times 0.6 \times 2,000}$	=	101 tons per year.
Hot Water	$\frac{3,355,500 \times 6 \times 365}{13,500 \times 0.6 \times 2,000}$	=	453 tons per year.
Process	$\frac{336,900 \times 7 \times 365}{13,500 \times 0.6 \times 2,000}$	=	53 tons per year.
Distribution Losses	$\frac{97,900 \times 24 \times 365}{13,500 \times 0.6 \times 2,000}$	=	53 tons per year.
	Total Coal Required Thus =		660 tons per year.

J-6.04. Boiler. This is a portable, horizontal, return tubular, fire-box boiler manufactured by the "Kewanee Boiler Corporation" and designated as a "Kewanee Model No. 590". Boiler is stoker fired, rated at 250 H. P., having 2500 square feet of heating surface and built for 125 p.s.i. working pressure. Standard trim including water column, gauge glass, pressure gauge, injector and blow-off connections are provided.

J-6.05. Breechings and Chimney. A 34" x 42" breeching connecting with a brick chimney 3'-4" square by 70 feet high is provided.

J-6.06. Combustion Equipment. The boiler is equipped with an Iron Foreman Corporation Model 5A mechanical stoker of the worm feed type and hopper capacity of 1200 pounds. It is driven by a 7.5 H.P. electric motor and operation is fully automatic being regulated by steam pressure actuated control with a McDonnell No. 150 safety cut-off switch at low water level.

J-6.07. Boiler Feed Water System.

Condensate Receiver. The capacity of the receiver tank is 560 gallons and it is provided with two submerged steam heaters; one unit is a heater coil supplied by exhaust steam from the boiler feed pump; the other consists of a perforated tube element discharging high pressure drip returns into the receiver water. Low pressure condensate is returned to the receiver through the overhead system from the various buildings. Raw water make-up is automatically provided by a float cage and make-up valve on the receiver.

Boiler Feed Water Pump. This is a Worthington Pump and Machinery Corporation Model VC, steam driven, reciprocating pump of 13 g.p.m. capacity. Boiler feed water level is maintained by a Copes regulator and pump governor mounted on boiler.

J-6.08. Boiler House Piping is installed in accordance with Navy Specification 66P1a and 21Yc.

Piping is welded wherever practicable in lieu of flanged and screwed fittings.

J-6.09. Coal Storage Yard of approximately 175 tons or three weeks supply at full load is provided.

J-7. Montford Point Camp No. 3.

J-7.01. Central Heating Plant. The purpose of this plant is to provide steam for heating, hot water and process to the various buildings in this camp. Located in a separate boiler house it consists of five mechanically fired coal burning boilers and necessary auxiliaries, a water softening system and mechanical coal handling equipment. Boiler No. 1 is 310 H.P., numbers 2, 3, 4, and 5 are each 250 H. P.

Steam distribution and condensate return systems are overhead on wood poles and are described in Section G-2 of Volume 2 of Completion Report.

J-7.02. Total Connected Load. In the following tabulation the total heat requirements for each building are given in Btu per hour.

Building	Heating	Hot Water	Process	Total
2 Mess Halls	3,565,000	5,781,600	2,588,000	11,934,600
24 Wash Rooms	3,276,000	21,840,000	-	25,116,000
1 Theatre & PX	1,851,200	460,800	-	2,312,000
1 Administration	303,700	59,760	-	363,460
1 Infirmary	1,163,900	639,730	427,700	2,231,330
1 Brig	408,900	747,000	-	1,155,900
1 Hostess House	465,000	261,000	362,500	1,088,500
1 Decontamination	202,000	-	55,000	257,000
4 Schools	1,020,000	-	-	1,020,000
1 Personnel Classification	255,000	20,950	-	275,950
1 Swimming Pool	3,048,400	1,485,000	-	4,533,400
Total	13,559,100	21,295,840	3,433,200	50,288,140
M. P. Camp No. 1	2,203,216	976,080	1,730,900	4,910,196
Grand Total	17,762,316	32,271,920	5,164,100	55,198,336
Distribution Losses		1,424,023	B.T.U. per hour	
Total Connected Load		56,622,359	B.T.U. per hour	

J-7.03. Estimated Fuel Requirements. The annual fuel requirements have been estimated and tabulated below. The overall boiler efficiency is estimated to be 60% average with coal having a heating value of 13,500 Btu per pound as fired.

Heating $\frac{17,762,316 \times 24 \times 2,300}{60 \times 13,500 \times 0.6 \times 2000} = 1008$ tons per year

Hot Water $\frac{32,271,920 \times 6 \times 365}{13,500 \times 0.6 \times 2000} = 4370$ tons per year

Process	$\frac{5,164,100 \times 7 \times 365}{13,500 \times 0.6 \times 2000}$	= 814 tons per year
Distribution Losses	$\frac{1,424,028 \times 24 \times 365}{13,500 \times 0.6 \times 2000}$	= 771 tons per year
	Total Coal Required thus	6963 tons per year

J-7.04. Boilers. Boiler No. 1 is a portable, horizontal, bent tube, water tube boiler manufactured by the E. Keeler Company and designated as a "Keeler Model CP". This boiler is stoker fired rated at 310 H. P., having 3100 square feet of heating surface and built for 125 p.s.i. working pressure.

Boilers numbered 3, 4 and 5 are manufactured by Farrar and Trefts Company and are designated as "Bison #586". Boiler No. 2 is manufactured by the Kewanee Boiler Corporation, and is designated as a "Kewanee #590". Numbers 2, 3, 4 and 5 are portable, horizontal, return tubular, firebox boilers, coal stoker fired, rated at 250 H. P. each, having a heating surface of 2500 square feet each, and built for 125 p.s.i. working pressure.

Standard trim including water column, gauge glass, pressure gauge, injector and blow-off connections are provided on each of the five boilers.

J-7.05. Breeching and Chimney. A single 10 gauge metal breeching at end of line is 4'-5" x 4'-5", stepped up in size at each boiler, the vent is 5'-9" x 10' x 9" at stack. The chimney is 115' high and 8'-6" in diameter at top.

J-7.06. Combustion Equipment.

Boiler No. 1 is equipped with a Westinghouse Electric & Mfg. Co. side dump underfeed stoker, which is provided with forced draft fan and Ruggles Klingman master and overfire draft regulators.

Boilers Nos. 2, 3, 4 and 5 are equipped with Iron Fireman Corporation Model 5A mechanical stokers of the worm feed type and hopper capacity of 1200 pounds each. These stokers are driven by 7.5 H.P. electric motors, operation is fully automatic, being regulated by steam pressure actuated controls and with a McDonnell No. 150 safety cut-off switch provided for each stoker to protect boilers at low water level.

J-7.07. Boiler Feed Water System.

Condensate Receiver. The capacity of the receiver tank is 1766 gallons, it is provided with a submerged heater which consists of a perforated tube element discharging high pressure drip returns into the receiver water. Low pressure condensate is returned to the receiver through the overhead system from the various buildings. Treated make-up water from the water softening equipment is automatically controlled by a float gauge and valve on the receiver tank.

Boiler Feed Water Pumps are three Ingersoll Rand Company, "Cameron Motorpumps" Model 1½MRV15 electric driven centrifugal pumps of 70 G.P.M. capacity each. These pumps, connected in series, provide all boilers, feed water level in the individual boilers being controlled by a "Copes" feed water regulator and pump governor on each boiler.

J-7.08. Water Treatment Equipment. Boiler feed water make-up is taken from the synthetic Zeolite water softening syste, which is an Elgin double unit consisting of two softener tanks, brine tank and accessories. This system is designed for operation at 100 pounds p.s.i.

J-7.09. Boiler House Piping is installed in accordance with Navy Specifications 66Pla and 21 Yc. Piping is welded where practicable in lieu of screwed and flanged fittings. Piping is designed for 125 lbs. working pressure.

J-7.10. Coal Storage. Provision has been made for the storage of 700 tons of coal or approximately two weeks supply at full load.

J-7.11. Coal Handling Equipment. Mechanical coal handling is provided for this plant, this system is manufactured by the Link-Blet Company. The equipment consists of an outside hopper into which coal is dumped directly from trucks, this feeds into the pit of a bucket elevator, the latter consisting of an endless belt with buckets attached and driven by an electric motor, lifts and discharges coal into storage hopper in tower, from which the fuel is conveyed as required by a Helicoid feeder to spouts to the individual stoker hoppers. The conveyor is driven by a 5 H.P., 1750 R.P.M. electric motor through a motor reducer with output speed of 83.7 R.P.M., normal operation is at 22 R.P.M. which provides a capacity of six tons of coal per hour.

J-8. Rifle Range Colored Battalion.

J-8.01. Central Heating Plant. The purpose of this plant is to supply steam for heating, hot water and process to the various buildings of this group. Located in a separate building it consists of two coal burning boilers and the necessary auxiliaries.

J-8.02. Total Connected Load. In the following tabulation the total heat requirements for each building are given in Btu per hour.

Building	Heating	Hot Water	Process	Totals
Moss Hall	803,000	1,365,000	592,000	2,760,000
Wash Rooms (6)	819,000	5,460,000	-	6,279,000
Total	1,622,000	6,825,000	592,000	9,039,000

Distribution System Losses	120,100 Btu per hour.
Total Connected Load	9,159,100 Btu per hour.

J-8.03. Estimated Fuel Requirements. The annual fuel requirements have been estimated and tabulated below. The overall boiler efficiency is estimated to be 60% average with coal having a heating value of 13,500 Btu per pound, as fired.

Heating	$\frac{1,322,000 \times 24 \times 2,300}{60 \times 13,500 \times 0.6 \times 2,000}$	=	92 tons per year.
Hot Water	$\frac{6,825,000 \times 6 \times 365}{13,500 \times 0.6 \times 2,000}$	=	922 tons per year.
Process	$\frac{592,000 \times 7 \times 365}{13,500 \times 0.6 \times 2,000}$	=	94 tons per year.
Distribution Losses	$\frac{120,100 \times 24 \times 365}{13,500 \times 0.6 \times 2,000}$	=	65 tons per year.

Total Fuel Required thus 1173 tons per year.

J-8.04. Boilers. There are two identically rated boilers, No. 1 is a "Bison No. 574" manufactured by Farrar & Trefts Company and No. 2 is a "Model P-89" manufactured by the Fitzgibbons Boiler Company. Both are portable, return tubular firebox boilers equipped for coal stoker firing, each rated at 89 H.P. with a heating surface of 893 square feet and built for 125 lbs. p.s.i. working pressure. Standard trim, including, water column, gauge glass, pressure gauge, injector and blow-off connection is provided for each boiler.

J-8.05. Breechings and Chimney. The boilers are connected with chimney by a 35 x 42 inch breeching, the brick chimney is 3'-0" x 3'-10 3/4" inside by 70 feet high.

J-8.06. Combustion Equipment. The boilers are fired with two Iron Fireman Corporation No. 4 Coal Stokers of the worm feed type and hopper capacity of 750 pounds each. They are driven by 2 H.P. electric motors. The operation of the stokers is fully automatic, regulated by steam pressure actuated controls in conjunction with McDonnell #150 safety cut-off switches at low water level.

J-8.07. Boiler Feed Water System.

Condensate Receiver. The capacity of the receiver is 560 gallons and it is provided with two submerged steam heaters; one unit is a heater coil supplied by exhaust steam from the boiler feed water pumps; the other consists of a perforated tube element discharging high pressure drip returns into the receiver water. Low pressure condensate is returned to the receiver through the overhead system from the various buildings. Raw water makeup is automatically controlled by an electrically operated Johnson make-up valve on the receiver.

Boiler Feed Water Pumps are Worthington Pump & Machinery Corporation model VC, steam driven reciprocating pumps of 13 g.p.m. capacity each. Boiler feed water level is maintained by a Coped regulator and pump governor.

J-8.08. Boiler House Piping is installed in accordance with Navy Specification 66Pla and 21 Yc.

Piping is welded wherever practicable in lieu of flanged and screwed fittings.

J-8.09. Coal Storage Yard of approximately 450 tons or two months supply at full load is provided.

J-9. Signal School Facilities.

J-9.01. Central Heating Plant. Material listed in following paragraphs represent our design choice and is not necessarily a list of equipment installed as this project has not been completed.

The purpose of this plant is to provide steam for heating, hot water and process to the various building in this area. Located in a separate boiler house it consists of two mechanically coal fired boilers, pump, condensate tank and auxiliaries.

J-9.02. Total Connected Load. In the following tabulation the total heat requirements for each building is given in B.T.U. per hour.

Building	Heating	Hot Water	Process	Total
Mess Hall	803,000	1,365,000	592,000	2,760,000
Barracks (3)	4,078,080	3,423,750	-	7,501,830
Total	4,881,080	4,788,750	592,000	10,261,830

Distribution Losses 133,200 Btu per hour.

Total Connected Load 10,395,030 Btu per hour.

J-9.03. Estimated Fuel Requirements. The annual fuel requiremnts have been estimated and tabulated below. The overall boiler efficiency is estimated to be 60% average with coal having a heating valve of 13,500 Btu per pound as fired.

Heating $\frac{4,881,080 \times 24, \times 2300}{60 \times 13,500 \times 0.6 \times 2000}$ = 278 tons per year.

Hot Water $\frac{4,788,750 \times 6 \times 365}{13,500 \times 0.6 \times 2000}$ = 646 tons per year.

Process $\frac{592,000 \times 7 \times 365}{13,500 \times 0.6 \times 2000}$ = 93 tons per year.

Distribution Losses $\frac{133,200 \times 24 \times 365}{13,500 \times 0.6 \times 2000}$ = 72 tons per year.

Total Coal Required 1089 tons per year.

J-9.04. Boilers. There are two portable, return tubular, fire box boilers manufactured by Kewanee Boiler Corporation and designated as #584, they are fired by mechanical coal stokers, rated at 89 H.P. with a heating surface of 893 sq. ft. and built for 100 p.s.i. working pressure. Standard trim, including water column, gauge glass, pressure gauge, injector and blow-off connections is provided.

J-9.05. Breeching & Chimney. The boilers are connected with the induced draft fan by a 28" x 28" inch breeching controlled by a multi-blade louvre. Induced draft fan which was specified is similar and equal to Clarage fan have the following requirement, C.F.M. 1200, S.P. 1.5, RPM 600 max., B.H.P. 5.35, working temperature of 600°F. Fan bearing are water cooled. The induced draft fan is connected with chimney by a 30' x 30 inch breeching, the brick chimney is 42 x 42 inch by 50 feet high.

J-9.06. Combustion Equipment. The boilers are fired with two coal stokers of the worm feed type and hopper capacity of 1200# each. These stokers are similar and equal to Iron Fireman Corporation No. 5. They are driven by 5 H.P. electric motors. The operation of the stoker is fully automatic, regulated by steam pressure actuated controls in conjunction with a safety cut-off switches at low water level. The safety cut-off switch is similar and equal to McDonnell #150.

J-9.07. Boiler Feed Water System.

Condensate Receiver. The capacity of the receiver is 940 gallons and it is provided with one submerged steam heater consisting of a perforated tube element discharging high pressure drip return into the receiver water. Low pressure condensate is returned to the receiver through the overhead system from the various buildings. Raw water make-up is automatically controlled by a float gauge on the receiver. The float gauge is similar and equal to Fisher Governor Company, standard pressure, size 8".

J-9.08. Boiler Feed Water Pumps. There are two Garner-Denver steam driven reciprocating pumps of 16.1 G.P.M. capacity each. Boiler feed water level is maintained by a regulator & pump governor. The regulator and governor are similar and equal to Copes Type OT and Type DS respectively.

J-9.09. Boiler House Piping is installed in accordance with Navy Specification 66P1a and 21Yc. Piping is welded wherever practicable in lieu of flanged and screwed fittings.

J-9.10. Coal Storage Yard of approximately 190 tons or 2 months supply at full load is provided.

J-10. Grade and High School.

J-10.01. Heating. Heat for this building is furnished by a hot water boiler of 10,500 sq. ft. capacity, based on an installed radiator rating of 240 Btu per sq. ft. The heating system is a 2 pipe reverse return, modulated

boiler water temperature, forced circulation; controlled by a Barber-Coleman "Outside-Inside Temperature Control. The building is divided into 3 zones, the end zone of 899,500 BTU/hr. and 823,100 BTU/hr. which have constant circulation and the auditorium section of 352,000 BTU/hr. whose circulation is controlled by a thermostat. The boiler is fired by a No. 4 Iron Fireman stoker of the worm feed type, driven by a 2 H.P. motor with a hopper capacity of 750 lbs. Beside the modulating boiler water temperature control the stoker is entirely automatic and has hold fire and high limit controls.

J-10.02. Hot Water. Hot water is furnished by a hand fired hot water supply boiler, of 85 g.p.h thru a 100° rise capacity. As a safety precaution a shell type indirect heater is installed between the boiler and the 220 gallon storage tank. The boiler is equipped with a thermostatic damper regulation.

J-10.03. Estimated Fuel Requirements. The annual fuel consumption as estimated by the ASHV degreed day method at 75% boiler efficiency and 13500 BTU/lb. coal is:

$$F = UND$$

$$U = .0441 \times \frac{12000}{13500} \times 1.28$$

$$N = 2074$$

$$D = 2304$$

$$F = .0441 \times \frac{12000}{13500} \times \frac{1.28 \times 2074}{2000} \times 2304 = 121 \text{ tons}$$

The estimated hot water fuel consumption is:

$$\frac{85 \times 8.33 \times 100 \times 4 \times 365 \times .7}{13500 \times 2000 \times .55} = 5 \text{ tons}$$

Total estimated Fuel Consumption,

Heating	=	121 tons
Hot Water	=	5 tons
Total		126 tons

J-11. Feedwater Treatment for Outlying Plants.

J-11.01. Feedwater Treatment. In the "Reports on Feedwater Treatment for the Various Heating Plants of the U. S. Marine Barracks" prepared by Sheppard T. Powell (filed in P.W.O.) he recommended suitable treatments depending upon the design of the plant, quality of the raw water, and the primary treatment provided.

The treatments recommended and for which plans were prepared, are as follows:

Naval Hospital. Pumping apparatus for feeding sodium sulphite and caustic soda to the suction of the boiler feed pumps.

Tent Camp Nos. 1 and 2. Pumping apparatus for feeding sodium sulphite, caustic soda, and phosphate into the boiler feed system.

Barrage Balloon, Rifle Range, Bachelor Officer's Quarters. Pumping apparatus for feeding sodium sulphite, caustic soda, and phosphate into the boiler feed system.

Montford Point Tent Camp, Amphibian Shops, Barrage Balloon Training School, Glider Base, Parachute Training School, Naval Hospital B.O.Q. Chemical solution pressure pots suitable for feeding phosphate compound containing tannin or other organic materials into the boiler was provided.

All of the above systems have been provided with adequate means of control to the end that the amount of solution added may be accurately proportioned to the requirements of the boilers under varying load conditions. The pumps have been fully manifolded to provide for interchange of operation and all systems have been provided with pressure relief valve protection. The electric circuits to the pump motors have been equiped with mercury type low level cut out switches mounted in each pump solution tank to preclude the possibility of pump operation when a low level condition exists in the solution tank. Every effort has been made in the work of layout to provide for complete flexibility and safety.

CHAPTER K - PART II

COMMUNICATIONS

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K-1. Introduction. This supplementary report is for the purpose of providing additional information to the previous description of the telephone system (Vol. II) and in conjunction with the latter form a coordinated record of the essential details of the central office equipment and outside plant.

K-2. Connecting Company and Facilities.

Since the previous report was prepared the Carolina Telephone Co. have added 100 additional local lines with the necessary associated switching equipment to the Jacksonville Exchange.

K-3. Toll Facilities. A description will be found in the former report (Vol. II).

K-4. Development Study. The estimated number of stations required, has been augmented considerably due to the addition of new Areas as well as the additional buildings being added to existing areas.

The following Areas have been added since the original study was prepared.

1- Rifle Range-Colored Camp.
2- Montford Point Camp No. 2.
3- Montford Point Camp No. 2A.
4- Montford Point Camp No. 3.
5- Camp Knox-Rehabilitation.
6- Women's Reserve Area.
7- Signal Battalion - Hurst Beach.
8- Industrial Area-New Buildings.
9- Industrial Area- Labor Battalion.

The revised total of stations is 2507 of which 1412 are located in the Division Training Area and 1095 in outlying areas. Revised totals for individual areas are given under their respective headings, figures are given only when revisions have been made.

On all new additions, the station requirements have been established by the Camp Communications Officer, and all design work has been based on these estimates.

K-5. General Design.

Since the original report (Vol. II) was prepared the general design and method of handling inter-office calls has changed materially due to increased plant facilities, and the establishment of a P. B. X. office at Montford Point.

The telephone system now consists of the following switchboard equipment.

(1) A attended automatic exchange at Hadnot Point.
(2) A unattended automatic exchange at Paradise Point.
(3) A attended automatic exchange at Tent Camp.
(4) A manual P. B. X. switchboard serving the Naval Hospital at Hadnot Point.
(5) A manual P. B. X. switchboard at Courthouse Bay (Balloon Barrage Area)
(6) A manual P. B. X. switchboard at Stone Bay (Rifle Range Area)
(7) A manual P. B. X. switchboard at Montford Point Camp.

Additional trunking facilities have been installed which provide increased flexibility for inter-communication between areas. These facilities are covered in Section K-7.

K-6. Transmission and Protection. The description of these items is the

Office of the Camp Engineer
S. A. Munch, Supt.
Plumbing and Heating
Camp Lejeune, N. C.

same as covered in the former report, (Vol. II).

K-7. Trunking. In addition to the existing facilities described in the previous report, non-loaded 20 Gauge submarine trunk cables have been installed, connecting the Tent Camp and Montford Point Central Office Equipment with the Paradise Point Exchange. These additional trunks permit intercommunication between these areas and Hadnot Point, independent of the existing trunks connecting with the Carolina Telephone Co.'s exchange in Jacksonville.

The connection between areas, previously noted, through the Jacksonville Exchange provides alternate routing and stand-by service.

The existing .104 copper open wire trunk circuits serving the Balloon Barrage and Rifle Range Areas have been replaced with a 19 Gauge B-88 loaded trunk cable from the Hadnot Point Exchange to the Balloon Barrage switchboard.

From the end of the trunk cable at the entrance to Court House Bay .104 copper circuits are extended to the Rifle Range switchboard. The original tie circuits connecting the Balloon Barrage and Rifle Range switchboards have been converted to straight trunks by the Marine Corps increasing the present facilities to five (5).

Following is a revised tabulation of trunk cable and open wire quantities.

TABLE OF TRUNK LINE QUANTITIES IN LINEAL FEET OF CABLE OR POLE LINE

EXCHANGE	Number of Pairs - Gauge						.104 Copper
	7-20	16-19	26-19	51-19	1-19	1-22	5 Circuits
DIVISION TRAINING MAX to Carolina Tel & Tel Co.*					27,490	43	
Paradise Point PAX					16,750	2,055	
Naval Hospital PBX				8,650			
Barrage Balloon PBX **							
Rifle Range PBX **			27,500				44,000
PARADISE POINT PAX to Main Tent Camp MAX	49,100	950					
Montford Point PBX	24,500						
MAIN TENT CAMP MAX to Carolina Tel & Tel Co. *			3,220				
MONTFORD POINT PBX to Carolina Tel & Tel Co. *				5,260			
Total Trunk Line Cable or Pole Line 209,518 Lineal Ft. or 39.68 Miles							

* Distance given is to point of connection with existing lines of Tel. Co.
** Balloon Barrage-Rifle Range trunks carried in 76-19, B-88 loaded composite cable, 67% distribution, 33% trunk from Holcomb Boulevard to Duck Creek(see distribution table, Division Training Area) and carried in same 26-19 cable Duck Creek to Balloon Barrage Area (see above).

K-8 Division Training Area.

K-8.01 Central Office In addition to the area previously reported as being served from the Hadnot Point Exchange, service to the quarters being constructed for the Signal Battalion at Hurst Beach will also be handled from this office.

K-8.02. Distribution The following changes and additions to the cable feeder and distribution plant have been made.

The Industrial Area cable facilities have been reinforced to meet the increased service demands caused by the expansion in the building program, and the addition of a Labor Battalion Group.

The U. S. M. C. Women's Reserve Group has been added, for which aerial cable facilities have been provided from the central office.

K-8.03. Drawings. A revised list of drawings prepared and quantities of feeder and distribution cable follows.

DIVISION TRAINING AREA

TABLE OF DISTRIBUTION LINE QUANTITIES IN LINEAL FEET OF CABLE

Plan No.	Number of Pairs - Gauge											
M.B.	11-19	16-19	26-19	51-19	76-19	1-19	1-22	2-19	3-19	4-19	6-22	9-22
778						973		260			1628	2681
779	460		430	500		1341		2964				
780	530		320	1630		2180						
781	320		230	683		1631		2352				
782	490		405	1493		2305						
783	245		445	1589		3233				1350		
784	485		90	895		1776		119				
785		1265	1970	2350		1370						
799	140			1770		210		155	756	1024		
3779	625		1143	1704		1065						
3784		950		1400		3650	3000	1675		150		
3785									2500			
3798			660									
**			10000		36000							

Total Distribution Cable 110,165 Lineal Feet or 20.68 Miles

Total Stations Provided 1412

** Distribution along Sneads Ferry Road to Duck Creek, distribution to Hurst Beach and trunks to Balloon Barrage-Rifle Range are carried by 76-19 cable (see above) from Duck Creek 26-19 cable carries distribution to Hurst Beach (see above); 26-19 cable carries trunks to Balloon Barrage (see trunk table).

K-9. Paradise Point.

K-9.01 The Central Office. Modifications of the switching equipment have been made in order to terminate the trunk cables connecting the Tent Camp and Montford Point Areas with the Paradise Point exchange.

The description of the central office will be found in the previous report.

K--9.02 Distribution. is as described in the former report (Vol. II).

K-10 Naval Hospital Area. This area was described previously (Vol.II) no changes or additions are noted.

K-11 Barrage Balloon and Amphibian Base.

K-11.01 The Central Office. The two (2) tie trunks connecting the Rifle Range and Balloon Barrage switchboards have been eliminated. Service between these areas is now handled through the Attendants Cabinet at Hadnot Point.

K-11.02 Distribution This was described in the previous report (Vol.II)

K-12 Rifle Range

K-12.01 The Central Office. The description of the central office as covered by the previous report (Vol II) remains unchanged with the exception that the tie circuits connecting the Rifle Range and Balloon Barrage switchboards have been converted into additional trunk circuits for serving the Rifle Range Area.

K-12.02 Distribution. as previously reported (Vol.II) has been increased by the addition of an aerial feeder cable to serve the colored camp area. A revised tabulation of drawing prepared and quantities of cable plant follows.

TABLE OF DISTRIBUTION LINE QUANTITIES IN LINEAL FEET OF CABLE							
Drawing No. M.B.	2 (pr)	7 (pr)	16-19	26-19	50-19	1-19	150-19
2755			2642	2205	755	390	125
2756	4460	10,806					
3762			1892				
	Total Distribution Cable 23,275 Lineal Feet or 4.41 Miles						
	Total Stations Provided 79						

K-13. Main Tent Camp

K-13.01 The Central Office. This exchange was reported previously (Vol II) and no change is noted with the exception of modifications in the switching equipment to permit the termination of additional trunk circuits connecting with the Paradise Point Exchange.

K-13.02 Distribution. The cable distribution system is the same as described in the previous report (Vol II).

K-14. Montford Point.

K-14.01 The Central Office. The switchboard and associated power equipment will be furnished and installed by the Marine Corps. The M. D. F. and cable terminations on the frame have been provided by the contractors.

Calls originating and terminating at Montford Point Camps 1, 2, 2A, 3 and Camp Knox are handled through this exchange which is connected by a submarine trunk cable to the Paradise Point office.

Additional trunks are also provided terminating on the Carolina Telephone Co.'s switchboard in Jacksonville.

This area was originally served by direct lines from the Jacksonville Exchange. Due to the increase in training and housing facilities it was necessary that a separate government owned communication system be installed.

K-14.02 Distribution. The distribution plant consists of buried and aerial cable construction serving the respective areas.

K-14.03 Drawings. A revised list of drawings prepared and cable distribution quantities follows.

TABLE OF DISTRIBUTION LINE QUANTITIES IN LINEAL FEET OF CABLE

Drawing No. M.B.	Number of Pairs — Gauge						
	11-19	16-19	26-19	50-19	1-19	150-19	3-19
1758				340			
1759		974	995	1200			
78							
174	200	550	5500	200			
175	300	600	1350	2100	1500	900	175
CCC-17			3250				
CCC-18		1800	900				

Total Distribution Cable 22834 Lineal Feet or 4.33 Miles

Total Stations Provided 186

K-15. Hurst Beach and Sneads Ferry Road.

K-15.01. The Central Office. The area which comprises the Signal Battalion at Hurst Beach and outlying stations along the Sneads Ferry Road will be served direct from the Hadnot Point Exchange.

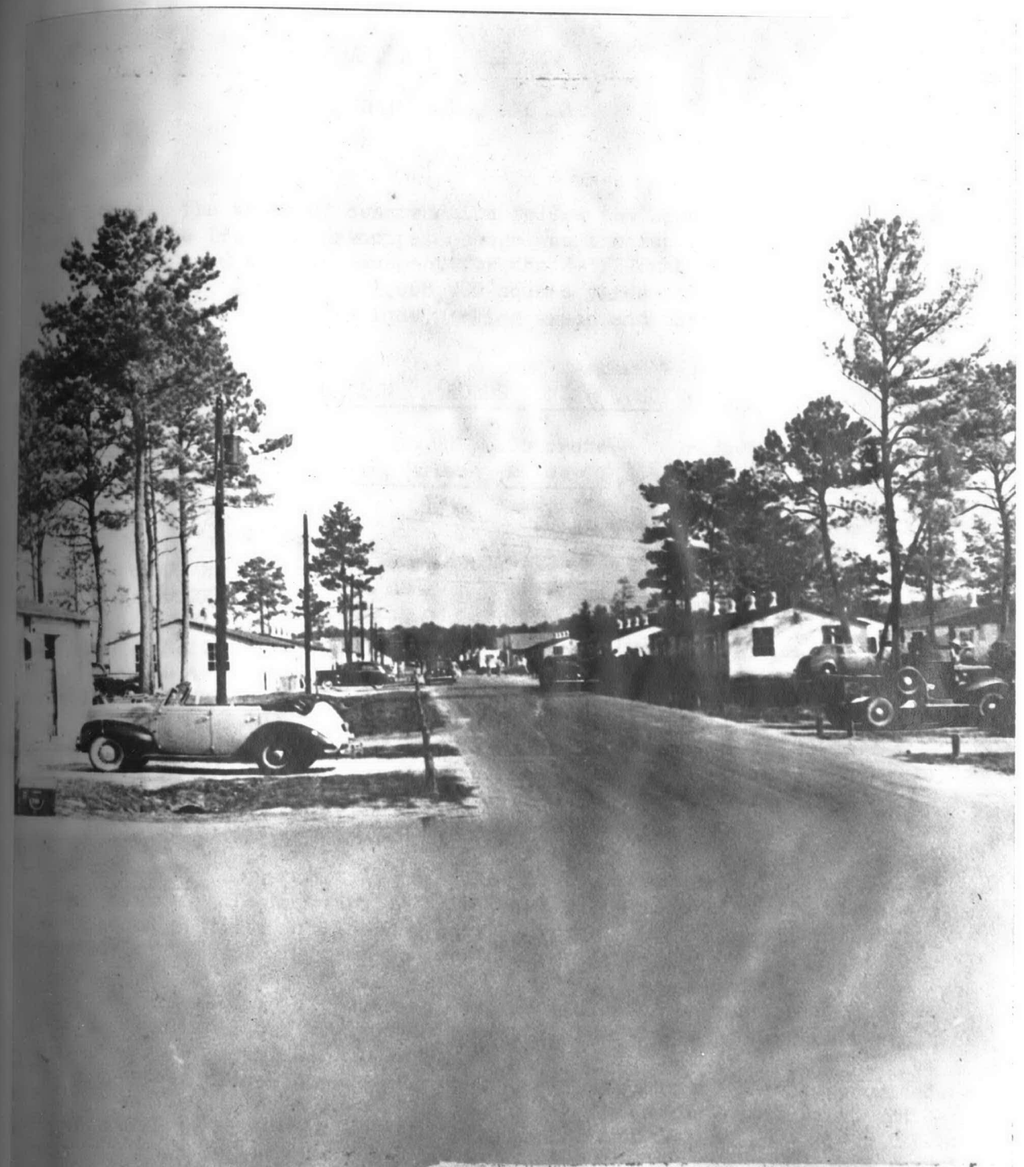
K-15.02. Distribution. A 76 pair aerial feeder cable has been placed on the existing pole route along Sneads Ferry Road extending from the intersection of Holcomb Boulevard and Sneads Ferry Road to Duck Creek. B-88 loading is provided only on 50 pairs with the remaining 26 non-loaded pairs used to serve outlying areas along the route.

From Duck Creek a 26 pair loaded aerial cable is extended to the Courthouse Bay Area to provide additional trunking facilities to both the Balloon Barrage and Rifle Range switchboards.

A 26 pair loaded aerial cable is also extended from Duck Creek to Hurst Beach to provide cable facilities to meet the service demands of the Signal Battalion located there.

See Section K-8.03 for tabulation of cable distribution.

K-16. Operating Practices and Maintenance recommendations were outlined in the former report (Vol. II).



No. 24 Marine Barracks
New River, N. C.
30 September 1941
View of ~~"D" Street~~
Tent Camp, looking North
Contract NOy-4750

CHAPTER L - PART II

ROADS, RAILROADS, AND AIRPORTS

L-1. Roads. The types of construction follow the same principles as outlined in Volume II. The principal change was the substitution of a single course 2-inch sand asphalt pavement for the 2-1/2-inch, two-course pavement previously used. A total of 1,658,000 square yards of roadway paving was installed. This does not include parking areas and miscellaneous turnouts.

TABULATION OF ROADS CONSTRUCTED

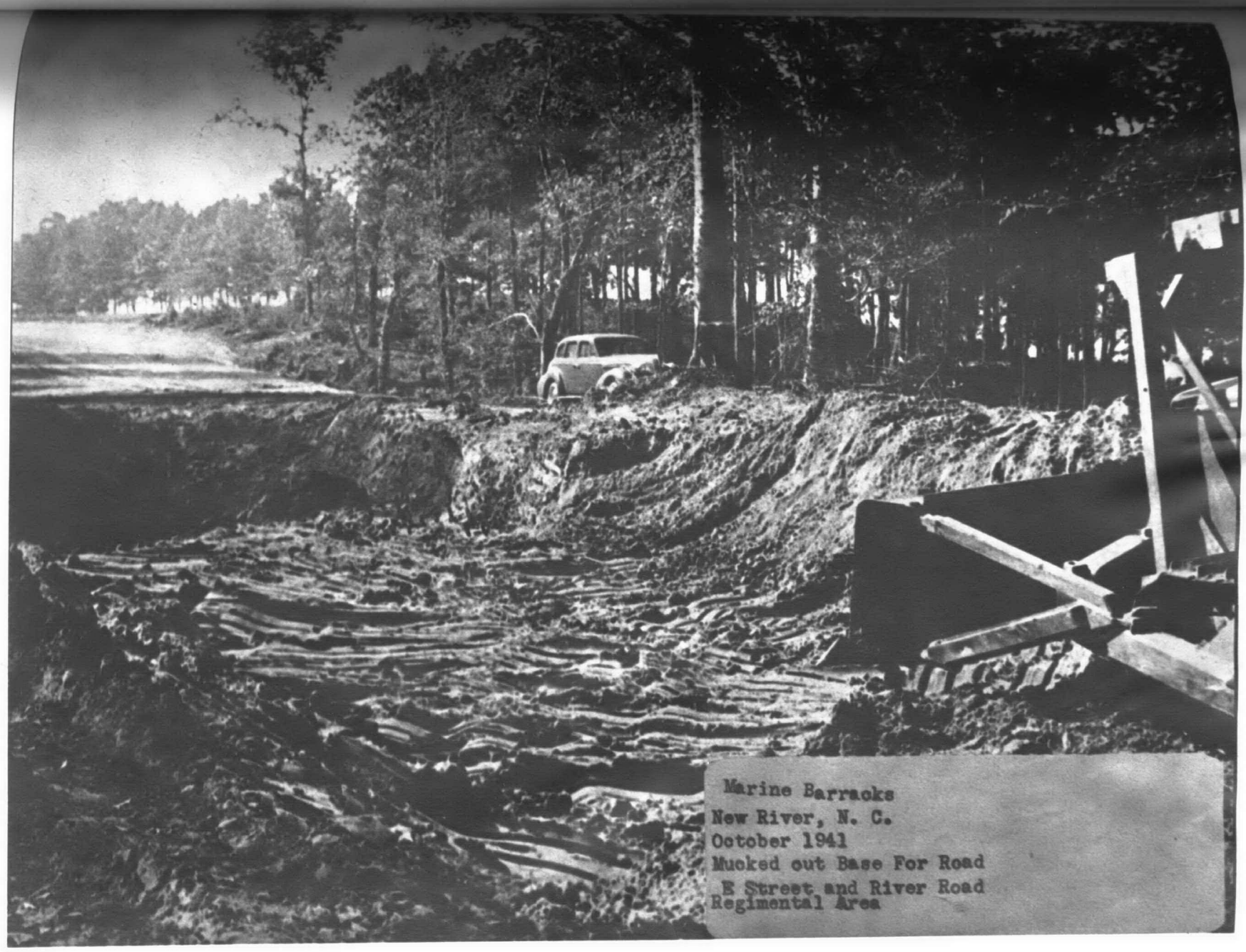
Sand Asphalt Width	Miles	Traffic Bound Macadam, Miles	Concrete Miles	Graded Miles	Total Miles
9	5.22		0.98		6.20
10	0.70	0.90	0.17		1.77
12	0.42	0.15			0.57
16	0.22	1.74			1.96
18	16.24	2.69			18.93
20	6.37	0.32			6.69
22	79.49	3.60		0.62	83.71 *
Variable	1.62				1.62
Dual 22'	5.63				5.63
Total	115.91	9.40	1.15	0.62	127.08

* Error in Volume II.

L-2. Railroads. Approximately two miles of trackage were added to the original system. The majority of this trackage is located in the Industrial Area and consists of side and passing track. One track was built to the center of the loading ramp to provide end loading facilities.

15.63 miles of railroad track were provided for the entire project including 890 lineal ft. of trestle and 2,072 lineal ft. of pipe culverts.

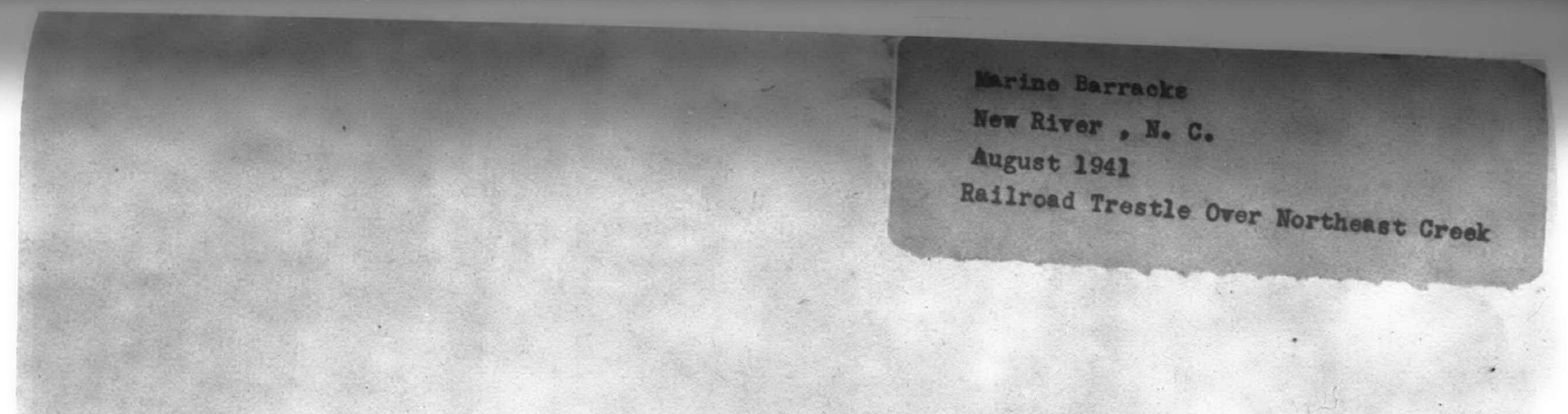
L-3. Airports. Miscellaneous glider and seaplane facilities were provided. New River was swept for obstructions and dredged between Hadnot Point and Montford Point to provide a safe landing place for seaplanes.



Marine Barracks
New River, N. C.
October 1941
Mucked out Base For Road
E Street and River Road
Regimental Area

No. 68 Marine Barracks
New River, N.C.
31 October 1941
Railroad Trestle over Wallace Creek
Looking North East
Regimental Area
Contract NOy-4750

Marine Barracks
New River , N. C.
August 1941
Railroad Trestle Over Northeast Creek



No. 16 Marine Barracks
New River, N. C.
16 August 1941
View of slide in filled Highway approach to Wallace Creek.
Looking North West toward Wallace Creek.
Contract NOy-4750

No. 21 Marine Barracks
New River, N. C.
3 September 1941
Backfilling muck hole at intersection of Main Service Drive and "C" Street.
Contract NOy-4750

No. 91 Marine Barracks
New River, N.C.
17 November 1941
Clearing operations in Airport with
Bulldozer blade on Caterpillar tractor
Regimental Area
Contract NOy-4750

CHAPTER M - PART II

WATER SUPPLY AND DISTRIBUTION

CONTENTS

Section	Title
M-1	Introduction
M-2	Tent Camps Nos. 1 and 2
M-3	Division Training Area
M-4	Midway Park Residential Area
M-5	Montford Point Area
M-6	Barrage Balloon Battalion
M-7	Amphibian Base
M-8	Rifle Range Area
M-9	Glider Training Base
M-10	Peterfield Point Tent Camp
M-11	Tank Battalion Tent Camp
M-12	Camp Knox
M-13	White Cemetery
M-14	Beach Area
M-15	Swimming Pools
M-16	Summary

M-1. Introduction. During the period October 1, 1942 - December 18, 1943 water supply and distribution facilities were designed for several new areas and additional facilities were added to areas reported previously in Volume II. Design methods were similar to those used previously. The facilities provided are described more fully in the following sections of this chapter.

M-2. Tent Camps Nos. 1 and 2. Volume II appears to cover all work performed.

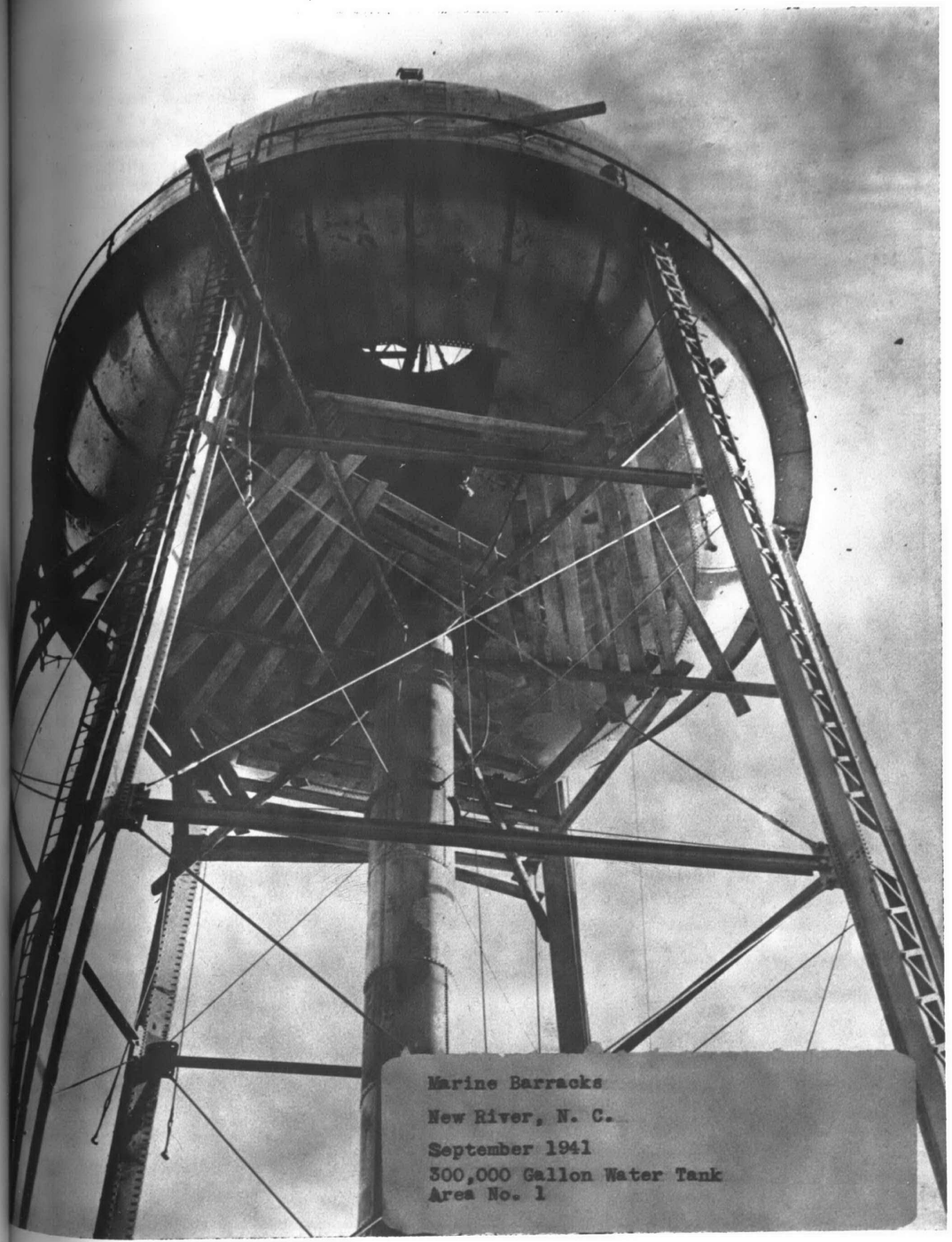
M-3. Division Training Area.

M-3.01. Regimental Areas 1, 2, 3, 4, and 5. No additions have been made to the distribution systems within these areas except to extend 6-inch services to the additional new buildings built in these areas.

M-3.02. Industrial and Supply Area. In order to serve the Colored Labor Battalion, with a population of 1,000, a complete loop of six and eight inch main was constructed around this unit. The new 6-inch main connects with the existing 8-inch in Michael Road and runs southeasterly along Birch Street and southwesterly along Lewis Street to Cedar Street. From this point an 8-inch main follows Cedar Street to connect with the existing 8-inch main in Michael Road. The new mains are sized to carry out the general plan of distribution previously adopted for this area.

No. 27 Marine Barracks
New River, N. C.
30 September 1941
View of Water Pump House and Reservoir,
looking South West
Contract NOy-4750

Marine Barracks
New River, N. C.
September 1941
Pouring Foundation for 300,000 Gallon
Water Tank _Area No. 1

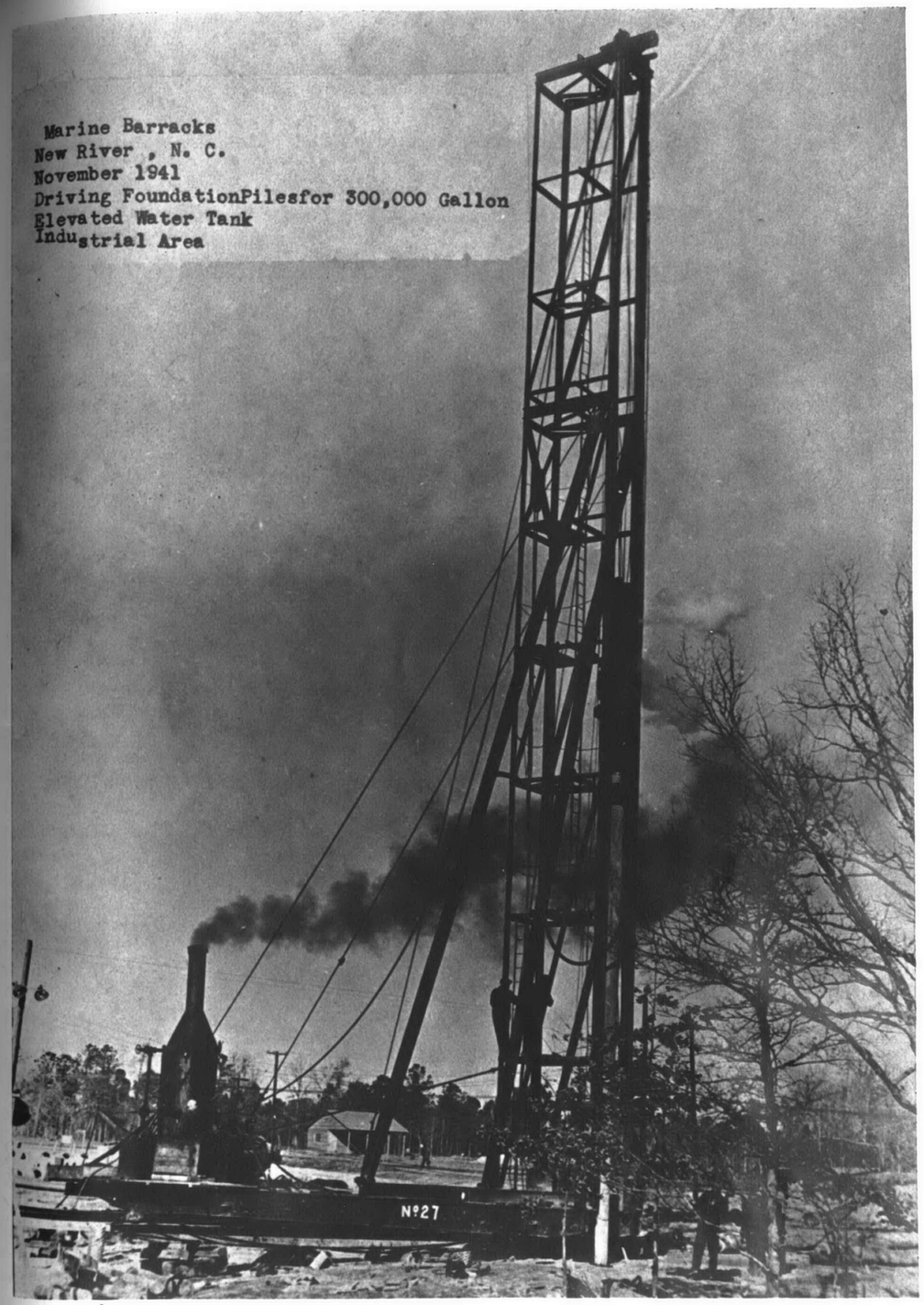


Marine Barracks

New River, N. C.

September 1941

300,000 Gallon Water Tank
Area No. 1



Marine Barracks
New River , N. C.
November 1941
Driving FoundationPilesfor 300,000 Gallon
Elevated Water Tank
Industrial Area

An 8-inch extension has been provided in Michael Road past Building 1005.

An 8-inch main has been installed along Fir Street to tie in with existing stubs in Fir Street, completing the circuit between Center and East Roads. This line also serves Building 1606.

A short extension of 8-inch pipe was made across Gum Street in line with East Road to serve Building 1707.

M-3.03. Paradise Point Road School. A 10-inch main has been extended from the existing 6-inch main directly in the rear of the Gate House to Holcomb Boulevard , thence south along the center strip of Holcomb Blvd to Paradise Point Road and along the south side of same to a point past the west end of the school building and directly opposite sewage pumping station No. 13. Four-inch services supply the school and pumping station.

The 10-inch line was selected as the proper size for future extension either for ultimate service from the Division Training Area or in the event that the supply continues to be derived from Midway Park and new activities are served along the Holcomb Boulevard or Paradise Point Road.

With this in mind, valves and fittings have been provided for a future feeder line to reinforce the existing 6-inch main from the Midway Park system and the point of connection just back of the Gate House.

M-3.04. Hospital Area. In order to insure the Hospital Area against interruption in water service and to augment the flow for fire fighting, a second 12-inch feeder main was installed to connect with the existing 12-inch main in River Road at a point near "A" Street and to extend along the southwest side of River Road to the existing 12-inch section of the Hospital Area loop. Valves and fittings have been installed at this point to permit connection with an elevated storage tank should one be required in the future.

M-3.05. Women's Reserve Area. The distribution system designed to serve this area was based upon a population of approximately 2,000. A new 8-inch main was constructed along the road bounding this unit on the north and east, connecting at the south end with the existing 12-inch main in Holcomb Boulevard and at the west end, with the existing 16-inch feeder to the elevated water storage tank. An 8-inch cross-over was installed from the above main to the existing 8-inch in Post Lane. The system is completely looped and is adequate for maximum fire service requirements.

M-3.06. Water Storage, Treatment and Pumping Plant. There have been minor changes and additions made to this plant as follows: A rotary surface washer was installed for trial purposes in filter no. 1 by agreement with the Permutit Company wherein its purchase is optional with the Navy Department depending upon the results obtained.

After being in operation for four months, the washer has thoroughly cleaned the sand which was originally in extremely bad condition and has maintained a satisfactory condition without resort to hand cleaning.

The two filters not so equipped require frequent hand cleaning in order to rid the sand of certain impurities carried over from the softening process. These impurities, consisting mainly of iron and lime, form mud balls and dead spots in the sand beds which cannot be removed by ordinary back-washing. It has been recommended that rotary surface washers be purchased and installed in all three filters in order to secure better and more economical plant operation.

An additional 4-inch service line has been installed to augment the original 4-inch service which was connected with the 12-inch emergency wash water line. The new service connects with the 12-inch line in the Main Service Road and loops into the existing service with check valve arrangement whereby pressure will be retained for operating hydraulic valves, chlorinators and other equipment in the event that the 12-inch main inside the building is put into use for the emergency washing of filters. The pressure loss on this main and the service therefrom while washing filters would seriously interfere with other normal operations as above stated.

Recommendations were made to the Officer in Charge under date of July 29, 1943, for the enlargement of this plant to serve the population in excess of that for which is was designed. At this time it appears that the population for which the plant was designed will be almost doubled and that the plant capacity may be exceeded during peak demands.

M-4. Midway Park Residential Area. Additions have been made to this area in accordance with plans and specifications prepared by others. We are advised that the additions consist of 264 housing units which will add approximately 1000 to the population now occupying the existing 700 units, making a total population of 3800.

The average demand is figured at 60 gallons per capita per day or 228,000 gallons and the maximum at 100 gallons per capita per day or 380,000 gallons.

Each of the two wells supplying this area will produce 300 g.p.m. or 432,000 gallons per day which is ample for present requirements. There have been no changes made in the plant or the original distribution system.

Details covering the extension of water facilities to serve the new housing units are the responsibility of others and are therefore not included in this report.

M-5. Montford Point Camps 1, 2, 2A, 3 and Camp Knox.

M-5.01. Design. The original design of water utilities for this area as described in Volume II was based upon a population of 1500 with the understanding that the camp was to be of temporary nature.

Since that time, this area has been greatly enlarged and all of the units known as Camps 1, 2, 2A and 3 together with Camp Knox, have been physically connected by feeder mains to produce one complete water system. This was not originally contemplated but was later authorized after the extent and importance of the development justified the consolidation of the water systems as being more economical and decidedly more efficient than to operate them as detached units.

The order in which the work was planned and executed is as follows:

Plans for a water distribution system, one well and one small elevated tank for the original C.C.C. Camp were approved October 14, 1941. This system was constructed as an independent unit by C.C.C. authorities.

Plans for the first Montford Point Tent Camp water distribution system, designed for 1500 men, were approved April 30, 1942, including two wells, Z and Z-1, with one 40,000 gallon elevated storage tank. This system was constructed as a separate unit and is fully described in Volume II, Section M-5, of the completion report.

The original C.C.C. Camp, now known as Camp Knox, was enlarged for a population of 1,000 men and plans for augmenting the original distribution system with larger pipe lines, installing fire hydrants and extending mains to serve new buildings, were approved February and April, 1943. One additional well known as C.C.C. No. 2 was approved December 26, 1942. On June 7, 1943, plans were approved for an 8-inch feeder main to connect with Area 3.

Plans for an 8-inch feeder main to tie in the Camp Knox system to Area No. 3 were approved June 4, 1943. Plans for Area No. 3 distribution system and feeder mains to connect with other areas, also for elevated storage and additional wells, were approved April 16th and May 25th, 1943.

After consolidation of the various units as above described, the water supply and feeder mains are sufficient to serve a population of 11,000 to 12,000. The present population in these areas is 8100.

Fire flow will vary considerably at different locations because of the arrangement of the system, which spreads over a large area and requires long lines of feeder main between elevated storage tanks. Also the normal working pressure is not more than 38 pounds. Pipe sizes have been kept to a minimum consistent with the service to be rendered. Fire flows will range from 500 g.p.m. in Camp Knox to 1000 g.p.m. in Camp No. 3.

M-5.02. Supply. The supply for the system as now consolidated is derived from wells located and equipped as follows:

Two wells, Nos. CCC No. 1 and No. 2, are located within Camp Knox (originally C.C.C. Camp)

Well C.C.C. No. 1, as described in Vol. II, Sec. M-12.02, was originally equipped with 50 g.p.m. pump. Since that time it has been equipped

with a Layne-Bowler deep well turbine type pump, electrically driven, rated 150 g.p.m. against 176 feet total discharge head. This change was made in order to take advantage of the full capacity of the well.

Well C.C.C. No. 2 discharges about 150 g.p.m., and is as described in Volume II, Section M-12.02.

Six wells have been drilled in addition to the above. The location and yield is as follows:

Well No.	Location	Yield
Z	Montford Landing Road north of Area 1.	150 g.p.m.
Z-1	On Montford Landing Rd., Area No. 1	100 g.p.m.
Z-2	North of Area 2, on 6-inch service main	150 g.p.m.
Z-3	On separate 6" transmission main north of Area 2	300 g.p.m.
Z-4	On separate 8" transmission main north of Area 3	150 g.p.m.
Z-5	At end of 6" service main, "C" Street, Area 3	130 g.p.m.
	Total from new wells	980 g.p.m.
	From wells CCC 1 & 2	300 "
	Total available supply	1280 g.p.m.

The 1280 g.p.m. discharge rate is equivalent to 1.84 million gallons per day, which should, with 50% of the total capacity held in reserve for peak loads and standby, be sufficient for a population of 11,000 to 12,000 based upon a daily consumption of 100 gallons per capita.

Pumping equipment for Well Z-3 was ordered prior to drilling and testing in order to have the supply available for immediate use. The pump was specified to deliver 100 g.p.m. against 160 ft. maximum discharge head, which was in line with results from other wells previously drilled in this area. After it was found that Well Z-3 would safely produce 300 g.p.m., a reserve pump previously purchased for Midway Park Residential Area was found suitable and was installed in lieu of the 100 g.p.m. unit. This unit is a Layne-Bowler deep well turbine type pump, electrically driven and rated at 300 g.p.m. against 170 ft. total discharge head. The only change made in this equipment was to lengthen the shaft and column so that the pump bowls could be set 50 feet instead of 40 ft. below the foundation.

The 100 g.p.m. pump ordered for this well was subsequently used in Well Z-5 and actually produces about 130 g.p.m. The quality of the water obtained from different wells varies in hardness from 138 to 260 p.p.m. and in Iron content from 0.2 to 2.00 p.p.m.

Logs of the wells within this area, together with technical data covering hydraulics and construction details and mechanical equipment, are shown on drawings filed in the Public Works Office.

M-5.03. Treatment. No treatment has been authorized or provided except sterilization by means of hypochlorinators. Wells Z, Z-1 and Z-2 are equipped with Wallace and Tiernan hypochlorinators. Wells Z-3, Z-4 and C.C.C. Wells Nos. 1 and 2, Proportioneers' Inc. hypochlorinators.

It has been previously recommended to the Officer in Charge that altitude valves be installed, one on each of the two 40,000 gallon elevated storage tanks serving this area in conjunction with 150,000 gallon steel tank. This appears to be the proper means for maintaining balance in static water level and to prevent overflowing under widely variable pumpage from different well combinations scattered throughout the various areas.

M-5.04. Well Transmission Mains and Distribution System. As a result of the original intent to provide separate water systems for the units in this Area, as discussed under Section M-5.01, Design, it was necessary in some instances to parallel existing small mains with larger ones. In general, the system consists of a 10-inch feeder main extending from a point just north of Camp 2, through Camps 1 and 3. The 10-inch line terminates north of Camp 3 in order to provide service to an additional area which was under contemplation at that time.

The 10-inch feeder is tied in to the grid systems of 6 and 8 inch pipe serving the respective areas and also connects with the 150,000 gallon elevated storage tank.

Well Z-3 is on a separate 6-inch transmission main. Well Z-4 is on a separate 8-inch main. This main has sufficient capacity for extension to a future well if one is required to further augment the supply.

Well C.C.C. No. 1 is on a separate 4-inch main.

The entire distribution system and the well transmission mains are of Class 150 cast iron pipe with A.W.W.A. specification gate valves and fittings except the original installation for the C.C.C. Camp (now Camp Knox) where threaded steel pipe was used in sizes smaller than 4-inch.

M-5.05. Elevated Storage. Three elevated tanks, as follows, provide storage and maintain a working pressure of about 38 pounds.

One 40,000 gallon wood tank on a steel tower in Camp No. 2.
One 40,000 gallon wood tank on a steel tower near the southmost corner of Camp No. 1.
One 150,000 gallon steel tank and tower near the northmost end of Camp 3.

The capacity lines of these three tanks was specified to be at elevation 108.7.

M-5.06. Future Water Treatment. No treatment is contemplated except for swimming pools or other special uses. In such cases, individual plants will be provided.

M-6. Barrage Balloon Area. There have been no changes in the water system serving this area, except for service to Bachelor Officers Quarters.

M-7. Amphibian Base. There have been no changes in the water system serving this area.

M-8. Rifle Range Area. An additional 8-inch feeder main has been constructed from the existing 8 inch main in Range Road to extend southerly along Booker T. Washington Boulevard to the Colored Troops Area. A complete loop of 6-inch pipe is provided to serve all of the buildings except the post exchange building which is detached.

The design of this addition was based upon a population of 1,000.

Fire flow of about 750 g.p.m. will be available.

8.01. Supply. Two additional wells have been drilled in order to supply the added population and to provide standby service.

Well S-1 is located near Range Road just east of the elevated storage tank. The total depth is 80 feet, ground level is at elevation 51.0, static water level, elevation - 5.30. At 250 g.p.m. discharge the drawdown level is elevation -·5.9. Equipment consists of a Layne-Bowler deep well electrically driven centrifugal type pump rated 250 g.p.m. against 190 ft. maximum discharge head.

Well T-1 is located just west of the Colored Troops Camp and is connected with the 8-inch supply main by a short line of 8-inch transmission pipe. The total depth is 77 feet, ground level is at elevation 32.0, static water level at elevation 8.75. At 150 g.p.m. discharge, the drawdown level is elevation - 4.84. Equipment consists of a dual electric and gasoline engine driven deep well centrifugal type pump manufactured by Layne-Bowler Co.

The total available supply from all wells now drilled is 750 g.p.m. or 1.08 m.g.d. This flow should be sufficient for a population of 5,000 at an average consumption of 100 gallons per capita per day with 50% of the well capacity held in reserve for peak demands and standby service.

8-02. Treatment. No treatment is provided except sterilization by means of a hypochlorinator installed at each well. This equipment was furnished by Proportioneers, Inc. and is electrically driven, arranged to start and stop with the pump. Future treatment of this supply is discussed in Volume II, Section M-8.08.

M-9. Glider Base. No changes have been made in the water system serving this activity.

Complete plans have been prepared to serve a Lighter-than-Air Base situated adjacent to the Glider Base. These plans contemplate extending the existing 6-inch main from the Glider Base for a distance of 800 feet to a point from which 3-inch services supply each of the two mooring facilities and the main building used for living quarters and storage. Action on this project has been deferred.

M-10. Peterfield Point Camp. There have been no changes in the water system serving this Area.

M-11. Tank Battalion Tent Camp. There have been no changes in the water system serving this area.

M-12. Camp Knox. The water system for this area was combined with that of Montford Point. See Section M-5.

M-13. White Cemetery. There have been no changes in the water system for this area.

M-14. Beach Area.

M-14.01. Mock-up. There have been no change in the water system serving this activity. Attention is called to the fact that the new water system as planned for the Signal School Facilities can be used for the installation of fire hydrants or sprinkler system for the protection of the Mock-up structure. Before adequate flow can be secured on the well transmission main to the northwest of the elevated tank it will be necessary to abandon the check valve which is specified for installation at the tank. Also, it is possible to extend the water main from Well No. 23 along the Mock-up Road to connect to Well No. "X" at the Sneads Ferry Road.

M-14.02. Signal School Facilities.

(a) Design. The design of water utilities for this Area was based upon an ultimate population of 1800 troops, including future expansion along the beach with normal consumption 100 gallons per capita per day. Fire flow of 800 gallons per minute will be available. The total average daily demand will be 18,000 gallons per day as against a total specified supply of 430,000 g.p.d.

(b) Development of Supply. An attempt was made to obtain an adequate supply of water on the site of this activity and two test wells were drilled, one at the northeast end and the other at the southwest end of the Area. Test wells were drilled to a depth of 51 and 80 feet, respectively, and were cased with 4-inch pipe. The yield on pumping was good but analyses showed a chloride content of 1650 p.p.m. in the southwesternmost well. This condition can readily be expected at any location which lies between the Ocean and the Inland Waterway where the natural strata

have been cut by dredging or where permeable material permits the salt water to penetrate into the fresh water horizon. This site was abandoned and new test wells were drilled on the mainland. The first well was located on the Beach Road, 2300 feet north of the Inland Waterway and the second test well on the Mock-up Road, 2300 feet northerly from the Waterway, the last location being the site selected for permenent well, No. 22.

Analyses of samples from these wells are very similar, the total alkalinity being 150 to 160 p.p.m., chlorides 16 p.p.m. and soap hardness about 160 p.p.m.

The water being of satisfactory quality, it was decided to confine future drilling to the mainland. A contract has been awarded to the Layne-Atlantic Company under Specification No. 12190 to furnish water at the rate of 300 g.p.m. from not less than two wells both to be located on the Access Road to the Mock-up, Well No. 22 to be 2300 feet northerly from the Inland Water way and Well No. 23 to be 2500 feet northerly from Well No. 22. It is expected that the stated requirement of 300 g.p.m. can be derived without difficulty from not more than two wells and accordingly, the specification designates that auxiliary gasoline engine drive shall be provided to pump 150 g.p.m., meaning that one well pump shall be electrically driven only and the other shall have dual electric and gasoline engine drive. Pumps are to be deep well turbine type sufficiently powered to deliver their respective capacities into the elevated tank with overflow at elevation 132.0.

(c) Treatment. No treatment has been specified except sterilization by means of one hypochlorinator for each well pump as covered by Specification No. 12098, Para. 11-05. This equipment will be electrically driven and manually regulated.

(d) Automatic Controls. No automatic controls have been specified, it being the intent to provide this equipment after the permanent wells are drilled and definite operating conditions are known.

(e) Well Transmission and Distribution System. The wells will discharge into a 10-inch transmission main located along the east side of the Mock-up Road to a point near the Inland Waterway where the main leaves the road and crosses the waterway by submerged pipe line, thence to the elevated tank and distribution system within the Signal School.

The distribution system consists of a 10-inch feeder main extending the full length of the Area. The system is specified to be of Class 150 cast iron pipe except that part which is submerged under the Inland Waterway and the apparatus thereto which are supported by piles. The submerged line will be Class D, with ball type joints and the approaches Class 150 with mechanical type joints, all as covered by Specification No. 12098.

Fire hydrants are to be of the compression type to conform with A.W.W.A. and Fire Underwriters requirements. Gate valves and fittings are to be A.W.W.A. standards.

(f) Elevated Storage. A steel storage tank of 100,000 gallons capacity with high water level at elevation 132 will maintain about 50 pounds working pressure. This tank is of special design and will be furnished and erected by Chicago Bridge and Iron Company.

(g) Future Water Treatment. No provision is being made at this time to treat the supply for the removal of iron and hardness. The layout is such that a future plant can be interposed between the wells and the elevated tank without altering the system as planned.

M-15. Swimming Pools.

M-15.01. Three identical size pools were provided for training purposes and one smaller outdoor pool for recreational purposes in the Officers Area, near Paradise Point.

M-15.02. Training Pools. All three pools use the same methods of treatment when the pool water is being recirculated, the major difference between the Division Training Area pools (Regimental Areas No. 2 and No. 5) and the Montford Point Area pool being in the methods of treatment when filling. A general description of the treatment processes follows.

(a) Design. The basic design of the pools was prepared in accordance with directives from the Officer in Charge. The water capacity of each pool is 434,000 gallons.

Recirculation will be at the rate of 1200 gallons per minute equivalent to four turnovers per 24 hours, in accordance with the latest trends in design and to provide for the heavy loads that may result from combat training activities. Station water, as it comes from the mains, will be used for filling the pools and for make-up water during normal operation. The special treatment of this supply together with the normal cycle operation is set forth in detail below.

(b) Filters. The mechanical equipment consists of three pressure filter units each enclosed in a horizontal steel tank 8 ft. diameter by 18 ft. long giving 133 sq. ft. of effective sand area. At 3 gallons per square foot per minute each, the combined filtering capacity will be 1200 g.p.m. Each unit is to be equipped with air relief valves, pressure gauges and rate of flow indicators.

(c) Circulating and Wash Water Pump. For passing the water from the pool through the filters and also for backwashing the filter units, a single pump has been provided with characteristics whereby normal recirculation will be accomplished at 1200 g.p.m. against a 50 ft. head and backwashing at 1600 g.p.m. against a head of about 30 ft. This unit will be electric driven at 1750 r.p.m. by 25 H.P. motor, with push-button controls.

(d) Chemical Feed Equipment. Proper conditioning of the recirculated water is accomplished by coagulation with alum, filtration and the introduction of soda ash for pH adjustment after filtering. Soda ash will be fed in solution from a steel tank 3'-6" diameter by 3'-6" high holding 250 gallons. The alum tank will be of wood 4'-6" diameter by 3'-6" high holding 400 gallons. Both tanks will be equipped with dissolving baskets and metered fresh water supply for preparing solution of predetermined strengths.

Chemical feeders consist of three positive displacement pumps capable of adjustment from 0 to maximum capacities, each driven by 1/6 H.P. electric motor.

Normally one pump will feed soda ash, the second alum, and the third pump, capable of pumping either solution will be held for standby service.

Suction and discharge piping is arranged so that the standby unit can be put into service by the operation of valves to replace either the alum or the soda ash pump. Introduction of chemicals into the recirculation line has been made at points which will insure the best possible mixing and reaction without adding additional equipment.

Sterilization is effected by means of a manually controlled solution feed chlorinator with a capacity of delivering 5 to 40 pounds per 24 hours. This unit is fully equipped and of the conventional type.

Ammonia will be injected as an adjunct to chlorination in order to effect more thorough sterilization by reason of its properties as a chlorine carrying agent and also because of its effect in stabilizing and neutralizing taste and odor.

The ammoniator is of the manual control direct feed type with maximum capacity of 10 lbs. per 24 hours.

Both the chlorinator and ammoniator are completely equipped with gauges, connectors, and platform scales for weighing gas containers, together with other required accessories and spare parts.

(e) Venturi Meter. For the purpose of maintaining proper flow when recirculating or washing filters a venturi meter is installed at each pool to indicate the rate of flow continuously for recirculation and also for filter washing. The meter tube is installed in the main pipe line between the recirculating pump and the filters.

(f) Wash Water and Waste Line. Filter washing will be at the rate of approximately 1600 gallons per minute. The rate of wash water through a given filter will be controlled by means of a common well with weir and ball float butterfly valve regulated and set to discharge at a predetermined rate. This control should be set by trial to discharge a minimum of water consistent with the thorough washing of filter units.

A separate butterfly valve regulated by the same weir as used for backwashing is provided to regulate the rewash or rinsing of the filters. This valve should be set for the normal filtration capacity of one filter or 400 gallons per minute. Each filter should be rewashed to the wash water tank after each backwashing to settle the filter media and to prepare it for return to normal filtration.

Adequate waste lines are provided for conveying wash water and for draining the pool to the wash water tank. This tank is drained to a nearby ditch as directed.

(g) Chemical Storage. Floor space left next to the chemical feed machines will provide storage of approximately nine tons of alum and five tons of soda ash. Under normal operation this supply should be sufficient for 60 days continual run.

(h) Water Heater. A 24000 gallon per hour water heater capable of raising the water temperature from 50 degrees F. to 75 degrees F. was provided after the filter nest. Piping and valves were arranged so that the heater can be by-passed. The heater will also raise the water temperature 5 degrees F. at the recirculation rate of flow- 1200 gallons per minute.

(i) Cycle of Operation, Division Training Area. Each time these pools are emptied they will be refilled with Station water having a pH of about 8.5, alkalinity of 50 p.p.m. and soap hardness of approximately 53 p.p.m. Laboratory tests previously made indicate that about 3 grains per gallon of alum are required to flocculate this water in its normal condition. This dose is obviously too high for normal operation and accordingly, alum should be added by broadcasting directly into the pool during each refilling by such amount as is required to reduce the pH to 6.4 or to whatever pH value is found to produce good flocculation. Unless this is done it will be necessary to operate the plant during each refilling and dose with alum alone by means of the chemical feeder until a sufficient amount has been introduced to lower the pH value to the optimum point. The latter procedure will require much recirculation with added cost for pumping, as against the quick and more economical method of adding alum direct to the incoming water. Careful pH control must be exercised in either case.

The pH value for proper coagulation, once determined, should be permanently adhered to for plant operation and control. As stated above this pH will probably be on the acid side or less than 7.0. Therefore after passing through the filters and before entering the pool, soda ash must be introduced to raise the alkalinity to a corresponding pH value of 7.0 or higher as needed to prevent irritation to the eyes and nose of swimmers. The exact pH of the pool water must be determined by trial and the chemical feed apparatus should be set to maintain the required conditions for continuous recirculation at the rate of 1200 g.p.m.

The pH of the pool water should be no higher than is actually required as otherwise an excess of alum will be needed to secure adequate coagulation.

If the pool has been out of operation for any period of time, the water supply line should be flushed by wasting down the line provided until all sediment or other foreign matter has been cleared. This should be done before any water is admitted to the pool to prevent any discoloration of the pool concrete.

Two-thirds of the pool may be drained by gravity to the wash water tank. The remainder can be pumped out with the recirculation pump.

(j) Fire Hydrant Connection. A fire hydrant connection was made to each pool to provide an emergency water supply for fighting nearby conflagrations. A sign was provided alongside of each hydrant designating it as such and the hydrant was also painted a contrasting color to the finish given the hydrants connected to the water system.

(k) Cycle of Operation, Montford Pt. Area Pool. The swimming pool designed for this area also will take untreated water directly from the distribution system for filling and for makeup purposes. However, analysis of this supply shows concentrations of carbonic acid gas and iron greatly in excess of that which can be tolerated for this usage.

Laboratory tests indicate that these constituents can readily be removed by proper aeration followed by filtration. Accordingly, this plant is equipped with a simple perforated tray aerator designed to treat raw water at the rate of 300 g.p.m. This rate of flow was selected as the maximum draft permissible on the distribution system.

After aeration the water is pumped at 300 g.p.m. through the filters and into the pool. The dosage of alum to be as needed from the chemical feeder to secure good coagulation. Soda ash is to be introduced after filtration exactly as is provided in the Division Training Area pools.

After the pool is filled with iron free water, the filters must be thoroughly washed and then the normal cycle of operation at a recirculation rate of 1200 g.p.m. put into effect. No broadcasting of alum will be required when refilling the pool with this water. Make-up water will be aerated and taken directly into the recirculation system without pumping. Any flushing of the water supply line to waste can be done at the aerator. The pool can be emptied in the same manner as is employed in the Division Training Area pools.

M-15.03. Paradise Point Swimming Pool. The basic design of this pool employs the same type of water treatment and recirculation as was used in the training pools, the chief differences being the elimination of a pool water heater, the addition of a wading pool and modifications due to the smaller water contents of the pool.

(a) Design. The water contents of the pool are approximately 177,500 gallons. Recirculation is at the rate of 510 gallons per minute, which is equivalent to four turnovers per 24 hours. The same water supply as is used in the Regimental Areas 2 and 5 pools, namely, from the Division Training Area Water Treatment Plant, is also used at this pool.

(b) Filters. Three vertical type steel pressure filters have been provided. Each filter is capable of filtering 170 gallons per minute at a 3 gal. per sq. ft. per minute rate. Filter media are of the conventional sand and gravel types. Each unit is provided with air relief valves, pressure gauges and rate-of-flow indicators.

(c) Circulating and Wash Water Pump. A single pump unit has been provided for both recirculation and for back washing the filter units. The pump has characteristics whereby normal recirculation is accomplished at 510 gallons per minute against a 40-foot head and back-washing at 700 gallons per minute against a head of about 25 feet. The unit will be electric driven at 1750 revolutions per minute by a 10 horsepower water, with push button controls.

(d) Chemical Feed Equipment. The chlorinator and ammoniator are of the identical size used in the training pools. The alum and soda ash feed equipment have been reduced in capacity in proportion to the reduced water contents of this pool.

(e) Venturi Meter. An 8-inch diamter venturi meter was installed between the circulating pump and the filter nest as in the training pools.

(f) Wash Water and Waste Lines. Filter washing will be at the rate of approximately 700 gallons per minute and rewashing at 170 gallons per minute controlled by the same means as described for the previous pools. The wash water tank is drained directly to New River as directed.

(g) Chemical Storage. Floor space left in the Filter Room will provide storage for 3 tons of soda ash and 5 tons of alum. Under normal operation this supply should be sufficient for 90 days continual run.

(h) Cycle of Operation. The same cycle of operation exists in this pool as was provided in the Regimental Areas 2 and 5 pools. The recommendations set forth therein apply equally well to this pool also. However, this pool can be drained entirely by gravity to the main drain line discharging into New River. A valved cross connection has also been provided between the pool drain line and the recirculating pipe line so that it too may be drained. With this scheme of drainage the recirculating system and the pool can be kept drained automatically throughout any periods the pool is out of operation.

(i) Wading Pool. The wading pool has a water content of approximately 5500 gallons. The pool is supplied from the potable water supply system and is not connected to the recirculating system of the swimming pool. Overflow is wasted to the sewer. This was considered the most satisfactory method of handling the wading pool water because of its relative highly contaminated nature and the resultant heavy load it would throw on the filters if connected to them. Also, wading pools must be drained and cleaned at very frequent intervals necessitating relative high losses of water anyway.

The overflow is regulated by an adjustable 12-inch length weir at the opposite end of the pool from the inlets. It is recommended that a turnover rate of about 3 hours be used which would be an overflow of approximately 30 gallons per minute. This, however, would only be applicable when the pool is loaded and in full use. At all other times the water supply should be cut off. This is very important in view of the fact that the water plant in the Division Training Area is rapidly becoming overtaxed by normal demands alone.

M-16. Summary. A summary of the pipe quantities of various sized used in the distribution systems and also for services, together with the number of fire hydrants installed, is shown in the following tabulation (as of December 18, 1943):

Reg. Areas 1 to 5, Incl., W. R. and Post Troops Areas.

Cast Iron Pipe		
16"	380'	
12"	27,550'	
8"	32,875'	
6"	13,406'	
4"	19,245'	
3"	3,860'	
2½"	2,545'	
2"	765'	
1¼"	500'	
	Total	101,126'
Fire Hydrants-		141

Hospital Area

Cast Iron Pipe		
12"	6,665'	
10"	4,930'	
8"	1,510'	
6"	3,010'	
4"	270'	
3"	1,420'	
2½"	100'	
1½"	80'	
1"	70'	
	Total	18,055'
Fire Hydrants-		20

Balloon Barrage Area.

Cast Iron Pipe		
12"	100'	
10"	1,325'	
8"	5,070'	
6"	2,310'	
4"	2,895'	
2½"	430'	
1½"	110'	
1¼"	130'	
3/4"	30'	
3"	505'	
2"	510'	
	Total	13,415'
Fire Hydrants-		21

Indus. & Supply Area, also Labor Bn

Cast Iron Pipe		
12"	7,075'	
8"	12,270'	
6"	7,610'	
4"	6,280'	
3"	630'	
2½"	120'	
1½"	290'	
2"	750'	
10"	4,920'	
	Total	39,945
Asbestos Cement Pipe		
18"	18,975'	
16"	2,525'	
14"	5,513'	
12"	6,520'	
10"	7,965'	
8"	15,007'	
	Total	56,505'
Fire Hydrants-		50

Officers Quarters Area

Cast Iron Pipe		
12"	2,800'	(feeder
12"	9,960'	main)
10"	5,280'	
8"	9,615'	
6"	8,400'	
4"	1,132'	
3"	488'	
2"	8,964'	
1¼"	10,500'	
3/4"	42'	
1½"	100'	
1"	228'	
	Total	57,509'
Fire Hydrants-		61

Rifle Range Area

Cast Iron Pipe	
10"	1,100'
8"	7,645'
6"	7,325'
4"	5,010'
3"	630'
2½"	780'
2"	3,480'
1½"	1,820'
1¼"	1,080'
3/4"	5,325'
Total	34,195'
Fire Hydrants -	22

Camp Knox (C.C.C. Camp)

Cast Iron Pipe	
4"	3,735'
8"	4,000'
6"	255'
2"	280'
Total	8,270'
Fire Hydrants	15

Mock-up

Cast Iron Pipe	
6"	45'
4"	70'
3"	50'
2"	12'
Total	177'
Fire Hydrants -	0

White Cemetery

Cast Iron Pipe	
4"	1,500'
2"	3,430'
1¼"	390'
Total	5,320'
Fire Hydrants	0

Peterfield Point Camp

Cast Iron Pipe	
4"	1,690'
2"	925'
3/4"	75'
Total	2,690'
Fire Hydrants-	5

Amphibian Base Area

Cast Iron Pipe	
6"	50'
4"	650'
3"	250'
2½"	50'
2"	240'
1¼"	260'
1"	100'
Total	1600'
Fire Hydrants	0
Asbestos-cement 6" Total	1670'

Glider Tr. Base (Landing Field)

Cast Iron Pipe	
8"	11,450'
6"	525'
4"	900'
3"	1,780'
2"	990'
1¼"	10'
1"	40'
Total	15,695'
Fire Hydrants	1

Montford Point Camp

Cast Iron Pipe	
10"	6,025'
8"	1,880'
6"	21,205'
4"	2,340'
3"	1,050'
2½"	40'
2"	430'
1½"	790'
12"	660'
Total	34,420'
Fire Hydrants-	44

Tent Camp Tank Battalion

Cast Iron Pipe	
4"	1,750'
2"	1,350'
Total	3,100'
Fire Hydrants-	5

Tent Camps I and 2

Cast Iron Pipe	
12"	665'
10"	1,805'
8"	14,845'
6"	16,550'
4"	4,932'
3"	470'
2½"	10'
2"	1,220'
1½"	170'
1¼"	330'
Total	40,997'

Asbestos-Cement Pipe	
12"	3,525'
10"	4,785'
8"	2,202'
6"	2,120'
4"	1,220'
Total	13,852'

Fire Hydrants - 65

Low Cost Housing (Midway Park)

Cast Iron Pipe		
10"	1,680'	
8"	19,650'	
6"	13,410'	
2"	5,290'	
3/4"	2,000'	(galv.)
3/4"	18,700'	(Copper)
Total	60,730'	

Fire Hydrants- 73

Signal School Facilities

Cast Iron Pipe		
12"	60'	
10"	7,030'	
6"	450'	
4"	1,100'	
3"	70'	
Total	8,710'	

Fire Hydrants- 5

SUMMARY OF PIPE INSTALLED IN ALL AREAS

Areas	Fire Hdts.	Cast Iron	Asbestos-Cement
Reg. Areas 1-5, W.R. and Post.Tr.	141	101,126'	
Industrial and Supply	50	39,945'	56,505'
Hospital	20	18,055'	
Officers' Quarters	61	57,509'	
Balloon Barrage	21	13,415'	
Amphibian Base	--	1,600'	1,670'
Rifle Range	22	34,195'	
Landing Field (Glider Base)	1	15,695'	
Mock-up	--	177'	
Camp Knox	15	8,270'	
White Cemetery	--	5,320'	
Montford Point Camps	44	34,420'	
Peterfield Point Camp	5	2,690'	
Tent Camp Tank Battalion	5	3,100'	
Tent Camps Nos. 1 and 2	65	40,997'	13,852'
Midway Park	73	60,730'	
Signal School	5	8,710'	
Totals	528	445,949'	72,027'
Total Miles		98.1	
Total Fire Hydrants		588	

CHAPTER N - PART II

SEWAGE COLLECTION AND TREATMENT

Contents

Section	Title
N-1	Introduction
N-2	General Design
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N-6	Montford Point Area
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N-9	Glider Training Base Area
N-10	Peterfield Point Tent Camp
N-11	Tank Battalion Tent Camp
N-12	Beach Area
N-13	Recommendations for Maintenance and Operation
N-14	Summary

N-1. Introduction. The sections that follow have been arranged in the order that they appear in Volume II with the new areas following the original ones. Only work designed in the time interval covered by this report is described in these sections with sewer quantities of the work to be built being shown in the sewer quantities schedules. No figures are shown for work designed but not to be built at this time.

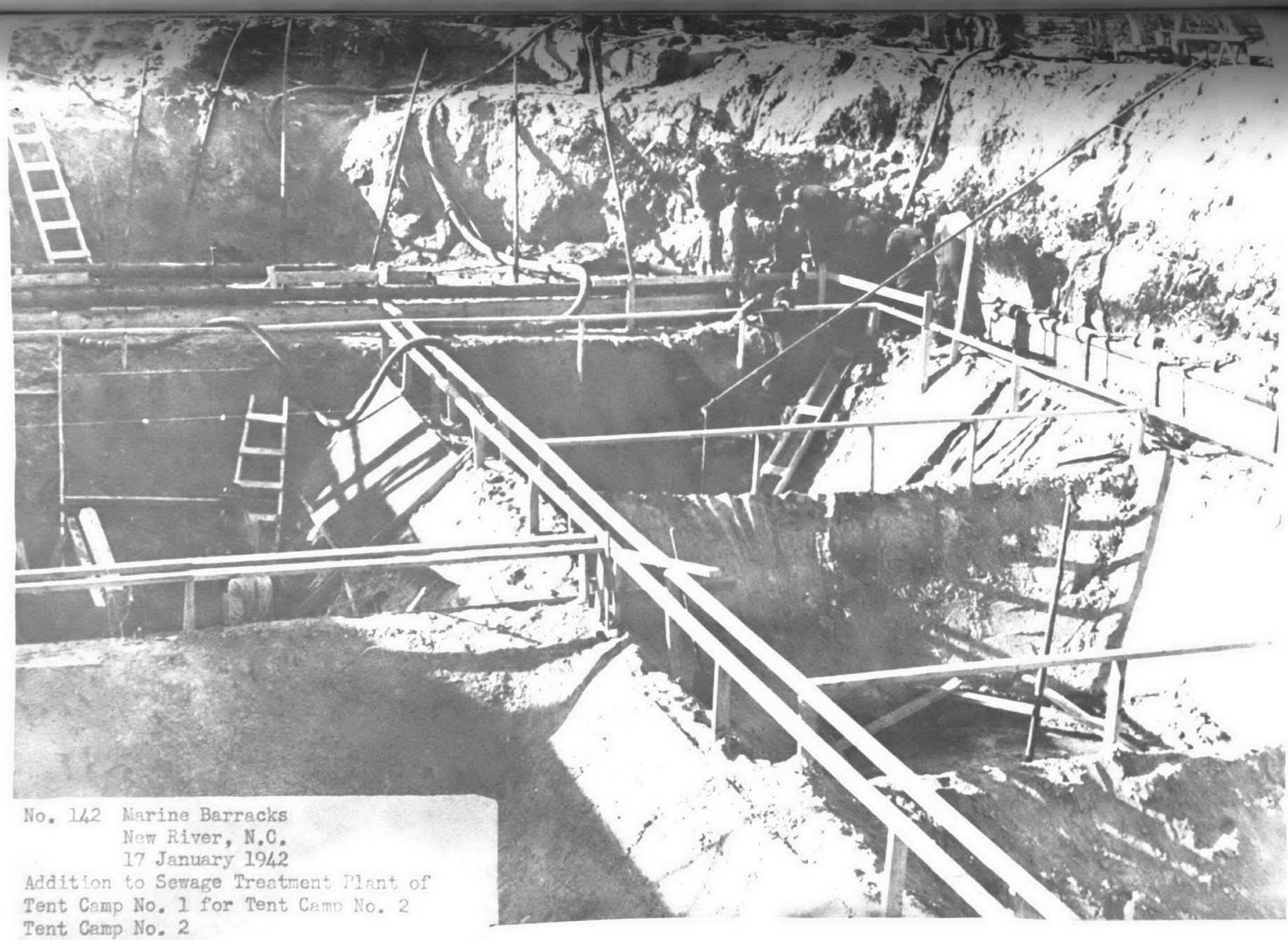
N-2. General Design. The same design data as set forth in Volume II were used in the design of the supplementary work. Additional design data used for the sewage treatment plants are set forth in the sections covering the various plants.

N-3. Tent Camps Nos. 1 and 2. No additions or changes were made to the sewerage system in this area.

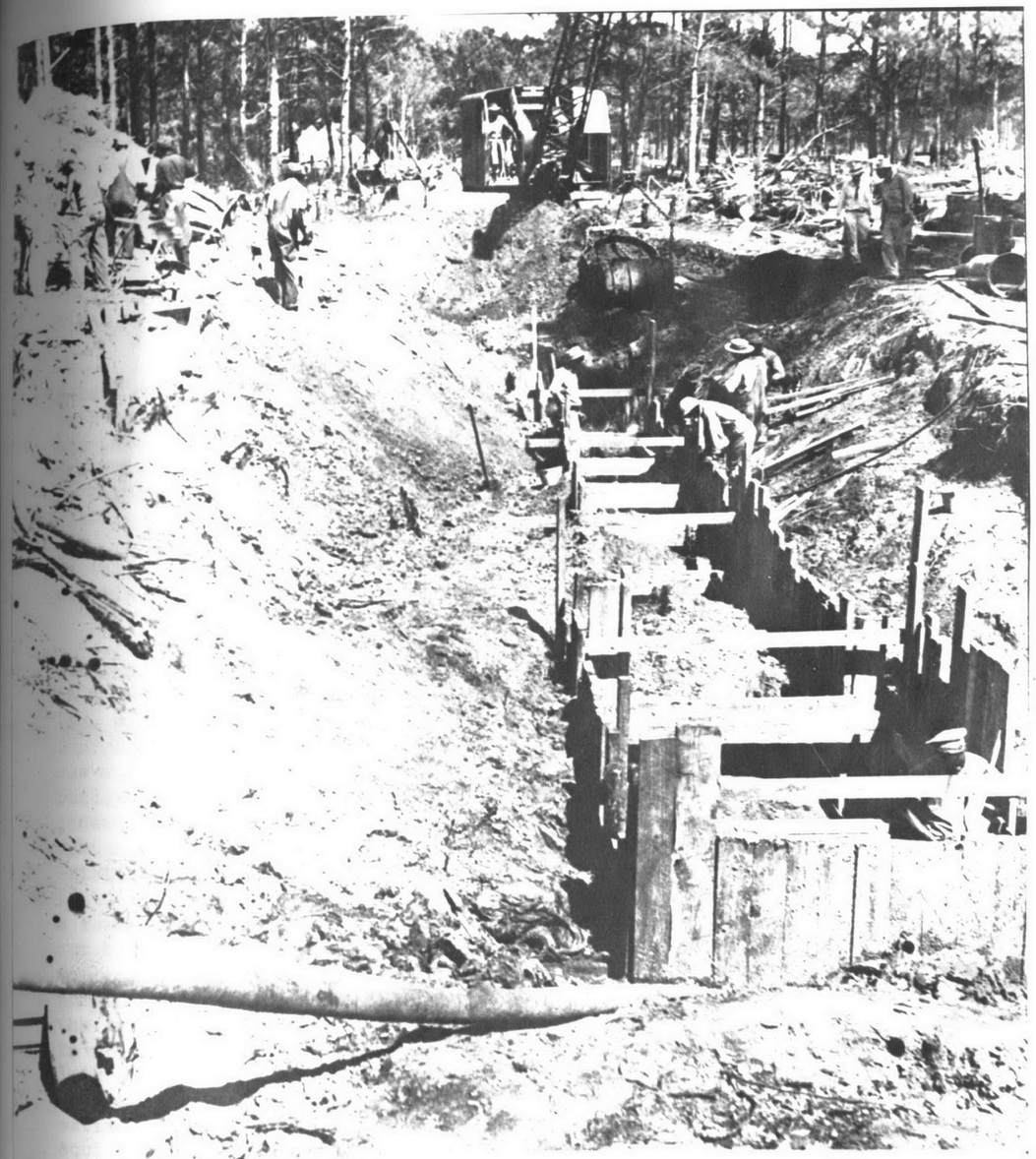
N-4. Division Training Area.

N-4.01. Regimental Areas.

(a) Regimental Area No. 1. Additional building connections were constructed in this area when the Women's Reserve took over to suit the additional facilities needed. No plans were prepared, the connections being located at the discretion of the outside construction forces employed by the U. S. Navy Department at that time. However, the approximate location of the majority of the connections were located as



No. 142 Marine Barracks
New River, N.C.
17 January 1942
Addition to Sewage Treatment Plant of
Tent Camp No. 1 for Tent Camp No. 2
Tent Camp No. 2
Contract NOy-4750



No. 19 Marine Barracks
New River, N. C.
3 September 1941
Work on Sewer in Barracks Area
Area No. 1, Looking North East
Contract NOy-4750

built and have been shown on the record drawings.

(b) Regimental Area No. 2. Additional 8-inch diameter laterals from the existing system were constructed in this area to serve the Bus Terminal and the sanitary flow from the Swimming Pool. The wash water from the pool filters, the filter room floor drains and the scum gutter drainage were conducted to a nearby drainage ditch as directed. The pool can be emptied to the ditch, also, through the same drain line.

(c) Regimental Areas Nos. 3 and 4. There were no additions or changes made to the systems in these areas.

(d) Regimental Area No. 5. In this area an additional 8-inch diameter lateral from the existing sewerage system was constructed to handle the sanitary flow from the Swimming Pool. The wash water from the pool filters, the filter room floor drains and the scum gutter drainage were conducted to a nearby drainage ditch as directed. The pool may be emptied to the ditch, also, through the same drain line.

N-4.02. Naval Hospital Area. The only addition made to the system in this area was for the 6-inch connection extended to serve the new plumbing outlets occasioned by the alterations to Ward 8.

N-4.03. Industrial and Supply Area. A short 8-inch diameter lateral and several connections were added to the existing sewerage system in this area to serve the following: (1) Mark I Gunnery Trainer Bldg. (No. 39); (2) grease traps on the north side of the Division and Post Garages that could not be served by the original sewer layout; (3) two new warehouses (Bldg. No. 1108 and 1606), and (4) a decontamination building (No. 1409). The Labor Battalion group of buildings while adjacent to this area was located on ground too remote from the existing system and a new 15-inch trunk sewer had to be constructed from the existing trunk sewer where it crossed Gum Street. This sewer also serves the Communications Building (No. 1707). The alternative of installing a sewage pumping station for these buildings was considered but was ruled out because there was no saving in cost of construction, an operating cost of another pumping station would be added and the force main from the pumping station would be discharging into the existing sewerage system of the Industrial and Supply Area which was not designed to serve the area in which the Labor Battalion was located. The 15-inch trunk sewer was laid on a minimum grade and sized so that additional areas adjacent to the Labor Battaion and along Michael Road could be served. The present estimated population contributing to this sewer is 1500, including an equivalent population of 500 for the Public Works Office and its attendant cafeteria operation. The capacity of the trunk sewer is 1.42 million gallons per day. While this new trunk sewer has approximately the same capacity of the existing sewer it is discharging into, it was felt that the diversion factor would be of such nature that peak flows from both the Industrial and Supply Area and the area this new sewer serves would not reach the junction point at the same time.

N-4.04. Post Troops Area. An 8-inch diameter lateral and several connections were added to the sewerage system in this area to serve the Red Cross Building (No. 41), the Battalion Warehouse (Bldg. 27) that was altered to serve as a Photo Shop, and one of the Bachelor Officers' Quarters (Bldg. 67) in the Women's Reserve Area.

N-4.05 Women's Reserve Area. The sewers in this area are an extension of the existing sewers located in the Post Troops Area that were designed for future extensions.

N-4.06. Grade and High School. The nearest existing sewer available was a shallow trunk sewer serving the Midway Park Residential Area. It was readily apparent, therefore, that a sewage pumping station would be needed, and Paradise Point Sewage Pumping Station No. 13 was designed. The station and the main sewers and force main connected to it were designed to serve the area in the vicinity of the Holcomb Boulevard and Paradise Point Road intersection as well as the Grade and High School. The station is provided with two electrically driven vertical centrifugal pumps with identical capacity of 150 gallons per minute when operating against a total dynamic head of 21 feet. Because of war conditions and the scarcity of materials no standby service was provided but one pump has counter-clockwise rotation so that an angle gear and standby gasoline engine can be added easily when that equipment is more readily available. The incoming 12-inch sewer has a capacity of one million gallons per day. The population to be served at the School is 450.

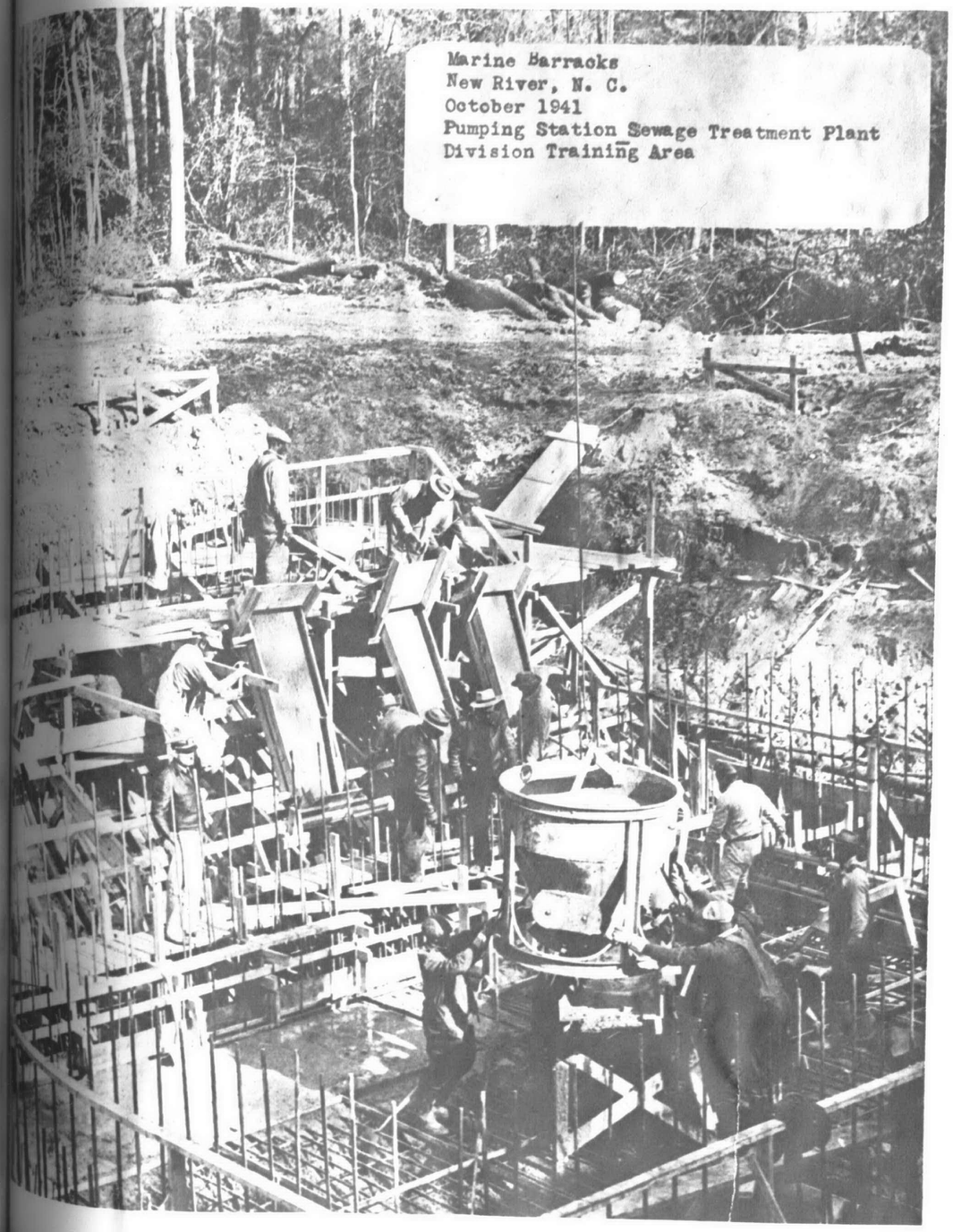
N-4.07. Residential Area. New sewers were constructed and a lateral extended in this area to serve the Radar Area No. 2, the Messmen's Quarters near the Bachelor Officers Quarters and the Swimming Pool.

(a) Radar Area No. 2. Two 6-inch diameter sewers discharging into soaking pits were provided for the buildings in this area. One sewer handles the sanitary flow and the other the floor and trench drains.

(b) Messmen's Quarters. An 8-inch diameter lateral was extended from the existing sewerage system in the Bachelor Officers Quarters Area to serve these buildings.

(c) Swimming Pool. The flow from the locker rooms was conveyed to the existing sewerage system with a 6-inch diameter connection. The wash water from the filters, the scum gutter drainage and the filter room floor drains were conducted to New River by a 10-inch diameter drain line as directed. The pool can also be drained into New River.

N-4.08. Sewage Treatment Plant. No additions or changes were made at the Sewage Treatment Plant. However, preliminary plans were prepared and filed with the Public Works Office showing additions that would provide secondary treatment by the use of the activated sludge process.


Marine Barracks
New River, N. C.
October 1941
Pumping Station Sewage Treatment Plant
Division Training Area

Office of the Camp Engineer
S. A. Mauch, Supt.
Plumbing and Heating
Camp Lejeune, N. C.

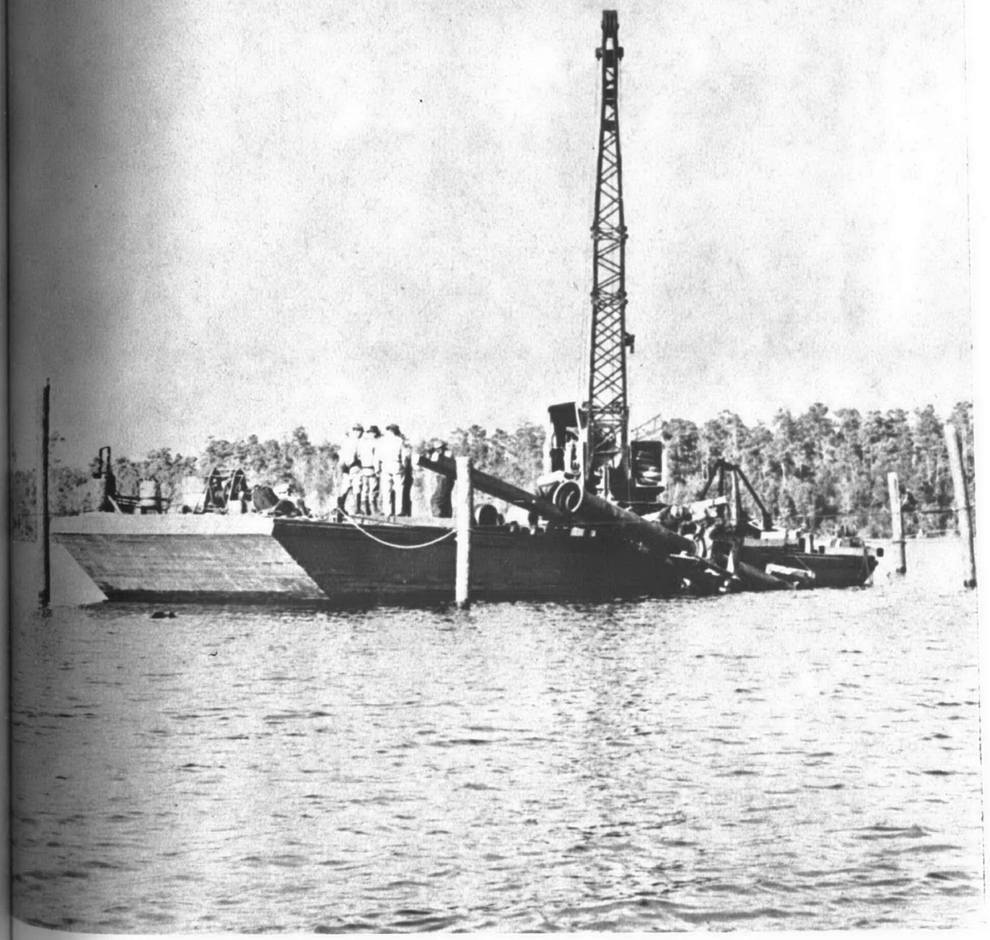
No. 66 Marine Base
New River, N.C.
30 October 1941
View of Sewage treatment plant, grit chamber, Looking East.
Regimental Area
Contract NOy-4750

No. 8 Marine Barracks
New River, N. C.
10 June 1941
Excavation operations at Sewage Treatment Plant.
View same as in print No. 3
Contract NOy-4750

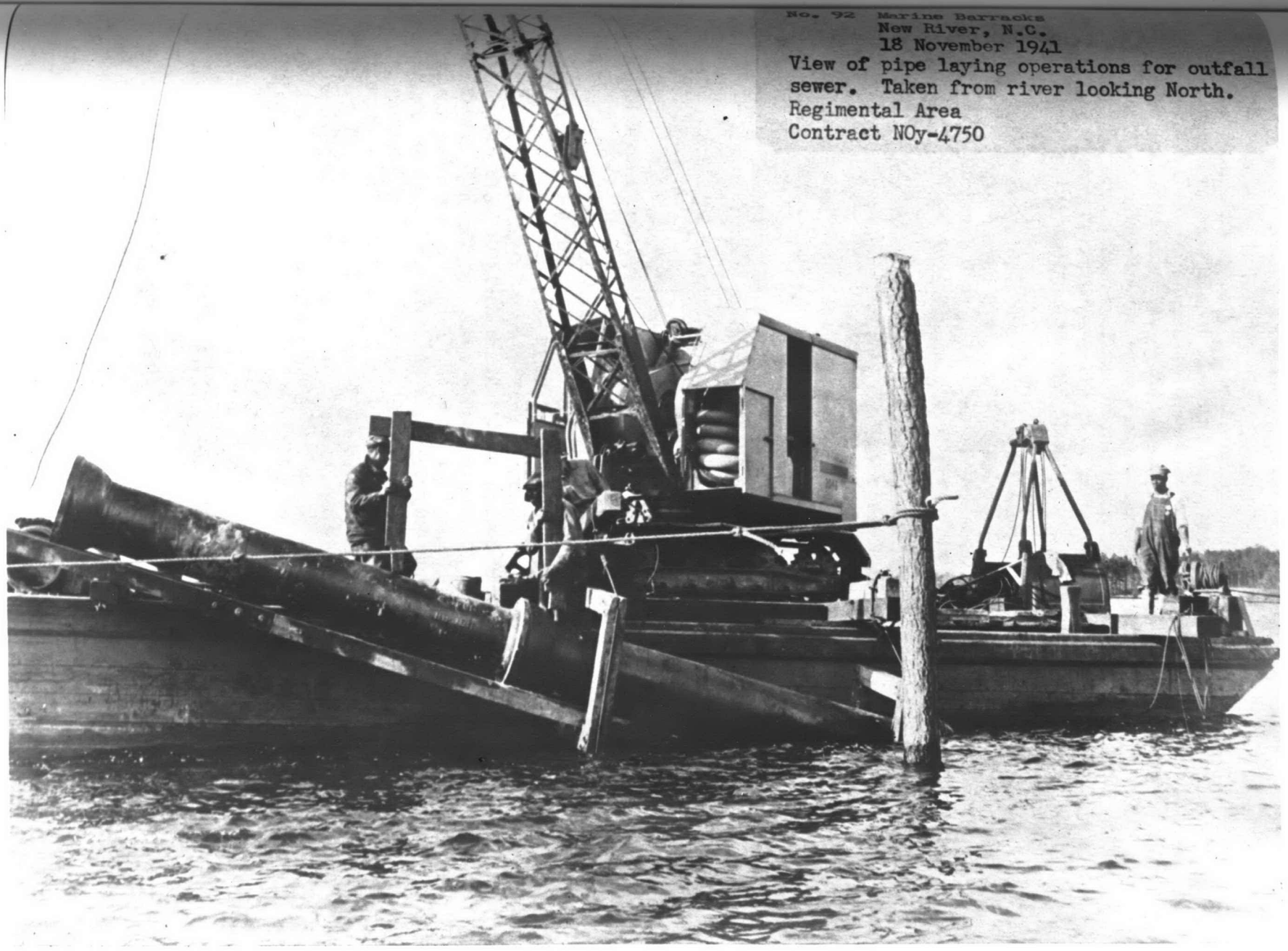
Marine Barracks

New River, N. C.
November 1941
Regimental Area
Sewer Outfall

Marine Barracks
New River, N. C.
November,18 1941
View of Pipe Laying Operations for Outfall Sewer . Regimental Area



No. 92 Marine Barracks
New River, N.C.
18 November 1941
View of pipe laying operations for outfall sewer. Taken from river looking North.
Regimental Area
Contract NOy-4750



The plans embody only general arrangement, piping layouts, electrical layout and tank sizes. Reinforcing, grading and other detail drawings were not prepared because the exact type of equipment to be used was not known at the time. The drawings now on file were prepared on the basis of using the tapered aeration principle with diffusor tubes and swing joint assemblies in the aeration tanks and endless chain collector system for sludge collection in the final settling tanks. Data used in the design are as follows:

Average design flow	=	2 million gallons per day
Peak design flow	=	200% of average
Ultimate flow	=	133% of design flows
Return sludge	=	25% of plant influent flow (with pumps and piping for a 50% return)
Aeration period	=	8 hours at average flow.
Air requirements	=	1.5 cubic feet per minute per gal. of sewage
Final Settling Tank detention period	=	2½ hours at average flow
Chlorine Chamber detention period	=	15 minutes at average flow.
Sludge capacity	=	4.5 cubic feet per capita.

All other factors used were identical with those used in the design of the original plant.

Toward the middle of 1943, it became apparent that the existing plant, which was designed for an average flow of two million gallons per day, would be too small when the new additions to the Division Training Area and Midway Park Residential Area were occupied. On August 31, 1943, recommendations were submitted to the Officer in Charge for enlarging the plant to serve a population of at least 27,000 with an average contribution of 100 gallons per capita. In view of the scarcity of materials and equipment due to war conditions, the recommendations were made on the basis of expanding the existing primary treatment facilities, by addition of (1) a primary settling tank of the size of the existing tanks, (2) two comminutors of the same size and characteristics of the existing equipment, and (3) a 2600 gallon per minute gasoline-electric driven centrifugal pump in the sewage pumping station. No action had been taken on the recommendations as of December 18, 1943.

N-4.09. Sewer Quantities. The following sewer quantities were added to those shown in Volume II:

4"	231'	15"	3024'
6"	8865'	18"	598'
8"	5485'		
10"	2361'	Total	24063' or 4.60 miles
12"	3461'	Number of Manholes -	55

N-5. Midway Park Residential Area. No changes or additions were designed for the sewerage system in this area. There have been additional sewers constructed in this Area, but all work was done under the supervision of the Officer-in-Charge of Midway Park. No additional quantities have been shown in the schedule of "Total Sewer Quantities" listed in Section N-14.

N-6. Montford Point Area.

N-6.01. Expanding from the original Tent Camp (which has been designated as Camp No. 1) this Area now includes Camps No. 1, 2, 2A and 3 and old Camp Knox. The entire Montford Point Area as thus defined is served by one sewage treatment plant and a sewage collection system completing tying in all the camps. The entire system was not designed at one time, however, as the several camps were conceived on various dates, the system was extended and expanded to serve them.

N-6.02. Camp No. 1. No changes or additions were made within the confines of the Camp proper but a lateral and a trunk sewer were connected into the original system for this area to serve the adjacent Camps, and the sanitary flow, including scum gutter drainage, from the Montford Point Swimming Pool (Bldg. No. M-139) was connected to the system just ahead of the treatment plant. The Swimming Pool Filter Room floor drainage and wash water from the filters was conveyed to Scales Creek by means of an open ditch as directed.

N-6.03. Camps No. 2 and 2A. In January, 1943 plans were prepared for Camp No. 2 to be located approximately 2500 feet southwest of Camp No. 1. A 10 inch diameter trunk sewer with a capacity of 0.65 million gallons per day was extended to this area from the existing system in Camp No. 1 to serve a population of 1000. It was connected just ahead of the existing sewage treatment plant, so that the present plant could be utilized by expanding its capacity if necessary to the ultimate that was provided for in its original design. It was impossible to reach Camp No. 2 without a sewage pumping station and Sewage Pumping Station No. 10 was designed to lift the sewage from Camp No. 2 into the trunk sewer extended from Camp No. 1. Two identical 150 gallons per minute horizontal centrifugal pumps to operate against a total dynamic head of 17.5 feet were provided. Horizontal pumps were used in place of vertical pumps because they were readily available and vertical pumps could not be procured in time for the occupancy date set for Camp No. 2. No standby service was provided because of the scarcity of material and other similar war conditions. At some future date, however, an engine driven generator set could be mounted on the top of the station to provide current to the motors when a power failure occurs. At present, an overflow to a nearby drainage ditch provides a relief against flooding of any buildings. Early in March, 1943 plans were prepared for an addition to Camp No. 2 for the housing of white officers and was designated Camp No. 2A. The 10-inch trunk sewer serving Camp No. 2 was extended to serve this Camp, also, with an expected population of 250.

N-6.04 Camp No. 3 Late in March, 1943 plans were prepared for Camp No. 3, to be located immediately adjacent to Camp No. 1, and to house 4000 men. This was a much larger increase in population than had ever been envisaged for the Montford Point Area and it was readily discernible that the existing sewerage system and sewage treatment plant would be entirely inadequate. An entire new sewerage system had to be laid out for Camp No. 3 and the small plant greatly expanded and added to. Inasmuch as the majority of Camp No. 3 was to be in Scales Creek watershed and any possible expansion of it would probably continue to be within it, to-gether with the fact that the available housing existing in the abandoned C.C.C. Camp was in this watershed, it was decided to design the main trunk line serving this area as an interceptor for the handling of all sewageflows originating in or near the Scales Creek watershed. Final design of the interceptor was made on the basis of the flow computations shown in "Flow Sheet" that follows:

FLOW SHEET - SCALES CREEK WEST BANK INTERCEPTOR

M.H to M.H	Area	Population	Total Population	Peak Flow Mgd.	Cumulative Flow-Mgd.	Size	% Grade
750 to 748	½ Camp No. 3 and Future Expansion W. Bank Scales Cr.	7000	7000	1.4	1.4	18"	0.15
748 to 747	¼ Camp No. 3	1000	8000	0.3	1.7	20"	0.16
747 to 745	East Bank - Scales Creek	4000	12,000	1.2	2.9	21"	0.13
745 to Treatment Plant	¼ Camp No. 3 and Future Expansion along Montford Landing Road	4000	16,000	1.2	4.1	21"	0.16

The school buildings and Infirmary could not be served by this new system because of their location and a 10-inch diameter lateral was extended to them from the old Camp No. 1 sewerage system.

N-6.05 Camp Knox. The original sewerage system in this Camp was designed and built by the Civilian Conservation Corps. It consisted mainly of 4" sewers and septic tanks with effluents emptying into the nearest stream. In January, 1943 plans were prepared to use Block "D" of this Camp for Dog Training facilities. The existing sewerage system in this Block was rehabilitated and two septic tanks with connecting sewers were added for the Dog Hospital and Kennels. In June, 1943 plans were made to rehabilitate the remainder of Camp Knox and it was decided to install a new sewerage system for the entire Camp. The system and sewage pumping station were designed for expansion along the east bank of Scales Creek as well as to handle the immediate flows. The sewage pumping station, designated as Scales Creek Sewage Pumping Station (No. 12), was provided with two identical electrically-driven 300 gallons per minute vertical dertrifugal pumps to operate against a total dynamic head of 25 feet. The sewage is lifted into the Scales Creek West Bank Interceptor at manhole No. 747 in Camp No. 3. No provision for standby service was provided, but connections were left for a third pump which could be a dual drive unit, driven by a gasoline engine or electric motor. In the event of a power failure now, the overflow or by pass that has been provided at the Station will conduct the flow to Scales Creek. The 18 - inch diameter Scales Creek East Bank Interceptor that empties into this Station has a capacity of 2.3 million gallons per day.

N-6.06 Sewage Treatment Plant. The existing sewage treatment plant was designed for an average flow of 0.18 million gallons per day and to serve a population of 1800. Primary treatment had been provided consisting of bar screen, grit channel, Imhoff tank, sludge beds, pre-chlorination and post - chlorination. The effluent discharged into Northeast Creek through an 8 - inch diameter outfall. The additions to the existing plant were designed for an expected population of 8000 and an ultimate population of 16,000. The existing plant and the additions were fully inter-connected so that the old plant could be kept in service during the construction of the additions and could be taken out of service when the additions were completed. A brief description of the capacity and characteristics of the various structures follows:

Bar Screen. An inclined manually cleaned bar screen fabricated of 3/8 - inch by 1½ - inch bars with 2 - inch clear openings and set in a concrete channel was provided just ahead of the grit channels.

Grit Channels. Two grit channels have been provided. The larger channel has a rectangular cross - section for handling average flows of 0.8 million gallons per day and the smaller channel has a trapezoidal cross-section for handling the smaller flows. Both channels have a peak capacity of 2.6 million gallons per day at a flow velocity of one foot per second.

Pre-Chlorination Chamber. A pre-chlorination chamber has been provided at the end of the Grit channels to provide a point of application ahead of Imhoff Tanks. Pre-chlorination is provided by the existing manually controlled 40-pound chlorinator.

Imhoff Tanks. Two Imhoff Tanks were provided just after the influent structures described above. The Settling Chamber capacity of each tank was designed on the basis of a 3 - hour detention period for flows of 0.4 million gallons per day. Two settling chambers were provided in each tank to eliminate an excessively deep Imhoff Tank and to provide settling facilities for flows as low as 0.2 million gallons per day. The sludge chamber has a capacity of 1.9 cubic feet per capita or a total capacity of 7640 cubic feet. No division was made in the sludge chamber. Sludge is drawn off by gravity - the sludge beds being 4.2 feet below the water level in the Imhoff Tank.

Sludge Beds. Six sludge drying beds have been provided by adding to the existing beds. The total area of the beds is 8400 square feet providing 1.05 square feet per capita. The sludge liquor is drained to Scales Creek.

Parshall Flume. A Parshall Flume with a 9" throat was provided for measuring the sewage flows and to regulate the automatic post - chlorination equipment. Flows are recorded by a float operated flow meter located in the nearby Chlorination Building.

Post-Chlorination. Post chlorination is provided by a Wallace and Tiernan automatic chlorinator capable of delivering 40 to 400 pounds of chlorine per 24 hours. Scales have been provided for the future use of the one ton chlorine containers but no hoists nor monorails were provided at this time. Adequate ceiling heights and door clearances were left in the building housing the equipment for installtion of this equipment when the large chlorine containers are available. Chlorine is applied in a chlorine contact chamber located at the end of the Parshall Flume.

Outfall. A new 18 - inch diameter cast iron pipe outfall was provided, extending 1200 feet out into Northeast Creek. The new outfall was inter-connected inshore with the old 8 - inch diameter outfall to provide dispersion over the largest area possible. The combined outfalls have a peak capacity of 5 million gallons per day. The outfall was further designed to provide for expansion of the plant for secondary treatment just after the post-chlorination chamber. An area for this expansion south of the new plant has been reserved on site plans of the Montford Point Area.

Office and Tool Storage Building. A small building was provided to serve as a storage for tools, equipment, etc.; to furnish toilet facilities, and to provide an office for the operator. A small laboratory sink was placed in the office for minor chemical analysises.

N-6.07 Sewer Quantities. The following sewer quantities (not including piping within the sewage treatment plant) were added to those shown in Volume 2

4"	-	548
6"	-	6218
8"	-	9574
10"	-	7633
12"	-	2161
15"	-	4815
18"	-	3207
20"	-	278
21"	-	2191
Total		36625 or 6.94 miles

Number of manholes - 95

N-7. Barrage Balloon Battalion and Amphibian Base Area. No changes or additions were made to the sewerage system in the Area except for connections built to the new Bachelor Officers Quarters Building. The following sewer quantities were added to those shown in Volume II to cover these connections as well as extensions to the disposal field in the Amphibian Base and the extension of a 6" lateral to the Supply and Storage Building in the School Area. (This latter work was done before Sept.30, 1942 but after Volumes I and II data had been compiled.)

6"	-	1462 ft.
8"	-	2 ft.
Total		1464 ft. or 0.28 miles

Number of manholes - 3

N-8. Rifle Range Area.

N-8.01 In March, 1943 plans were prepared for a 1000-man Colored Troops Camp about 2000 feet South of the Range Road. Since the existing sewage treatment plant was capable of easy expansion to handle this additional load, it was decided to convey the flow from this Camp to the existing plant rather than provide a separate plant, Comparative costs being in favor of this procedure also. The area in which this new Camp was located was too low to be reached by a gravity trunk line so the entire flow from this area was collected and conveyed to a sewage pumping station, designated as the Rifle Range Colored Troops Camp Sewage Pumping Station . (No. 11), which lifts the flow into a short trunk line extended from Manhole No. 335 on the existing trunk line in Range Road. No changes or additions were made to the system in the old area.

N-8.02 Rifle Range Colored Troops Camp Sewage Pumping Station (No. 11). The Colored Troops Sewage Pumping Station was located some distance from the Camp in order to shorten the force main and to place the Station in an advantageous location for future expansion in

the area west of the new Camp. Two identical 150 gallons per minute, horizontal, electrically driven, centrifugal pumps to operate against a total dynamic head of 20 feet were provided. As in the Montford Point Camp No. 2 Sewage Pumping Station (No.10) horizontal pumps were used instead of vertical pumps because of war conditions. No standby service was provided but in the event of a power failure the overflow or by pass provided near the Station will relieve the flow into a nearby stream.

N-8.03 Expansion of Sewage Treatment Plant. The Rifle Range Sewage Treatment Plant was expanded to handle the new additional flow by the installation of another Imhoff Tank of identical size, capacity and features as the existing tank and the expansion of the existing sludge beds to twice their area. Chlorination facilities and outfall were of sufficient size to handle the increased flow.

N-8.04 Sewer Quantities. The following sewer quantities (not including piping within the sewage treatment plant) were added to those shown in Volume II.

6"	-	500
8"	-	1309
10"	-	1696
12"	-	332
Total		3837 or 0.72 miles

Number of manholes - 10

N-9 Glider Training Base Area.

N-9.01 In January, 1943, complaints were received from the Officer in Charge of this area that the septic tank was over flowing at the top and causing a general nuisance in the low-lands surrounding it. The complaint was made just following a protracted rainy period and the area around the disposal field was found to be saturated, with some ponding on the surface. It was apparent that extension of the disposal field would do little to relieve the condition so, as was expected when the installation of the septic tank was originally made, an 8-inch diameter emergency overflow to New River had to be provided for the existing disposal field. The invert elevation of the overflow was set so that the disposal field would be flooded 1.4 feet before it went into operation. In August, 1943, plans were projected for Lighter than Air Facilities to be located 2000 feet south of the old area. Since only 15 men were to be housed in the Quarters and Storage Building for these facilities, a septic tank and disposal field were designed to handle the small expected flow. The septic tank had a settling capacity of 4050 gallons and a sludge capacity of 216 cu.ft. 500 feet of open joint drains were to be provided for a disposal field. As of December, 18, 1943 no action had been taken to construct these facilities.

N-9.02 Sewer Quantites. As the Lighter than Air Facilities were not constructed only 255 lineal feet of 8" sewer were added in this area.

N-10 Peterfield Point Tent Camp. No changes or additions were made to the sewerage system in this Camp.

N-11 Tank Battalion Tent Camp. No changes or additions were made to the sewerage system in this Camp.

N-12 Beach Area.

N-12.01 In August,1943 plans were prepared for Signal School Facilities to be located about 2500 feet south of the Ponton Bridge on the narrow strip of land between the Atlantic Ocean and the inland waterway. The average elevation of the ground in the building area was only 5.5 feet above mean sea level so it was readily apparent that the sewerage system would have to be of an unconventional nature if the installation of a sewage pumping station was to be avoided. It was decided to set the elevations of the system as low as possible,yet high enough so that a water level in the Imhoff Tank of the sewage treatment plant would provide enough head to force the sewage out into the Inland Waterway against normal tides.

N-12.02 The Collection System and Connections. The Collection System and Connections were built entirely of cast iron pipe and in general are aerial sewers supported on single pile bents. Due to the poor foundation conditions prevalent in this area timber pile foundations and cast iron pipe would have been necessary even if the sewers had been constructed along conventional lines. Part of the cost of the pile foundation was shared by the installation of the steam distribution system on the same pile bents. To further economize only one manhole was used and it was located just ahead of the sewage treatment plant and served as a pro-chlorination point of application as well as a manhole. Other points of access to the system were provided at serveral points by leaving tees with branches upturned and plugged.

N-12.03 Sewage Treatment Plant. The sewage treatment plant was designed for a population of 1800 and an average flow of 180,000 gallons per day. This furnishes capacity enough for both present expected flows as well as future expected flows. It was not considered economical to build a plant of any smaller size. The plant is similar to those built in the other outlying area and consists of: (1) a pre-chlorination manhole,(2) a manually cleaned bar screen.(3) a grit, channel,(4) an Imhoff tank, (5) a post-chlorination chamber.(6) sludge drying beds and (7) an 8-inch cast iron pipe outfall into the Inland Waterway. The two major differences in design consisted of the pumping of sludge and the construction of the chlorination chamber integral with the tank. The sludge is drawn off from the Imhoff Tank to the sludge drying beds by a portable diaphragm pump. The chlorination house was enlarged over and above those used at the other locations to provide a storage place for the pump when it is not in use. The chlorination chamber was provided in place of the usual manhole to furnish a 25 minute contact period at average flows. This was considered essential at this location because of the short outfall being used.

N-12.04 Sewer Quantities. The total sewer quantities (not including piping within the sewage treatment plant) for this area are as follows:

6"	-	655	
8"	-	485	
10"	-	675	
12"	-	50	
Total		1865	or 0.35 miles

Number of manholes 1

N-13 Recommendations For Maintenance and Operation.

N-13.01 There are no new recommendations to be added to those listed in Volume II. The recommendations as listed therein apply equally well to the supplementary construction.

N-14 Summary.

N-14.01 To Summarize briefly, as of December 18,1943 there was completed or well on the way to completion the following sewerage construction:

1. 338,682 lineal feet or 64.14 miles of sewers.
(See table N-14.02)

2. Thirteen sewage pumping stations.
(See table N-14.03)

3. Six sewage treatment plants.
(See table N-14.04)

4. Fifteen septic tanks. The two septic tanks built for the Dog Training Camp were later put out of service by the installation of a sewerage system in the area in which they are located.
(See table N-14.05)

Over Size Form

☐ Too Large ☑ Bound Book

☐ Fragile ☐ Other _____

Sheet Number: _____

Drawing/NAVFAC Number: N-14.02

Title

Total Sewer Quantities

A				TOTAL NUMBER OF		
	27"	30"	36"	LIN. FT.	MILES	M.H's.
TENT CAM				31,863	6.04	89
DIVISION T	2,003	1,750	3,629	159,715	30.29	360
MIDWAY PA				65,259	12.36	145
MONTFORD				41,924	7.94	108
BARRAGE B and AMPH				14,889	2.82	30
RIFLE RA				16,012	3.03	31
GLIDER T				2,964	0.56	6
PETERFIEL				2,066	0.39	7
TANK BAT				1,883	0.36	7
BEACH AI				1,865	0.35	1
TO	2,003	1,750	3,629	338,682		784
TO	0.38	0.33	0.69		64.14	

LIST OF SEWAGE PUMPING STATIONS

N-14.03

STATION Nº	LOCATION	AREA	PUMP SIZES			
			Nº1	Nº2	Nº3	Nº4
1	SEWAGE TREATMENT PLANT	DIVISION TRAINING	1000 G.P.M.	1500 G.P.M.	(D) 2600 G.P.M.	FUTURE
2	RIVER ROAD	NAVAL HOSPITAL	200 G.P.M.	(D) 300 G.P.M.	—	—
3	WALLACE CREEK	RESIDENTIAL	500 G.P.M.	FUTURE	(D) 800 G.P.M.	—
4	NEAR BACHELOR OFFICERS' QUARTERS	RESIDENTIAL	200 G.P.M.	(D) 200 G.P.M.	—	—
5	AUTUMN OVAL	RESIDENTIAL	50 G.P.M.	50 G.P.M.	—	—
6	BUTLER DRIVE, NORTH NEAR FIRST STREET	MIDWAY PARK RESIDENTIAL	300 G.P.M.	300 G.P.M.	(D) 600 G.P.M.	—
7	ELLEN PATH	BARRAGE BALLOON BATTALION and AMPHIBIAN BASE	140 G.P.M.	(D) 200 G.P.M.	—	—
8	SEWAGE TREATMENT PLANT	TENT CAMPS Nos. 1 and 2	1500 G.P.M.	(D) 2250 G.P.M.	FUTURE	—
9	HOLCOMB BOULEVARD AT BIRCH STREET	PARACHUTE TRAINING	100 G.P.M.	(D) 200 G.P.M.	—	—
10	CAMP No.2 (NEAR WILSON DRIVE)	MONTFORD POINT	(H) 150 G.P.M.	(H) 150 G.P.M.	—	—
11	BOOKER T. WASHINGTON BOULEVARD COLORED TROOPS CAMP	RIFLE RANGE	(H) 150 G.P.M.	(H) 150 G.P.M	—	—
12	FLORENCE ROAD CAMP KNOX	MONTFORD POINT	300 G.P.M.	300 G.P.M.	FUTURE	—
13	PARADISE POINT RD. AT GRADE & HIGH SCHOOL	DIVISION TRAINING	150 G.P.M.	150 G.P.M.	—	—

NOTE:- (D) ALONGSIDE SIZE OF PUMP INDICATES THE UNIT IS DUAL GASOLINE-ELECTRIC DRIVE FOR STANDBY AS WELL AS REGULAR SERVICE.
(H) ALONGSIDE SIZE OF PUMP INDICATES HORIZONTAL UNIT. ALL OTHER PUMPS ARE VERTICAL UNITS.

LIST OF SEWAGE TREATMENT PLANTS

N-14.04

AREA	CAPACITY-(Aver. Flow)(1) MILLION GALLONS PER DAY		POPULATION CAN SERVE		(2) TYPES OF TREATMENT
	PRESENT	BY FUTURE EXPANSION	PRESENT	BY FUTURE EXPANSION	
TENT CAMPS No.1 and 2	1.2	EXPANDED TO LIMIT	12,000		PRE-CHLORINATION, POST-CHLORINATION, CHEMICAL PRECIPITATION, SEPARATE SLUDGE DIGESTION.
DIVISION TRAINING	2.0	2.67	20,000	26,700	PRE-CHLORINATION, POST-CHLORINATION, PRIMARY SETTLING, SEPARATE HEATED SLUDGE DIGESTION.
MONTFORD POINT (3)	0.80	1.60	8,000	16,000	PRE-CHLORINATION, POST-CHLORINATION, IMHOFF TANK.
BARRAGE BALLOON BATTALION and AMPHIBIAN BASE	0.18	0.36	1,800	3,600	PRE-CHLORINATION, POST-CHLORINATION, IMHOFF TANK.
RIFLE RANGE	0.36	EXPANDED TO LIMIT	3,600		PRE-CHLORINATION, POST-CHLORINATION, IMHOFF TANK.
BEACH AREA	0.18	EXPANDED TO LIMIT	1,800		PRE-CHLORINATION, POST-CHLORINATION, IMHOFF TANK.

NOTE:- (1) CAPACITIES ARE COMPUTED ON BASIS OF AVERAGE FLOW OF 100 GALLONS PER CAPITA PER DAY.

(2) BAR SCREENS AND GRIT CHAMBERS PRECEDE ALL TREATMENT AND AT DIVISION TRAINING AREA TWO COMMINUTERS ARE PROVIDED.

(3) 0.18 MILLION GALLONS PER DAY CAPACITY OF THE TEMPORARY WOOD IMHOFF TANK IN THE ORIGINAL PLANT HAS NOT BEEN INCLUDED.

LIST OF SEPTIC TANKS

N-14.05

AREA	LOCATION	SIZE	SETTLING CAPACITY (GALLONS)	SLUDGE CAPACITY (CU. FT.)	DISPOSAL FIELD
PARACHUTE TRAINING	THIRD TOWER	5'-8" × 16'-0" × 8'-5" Deep	3170	181	500'-4" Tile drains with vertical blind drains at 25' ctrs.
INDUSTRIAL and SUPPLY	GAS & OIL STATION	3'-6" × 9'-0" × 6'-6" Deep	668	63	350'-4" Tile
BARRAGE BALLOON BATTALION and AMPHIBIAN BASE	AMPHIBIAN BASE	6'-0" × 18'-0" × 8'-9" Deep	4050	216	500'-6" Tile
GLIDER TRAINING BASE	NEAR NEW RIVER	6'-0" × 18'-0" × 8'-9" Deep	4050	216	500'-6" Tile drains with vertical blind drains at 25' ctrs.
RIFLE RANGE	ALONG 300yd. LINE (1)	3'-6" × 9'-0" × 6'-6" Deep	668	63	350'-4" Tile drains with vertical blind drains at 25' ctrs.
RIFLE RANGE	ALONG BUTTS AVE. (2)	3'-6" × 9'-0" × 6'-6" Deep	668	63	350'-4" Tile drains with vertical blind drains at 25' ctrs.
MONTFORD POINT	DOG KENNELS CAMP KNOX (3)	3'-6" × 9'-0" × 6'-6" Deep	668	63	400'-4" Tile
MONTFORD POINT	DOG HOSPITAL CAMP KNOX (3)	3'-6" × 9'-0" × 6'-6" Deep	668	63	400'-6" Tile

NOTE:- (1) THREE IDENTICAL TANKS INSTALLED.
(2) SIX IDENTICAL TANKS INSTALLED.
(3) ABANDONED WHEN SEWERAGE SYSTEM WAS PROVIDED FOR MONTFORD POINT AREA.

CHAPTER O

SURVE

O-1. Introduction. The work of
the same general lines as stated
control were extended into many
construction surveys made for
are described fully in the follo

O-2. Existing Data.

O-2.01. Maps and other da
filed in the Public Works Record

O-2.02 Intracoastal Water
topography and right-of-way li
N. C.

O-2.03 Tidal Bench Marks,
ion T-18, "Tidal Bench Marks, S

O-2.04 Triangulation Sta
not shown in existing publicati
sheets and were furnished by th

O-2.05. Control Surveys,
by the 30th Engineers in 1941.

O-2.06. U. S. Marine Corp
1 to 12, inclusive, Grid Zone
reservation. The North Carolin
The "A" Grid is indicated by s
within the body of the map. L
Coordinate stations, bench mark
these maps were furnished by C

O-2.07. Soil Survey of
pared by U. S. Department of A
North Carolina.

O-2.08. Geologic Map of
Department of Conservation and

O-2. 09. U. S. Coast and
harbor, and intracoastal wate

O-2.10. U. S. Coast and
Cape Lookout Little River.

CHAPTER O - PART II.

SURVEY DEPARTMENT

O-1. Introduction. The work of this department was carried out along the same general lines as stated in Volume II. Horizontal and vertical control were extended into many areas and topographic, hydrographic and construction surveys made for new projects. Various phases of survey work are described fully in the following sections.

O-2. Existing Data.

O-2.01. Maps and other data secured from governmental agencies and filed in the Public Works Record Office are shown in the following list:

O-2.02 Intracoastal Waterway. Strip map showing surveys, monuments, topography and right-of-way lines prepared by U. S. Engineers, Wilmington, N. C.

O-2.03 Tidal Bench Marks. U. S. Coast and Geodetic Survey Publication T-18, "Tidal Bench Marks, State of North Carolina, June, 1939".

O-2.04 Triangulation Stations. Supplementary triangulation stations not shown in existing publications. These data are in the form of record sheets and were furnished by the U. S. Coast and Geodetic Survey.

O-2.05. Control Surveys, 30th Engineers. Control surveys executed by the 30th Engineers in 1941.

O-2.06. U. S. Marine Corps Topographic Maps, Camp Lejeune, Sections 1 to 12, inclusive, Grid Zone B, Scale 1:20,000. These maps show the entire reservation. The North Carolina grid is indicated by dashed tick marks. The "A" Grid is indicated by short ticks along the border and small crosses within the body of the map. Latitude and longitude also are indicated. Coordinate stations, bench marks, and picture points for the control of these maps were furnished by Carr and J. E. Greiner Company.

O-2.07. Soil Survey of Onslow County, together with soil map prepared by U. S. Department of Agriculture in cooperation with the State of North Carolina.

O-2.08. Geologic Map of North Carolina, prepared by North Carolina Department of Conservation and Development, 1937.

O-2. 09. U. S. Coast and Geodetic Survey graphic index of coast, harbor, and intracoastal waterway charts, May, 1940.

O-2.10. U. S. Coast and Geodetic Survey index, topographic map No. 13, Cape Lookout Little River.

O-2.11. U. S. Coast and Geodetic Survey, Chart 834 Intracoastal Waterway, NewRiver Inlet to Southport, Scale 1:40,000.

O-2.12. U. S. Coast and Geodetic Survey,New River Inlet to Cape Fear, Charge 1235, Scale 1:80,000.

O-2.13. U. S. Coast and Geodetic Survey, Chart T-5192, Air Photo Compilation, Cape Fear River, Campbell Island, Scale 1:20,000.

O-2.14. U. S. Coast and Geodetic Survey, Chart 5043, Air Photo Compilation, Virginia Creek to Queen Inlet, Scale 1:20,000.

O-2.15 U. S. Coast and Geodetic Survey, Chart T-5042, Air Photo Compilation, Queen Inlet to Myrtle Sound, Scale 1:20,000.

O-2.16. U. S. Coast and Geodetic Survey, Chart T-5191, Air Photo Compilation, Cape Fear River, Wilmington and Vicinity, Scale 1:10,000.

O-2.17 Property Maps,1" = 660', prepared by Boney and Broadfoot, Architects and Engineers.

O-3. Horizontal Controls.

O-3.01. A number of monuments were installed to preserve surveys previously reported in Volume II. New surveys were extended along the perimeter of the reservation and monuments installed to preserve the boundary surveys where the lines do not follow water courses or paved roads. Prominent objects were tied in and coordinated. Many Government triangulation stations had not been coordinated on the North Carolina system. These computations were made and the resulting positions are shown herein. Old triangulation stations were recovered and new control established in the Beach Area and along the Intracoastal Waterway. The Anti-tank range was tied in for fire control purposes. New lines of traverse were run in the parts of the reservation not previously covered andat the present time there is no part that does not have permanent coordinated monuments within a reasonable distance. The coordinate system is described in Volume II. 92 new coordinate stations were listed in Section O-9 herein. Adddd to the 360 reported in Volume II of the completion report, a total of 452 permanent stations have been listed to provide for future surveys. These stations are listed by quadrangle number and the vicinity in which they are located may be determined readily by consulting the general area map. The exact location may be determined from the descriptions and coordinates given.

O-3.02 Military Grid. By direction, the previous decision to use Grid Zone A for military mapping of the reservation was rescinded and Grid Zone B made the official basis for military mapping by the U. S. Marine Coprs. The relationship between the North Carolina Grid and Military Grid Zone B, is as follows:

Triangulation Station	Geographic Position	N. C. Grid Coordinates (ft.)	Mil. Grid Coordinates (yds.)
Duck Crk. 1932	Lat. 34°35'01.282" N. Long. 77°17'56.046" W.	N. 307,798.89 E. 2,512,004.00	N. 1,288,716.19 E. 1,371,281.21
Northeast 1933	Lat. 34°43'47.379" N. Long. 77°24'04.316" W.	N. 360,462.81 E. 2,480,360.37	N. 1,306,086.0 E. 1,360,389.8
Verona 1932	Lat. 34°38'37.376" N. Long. 77°28'42.85" W.	N. 328,763.30 E. 2,457.596.51	N. 1,295,358.13 E. 1,353.010.65

The military grid north bears approximately 1°07'20" east of the N.C. Grid North.

0-4. Vertical Control. Leveling was extended into various new areas of the reservation. 236 permanent bench marks were listed in Volume II. 118 additional bench marks are listed in the following section of this chapter, making a total of 354 permanent bench marks scattered over the reservation. The bench marks are listed by quadrangle number and their approximate location may be determined readily by consulting the general area map. The exact location then may be determined from the descriptions and by consulting the hard copy record maps. The elevations are referred to mean sea level.

0-5. Topographic Surveys. Topographic surveys were made of the new areas developed during this period by the same general methods described in Volume II.

0-6. Hydrographic Surveys. Hydrographic surveys were made by the same methods described in Volume II. The principal survey was that of New River between Hadnot Point and Montford Point which served as control for dredging and sweeping operations.

Tide gauges were established at Wallace Creek Boat Basin and at the Ponton Bridge, Intracoastal Waterway.

0-7. Construction Surveys. Construction surveys for buildings, roads, utilities and other structures were made generally along the same lines described in Volume II.

0-8. Final Surveys. A great deal of work was done securing as-built data for the preparation of as-built drawings and maps, particularly in the outlying areas where transmission and distribution lines had been installed hurridly in the early part of the project. Photact reproductions of hard copy maps were made and checked in the field. Missing data was added and the reproductions returned to the office in order that complete data could be plotted on the hard copy record map. As of December 18, 1943, the record maps were substantially complete, there remaining to be located and plotted only the improvements which had not been constructed.

0-9. Permanent Coordinate Stations. (Also see Chapter 0, Volume II.)

Quad-rangle	Station	Coordinates North	Coordinates East
99	Monument USMC 106	361,984.32	2,478,159.41
	Monument USMC 107	362,305.64	2,478,809.04
	Monument USMC 108	362,527.23	2,479,257.05
	Monument USMC 109	362,903.91	2,480,018.62
	Monument USMC 136	363,608.69	2,481,443.50
	Monument USMC 137	363,217.40	2,483,801.27
118	Monument USMC 125	355,619.07	2,463,678.22
	Monument USMC 130	358,070.06	2,463,475.26
	Monument USMC 131	356,864.00	2,463,525.88
	Monument USMC 132	354,851.86	2,464,327.21
	Monument USMC 133	353,831.52	2,465,381.58
	Monument USMC 134	352,568.72	2,469,799.37
	Monument USMC 135	350,939.29	2,469,825.58
	Monument USMC 139	357,711.10	2,476,999.98
	Monument USMC 140	358,437.40	2,477,233.80
	Monument USN 38	357,239.20	2,476,152.92
120	Monument USMC 121	357,962.34	2,497,352.03
	Monument USMC 129	351,476.88	2,499,931.69
140	Monument	341,724.67	2,502,967.21
	Monument	342,486.57	2,504,081.11
	Monument USMC 112	343,371.30	2,502,952.22
	Monument USMC 114	342,389.04	2,502,848.55
	Monument USMC 116	341,717.50	2,503,219.71
	Monument USMC 126	345,120.86	2,501,688.65
	Monument USMC 127	346,755.77	2,501,555.62
	Monument USMC 128	349,708.24	2,500,633.96
160	Monument	332,311.38	2,497,056.13
	Monument USMC 110	338,912.79	2,497,867.88
	Monument USMC 111	338,616.77	2,496,656.38
198	Monument USMC 101	310,634.74	2,466,645.92
	Monument USMC 148	310,699.19	2,467,127.56
	Monument USMC 149	310,712.92	2,468,001.28

Quad-rangle	Station	Coordinates North	Coordinates East
198	Monument USMC 150	310,726.54	2,468,868.36
218	Monument USMC 102	309,686.87	2,466,660.93
	Monument USMC 103	308,817.31	2,466,674.70
	Monument USMC 104	308,217.66	2,466,684.20
	Monument USN 6	308,138.29	2,468,752.78
	Monument USN 7	309,079.90	2,468,792.24
219	Monument USMC 146	303,754,13	2,481,777.64
	Monument USMC 147	303,404.42	2,481,361.36
220	Samworth 1932	302,836.48	2,493,469.88
221	High 1914	301,042.28	2,515,501.69
	Snag 1914	300,787.67	2,518,303.78
	Swamp 1914	302,260.20	2,517,160.17
	Baker 1914	303,404.33	2,518,482.30
	Pass 1914	302,012.74	2,519,678.04
	Low 1914	303,308.84	2,521,132.85
	Pine 1914	304,583.73	2,520,150.76
	Sandy 1914	304,596.66	2,522,558.09
	Week 1914	305,767.05	2,521,502.48
	Gillett's Creek 1855	303,868.79	2,519,151.32
	Horsehead 1855	305,831.83	2,521,907.27
	Monument USMC 141	302,698.30	2,520,188.72
	Monument USMC 142	303,474.96	2,521,085.22
	Monument USMC 143	304,054.09	2,521,753.67
	Monument USMC 144	304,549.32	2,522,325.29
	Monument USMC 145	305,126.85	2,522,991.89
	Monument USN 3	305,807.82	2,519,096.98
	Monument USN 4	306,397.61	2,518,637.06
	Monument USN 5	306,993.40	2,518,172.46
	Monument USN 40	301,061.17	2,518,298.99
222	Windy 1914	306,189.59	2,524,439.98
	Piver 1914	307,698.85	2,526,233.18
	Point 1914	307,593.75	2,523,449.89

Quad-rangle	Station	Coordinates North	Coordinates East
239	Swan Pt. 2, 1888	292,367.21	2,492,900.38
240	Lighter 1855	293,179.98	2,498,099.05
	Smith's House, Cupola 1914	297,720.28	2,504,935.01
	Swan Point (U.S.E.) 1914	292,577.69	2,493,654.78
	Swan Point Ecc. 1932	292,861.72	2,493,062.52
	North Base U.S.E. 1932	295,498.04	2,496,686.84
	South Base U.S.E. 1932	292,562.35	2,499,117.46
241	Tie 1914	298,564.10	2,515,623.64
	Gap 1914	293,255.21	2,509,146.07
	Bay 1914	297,869.72	2,509,011.74
	Shell 1914	295,364.40	2,511,727.10
	Williams 1914	298,716.66	2,512,418.80
	Brier 1914	299,884.54	2,514,486.04
	Henderson 1914	299,798.22	2,515,306.40
	Cross 1914	299,715.03	2,516,909.74
	Northeast Base 1914	299,635.86	2,517,028.32
	Southwest Base 1914	298,487.49	2,515,682.11
259	Fullard 1914	287,080.80	2,485,819.07
	Wreck 1914	281,818.12	2,490,168.79
	Grant 1914	281,135.60	2,481,025.60
	Fish 1932	282,176.38	2,490,495.49
260	Tile 1914	285,071.77	2,496,115.55
	Pavilion 1914	289,395.18	2,503,683.49
	Wrights Island (U.S.E.) 1914	289,443.56	2,500,892.37
	Hilt 1927	285,281.93	2,496,451.25
	View 1932	285,370.48	2,495,404.15
	Amos 1932	289,482.63	2,503,553.38

O-10. Permanent Bench Marks. (Also see Chapter O, Volume II.)

Quadrangle	Description	Elevation
98	Bench Mark 1 (U.S.E.) (1931), established by the United States Engineers, is a brass tablet and set in a concrete monument between two small cypress trees, about midway between the Atlantic Coast Line Railroad freight warehouse and the Standard Oil Company. Elevation: 1.74 feet above low-water datum.	2.51
	USMC Monument 31. Coordinates: N. 364,521.87; E. 2,473,263.83	3.03
	USMC Monument 41. Coordinates: N. 367,909.97; E. 2,471,135.83	17.02
	USMC Monument 40. Coordinates: N. 368,016.37; E. 2,471,176.92	17.19
	USMC Monument 30. Coordinates: N. 365,351.18; E. 2,473,793.04	17.83
	USMC Monument 26. Coordinates: N. 367,139.14; E. 2,475,379.97	18.63
	USMC Monument 29. Coordinates: N. 365,860.04; E. 2,474,118.95	19.11
	USMC Monument 28. Coordinates: N. 366,332.34; E. 2,474,576.56	21.99
	USMC Monument 27. Coordinates: N. 366,691.78; E. 2,474,934.54	24.85
99	USMC Monument 109. Coordinates: N. 362,903.91; E. 2,480,018.62	16.40
	USMC Monument 136. Coordinates: N. 363,608.69; E. 2,481,443.50	17.88
	USMC Monument 106. Coordinates: N. 361,984.32; E. 2,478,159.41	19.99
	USMC Monument 108. Coordinates: N. 362,527.23; E. 2,479,257.05	20.14
	USMC Monument 107. Coordinates: N. 362,305.64; E. 2,478,809.04	21.38

Quadrangle	Description	Elevation
99	USMC Monument 137. Coordinates: N. 363,217.40; E. 2,483,801.27	22.57
118	U.S.N. Monument 38. Coordinates: N. 357,239.20; E. 2,476,152.92	12.04
	USMC Monument 139. Coordinates: N. 357,711.10; E. 2,476,999.98	14.42
	USMC Monument 140. Coordinates: N. 358,437.40; E. 2,477,233.80	18.39
	USMC Monument 134. Coordinates: N. 352,568.72; E. 2,469,799.37	18.65
	USMC Monument 135. Coordinates: N. 350,939.29; E. 2,469,825.58	21.55
	USMC Monument 131. Coordinates: N. 356,864.00; E. 2,463,525.88	23.12
	USMC Monument 133. Coordinates: N. 353,831.52; E. 2,465,381.58	23.63
	USMC Monument 130. Coordinates: N. 358,070.06; E. 2,463,475.26	24.14
	USMC Monument 132. Coordinates: N. 354,851.86; E. 2,464,327.21	24.44
	USMC Monument 125. Coordinates: N. 355,619.07; E. 2,463,678.22	27.36
	USMC Monument 91**. Coordinates: N. 358,591.70; E. 2,476,754.66	17.80**
	*USMC Monument 92. Coordinates: N. 359,298.68; E. 2,477,521.27	14.49*
	*Monument Reset. This Elevation Supersedes that given in Volume II.	
119	USMC Monument 73. Coordinates: N. 351,461.56; E. 2,488,002.73	4.57
	USMC Monument 74. Coordinates: N. 351,141.29; E. 2,488,242.37	18.55
120	USMC Monument 121. Coordinates: N. 357,962.34; E. 2,497,352.03	26.25

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Quadrangle	Description	Elevation
120	USMC Monument 129. Coordinates: N. 351,476.88; E. 2,499,931.69	27.55
	USMC Monument 39. Coordinates: N. 355,972.85; E. 2,503,238.16	38.82
	USMC Monument 38. Coordinates: N. 356,179.82; E. 2,501,617.09	40.94
121	USMC Monument 49. Coordinates: N. 353,919.85; E. 2,522,661.30	39.01
	USMC Monument 43. Coordinates: N. 353,162.44; E. 2,514,629.84	41.00
	USMC monument 42. Coordinates: N. 353,878.45; E. 2,512,119.67	41.42
122	Monument Corps of Engineers. Coordinates: N. 353,404.98; E. 2,531,419.21	35.25
	USMC Monument 51. Coordinates: N. 354,294.79; E. 2,528,713.43	38.25
	USMC Monument 50. Coordinates: N. 354,697.49; E. 2,524,603.62	39.92
	USMC Monument 52. Coordinates: N. 353,372.29; E. 2,530,892.98	40.86
140	USMC Monument 126. Coordinates: N. 345,120.86; E. 2,501,688.65	23.56
	USMC Monument 128. Coordinates: N. 349,708,24; E. 2,500,633.96	23.59
	USMC Monument 112. Coordinates: N. 343,371.30; E. 2,502,952.22	23.74
	USMC Monument 114. Coordinates: N. 342,389.04; E. 2,502,848.55	27.40
	Monument - Coordinates: N. 342,486.57; E. 2,504,081.11	27.59
	USMC Monument 127. Coordinates: N. 346,755.77; E. 2,501,555.62	28.17
	Monument - Coordinates: N. 341,724.67; E. 2,502,967.21	28.37

Quadrangle	Description	Elevation
140	USMC Monument 116. Coordinates: N. 341,717.50; E. 2,503,219.71	29.93
142	USMC Monument 53. Coordinates: N. 348,514.29; E. 2,529,667.89	28.30
	USMC Monument 55. Coordinates: N. 342,194.56; E. 2,529,092.37	34.46
	USMC Monument 54. Coordinates: N. 346,988.60; E. 2,529,094.34	40.14
157	USMC Monument 34. Coordinates: N. 337,415.50; E. 2,459,634.19	38.35
	USMC Monument 35. Coordinates: N. 337,354.44; E. 2,459,486.46	39.81
	USMC Monument 36. Coordinates: N. 337,328.28; E. 2,459,341.78	42.31
	USMC Monument 37. Coordinates: N. 337,335.68; E. 2,459,265.09	43.51
	USMC Monument 32. Coordinates: N. 339,032.72; E. 2,459,841.23	51.68
	USMC Monument 33. Coordinates: N. 338,885.94; E. 2,460,213.68	57.43
159	Bench Mark 1 (U.S.E.) (1931) established by the United States Engineers, is a nail in a cypress tree southwest of Triangulation station "Town" (1933). The latter is set in a concrete monument on Town Point which is 3 miles Northeast of Verona. Elevation: 2.57 feet above low-water datum.	2.79
	Bench Mark 3 (1933) is a standard desk set in the top of a concrete monument 6" x 6" buried in the ground 36" and having a base 12" x 12". The top of the monument projects about 4" above the surface of the ground. The Bench Mark is approximately 230 feet southwest of Bench Mark 2 and is located at the foot of two 2' diameter live pine trees and 26' southwest of the end of the fish net racks. The Bench Mark is approximately 492' southwesterly from triangulation station "Town (1933)." Elevation: 4.27 feet above low-water datum.	4.49

Quadrangle	Description	Elevation
159	Bench Mark 2 (1933) is a standard desk set in the top of a concrete monument 6" x 6" buried in the ground 36" and having a base 12" x 12". The top of the monument projects 4" above the ground. The Bench Mark is located about 262' southwest of Triangulation station "Town 1933" and is 49' north of fish net racks and surrounded by a cluster of live oak trees. Elevations: 7.92 feet above low-water datum.	8.14
160	Monument - Coordinates: N. 332,311.38; E. 2,497,056.13	1.89
	USMC Monument 110. Coordinates: N. 338,912.79; E. 2,497,867.88	21.14
	USMC Monument 111. Coordinates: N. 338,616.77; E. 2,496,656.38	26.98
162	USMC Monument 56. Coordinates: N. 338,837.43; E. 2,529,889.56	32.91
	**USMC Monument 59. Coordinates: N. 334,713.09; E. 2,533,313.47	**24.18
	**USMC Monument 57. Coordinates: N. 334,573.88; E. 2,532,187.11	**32.67
	USMC Monument 58. Coordinates: N. 334,267.34; E. 2,532,403.51	**38.72
	**Stronger value obtained by new levelling. This Elevation supersedes that given in Volume II	
197	USMC Monument 1. Coordinates: N. 319,878.08; E. 2,456,100.07	51.78
	USMC Monument 2. Coordinates: N. 318,013.73; E. 2,456,068.46	72.18
198	USMC Monument 150. Coordinates: N. 310,726.54; E. 2,468,868.36	27.10
	USMC Monument 149. Coordinates: N. 310,712.92; E. 2,468,001.28	30.46
	USMC Monument 148. Coordinates: N. 310,699.19; E. 2,467,127.56	40.16

Quadrangle	Description	Elevation
198	USMC Monument 101. Coordinates: N. 310,634.74; E. 2,466,645.92	49.61
199	Bench Mark 3 (1933) is standard reference Mark No. 2 for triangulation station "Hines (1933)2 set in solid rock along the shore about 33' eastward along the shore of the river from the end of the dock, and 175' N. E. from the triangulation station which is located at the W. edge of dock. The Bench Mark is located about 1 mile northward of Gillette and across the river. Elevation: 0.85 feet above low-water datum. Coordinates: N. 317,875.83; E. 2,483,475.26	1.09
	Bench Mark 1 (U.S.E.) (1931) established by the United States Engineers, is a nail in the root of a gum tree in front of the next to the most westerly house on bank of river, and northwestward of triangulation station "Hines (1933)" (U.S. Coast of Geodetic Survey). It is located about 1 mile northward of Gillette and across the river. NOTE: It was reported in 1933 that this is a poor Bench Mark. Elevation: 10:99 feet above low-water datum	11.23
201	*USMC Monument 75. Coordinates: N. 311,741.16; E. 2,517,199.87	*26.66
	*Monument Reset. This Elevation supersedes that given in Volume II.	
217	USMC Monument 4. Coordinates: N. 308,576.63; E. 2,460,508.33	57.50
	USMC Monument 3. Coordinates: N. 308,905.46; E. 2,457,757.69	57.61
218	USMC Monument 16. Coordinates: N. 302,408.84; E. 2,469,161.29	7.79
	USMC Monument 17. Coordinates: N. 303,329.37; E. 2,470,185.00	9.21
	USMC Monument 18. Coordinates: N. 303,349.44; E. 2,470,695.85	11.56
	USMC Monument 15. Coordinates: N. 302,202.51; E. 2,468,882.70	11.94
	USMC Monument 19. Coordinates: N. 303,390.42; E. 2,471,581.83	27.32

Quadrangle	Description	Elevation
218	USMC Monument 25. Coordinates: N. 302,082.58; E. 2,467,738.20	28.11
	USMC Monument 21. Coordinates: N. 303,496.21; E. 2,473,761.70	28.20
	U.S.N. Monument 7. Coordinates: N. 309,079.90; E. 2,468,792.24	28.86
	USMC Monument 22. Coordinates: N. 302,730.82; E. 2,474,527.19	29.72
	U.S.N. Monument 6. Coordinates: N. 308,138.29; E. 2,468,752.78	29.92
	USMC Monument 6. Coordinates: N. 305,457.30; E. 2,463,739.88	33.00
	USMC Monument 20. Coordinates: N. 303,456.00; E. 2,472,975.96	33.06
	USMC Monument 24. Coordinates: N. 301,402.28; E. 2,467,204.87	34.41
	USMC Monument 14. Coordinates: N. 300,368.95; E. 2,467,409.10	39.43
	USMC Monument 11. Coordinates: N. 300,483.38; E. 2,466,359.86	49.75
	USMC Monument 102. Coordinates: N. 309,686.87; E. 2,466,660.93	51.13
	USMC Monument 104. Coordinates: N. 308,217.66; E. 2,466,684.20	51.49
	USMC Monument 10. Coordinates: N. 301,201.02; E. 2,465,953.25	53.22
	USMC Monument 9. Coordinates: N. 302,075.93; E. 2,465,164.46	53.99
	USMC Monument 103. Coordinates: N. 308,817.31 E. 2,466,674.70	55.65
	USMC Monument 8. Coordinate: N. 303,522.88; E. 2,464,686.30	58.73

Quadrangle	Description	Elevation
218	USMC Monument 7. Coordinates: N. 304,370.43; E. 2,464,422.51	63.49
219	Bench Mark 3 (1933) is a standard triangulation disk for triangulation station "Ferry (ECC.)", set in a 6" terra cotta pipe filled with cement and extending 36" below the surface of the ground. A square block of concrete is placed around the pipe at top and projects 6" above surface of the ground, and is located about 295' northeastward of Bench Mark 2. Elevation: 4.03 feet above low-water datum. Coordinates: N. 305,110.21; E. 2,482,583.89	4.42
	Bench Mark 1 (U.S.E.), established by the United States Engineers, is a nail in crotch of twin live oak trees located 157' west of end of wharf or ferry and directly across road from small filling station. Elevation: 4.07 feet above low-water datum	5.36
	Bench Mark 2 (1933) is a standard desk, stamped "1933", set in the top of a concrete monument 6" x 6", buried 36" and having a base 12" x 12", the top of the monument projecting about 4" above the surface of the ground. It is located 92' E. of end of wharf, 90' downstream from ferry, 13' south of an 18" pine tree and 249' northeastward of Bench Mark 1. Elevation: 5.39 feet above low-water datum.	5.78
	USMC Monument 146. Coordinates: N. 303,754.13; E. 2,481,777.64	16.92
	USMC Monument 147. Coordinates: N. 303,404.42; E. 2,481,361.36	19.67
221	"U.S.N." Monument 40. Coordinates: N. 301,061.17; E. 2,518,298.99	6.47
	U.S.N. Monument 3. Coordinates: N. 305,807.82; E. 2,519,096.98	6.68
	USMC Monument 141. Coordinates: N. 302,698.30; E. 2,520,188.72	7.05
	USMC Monument 143. Coordinates: N. 304,054.09; E. 2,521,753.67	7.74
	USMC Monument 142. Coordinates: N. 303,474.96; E. 2,521,085.22	8.67

Quadrangle	Description	Elevation
221	USMC Monument 144. Coordinates: N. 304,549.32; E. 2,522,325.29	8.77
	USMC Monument 145. Coordinates: N. 305,126.85; E. 2,522,991.89	9.29
	"U.S.N." Monument 5. Coordinates: N. 306,993.40; E. 2,518,172.46	12.43
	"U.S.N." Monument 4. Coordinates: N. 306,397.61; E. 2,518,637.06	14.16
238	USMC Monument 13. Coordinates: N. 299,835.48; E. 2,467,077.77	50.80
	USMC Monument 12. Coordinates: N. 299,241.58; E. 2,466,601.64	56.36
240	Bench Mark 3 (1933) is a standard disc cemented in the top of a 4" tile which extends in the ground about 2' and is slightly above the surface. The bench mark is approximately 100 yds. from the dirt road that leads to the main road, and about 100 yds north of the dock at Peru close to the south face of a fisherman's shack. Elevations: 2.98 feet above low-water datum.	2.78
	Bench Mark 1 (1933) is a standard disk cemented in the top of a 4" tile which extends below the surface of the ground about 2 feet and is slightly above the surface. The bench mark is located about 100 yards south of the dock at Peru on the edge of a slight bluff and on the east side of a path from the dock at Peru to the houses on the bluff, and about 25 yards from the high water-line. Elevation: 9.86 feet above low-water datum.	9.66
241	Sea 1914 Coordinates: N. 297,114.52; E. 2,513,782.46	20.33
	Vim 1932 Coordinates: N. 295,635.24; E. 2,511,600.67	20.50
	Tie 1914 Coordinates: N. 298,564.10; E. 2,515,623.64	20.75
	Passet 1932 Coordinates: N. 293,173.64; E. 2,509,046.21	26.85

Quadrangle	Description	Elevation
260	Amos 1932 Coordinates: N. 289,482.63; E. 2,503,533.38	23.11

O-11. Soil Borings. Approximately 400 new soil borings were taken in various areas of the reservation. The logs of these borings are on file in the Public Works Record Office.

O-12. Records Filed With Public Works Officer. All notes, computations, working drawings, government publications, charts and other data of the survey department have been filed in the Public Works Record Office.

CHAPTER P - PART II

RECORD MAPPING

P-1. Introduction. Record mapping was carried out substantially as described in Volume II.

P-2. 1" = 500' Scale Maps. The program of record mapping originally contemplated the preparation of linen tracings of all maps and additional reproductions showing main utility layouts. A number of the linen tracings were made but due to the loss of trained personnel to the armed services and the shortage of help in design departments, we were directed to concentrate our efforts on the hard copy record maps. The installation of Photact equipment made it possible to secure linen tracings by mechanical methods directly from an opaque surface and at a greatly decreased expenditure of man-hours. Photact reproductions of all hard copy record maps were made and filed with the Public Works Record Office, and a duplicate set prepared for the Bureau of Yards and Docks.

P-3. Tabulation of 1" = 500' Hard Copy Record Maps.

Quad. No.	Yards & Docks No.
97-117	267570
98-118	267571
99-119	267572
100-120	267573
101-121	267574
102-122	267575
137-157	267576
138-158	267577
139-159	267578
140-160	267579
141-161	267580
142-162	267581
177-197	267582
178-198	267583
179-199	267584
180-200	267585
181-201	267586
182-202	267587
217-237	267588
218-238	267589
219-239	267590
220-240	267591
221-241	267592

Total 23

P-4. 1" = 50' Scale Maps. These maps were completed along the same lines described in Volume II. As in the case of the 1" = 500' scale maps previously described, it was found impossible to secure sufficient personnel to trace these drawings. Therefore, we were directed to concentrate our efforts on the basic 1" = 50' hard copy drawings and all structures under construction as of December 18, 1943, have been shown thereon. Photact tracings have been prepared and filed with the Public Works record office, and a duplicate set prepared for the Bureau of Yards and Docks.

P-5. Tabulation of 1" = 50' Scale Hard Copy Record Maps.

Quad. No.		Yards and Docks No.
98	K-1 & K-2	267400
	K-3 & K-4	267401
	P-1 & P-2	267402
	P-3 & P-4	267403
	Q-3 & Q-4	267404
	T-1 & T-2	267405
	U-1 & U-2	267406
	U-3 & U-4	267407
	Y-1 & Y-2	267408
99	K-1 & K-2	267411
	P-1 & P-2	267412
	P-3 & P-4	267413
	Q-1 & Q-2	267414
	Q-3 & Q-4	267415
	R-3 & R-4	267416
	U-1 & U-2	267417
	U-3 & U-4	267418
	V-1 & V-2	267419
	V-3 & V-4	267420
	W-3 & W-4	267421
118	A-1 & A-2	267424
	A-3 & A-4	267425
	E-1 & E-2	267426
	E-3 & E-4	267427
	H-1 & H-2	267428
	J-1 & J-2	267429
	J-3 & J-4	267430
	R-1 & R-2	267431
	R-3 & R-4	267432
	S-3 & S-4	267433
	W-1 & W-2	267434
	W-3 & W-4	267435
119	A-3 & A-4	267438
	L-3 & L-4	267439
	Q-1 & Q-2	267440

1" = 50' Scale Maps (cont'd)

Quad No.		Yards and Docks No.
119	Q-3 & Q-4	267441
	R-1 & R-2	267442
	R-3 & R-4	267443
	S-1 & S-2	267444
	S-3 & S-4	267445
	W-1 & W-2	267446
	X-1 & X-2	267447
	X-3 & X-4	267448
120	B-1 & B-2	267452
	B-3 & B-4	267453
	F-1 & F-2	267454
	G-1 & G-2	267455
	G-3 & G-4	267456
	L-1 & L-2	267457
	L-3 & L-4	267458
139	D-1 & D-2	267461
	E-3 & E-4	267462
	J-3 & J-4	267463
	O-1 & O-2	267464
	O-3 & O-4	267465
	T-1 & T-2	267466
	T-3 & T-4	267467
	X-1 & X-2	267468
	X-3 & X-4	267469
	Y-1 & Y-2	267470
	Y-3 & Y-4	267471
140	P-3 & P-4	267475
	R-1 & R-2	267476
	R-3 & R-4	267477
	U-1 & U-2	267478
	U-3 & U-4	267479
	W-1 & W-2	267480
	W-3 & W-4	267481
	X-3 & X-4	267482
159	E-1 & E-2	267485
160	A-1 & A-2	267488
	A-3 & A-4	267489
	B-1 & B-2	267490
	B-3 & B-4	267491
	C-1 & C-2	267492
	C-3 & C-4	267493

1" = 50' Scale Record Maps (Cont'd)

Quad. No.		Yards and Docks No.
160	D-3 & D-4	267494
	F-1 & F-2	267495
	F-3 & F-4	267496
	G-1 & G-2	267497
	G-3 & G-4	267498
	H-1 & H-2	267499
	H-3 & H-4	267500
	I-3 & I-4	267501
	K-1 & K-2	267502
	K-3 & K-4	267503
	L-1 & L-2	267504
	L-3 & L-4	267505
	M-3 & M-4	267506
	Q-1 & Q-2	267507
	Q-3 & Q-4	267508
	V-1 & V-2	267509
198	Q-1 & Q-2	267520
	Q-3 & Q-4	267521
	V-1 & V-2	267522
	V-3 & V-4	267523
	W-3 & W-4	267524
218	B-1 & B-2	267527
	B-3 & B-4	267528
	C-3 & C-4	267529
219	D-1 & D-2	267532
	E-1 & E-2	267533
	E-3 & E-4	267534
	I-1 & I-2	267535
	J-1 & J-2	267536
	J-3 & J-4	267537
	O-1 & O-2	267538
	O-3 & O-4	267539
220	F-3 & F-4	267542
	K-3 & K-4	267543
221	S-1 & S-2	267546
	X-1 & X-2	267547
	X-3 & X-4	257548

Total 113

CHAPTER Q PART II

LIST OF DRAWINGS PREPARED

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Q-10 Electrical Distribution
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Q-31 Miscellaneous
Q-32 Marine Corps Women's Reserve
Q-33 Beach Area (Signal School Activities)

Q-1. Introduction. As in the first two volumes, lists of drawings have been omitted from the preceding chapters of this volume wherever practicable. Listed hereinafter are the drawings completed during the period October 1, 1942 - December 18, 1943. The tracings have been turned over to the Public Works Officer indexed so that a desired drawing may be found readily if either the Yards and Docks number, the temporary drawing number, the accounting project number, the subject or the area involved is known.

Graphical records of load tests made by the U. S. Navy are not included.

Tracings reported in Chapter Q. Vol. II -	3,078
Tracings prepared Oct. 1, 1943-Dec. 18, 1943	940
Tracings of Studies and Abandoned Projects filed with Public Works Officer but not listed herein -	498
Total No. of Tracings Prepared	4,516

Q-2. Roads, Streets, Railroads and Bridges

Q-2.01. Division Training Area

Dwg. No.	Y & D No.	Proj. No.	Title
2230	229300	1509	Bus Terminal. Details of Walks, Drives, Parking and Drainage

Q-2.02. Camp Troops Activities

2227	229327	1500	Plan and Profile of Drive to School and Coal Storage
1308	304692	1513	Red Cross Building Site and Detail, Roads Grading, Sewer and Water Plan

Q-2.03. Supply and Industrial Area

2228	229312	1308-10	Colored Labor Battalion. Plan and Profile of Cedar and Birch Streets Extension and Lewis Road with Walk Plan
2229	229318		Plan Showing Drainage Layout (This Drawing Supersedes M.B. Dwg. No. 244, Y&D No. 161924)

Q-2.04. Naval Hospital

None

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)

Q-2.05. Residential Area

None

Q-2.06. Rifle Range

2223	248256	1900-16	Plan and Profile G. W. Carver Street and Booker T. Washington Blvd.

Q-2.07. Barrage Balloon and Amphibian Base

None

Q-2.08. Parachute Training Area

None

Q-2.09. Airport
Incomplete - Construction Deferred

2231	229376	2200-16	Plan and Profile Curtis Road Extension, Taxiway, Mooring Circles, Typical Sections
3192		2200	Mooring Out Circle, Anchors and Manholes

Q-2.10. Tent Camps No. 1 and No. 2
Incomplete - Construction Deferred

TC 404		139	Plan of Drive and Walk at Water Treatment Plant

Q-2.11. Montford Point Area (Including Camp Knox)

MP 59	229471	501-1	Montford Point Camp No. 2. Plan and Profile Coolidge, Taft, Hoover, Harding and Company Streets
MP 58.	229470	501-1	Montford Point Camp No. 2. Plan and Profile Wilson Drive Typical Section
MP 102	248281	1100-16	Montford Point Camp No. 2A. Plan and Profile Hayes Street and Harding-Typical Section of Company Street
MP 123	248282	1101-16	Montford Point Camp No. 3. Plan and Profile Harlem Drive Typical Section

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
MP 126	248283	1101-16	Montford Point Camp No. 3. Plan and Profile Rochester Lane and Company Street
MP 127	248284	1101-16	Montford Point Camp No. 3. Plan and Profile Company Streets C, D, E and F and Drive to Mess Hall No. 324

Q-2.12. Peterfield Point Camp

None

Q-2.13. Tank Battalion Camp

None

Q-2.14. Midway Park Residential Area

None

Q-2.15. Marine Corps Women's Reserve

2224	229293	1200-16	Plan, Profile and Typical Section-Lucy Brewer Avenue
2225	229294	1200-16	Plan and Profile Virginia Dare Drive
2226	229295	1200-16	Plan and Profile Molly Pitcher Drive

Q-2.16. Beach Area

None

Q-2.17. Miscellaneous

None

Q-3. Site Plans

Q-3.01. Division Training Area

392	162066	Site Plan in Vicinity of Recreational Facilities and Central Heating Plant (This Dwg. Supersedes MB No. 346, Y&D No. 161992)

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
399	162067		Site Plan Regimental Area No. 3 (This Dwg. Supersedes MB No. 303, Y & D No. 161983)
1305	287880	1510	Site and Detail Plan Showing Swimming Pool - Regimental Area No. 5
1306	287879	1510	Site and Detail Plan Showing Swimming Pool - Regimental Area No. 2

Q-3.02. Camp Troop Activities

397	162074	1500	Site Plan School Building, Paradise Point Road
1303			Site Plan Area North of Virginia Dare Drive and Northeast of Service Road
1308	304692	1513	Red Cross Bldg. Site and Details, Roads, Grading, Water and Sewage

Q-3.03. Supply and Industrial Area

391	162065	108-3	Supply and Industrial Area - Walk Plan
395	162075		Site Plan Supply and Industrial Area, Ash Street to Sneads Ferry Road
396	162073		Site Plan Supply and Industrial Area (This Dwg. Supersedes MB No. 306 Y & D No. 161986)
1300	162078		Site Plan for Colored Labor Battalion

Q-3.04. Naval Hospital

None

Q-3.05. Residential Area

390	162064	234-1	Radar Facilities - Area No. 2 Site Plan
1307		1510	Site and Detail Plan Showing Swimming Pool, Officers' Quarters Area
1307	287908	1601	Site and Detail Plan, Paradise Point Swimming Pool.

Q-3.06. Rifle Range

393	162067		Rifle Range Area, Site Plan for Colored Troops

Q-3.07. Barrage Balloon and Amphibian Base

1309	304700	2400	Bachelor Officers' Quarters Site and Detail Plan

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)

Q-3.08. Parachute Training Area

None

Q-3.09. Airport
Incomplete - Construction Deferred

1301	162079		Site Plan Lighter-Than-Air Facilities

Q-3.10. Tent Camp No. 1

None

Q-3.11. Tent Camp No. 2

None

Q-3.12. Montford Point Area (Including Camp Knox)

MP 54	162062		Numbering Plan Montford Point Camps No. 1 and No. 2
MP 55	162063		Site Plan Montford Point Camp No. 2
MP 109	162068		Site Plan Montford Point Camp No. 3
CCC 10	162070		Camp Knox - Site Plan Block "E"
MP 292	287878	1103	Site and Detail Plan of Swimming Pool at Montford Point

Q-3.13. Peterfield Point Camp

None

Q-3.14. Tank Battalion Camp

None

Q-3.15. Midway Park Residential Area

None

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
	Q-3.16. Marine Corps Women's Reserve		
394	162071		Site Plan Marine Corps Women's Reserve
398	162076	1200-17	Grading and Walk Plan Marine Corps Women's Reserve
	Q-3.17. Beach Area		
1302	287927	2302	Signal School Facilities - Site Plan
1304	287942	2302	Grading and Walk Plan Signal School Facilities
	Q-3.18. Miscellaneous		
3133			R.E.A. Power Site on Northeast Creek Showing Property Lines and Right Of Way
	Q-4. Sewers		
	Q-4.01. Division Training Area		
1517	287872	1510	Sewer and Water Plans, Swimming Pool Regimental Area No. 5
1518	287873	1510	Sewer and Water Plans, Swimming Pool Regimental Area No. 2
	Q-4.02. Camp Troop Activities		
1421	288080	1500-14	Grade and High School, Paradise Point, Sewers
1308	304692	1513	Red Cross Building Site and Detail, Roads, Grading, Sewer and Water Plan.
	Q-4.03. Supply and Industrial Area		
1420	288081	1308-5	Labor Battalion, Supply and Industrial Area-Sewers
	Q-4.04. Naval Hospital		
	None		

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
Q-4.05. Residential Area			
1415	162319	234-1	Radar Area No. 2, Sewers
1527	287907	1601	Paradise Point Swimming Pool Water and Sewer Plan
Q-4.06. Rifle Range			
1416	288082	1900-14	Rifle Range Area, Colored Troops Camp Sewers
Q-4.07. Barrage Balloon and Amphibian Base			
	None		
Q-4.08. Parachute Training Area			
	None		
Q-4.09. Airport			
	Incomplete - Construction Deferred		
1426		2200-14	Lighter-Than-Air Facilities - Sewers
Q-4.10. Tent Camp No. 1			
	None		
Q-4.11. Tent Camp No. 2			
	None		
Q-4.12. Montford Point Areas (Including Camp Knox)			
MP 62	162317	501-2	Montford Point Camp No. 2 - Sewers
MP 82	162318	501-2	Montford Point Camp No. 2 - Trunk Sewers
MP 111	288083	1100-14	Montford Point Camp No. 2A - White Officers' Quarters Area - Sewers
MP 129	288084	1101-14	Montford Point Camp No. 3 - Sewers
MP 130	288085	1101-14	Montford Point Camp No. 3 - Sewer Profiles

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
MP 300	287877	1103	Sewer and Water Plan - Montford Point Swimming Pool
CCC 9	162318	236	Camp Knox - Dog Training Area - Sewer
CCC 19	288086	1102-14	Camp Knox - Block E - Sewer Plans and Profiles
CCC 20	288087	1102-14	Camp Knox - Block A, B, C & D - Sewer Plans
CCC 21	288088	1102-14	Camp Knox - Block A, B, C & D - Sewer Profiles

Q-4.13. Peterfield Point Camp

None

Q-4.14. Tank Battalion Camp

None

Q-4.15. Midway Park Residential Area

None

Q-4.16. Marine Corps Women's Reserve

1419	288089	1200-14	U.S.M.C. Women's Reserve Area - Sewers

Q-4.17. Beach Area

1521	287941	2302-14	Sewer and Water Plan
1522	287973	2302	Sewer and Water - Miscellaneous Details

Q-4.18. Miscellaneous

None

Q-5. Sewage Structures

Q-5.01. Division Training Area
Incomplete - Construction Deferred

1409		229	Addition to Sewage Treatment Plant, General Plan

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
1410		229	Addition to Sewage Treatment Plant, Aeration Tanks, Piping Details
1411		229	Addition to Sewage Treatment Plant, Aeration Tanks, Pump Pit, Piping and Structural Details
1412		229	Addition to Sewage Treatment Plant, Final Settling Tanks, Piping and Structural Details
1413		229	Addition to Sewage Treatment Plant, Piping Details for Blowers and Sludge Pumps, Details of Return Sludge-Division Chamber
1414		229	Addition to Sewage Treatment Plant, Piping Details, Sludge Digestion Tank No. 4, Miscellaneous Details

Q-5.02. Camp Troop: Activities

1422	288111	1500-14	Paradise Point Road Sewage Pumping Station, Station No. 13 Structural and Piping Details, Layout and Location Plan
1423	288112	1500-14	Paradise Point Road Sewage Pumping Station, Manhole No. 849, Miscellaneous Details
1424	288113	1500-14	Paradise Point Road Sewage Pumping Station, Reinforcing Details
1425	288114	1500-14	Paradise Point Road Sewage Pumping Station, Reinforcing Details, Bar Lists
3786	288115	1500-14	Paradise Point Road Sewage Pumping Station, Electrical Layout

Q-5.03. Supply and Industrial Area

None

Q-5.04. Naval Hospital

None

Q-5.05. Residential Area

None

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)

Q-5.06. Rifle Range

1417	288116	1900-14	Rifle Range Colored Troops Camp-Sewage Pumping Station, Reinforcing Details, Layout Plan
1418	288117	1900-14	Rifle Range Colored Troops Camp-Sewage Pumping Station, Structural and Piping Details, Location Plan
3771	288118	1900-14	Rifle Range Colored Troops Camp-Sewage Pumping Station, Electrical Work

Q-5.07. Barrage Balloon and Amphibian Base

None

Q-5.08. Parachute Training Area

None

Q-5.09. Airport

None

Q-5.10. Tent Camp No. 1

None

Q-5.11. Tent Camp No. 2

None

Q-5.12. Montford Point Areas (Including Camp Knox)

MP 87	248248	501-2	Montford Point Camp No. 2, Sewage Pumping Station No. 10, Structural and Piping Details, Location and Layout Plans
MP 88	248251	501-2	Montford Point Camp No. 2, Sewage Pumping Station No. 10, Special Manhole No. 705, Miscellaneous Details
MP 95	248249	501-2	Montford Point Camp No. 2, Sewage Pumping Station No. 10, Bar Bending Details

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
MP 99	248250	501-2	Montford Point Camp No. 2, Sewage Pumping Station No. 10, Electrical Layout
MP 137	288119	1101-14	Additions to Montford Point Sewage Treatment Plant, General Plan
MP 138	288120	1101-14	Additions to Montford Point Sewage Treatment Plant, Imhoff Tank, Structural and Piping Details, Location Plan
MP 139	288121	1101-14	Additions to Montford Point Sewage Treatment Plant, Imhoff Tank, Reinforcing Details
MP 140	288122	1101-14	Additions to Montford Point Sewage Treatment Plant, Imhoff Tank, Bill of Reinforcing Steel
MP 169	288123	1101-14	Additions to Montford Point Sewage Treatment Plant, Influent Chambers, Reinforcing Details
MP 170	288124	1101-14	Additions to Montford Point Sewage Treatment Plant, Parshall Flume, Reinforcing Details
MP 187	288125	1101-14	Additions to Montford Point Sewage Treatment Plant, Details of Influent Chamber and Parshall Flume
MP 198	288126	1101-14	Additions to Montford Point Sewage Treatment Plant, Miscellaneous Details
MP 199	288127	1101-14	Additions to Montford Point Sewage Treatment Plant, Outfall Sewer
MP 201	288128	1101-14	Additions to Montford Point Sewage Treatment Plant, Office and Tool Storage Bldg.
MP 203	288129	1101-14	Additions to Montford Point Sewage Treatment Plant, Chlorination Bldg., Piping and Structural Details
MP 204	288130	1101-14	Additions to Montford Point Sewage Treatment Plant, Chlorination Bldg., Reinforcing Details
MP 205	288131	1101-14	Additions to Montford Point Sewage Treatment Plant, Chlorination Bldg., Architectural Plans and Details
MP 217	288132	1101-14	Additions to Montford Point Sewage Treatment Plant, Electrical Layout
MP 218	288133	1101-14	Additions to Montford Point Sewage Treatment Plant, Sludge Drying Bed
CCC 22	288134	1102-14	Scales Creek Sewage Pumping Station, Structural and Piping Details, Layout Plan, Location Plan
CCC 23	288135	1102-14	Scales Creek Sewage Pumping Station, Special Manhole No. 813, Miscellaneous Details
CCC 24	288137	1102-14	Scales Creek Sewage Pumping Station, Reinforcing Details

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
CCC 25	288137	1102-14	Scales Creek Sewage Pumping Station, Reinforcing Details, Bar Lists
CCC 26	288138	1102-14	Scales Creek Sewage Pumping Station, Electrical Layout

Q-5.13. Peterfield Point Camp

None

Q-5.14. Tank Battalion Camp

None

Q-5.15. Midway Park Residential Area

None

Q-5.16. Marine Corps Women's Reserve

None

Q-5.17. Beach Area

13892	287971	2302	Chlorination Building, Plans, Elevations and Details
1427	287974	2302	Sewage Treatment Plant, Layout Plan, Sludge Beds, Prechlorination Manhole
1428	287975	2302	Imhoff Tank, Piping and Structural Details
1429	287976	2302	Imhoff Tank, Reinforcing Details
1430	287977	2302	Imhoff Tank, Reinforcing Details and Bar List

Q-5.18. Miscellaneous

None

Q-6. Water

Q-6.01. Division Training Area

1517	287872	1510	Sewer & Water Plan Swimming Pool Regimental Area No. 5

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
1518	287873	1510	Sewer & Water Plan Swimming Pool Regimental Area No. 2

Q-6.02. Camp Troop Activities

1511	248266		Water Distribution System - Holcomb Blvd. and Paradise Point Road
1308	304692	1513	Red Cross Building, Site and Detail Roads, Grading, Sewer and Water Plan

Q-6.03. Supply and Industrial Area

1510	248265		Water Distribution Area, Supply and Industrial Area, Southeast Side

Q-6.04. Naval Hospital

None

Q-6.05. Residential Area

1507	162297	234-1	Water Distribution System, Radar Area
1527	287907	1601	Paradise Point Swimming Pool Water and Sewer Plan

Q-6.06. Rifle Range

1508	162298		Water Distribution System for Rifle Range Colored Troops Area

Q-6.07. Barrage Balloon and Amphibian Base

None

Q-6.08. Parachute Training Area

None

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)

Q-6.09. Airport
Incomplete - Construction Deferred

1512		2200-13	Lighter-Than-Air Facilities Water Distribution

Q-6.10. Tent Camp No. 1

None

Q-6.11. Tent Camp No. 2

None

Q-6.12. Montford Point Areas (Including Camp Knox)

MP 300	287877	1103	Sewer and Water Plan Swimming Pool Montford Point Area
MP 60	162296	501-1	Montford Point Camp No. 2, Water Supply and Distribution System
MP 112	162299	1100-13	Montford Point Camp No. 2 and 2A White Officers' Quarters, Water Distribution System
MP 113	248261	1101-13	Montford Point Camp No. 3, Water Distribution System
MP 114	248263	1101-13	Montford Point Camp No. 3, Water Distribution System
CCC 15	248264	1102-13	Water Supply and Distribution System Camp Knox
CCC 7	162295		Water Supply and Distribution System Camp Knox

Q-6.13. Peterfield Point Camp

None

Q-6.14. Tank Battalion Camp

None

Q-6.15. Midway Park Residential Area

None

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
	Q-6.16. Marine Corps Women's Reserve		
1509	248262	1200-13	Water Distribution System - Marine Corps Women's Reserve
	Q-6.17. Beach Area		
1520	287940	2302-13	Wells Nos. 22 & 23 and Water transmission Mains
1521	287941	(2302-14 (2302-13	Water and Sewer Plan
3195		2302	Proposed Water Main Crossing - Inland Waterway - Location Detail - Vicinity Map
3196		2302	Proposed Water Main Crossing - Inland Waterway Profile and Details
1522	287973	2302	Sewer and Water, Miscellaneous Details
	Q-6.18. Miscellaneous		
		None	

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)

Q-7. Water Structures.

Q-7.01. Division Training Area

1542 14801	248267 228762	108-4 1511	Water Plant - Filter-Surface Wash System Chemical Storage Building for Water Treatment Plans, Elevations and Details

Q-7.02. Camp Troops Activities

None

Q-7.03. Supply & Industrial Area

None

Q-7.04. Naval Hospital

None

Q-7.05 Residential Area

None

Q-7.06. Rifle Range

None

Q-7.07. Barrage Balloon & Amphibian Base

None

Q-7.08. Parachute Training Area

None

Q-7.09. Airport

None

Dwg. No.	Y & D. No.	Proj. No.	Title (Cont'd.)
	Q-7.10.	Tent Camps No. 1 & No. 2 Incomplete - Construction Deferred	
TC 126		139	Water Treatment & Filter Plant Location Plan
TC 127		139	Water Treatment Plant - Floor Plans, Elevations 20.25 & 29.0
TC 128		139	Water Treatment Plant - Floor Plan, Stair Sections, Concrete Bracket Details
TC 129		139	Water Treatment Plant - Elevations & Details
TC 130		139	Water Treatment Plant - Framing Sections & Details
TC 131		139	Water Treatment Plant - Door & Window Details & Schedules
TC 132		139	Water Treatment Plant, Aerator Details and Piping
TC 133		139	Water Plant, Plan & Details of Filters, Water Softening Equipment & Piping
TC 134		139	Water Treatment Plant, Chemical Feeder and Chlorine Equipment
TC 135		139	Water Treatment Plant, Venturi Vault Details and Piping, Chlorinator Injector Chamber, Softening Tank Piping
TC 140		139	Water Treatment Plant - Floor Plans - Plumbing
TC 405		139	Water Treatment Plant - Floor Plans Electrical Layout & Details
TC 406		139	Water Treatment Plant - Floor Plan Chlorine Equipment & Chemical Pumps Power Layout
	Q-7.11.	Montford Point Areas (Including Camp Knox)	
MP 83	248253	501-3	Foundation Plan for Water Tank M.P. No. 2
MP 100	248254	(500-3 (501-3	Obstruction Lights for Water Tank M.P. No. 2
MP 146	248268	1101-13	Foundation Plan for 150,000 Gallon Water Tank

Q-7.12. Peterfield Point Camp

None

Q-7.13. Tank Battalion Camp

None

Q-7.14. Midway Park Residential Area

None

Q-7.15. Marine Corps Women's Reserve

None

Q-7.16. Beach Area

1513	287925	2301	Foundation Plan, Elevation, Piping Details and Layout Plan, 100,000 Gallon Elevated Water Tank.
1514	287926	2301	Details for Observation House, Elevated Water Tank.
13893	287972	2302	Well Pump Houses - Plans, Elevations and Details
4730	287982	2302	Electrical Layout and Distribution Wells Nos. 22 and 23

Q-7.17. Miscellaneous

None

Q-8. Telephone.

Q-8.01 Division Training Area

None

Q-8.02. Camp Troops Activities

Q-8.03. Supply & Industrial Area

3784	267225	124	Industrial Area Telephone System Additional Plant Facilities
3798	267226	1308-9	Telephone System - Labor Battalion - Industrial Area

Q-8.04. Naval Hospital

None

Q-8.05 Residential Area

None

Q-8.06. Rifle Range

3762	162366	1900-15	Outside Plant Construction - Telephone System - Rifle Range Area

Q-8.07. Barrage Balloon & Amphibian Base

None

Q-8.08. Parachute Training Area

None

Q-8.09. Airport

4707		(P-2200-12	
		(P-2200-13	
		(P-2200-1	Lighter-Than-Air Facilities

Q-8.10. Tent Camp No. 1

None

Q-8.11. Tent Camp No. 2

None

Q-8.12. Montford Point Areas (Including Camp Knox)

MP 174	162367	1100-15	Montford Point Camp No. 2 & 2A Outside Plant Construction - Telephone System
MP 175	162368	1100-15	Montford Point Camp No. 3 - Telephone System - Outside Plant Construction
CCC 17	162369		Camp Knox Area - Telephone System-Outside Plant Construction
CCC 18	162370		Camp Knox Area - Telephone System-Outside Plant Construction
MP 78	162365	501-17	Montford Point Camp No. 2 - Telephone System - Outside Plant Construction

Q-8.13. Peterfield Point Area

None

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
			Q-8.14. Tank Battalion Area
			None
			Q-8.15. Midway Park Residential Area
			None
			Q-8.16. Marine Corps Women's Reserve
3779	267227	1200-15	U. S. Marine Corps Women's Reserve - Telephone System - Outside Plant Construction
			Q-8.17. Beach Area
4713	267228	124-1	Cable Facilities - For Hurst Beach and Balloon Barrage Area
4714	267229	124-1	Cable Facilities - For Hurst Beach and Balloon Barrage Area
4715	267230	124-1	Cable Facilities - For Hurst Beach and Balloon Barrage Area
4716	267231	124-1	Cable Facilities - For Hurst Beach and Balloon Barrage Area
4717	267232	124-1	Cable Facilities - For Hurst Beach and Balloon Barrage Area
4718	267233	124-1	Cable Facilities - For Hurst Beach and Balloon Barrage Area
4719	267234	124-1	Cable Facilities - For Hurst Beach and Balloon Barrage Area
4720	267235	124-1	Cable Facilities - For Hurst Beach and Balloon Barrage Area Schematic Loading Layout
3189			Proposed 2400 V. Submarine Power and Telephone Cable Crossing - Inland Waterway near Hurst Beach - Plan
3190			Proposed 2400 V. Submarine Power and Telephone Cable Crossing - Inland Waterway near Hurst Beach - Location Detail
			Q-8.18. Miscellaneous
4711	162371	1509	Line Change for New Bridge at Sneads Ferry
3191			Proposed Submarine Power and Telephone Cables across New River at Sneads Ferry

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)

Q-9. Propane Gas System.

None

Q-10. Electrical Distribution.

Q-10.01. Division Training Area

4701	287812	1506-12	Regimental Area No. 3 - School Buildings Electrical Distribution
4702	287813	1506-12	Regimental Area No. 4 - School Buildings Electrical Distribution
4703	287814	1506-12	Regimental Area No. 5 - School Buildings Electrical Distribution

Q-10.02. Camp Troop Activities

3774	267210	1500-12	Electrical Distribution - School Building Paradise Point Road
4733	304691	1513	Red Cross Building Electrical Layout and Electrical Distribution

Q-10.03. Supply and Industrial Area

3776	248165	1308-7	Supply and Industrial Area - Electrical Distribution for Colored Labor Camp
4721	267211	108-9	Supply and Industrual Area - Electrical Distribution
4736	230194	1312	Central Heating Plant - Office and Storage Space - Electrical Layout and Distribution

Q-10.04. Naval Hospital

3759		400-1-22	Naval Hospital - Electrical Distribution Additional Feeder

Q-10.05 Residential Area

None

Q-10.06 Rifle Range

3763	248161	1900-12	Rifle Range Area - Colored Troops Camp Electrical Distribution
4700	287811	1901-12	Rifle Range Area - School Buildings Electrical Distribution

Q-10.07. Barrage Balloon and Amphibian Base

None

Q-10.08. Parachute Training Area

None

Q-10.09. Airport
Incomplete - Construction Deferred

4707 (2200-12
(2200-13
(2200-1
(2200-2
(2200-5 Lighter-Than -Air Facilities - Electrical Distribution and Interior Wiring - Telephone System

Q-10.10. Tent Camp No. 1

None

Q-10.11. Tent Camp No. 2

None

Q-10.12. Montford Point Areas (Including Camp Knox)

MP 75	248757	501-9	Electrical Distribution-Feeder to Montford Point Camp No. 2
MP 76	248158	501-9	Electrical Distribution for Montford Point No. 2
MP 110	248162	1101-12	Montford Point No. 3 - Electrical Distribution
MP 115	248163	1100-12	White Officer's Quarters at Montford Point No. 2 - Electrical Distribution
CCC 12	248159	1102-12	Electrical Distribution for Camp Knox
CCC 13	248160	1102-12	Electrical Distribution for Camp Knox

Q-10.13. Peterfield Point Camp

None

Q-10.14. Tank Battalion Camp

None

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
	Q-10.15. Midway Park Residential Area		
	None		
	Q-10.16. Marine Corps Women's Reserve		
3767	248164	1200-12	Marine Corps Women's Reserve Area Electrical Distribution
	Q-10.17. Beach Area Signal School Facilities		
4727	287981	2302-12	Substation and Dead End at Inland Waterway
4726	287980	2302-12	Electrical Distribution
4725	287979	2302-12	Electrical Distribution
4724	287978	2302-12	Electrical Distribution
4730	287982	(2302-12 (2302-13	Electrical Layout and Distribution for Wells Nos. 22 and 23
3189			Proposed 2400 Volt Submarine Power and Telephone Cable Crossing - Inland Waterway near Hurst Beach - Plan
3190			Proposed 2400 Volt Submarine Power and Telephone Cable Crossing - Inland Waterway near Hurst Beach - Location Detail
	Q-10.18. Miscellaneous		
3191			Proposed Submarine Power and Telephone Cable Crossing Across New River at Sneads Ferry
	Q-11. Topography		
3186	248147		Trailer Camp Area - Quadrangle 140-S
3187	248148		Anti-Tank Range - Topographic Map Part of Quadrangle 202
	267400		Quad. 98 K-1 and K-2
	267401		Quad. 98 K-3 and K-4
	267402		Quad. 98 P-1 and P-2
	267403		Quad. 98 P-3 and P-4
	267404		Quad. 98 Q-3 and Q-4
	267405		Quad. 98 T-1 and T-2
	267406		Quad. 98 U-1 and U-2
	267407		Quad. 98 U-3 and U-4
	267408		Quad. 98 Y-1 and Y-2
	267411		Quad. 99 K-1 and K-2

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
	267412		Quad. 99 P-1 and P-2
	267413		Quad. 99 P-3 and P-4
	267414		Quad. 99 Q-1 and Q-2
	267415		Quad. 99 Q-3 and Q-4
	267416		Quad. 99 R-3 and R-4
	267417		Quad. 99 U-1 and U-2
	267418		Quad. 99 U-3 and U-4
	267419		Quad. 99 V-1 and V-2
	267420		Quad. 99 V-3 and V-4
	267421		Quad. 99 W-3 and W-4
	267424		Quad. 118 A-1 and A-2
	267425		Quad. 118 A-3 and A-4
	267426		Quad. 118 E-1 and E-2
	267427		Quad. 118 E-3 and E-4
	267428		Quad. 118 H-1 and H-2
	267429		Quad. 118 J-1 and J-2
	267430		Quad. 118 J-3 and J-4
	267431		Quad. 118 R-1 and R-2
	267432		Quad. 118 R-3 and R-4
	267433		Quad. 118 S-3 and S-4
	267434		Quad. 118 W-1 and W-2
	267435		Quad. 118 W-3 and W-4
	267438		Quad. 119 A-3 and A-4
	267439		Quad. 119 L-3 and L-4
	267440		Quad. 119 Q-1 and Q-2
	267441		Quad. 119 Q-3 and Q-4
	267442		Quad. 119 R-1 and R-2
	267443		Quad. 119 R-3 and R-4
	267444		Quad. 119 S-1 and S-2
	267445		Quad. 119 S-3 and S-4
	267446		Quad. 119 W-1 and W-2
	267447		Quad. 119 X-1 and X-2
	267448		Quad. 119 X-3 and X-4
	267452		Quad. 120 B-1 and B-2
	267453		Quad. 120 B-3 and B-4
	267454		Quad. 120 F-1 and F-2
	267455		Quad. 120 G-1 and G-2
	267456		Quad. 120 G-3 and G-4
	267457		Quad. 120 L-1 and L-2
	267458		Quad. 120 L-3 and L-4
	267461		Quad. 139 D-1 and D-2
	267462		Quad. 139 E-3 and E-4
	267463		Quad. 139 J-3 and J-4
	267464		Quad. 139 O-1 and O-2
	267465		Quad. 139 O-3 and O-4
	267466		Quad. 139 T-1 and T-2
	267467		Quad. 139 T-3 and T-4
	267468		Quad. 139 X-1 and X-2
	267469		Quad. 139 X-3 and X-4

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
	267470		Quad. 139 Y-1 and Y-2
	267471		Quad. 139 Y-3 and Y-4
	267475		Quad. 140 P-3 and P-4
	267476		Quad. 140 R-1 and R-2
	267477		Quad. 140 R-3 and R-4
	267478		Quad. 140 U-1 and U-2
	267479		Quad. 140 U-3 and U-4
	267480		Quad. 140 W-1 and W-2
	267481		Quad. 140 W-3 and W-4
	267482		Quad. 140 X-3 and X-4
	267485		Quad. 159 E-1 and E-2
	267488		Quad. 160 A-1 and A-2
	267489		Quad. 160 A-3 and A-4
	267490		Quad. 160 B-1 and B-2
	267491		Quad. 160 B-3 and B-4
	267492		Quad. 160 C-1 and C-2
	267493		Quad. 160 C-3 and C-4
	267494		Quad. 160 D-3 and D-4
	267495		Quad. 160 F-1 and F-2
	267496		Quad. 160 F-3 and F-4
	267497		Quad. 160 G-1 and G-2
	267498		Quad. 160 G-3 and G-4
	267499		Quad. 160 H-1 and H-2
	267500		Quad. 160 H-3 and H-4
	267501		Quad. 160 I-3 and I-4
	267502		Quad. 160 K-1 and K-2
	267503		Quad. 160 K-3 and K-4
	267504		Quad. 160 L-1 and L-2
	267505		Quad. 160 L-3 and L-4
	267506		Quad. 160 M-3 and M-4
	267507		Quad. 160 Q-1 and Q-2
	267508		Quad. 160 Q-3 and Q-4
	267509		Quad. 160 V-1 and V-2
	267520		Quad. 198 Q-1 and Q-2
	267521		Quad. 198 Q-3 and Q-4
	267522		Quad. 198 V-1 and V-2
	267523		Quad. 198 V-3 and V-4
	267524		Quad. 198 W-3 and W-4
	267527		Quad. 218 B-1 and B-2
	267528		Quad. 218 B-3 and B-4
	267529		Quad. 218 C-3 and C-4
	267532		Quad. 219 D-1 and D-2
	267533		Quad. 219 E-1 and E-2
	267534		Quad. 219 E-3 and E-4
	267535		Quad. 219 I-1 and I-2
	267536		Quad. 219 J-1 and J-2
	267537		Quad. 219 J-3 and J-4
	267538		Quad. 219 O-1 and O-2
	267539		Quad. 219 O-3 and O-4
	267542		Quad. 220 F-3 and F-4
	267543		Quad. 220 K-3 and K-4

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
	267546		Quad. 221 S-1 and S-2
	267547		Quad. 221 X-1 and X-2
	267548		Quad. 221 X-3 and X-4
	267570		Quad. 97 and 117
	267571		Quad. 98 and 118
	267572		Quad. 99 and 119
	267573		Quad. 100 and 120
	267574		Quad. 101 and 121
	267575		Quad. 102 and 122
	267576		Quad. 137 and 157
	267577		Quad. 138 and 158
	267578		Quad. 139 and 159
	267579		Quad. 140 and 160
	267580		Quad. 141 and 161
	267581		Quad. 142 and 162
	267582		Quad. 177 and 197
	267583		Quad. 178 and 198
	267584		Quad. 179 and 199
	267585		Quad. 180 and 200
	267586		Quad. 181 and 201
	267587		Quad. 182 and 202
	267588		Quad. 217 and 237
	267589		Quad. 218 and 238
	267590		Quad. 219 and 239
	267591		Quad. 220 and 240
	267592		Quad. 221 and 241

Q-12. Gasoline and Oil Storage & Distribution.

Q-12.01. Division Training Area

None

Q-12.02. Camp Troop Activities

None

Q-12.03. Supply and Industrial Area

5687	228830	108-11	Tank Farm and Service Station - Piping Diagram (As Built)
6635	228831	1307	Gasoline Supply from Tank Farm to Post and Division Garages

Q-12.04. Naval Hospital

None

Q-12.05. Residential Area

None

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)

Q-12.06. Rifle Range

None

Q-12.07. Barrage Balloon and Amphibian Base

None

Q-12.08. Parachute Training Area

None

Q-12.09. Airport

5676	162069	(116 (142-4	Landing Field - Gasoline Distribution - Aqua System Layout (As Built)

Q-12.10. Tent Camp No. 1

None

Q-12.11. Tent Camp No. 2

None

Q-12.12. Montford Point Areas (Including Camp Knox)

None

Q-12.13. Peterfield Point Camp

None

Q-12.14. Tank Battalion Camp

None

Q-12.15. Midway Park Residential Area

None

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
	Q-12.16. Marine Corps Women's Reserve		
	None		
	Q-12.17. Beach Area		
	None		
	Q-12.18. Miscellaneous		
	None		
Q-13.	Steam Distribution.		
	Q-13.01. Division Training Area		
5669	248047	(411 (238	Location Plan of Chemical Feeders for Corrosion Prevention Treatment of Condensate Return System - Regimental Area and Industrial Area
6639	287809	(1506-11 (1901-11	Thirty School Buildings, Steam Distribtion, Areas 3, 4 & 5 and Rifle Range
6640	287810	1506-11	Thirty School Buildings, Steam Distrib-Details Areas 3, 4 & 5 and Rifle Range
6662	287899	(1510 (1103	Steam Distribution for Swimming Pools
	Q-13.02 Camp Troop Activities		
6686	304690	1513	Red Cross Building - Steam Distribution
	Q-13.03. Supply and Industrial Area		
5669	248047	(411 (238	Location Plan of Chemical Feeders for Corrosion Prevention Treatment of Condensate Return System - Regimental Area and Industrial Area
13832	248049	1308-8	Mechanical Pit at Office Building-Supply and Industrial Area - Plan, Elevations, Sections and Details
6614	248050	1308-8	Labor Battalion Supply and Industrial Area, Steam Distribution Plan

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
6615	248051	1308-8	Labor Battalion Supply and Industrial Area, Steam Distribution Profile
6616	248052	1308-8	Labor Battalion Supply and Industrial Area, Steam Distribution Details
12877	248053	1308-8	Service Pit for Post Exchange and Adm. Building - Labor Battalion
	Q-13.04. Naval Hospital		
5666	228874	(411 (238	Location Plan of Chemical Feeders for Corrosion Prevention Treatment of Condensate Return System - Hospital Area
6648	287821	1508	Steam Line to Naval Hospital - Plan and Profile
6649	287822	1508	Steam Line to Naval Hospital - Plan and Profile
6650	287823	1508	Details
	Q-13.05. Residential Area		
5668	228876	(411 (238	Location Plan of Chemical Feeders for Corrosion Prevention Treatment of Condensate Return System
	Q-13.06. Rifle Range		
5684	248054	(1900-11 (1100-11	Rifle Range, Colored Troops Area, Outside Steam Distribution
5668	228876	(411 (238	Location Plan of Chemical Feeder for Corrosion Prevention Treatment of Condensate Return System
6639	287809	(1506-11 (1901-11	Thirty School Buildings - Steam Distribution Areas 3, 4 & 5 and Rifle Range
6640	287810	(1506-11 (1901-11	Thirty School Buildings - Steam Distribution Details Areas 3, 4 & 5 and Rifle Range
	Q-13.07. Barrage Balloon and Amphibian Base		
5668	228876	(411 (238	Location Plan of Chemical Feeder for Corrosion Prevention Treatment of Condensate Return System
6691	304718	2400	Bachelor Officers' Quarters, Steam Distribution and Details

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)

Q-13.08. Parachute Training Area

None

Q-13.09. Airport

None

Q-13.10. Tent Camp No. 1

5667	228875	(411 (238	Location Plan of Chemical Feeders for Corrosion Prevention Treatment of Condensate Return System - Tent Camp No. 1 and No. 2

Q-13.11. Tent Camp No. 2

5667	228875	(411 (238	Location Plan of Chemical Feeders for Corrosion Prevention Treatment of Condensate Return System - Tent Camp No. 1 and No. 2

Q-13.12. Montford Point Areas (Including Camp Knox)

168	248044	1101-11	Montford Point No. 3 - Outside Steam Distribution
56688	228876	(411 (238	Location Plan of Chemical Feeders for Corrosion Prevention Treatment of Condensate Return System
74	248048	501-16	Montford Point Camp No. 2, Outside Steam Distribution and Details
5684	248054	(1900-11 (1100-11	Outside Steam Distribution - Montford Point White Officers' Quarters
6662	287899	(1510 (1103	Steam Distribution for Montford Point Swimming Pools

Q-13.13. Peterfield Point Camp

None

Q-13.14. Tank Battalion Camp

None

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
	Q-13.15. Midway Park Residential Area		
	None		
	Q-13.16. Marine Corps Women's Reserve		
6605	248055	1200-11	Plan and Profile
6606	248056	1200-11	Details
	Q-13.17. Beach Area		
6679	287969	2302	Steam Distribution
	Q-13.18. Miscellaneous		
	None		

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
Q-14. Division Training Area			
Q-14.01. Barracks			
3772	162524	1200-22	Alterations - First Regimental Area - Barracks, Electrical Work
Q-14.02. Mess Hall			
12817	287701	1200-22	Uniform Shop for Women's Reserve in Mess Hall No. 107 - Plans and Details
12818	287702	1200-22	Uniform Shop for Women's Reserve in Mess Hall No. 107 - Partition and Fixture Details
12819	287703	1200-22	Uniform Shop for Women's Reserve in Mess Hall No. 107 - Fixture Details
3780	287704	1200-22	Uniform Shop for Women's Reserve in Mess Hall No. 107 - Electrical Layout
Q-14.03. Battalion Warehouse			
12812	287700	1200-22	Alteration Shop in Battalion Warehouse No. 133
3781	287705	1200-22	Alteration Shop in Battalion Warehouse No. 133 - Electrical Layout
3782	287706	1200-22	Beauty Shop in Battalion Warehouse No. 103 - Electrical Layout
13836		1507	Photographic Facilities in Bldg. No. 27 Floor Plan and Details
13836	304695	1507	Photographic Facilities in Bldg. No. 27 Floor Plans and Details
6685	304696	1507	Photographic Facilities in Bldg. No. 27. Plumbing
6684	304697	1507	P. F. in Bldg. No. 27 - Heating
4735	304698	1507	P. F. in Bldg. No. 27 - Elect. Layout
Q-14.04. Post Exchange and Service Club Storehouse			
11863	248204	234-A	Plans, Elevations and Details
Q-14.05. School Buildings			
13833	287805	(1506-21 (1901-21	Plans, Elevations, Sections, Details
13834	287806	(1506-21 (1901-21	Door, Window and Louver Details
13835	287807	(1506-21 (1901-21	Alternate Wall Section
6638	287808	(1506-21 (1901-21	Heating and Ventilation

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
4704	287815	(1506-21 (1901-21	Electrical Layout

Q-14.06. Bus Terminal

13816	287792	1509	Foundation Plan
13817	287793	1509	Floor Plan
13818	287794	1509	Elevations, Bench and Door Jamb Details
13819	287795	1509	Bay Window and Exterior Door Details
13820	287796	1509	Sections, Ticket Windows, Details, Schedule
13821	287797	1509	Toilet Room Details
13822	287798	1509	Structural Details
6652	287799	1509	Heating Plans and Details and Steam Distribution and Details
6653	287800	1509	Waste and Vent - Hot and Cold Water Piping
4710	287801	1509	Electrical and Telephone

Q-14.07. Swimming Pools

1519	287874	(1510-23 (1103-23	Drainage Layout
13847	287881	1510	Main Floor Plan
13848	287882	(1510 (1103	Filter Room Plan with Details
13849	287883	(1510 (1103	Locker, Toilet and Shower Rooms, Plan, sections and Details
13850	287884	(1510 (1103	Roof Plan, Skylight and Cupola Details
13851	287885	1510	Elevations, Exterior Door, Details
13852	287886	1510	Longitudinal and Cross Sections
13853	287887	1510	Exterior Wall Details
13883	287889	1510	Elevation and Exterior Door Details for Regimental Area No. 2
13874	287890	(1103 (1510	First Floor Plan - Foundation Plan
13875	287891	(1103 (1510	Typical Sections and Details for First Floor and Foundations
13876	287892	(1103 (1510	Miscellaneous Structural Details Below Locker Room
13877	287893	(1103 (1510	Structural Details for Dressing Room Roof and Diving Platform
13878	287894	(1103 (1510	Roof Framing Plan
13879	287895	(1103 (1510	Roof Framing Details

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
13889	287896	(1103 (1510	Details of Skylight Beams
6660	287897	(1103 (1510	Heating and Ventilation
6661	287898	(1103 (1510	Plumbing
6663	287900	(1103 (1510	Water Piping
1515	287870	1510-23	Piping Details, Deep End
1516	287871	(1103-23 (1510-23	Piping Details, Shallow End
4728	287901	(1103 (1510	Main Floor Electrical Layout
4729	287902	(1103 (1510	Filter Room Electrical Layout and Electrical Distribution

Q-15. Division Activities

None

Q-16. Camp Troop Activities

Q-16.01. Post Theater

5685	230812	201-12	Heating - Machine Room Details
12878	230813	201-12	Enclosure for Fan over Stage
12821	230814	201-12	Revised Details of Vomiters

Q-16.02. Post Dispensary

11861	248134	400-3	Miscellaneous Details

Q-16.03. Waller Gunnery Trainer

5671	229734	130	Details for Heating in Machine Room

Q-16.04. Mark 1 Gunnery Trainer

Built according to Standard Drawings of the Bureau of Yards and Docks - Y & D Drawing Nos. 246937, 246936, 246934, 246933 and 236928.

Q-16.05. Uniform Shop

13838	267600	1503	Foundation Plan
14807	267611	1503	Color Scheme

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
13839	267601	1503	Floor Plan and Details
13840	267602	1503	Elevations and Miscellaneous Details
13841	267603	1503	Wall Section and Entrance Details
13842	267604	1503	Room Finish, Door Schedule and Details
13843	267605	1503	Shelving and Miscellaneous Details
13844	267606	1503	Roof Plan, Truss "T-1" and Details
13845	267607	1503	Trusses "T-2", "T-3", "T-4" and Details
6654	267608	1503	Plumbing
6655	267609	1503	Heating
4712	267610	1503	Electrical Layout

Q-16.06. Dispensary Warehouse

11864	287829	(1501 (1200-3	Architectural Plans and Details
11866	287830	(1501 (1200-3	Structural Details

Q-16.07. Grade and High School

11887	287748	1500	Foundation Plan
11888	287749	1500	Floor Plan
11889	287750	1500	Elevations - Roof Plan - Brick Grill Details
11890	287751	1500	Wall Sections
11891	287752	1500	Entrances and Chimneys
11892	287753	1500	Sections and Details
11893	287754	1500	Doors, Windows and Room Finish Schedule
11894	287755	1500	Class Room and Cabinet Details
11895	287756	1500	Toilets, Shelving and Locker Details
11896	287757	1500	Ceiling Plans Reflected
12827	287758	1500	Structural and Roof Framing Details
12828	287759	1500	Details of Truss "T-5"
12829	287760	1500	Corridor Ceiling and Attic Framing Plan - Roof Framing Plan - Structural Details
12876	287761	1500	Equipment Layout
12879	287762	1500	Color Scheme
5698	287763	1500	Plumbing
5699	287764	1500	Heating and Ventilating
3778	287765	1500	Electrical Layout

Q-16.08. Chapel
Incomplete - Construction Deferred

3197			Proposed Balcony for Protestant Chapel

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
	Q-16.09. American Red Cross Building		
14802	304685	1513	Foundation Plan, 1st. Floor Plan, Schedules & Details
14803	304686	1513	Elevations and Details
14804	304687	1513	Exterior Details
14805	304688	1513	Truss and Toilet Room Details
6680	304689	1513	Plumbing, Heating & Ventilating
4733	304691	1513	Electrical Layout & Electrical Distribution
	Q-17. Supply and Industrial Area		
	Q-17.01. Concrete Warehouse		
11858	229005	(106-2A (206-1A	Layout for Additional Toilets for Warehouses Nos. 1101, 1201, 1402 and 1501 - Plans, Elevations and Details - Toilet Stall Details
	Q-17.02. Laundry		
12820	287711	1304	Laundry Extension - Structural Details
12830	287712	1304	Laundry Extension - Foundation - Floor Plan Elevations - Sections - Schedules and Details
12831	287713	1304	Laundry Extension - Details
12832	287714	1304	Laundry Extension - Details
3789	287715	1304	Laundry Extension - Electrical Layout
6622	287716	1304	Laundry Extension - Heating Plan
	Q-17.03. Post Shop Building		
11859	229956	207	Post Shop Building - Shelving Details
	Q-17.04. Main Central Heating Plant		
1657	230189	237	Central Heating Plant - Chemical Feed System
13899		1312	Office and Storage Space, Floor Plans, Elevations and Sections
14800		1312	Toilet and Door Details, Wall Section, Structural Details, Office and Storage Space - Roof Plan
13899	230191	1312	Office & Storage Space - Fl. Plans Elevs. & Sections
14800	230192	1312	Office & Storage Space - Roof Plan. Toilet Door Details - Wall Sections, Strct. Det.
6683	230193	1312	Office & Storage Space - Plbg. & Htg.
4736	230194	1312	Office & Storage Space - Elect. Layout & Distribution

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
	Q-17.05. Warehouse No. 1108		
12858	287777	1305	Piling Plan and Details
12859	287778	1305	Pile Cap Details
12866	287782	1305	Floor Plan and Elevations
12867	287783	1305	Plan of Depot Administrative Offices
12868	287784	1305	Sections - Details
12869	287785	1305	Roof Plan - Details
12860	287780	1305	First Floor Framing
12861	287781	1305	Roof Framing Plan and Details
6630	287787	1305	Waste, Vent, Hot and Cold Water Piping
6624	287791	1305	Heating and Details
3792	287790	1305	Electrical Layout (Nos.1108 and 1606)
3791	287789	1305	Telephone Layout (Nos. 1108 and 1606)
13837	287770	1305	Color Scheme - Buildings 1108 and 1606
	Q-17.06. Warehouse No. 1606		
11874	287771	1305	Piling Plan and Details
11875	287772	1305	Pile Cap Details
12834	287774	1305	Floor Plan - Elevations
12835	287775	1305	Office and Toilet Details, Schedules, Misc. Details
12836	287776	1305	Roof Plans, Sections, Details
11886	287779	1305	First Floor Framing Plan
12813	287773	1305	Roof Framing and Details
6641	287788	1305	Plumbing
3792	287790	1305	Electrical Layout (1108 and 1606)
3791	287789	1305	Telephone Layout (1108 and 1606)
13837	287770	1305	Color Scheme Buildings 1108 and 1606
	Q-17.07. Lumber Drying Kiln		
12870	287727	1301	Foundation and Floor Plan, Elevations, Details
12871	287728	1301	Machine Room Floor Plan, Sections and Elevations, Details
12872	287729	1301	Truss Details
6627	287730	1301	Equipment and Piping Layout
6628	287731	1301	Equipment and Piping Layout
3790	287732	1301	Electrical Layout
	Q-17.08. Paint and Oil Storage, Reclamation Storage Building and Reclamation Decontamination Building		
12863	287718	(1302 (1306	Plans, Elevations and Details for Bldgs. Nos. 1410, 1704 and 1705.

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
12864	287719	(1302 (1306	Detail Sheet for Buildings Nos. 1410, 1704 and 1705
3788	287722	(1302 (1306	Electrical Layout for Buildings Nos. 1410, 1704 and 1705
12865	287720	1306	Plans, Elevations and Details of Bldg. No. 1409
6637	287721	1306	Heating, Steam Connections and Plumbing, Building No. 1409
3797	287723	1306	Building No. 1409 - Electrical Layout

Q-17.09. Camp Communications Warehouse

13823	287833	1303-B	Floor Plans, Elevations, Schedules, Details
13824	287834	1303-B	Roof Plan, Details
6636	287835	1303-B	Heating and Plumbing
4705	287836	1303-B	Electrical Layout
13801	287837	1303-B	Plan, Elevations, Sections

Q-17.10. Camp Communications Storage Shed

12880	287838	1303-C	Post Communication Facilities - Motor Storage Shed - Plans, Elevations, Sections and Details
3799	287839	1303-C	Post Communication Facilities - Motor Storage Shed - Electrical Layout

Q-17.11. Labor Battalion Barracks (One Story "H" Type)

12807	287735	1308-1	Foundation Plan and Sections
12808	287736	1308-1	Floor Plan and Miscellaneous Details
12809	287737	1308-1	Elevations and Details
12810	287738	1308-1	Truss Details and Roof Framing Plan
12811	287739	1308-1	Toilet Area Details
6604	287740	1308-1	Waste and Vent Pipe Details
6611	287741	1308-1	Plumbing Waste and Vents
6613	287743	1308-1	Water Piping
6625	287744	1308-1	Heating and Ventilation
3775	287745	1308-1	Electrical Layout

Q-17.12. Labor Battalion Mess Hall

116	267250	1308-2	Foundation Plan
117	267251	1308-2	Floor Plan
118	267252	1308-2	Roof Framing and Trusses
119	267253	1308-2	Elevations

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
MP 120	267254	1308-2	Door and Window Schedules - Wall Sections
MP 121	267255	1308-2	Miscellaneous Details
MP 122	267256	1308-2	Interior Details
MP 221	267257	1308-2	Galley and Scullery Ceiling and Roof Plan
6607	267036	1308-2	Plumbing - Waste and Vent Piping
6608	267037	1308-2	Plumbing - Water Piping
6623	267039	1308-2	Heating Plan
MP 226	267259	1308-2	Ventilation
MP 125	267258	1308-2	Refrigeration
3770	267041	1308-2	Electrical Work

Q-17.13. Labor Battalion Administration Building

MP 63	248219	1308-3	Foundation, Elevation and Details
MP 64	248220	1308-3	Plan, Wall Section, Door and Window Details, Cross Section
11884	287843	1308-3	Architectural Plan and Details
6621	287848	1308-3	Administration Bldg. and Post Exchange Plan, Heating, Water Piping, Plumbing
3787	287849	1308-3	Electrical Layout

Q-17.14. Labor Battalion Post Exchange

MP 63	248219	1308-4	Foundation Plan, Elevation and Details
MP 64	248220	1308-4	Plan, Wall Section, Door and Window Details, Cross Section
11884	287843	1308-4	Architectural Plans and Details
6621	287848	1308-4	Administration Bldg. and Post Exchange Plan, Heating, Water Piping, Plumbing
3787	287849	1308-4	Electrical Layout

Q-17.15. Office Building

13815	287850	1309	Light Tight Louvers - For Door to Dark Room
3137	287851	1309	Camp Lejeune Office Layout - Carr & J.E. Greiner Company
3138	287852	1309	Camp Lejeune Office Furniture - Carr & J. E. Greiner Company
6612	287853	1309	Heating

Q-17.16. Truck Loading Sheds and Car Unloading Assemblies

11857	248178	108-11	Plans, Elevations and Details

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
	Q-17.17. Cafeteria	By Others	
Q-18. Naval Hospital			
	Q-18.01. Naval Hospital Corpsmen's Barracks		
13898	229834	2100	Changes in Toilet and Shower Rooms, Floor Plan, Elevations and Details
	Q-18.02. Naval Hospital - Nurses Home		
11860	230256	400-1-7	Details of Screen Enclosure on Loading Platform.
	Q-18.03. Naval Hospital - Laundry		
11865	230257	400-1-12	Details of Shelving in Rooms No. 109 and 102
	Q-18.04. Facilities for Waves		
13898	229834	2100	Naval Hospital Corpsmen's Barracks, Changes in Toilet and Shower Rooms, Floor Plans, Elevations and Details
	Q-18.05. Naval Hospital Wards and Corridors		
14821	230436	2102	Changes in Ward 8 - Plan and Details
6693	230437	2102	Alteration to Ward 8 - Plumbing and Heating
4739	230438	2102	Changes in Ward 8 - Electric
	Q-18.06. Naval Hospital Administration Building and Mess Hall		
14806	230513	2101	Acoustical Treatment - Auditorum, Recreation and Refreshment Areas - Ship Stores and Scullery Corridor
Q-19. Residential Area			
	Q-1901. Bachelor Officers' Mess and Officers' Club		
6617	229177	237	Chemical Feed Systems for Boiler Houses

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
	Q-19.02. Barracks for Messmen		
NP 63	248219	1600-1	Foundation Plan, Elevation and Details
NP 64	248220	1600-1	Plan, Wall Section, Door and Window Details, Cross Section
NP 77	248213	1600-1	Electrical Layout
	Q-19.03. Washroom for Messmen		
NP 56	248210	1600-2	Plans, Sections and Details
NP 57	248211	1600-2	Elevations and Details
NP 81	248212	1600-2	Plumbing and Heating
NP 77	248213	1600-2	Electrical Layout
	Q-19.04. Swimming Pool		
13894		1601	Plans - Pool to Dressing Rooms
13895		1601	Elevations and Details
13896		1601	Details
13894	287910	1601	Plans, Pool and Dressing Room
13895	287911	1601	Elevations and Details
13896	287912	1601	Details
6682	287909	1601	Heating and Plumbing
1523	287903	1601	Filter Room Piping, Layout & Details
1524	287904	1601	Miscellaneous Sections & Details
1525	287905	1601	Outside Piping
1526	287906	1601	Pool Piping
4734	287913	1601	Electrical Layout
	Q-19.05. Signal School Area No. 2, Radar Towers		
11855	248180	234-1	Foundation Plans for Winch and Radar Tower and Hold Down Mat for AWS Fuel Tank
	Q-19.06. Signal School Area No. 2, Radar Facilities Operating House HO-2		
11854	248182	234-1	Foundations

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)

Q-19.07. Signal School Area No. 2, Radar Facilities Power House

11853	248185	234-1	Plans, Elevations and Sections

Q-20. Rifle Range

Q-20.01. Rifle Range Boiler Plant

5677	229779	(203-13 (202-16	Induced Draft Fan and Duct Layout
6617	229177	237	Chemical Feed Systems for Boiler Houses

Q-20.02. Rifle Range, Colored Troops Barracks

P 63	248219	1900-1	Foundation Plan, Elevation and Details
P 64	248220	1900-1	Plan, Wall Section, Door and Window Details, Cross Section
P 77	248213	1900-1	Electrical Layout

Q-20.03. Rifle Range, Colored Troops Mess Hall

12833	287856	1900-4	Galley and Scullery Roof, Framing and Equipment Layout
5686	287857	1900-4	Plumbing, Waste and Vent Piping
5688	287858	1900-4	Refrigeration
6609	287859	1900-4	Galley and Scullery Ventilation
P 65	248222	1900-4	Foundation Plans
P 66	248223	1900-4	First Floor Plans
P 67	248224	1900-4	Elevations, Sections and Details
P 68	248225	1900-4	Typical, Windows and Doors, Details, Roof Framing, Truss Details
P 69	248226	1900-4	Details
P 98	248227	1900-4	Heating
P 101	248229	1900-4	C. W. & H. W. Piping
P 80	248230	1900-4	Electrical Layout

Q-20.04. Rifle Range, Colored Troops Administration Building

11884	287843	1900-5	Architectural Plans and Details
5690	287844	1900-5	Plumbing
3766	287845	1900-5	Electrical Work
P 63	248219	1900-5	Foundation Plan, Elevation and Details
P 64	248220	1900-5	Plan, Wall Section, Door and Window Details, Cross Section

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)

Q-20.05. Rifle Range, Colored Troops Post Exchange and Barber Shop

11884	287843	1900-7	Architectural Plans and Details
5690	287844	1900-7	Plumbing
3766	287845	1900-7	Electrical Work
MP 63	248219	1900-7	Foundation Plan, Elevation and Details
MP 64	248220	1900-7	Plan, Wall Section, Door and Window Details, Cross Section

Q-20.06. Rifle Range, Colored Troops Washrooms

MP 56	248210	1900-2	Plans, Sections and Details
MP 57	248211	1900-2	Elevations and Details
MP 81	248212	1900-2	Plumbing and Heating
MP 77	248213	1900-2	Electrical Layout

Q-20.07. Rifle Range, Colored Troops Warehouse

MP 63	248219	1900-3	Foundation, Elevation and Details
MP 64	248220	1900-3	Plans, Wall Sections, Door and Window Details, Cross Sections
MP 77	248213	1900-3	Electrical Layout

Q-20.08. Rifle Range, Colored Troop Heating Plant

11884	287843	1900-11	Architectural Plans and Details
MP 90	248242	1900-11	Details
MP 91	248243	1900-11	Elevations and Details
5691	287862	1900-11	Boiler and Stoker Setting and Details
5681	287863	1900-11	Piping and Details
3765	287864	1900-11	Electrical Layout

Q-21. Barrage Balloon and Amphibian Base

Q-21.01. Amphibian Base Carpentry Shop

5683	Incomplete	202-5	Induced Draft Fan and Duct Layout

Q-21.02. Barrage Balloon Battalion Heating Plant

5677	229779	(202-16 (203-13	Induced Draft Fan and Duct Layout
6617	229177	203-13	Chemical Feed System

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
	Q-21.03. Barrage Balloon School Heating Plant		
5679	Incomplete	202-4	Induced Draft Fan and Duct Layout
	Q-21.04. Barrage Balloon Area Alterations To Existing Bldgs. Incomplete - Construction Deferred		
13884			Alterations to House No. BB-40
13885			Alterations to House No. BB-42
	Q-21.05. See next page.		
Q-22.	Parachute Training Area		
	Q-22.01. Heating Plant - Parachute Training School		
5678	230061	138	Induced Draft Fan and Duct Layout
	Q-22.02. Parachute Towers		
11862	230827	129-1-1	Revisions to Foundations - Parachute Towers Nos. 1, 2 and 3
Q-23.	Airport		
	Q-23.01. Central Heating Plant - Glider Training Base		
5682	Incomplete	142-6	Induced Draft Fan and Duct Layout
	Q-23.02. Lighter-Than-Air Facilities - Quarters and Storage Building Incomplete - Construction Deferred		
13826		2200-1	Foundation Plan and Door Schedule
13827		2200-1	Floor Plan and Cross Sections
13828		2200-1	Elevations and Wall Sections
13829		2200-1	Roof Framing and Truss Details
6642		2200	Heating and Plumbing
4707		(2200-1	Electrical Distribution and Interior
		(2200-2	Wiring, Telephone System
		(2200-5	
Q-24.	White Cemetry		
	None		

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
		Q-21.05.	Barrage Balloon Area Bachelor Officers' Quarters
14808	304701	2400	Foundation Plan and Details
14809	304702	2400	First Floor Plan
14810	304703	2400	Second Floor Plan
14811	304704	2400	Elevations
14812	304705	2400	Roof Plans, Trusses and Misc. Details
14813	304706	2400	Wall Sections, Entrance and Misc. Det.
14814	304707	2400	Structural Details
14815	304708	2400	Room and Door Schedules, Jamb Details
14816	304709	2400	Sections, Plans and Details
14817	304710	2400	Details of Refrigeration Room and Blanket Presses
14818	304711	2400	Details of Stairs
14819	304712	2400	Stair and Cabinet Details
14820	304713	2400	Color Scheme
6687	304714	2400	First Floor, Waste and Vent Piping.
6688	304715	2400	First Floor, Water Piping
6689	304716	2400	Second Floor, Plumbing
6690	304717	2400	First Floor - Heating
6691	304718	2400	Second and Attic Floor Heating and Steam Distribution and Details
6692	304719	2400	Ventilation
6694	304720	2400	Refrigeration
4737	304721	2400	Electrical Layout, First Floor
4738	304722	2400	Electrical Layout, Second Floor

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
Q-25. Tent Camps No. 1 and No. 2			
Q-25.01. Tent Camp No. 1 - Heating Plant			
6617	229177	237	Chemical Feed Systems for Boiler Houses
Q-25.02. Tent Camp No. 2 - Heating Plant			
6617	229177	237	Chemical Feed Systems for Boiler Houses
C 409	229504	250-1-11	Induced Draft Fan and Duct Layout
Q-26. Montford Point Areas (Including Camp Knox)			
Q-26.01. Montford Point Camp No. 1 - Heating Plant			
MP 97	229641	500-16	Induced Draft Fan and Duct Layout
Q-26.02. Montford Point Camp No. 2 - Platoon Barracks			
MP 63	248219	501-8	Foundation, Elevation and Details
MP 64	248220	501-8	Plan, Wall Section, Door and Window Details, Cross Section
MP 77	248213	501-8	Electrical Layout
Q-26.03. Montford Point Camp No. 2 - Mess Hall			
MP 65	248222	501-4-2	Foundation Plans
MP 66	248223	501-4-2	First Floor Plans
MP 67	248224	501-4-2	Elevations, Sections and Details
MP 68	248225	501-4-2	Typical, Windows and Doors, Details, Roof Framing, Truss Details
MP 69	248226	501-4-2	Details
MP 98	248227	501-4-2	Heating
MP 85	Incomplete	501-4-2	Plumbing
MP 101	248229	501-4-2	C.W. and H.W. Piping
MP 80	248230	501-4-2	Electrical Layout
Q-26.04. Montford Point Camp No. 2-Officers' Mess and Demonstration Building			
MP 105	248235	501-4-1	Floor Plans, Elevations, Sections, Details
MP 106	248236	501-4-1	Doors, Gable, Kitchen Cabinet and Shelving Details

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
MP 108	248237	501-4-1	Structural Details
MP 104	248238	501-4-1	Plumbing and Details
MP 107	248239	501-4-1	Ventilation
MP 103	248240	501-4-1	Electrical Layout

Q-26.05. Montford Point Camp No. 2 - Enlisted Men's Washroom

MP 56	248210	501-14	Plans, Sections and Details
MP 57	248211	501-14	Elevations and Details
MP 81	248212	501-14	Plumbing and Heating
MP 77	248213	501-14	Electrical Layout

Q-26.06. Montford Point Camp No. 2 - Administration Building

MP 61	248215	501-15	Plans, Elevations, Sections and Details
MP 84	248216	501-15	Plumbing and Heating
MP 79	248217	501-15	Electrical Layout

Q-26.07. Montford Point Camp No. 2 - Heating Plant

MP 90	248242	501-16	Foundation and Floor Plans, Details and Windows
MP 91	248243	501-16	Elevations and Details
MP 86	248244	501-16	Piping and Details
MP 89	248245	501-16	Boiler and Stoker, Setting and Details
MP 94	248246	501-16	Electrical Layout

Q-26.08. Montford Point Camp No. 2 - Gun Sheds

MP 92	248206	502	Plans, Elevations and Details
MP 93	248207	502	Structural Details
MP 96	248208	502	Electrical Layout

Q-26.09. Montford Point Camp No. 2 - Warehouse

MP 72	248232	501-7	Foundation Plan and Details
MP 73	248233	501-7	Floor Plans, Elevations and Details
MP 77	248213	501-7	Electrical Layout

Q-26.10. Montford Point Camp No. 2A - Platoon Barracks

MP 63	248219	1100-1	Foundation, Elevation and Details
MP 64	248220	1100-1	Plan, Wall Section, Door and Window Schedules, Details

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
MP 77	248213	1100-1	Electrical Layout

Q-26.11. Montford Point Camp No. 2A - Mess Hall and Post Exchange

MP 131	267323	1100-4	Foundation Plan
MP 132	267324	1100-4	Floor Plan
MP 133	267325	1100-4	Roof Framing and Trusses
MP 134	267326	1100-4	Elevations
MP 135	267327	1100-4	Door, Window and Wall Sections
MP 136	267328	1100-4	Interior Details
MP 171	267329	1100-4	Plumbing, Waste and Vent Piping
MP 172	267330	1100-4	Plumbing, and Water Piping
MP 173	267331	1100-4	Heating
MP 220	267332	1100-4	Ventilation
MP 128	267333	1100-4	Refrigeration
MP 142	267334	1100-4	Electrical Work

Q-26.12. Montford Point Camp No. 2A - Washrooms

MP 56	248210	1100-2	Plans, Sections and Details
MP 57	248211	1100-2	Elevations and Details
MP 81	248212	1100-2	Plumbing and Heating
MP 77	248213	1100-2	Electrical Layout

Q-26.13. Montford Point Camp No. 2A - Bachelor Officers' Quarters

MP 149	267348	1100-9	Foundation Plan and Details
MP 150	267349	1100-9	First Floor Plan
MP 151	267350	1100-9	Second Floor Plan
MP 152	267351	1100-9	Elevations
MP 153	267352	1100-9	Roof Plan, Trusses and Miscellaneous Details
MP 154	267353	1100-9	Wall Section, Entrance and Miscellaneous Details
MP 155	267354	1100-9	Structural Details
MP 156	267355	1100-9	Room and Door Schedules, Jamb Details
MP 157	267356	1100-9	Sections, Plans and Details
MP 158	267357	1100-9	Room and Blanket Presses, Details of Refrigeration
MP 159	267358	1100-9	Details of Stairs
MP 160	267359	1100-9	Stair and Cabinet Details
MP 271	267360	1100-9	Color Scheme
MP 124	267361	1100-9	Refrigeration
MP 178	267362	1100-9	First Floor Plans, Heating, Plumbing and Heating, Pit Details
MP 179	267363	1100-9	Second Floor and Attic Plan - Heating Plan

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
MP 180	267364	1100-9	Plumbing, Waste and Vent, First Floor Plan
MP 181	267365	1100-9	Plumbing, C.W. and H.W., First Floor Plan
MP 182	267366	1100-9	Plumbing, Second Floor Plan
MP 207	267367	1100-9	Ventilation
MP 143	267368	1100-9	Electrical Work
MP 144	267369	1100-9	Electrical Work

Q-26.14. Montford Point Camp No. 2A - Heating Plant

MP 183	267340	1100-11	Foundation, Floor Plan and Details
MP 184	267341	1100-11	Elevations and Details
MP 185	267342	1100-11	Truss and Door Details
MP 202	267343	1100-11	Boiler and Stoker Setting Details
MP 145	267344	1100-11	Piping and Details
MP 176	267345	1100-11	Electrical Layout

Q-26.15. Montford Point Camp No. 3 - Platoon Barracks

MP 63	248219	1101-1	Plans, Elevations and Details
MP 64	248220	1101-1	Plans, Wall Sections, Door and Window Details, Cross Section
MP 77	248213	1101-1	Electrical Layout

Q-26.16. Montford Point Camp No. 3 - Mess Hall

MP 116	267250	1101-4	Foundation Plan
MP 117	267251	1101-4	Floor Plan
MP 118	267252	1101-4	Roof Framing and Trusses
MP 119	267253	1101-4	Elevation
MP 120	267254	1101-4	Door and Window Schedules, Wall Sections
MP 121	267255	1101-4	Miscellaneous Details
MP 122	267256	1101-4	Interior Details
MP 221	267257	(1101-4 (1308-2	Galley and Scullery Ceiling and Roof Plan
MP 125	267258	1101-4	Refrigeration
MP 226	267259	1101-4	Ventilation
MP 194	267260	1101-4	Heating
MP 195	267261	1101-4	Waste and Vent Piping
MP 196	267262	1101-4	Water Piping
MP 141	267263	1101-4	Electrical Work

Q-26.17. Montford Point Camp No. 3 - Washrooms

MP 56	248210	1101-2	Plans, Sections and Details
MP 57	248211	1101-2	Elevations and Details

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
MP 81	248212	1101-2	Plumbing and Heating
MP 77	248213	1101-2	Electrical Layout

Q-26.18. Montford Point Camp No. 3 - Administration Building

MP 162	267268	1101-5	Foundation Plan and Details
MP 163	267269	1101-5	Floor Plan and Details
MP 164	267270	1101-5	Elevations, Wall Sections and Details
MP 165	267271	1101-5	Detail Sheet
MP 186	267272	1101-5	Heating
MP 197	267273	1101-5	Plumbing, Waste, Vent and Water Piping
MP 177	267274	1101-5	Electrical Layout
MP 281	267275	1101-5	Color Scheme

Q-26.19. Montford Point Camp No. 3 - Infirmary

MP 228	267649	1101-6	Foundation Plan
MP 229	267650	1101-6	Floor Plans
MP 230	267651	1101-6	Elevations
MP 231	267652	1101-6	Wall Sections and Details
MP 232	267653	1101-6	Exterior and Interior Details
MP 233	267654	1101-6	Room Finish, Door & Window Schedule
MP 234	267655	1101-6	General Details
MP 235	267656	1101-6	Toilet & General Details
MP 236	267657	1101-6	Roof Framing and Details
MP 237	267658	1101-6	Roof Truss Details
MP 238	267659	1101-6	Equipment Plan
MP 301	267660	1101-6	Color Scheme
MP 285	267661	1101-6	Plumbing
MP 286	267662	1101-6	Plumbing Details
MP 297	267663	1101-6	Heating and Ventilating
MP 283	267664	1101-6	Electrical Layout
MP 295	267665	1101-6	Transformer Room and Steam Pit, Electrical Layout
MP 276	267666	1101-6	Telephone System - Conduit Layout

Q-26.20. Montford Point Camp No. 3 - Theater, Post Exchange and Barber Shop

MP 246	267621	1101-8	Foundation Plan & Wall Sections
MP 247	267622	1101-8	Mechanical Pit, Stairs, Columns, Details
MP 248	267623	1101-8	First Floor Plan, Door Schedule and Details
MP 249	267624	1101-8	Mezzanine and Reflected Ceiling Plans, Room Finish Schedule
MP 250	267625	1101-8	Truss and Mezzanine Framing Plans

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
MP 251	267626	1101-8	Wood Truss Details
MP 252	267627	1101-8	Elevations, Lintel Schedule and Louver Details
MP 253	267628	1101-8	Wall Sections (12½" Wall), Window Details
MP 254	267629	1101-8	8" Wall Section, Arcade Details
MP 255	267630	1101-8	Details of Toilets, Showers, Hose Cabinets, D.R. Cabinets and Fl. Sections
MP 256	267631	1101-8	Exterior Details
MP 257	267632	1101-8	Details - Entry & Vestibule, Ticket Window, Wood Grill at Stage Front
MP 258	267633	1101-8	Longitudinal and Transverse Sections
MP 259	267634	1101-8	Stairs - Details
MP 260	267635	1101-8	Stage and Panelling Details - Exit Hall and Attic Stairs
MP 261	267636	1101-8	Details of Room 124
MP 287	267637	1101-8	Plumbing
MP 288	267638	1101-8	Plumbing
MP 289	267639	1101-8	Heating
MP 290	267640	1101-8	Ventilation
MP 291	267641	1101-8	Ventilation
MP 278	267642	1101-8	Electrical Layout
MP 279	267643	1101-8	Electrical Details
MP 302	267644	1101-8	Color Scheme

Q-26.21. Montford Point Camp No. 3 - Brig

MP 209	267278	1101-10	Foundation and Floor Plans
MP 210	267279	1101-10	Elevations, Door and Louver Details
MP 211	267280	1101-10	Cross Section, Cupola and Entrance Details
MP 212	267281	1101-10	Details of Windows, Cornice, Shower and Toilet
MP 225	267282	1101-10	Roof Framing and Truss Details
MP 227	267283	1101-10	Heating, Plumbing, Water Piping and Ventilation
MP 245	267284	1101-10	Electrical Layout
MP 284	267285	1101-10	Color Scheme

Q-26.22 Montford Point Camp No. 3 - Warehouses

MP 72	248232	1101-3	Foundation Plan and Details
MP 73	248233	1101-3	Floor Plans Elevation and Details
MP 77	248213	1101-3	Electrical Layout

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
		Q-26.23. Montford Point Camp No. 3 - Hostess House	
MP 266	267376	1101-19	Foundation Plan and Details
MP 267	267377	1101-19	Floor Plan and Schedules
MP 268	267378	1101-19	Elevations and Details
MP 269	267379	1101-19	Toilet and Bath Details
MP 270	267380	1101-19	Typical Wall Sections and Structural Details
MP 282	267381	1101-19	Color Scheme
MP 272	267382	1101-19	Plumbing
MP 273	267383	1101-19	Plumbing
MP 274	267384	1101-19	Heating
MP 275	267385	1101-19	Ventilation
MP 280	267386	1101-19	Electrical Layout
MP 296	267387	1101-19	Revised Roof Framing over Galley and Details of Scullery Pass Window
		Q-26.24. Montford Point Camp No. 3 - Decontamination Building	
MP 222	267317	1101-22	Plans, Elevations and Miscellaneous Details
MP 223	267318	1101-22	Roof Trusses and Miscellaneous Details
MP 244	267319	1101-22	Heating, Steam Connection and Plumbing
MP 224	267320	1101-22	Electrical Layout
		Q-26.25. Montford Point Camp No. 3 - School Buildings	
MP 167	267312	1101-21	Plan and Details
MP 63	248219	1101-21	Elevations and Details
MP 64	248220	1101-21	Details
MP 147	267307	1101-21	Roof Framing Details
MP 200	267313	1101-21	Plumbing, Water Piping and Heating
MP 148	267308	1101-21	Electrical Layout
		Q-26.26. Montford Point Camp No. 3 - Personnel Classification Bldg.	
MP 166	267306	1101-20	Plan and Details
MP 63	248219	1101-20	Elevations and Details
MP 64	248220	1101-20	Details
MP 147	267307	1101-20	Roof Framing Details
MP 200	267313	1101-20	Plumbing, Water Piping and Heating
MP 148	267308	1101-20	Electrical Layout
		Q-26.27. Montford Point Camp No. 3 - Gun Sheds	
MP 92	248206	1101-23	Plans, Elevations and Details

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
MP 93	248207	1101-23	Structural Details
MP 96	248208	1101-23	Electrical Layout

Q-26.28. Montford Point Camp No. 3 - Heating Plant

MP 188	267288	1101-11	Foundation Plan and Details
MP 189	267289	1101-11	Boiler Foundation and Miscellaneous Details
MP 190	267290	1101-11	Floor Plan and Opening Schedules
MP 191	267291	1101-11	Elevations and Details
MP 192	267292	1101-11	Wall Sections and Miscellaneous Details
MP 193	267293	1101-11	Miscellaneous Details
MP 206	267294	1101-11	Structural Details
MP 213	267295	1101-11	Piping Plan
MP 214	267296	1101-11	Elevation of Piping and Breeching Layout
MP 215	267297	1101-11	Details
MP 216	267298	1101-11	Coal Handling and Details
MP 219	267299	1101-11	Boiler and Stoker Setting Details
MP 208	267300	1101-11	Electrical Layout

Q-26.29. Montford Point Camp No. 3 - Swimming Pool

1519	287874	(1510-23 (1103-23	Drainage Layouts
13847	287881	(1103 (1510	Main Floor Plan
13848	287882	(1103 (1510	Filter Room Plan with Details
13849	287883	(1103 (1510	Locker, Toilet and Shower Rooms, Plans, Sections and Details
13850	287884	(1103 (1510	Roof Plan, Skylight and Cupola Details
13852	287886	(1103 (1510	Gutter and Ladder Details, Longitudinal and Cross Sections
13853	287887	(1103 (1510	Exterior Wall Details
294	287888	1103	Elevations and Exterior Door Details
13874	287890	(1103 (1510	First Floor Plan, Foundation Plan
13875	287891	(1103 (1510	Typical Sections and Details for First Floor and Foundations
13876	287892	(1103 (1510	Miscellaneous Structural Details Below Locker Room Floor Line
13877	287893	(1103 (1510	Structural Details for Dressing Room, Roof and Diving Platform
13878	287894	(1103 (1510	Roof Framing Plan
13879	287895	(1103 (1510	Roof Framing Details

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)
13889	287896	(1103 (1510	Details of Skylight Beams
6660	287897	(1103 (1510	Heating and Venilating
6661	287898	(1103 (1510	Plumbing
6663	287900	(1103 (1510	Water Piping
1516	287871	(1103-23 (1510-23	Piping Details, Shallow End
298	287875	1103-23	Piping Details, Deep End
299	287876	1103-23	Aerator Details
4728	287901	(1103 (1510	Main Floor, Electrical Layout
4729	287902	(1103 (1510	Filter Room, Electrical Layout and Electrical Distribution

Q-26.30. Camp Knox - Mess Hall

CCC 11	267616	1102-4	Floor Plan, Elevations and Details
CCC 14	267618	1102-4	Electrical Layout
CCC 16	267617	1102-4	Plumbing

Q-26.31. Camp Knox - Rehabilitating Existing Structures

The work on this Project was covered in M.B. Specification Number 898

Q-26.32. Camp Knox - Hospital

11843	248188	236-3	Foundation and Floor Plans, Sections and Details
11844	248189	236-3	Elevations and Roof Plans, Miscellaneous Details
5674	248190	236-3	Plumbing and Heating
3757	248191	236-3	Electrical Layout
11856	248202	236-3	Complete on this Sheet - Heating Plant

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd)

Q-26.33. Camp Knox - Kennels

11848	248193	236-2	Foundation Plan and Heating Plant
11849	248194	236-2	Floor Plans and Elevations, Door and Window Schedule and Sections
11850	248195	236-2	Wall and Cross Sections
11851	248196	236-2	Interior Details
11852	248197	236-2	Details of Rooms 100, 101, 106, 107 and 108
5675	248198	236-2	Plumbing and Heating
3758	248199	236-2	Electrical Layout

Q-27. Peterfield Point Camp

None

Q-28. Tank Battalion Camp

None

Q-29. Midway Park Residential Area

None

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
Q-30.	Mockup Area.		
	None		
Q-31.	Miscellaneous.		
	None		
Q-32.	Marine Corps Women's Reserve.		
	Q-32.01. M.C.W.R. Alterations to 1st Regimental Area - Barracks		
3772	162524	1505	Alterations, First Regimental Area, Barracks, Electrical Layout
	Q-32.02. M.C.W.R. Alterations to 1st Regimental Area, Mess Hall		
12817	287701	1505	Uniform Shop for Women's Reserve in Mess Hall No. 107, Plans and Details
12818	287702	1505	Uniform Shop for Women's Reserve in Mess Hall No. 107, Partition and Fixture Details
12819	287703	1505	Uniform Shop for Women's Reserve in Mess Hall No. 107, Fixture Details
3780	287704	1505	Uniform Shop for Women's Reserve in Mess Hall No. 107, Electrical Layout
	Q-32.03. M.C.W.R. Alterations to 1st Regimental Area Battalion Whse.		
12812	287700	1505	Alteration Shop in Battalion Whse. No. 133
3780	287705	1505	Alteration Shop in Battalion Whse. No. 133 - Electrical Layout
3781	287706	1505	Beauty Shop in Battalion Warehouse No. 103 - Electrical Layout
	Q-32.04. M.C.W.R. Barracks		
11876	267000	1200-1	Foundation and First Floor Framing
11877	267001	1200-1	Second Floor Framing and Details, Sleeve Plans

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
11878	267002	1200-1	First Floor Plan, Door Schedule and Details
11879	267003	1200-1	Second Floor Plan and Roof
11880	267004	1200-1	Elevations and Exterior Details
11881	267005	1200-1	Truss Details, Wall Sections and Coursing
11882	267006	1200-1	Toilet Room Details
11883	267007	1200-1	Interior Details
11885	267008	1200-1	Miscellaneous Details
13800	267009	1200-1	Color Scheme
5692	267010	1200-1	Foundation Plan, Plumbing, Waste and Vent Piping
5693	267011	1200-1	First Floor Plan, Plumbing, Waste and Vent Piping
5694	267012	1200-1	Second Floor Plan, Plumbing, Waste and Vent Piping
5695	267013	1200-1	Foundation Plan, Plumbing, Water Piping
5696	267014	1200-1	First Floor Plan, Plumbing, Water Piping
5697	267015	1200-1	Second Floor Plan, Plumbing, Water Piping
6600	267016	1200-1	Foundation Plan, Heating and Ventilation
6601	267017	1200-1	First Floor Plan, Heating and Ventilation
6602	267018	1200-1	Second Floor and Attic, Heating and Ventilation
6603	267019	1200-1	Pit Details, Plumbing and Heating
3768	267020	1200-1	First Floor Plan, Electrical Work
3769	267021	1200-1	Second Floor Plan, Electrical Work

Q-32.05. M.C.W.R. Mess Hall

12800	267027	1200-4	Foundation Plan
12801	267028	1200-4	Floor Plan
12802	267029	1200-4	Roof Framing and Trusses
12803	267030	1200-4	Elevations
12804	267031	1200-4	Door and Window Schedules, Wall Sections
12805	267032	1200-4	Refrigerator and Storage Room No. 108 - Details
12806	267033	1200-4	Typical Details and Cross Section
12862	267034	1200-4	Galley Roof Framing and Details
13831	267035	1200-4	Color Scheme
6607	267036	1200-4	Plumbing, Waste and Vent Piping
6608	267037	1200-4	Plumbing, Water Piping
6623	267039	1200-4	Heating Plan
P 125	267258	1200-4	Refrigeration
3770	267041	1200-4	Electrical Work
6610	267038	1200-4	Ventilation

Q-32.06. M.C.W.R. Administration Building

12822	267047	1200-5	Foundation and Floor Plan

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
12823	267048	1200-5	Toilet and Steam Pit Details
12824	267049	1200-5	Wall Sections and Door Schedule
12825	267050	1200-5	Entrance and Truss Details
12826	267051	1200-5	Elevations and Details
6618	267052	1200-5	Heating, Plumbing and Water
6619	267053	1200-5	Steam Pit Details
3777	267054	1200-5	Telephone Conduit Layout
3783	267055	1200-5	Electrical Layout
13888	267057	1200-5	Color Scheme

Q-32.07. M.C.W.R. Infirmary

4709	267146	1200-6	Electrical Layout
12881	267129	1200-6	Foundation Plan
12882	267130	1200-6	Floor Plan
12883	267131	1200-6	Elevations
12884	267132	1200-6	Elevations "F-F" and Details
12885	267133	1200-6	Portico Details
12886	267134	1200-6	Room Finish, Door and Window Schedule
12887	267135	1200-6	Interior Details
12888	267136	1200-6	General Details
12889	267137	1200-6	Toilet Details
12890	267138	1200-6	Details
12891	267139	1200-6	Roof Framing Details
12892	267140	1200-6	Roof Framing Plan
12893	267141	1200-6	Equipment Plan
4708	267147	1200-6	Telephone System, Conduit Layout
13886	267142	1200-6	Color Scheme
6666	267144	1200-6	Plumbing Details
6665	267143	1200-6	Plumbing
6664	267145	1200-6	Heating & Ventilating

Q-32.08. M.C.W.R. Post Exchange and Service Club

13802	267106	1200-7	Foundation Plan and Footing Details.
13803	267107	1200-7	First Floor Plan, Door Schedule and Details
13804	267108	1200-7	Second Floor and Roof Framing Plan, Parapet Details
13805	267109	1200-7	Elevations and Finish Schedule
13806	267110	1200-7	Cross Section and Details
13807	267111	1200-7	Stair Details and Section Through
13808	267112	1200-7	Typical Wall Section, Window Details and Schedule
13809	267113	1200-7	Details of Toilets, Fire Hose Cabinets and Lockers
13810	267114	1200-7	Main Entrance and Side Door Details

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
13811	267115	1200-7	Exterior Details of Two Story Portion
13812	267116	1200-7	Details of Trusses and Louvers
13813	267117	1200-7	Shelving Details
13814	267118	1200-7	Structural Second Floor Slab Details
13825	267119	1200-7	Details of Steam Pit and Pipe Trench
6647	267120	1200-7	Plumbing
4706	267121	1200-7	Electrical Layout
6657	267123	1200-7	Heating & Ventilating Plans & Details
13887	267124	1200-7	Color Scheme

Q-32.09. M.C.W.R. Officers' Quarters

12840	267061	1200-9	Foundation and First Floor Framing Plan
12841	267062	(1200-9A (1200-9	Steam Pit and Second Floor Framing Plan
12842	267063	1200-9	First Floor Plan, Bedroom Details
12843	267064	1200-9	Second Floor Plan, Roof Plan
12844	267065	(1200-9A (1200-9	Elevations and Window Schedules
12845	267066	(1200-9A (1200-9	Truss "T-6", Roof Framing and Details
12846	267067	(1200-9A (1200-9	Trusses "T-1", "T-2", "T-4" and "T-5"
12847	267068	(1200-9 (1200-9A	Truss "T-7" and Louver Details
12848	267069	(1200-9 (1200-9A	Exterior Details of Coursing and Wall Sections
12849	267070	(1200-9 (1200-9A	Cross Section, Shelving in Linen Closets
12850	267071	(1200-9 (1200-9A	Stair Details, Stairs No. 139 and 149
12851	267072	(1200-9 (1200-9A	Stair Details, Stairs No. 118
12852	267073	(1200-9 (1200-9A	Dining Room Details
12853	267074	(1200-9 (1200-9A	Details of Refrigeration Rooms and Galley
12854	267075	(1200-9 (1200-9A	Details of Lounge and Lobby
12855	267076	(1200-9 (1200-9A	Toilet Room Details
12856	267077	(1200-9 (1200-9A	Miscellaneous Details
12857	267078	(1200-9 (1200-9A	Schedule and Door Details
13830	267079	(1200-9 (1200-9A	Color Scheme

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
12873	267093	1200-9A	Foundation and First Floor Framing Plan
12874	267094	1200-9A	First Floor Plan
12875	267095	1200-9A	Second Floor Plan
6629	267080	(1200-9 (1200-9A	Refrigeration
6631	267081	1200-9	First Floor Plumbing
6632	267082	1200-9	Second Floor Plumbing
6643	267083	1200-9	First Floor Heating
6644	267084	1200-9	Second Floor Heating
3793	267085	1200-9	First Floor Electrical Layout
3794	267086	1200-9	Second Floor Electrical Layout
6651	267087	1200-9	Ventilation
6633	267096	1200-9A	First Floor Plumbing
6634	267097	1200-9A	Second Floor Plumbing
6645	267098	1200-9A	First Floor Heating
6646	267099	1200-9A	Second Floor Heating
3795	267100	1200-9A	First Floor Electrical Layout
3796	267101	1200-9A	Second Floor Electrical Layout
6656	267102	1200-9A	Ventilation

Q-32.10. M.C.W.R. Warehouse

11864	287829	(1501 (1200-3	Architectural Plans and Details
11866	287830	(1501 (1200-3	Structural Details

Q-33. Beach Area.

Q-33.01. Barracks

13854	287928	2302-1	Foundation and Pile Plan Mechanical, Pit Details
13855	287929	2302-1	B eams, Slabs and Wall Sections
13856	287943	2302-1	Floor Plan, Schedules and Miscellaneous Details
13857	287944	2302-1	Elevations and Details
13858	287945	2302-1	Truss Details and Roof Framing Plan
13859	287946	2302-1	Toilet Area Details
13860	287930	2302-1	Exterior Steps and Platforms
6659	287939	2302-1	Plumbing, Waste and Vent Piping, B uilding 102
6658	287938	2302-1	Plumbing, Waste and Vent Piping, Buildings Nos. 104 and 105
6667	287947	2302-1	BA 102 Plumbing, Waste and Vent Piping
6668	287948	2302-1	BA 104 and BA 105 Plumbing, Waste and Vent Piping

Dwg. No.	Y & D No.	Proj. No.	Title (Cont'd.)
6669	287949	2302-1	Waste and Vent Details
6670	287950	2302-1	Hot Water and Cold Water Piping
6671	287951	2302-1	BA 102, Heating and Ventilation
6672	287952	2302-1	BA 104 and BA 105, Heating and Ventilation
4723	267936	2302-1	Electrical Layout
	Q-33.02. Mess Hall		
13861	287931	2302-4	Foundation and Pile Plan
13862	287932	2302-4	Details of Beams and Slabs
13863	287933	2302-4	Details of Mechanical Pit and Steps
13864	287953	2302-4	Floor Plan and Details
13865	287954	2302-4	Elevations, Sections and Details
13866	287955	2302-4	Roof Framing, Wall Sections, Door Details
13867	287956	2302-4	Details of Refrigerated Rooms and Toilets
13891	287957	2302-4	Galley and Scullery Roof Framing and Equipment Layout
6673	287958	2302-4	Plumbing, Waste and Vent Piping
6674	287959	2302-4	Hot Water and Cold Water Piping
6675	287960	2302-4	Heating
6676	287961	2302-4	Galley and Scullery Ventilation
6677	287962	2302-4	Refrigeration
4722	287937	2302-4	Electrical Layout
	Q-33.03. School Buildings		
13868	287934	2302-21	Foundation Plans, Beam and Slab Details
13869	287963	2302-21	Plans, Elevations, Details
13870	287964	2302-21	Door, Window and Louver Details
4732	287965	2302-21	Electrical Layout
	Q-33.04. Heating Plant		
13871	287935	2302-11	Foundation Plans, Beam and Slab Details
13872	287966	2302-11	Floor Plans, Elevations and Stack Details
13873	287967	2302-11	Details of Windows, Doors, Louvers and Truss
6678	287968	2302-11	Piping Plan and Details
4731	287970	2302-11	Electrical Layout

CHAPTER R - PART II

LIST OF SPECIFICATIONS PREPARED

Listed herein are 114 new specifications and 61 addenda to old specifications prepared during the period from October 1, 1942 to December 18, 1943.

Numbers above eleven thousand were assigned by the Bureau of Yards and Docks.

SPEC. NO.	TITLE
168	Glider Base Addendum No. 7
170	Water Treatment Plant - Tent Camp Areas 1 and 2 Sections 1 to 24 inclusive
402	Sewage Treatment Plant Addenda Nos. 2 and 3
412	Montford Point Camp No. 2 - Sewage Pumping Station Sections 1 to 10 inclusive Section E
502	Water Pumping Equipment Addenda Nos. 4 and 5
504	Well Pumps Addenda Nos. 6 to 9 inclusive
508	Water Pumping Equipment, Emergency Pumping Station Sections 1 to 13 inclusive
611	Induced Draft Fans for Heating Plants Sections 1 to 6 inclusive
612	Draft Gauges for Heating Plants
613	Chemical Feed Systems Sections 1 to 3 inclusive

SPEC. NO.	TITLE
710	Emergency Plant Radio Transmission Building
801	Barracks B - Modified Addendum No. 35
803	Warehouses 360' x 180' Addendum No. 19
810-18	Insulation and Painting of Piping, Ducts, Breechings and Stacks for the Central Heating Plant Addendum No. 1
818	Naval Hospital - Medical Storehouse Addenda Nos. 8 to 10 inclusive
824	Heating Plant - Structural Steel Specification Addenda Nos 2 to 4 inclusive
825	Cold Storage Plant Addenda Nos 8 and 9
830	Naval Hospital - Garage Addenda Nos. 6 and 7
833	Naval Hospital - Administration Bldg. and Mess Hall Naval Hospital - Wards and Corridors Addenda Nos. 48 to 55 inclusive
835	Post Dispensary (Division Infirmary, Dental Clinic and Sick Bay and Out-Patient Clinic) Addenda Nos. 7 to 10 inclusive
846	Naval Hospital - Laundry Addenda Nos. 9 and 10
853	Reclamation Building Addenda Nos. 2 and 3
854	Post Shop Building Addenda Nos. 5 and 6

SPEC. NO.	TITLE
856	Naval Hospital - Power Plant Addenda Nos. 3 to 5 inclusive
859	Post Tailor and Cobbler Shop Addendum No. 1
860	Bakery Addendum No. 4
867	Garage and Repair Shop - D.T.A. Addenda Nos. 2 to 4 inclusive
880	Post Theater Addenda Nos. 5 and 6
883	Post Exchange Warehouse Addendum No. 2
888	Transformer Houses at Naval Hospital Addendum No. 1
890	Equipment Specification for Radiographic and X-Ray Apparatus for Family Hospital Addenda Nos 8 to 12 inclusive
891	Service Station at Post Exchange Addenda Nos. 1 and 2
893	Scale House at Central Heating Plant Addendum No. 1
897	Gun Emplacements on Onslow Beach Sections 1 to 3 inclusive
898	Repairing C.C.C. Camp Buildings to be used as Dog Training Camp Sections 1 to 9 inclusive
899	Naval Hospital - Storage Garage Sections 1 to 11 inclusive
900	Repairs and Additions to Gate House Sections 1 to 19 inclusive
901	Dog Training Camp Dispensary Sections 1 to 12 inclusive Addendum No. 1

SPEC. NO.	TITLE
902	Dog Training Camp - Kennels and Heating Plant Sections 1 to 11 inclusive
903	One Parachute Jumping Tower - Parachute Training Area (Furnishing and Erection of all Structural Steel) Sections 1 and 2 Addenda Nos. 1 and 2
904	Montford Point Buildings, Camp No. 2 Sections 1 to 13 inclusive Addenda Nos. 1 and 2
905	Radar Facilities Building Sections 1 to 9 inclusive
906	Specification for Repainting Storehouses, Type SH-9, SH -13 and Motor Storage Sheds, Tent Camp Area
907	Mark I Anti-Aircraft Trainer Building Sections 1 to 12 inclusive Addendum No. 1
908	Acoustical Treatment for Naval Hospital Sections
1001	Standard General Conditions (Contr. NOy 6007 Sections 1 to 13 inclusive only)
1002	Standard Specifications for Interior Electrical Work Sections 1 to 23 inclusive
1003	Standard Specifications for Clearing of Building Site Sections 1 to 4 inclusive
1004	Standard Specifications for Excavation, Filling and Grading Sections 1 to 7 inclusive
1005	Standard Specifications for Concrete Work Sections 1 to 9 inclusive
1006	Standard Specifications for Reinforcing Steel Sections 1 to 3 inclusive

SPEC. NO.	TITLE
1007	Standard Specifications for Brick Work Sections 1 to 9 inclusive
1008	Standard Specifications for Clay Tile Work Sections 1 to 9 inclusive
1009	Standard Specifications for Cast Stone Sections 1 to 6 inclusive
1010	Standard Specifications for Carpentry Sections 1 to 31 inclusive Addendum No. 1
1011	Standard Specifications for Roofing and Metal Work Sections 1 to 13 inclusive
1012	Standard Specifications for Lathing Sections 1 to 5 inclusive
1013	Standard Specifications for Plastering Sections 1 to 12 inclusive Addendum No. 1
1014	Standard Specifications for Glass and Glazing Sections 1 to 5 inclusive Addendum No. 1
1015	Standard Specifications for Painting Sections 1 to 12 inclusive Addenda Nos. 1 and 2
1016	Standard Specifications for Sanitary Sewers Sections 1 to 26 inclusive Addendum No. 1
1017	Standard Specifications for Roads and Appurtenances Sections 1 to 15 inclusive Addendum No. 1
1018	Standard Specifications for Finish Hardware Sections 1 to 7 inclusive Addendum No. 1

SPEC. NO.	TITLE
1019	Standard Specifications for Forced Circulation - Hot Water Heating Systems Sections 1 to 32 inclusive Addendum No. 1
1020	Standard Specifications for Stucco Work Sections 1 to 4 inclusive
1021	Standard Specifications for Plaster Bond Sections 1 to 3 inclusive
1022	Standard Specifications for Water Distribution Systems Sections 1 to 26 inclusive Addendum No. 1
1023	Standard Specifications for Railroad Tracks and Timber Trestles Sections 1 to 12 inclusive Addendum No. 1
1024	Standard Specifications for Refrigeration and Cold Storage Sections 1 to 39 inclusive Addendum No. 1
1025	Standard Specifications for Elevated Steel Water Tanks Sections 1 to 21 inclusive Addendum No. 1
1026	Standard Specifications for Steam Heating Sections 1 to 42 inclusive
1027	Standard Specifications for Plumbing Sections 1 to 28 inclusive Addendum No. 1
1028	Standard Specifications for Exterior Overhead Electrical Distribution System Sections 1 to 19 inclusive Addendum No. 1
1029	Standard Specifications for Sewage Pumping Stations Sections 1 to 26 inclusive Addendum No. 1

SPEC. NO.	TITLE
1030	Tentative Standard Specification for Air Conditioning Sections 1 to 41 inclusive
1031	Standard Specification for Ventilation Sections 1 to 22 inclusive Addendum No. 1
1032	Standard Specification for Well Pumps Sections 1 to 17 inclusive Addendum No. 1
1033	Standard Specification for Timber Pile Foundation Sections 1 to 11 inclusive
1034	Standard Specifications for Structural Steel Sections 1 and 2 Addendum No. 1
1036 1501	Std. Spec. for Elev. Steel Water Tanks For Projects P-1100-1, 1101-1, 1600-1, 1900-1, 1900-3, 1101-3, 1100-2, 1101-2, 1600-2, 1900-2, 1900-4 Addenda Nos. 1 to 3 inclusive
1502	Automatic Chlorinator for Additions to Montford Point Sewage Treatment Plant Sections 1 to 17 inclusive
1503	Montford Point Camp No. 3 - Mess Hall - Architectural Specifications Sections 1 and 2 Addendum No. 1
1505	150,000 Gallon Elevated Water Tank - Montford Point Camp No. 3 Sections 1 to 8 inclusive
1506	Facilities for Colored Men at Rifle Range Sections 1 and 2
1507	Additions to Montford Point Sewage Treatment Plant Sections 1 to 20 inclusive
1508	Flow Meter for Additions to Montford Point Sewage Treatment Plant Sections 1 to 6 inclusive

SPEC. NO.	TITLE
1509	Warehouses for Marine Corps Women's Reserve and Post Dispensary Sections 1 to 12 inclusive
1510	Mess Hall for Marine Corps Women's Reserve Sections 1 to 20 inclusive
1511	Mess Hall and Post Exchange Building - Montford Point Camp No. 2A Sections 1 to 16 inclusive
1512	Barracks - Marine Corps Women's Reserve Sections 1 to 19 inclusive Addenda Nos. 1 to 3 inclusive
1513	Sewage Pumping Equipment - Scales Creek Sewage Pumping Station (No. 12) Sections 1 to 8 inclusive
1514	Personnel Classification Building - Montford Point Camp No. 3 Sections 1 to 5 inclusive
1515	School Building - Montford Point Camp No. 3 Sections 1 to 8 inclusive
1516	Administration Building - Montford Point Camp No. 3 Sections 1 to 5 inclusive
1517	Furnishing and Installing two Well Pumps Montford Point Camp No. 2 Sections 1 to 3 inclusive
1518	Furnishing and Installing one Well Pump Montford Point Camp No. 3 Sections 1 to 3 inclusive
1519	Bachelor Officers' Quarters - Montford Point Camp No. 2A Sections 1 to 12 inclusive
1520	Sewage Pumping Equipment - Paradise Point Road, Sewage Pumping Station (No. 13) (Near Over's Creek) Sections 1 to 8 inclusive

SPEC. NO.	TITLE
1521	Grade and High School Sections 1 to 24 inclusive Electrical Sections 1 to 10 inclusive Addenda Nos. 1 to 3 inclusive
1522	Warehouses - Buildings Nos. 1108 and 1606 Sections 1 to 20 inclusive
1523	One Story "H" Type Barracks Sections 1 to 17 inclusive Addendum No. 1
1524	Heating Plant - Montford Point No. 2A Sections 1 to 14 inclusive
1525	Furnishing and Installing One Well Pump-Rifle Range Sections 1 to 3 inclusive
1526	Furnishing and Installing One Well Pump - Rifle Range Sections 1 to 3 inclusive
1527	Laundry Extension - Industrial Area Sections 1 to 14 inclusive
1528	Administration Building for Marine Corps Women's Reserve Sections 1 to 19 inclusive
1529	Heating Plant - Montford Point Camp No. 3 Sections 1 to 18 inclusive
1530	Electrical Systems for Infirmaries for Montford Point No. 3 and Marine Corps Women's Reserve Sections 1 to 3 inclusive
1531	Storage Building - Industrial Area Sections 1 to 15 inclusive
1532	Decontamination Building - Montford Point Camp No. 3 Sections 1 to 5 inclusive
1533	B.O.Q. Marine Corps Women's Reserve Sections 1 to 20 inclusive Addendum No. 1

SPEC. NO.	TITLE
1534	Brig - Montford Point No. 3 Sections 1 to 4 inclusive Section 5
1535	Lumber Drying Kiln - Industrial Area Sections 1 to 15 inclusive Addendum No. 1
1536	Service Club and Post Exchange - Marine Corps Women's Reserve Sections 1 to 19 inclusive
1537	Marine Corps Women's Reserve - Infirmary Sections 1 to 24 inclusive
1538	Montford Point Camp No. 3 - Infirmary Sections 1 to 24 inclusive
1539	Non-Climbable Wire Fence for Post Communication Facilities - Buildings Nos. 1703 and 1707 Section 1
1541	Warehouse and Cable Platform Post Communication Facilities Sections 1 to 18 inclusive
1542	Hostess House - Montford Point No. 3 Sections 1 to 15 inclusive
1543	Uniform Shop - Post Troops Area Sections 1 to 18 inclusive
1545	Theater, Post Exchange and Barber Shop - Montford Point No. 3 Sections 1 to 23 inclusive
11905	Three Swimming Pools Sections 1 to 15 inclusive
11905-1	Paradise Point Swimming Pool Sections 1 to 11 inclusive
11987-1	Thirty School Buildings - Heating and Steam Distribution Sections 1-01 to 1-42 inclusive
11987-2	Thirty School Buildings - Architectural Sections 1 to 14 inclusive

SPEC. NO.	TITLE
11987-3	Thirty School Buildings - Interior Electrical Work and Electrical Services Sections 1-01 to 1-03 inclusive
11987-4	Sanitary Sewers for 26 School Buildings in Division Training Area Sections 1-01 to 1-04 inclusive
11987-5	Clearing, Landscaping and Walks for 26 School Buildings in D. T. A. Sections 1 to 4 inclusive
11987-6	Lighter-Than-Air Facilities Sections 1 to 11 inclusive
11987-7	Steam Line to Naval Hospital Sections 1-01 to 1-36 inclusive
11987-8	Addendum to Specifications for Thirty School Buildings
11987-8A	Addendum to Specifications for Thirty School Buildings
11987-9	Bus Terminal Sections 1 to 12 inclusive Addendum No. 1
11987-10	Grading, Piling and Concrete Work - Signal School Facilities Sections 1 to 8 inclusive Addendum No. 1
11987-11	Photographic Facilities Sections 1 to 10 inclusive
12098	Buildings and Utilities - Signal School Facilities Sections 1 to 16 inclusive
12190	Well Water Supply at Signal School Facilities Sections 1 to 3 inclusive
12306	Addition to Central Heating Plant and Chemical Storage for Water Treatment Plant Sections 1 to 8 inclusive

12657	100,000 Gallon Elevated Water Tank and Foundations Sections 1 to 18 inclusive
12675	Red Cross Building Section 1 to 13 inclusive
12942	Bachelor Officers' Quarters-Barrage Balloon Battalion Sections 1 to 13 inclusive.

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S. A. Munch, Supt.
Plumbing and Heating
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S. A. Munch, Supt.
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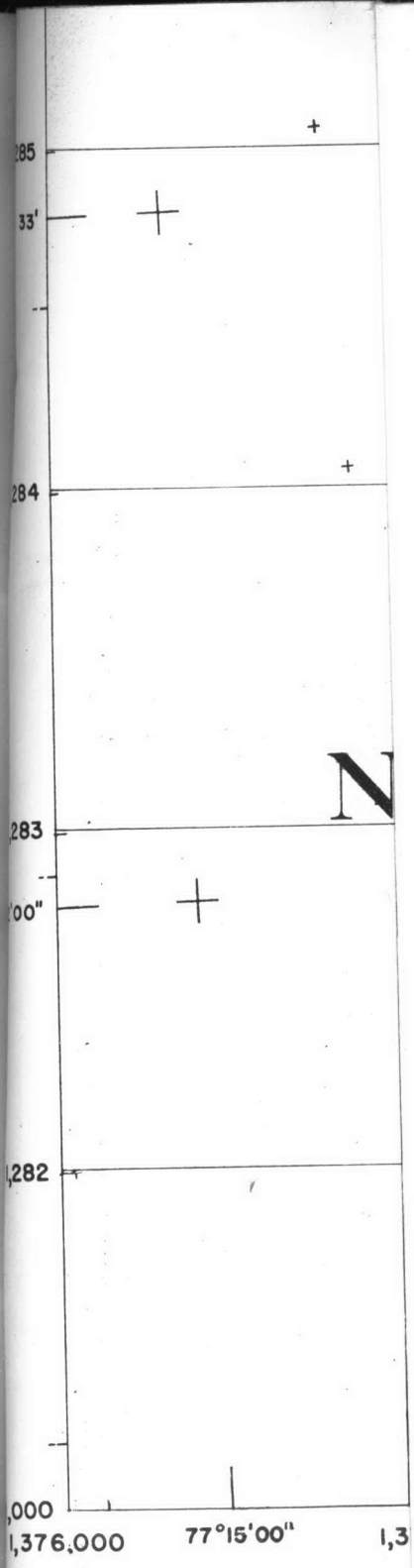

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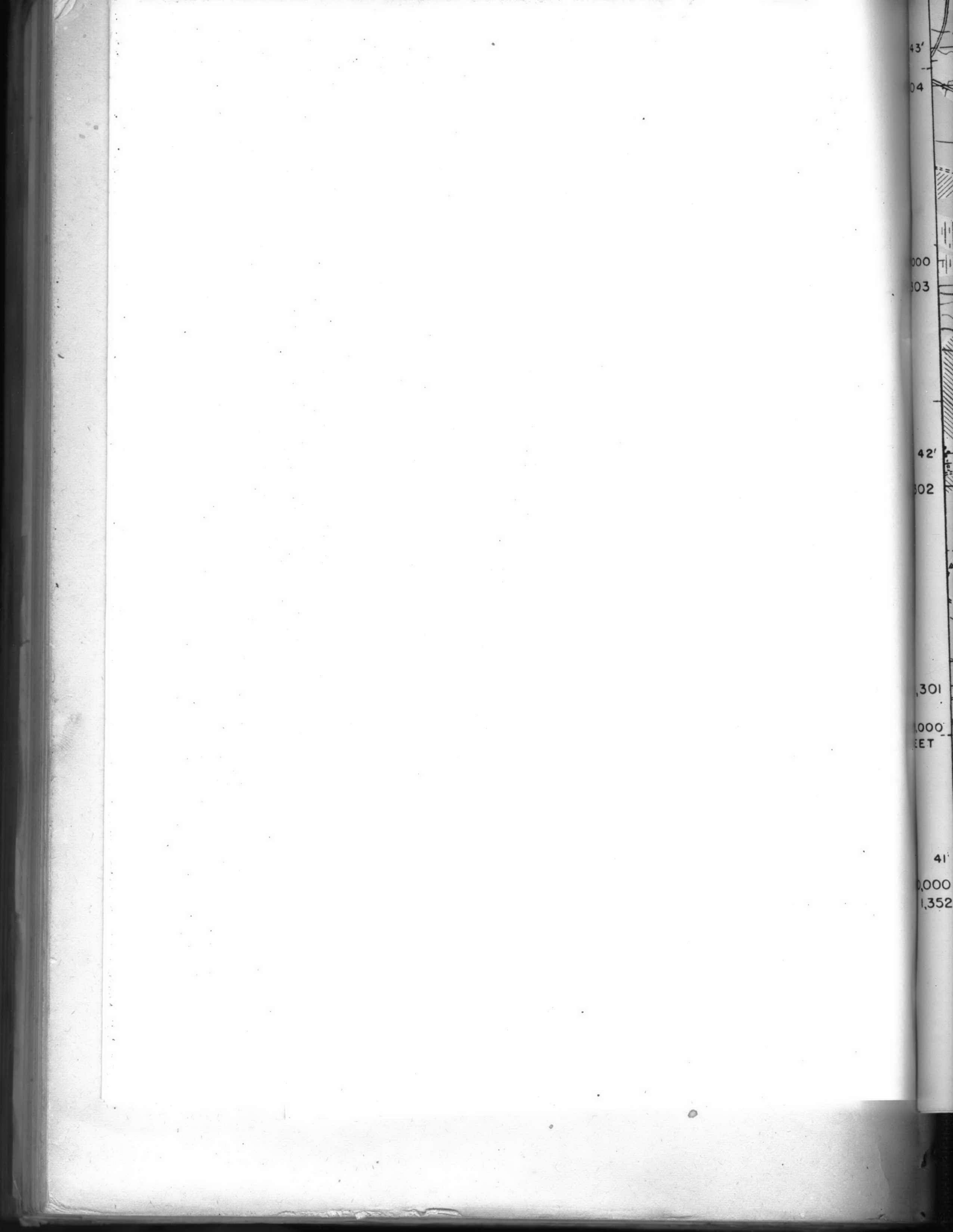

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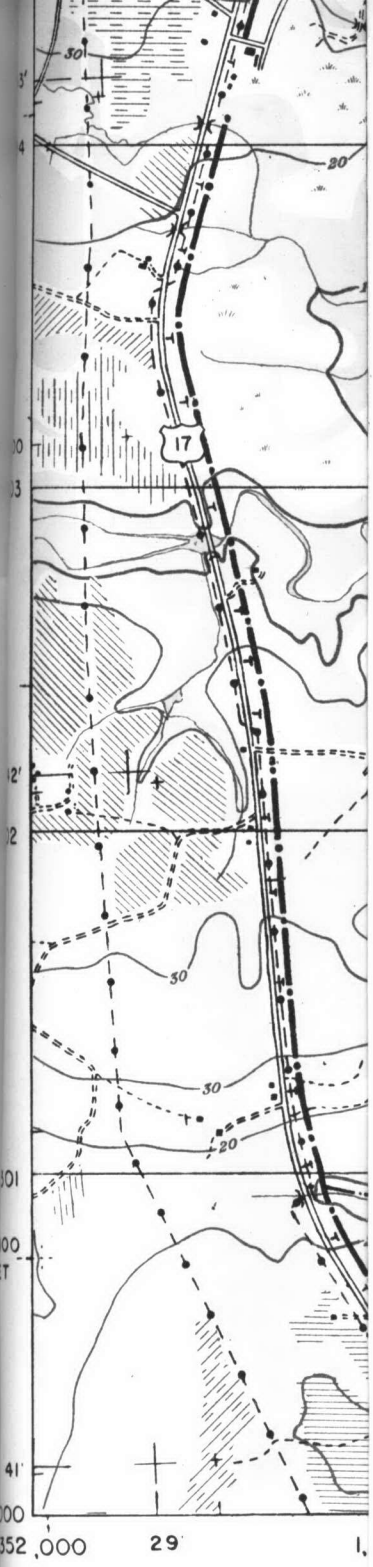

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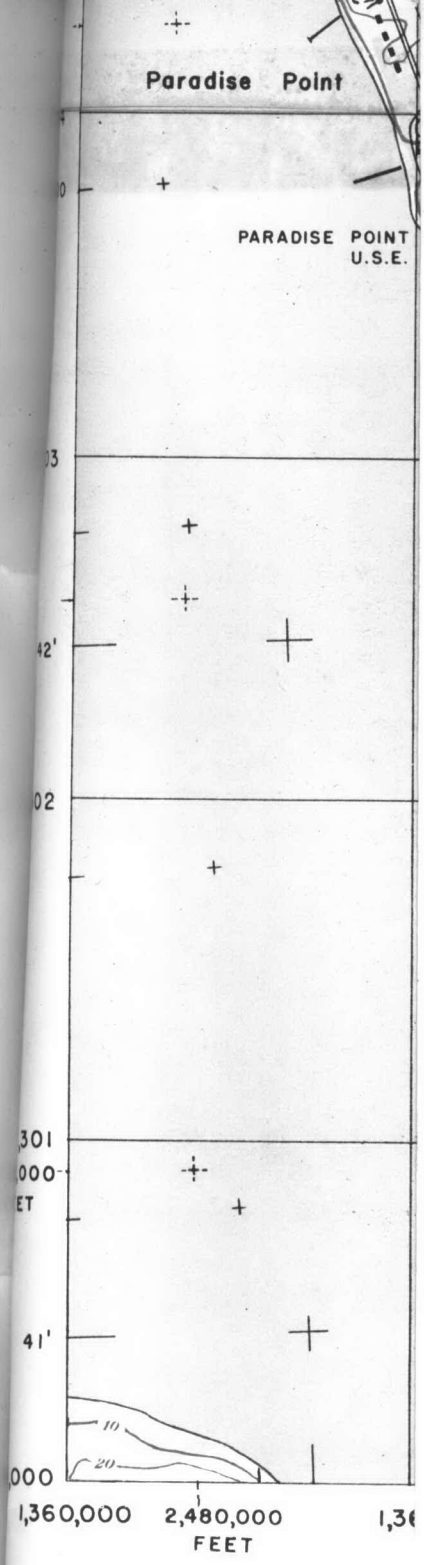

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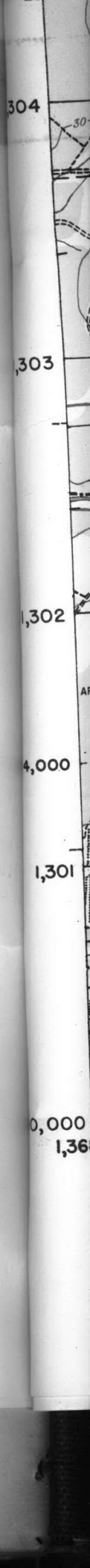
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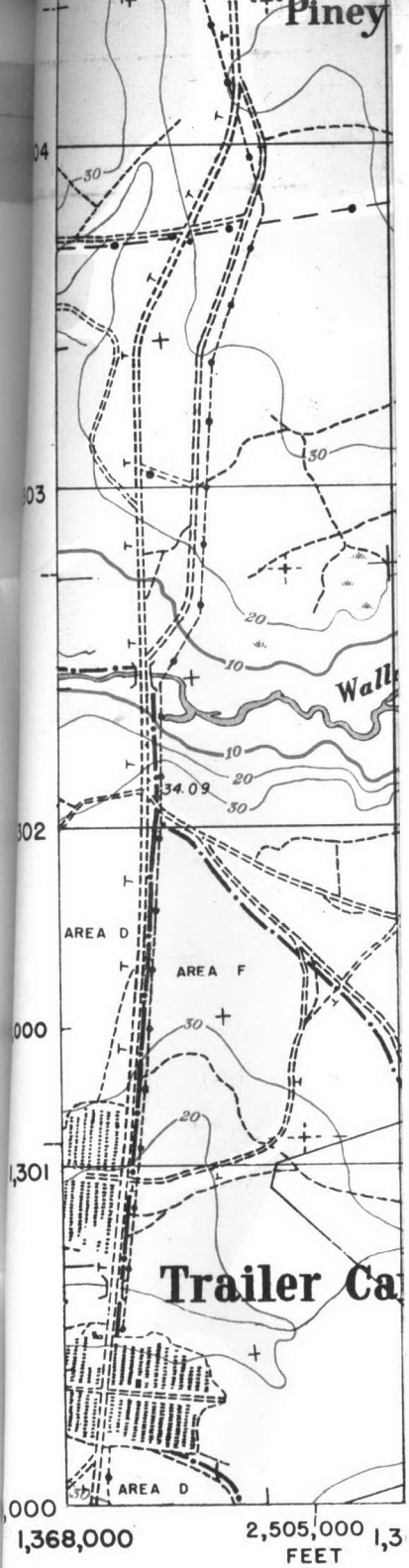

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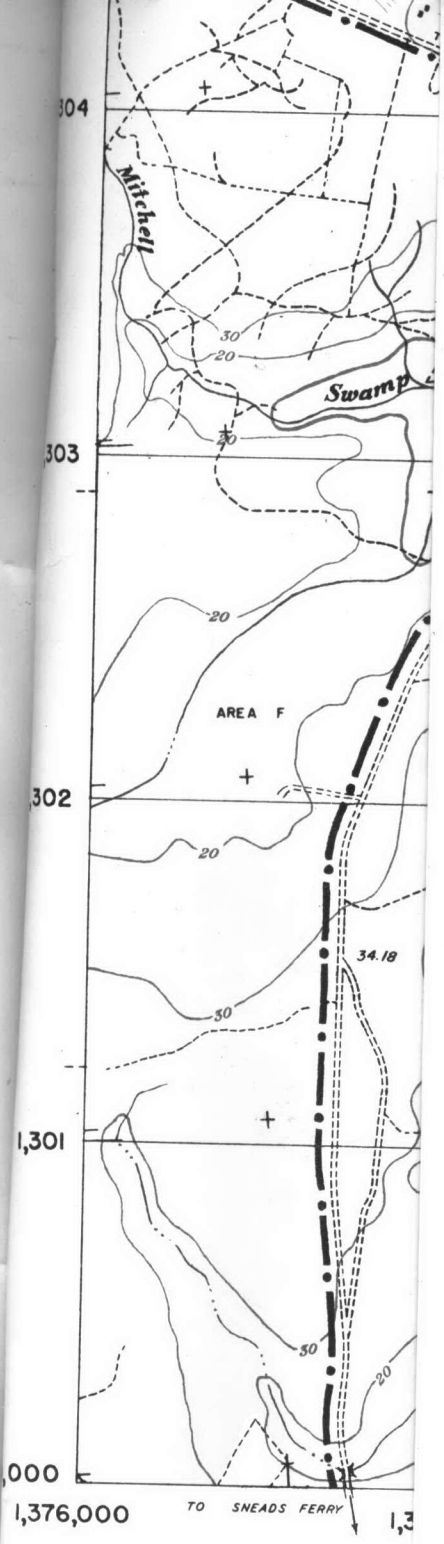

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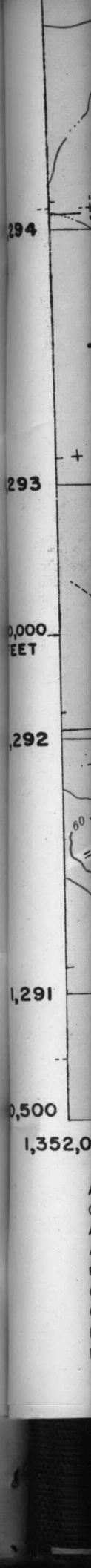
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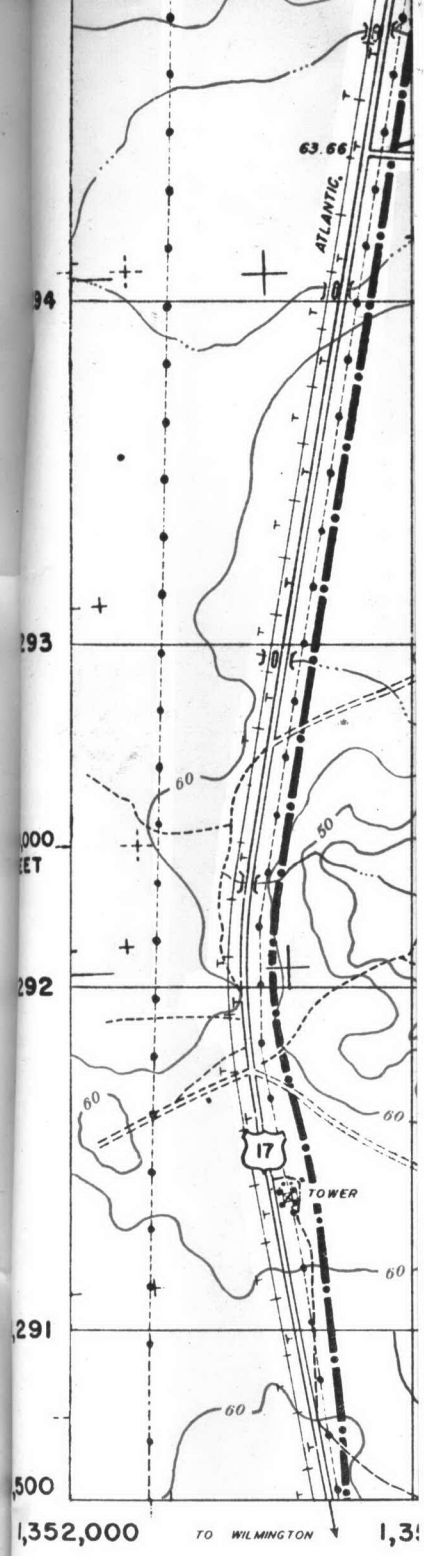

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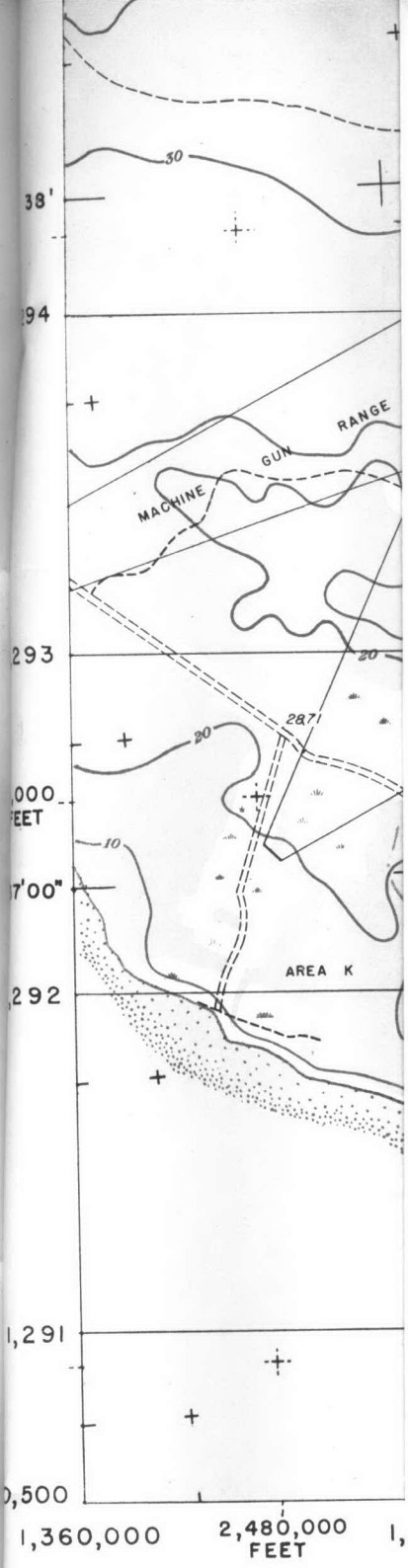

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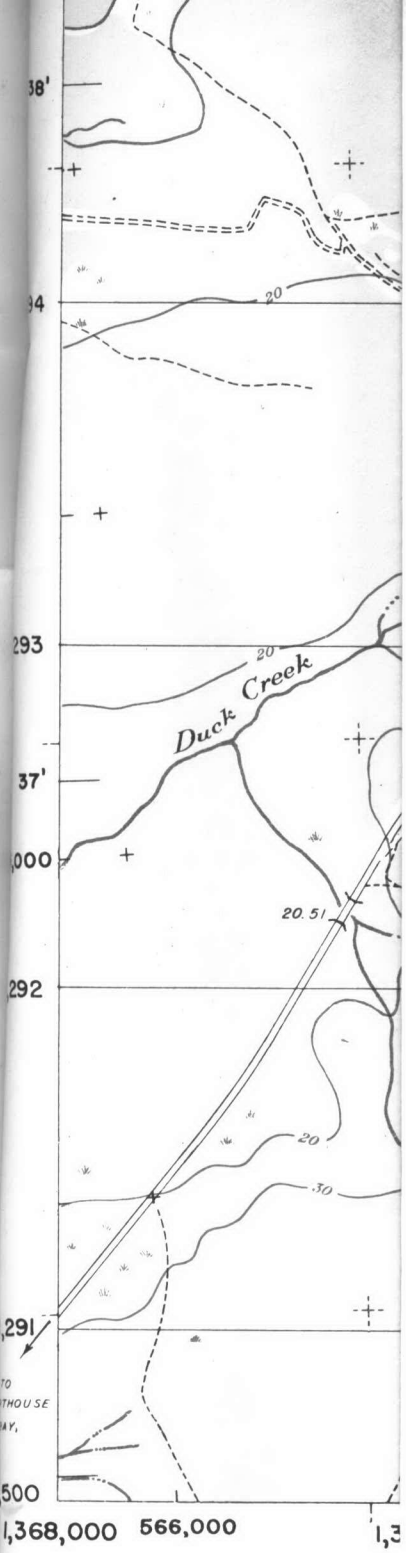

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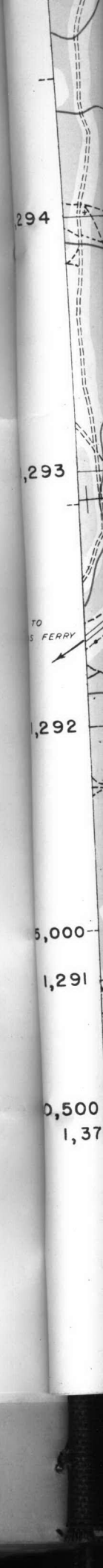
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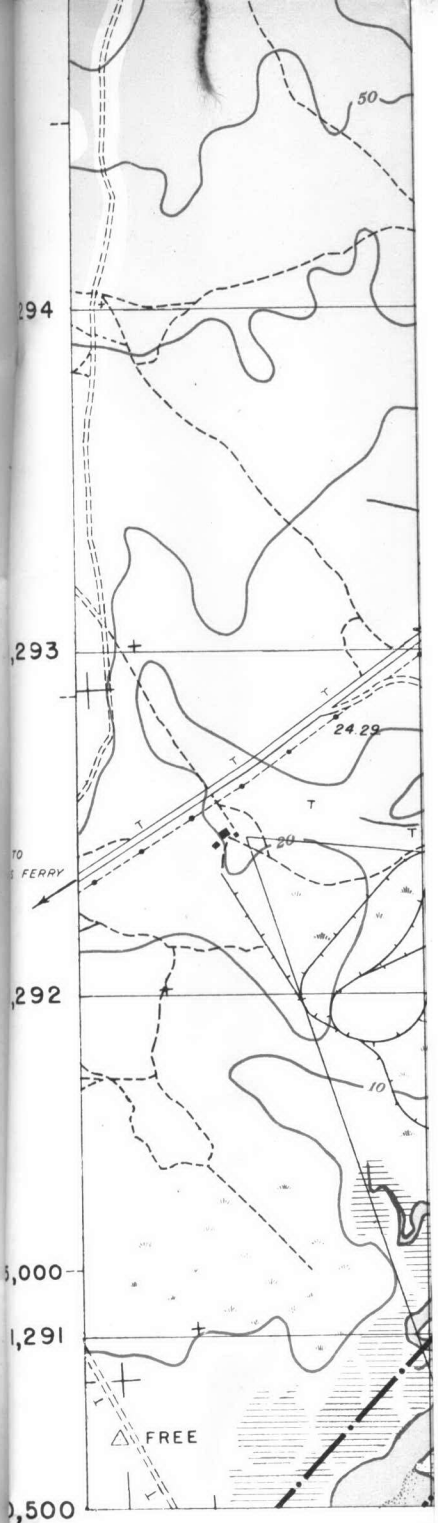

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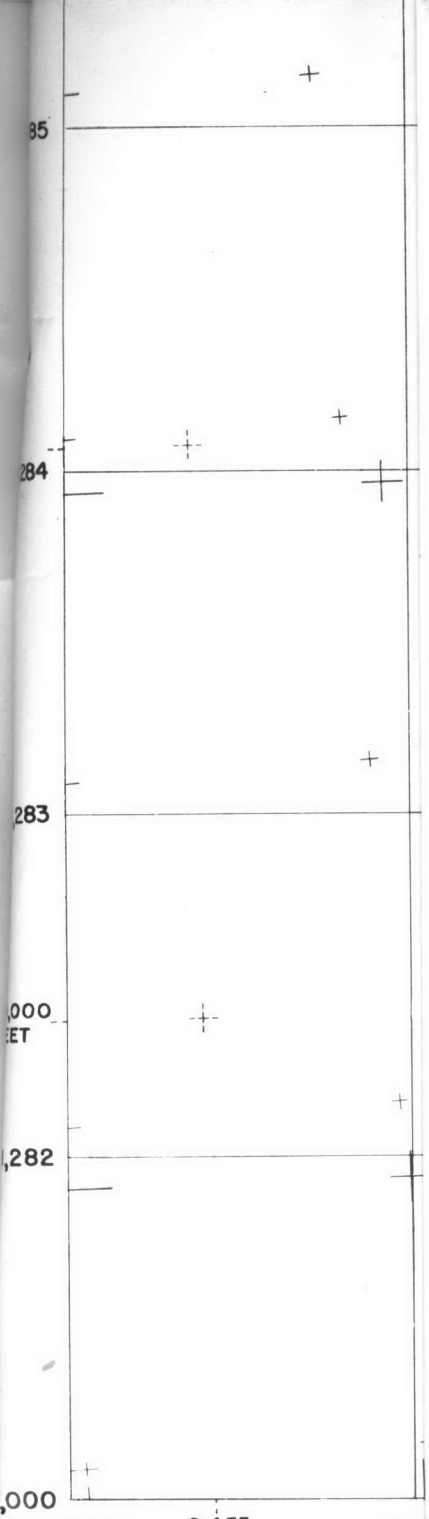

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1,28
1,3

Over Size Form

☐ Too Large ☑ Bound Book

☐ Fragile ☐ Other _____

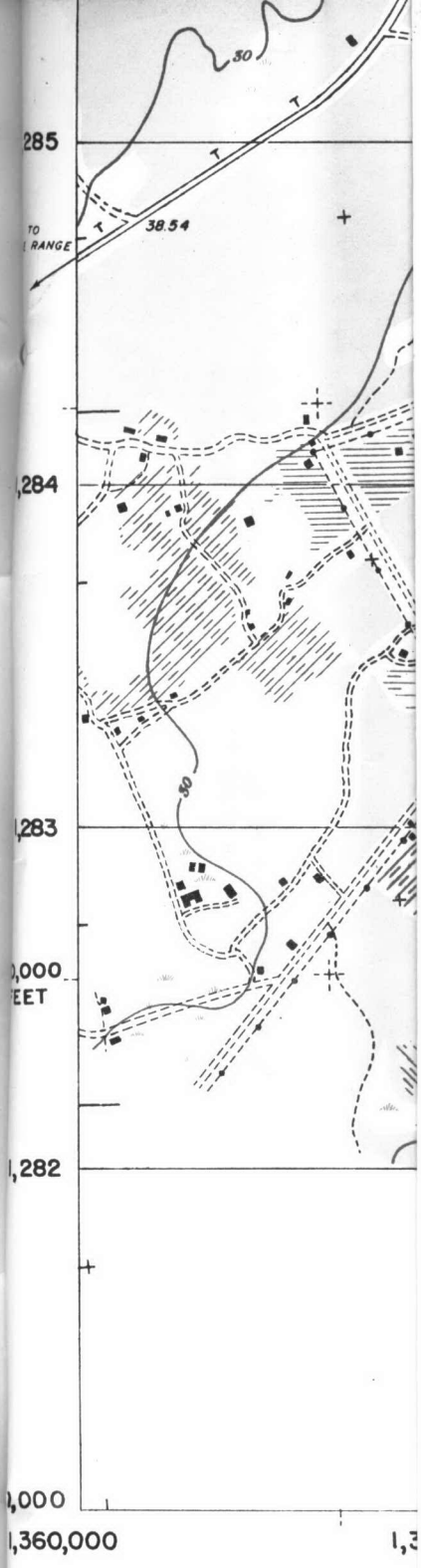
Sheet Number: Section No. 10 Grid Zone B

Drawing/NAVFAC Number: _____

Title

Camp Lejeune

New River, N.C.



AERIAL MAPPING AND PHOTO
COURSES, ENGINEER BATTALION
AERIAL PHOTOGRAPHY BY U.S.
AIR STATION, CHERRY POINT, N
FEBRUARY AND MAY 1943.
CONTROL PLOTTED TO NORTH
ON LAMBERT CONFORMAL PRO
MILITARY GRID SUPERIMPOSED
PROJECTION.

1,285
33'
1,284
1,283
2' 00"
5,000
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81,000
1,368,00

Over Size Form

☐ Too Large ☑ Bound Book

☐ Fragile ☐ Other _____

Sheet Number: Section No. 11 Grid Zone B

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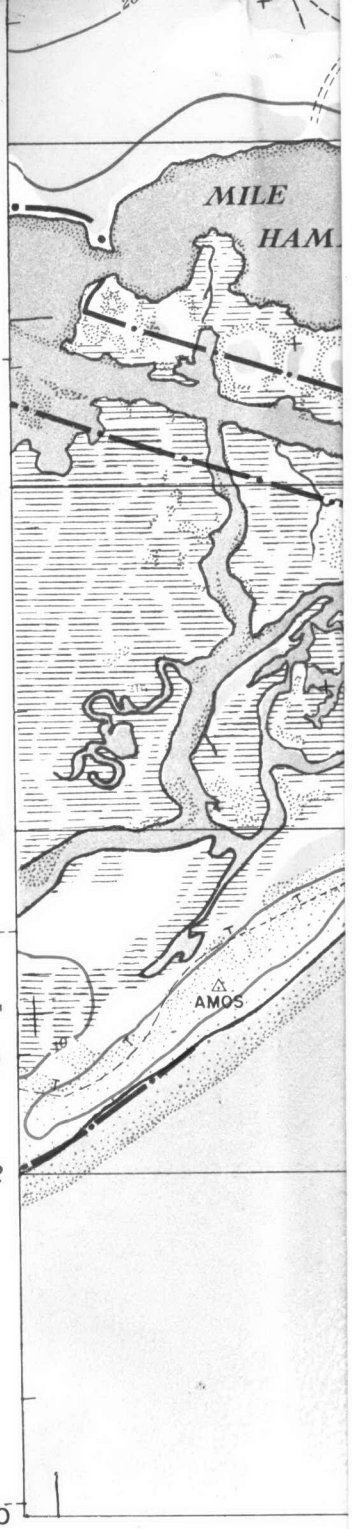
Title

Camp Lejeune

New River, N.C.



AERIAL MAPPING AND PHO
COURSES, ENGINEER BATTALI
AERIAL PHOTOGRAPHY BY U.
AIR STATION, CHERRY POINT,
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MILITARY GRID SUPERIMPOS
PROJECTION.

Office of the Camp Engineer
S. A. Munch, Supt.
Plumbing and Heating
Camp Lejeune, N. C.

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