

N-7091.2
~~8124~~

UNCLASSIFIED



LETTER REPORT

KWAJALEIN ATOLL

Study and report of Japanese Defenses
by Engineer, V Amphibious Corps.

UNCLASSIFIED

Classification changed to
~~CONFIDENTIAL~~
by authority of AC of S, G-2, WDGS
by P.J. Cronin, 6M, 44

REGRADED
BY AUTHORITY OF Sp. 4 statement
BY D.M. Williams
ON 12 May 72

Instructors Reading this Document

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Stinson 23/VI
Cunningham 17 July
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Hunter 1 Aug

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HEADQUARTERS UNITED STATES ARMY FORCES CENTRAL PACIFIC AREA
OFFICE OF THE COMMANDING GENERAL
APO 958

AG 052/141

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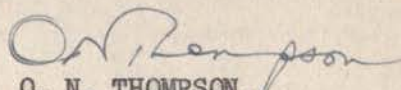
3- MAY 1944

SUBJECT: Letter report - Kwajalein Atoll.

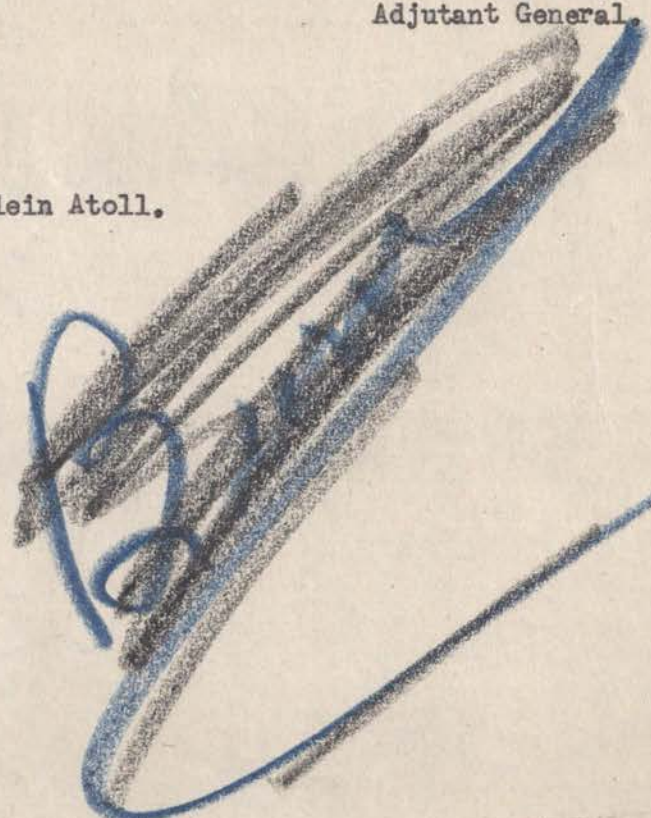
TO : Commanding General, Command and General Staff School,
Fort Leavenworth, Kansas.

The inclosed report, subject as above, is forwarded for your information. Attention is invited to the fact that this report is a copy of inclosure "H" to Fifth Amphibious Corps "Report on Flintlock" which was forwarded you by photo-mail 23 April 1944.

For the Commanding General:


O. N. THOMPSON,
Colonel, AGD,
Adjutant General.

1 Incl.
Letter report - Kwajalein Atoll.



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2295-80
0121/244
Ser.00493

OFFICE OF THE CORPS ENGINEER,
HEADQUARTERS, V AMPHIBIOUS CORPS,
C/O FLEET POST OFFICE, SAN FRANCISCO.

15 February, 1944.

~~S E C R E T~~

From: The Engineer, V Amphibious Corps.
To : The Commanding General, V Amphibious Corps.
Subject: Japanese Defensive Works - Study of, Kwajalein Atoll.
Enclosures: (A) Situation Map of Kwajalein Island, scale as shown.
(B) Roi-Namur Island, scale as shown.
(C) Ebeye Island, scale as shown.
(D) Annex A - Photographs and Sketches of Defensive Works.

1. In compliance with instructions, studies were made by the undersigned officer of the Japanese defensive works on the principal islands of the Kwajalein Atoll, immediately following their capture by the Expeditionary Troops of the V Amphibious Corps. The islands visited were Kwajalein, Roi-Namur, and Ebeye on the respective dates of 4-5 February, 7-8 February and 10 February 1944. Owing to the extremely destructive bombardment by air and naval and field artillery gunfire defensive structures were in a great measure razed. However, by the study of aerial photographs taken shortly before the target date, and by the inspection and investigation of ruins of fortifications after the attack, it has been possible to arrive at a reasonably accurate estimate of their strength, disposition and effectiveness. In some few instances, notably that of a German type blockhouse on Roi Island, type structures were found almost intact. Photographs of all works referred to in following paragraphs are to be found in Annex A, as well as dimensioned sketches of types initially encountered in the operations of this corps.

2. (a) Kwajalein Island.

(1) The prepared defenses of this island were surprisingly weak in that there were almost no heavily constructed blockhouses, a paucity of artillery, and those few weapons, 5-inch and 3-inch, were provided neither with cover nor concealment. The only exceptions to this were two (2) cases in which light 75mm guns were emplaced in small concrete bunkers, sited to fire on targets in the lagoon. It appeared that those defensive measures taken were in the expectancy of an attempted landing from the lagoon, but on the target date the defensive fire power was scarcely more than adequate to deny landing to a raid in force without gunfire preparation or support.

(2) Two (2) batteries of two (2) guns each of 5-inch dual mount dual purpose guns were found on the island. One (1) battery was located at the northwest corner of the island and the other at the most northerly point. The guns from the former battery had been blown from their mounts and the emplacements almost completely destroyed. At each battery position was a third emplacement prepared to receive its gun, and a reinforced concrete magazine on top of which was located director and range finding equipment.

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Subject: Japanese Defensive Works - Study of, Kwajalein Atoll.
(Continued) 15Feb44.

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(3) Inspection of the magazines of these weapons disclosed that very few rounds had been fired. It is believed that this as well as other artillery on this island had been put out of action prior to D-Day. One (1) 5-inch dual mount dual purpose gun, the same type as those in battery, was found disassembled in a naval equipment storage area in the vicinity of Center Pier. All of these 5-inch guns were emplaced 15 to 20 feet above the natural ground level. Two (2) 3-inch antiaircraft and antiboat guns, three (3) 75mm field pieces and one (1) obsolete British field piece, of estimated calibre 47mm, were found distributed along the lagoon shore of the island. As previously mentioned two (2) of the 75mm guns were sited in concrete emplacements for use as antiboat weapons. On Nob Pier, half way between the shore and the end of the pier, was found a small blockhouse approximately 12 by 17 feet. This fortification had been difficult to silence; it finally was put out of action by artillery fire from the lagoon shore. Effort had been made in the bombardment to avoid the destruction of this well built quai. Mounted on the roof of this blockhouse was a .50 calibre machine gun in a turret 10 feet in diameter and with a 4½ foot parapet wall. This weapon had an excellent field of fire within the lagoon and along its shore line. On the ground floor were rooms provided with rifle ports through the 14-inch walls. On the south shore of the island was found a battery of three (3) 3-inch antiaircraft and antiboat guns, which from appearances had not been used during the attack. There may have been other similar guns which had been completely destroyed during the bombardment but no evidence of their existence remained.

(4) Pill boxes, rifle pits and barbed wire entanglements were almost completely demolished. For 200 yards northeast from Center Pier were 12-foot lengths of concrete protective walls provided with single rifle ports. These barriers were placed on 14-foot centers. On the northeast shore was found a new type of concrete rifle pit or well, with adjoining small arms magazine. There were four (4) of these all on the seaward side and thus not employed.

(5) There were on the island many air raid shelters of three (3) distinct types all of which had 2 to 4 feet of overhead cover of sand or coral. These types were: (a) galleries of coconut logs over which were placed one (1) to three (3) courses of 3/4-inch steel in plates 48 by 56 inches, (b) reinforced concrete shelters parabolic in section, with all entrances equipped with steel doors 1-inch in thickness, and (c) small heavily reinforced concrete buildings generally rectangular in shape. One (1) such building with a 5-foot roof slab was believed to have been the island command post. Other shelters of this type, but with heavier walls were in process of construction on target date. The floors of all air raid shelters were 3 to 4 feet below normal ground surface. In comparison with the class A concrete expected to be found in modern fortifications, that in these

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(Continued). 15Feb44.

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works was of very inferior quality, due to poor aggregate and probably insufficient cement. While steps evidently had been taken to offset the adverse quality of the concrete by the excessive use of reinforcing steel, none of these structures were proof against gunfire or heavy bombs.

(b) Roi-Namur Islands.

(1) While these islands were better fortified than Kwajalein, the siting of weapons was premised on an attempted landing from the north or seaward side.

(2) One (1) battery of two (2), 5-inch dual mount dual purpose guns was situated on the northwest corner of Roi, and a like battery on the most northerly point of Namur. Each battery as those at Kwajalein was provided with a third emplacement prepared to receive weapon. These gun positions differed from those of the same calibre found elsewhere in that the guns were mounted at the natural ground level, and surrounded with revetment walls 6-feet in height. Each revetment was provided with eight (8) equally spaced chambers designed for the temporary storage of twelve (12) rounds. The main magazine for each of these batteries, 150 yards from the guns and connected thereto by narrow gauge trackage, was a reinforced concrete structure 43½ by 22½ feet.

(3) On Roi were found five (5) of the German type blockhouse, two (2) on the west and three (3) on the north shore. These bunkers of heavily reinforced concrete 40 feet in diameter, with walls 4 feet thick on the seaward side, mounted four (4) 13mm guns in separate chambers, provided with stepped embrasures equipped with 7/16-inch steel closure plates. In the central portion of the blockhouse was a reinforced concrete magazine surmounted by a platform from which an observer was able to peer through slits in a small steel turret extending 24 inches above the roof of the bunker proper. This type of blockhouse constructed of class A, 8,000 lb. concrete would require for its silencing, fire from naval guns, 155mm guns, or bombs of not less than 1,000 lb. SAP. The quality of the concrete in these Japanese works was little better than that found at Kwajalein.

(4) On both Roi and Namur were found numerous air raid shelters, all of reinforced concrete, and similar in design to those at Kwajalein. The principal difference being that these as well as all other concrete works on these two (2) islands were erected with floors at natural ground level, and with little or no camouflage. Here too, heavier concrete shelters were in process of construction on the target date.

(5) As at Kwajalein, most of the small pill boxes, rifle pits and wire entanglements were almost entirely destroyed. Three hundred (300) yards of effective tank ditch was found on the northeast shore of Namur.

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(Continued). 15Feb44.

(6) In the heavily wooded area in the north central portion of Namur, a maze of fire and communication trenches, made the destruction of the enemy here difficult and slow.

(c) Ebeye Island.

(1) Little fortification work was found on this island, other than simple machine gun positions and rifle pits. On almost the entire island perimeter was erected a tank barricade composed of two (2) courses of 30 lb. railroad rail lashed by wire to coconut logs set vertically in the sand or coral. It is not believed that this would have served as an effective barrier to other than light tanks. This barricade had been destroyed or damaged throughout its entire length by gunfire or bombing. A few lengths of antitank ditch, notably that at the northeast corner of the island, would have proven effective.

(2) On this island were found a number of well designed concrete works including a command post, several magazines, and many air raid shelters. All of these structures were built with floor levels 3 to 5 feet below natural grade. The concrete was of the same inferior quality as seen on Kwajalein. As on the other islands visited, heavy reinforced concrete air raid shelters were in process of construction, with walls up to 3 feet in thickness.

3. Conclusions.

(a) That the bold conception of the Flintlock Operation to land in the very heart of the Marshalls, bypassing the heavily fortified atolls on the eastern fringe of the group, caught the enemy off balance and ill prepared to withstand an attack in force.

(b) That none of the Japanese defensive works, even though constructed of first class reinforced concrete, could have withstood the naval gunfire, 155mm field artillery fire or 1,000 lb. SAP aerial bombs.

(c) That the absence of underwater obstacles and mines, effective antitank barriers, extensive barbed wire entanglements, artillery in adequate quantity, and suitable designed and erected fortifications all point to the fact that the enemy had not expected surface attacks other than raids.

(d) That the great number of air raid shelters completed, and those in process of construction indicated that repeated bombing raids were expected.

(e) That any raid on the Kwajalein Atoll was expected at Roi-Namur, and with the landing on the seaward side.

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Subject: Japanese Defensive Works - Study of, Kwajalein Atoll.

(Continued).

15Feb44.

4. Recommendations.

(a) That the state of defenses of Kwajalein Atoll not be considered as a criterion to judge those on Japanese possessions to the westward.

(b) That the quality and design of enemy works found on Kwajalein Atoll not be used as a guide to estimate those that may be confronted elsewhere.

(c) That investigation and experiment in the technique and tactics of the passage of reefs and beaches heavily fortified with obstacles, barriers, and mines, be continued.

(d) That in future operations our infantry divisions be trained in the expectancy of encountering determined active defense by an enemy neither disorganized nor bewildered by the type of superb gunfire and aerial bombardment so effectively employed in the preparation and support of the Flintlock Operation.

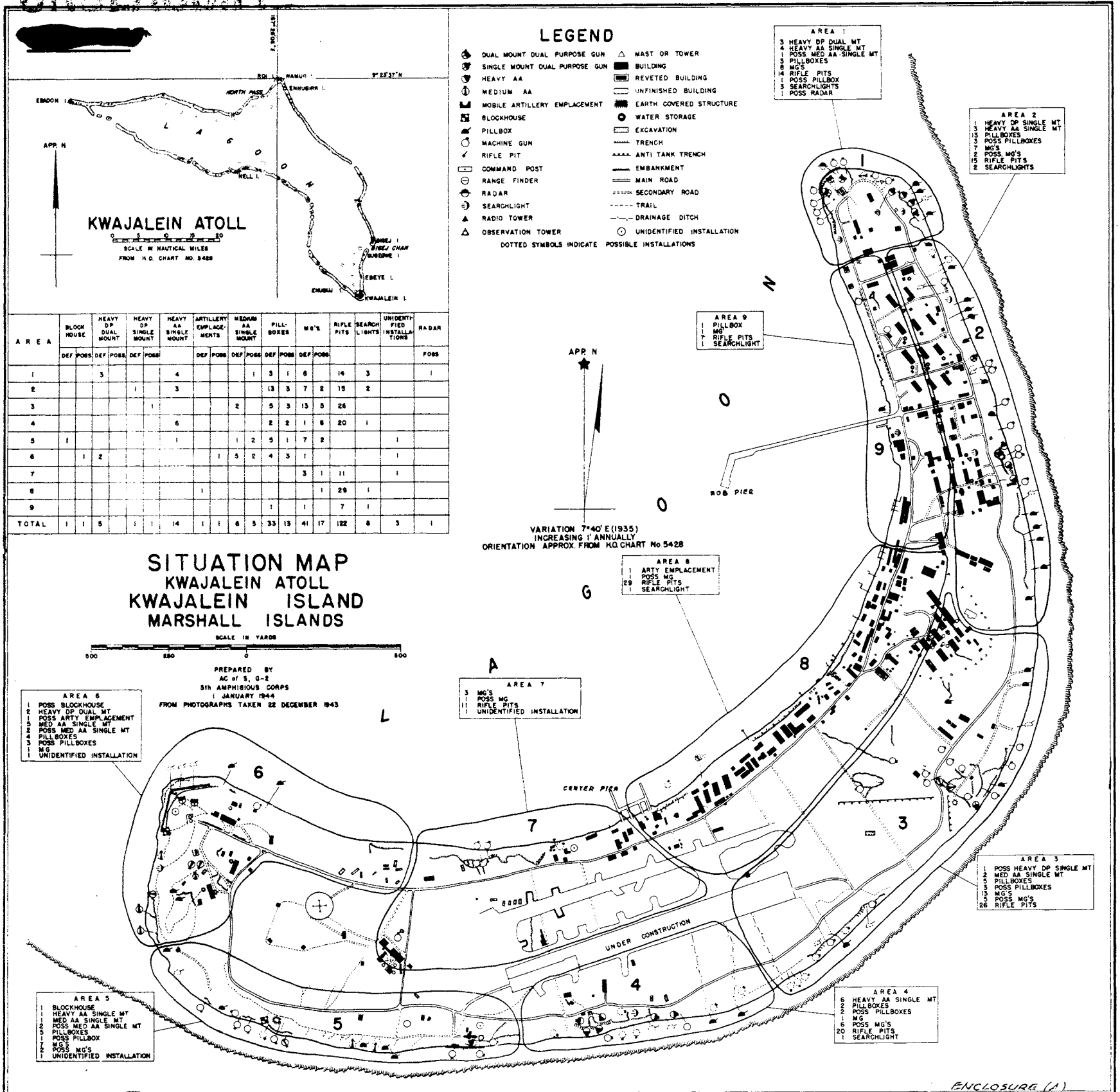
(e) That bomb disposal teams be provided for infantry divisions, with two (2) distinct missions: to train infantry division personnel in the recognition and marking of unexploded bombs and shells, and to furnish the trained technicians for the destruction of these munitions.



A. VINCENT WILSON,
LtCol, CE, USA,
Engineer.

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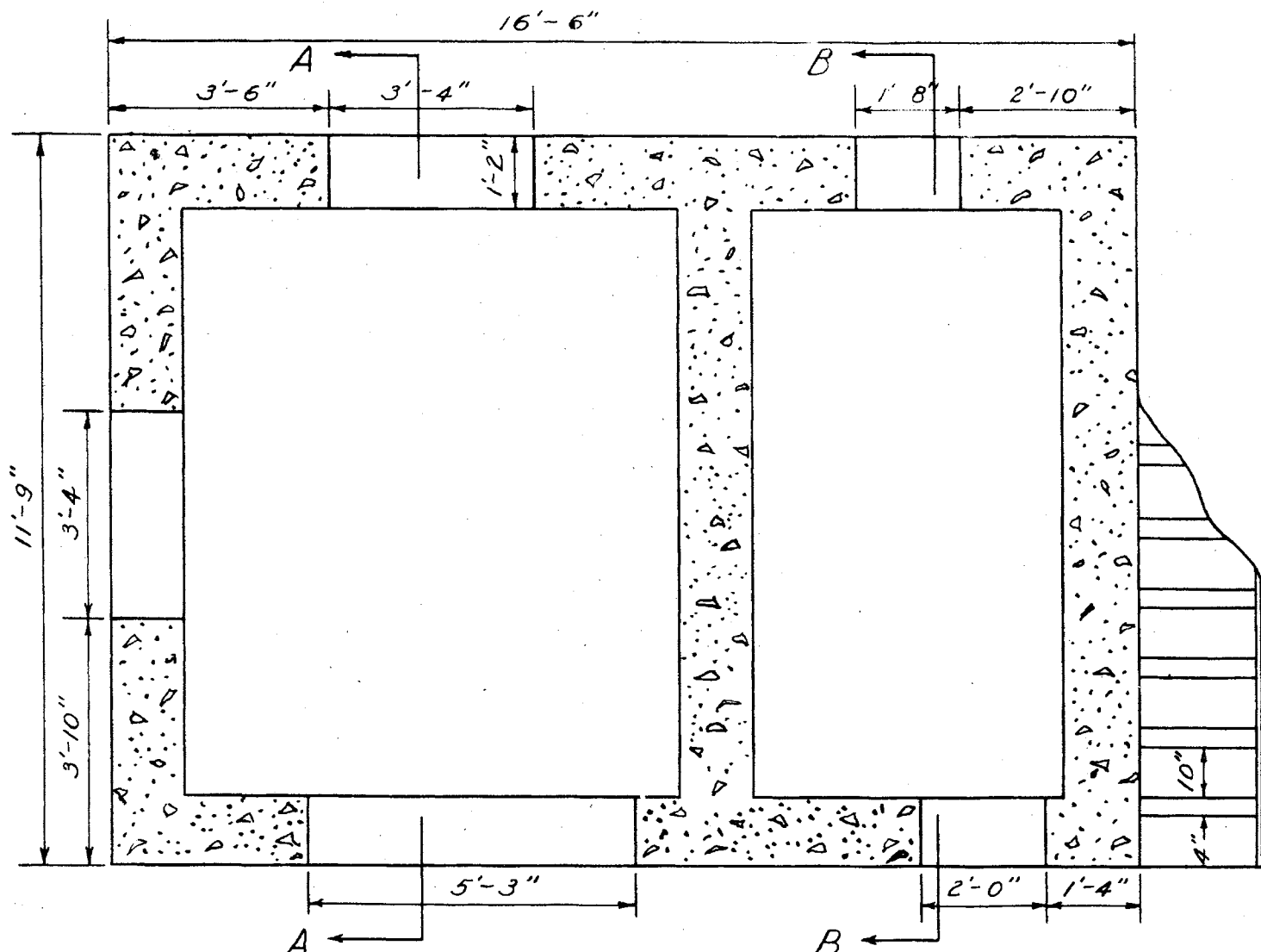
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BLOCK HOUSE, NOB PIER
KWAJALEIN



BLOCK HOUSE, NOB PIER
KWAJALEIN

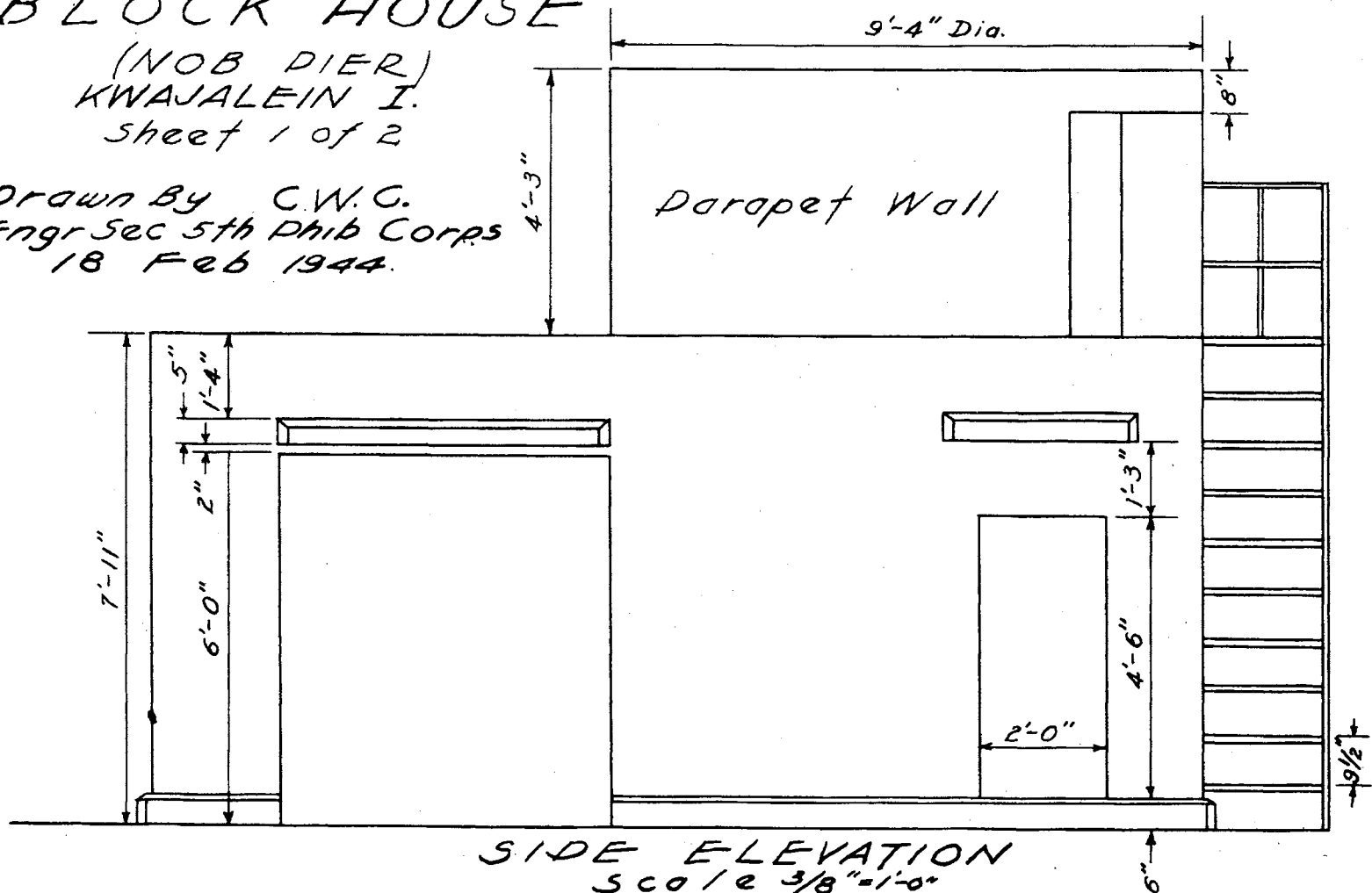


• FLOOR PLAN •
Scale $\frac{3}{8}'' = 1'-0''$

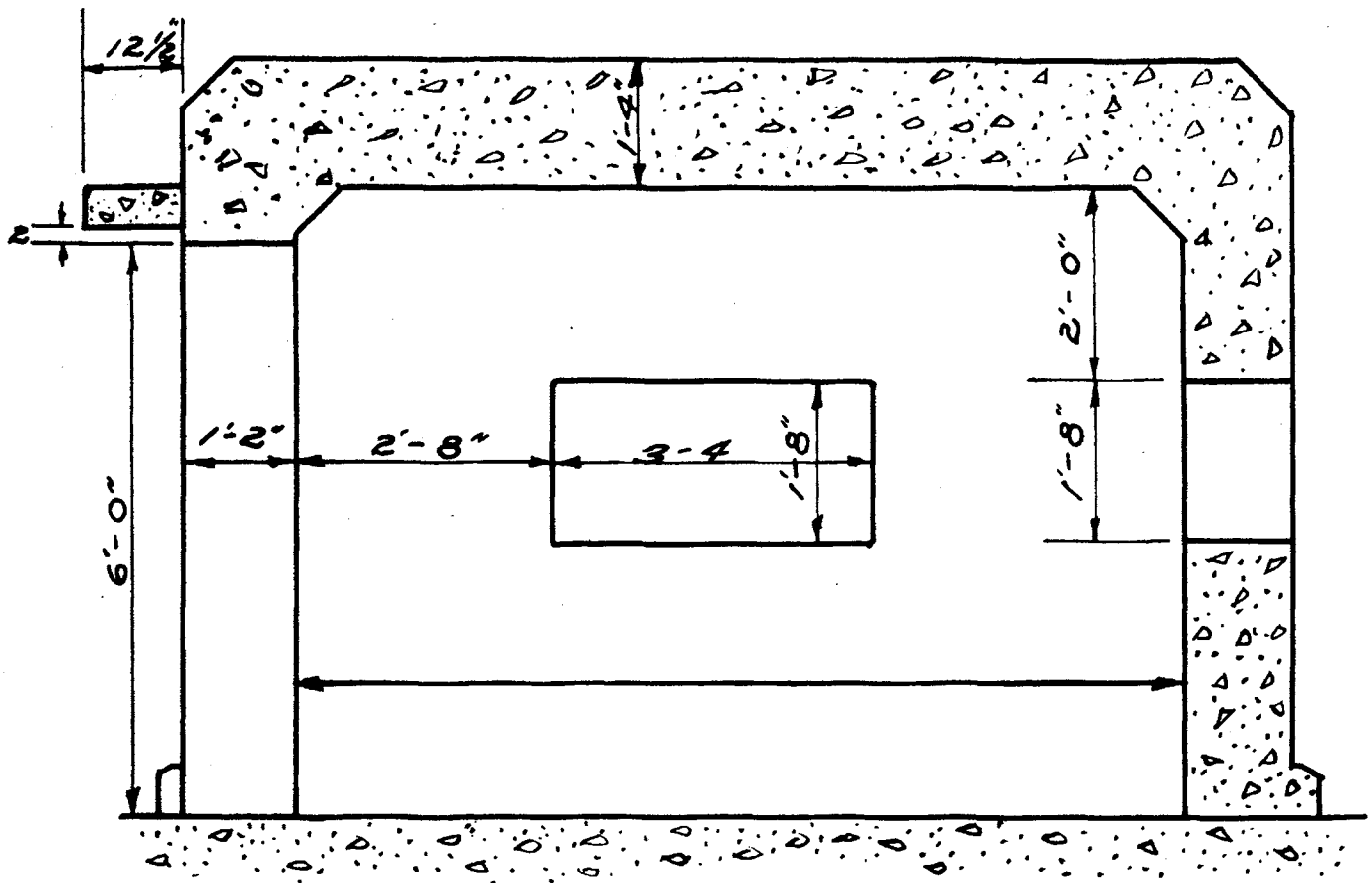
BLOCK HOUSE

(NOB DIER)
KWAJALEIN I.
Sheet 1 of 2

Drawn By C.W.C.
Engr Sec 5th Phib Corps
18 Feb 1944.

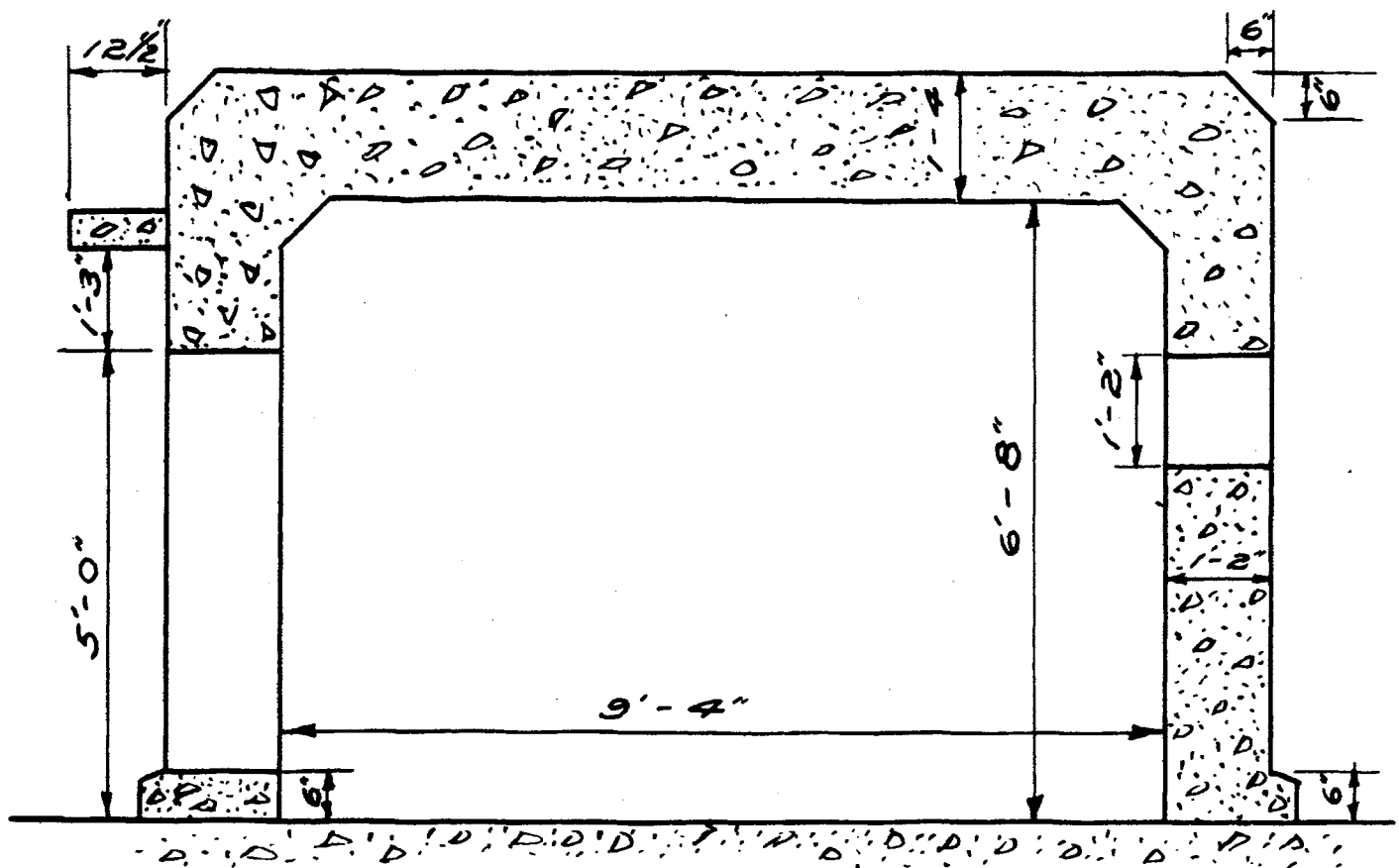


SIDE ELEVATION
Scale $\frac{3}{8}'' = 1'-0''$



• SECTION • AA •

• BLOCK HOUSE • (NOB PIER) •
 (KWAJALEIN)
 Sheet 2 of 2.

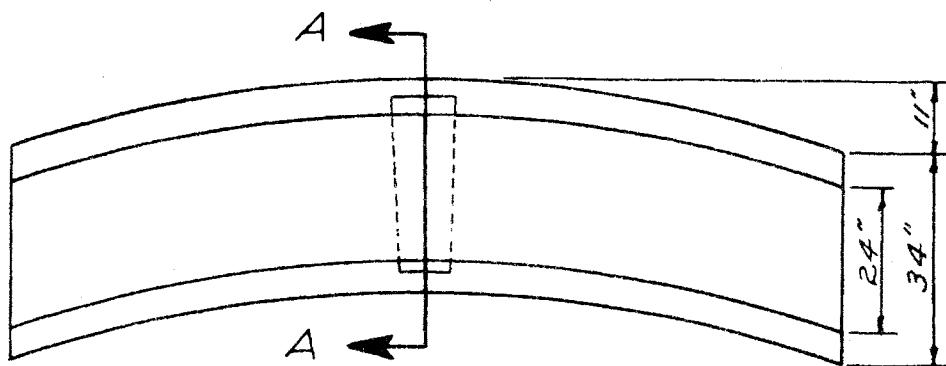


• SECTION • BB •
 Scale 1/2" = 1'-0"

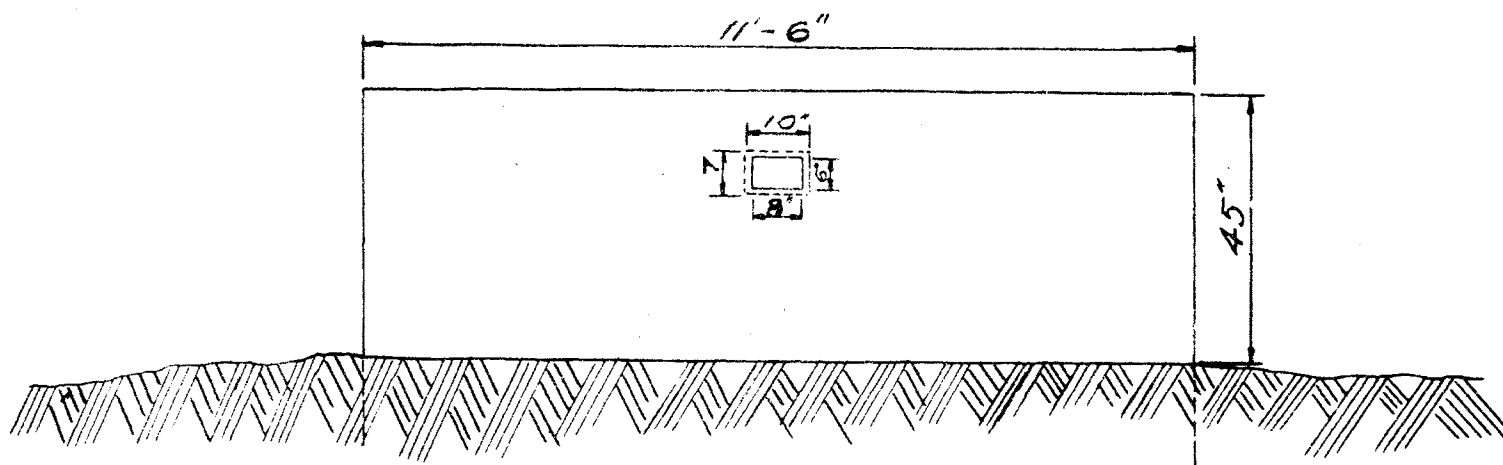
Drawn By C.W.C.
 Engr Sec 5th Phib Corps
 18 Feb 1944



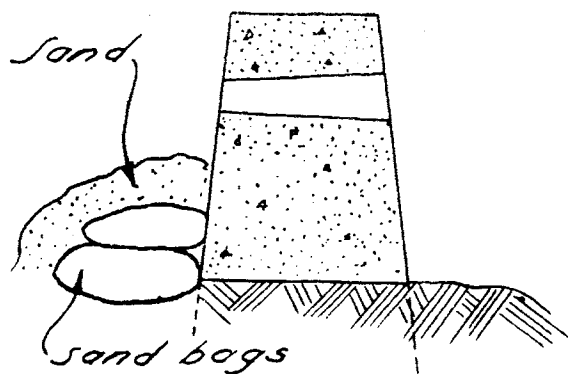
RIFLE PITS AND PROTECTIVE WALLS
EAST OF CENTER PIER, KWAJALEIN



• PLAN •



• FRONT ELEVATION •



• SECTION A A •

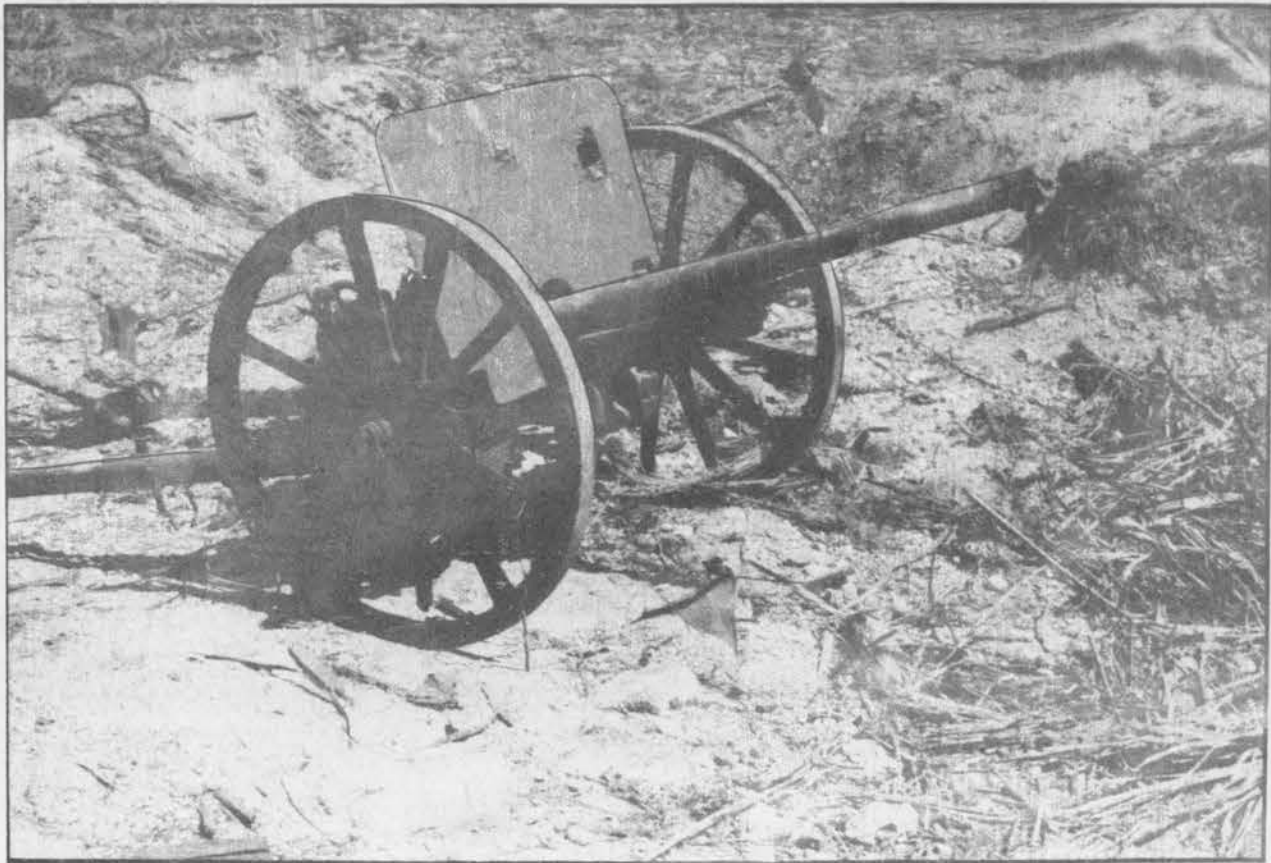
• PROTECTIVE WALLS •
• FOR RIFLE PITS •

East of Center Pier
Kwajalein I.
Scale $\frac{3}{8}" = 1'-0"$

DRAWN BY - C.W.C.
ENGR SEC 5TH ARMB CORPS
18 FEB 1944.



JAPANESE 3" ANTI-BOAT GUN
KWAJALEIN



JAPANESE 37MM GUN
KWAJALEIN



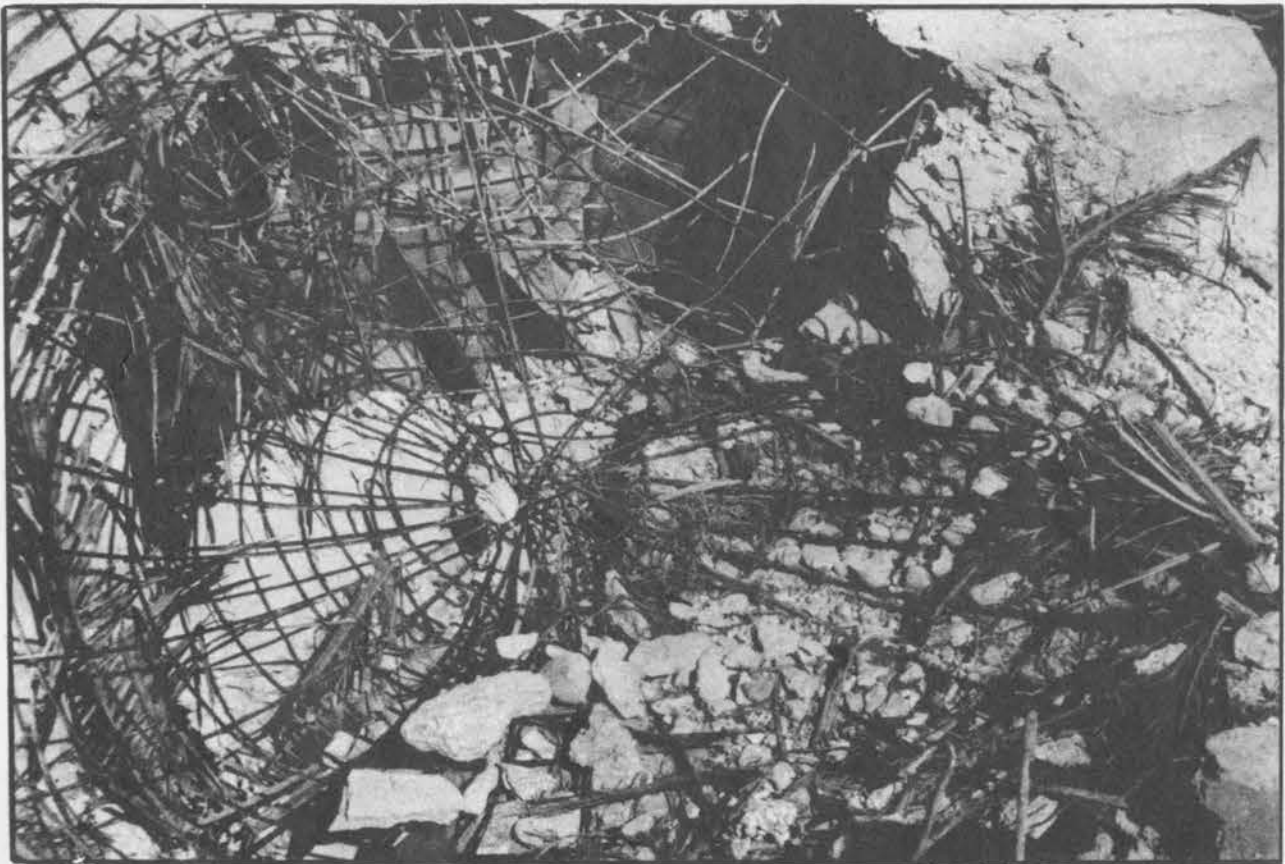
JAPANESE 75MM GUN
KWAJALEIN



AIR RAID SHELTER IN PROCESS OF
CONSTRUCTION KWAJALEIN

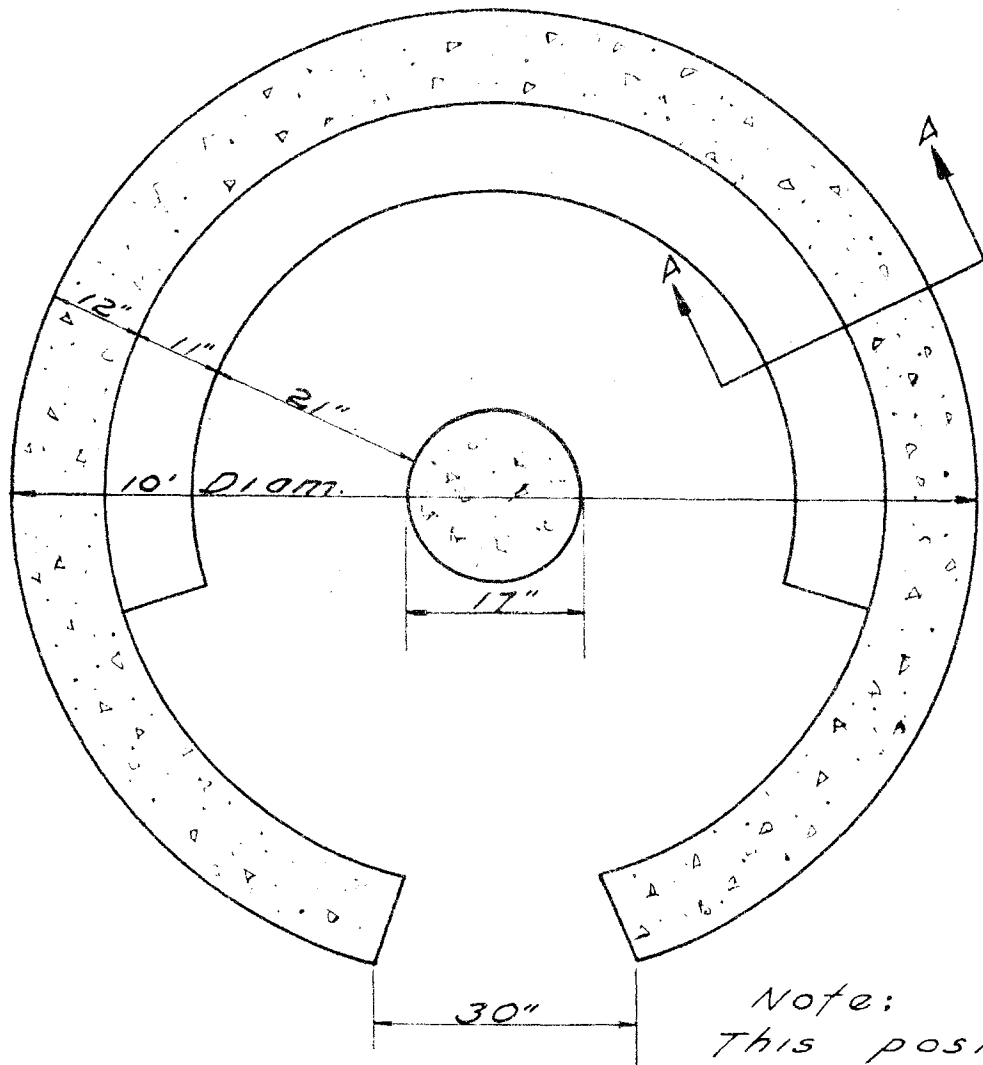


5" DUAL MOUNT DUAL PURPOSE GUN
DISASSEMBLED IN STORAGE YARD
KWAJALEIN

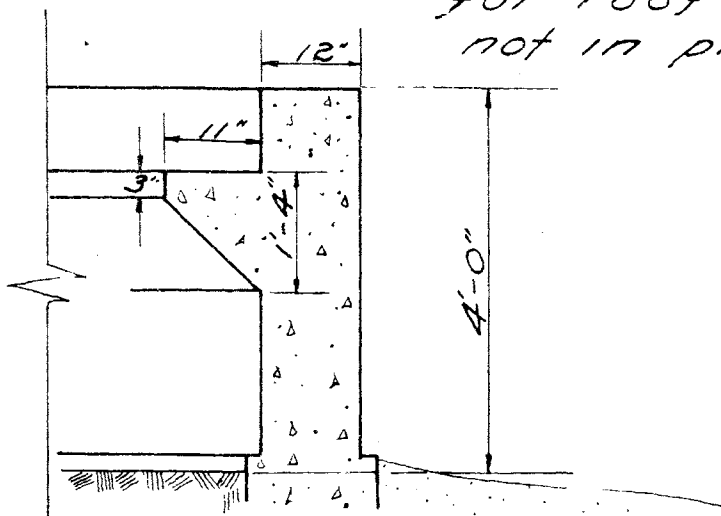


UNFINISHED AUTOMATIC WEAPON POSITION,
SOUTH SHORE, KWAJALEIN

• GUN POSITION •
 KWAJALEIN I.
 • PLAN •

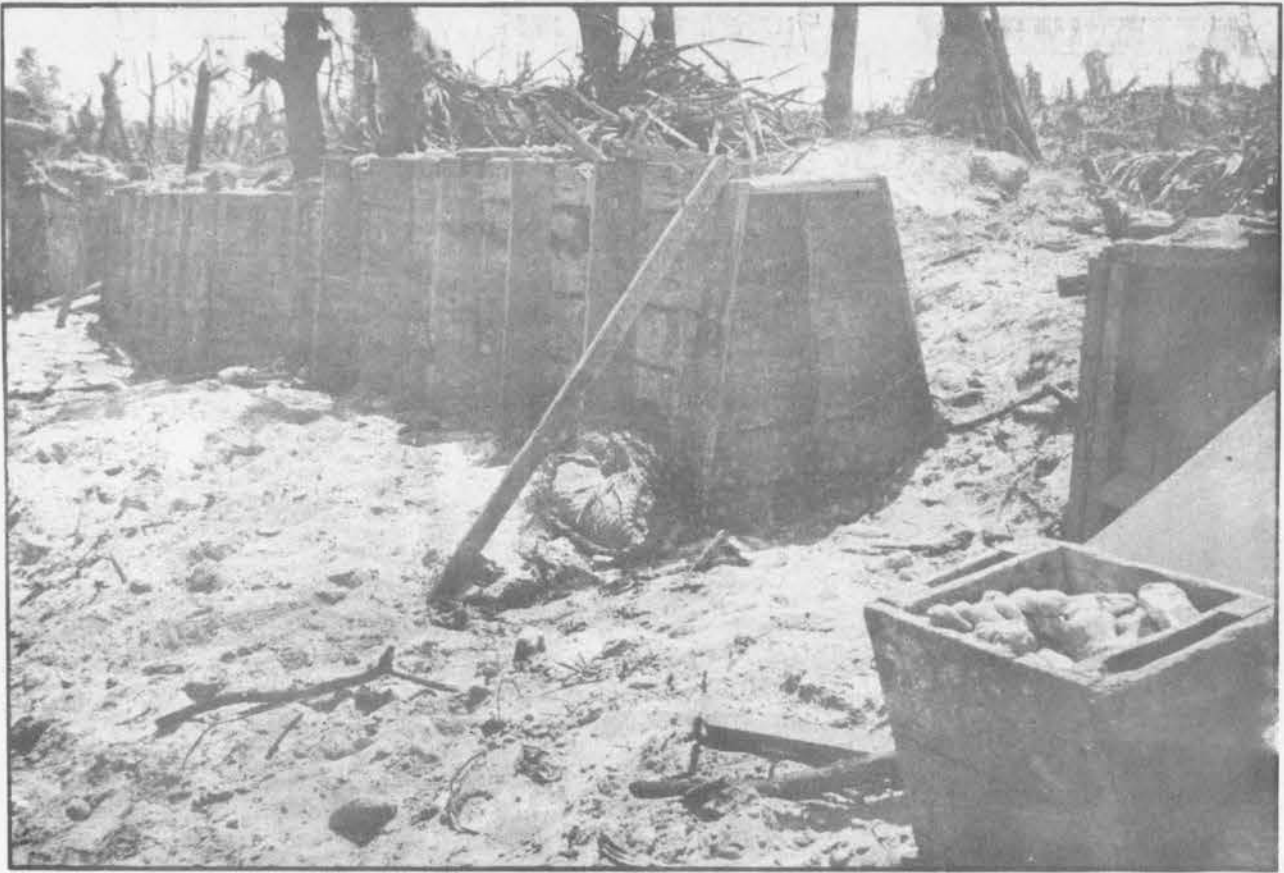


Note:
 This position not
 completed, Steel reinf.
 $\frac{3}{8}$ " ϕ mat prepared
 for roof, Altho form
 not in place -



• SECTION - AA •
 Scale $\frac{1}{2}$ " = 1'-0"

Drawn By R.F.G.
 Engr 3rd 5th Div Corps
 18 Feb 1944.



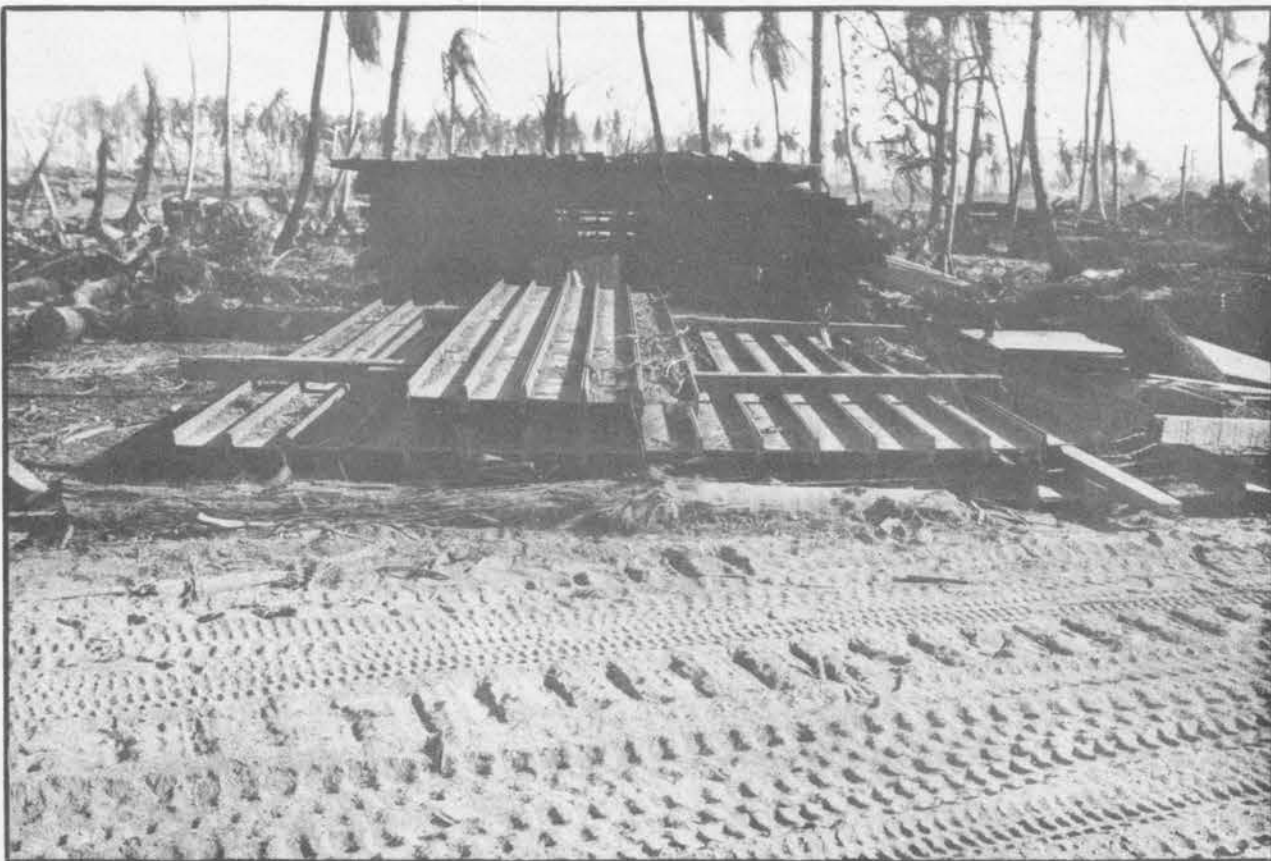
CONCRETE BARRICADE IN PROCESS
OF CONSTRUCTION
KAWAJALEIN



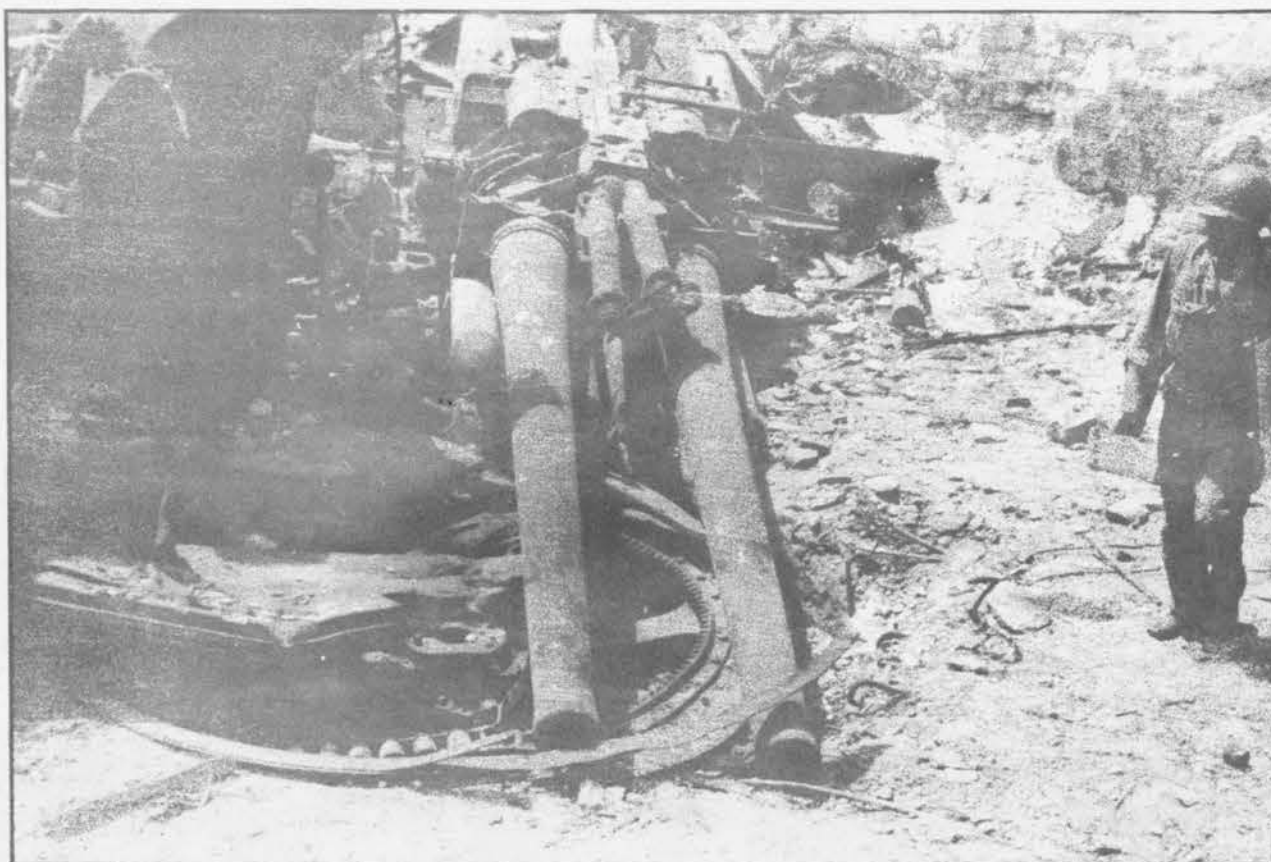
ANTITANK DITCH
KAWAJALEIN



SMALL SHORE PILLBOX
KWAJALEIN



STOCK OF 10 INCH IBEAMS
KWAJALEIN



5" DUAL MOUNT DUAL PURPOSE
GUN EMPLACEMENT
KWAJALEIN



5" DUAL MOUNT DUAL PURPOSE
GUN EMPLACEMENT
KWAJALEIN



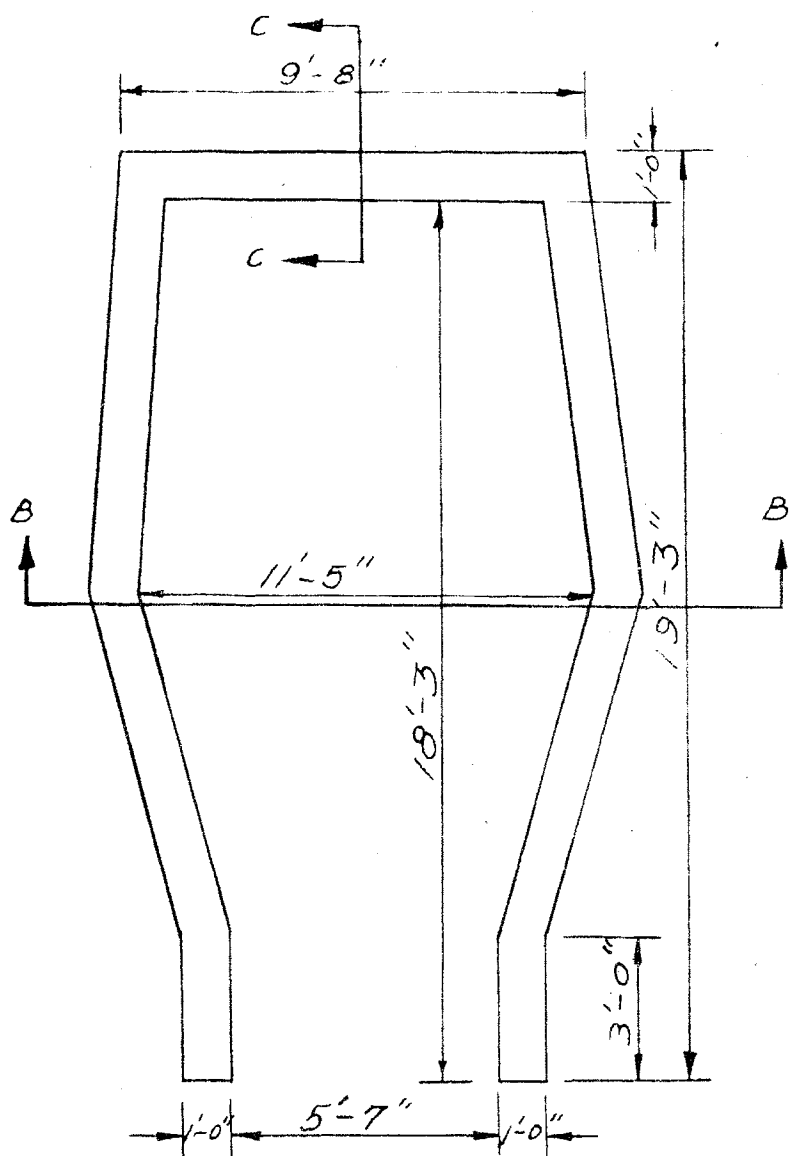
5" DUAL MOUNT DUAL PURPOSE
GUN EMPLACEMENT
KWAJALEIN



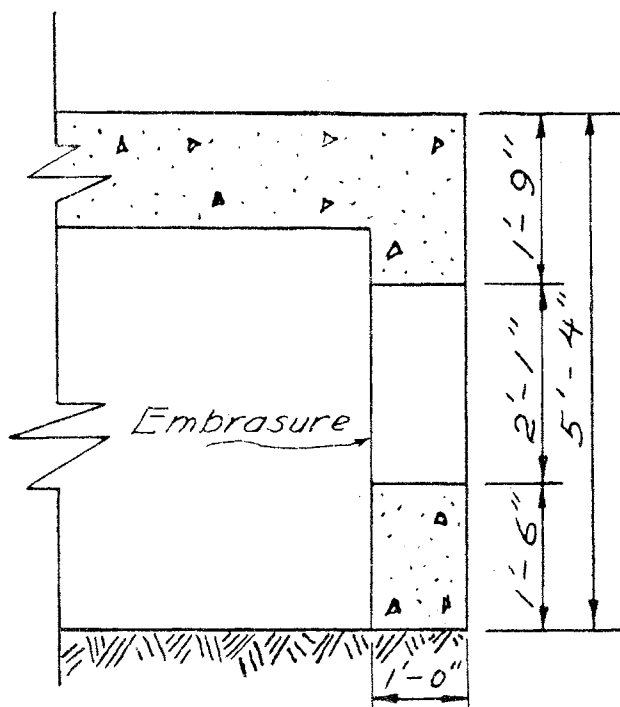
FRONT



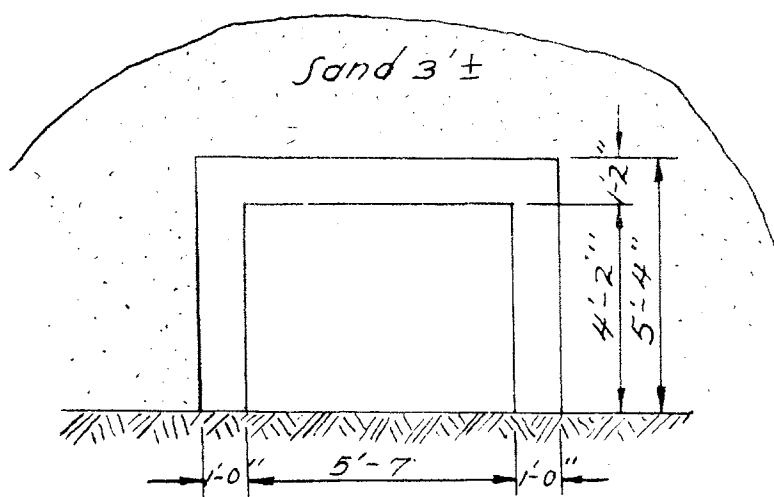
75MM GUN POSITION, KWAJALEIN
- REAR -



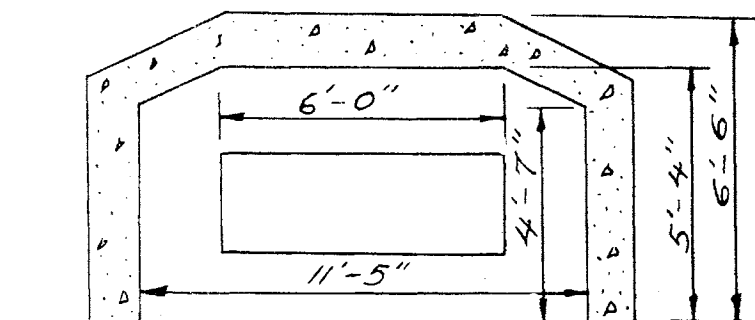
FLOOR PLAN
Scale $\frac{1}{4}'' = 1'-0''$



SECTION C-C
Scale $\frac{1}{2}'' = 1'-0''$



SHOREWARD ELEVATION
Scale $\frac{1}{4}'' = 1'-0''$



SECTION B-B
Scale $\frac{1}{4}'' = 1'-0''$

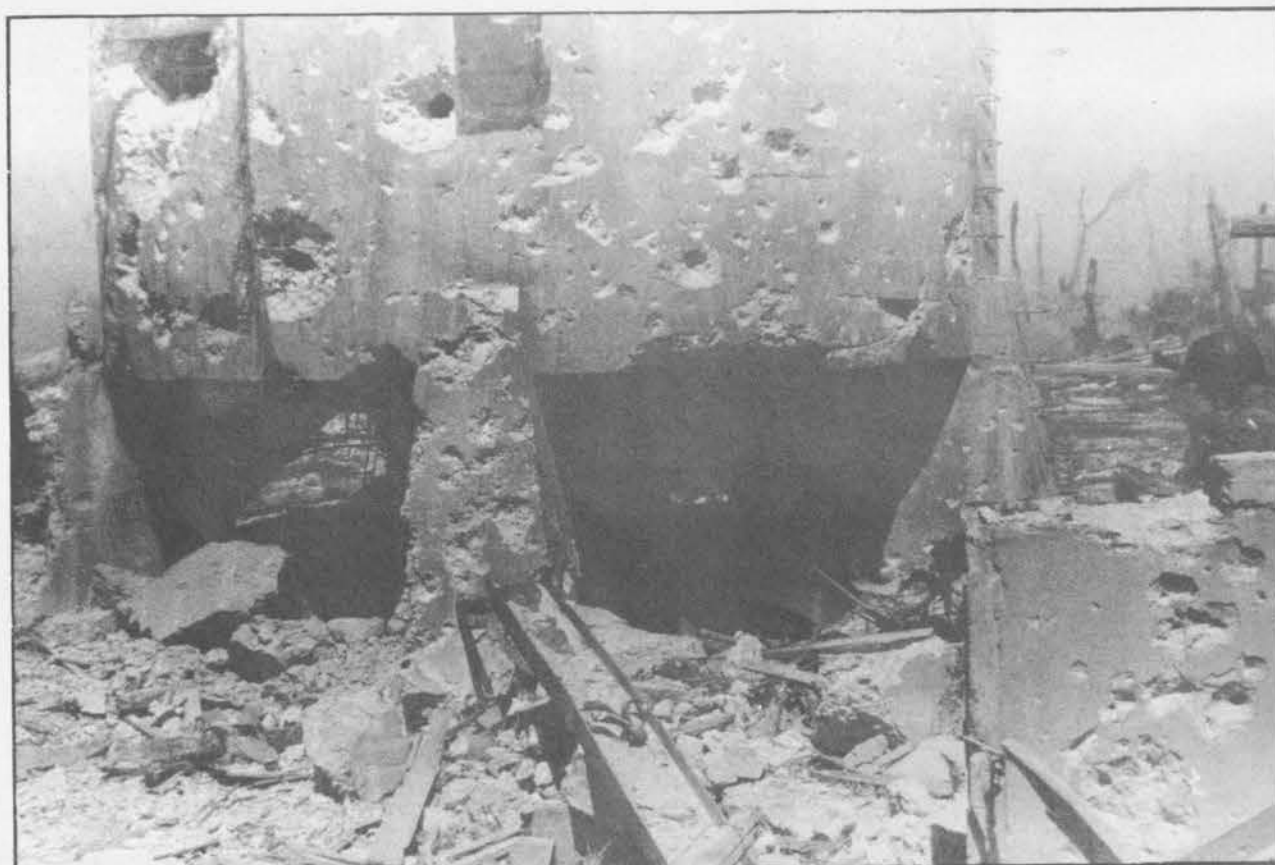
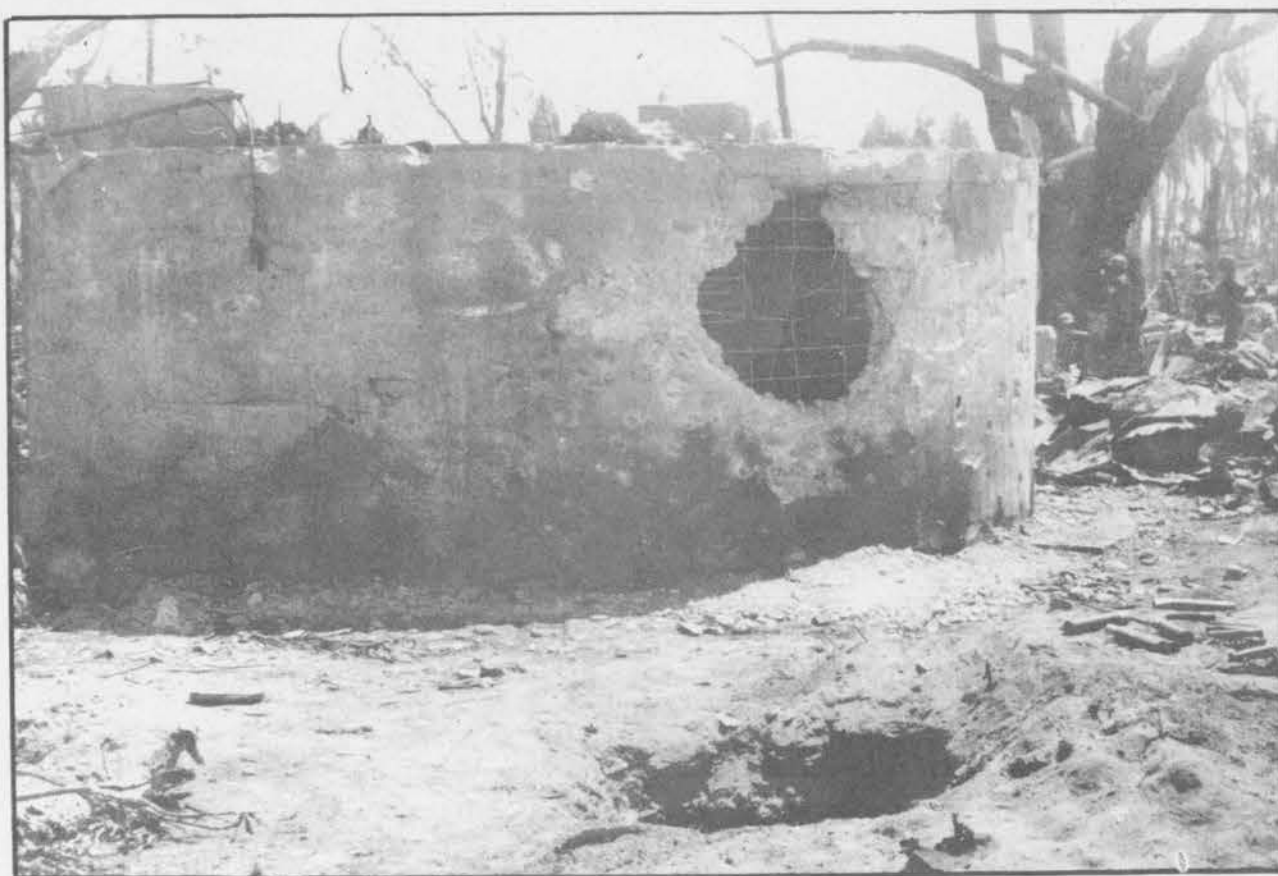
◦ 75 MM GUN EMPLACEMENT ◦

Scale as shown
(KWAJALEIN)

Drawn by H/K
Engr Sec 5th Phib Corps
18 Feb. 1944



75MM GUN EMPLACEMENT EMBRASURE
KWAJALEIN



WATER TANKS
KWAJALEIN



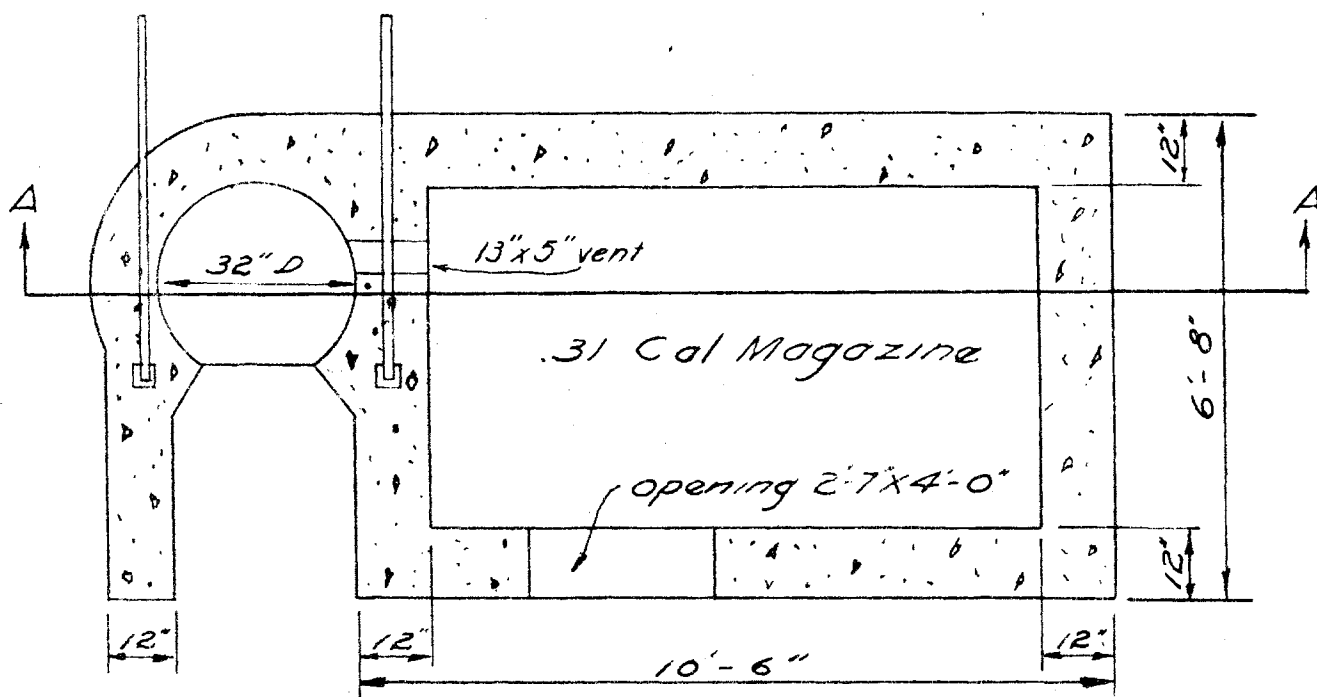
EFFECT OF BOMBARDMENT OF AIR
RAID SHELTER, KWAJALEIN



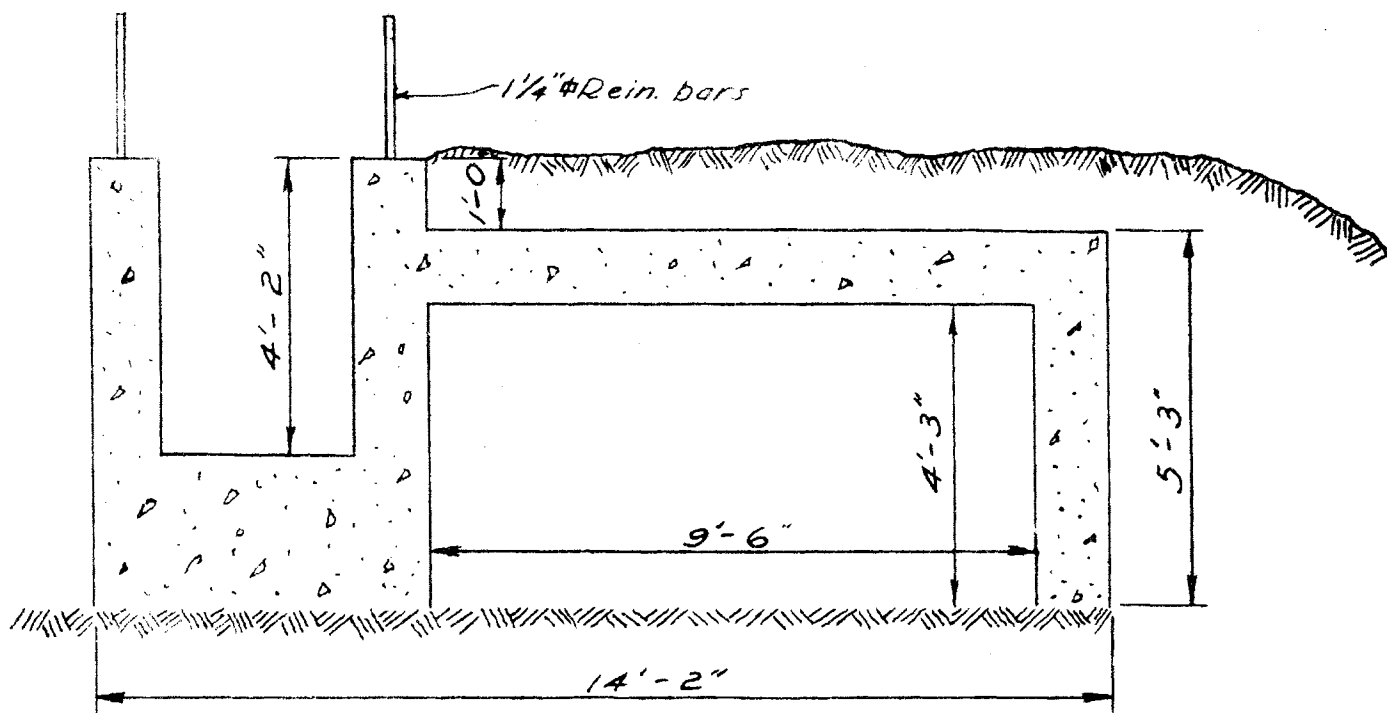
EFFECT OF BOMBARDMENT OF 5"
AMMO MAGAZINE, KWAJALEIN



SMALL RIFLE WELL AND SA
MAGAZINE, KWAJALEIN



• SECTION PLAN •



• SECTION AA •

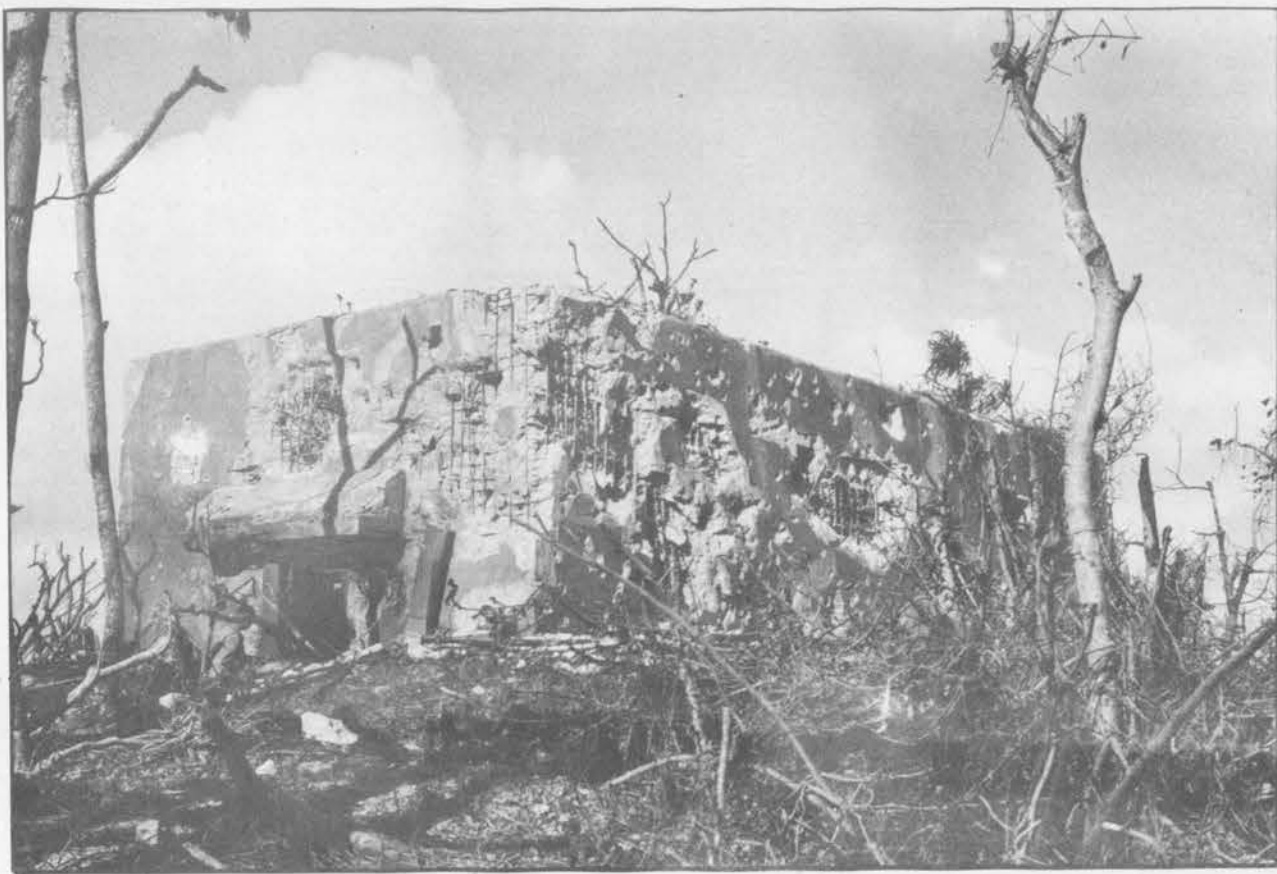
• ONE MAN RIFLE PIT & MAGAZINE •
Scale $\frac{3}{8}" = 1'-0"$



TYPICAL GASOLINE STORAGE, KWAJALEIN



TANK DITCH, NAMUR

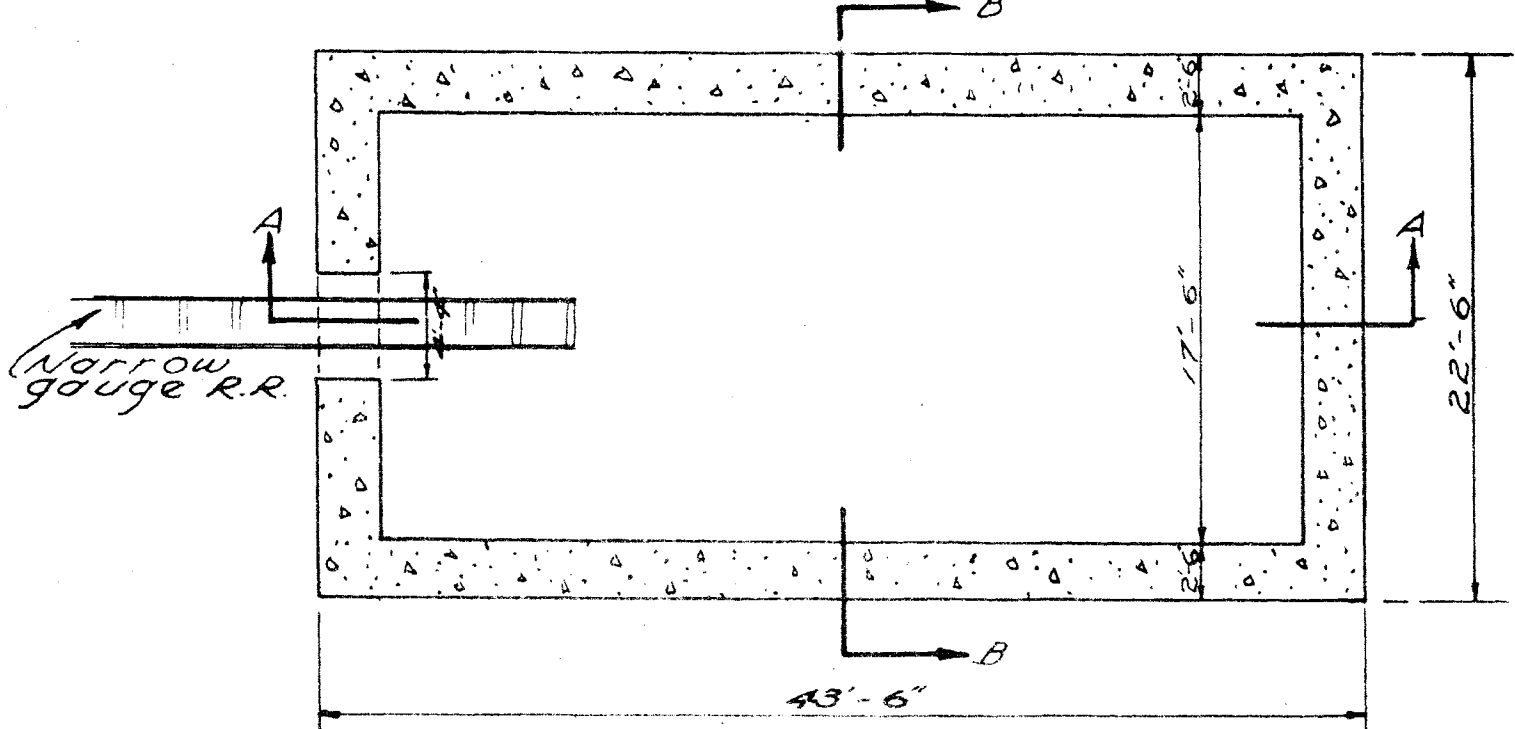


5" AMMO MAGAZINE, ROI

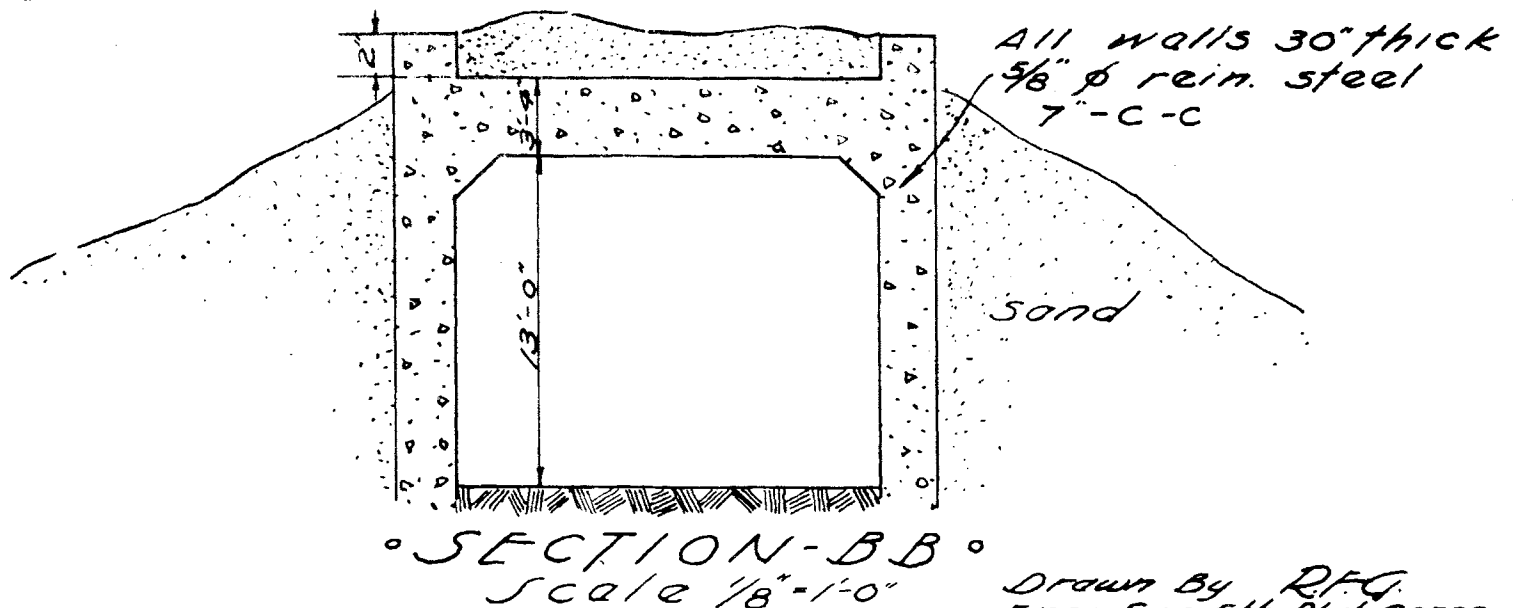
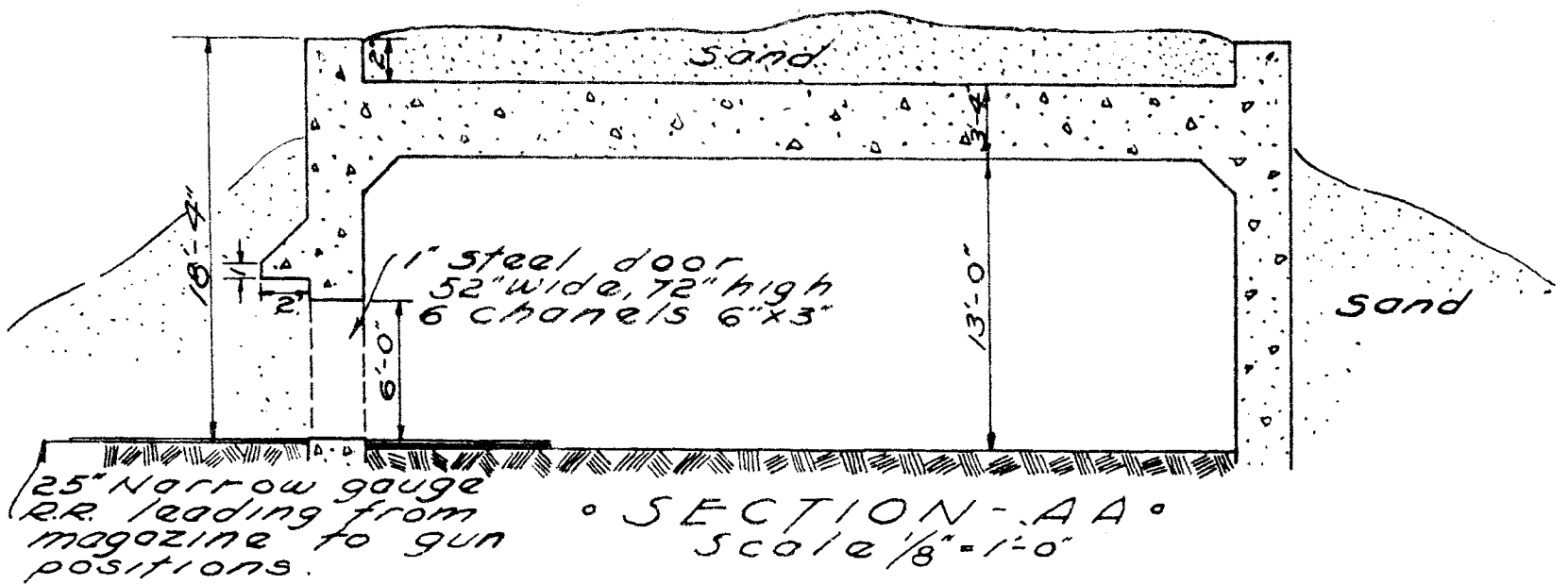


5" AMMO MAGAZINE, ROI

5 INCH AMMUNITION
 ° TYPICAL MAGAZINE °
 ° NAMUR °
 (REINF. CONC.)



° SECTIONAL PLAN °
 Scale $\frac{1}{8}" = 1'-0"$



Drawn By R.F.G.
 Engr Sec 5th Phib Corps
 17 Feb. 1944.

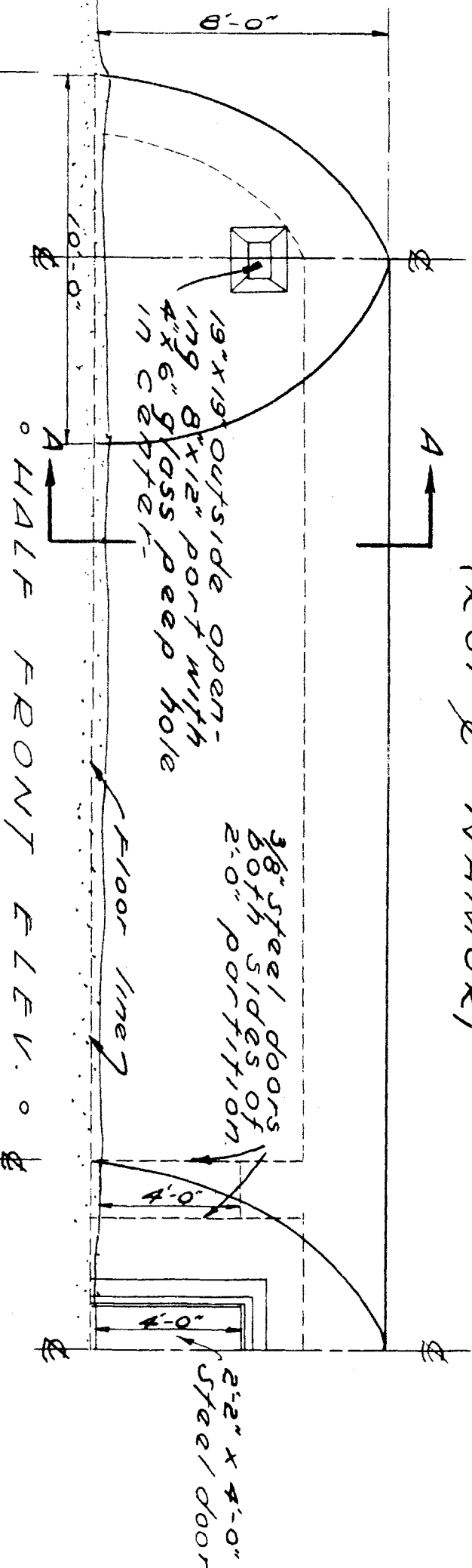


EFFECT OF BOMBARDMENT OF AIR RAID SHELTER
ROI



EFFECT OF BOMBARDMENT OF AIR RAID SHELTER
ROI

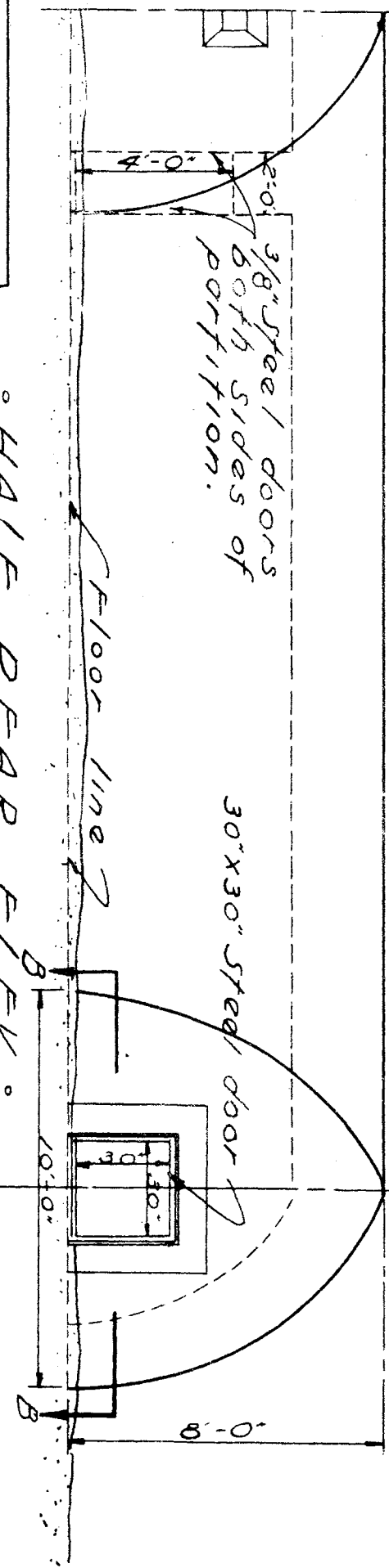
° TYPICAL BOMB SHELTER ° (RO, & NAMUR)



° 3/8" steel doors
both sides of
partition.

30"x30" steel door

° HALF REAR ELEV. °



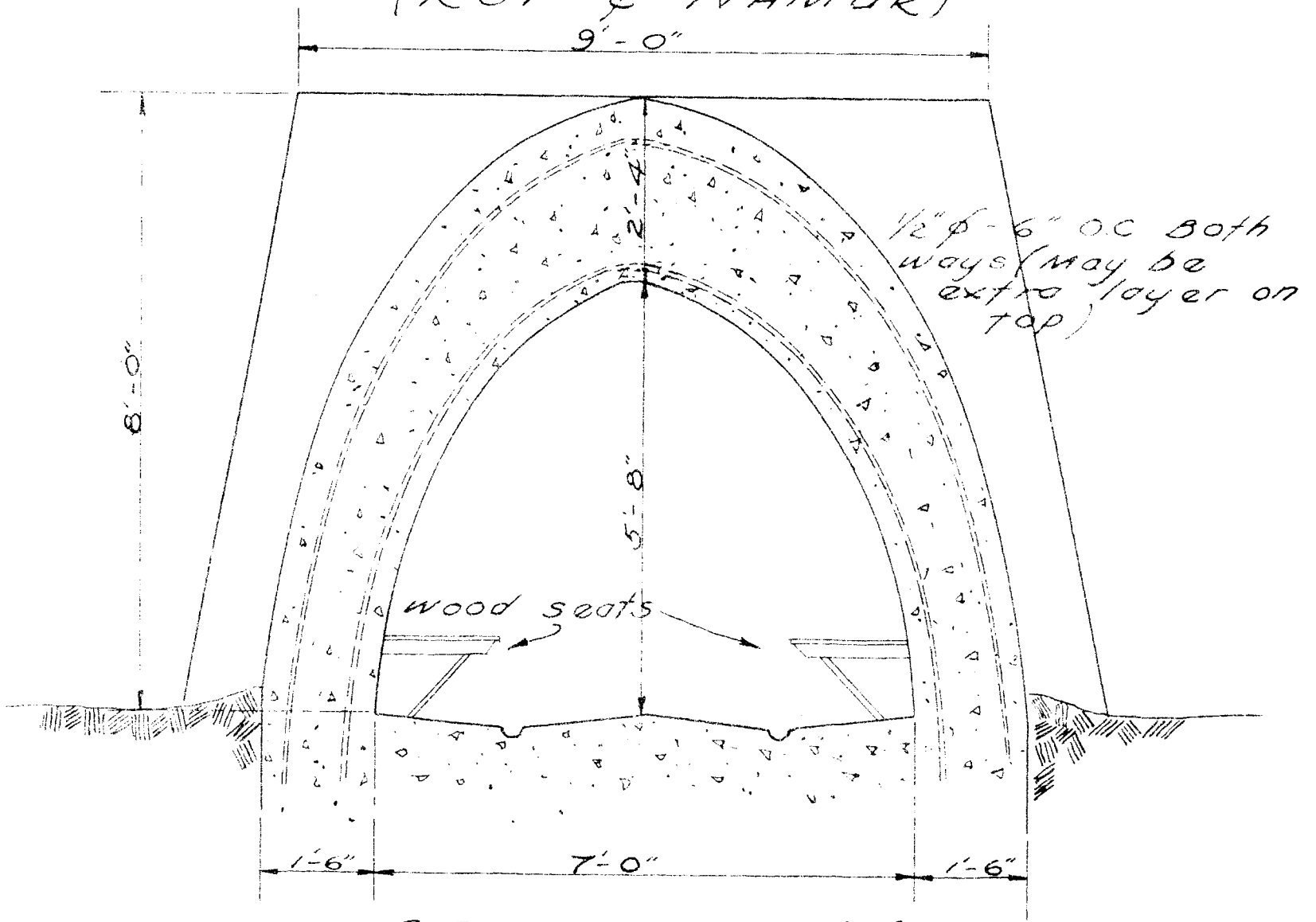
° SHELTER ° Two on RO, scattered
over NAMUR. All shelters above
ground. No camouflage except green
& gray paint - door concrete (soft) -

Sheet 1 of 2
Scale 1/4" = 1'-0"

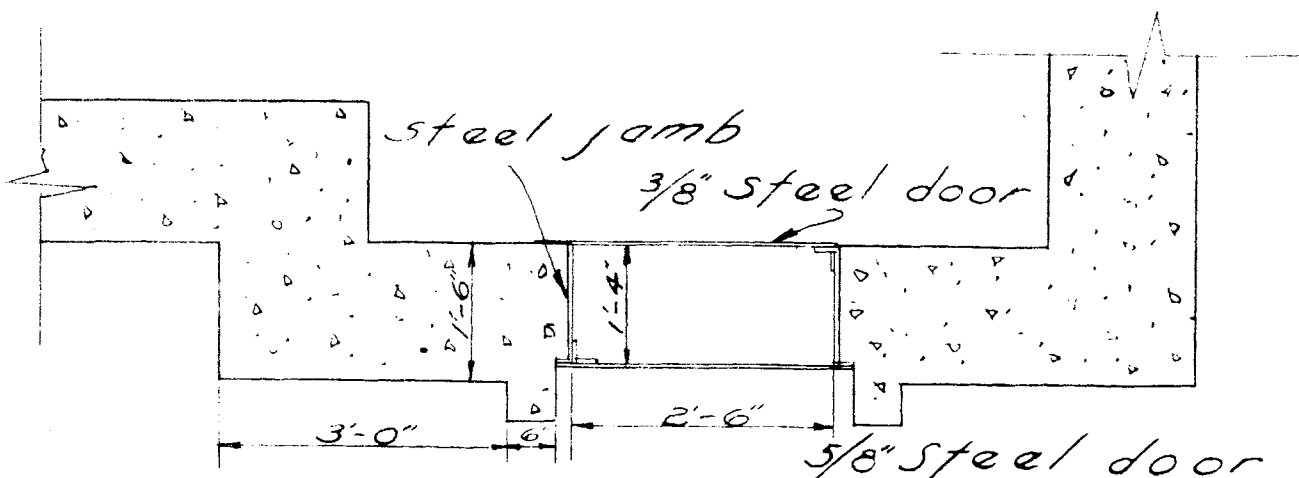
° END ELEV. °

Drawn by R.F.G.
Eng. Sec 5th Inf Corps
17 Feb. 1944

° TYPICAL BOMB SHELTER °
(ROI & NAMUR)



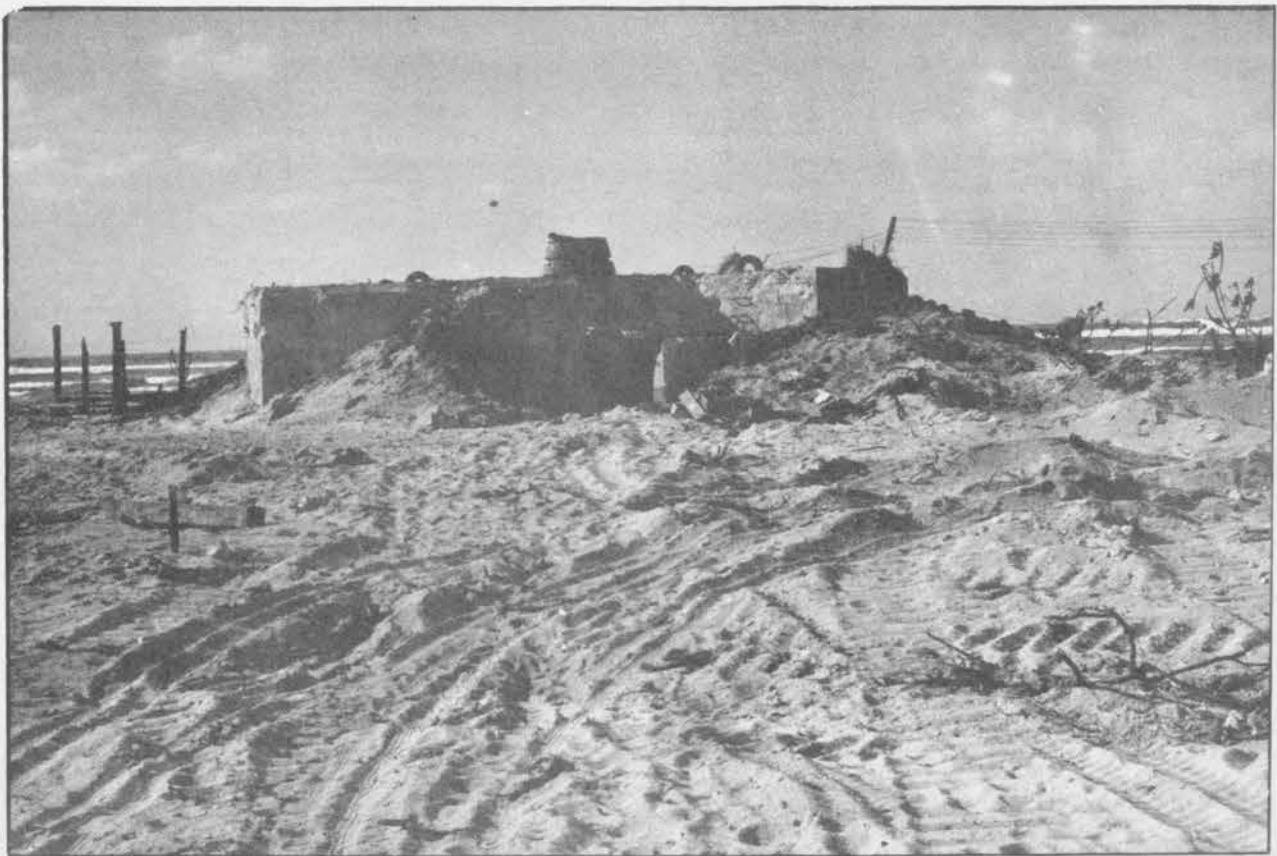
° SECTION ° AA °
Scale 1/2" = 1'-0"



° SECTION ° BB °
Scale 1/2" = 1'-0"
Sheet 2 of 2



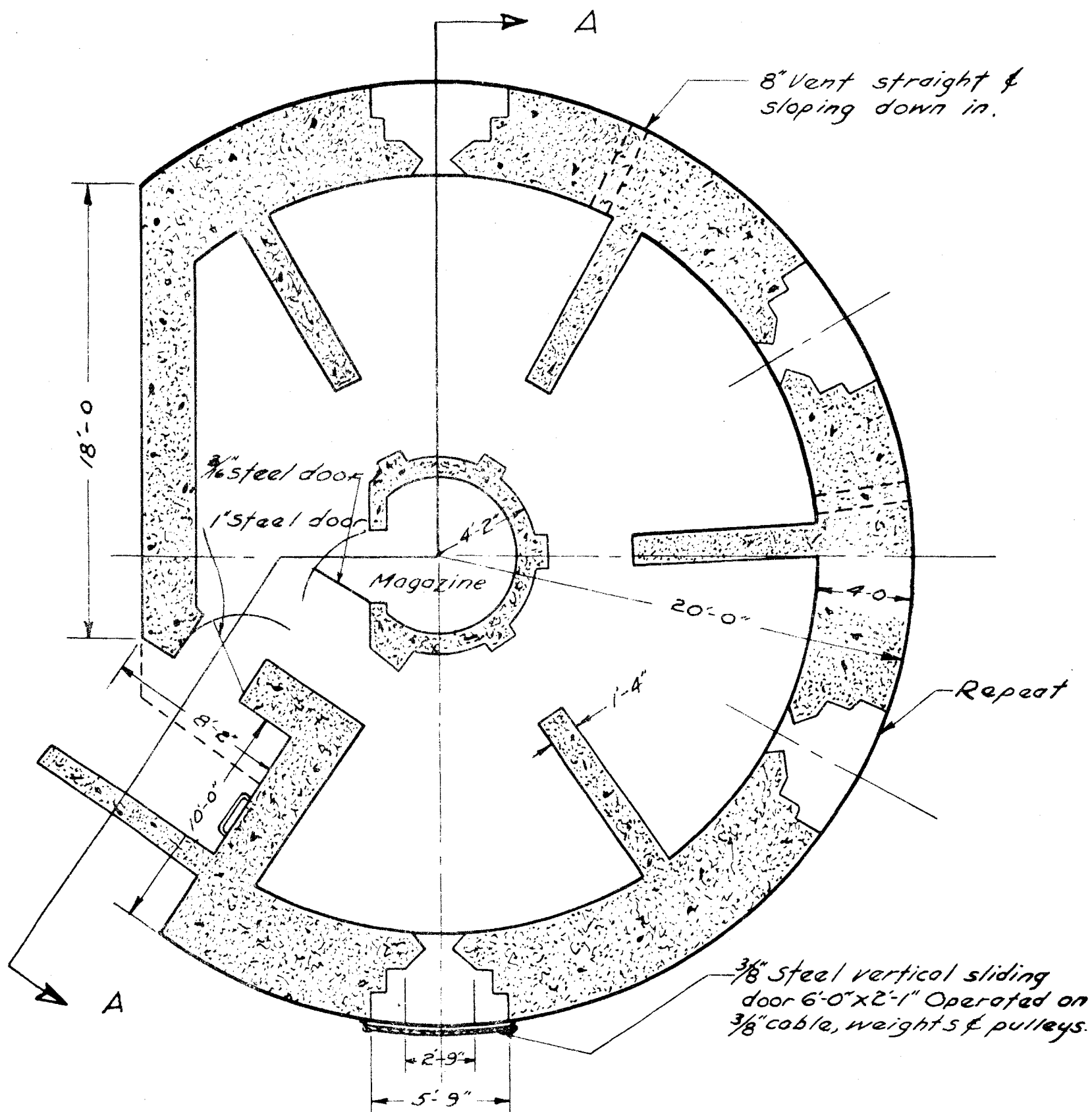
GERMAN TYPE BLOCK-HOUSE
ROI



GERMAN TYPE BLOCK-HOUSE
ROI



GERMAN TYPE BLOCK-HOUSE
ROI

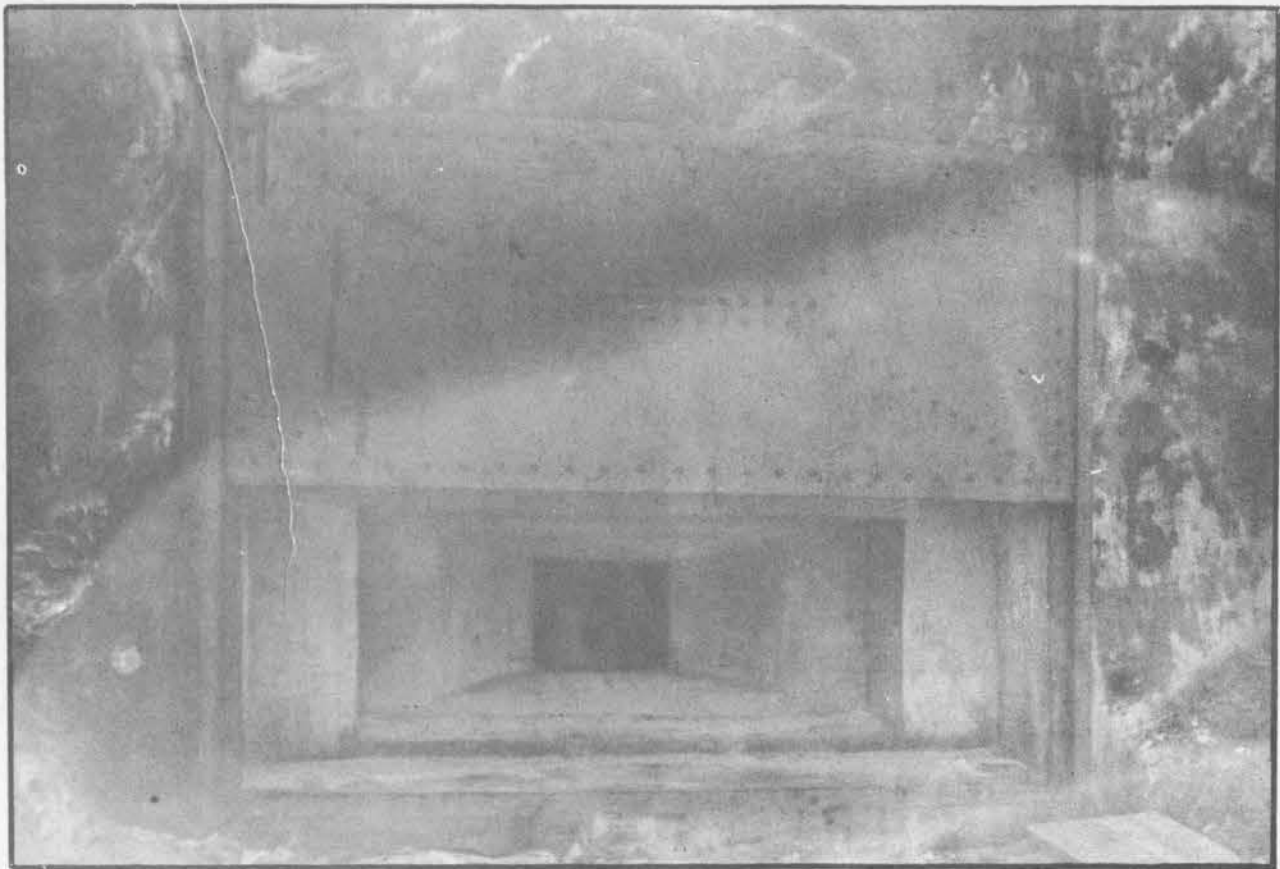


NOTE: Plan of elevation of embrasure. This bunker provided firing chamber for four (4) 13.m.m. guns. Entire structure heavily reinforced concrete. End embrasure fitted with steel closure doors.

PLAN OF GERMAN TYPE BLOCK HOUSE (13.M.M.)

ROI ISLAND Sheet 1 of 2
Scale $\frac{3}{16}" = 1'-0"$

Drawn By E.J.K.
Engr. Sec. 5th Phil. Corps
18 Feb. 1944



EMBRASURE, BLOCK-HOUSE



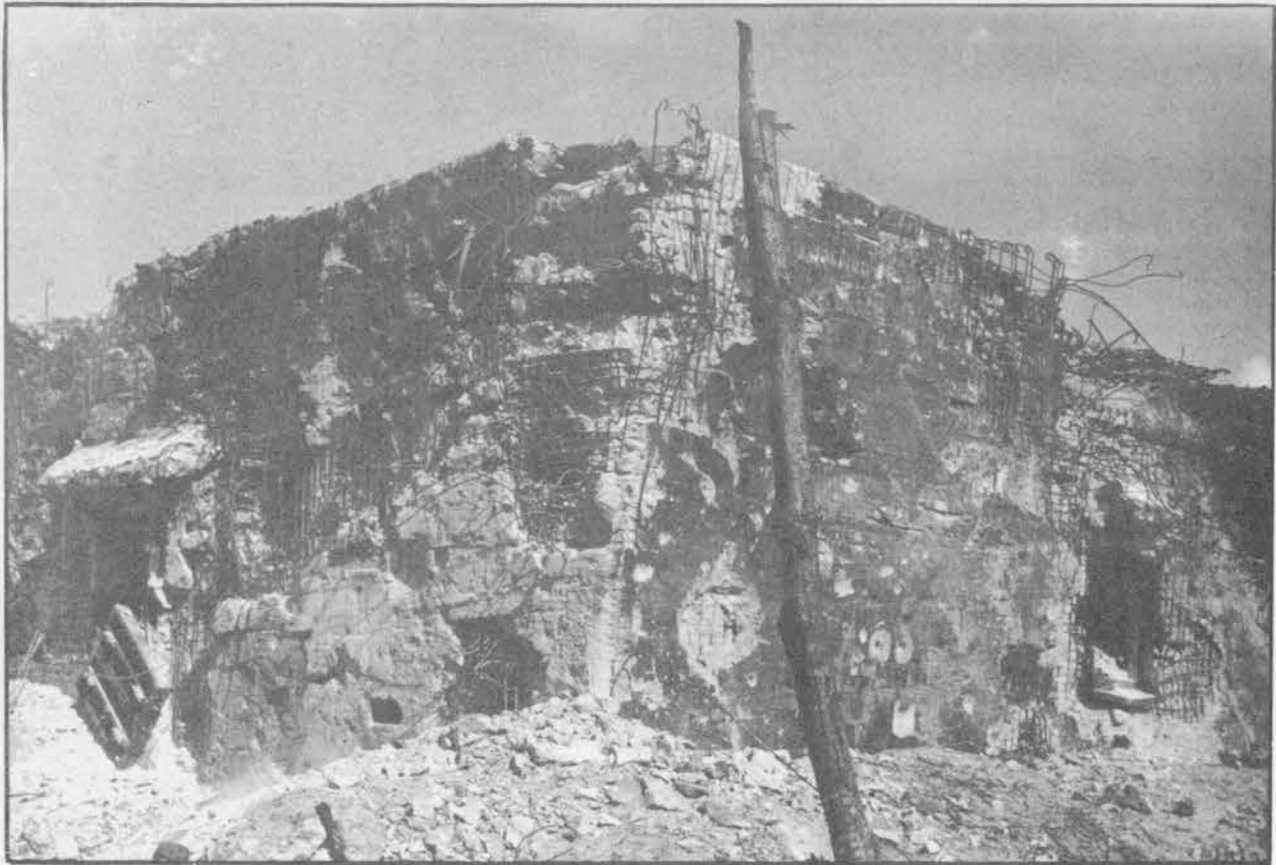
VENTILATION AND OBSERVATION TURRET
BLOCK-HOUSE, ROI



METHOD OF REINFORCING AIR-RAID SHELTER WITH
USE OF SAND FILLED EMPTY GASOLINE DRUMS, ROI



ANTITANK DITCH, NAMUR



EFFECTS OF GUNFIRE AND BOMBARDMENT OF
WAREHOUSE, ROI



HEADQUARTERS BUILDING
AIR FIELD - ROI



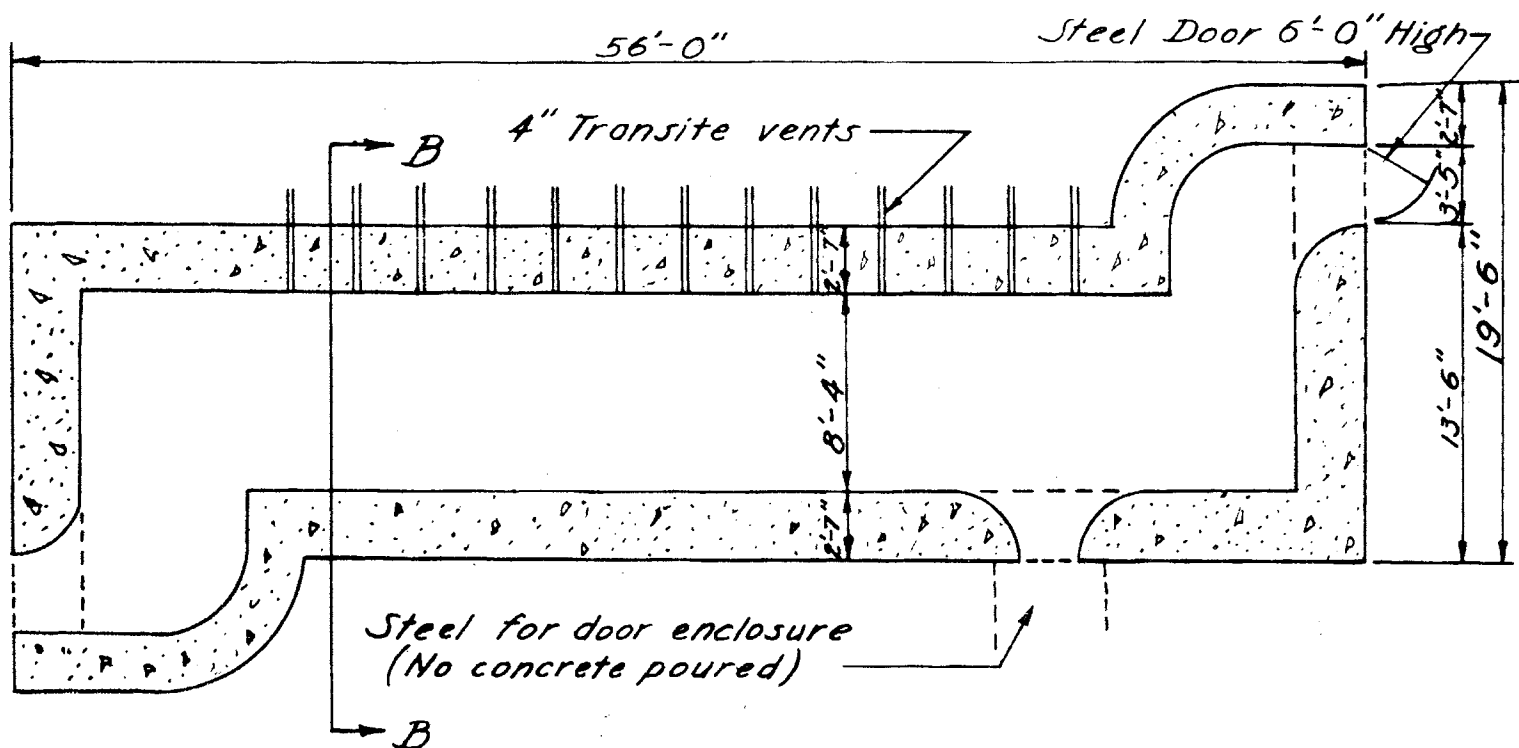
5" DUAL MOUNT DUAL PURPOSE GUNS
ROI - NAMUR



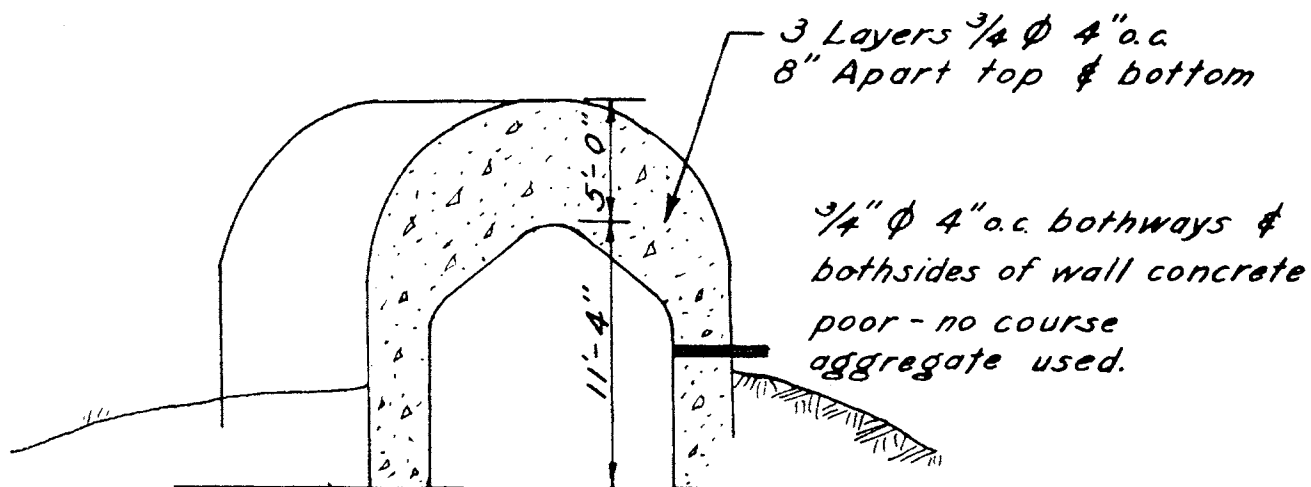
COMMAND POST
ROI



SEAWALL AND BARBED WIRE
SEAWARD SIDE, NAMUR



• SECTIONAL PLAN •

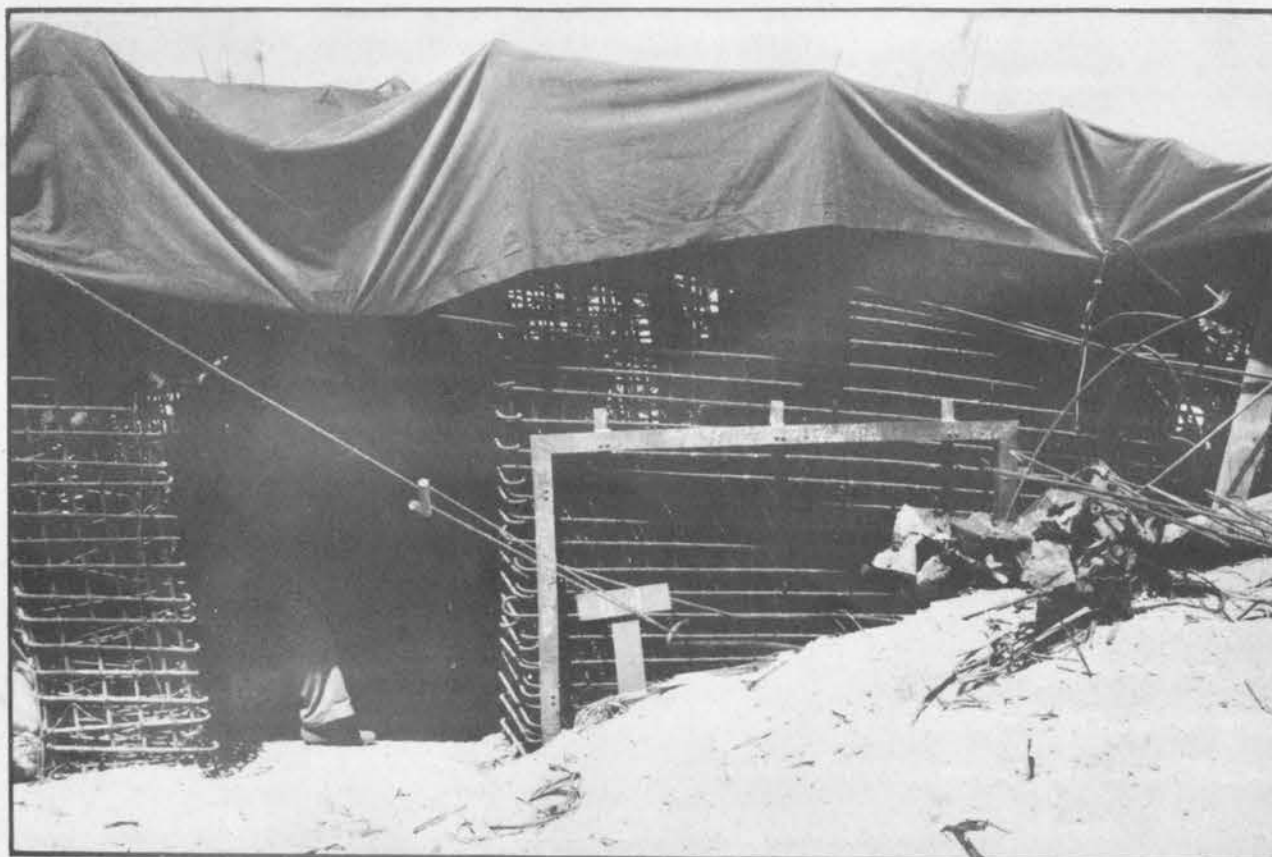


• SECTION B-B •

• BOMB SHELTER ROI ISLAND •

Scale - $\frac{1}{8}$ " = 1'-0"

Drawn by RJW
Engr Sec V Phib Corps
19 Feb 44



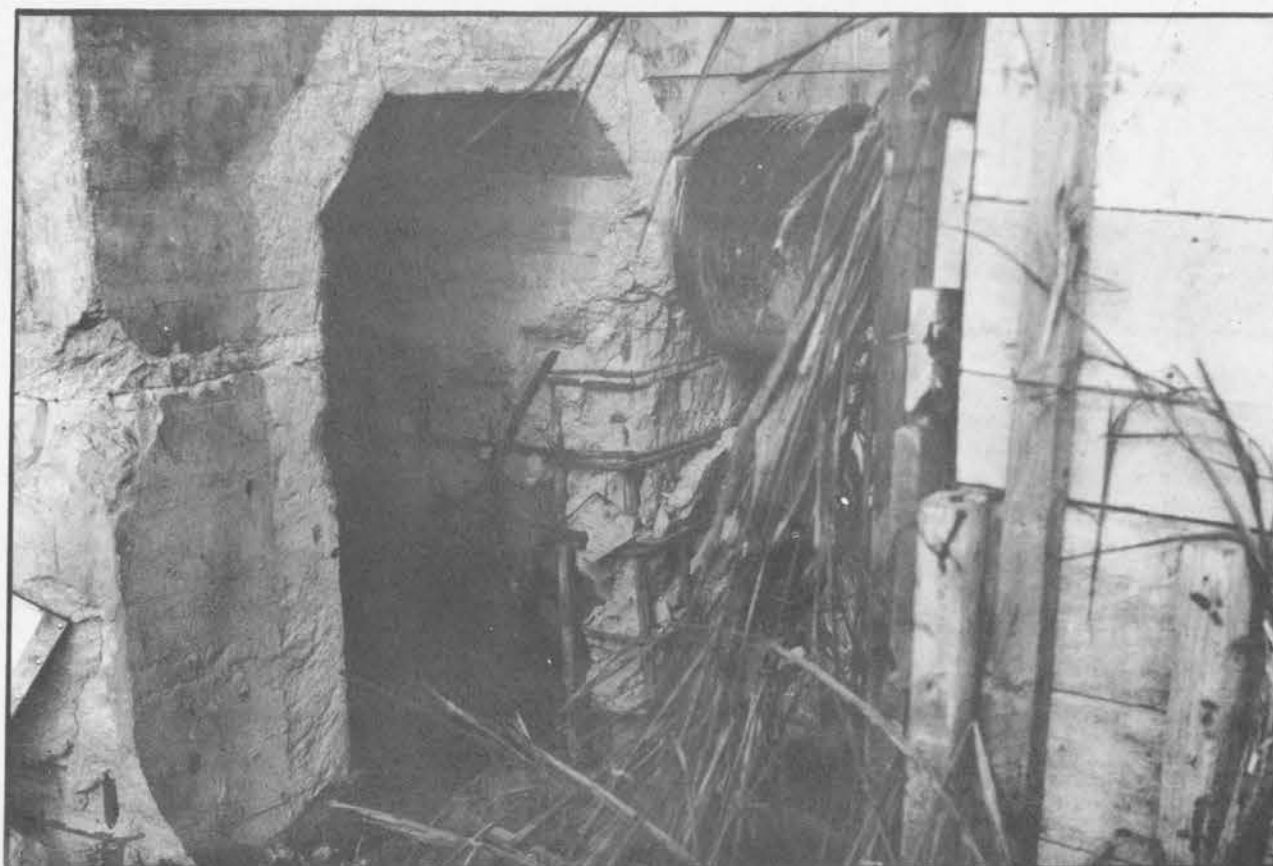
EXAMPLE OF SHELTERS IN PROCESS OF CONSTRUCTION,
ROI. (In use as a staff section HQ, Assault Troops)



AIR RAID SHELTERS IN PROCESS OF CONSTRUCTION
EBEYE



TANK BARRICADE
EBEYE





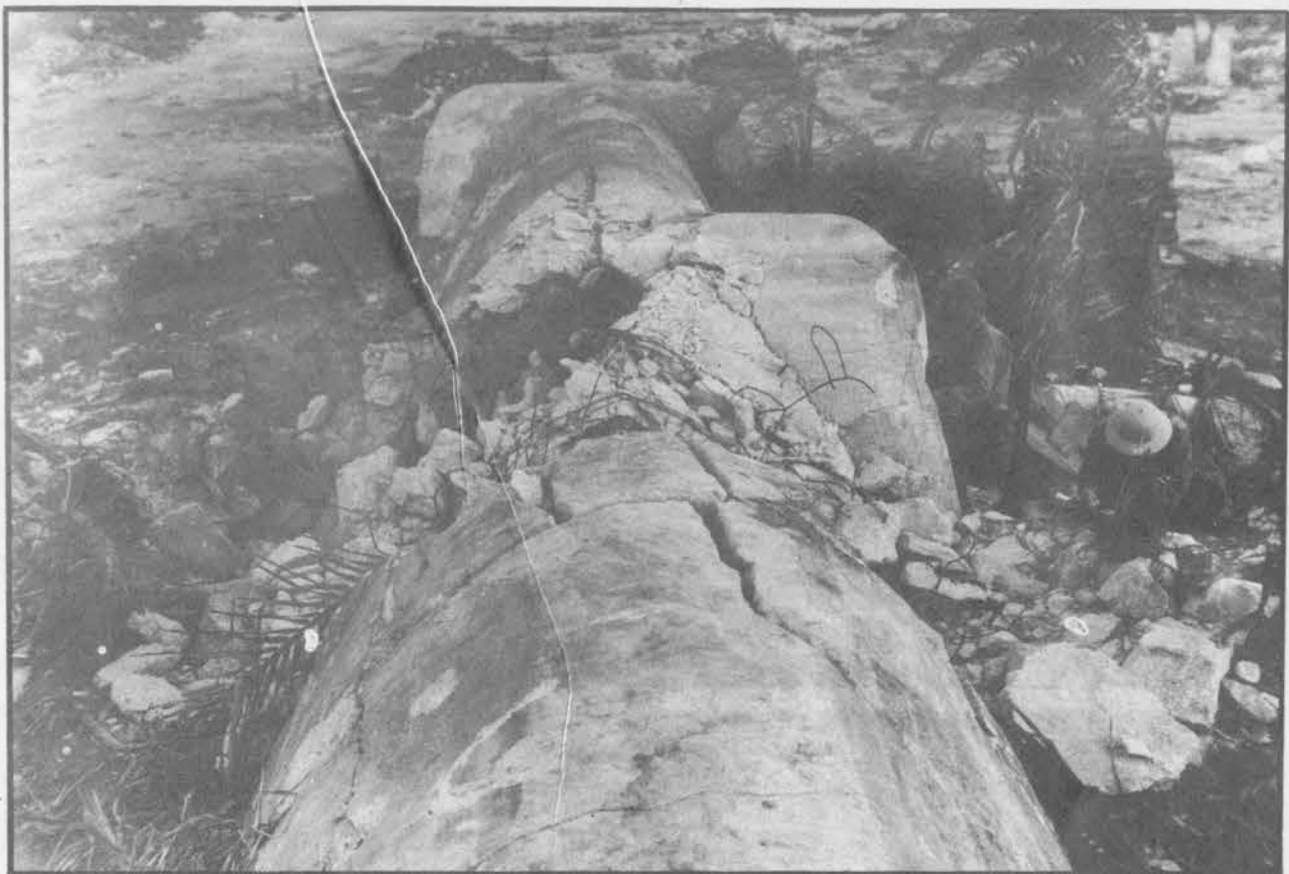
MAGAZINE
EBEYE



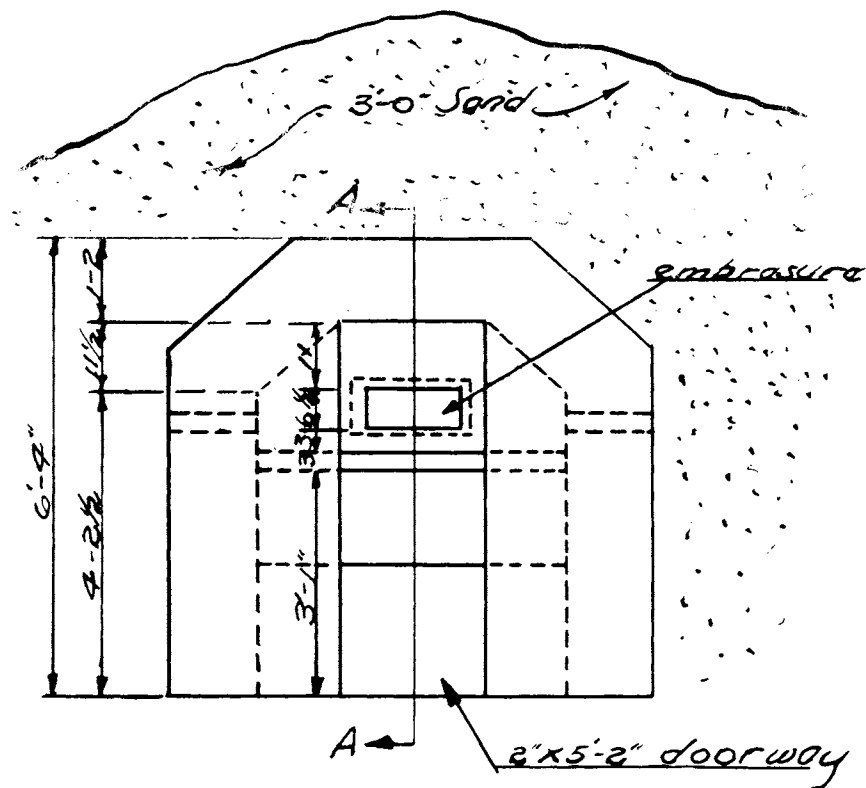
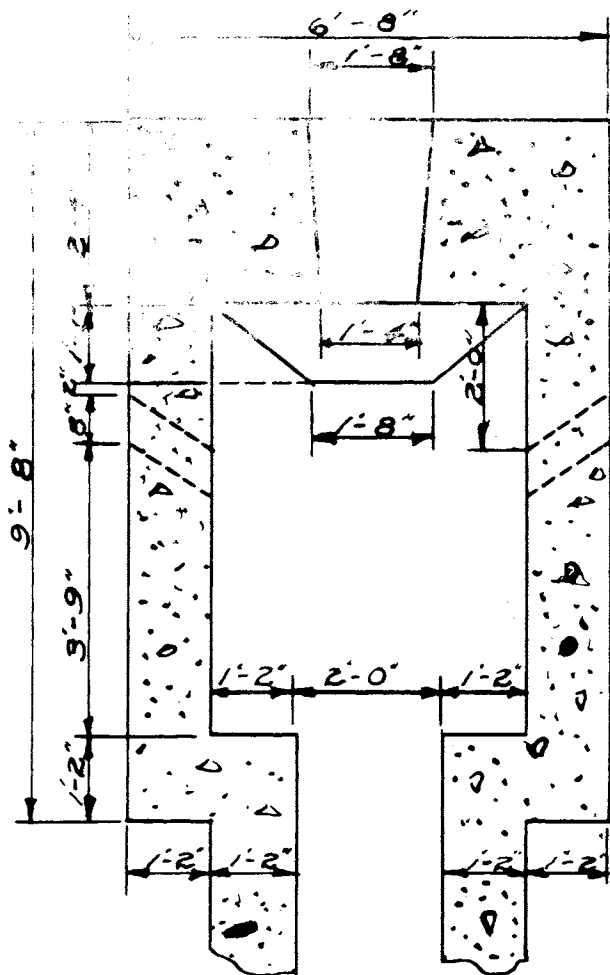
COMMAND POST
EBEYE



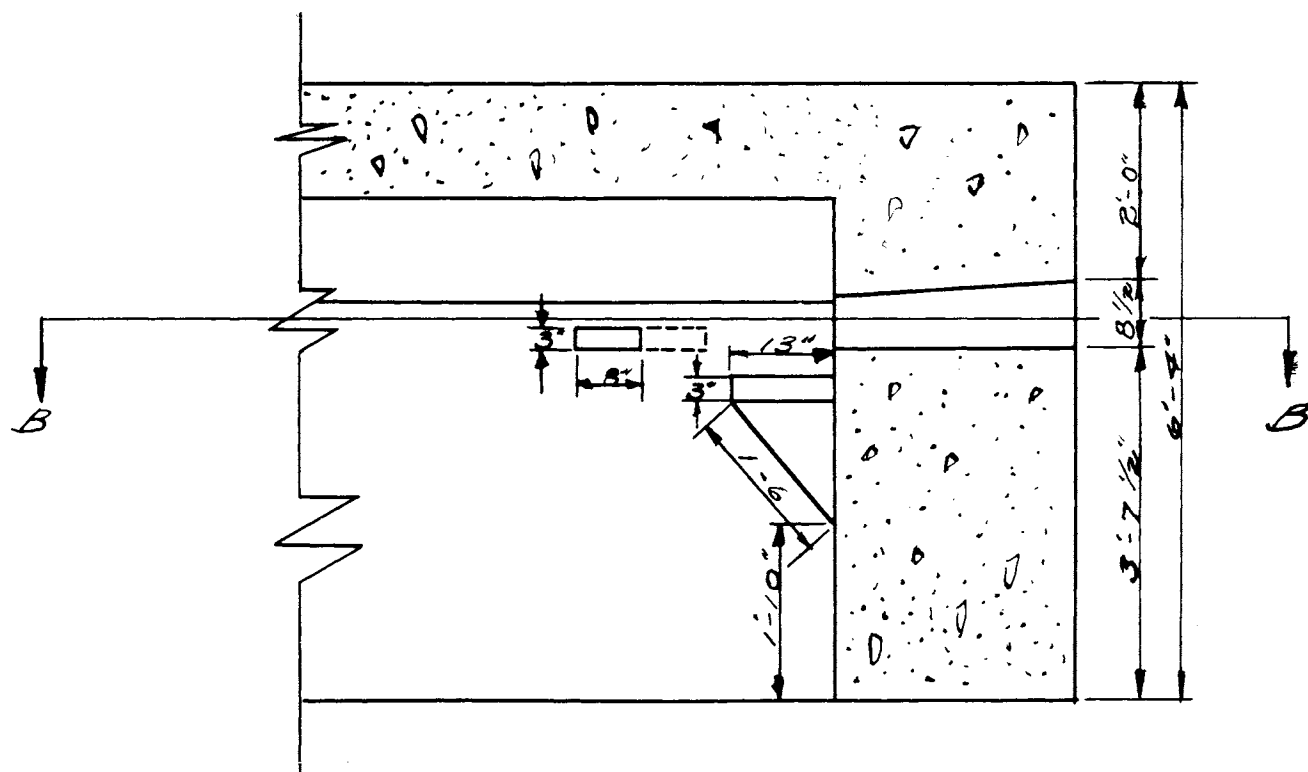
COMMAND POST
EBEYE



EFFECT OF GUNFIRE AND BOMBARDMENT OF
AIR RAID SHELTER, EBeye



• SECTION • BB • • END VIEW •
Scale $\frac{3}{8}'' = 1'-0''$



• SECTION • AA •
Scale $\frac{1}{2}'' = 1'-0''$

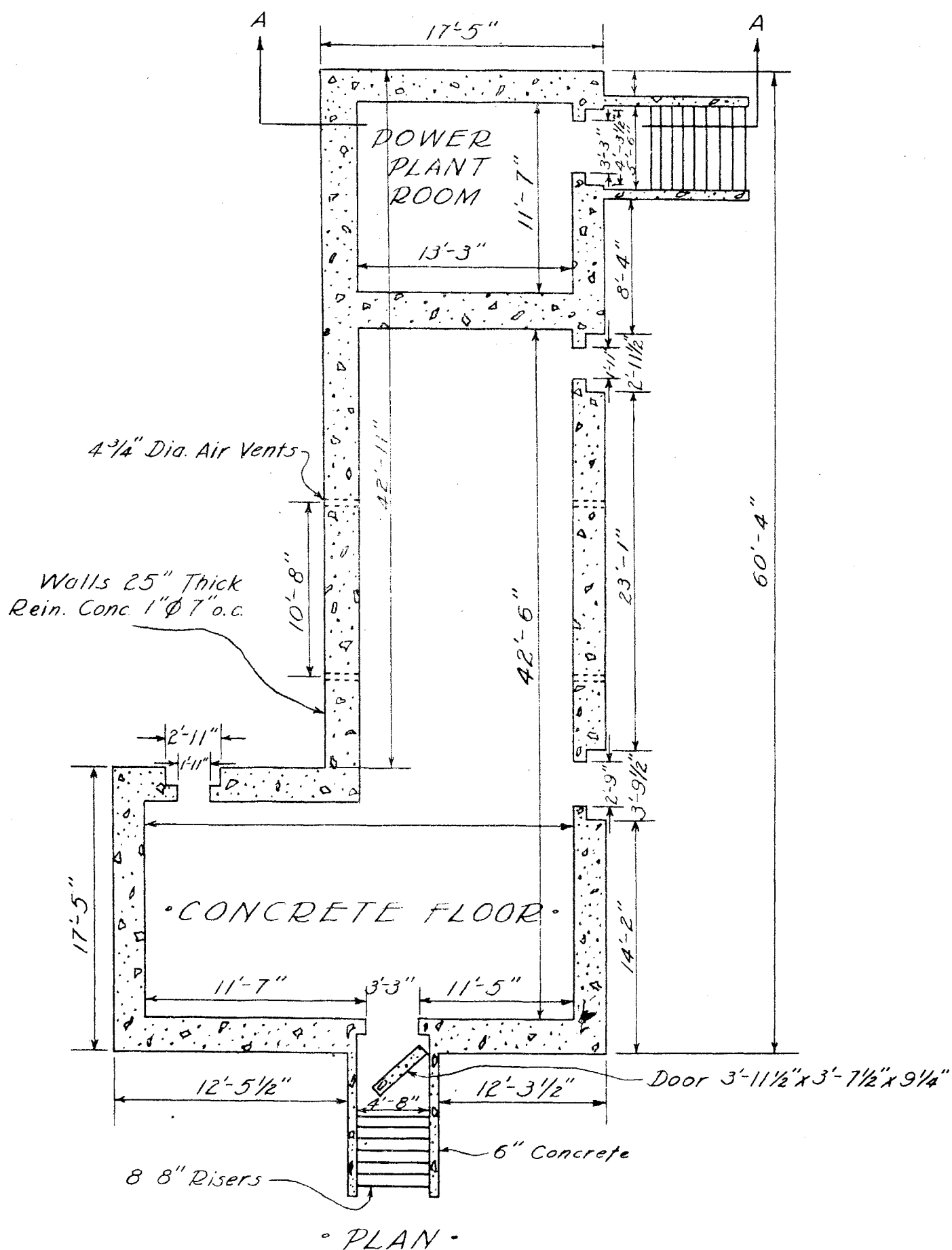
PILL BOX
R01 50

Drawn by H.K. J.
Engr Sec 5th Phib Corps
21 Feb. 1944.



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

Drawn by NK2
Engr Sec 5th Phib Corps
17 Feb 1944



• AIR RAID SHELTER •

• KWAJALEIN •

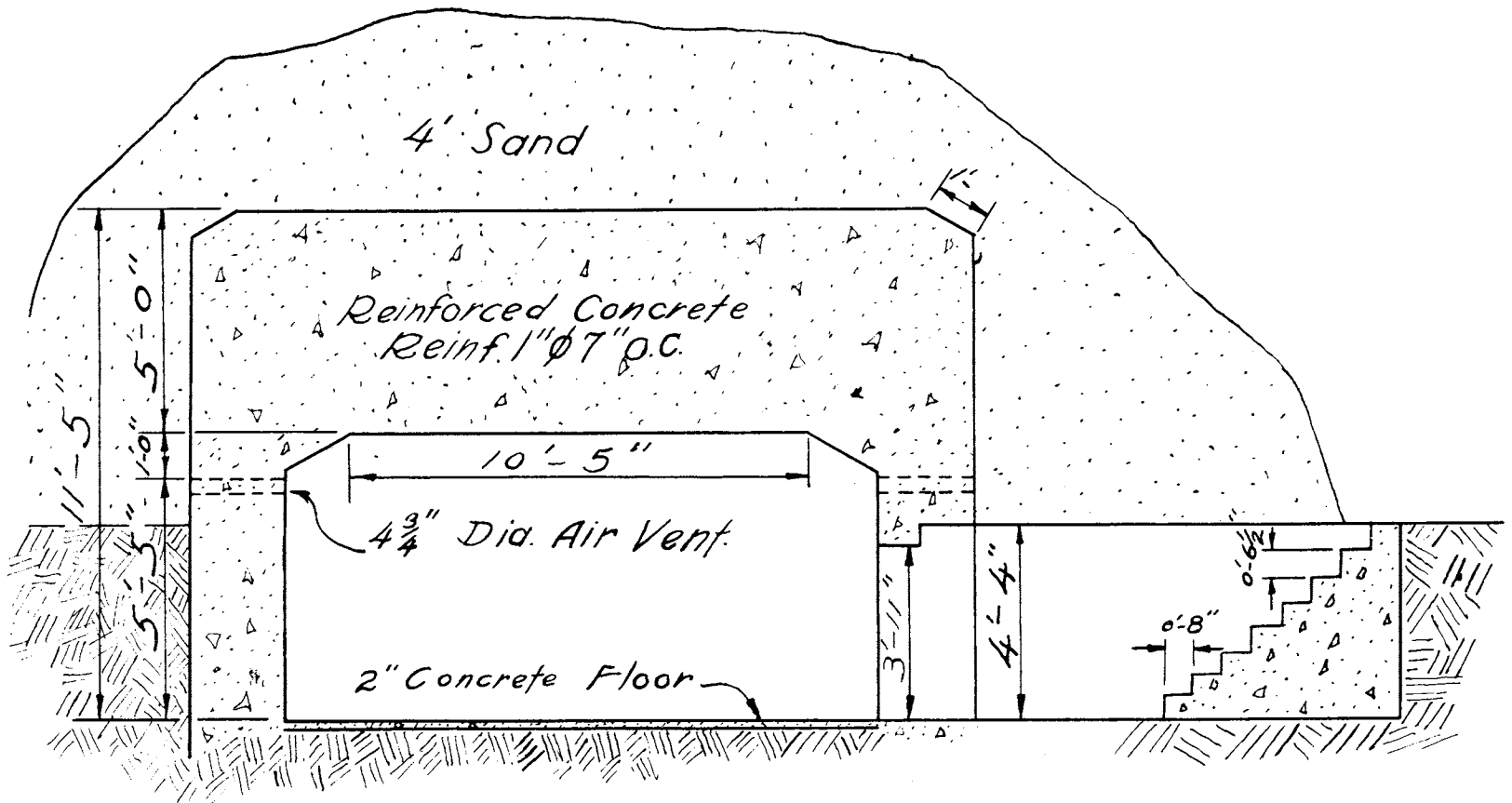
(Supposedly Island Headquarters)

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

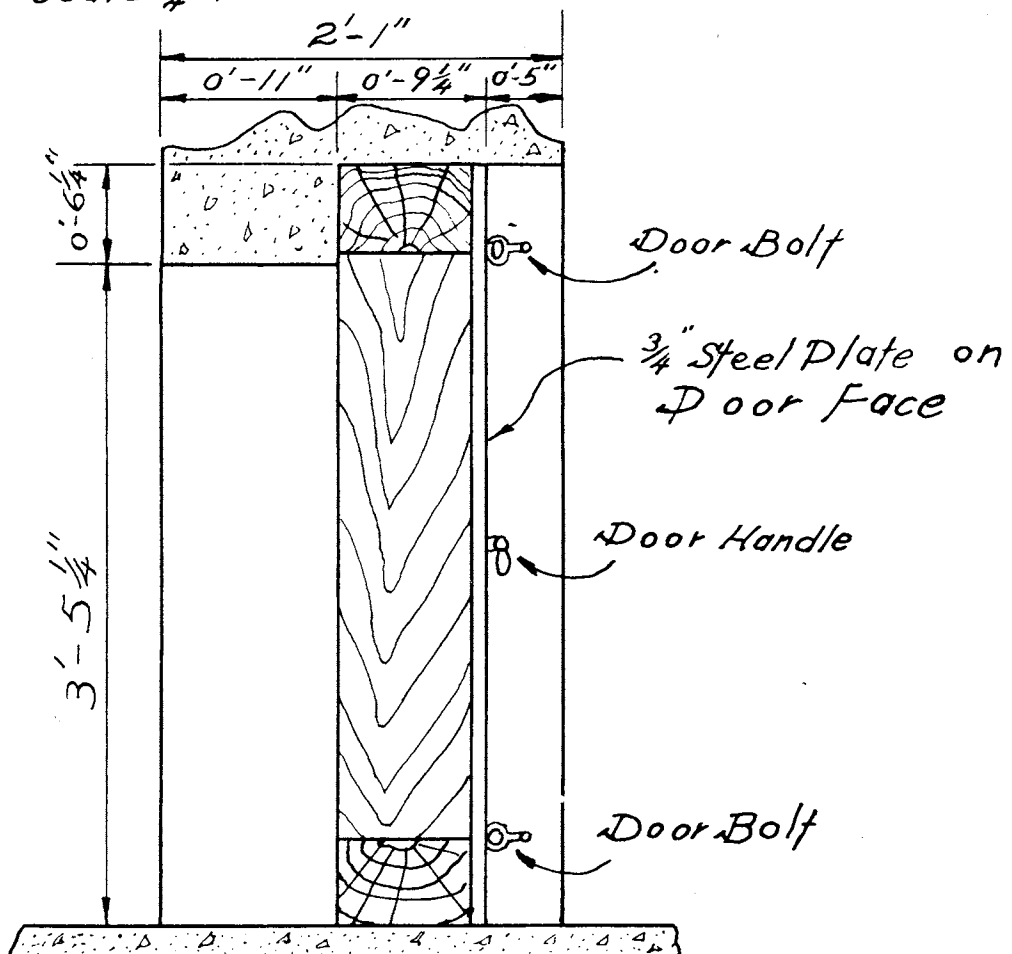
Sheet No. 1 of 2 Sheets

AIR RAID SHELTER

• KWAJALEIN •
 Supposedly Island Headquarters
 Sheet No. 2 of 2 Sheets



Section-A-A
 Scale 1/4" = 1'



DOOR DETAIL
 Scale 1" = 1'-0"

#001377

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