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FORT RODD HILL
HISTORIC RESOURCE STUDY

by
RONALD LOVATT

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Fort Rodd Hill
Historic Resource Study
by Ronald Lovatt
1978

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Abstract

This study of the Historic Resource of Fort Rodd Hill is an inventory of structures and features, each with its own history and a report on its apparent present state. It ends with a history of Fort Rodd Hill which is an amalgam of the history of each part of the resource. It concludes that there is a considerable wealth of historic material physically present at Fort Rodd Hill, much of it in its original form, some of it in a developed form, which should be preserved, enhanced and explained to the park visitor.

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Introduction

The potential of Fort Rodd Hill as a National Historic Park has been felt and expressed in enthusiastic, but general, terms by many who have visited the park. Because of this appreciation the park has a high priority for development.

Rodd Hill was a military site from 1895 until it became a park in 1962. The military used it as one position of several which together made up the Esquimalt - Victoria defences. In doing so they erected structures on the site and gave it features. Many of these have survived to today. Some are in their original form, others show a process of evolution to their present state. There were some that disappeared with little or no trace. All of these structures and features, present or not, together with the documentation and artifacts which have been gathered at the park, are the historic resource of Fort Rodd Hill.

This study was conceived to provide comprehensive information on the resource in a readily accessible form for all who are, or will be, engaged in the process of development of Fort Rodd Hill National Historic Park.

The study is largely an inventory of the structures and features. Each item is described in association with the earliest record of it, has an account of its history, and includes a summary of its apparent state today. The individual items are drawn together by association in chapters and finally in an outline history. The study ends with conclusions and recommendations for the development of the park to realise its full potential and yet preserve its historicity.

The study has been completed in seven months. Such a short

period of preparation limited the use made of all known sources of information. Full use was made of the extensive Fort Rodd Hill archival material which has been gathered from both Canadian and English archives. It was supplemented by the author's personal extensive records of the Esquimalt - Victoria defences. It is quite possible that many of the gaps in detailed knowledge which show in the report can be filled from further research among more widespread sources.

One term used in this study may lead to confusion in the mind of any reader without a military history background. It is the term battery. It should be realised that this word can refer to a specific number of guns which may or may not be placed physically together; to a fortification, and to a unit of artillery organisation. An appreciation of the connotations becomes important when considering Upper & Lower Batteries in Fort Rodd Hill. Both names are, & were, largely a matter of administrative convenience. In the report I have tried to use the word as sparingly as possible, replacing it with other terms such as fire unit or adding explanatory clauses whenever a specific meaning is intended, but long familiarity may have thwarted my intent. A glossary of other terms is included at the end of the study.

Upper Battery Chronology

	1894-5	Purchase of Rodd Hill Site
22 April	1895	Authority for construction
6 September	1895	Construction begins
12 March	1896	6-inch disappearing guns arrive Esquimalt aboard <u>Charmer</u>
29 April	1896	Master Gunner Wild and Sergeant Armament Artificer Watson of the Royal Garrison Artillery, Halifax, arrive Victoria to supervise armament mounting
3 July	1896	One 6-inch gun mounted at Rodd Hill
October	1896	6-inch disappearing guns still being mounted at Rodd Hill
	1896	Date on stone in wall of magazine
22 October	1897	6-inch disappearing guns, Rodd Hill, proof firings
31 March	1898	Official completion date of Upper Battery
5-8 October	1898	Rodd Hill handed over to artillerymen of Esquimalt garrison
5 November	1898	6-inch disappearing guns, Rodd Hill, fired in practice for first time
	1902	Reserve water tank built
29 May	1903	Construction of Electric Light Directing Station begins
15 June	1903	Newly installed telephone system linking Upper Battery with the remainder of the defences tested in exercise
28 January	1903	First set of Record Plans
5 September	1903	Second set of Record Plans include Electric Light Directing Station
4 November	1904	Electric Light Directing Station completed
9 May	1906	Transferred from British to Canadian army
circa	1913	Gun removed to militia armoury, Victoria, for training

August	1914	Gun remounted in battery
19 June	1917	Battery demobilized
from	1920s	6-inch disappearing guns designated "Fortress armament in reserve and allotted."
	1924	Last firing of Rodd Hill 6-inch disappearing guns
21 Jan-29 April	1924	Construction of Fire Command Post and Shed for repositioned D.R.F.
	1928	Mains water and electricity connected.
19 April	1941 -	Gun removed
29 April	1943	
	1940-44	Wooden platform in northeast corner of de- fensible wall
29 April	1943 -	Dummy gun positioned on glacis
18 March	1944	
1943 -	1950	Three box-like structures positioned on rampart
	1954	Fort redundant
	1958	Caretaker supervision severely restricted - considerable vandalism
	1962	Fort Rodd Hill declared National Historic Park
	1960s	Repairs and renovation of buildings by park staff & local contract

Upper Battery 6-inch Gun Position

General

The works for this self contained position mounting one 6-inch disappearing gun were completed in 1898. The gun was one of three in the Rodd Hill fire unit which existed from 1898 until circa 1941. Throughout this period the works underwent only minor alterations. They remained basically unchanged when the emplacement was abandoned and the gun removed and have survived to the present.

Entrance gates (Figure 3)

The original steel double gates dating from 1898 are still in position. One of the gates has a lockable wicket. The condition of these gates appears to be generally good. The following deficiencies are noticeable:-

Left gate	Loophole covers jammed
	Locking bar peg missing from chain
	Three teeth missing from top of gate
	Bottom gunmetal roller missing
Right gate	Loophole covers jammed
	Retaining peg to ground jammed
	Bar of teeth at top of gate has lifted
	Bottom gunmetal roller missing
Wicket	Lock jammed open
	Upper bolt and peg missing

Thermometer box

This small wooden box with a louvred door is on the inside gate

pillar between the gate and the guard house. It was made by the park. The original housed the wet and dry bulb thermometer which was read twice daily by the District Gunner. He then opened or closed the magazine ventilator doors according to the reading to ensure the correct ventilation of the ammunition.

The box needs minor repairs. Two of the louvres are partly broken and the door is jammed, or fastened, shut. There is no thermometer.

Defensible Wall (Figure 3)

The original defensible wall, completed by 1898, is intact. Its purpose was to protect the gun position from landward attack by raiding parties put ashore from enemy ships to silence the coast defence guns. It provided bullet proof protection for defending riflemen and was an obstacle in the path of any assault.

The wall is loopholed to enable riflemen to fire upon an enemy attack from its protection. There is an earth bank providing a firing step or banquette behind the wall for much of its length between the guard house and the north-west corner. The loopholes are of two types. Those having a vertical slit are placed where the slope of the outside ground would necessitate a rifleman to fire down as well as horizontally. Horizontally slitted loopholes are situated where the outside ground is level. They provide the maximum horizontal arc of fire. Enfilade fire could be directed along the wall from the guard house and from the north-east and north-west corners where the wall is angled to allow this.

The wall has a concrete coping throughout its length. Excavations at two points in recent years have shown it to have shallow loose rock foundations.

During the period 1940-44, a wooden platform filled the triangle formed by the wall in the north-east corner of the fort, extending approximately six metres from the corner. Its purpose is unknown. It is probable that it was a platform for

some form of anti-aircraft defence post, either an observer post or a machine gun post. (Figure 4)

The loopholed wall appears to be in generally good condition throughout its length although there are cracks from coping to foundation at several points and the concrete surrounding several loopholes has broken away.

Barbed Steel Wire Entanglement (Figure 3)

A barbed wire entanglement joins the ends of the defensible wall, surrounding the battery on its east, south and southwest sides. Much of it is original, dating from 1898.

The slope of the ground southwards from the gun emplacement, and the entrenched nature of the emplacement itself, gave protection to defending riflemen so that these sides of the battery did not need a wall to protect the defenders. But an obstacle was needed to halt an infantry assault so that it could be subjected to the maximum effect of defensive rifle and machine gun fire. The barbed wire provided that obstacle.

The entanglement was constructed in the standard pattern of that era, contrasting sharply with the "concertina" type coiled barbed wire entanglements of the Second World War. The strands of wire were hung on metal standards 3'9" high in bays 6' long and 5'6" wide. Most of the standards were mounted in solid rock. Many of the original standards are present. They have been replaced in some cases by First World War standards and by angle iron standards of a later period. Much of the original wire remains, but is very rusty and is broken in several places, notably in the south and east. The overall width of the fence varies from one to five bays. The single bay width is on the west and south sides at the top of a vertical rock face which is sometimes a natural feature and sometimes man-made. East of the emplacement, the ground is not so steeply sloped. The fence there is wider and augmented at one point by a concrete wall (see 'Concrete Wall' below).

In 1941, it was suggested that the materials in the entanglement might be used to construct a fence elsewhere at Fort Rodd Hill. The District Engineer Officer countered the suggestion and complimented the original builders in a letter which stated "...it is found that it would not be feasible to salvage the barbed wire, due to the fact that it is so well constructed and so entangled in the underbrush it would be quite a hazardous job to discount."¹

Today, there is a major gap in the original continuous line of the fence. It is some 18 yards wide, behind the concrete wall on the east side of the emplacement. It was cleared by park staff in the 1960s to aid grounds maintenance.

Concrete Wall (Figure 3)

This wall, approximately 30 yards long, is on the east side of the battery. It crosses a gully between two rock outcrops outside the line of barbed wire entanglement. Its function was distinct from that of the loopholed wall. Although described in the Record Plans of January 1903 as "Concrete Wall", it is of rough rock and concrete construction with a smooth concrete outer face and a rounded concrete coping. It dates from the completion of the battery in 1898.

The wall crosses a narrow, steep sided gully which led directly into the gun position. The gully would have provided a direct covered approach route for assaulting infantry. The wall effectively blocks this route, continuing the line of steep rock face on that side of the emplacement. It has a maximum external height of about ten feet. On the battery, or internal, side of the wall, ground fill was used to level the gully. A barbed wire entanglement, five to six bays in width was placed on top of the fill immediately behind the wall. The top of the wall and the entanglement were within easy rifle shot from the emplacement. The filled gully also apparently provides a drainage field for surface water from the emplacement and waste water from the guard house.

The wall exists today, apparently in generally good condition but with some cracks and deterioration in the outer concrete facing. Three drainage pipes penetrate the wall about two feet up from the external ground level. Park staff cleared the entanglement behind the wall in the 1960s, creating a gap of about 18 yards.

Guard House (Figure 3)

This building, alongside the gate in the defensible wall on the north side of the battery, has apparently survived with no major structural changes since the Record Plan of January 1903. It dates from the completion of the battery in 1898 and was built to accommodate a small guard when the battery was fully manned. The guard would have provided sentries for the battery perimeter and controlled the gate. One room of the building juts through the defensible wall to form a loopholed salient from which riflemen could fire in enfilade along the wall. There are few records of the actual use of the building and no record of its use as a guard house.

The general layout of the building is common to that of the two other British guard houses of the time in the area; one in Lower Battery and one in Work Point Barracks. Three rooms provided a kitchen and living and sleeping accommodation. The entrance door leads directly into the central living room. There is an external latrine and a verandah. The latter was intended to be used for guard mountings, inspections and turn-outs in inclement weather, as a sheltered sentry beat and as a protected examination area for persons passing through the gate. It has been repaired by the park and has received two new roofings since 1962, the first using Duroid shingles and the second using cedar shingles.

The kitchen is at the southern end of the building and is reached by a door from the central living room. The door itself is probably original, but the lock is broken and the door

knobs are missing. There are two windows of the vertically opening sash type. Neither open. The frames and panes of glass are replacements for the originals. The floor was laid in the 1960s on the pattern of the old flooring then present.

The kitchen furnishings are best described in an anti-clockwise direction from the entrance door. Immediately behind the door there is a concrete slab base for a stove with two flues in the wall above it. The stove is missing. In the right corner beyond the concrete slab, there is a built in kitchen dresser which conforms to the standard Royal Engineer pattern for this item except for a reduction in total width (Figure 5). It is almost certainly original, dating from 1898. The two drawers originally included in this piece are missing and the original oil paint has been painted over in the course of park maintenance. Nearby, in the far right corner, there is a hanging cupboard. Its general configuration follows that of Royal Engineer patterns of the time with a reduction in overall size. It is most probably original, dating from 1898. The cupboard originally had two doors which are now missing. It has been painted the standard park light grey. The two iron cantilevers on which the cupboard rests are probably of local manufacture. They are similar to those specified at the time the guard house was built.² In the far left corner is a large sink with cupboard beneath. The wall above it is drilled to allow a water pipe to be brought in from the outside. Such a pipe was connected to the reserve water tank in the battery circa 1905 and no doubt ended in a tap over the sink. Before the water tank was built in 1902-3 the guard house did not have running water. Water would have been carried to the building in containers from the reservoir outside the gate of Lower Battery.

The central room of the guard house is the living room. The building entrance door opens into this room. The door may be the original and is still fitted with an old, probably original, lock and set of door knobs. There are two windows, both

in the same wall, overlooking the verandah and gate. They are of the vertical opening sash type and do not function. Their frames and panes are replacements for the originals and were installed in the 1960s. A new floor was installed in the room in the 1960s on the pattern of the old floor of that time. There is a long double shelf with a line of pegs under it on the wall opposite the door. The metal brackets and the pegs are probably original and the wooden shelving more recent. If the brackets and pegs are original, then a maximum guard of 4 men was anticipated. At the far end of the shelving, on the end wall, in the corner, there is a double doored wooden cupboard. Many of its features are similar to those specified in Royal Engineer patterns of the time.³ It is most probably original dating from 1898. Its door catch is broken and appears to have been of the same pattern as that used on the loophole doors in the bed room. Next to the cupboard there is a concrete base for a stove. Above it there is a flue in the wall, the same as that for the kitchen. There is an old stove, marked No 2 Glory 169, presently on the base. It is rusted, needs repair and may not be the original or even of the same type as the original.

There is a wide continuous crack in the walls and ceiling of the living room which begins at an upper corner of the entrance doorway and ends in the foundation of the opposite wall. A common belief is that this was caused by a major earthquake in the area in 1946, but there is no documentation of this.

Both the living room and the kitchen have a series of wood plugged holes in the walls near the ceiling. A kitchen window frame has been drilled in the upper right corner and has several wall marks near it which appear to lead to the series of plugged holes. It seems that all of these features are related to the installation of mains electricity wiring in 1928. All electrical fixtures and the wiring were removed in the 1960s. The building is not wired for electricity at present.

The bed room of the Upper Battery Guard House is also a

concrete blockhouse protruding as a salient from the defensible wall. It is entered through a doorway from the central room. The door is probably original. The lock is broken and the door knobs are missing. The floor was renewed in the 1960s on the pattern of the old floor then present, but the skirting board requires renovation. There are ten loopholes in three walls of the room. Each loophole is closed by a thick wooden door with a circular brass catch. All of the doors and woodwork are probably original, some need repairs to the woodwork or hinges and some are difficult to open. There are remnants of the circular brass catch plates and the catches on seven of the doors, and one door has a complete catch. There are two windows high on opposite walls. Both have heavy iron grills on the outside and both tilt to open. A ring is screwed into the woodwork of each window and below each a metal cleat is fastened to the woodwork of a loophole. Cord between the ring and cleat would have allowed each window to be opened and secured. The cords are missing.

The bed room was suitable for holding short term prisoners and is marked for this role on some later plans, but it was not constructed for that purpose. The door and its frame are not of the type specified for cells.

Unlike the other two rooms in the guard house, there is no indication of electric wiring, but a corner drilling through to the living room may have been the site of a light fixture.

The present interior paint and colours are probably not correct. It appears that the woodwork was originally painted green with the exception of the kitchen dresser pot board skirting and riser which were painted black.⁴ Some paint sampling and analysis was done in 1964 by the park.

Outside, at the rear of the guard house and attached to it, there is a latrine. It appears on the Record Plan of January 1903 and was obviously built at the same time as the remainder of the guard house. The outside wall bears markings indicating that a water pipe was once attached to the wall and

carried through it to flush the corner urinal. The pipe is now missing, the metal drain covers of the urinal are badly rusted and the drainage system, although apparently intact, is blocked with rubbish. In addition to the urinal, the latrine contained a dry earth toilet (Figure 6) which is now missing, together with the toilet door. The door frame has badly deteriorated although some parts of the metal fittings have survived.

Although the Upper Battery Guard House was intended to accommodate a guard when the battery was fully manned, there is no record of this actually having happened. It is possible that it was used in its intended role on brief occasions during annual summer peace-time training. There is a record that it was earmarked as temporary accommodation for two non-commissioned officers and six rank and file of the Royal Garrison Artillery for a short period from 29 September 1899 while Work Point Barracks was being enlarged.⁵ Another record exists of its use in 1922 as a Battery Orderly Room (offices) during summer camp.

The guard house was used occasionally as a temporary married quarter. The occupants were families awaiting housing elsewhere or the family normally housed in the Warrant Officers House at Fort Rodd Hill but displaced temporarily when the house was used as an officers mess during summer camp. It is recorded that Sergeant Frank Zala of 5th (BC) Regiment C.G.A., his wife and his sister Mrs. Oatman lived in the guard house for 2-3 months during the summer of 1917. Sergeant Wharton and his family lived there in the early 1930s and Sergeant Sid Barker and his wife were the occupants for a similar period in 1937 and 1938. There is no record at present of the interior use or furnishings during these occupancies. During the Second World War the guard house was used for a period as N.C.O. accommodation.⁶

In 1969 As Found drawings were made of an oak sill, cedar sash and flooring and ceiling boarding when repairs were being carried out. Copies of these drawings are held at the park.

Water Tank (Figure 3)

Upper Battery was completed in 1898 without any running water supply and without a water tank. Water was drawn from the main reservoir near Lower Battery and carried to Upper Battery.

In his report on his inspection of the garrison, 11-17 June 1901, Colonel V.R. Biscoe stated "... the provision of 3 Reserve water Tanks is being carried out."⁷ One of them was scheduled for Upper Battery. But it was apparently not provided immediately because in a letter dated 29 January 1902, Lieutenant-Colonel A. Grant, Commanding Troops, Esquimalt pointed out that "...reserve tanks should be provided within, or in the vicinity of, the various works of defence, ..."8 A tank of 7500 gallons capacity is marked on the Record Plan of January 1903 and exists today, almost unchanged. It was most probably built during 1902.

The tank was entered, and cleaned through a roof opening. There are rung steps inside the tank below the roof opening. A 1905 General Site Plan shows pipes connecting it to the guard house and to a ram pump drawing water from the reservoir. Circa 1928, the tank was connected to the municipal water supply when this was installed at the fort. A new water system was installed in the park in the 1960s and at that time the tank was disconnected and the old piping was removed.

Today the tank appears to be the same as it was when it was constructed and shows little outward sign of deterioration. It contains water. The wooden grill over the roof hole is old, may contain some original pieces, and is easily removed. It is possible that the roof hole may have been closed by a heavy concrete slab similar to the one in use on the Lower Battery Water Tank. The loose rock wall around the front right corner conceals the original hard surface area which is a feature of the Record Plan of January 1903.

Emplacement Entrance Way (Figure 3)

This follows the route, and coincides with the dimensions, shown

on the Record Plan of January 1903. An open concrete gutter lines one side of the path and is apparently original, dating from 1898. It drains underground eventually and functions today.

The protective bank on the east side of the path would also have served as a fire position for riflemen countering any ground assault on that side of the battery. There is a set of concrete steps in this bank, placed there by the park, for which there is no historic precedent.

Gun Emplacement Surface Features - General (Figures 2,7,8)

The emplacement was completed by 1898. It was designed for mounting a 6-inch disappearing gun. Accordingly, it is U-shaped and slightly flared at the gorge. It survives today, basically unchanged from the date of its completion. The description of its various features that follows is from left to right.

Bench Mark

On the far left (east) there is an angled and inclined supporting wall. In the corner it makes with the parapet a War Office bench mark is carved in the concrete with the height of the emplacement above mean sea level, 97.93'. This survey record was apparently placed there by Royal Engineer surveyors when the emplacement was completed. An established accurate height for the battery was essential for the calculation of the elevation at which the gun would be fired to engage a target.

Near the bench mark are four holes. These appear to be for two iron brackets of the type to be found in similar positions in Lower Battery. No one knows what these brackets were for.

Cartridge and Dial Recesses (Figure 7)

On the left flank of the emplacement, set into the parapet wall, are two double doored recesses. The smaller recess was for the ready storage of cartridges brought up from the underground magazine. The taller recess housed the range and training dials, terminal board, R.A./R. Sigs junction box, and leclanché cells. All except the latter would have been mounted on a board fixed to the back wall of the recess. Two remnants of this board, fastened to the incoming dial cables, are all that remain today of the former contents of this recess. The doors of both recesses were renovated by the park. The paint is probably the wrong colour.

Emplacement (Figure 7)

The wall of the emplacement itself has five recesses at ground level. These were for immediate use shell storage when the gun was in action. The shells were stored vertically in these recesses.

Immediately above the shell recesses are five ring bolts with 7" rings. They provided lashing points for mounting and dismounting the gun and its carriage.

On the left, set high in the emplacement wall there is a small recess with a drop door. This was for small gun stores. The woodwork here is park renovated.

On each side of the emplacement gorge, set high in the walls, there are two small square holes. These originally contained wooden plugs which provided a bed for screws which held an iron bracket to the wall. An example of the type of bracket can be seen in the right gun emplacement in Lower Battery. The bracket held the tube box.

On the right flank of the emplacement, set into the parapet wall immediately above the cartridge serving hatch, there is a small recess with double wooden doors. It was intended to hold fuses and tubes. The woodwork is park renovated.

The cartridge serving hatch allowed the easy and protected passage of cartridges from the underground ammunition storage area to the gun emplacement.

The pit in the centre of the emplacement has remnants of the original carriage holding down bolts still in place. It has a central drain which is connected to the underground drainage system and a surface drain.

Gun Group Commanders Position (Figure 8)

The parapet wall extends to the right of the emplacement, past the steps and entrance well of the underground stores, to an upper level of the terreplein. This upper level was the area from which the gun was commanded by the Gun Group Commander. From 1903 he was linked to the Battery Commander by telephone. The instrument was housed in a box against the concrete wall on the west edge of the area at the opposite end to the flagpole. The box, telephone and telephone cable remained until the end of the Second World War but are not present today. Before the telephone was installed communication between the Gun Group Commander and the Battery Commander would have been by signal flag or lamp. When the telephone was installed flag and lamp signalling became important secondary methods of communication and remained so until the Second World War. A flagpole was used to fly certain signal flags. The present pole is on the site of the original.

Depression Range Finder Position

The parapet wall on the upper level of the terreplein was indented to accommodate the Depression Range Finder position. In 1898, the semi-circular indentation contained a concrete pedestal for the instrument. A recess in the parapet wall housed the leclanché cells and terminal board associated with the electrical transmission of data by cable from the Depression

Range Finder to the gun dials. Today there are two recesses of this type, one on each side of the position. The one on the left has double doors and woodwork renovated by the park while that on the right is without woodwork and in poor condition. It is not known why there should be two recesses. It may be that the first was poorly constructed. The pedestal was moved to a new position further left (east) in 1924 when a Fire Command Post was constructed on the site.

In its new location the Depression Range Finder pedestal was enclosed by a small wooden building with a shed roof from 1924 until it was removed in the 1950s. The pedestal remains on site today.

Steps (Figure 2)

The Record Plan of January 1903 shows three flights of steps in the area of the upper level of the terreplein. One is from the lower to the upper terreplein level and is located close to the parapet wall, a second is in the parapet wall between the first flight of steps and the Depression Range Finder parapet indentation allowing access to the glacis, and the third is at the north end of the west wall giving access to the top of the northern rampart of the emplacement. The flight from the lower to the upper terreplein level is remembered by eyewitnesses who were present in the late 1930s. Those in the parapet wall were most probably removed when the new Depression Range Finder Post and the Fire Command Post were built against the wall in 1924. The steps to the northern rampart had disappeared by 1943, perhaps much earlier. None of these three flights of steps existed when Fort Rodd Hill became a National Historic Park in 1962. Two flights of concrete steps, one from the lower to the upper terreplein level and the other in the parapet at its west end, were constructed by park staff in the 1960s. Both exist today (Figure 8). There is no historic precedent for them

Armament (Figure 9)

One 6-inch disappearing gun, the correct nomenclature of which was Ordnance B.L. 6-inch MK. VI. Registered No. 841 on Carriage H.P. Mark IV. Registered No. A791, was mounted in the emplacement between April 1896 and October 1897 by the Royal Marine Artillery garrison of Esquimalt under the supervision of Master Gunner Wild and Sergeant Armament Artificer Watson, both of the Royal Artillery stationed in Halifax, Nova Scotia, and temporarily posted to Esquimalt for this task.⁹ Except for one short period, the gun and carriage were in the emplacement until 1942-43. The gun barrel has survived until today and is on public display in the park. The technical details of the gun and its carriage are the subject of a separate report.

Both gun and carriage were manufactured in England and were shipped with others for Lower Battery and Macaulay Point, together with their ammunition and stores, to Halifax, and thence via the Canadian Pacific Railway to Vancouver and Esquimalt. The gun arrived in Esquimalt aboard the S.S. Charmer on 12 March 1896.¹⁰ It may have been mounted in the emplacement as early as July 1896. A Royal Artillery and Royal Engineer Committee Report of 3 July 1896 lists one 6-inch B.L. gun as mounted at Fort Rodd Hill,¹¹ but it is not known which of the three guns this was. All three were mounted by October 1897.

All of the Rodd Hill 6-inch disappearing guns were fired on 22 October 1897 by the Royal Marine Artillery of the Esquimalt garrison.¹² This was the first and proof firings of these guns after mounting. The first annual practice firing took place after the completed works and the guns had been officially handed over to the garrison by the Royal Engineers on 5-8 October 1898. The militia gunners of the 5th B.C. Regiment Canadian Artillery manned the guns on this first practice firing on 5 November 1898 under the supervision of Major W.F. Trotter and other officers of the Royal Marine Artillery.¹³ A third firing took place on 11, 12 November 1898 with Royal Marine Artillery of the Esquimalt garrison manning the guns.¹⁴ These

firings began a series of practices which continued until the First World War and probably until the 1920s.

At some time before May 1914, probably during 1913, the gun and its carriage, but not the overhead shield, were removed to the Menzies Street, Victoria, drill hall of the 5th B.C. Regiment Canadian Artillery. They were mounted there for training purposes. According to a tape recorded interview with ex-Corporal Logan, then a member of the unit, the gun was returned to Upper Battery in August 1914, shortly before the declaration of war.

Upper Battery was operational for the first three years of the First World War. In a letter dated 19 June 1917, the Officer Commanding the Royal Canadian Garrison Artillery and Fire Commander, Esquimalt, announced that all of the 6-inch H.P. batteries in the defences "... have lately been demobilized..."¹⁵ During the 1920s and 1930s these guns, including the one in Upper Battery, were classified as "Fortress Armament in Reserve and Allotted". They were last fired in 1924¹⁶ and were gradually replaced by modern weapons. Fort Rodd Hill's 6-inch disappearing guns were replaced in the Esquimalt-Victoria defences by new guns sited in new batteries constructed elsewhere in the area in the late 1930s. The gun and mounting remained in the emplacement at least until 19 April 1941 when it was photographed there. By 29 April 1943 it had been partially removed. The carriage and shield were cut up for scrap but the barrel survived, lying on the ground, until Rodd Hill was declared a National Historic Park in 1962. It is now displayed on two blocks just inside the entrance to Lower Battery. Nothing else remains of the gun and its carriage.

During the years from 1898 to 1941 there were few changes to the gun and its carriage. The details of the changes are given in the separate report on 6-inch disappearing guns. New siting gear was fitted by 1905. The gun always carried the designation "A/1" for fire control purposes and was expected to engage targets within an arc of 122° to 214° . Today, about half of the arc is blocked by trees. The trees have been

topped in the remainder of the arc.

Gun Emplacement Subterranean Structures - General (Figure 2)

The Upper Battery Record Plan of January 1903 indicates the - extent, location, construction details, including drainage system, and intended use of these structures when completed in 1898. There has not been any major physical change to the structures since.

Steps and Entrance Well (Figure 2)

The guard rails and davit hoist appear to be original. According to one of the sectional drawings on the Record Plan of January 1903 the two guard rails near the davit were flexible, almost certainly chain. Two boards are used today.

The entrance well allowed shells to be hoisted to the terreplein from the magazine using the davit. It also served as a light well for the subterranean chambers. A rifle or carbine rack stood against the wall immediately below the davit. Only the wall fastenings remain. Above the windows and doors opening into the well, two of the walls are drilled in a line of holes where supports once held a lintel. A similar feature can be seen at Duntze Head battery in its complete state.

Lamp Room (Figure 2)

Located at the bottom of the entrance steps, on the right, this room was intended for the maintenance and storage of the candle lamps which were the main source of illumination in the underground structures.

The entrance door may be original, the window and frame are park replacements. The bench and shelf which are shown on the Record Plan of January 1903 are missing. Those in the Lower Battery lamp room could serve as models for any replacement.

The room is brick lined and vaulted. Seepage was a problem which led to metal sheeting being fastened to part of the ceiling. The sheeting exists today and the seepage continues. Wall drillings and plugs indicate that it is most probable that the walls were panelled with narrow board in the same manner, as that to be seen today in the Lower Battery lamp room.

Crew Shelter (Figure 2)

This brick lined vault was intended to shelter the men serving the gun from enemy fire and inclement weather during stand-by periods. It also offered protection for wounded. Those sheltering there would not be expected to be there for more than a few hours. Furniture and fittings would therefore be rudimentary. Perhaps a table and some benches.

The Record Plan of January 1903 indicates double doors at the well entrance. They are missing. The ill fitting door frame is a park replacement. The window is of the vertical sliding sash type. The sashes are missing and panes and woodwork have been replaced by the park. Inside, the ceiling is partly lined with metal sheets to deflect seepage to the wall drainage channels. There is a ceiling ventilator. Regular drillings and wall plugs indicate that the shelter was once panelled, most probably with narrow board of the same pattern as that to be seen in the Lower Battery lamp room. There is a lamp recess between the shelter and the Royal Artillery store area. The frame, grill and glass door for this recess are missing. The short passage to the store area from the shelter was once closed by a pair of iron gates at the store end and double wooden doors at the shelter end. The gates exist today but the wooden doors have gone. The ill fitting door frame is a park replacement.

The shelter provided a convenient clear sheltered space in peace time which was convenient to the stores. It was used occasionally for ammunition and stores maintenance and examination.

R.A. Store (Royal Artillery Store) (Figure 2)

According to the Record Plan of January 1903 this was the brick lined vault at the west end of the underground stores area. It was intended to house all of the artillery stores associated with the maintenance and operation of the gun and ammunition. Such a store normally contained a work bench. Many of the tools were hung on the walls. All items were normally displayed in a recognised pattern so that any missing item would be noted immediately.

The vault fronts openly on to a passageway which links it with other chambers. Both passageway and chamber were lit by candle lamps in two lamp recesses in the passageway walls. Both of these recesses have lost their frames, grills and glass doors.

The vault walls have been drilled and plugged in a pattern which seems to indicate that they were panelled, probably with narrow board of the pattern to be seen today in the Lower Battery Lamp room. One wall has a series of holes and there are matching post holes in the floor to indicate the presence of a work bench extending the full length of the wall. Such a bench was a normal feature of an R.A. Store. A small free standing work-bench is present in the store today. Its origin and purpose are unknown.

The vault was used as a shell store at a later period. The work bench was probably removed then. The date of change is not known, but it was before 1931. There is no indication why it occurred, but it was probably done to place the R.A. stores in a vault having natural light, the original shell store.

Shell Store (Figure 2)

The brick-lined centre vault of the underground storage area was intended for storage of 400 projectiles according to the Record Plan of January 1903. The projectiles or shells were stored upright and it was common practice to stand them on some form of loose wooden flooring.

The vault fronts on a passageway with a window and doorway to the entrance well. The wooden double doors, their fittings and frame are probably original. The window is a vertical sliding sash type restored by the park. The sash cord is missing.

The vault walls have been drilled and plugged in a pattern which suggests that they were panelled or half panelled, probably with narrow boards to the same pattern as the panelling in the Lower Battery lamp room. The ceiling is partly metal sheeted and has a ventilator.

A long work bench presently stands against the full length of one wall. It may have been made from the materials in the bench originally in the R.A. Store next door. A bench was not a normal fitment in a shell store. It is most probably a remnant of the period when this vault was used as an R.A. store and the projectiles were stored in the original R.A. Store. The use of this vault as an R.A. Store began before 1931.

Besides the long bench, two types of replica shell are present in the store today, 23 of one type and 31 of another. There is no interpretation of the shell markings. They stand on loose wooden flooring, which is probably historically correct, and are fastened to it for security reasons. Apparently eight shells are missing. The mixture of an R.A. Store type bench and shells in one vault is incongruous.

Shifting Lobby (Figures 2, 10)

This entrance passageway to the cartridge store provided the opportunity for the application of clothing and other safety regulations to all personnel before entering the cartridge store, the potentially most dangerous storage area. A simple moveable wooden barrier with benches and pegs on both sides of it physically marked the point at which the special regulations for personnel entering the magazine were applied.

The Record Plan of January 1903 shows the arrangement of

barrier, benches and pegs in this lobby. Parts of the barrier, its hinge, the benches and the peg board are present today. The barrier bar, the bottom bar and the pegs are missing.

On the external side of the barrier, there is a lamp recess through the wall to the cartridge store allowing a lamp to be placed to illuminate the store without entering it. The lamp also illuminated the shifting lobby. The lamp recess has park restored frames and perspex doors at both ends. These are not replicas of the originals. Close by there is a hatch through which cartridges were issued from the store to the men responsible for moving them up the nearby flight of steps to the serving hatch where they were handed to personnel serving the gun. The shifting lobby ends at the entrance to the cartridge store.

The lobby's end wall has been drilled and plugged in a regular pattern, perhaps for panelling. The ceiling near this wall has a sheet metal lining. There is a ventilator in the ceiling.

Cartridge Store (Figure 2)

This brick lined vault is at the east end of the underground stores area. On the Record Plan of January 1903 its capacity is shown as 450 cylinders. Entrance to it is through double doors. There is a hatch for the issue of cartridges and two lamp recesses, accessible from outside the vault, where candle lamps, placed from outside the vault provided artificial illumination.

Cartridges of the type stored here were cased in cylinders or boxes or a mixture of both. Zinc cylinders were normally stacked on their ends, not more than three tiers high, with thin battens of wood between each tier to prevent the handles on the end of the lower cylinder from injuring the bottom of the cylinder above it. The cylinder also served as a case in

which to carry the cartridge from the cartridge store to the gun.

The vault is entered from the shifting lobby through double doors. The doors, their fittings and frame are probably not original but are similar to doors of this type and situation in Lower Battery. Just inside the doors on the right there is a small wall recess. This dates from the Second World War and was designed to hold a battery powered bullseye lantern, then a standard lamp for use in magazines.

The vault has two lamp recesses, one through to the shifting lobby and the other to the ammunition passage. The former has a frame and perspex panel fitted by the park. They are not replicas of the originals. The other recess has no frame, grill or glass. Between the two lamp recesses there is a ground level ammunition serving hatch which originally had a vertical sliding door which is now missing. The vault has a ceiling ventilator.

Ammunition Passage (Figure 2)

The ammunition passage is the route along which both cartridges and shells were passed from the storage vaults to the gun. The arrangement of stores and passages in Upper Battery allowed cartridges to be passed along one route to the serving hatch and the much heavier shells along another route via the davit hoist to ground level.

The Record Plan of January 1903 shows that the main drain for the emplacement and underground works lies under the Ammunition Passage floor. There are two inspection pits, one at the top and one at the bottom of the flight of steps in the passage, and a large catch pit at the west end of the passage. These features exist today.

The passage has five lamp recesses for candle lamp lighting: One at the top of the steps opposite the ammunition issuing hatch, one half way down the steps, one common with the

crew shelter, and one above the catch pit at the end of the passage. All are without their metal frames, grills and glass.

The passage rises in a flight of concrete steps from the shifting lobby to the ammunition serving hatch at the terreplein level. The hatch has a park replica vertical sliding door which does not operate, is probably similar to the original, but does not have the lifting handles, sash and fastenings that the original would have had.

Ventilator (Figure 2)

Each vault has a ceiling ventilation hole which is connected to the surface ventilator situated on the parapet above the entrance well. Each side of the ventilator has a louvred opening behind a wood door. At present one door is missing and some damage has occurred to the wooden louvres. There are a variety of catches on the doors including one of the type used on loophole doors in the Guard House.

The doors of the ventilator were opened or closed twice daily by the District Gunner according to the readings on the wet and dry bulb thermometer at the guard house.

Upper Battery. Minor Second World War Additions.

Anti-Aircraft Machine Gun Position (Figure 4)

A square concrete pit with a pedestal in its centre was constructed on the glacis, forward and to the left of the 6-inch gun, by October 1940. An anti-aircraft machine gun was mounted there during the war. The type of gun and its mounting has yet to be authenticated. At the beginning of the war Maxim, Vickers and Lewis guns were all present in the garrison and later Bren guns were added. Any one of these guns, or all of them at different times, could have been mounted here. The pit exists today in its original condition.

Rampart Structures (Figure 4)

Three small box-like structures were placed on the north rampart of the emplacement between the telephone exchange and the water tank between 29 April and 15 November 1943. Aerial photographs also show a flight of steps was cut into the bank alongside the east wall of the telephone exchange at this time, presumably to give easy access to the structures. The structures and steps had disappeared by 1950.

Nothing is known at present about these structures. The only physical trace of their presence remaining is a group of bolts anchored in the rock at their location. Further research should be able to throw light on this mystery.

Dummy Gun

A high oblique aerial photograph in the Fort Rodd Hill collection

dated 15 November 1943 shows what appears to be a dummy gun on the glacis south-west of the 6-inch gun pit. Other aerial photographs show that it was placed there sometime after 29 April 1943 and removed before 18 March 1944.

Nothing more is known about this dummy gun at present.

Sports Pitch (Figure 4)

A sports pitch was laid out on the flat ground between the Upper Battery Guard House and the water tank by 10 March 1944. There was a pitch on this site as late as 1950. The site is now occupied by a maple tree.

Anti-Aircraft Gun

There has been a verbal report of a 40mm Bofors anti-aircraft gun being mounted on the northern rampart immediately behind the emplacement in the early period of the Second World War. The same report stated that it was only there for a matter of days.

These reports have not been confirmed so far by other sources.

Upper Battery. Esquimalt-Victoria Defence Command Elements

General

The upper terreplein of the emplacement in Upper Battery has always been the site of command and control functions.

From the completion of the emplacement in 1898 until the 6-inch gun was abandoned it was the position from which the Gun Group Commander (GGC) directed the gun. A telephone, the flagpole and the Depression Range Finder were located in the area to enable him to carry out his duties in accordance with orders received from the Battery Commander. This was the only use of the area from 1898 until 1904.

From 1904 until circa 1945 the upper terreplein level was also the site from which all of the defence electric lights and perhaps the searchlights of the Esquimalt-Victoria defences were controlled. This command function was housed in a building completed in 1904.

From 1924 until 1940 the whole of the Esquimalt-Victoria coast defences were commanded from the upper terreplein from a building erected in 1924.

A telephone exchange was built to handle the lines associated with the searchlight, or the coast defence command, or both.

All three of the command functions operated separately, but in association.

Electric Light Directing Station. (Figures 4,8,11,12)

The role of the four electric lights of the Esquimalt-Victoria defences from 1902 to 1940, and of searchlights which replaced them, was to illuminate the harbour approaches for the light

quick-firing (Q.F.) guns of the defences. It was essential that the Electric Light Directing Station should be sited where the whole of the illuminated area could be seen. For this reason it was built at the west end of the Rodd Hill Upper Battery emplacement, on the upper terreplein level, in the parapet. In this location it was also directly above, and therefore ideally placed to direct, the single concentrated beam light situated on the Rodd Hill foreshore which was charged with the task of illuminating individual ships beyond, or at the limits of, the illuminated area.

The Electric Light Directing Station was authorised in 1902 and built between 29 May 1903 and 4 November 1904 by 44th Fortress Company Royal Engineers of the Esquimalt garrison at a cost of 104 pounds sterling. The details of the building were recorded on the Record Plan of September 1903. (Figure 11). The internal fittings included a long shelf under the observation slit, a small table in a rear corner and a stove. The walls were boarded and entry was by double doors.

This building exists today with little change to the basic structure. The small table is missing but its post hole is clearly visible in the concrete floor. The stove is also missing and its roof opening is blocked with concrete, but the shelf under the observation slit remains. Some of the wall boarding has gone. Eight cables remain fixed in a definite pattern on the walls, ending on the bench under the slit where they were once connected to instruments of some kind, possibly 4 telephones. The double doors are possibly original, are complete with fittings and have been secured open by park staff. Two of the steel shutters on the observation slit are closed.

The station was linked by telephone to the engine room and two lights at Rodd Hill, to the Officer Commanding Submarine Mining in the naval yard, Esquimalt, to the electric lights and engine room on that side of the harbour, and to the fortress exchange at Signal Hill.¹

The role of this building may have remained unchanged

until 1945, but it is likely that it changed as searchlight techniques and equipment developed. Some searchlight direction was undertaken from Belmont Battery from 1936 or earlier and from other locations during the Second World War. The explanation of this apparent conflict with, or dispersion of, the role of the Electric Light Directing Station will come from further detailed research into the development of searchlight command and employment.

Fortress Fire Commanders Post (Figures 4,8,13)

From 1898 until the end of the First World War this post was at Signal Hill. At some time, certainly by 1924, the post functioned at Signal Hill by day and at Upper Battery, Rodd Hill by night. Having the Artillery Fire Commander and the Searchlight Director in the same location during night operations improved coordination and command of the defences and was probably the initial reason for the Fortress Fire Commanders Post being located in Upper Battery.

A wooden shed was built on the upper terreplein of Upper Battery, abutting the parapet alongside the Electric Light Directing Station, to accommodate the Fire Commander, his staff and equipment. The site was occupied by the Depression Range Finder position. The pedestal for this instrument was moved to a new location further east along the parapet and a second and smaller shed was built around it in its new location. Both sheds were built between 21 January and 29 April 1924 using military labour.² Much of the material used came from the Navy Yard in Esquimalt, but the following list was purchased locally:-

- 700 lineal feet 4 x 3 dressed lumber
- 400 square feet 1½" single dressed
- 20 lbs 3" wire nails
- 10 lbs 4" -do-
- 3 gals stone coloured paint
- 1 roll roofing³

The Record Plan of September 1933 gives details of the construction of the Fire Commanders Post. It contained three concrete pedestals which supported the Position Finder, an instrument used in fire direction.

The exact date of installation of the Position Finder is not known. It was present in 1934, but was probably installed much earlier, although it does not appear on earlier annual returns of equipments. A description of the instrument and an explanation for its omission from returns are both contained in a letter from the Officer Commanding Royal Canadian Artillery, Esquimalt dated 20 April 1935:-

2. Position Finder C MK1 numbered 299 was vouchered from Ordnance to the RCA (5th Heavy Battery RCA) as non serviceable and the instrument is not complete. It is issued for drill and instructional purposes at the Fire Commanders Post, Upper Battery, Rodd Hill.
3. For the above reason, this Position Finder is not included in the list of technical stores (for the Annual Inspection Report 1934-35)....⁴

While the Fire Commanders Post in Upper Battery seems to have been, initially, only a night command post it very soon became the only Fortress Fire Command Post, operating by day and night to control all of the Esquimalt-Victoria coast defences. A report on the defence of the Pacific Coast of Canada in 1928⁵ considered the separate locations of the Fire Commanders Post, by day at Signal Hill and by night at Upper Battery, to be unsatisfactory. The defence scheme operative in 1939, which was probably written many years earlier, refers to the Fire Commanders Post in Upper Battery, does not mention a post at Signal Hill, and emphasises the need to establish visual communication by lamp and flag between the Fire Commander and all batteries to supplement the 1903 telephone communications still then in existence. Visual communication was possible from Upper Battery but not from Signal Hill. In view of this it

seems that the Fire Commanders Post for the Esquimalt-Victoria defences was solely at Upper Battery after the report of 1928 until it moved to temporary accommodation at Mary Hill in 1940 before its final move to Triangle Mountain. There is one unconfirmed aural report that defence exercises in the early 1930s were conducted entirely from Upper Battery. It should be possible to verify this and the fire command organisation with further research.

The post was demolished some time after 1950. The foundations and the three concrete pedestals which supported the Position Finder are clearly visible today. The shed covering the Depression Range Finder has also been removed. Only the pedestal remains.

Telephone Exchange (Figures 8,14)

Little is known of the history or use of this building at present. There is no reason to assume that it was directly associated with the Rodd Hill 6-inch gun batteries. It was most likely related to the rapid increase in line communications in the upper terreplein area of Upper Battery with the advent of the Electric Light Directing Station in 1904 and/or the Fortress Fire Commanders Post in 1924.

Various site plans from 1898 indicate a telephone located at the west wall of the upper terreplein but no exchange or exchange building appears until a site plan of 1944.⁶ It is not possible to positively identify a building on the site in any aerial photograph in the Fort Rodd Hill collection until 25 April 1941.⁷ There is no direct reference to the building in any document examined so far, but the defence scheme operative in 1939 does refer to an exchange or concentrator, normally located at Signal Hill, being transferred to Rodd Hill during the Precautionary Period when hostilities were imminent. One eyewitness claims that the building was present in 1931 and was used by Signals personnel then. There are indications

that all exchange activities at Rodd Hill were concentrated in the Fortress Plotting Room alongside Casemate Barracks when that was completed during the Second World War. This unsatisfactory historical situation can only be resolved among the ex-signalmen who served at Rodd Hill, some of whom are still living in the area.

The building standing today appears to be the original with no major structural change. The window and door appear to be original. There are no panes of glass in the window frame which has been boarded over with plywood for a number of years. The window frame is painted green and the door light grey. The green paint may be original and quite old, and seems to match traces of a similar paint on the dresser in the Upper Battery Guard House Kitchen. Internally there are traces of a shelf or bench against the west wall above a conduit containing several old cable ends.

Battery Commanders Post

General

The Battery Commanders Post, sited on high ground midway between Upper and Lower Batteries was the centre from which the two batteries were commanded in action as one fire unit. It was constructed between 1 March and 30 September 1901 and was operational until the 6-inch disappearing guns were removed from the batteries in the Second World War. The basic structure has survived well with some minor damage and losses of replaceable fittings.

The Record Plan of March 1906 shows the details of the building (Figure 15). The chart room accommodated the Battery Commander commanding the Fort Rodd Hill 6-inch disappearing guns, his technical staff and their instruments of fire direction. The concrete pedestal for the Depression Range Finder and the observation slit remain as features of the room today. At the rear of the post, a smaller room housed the telephonists and their instruments. The curtain which closed the message window between the two rooms is no longer present. Two external features, a flagpole and a carbine rack, are missing. The flagpole was a necessary part of the visual signalling system.

Chart Room Equipment

The equipment usually to be found in the chart room can be expected to have changed little over the years as the system of fire control of the three 6-inch disappearing guns underwent only minor changes within the battery. The pedestal for

the Depression Range Finder would have been marked originally with the following information:-

1. Direction of true North
2. Training (Bearing) and range of datum points
3. Height of Depression Range Finder on the pedestal above mean tide
4. Rise and fall of the tide
5. Ranges to prominent objects¹

There are remnants of this information on the pedestal today and the datum still exists but is obscured by trees.

When the chart room was manned the following items could be expected to be present:-

Fire Commanders Chart. (Figure 16.)

A duplicate of the Victoria-Esquimalt defences Fire Commander's chart showing the area of water covered by the 6-inch disappearing guns marked in 400 yard squares, oriented north and south, numbered and colour coded for the Rodd Hill fire unit of three 6-inch guns. A metal pivoted range scale was used on the chart.

Battery Commanders Chart. (Figure 17.)

Marked with the arcs of fire of each of the three disappearing guns at Fort Rodd Hill and having a fixed training (bearing) arc and pivoted range scale

Target Indicator Card. (Figure 18.)

Used by the Depression Range Finder operators to obtain range and training (bearing) of the centre of each square in which the Rodd Hill 6 inch guns could be brought to bear.

Battery Commanders Drum. (Figure 19.)

Not a musical instrument, but a simple device for producing corrections to range and deflection required when firing at a moving vessel.

Group Difference Disc & Table. (Figure 20.)

Used together to calculate the correction to range to be made to allow for the displacement of the three guns of the Rodd Hill fire unit in two emplacements - Upper & Lower Battery.

Depression Range Finder.

This instrument, oriented to bearings on the Fire Commanders Chart, when directed at a target, produced visual data for the guns. In the early years of Fort Rodd Hill the instrument probably produced range only. Later modifications to the instrument itself and to transmission equipment associated with it allowed both bearing and range to be transmitted. In its final form various corrections, until then calculated separately, could be set on the instrument, providing for their automatic inclusion in the transmitted bearings and ranges.

Mechanical dials.

A manually operated dial on which the gun data obtained from the Depression Range Finder and calculations by the staff was set. Separate dials were used for range and bearing. When set, the data was transmitted electrically to similar dials at each of the three 6-inch disappearing guns. One unconfirmed report places these dials in the adjacent telephone room.

Temporary Cover for Depression Range Finder.

When mounted on the pedestal the Depression Range Finder was protected when not in use by a canvas or linen or wooden box cover.

Leclanché Cells.

The source of electricity for data transmission.

A log sheet recording the hours worked would have been kept near the bank of cells. A bank of approximately 20 cells would be needed to power the dial circuit and another of 3-4 cells for lighting.

A Depression Range Finder is held in the Fort Rodd Hill collection. The original data transmission cables (R.A. dial circuit) can be seen outside the post. None of the other equipment exists at present.

Telephone Room Equipment

When manned the telephone room was occupied by a maximum of two signallers. Two telephones were present, one on the Fire Command line linking all of the Victoria-Esquimalt defences and a second on a line to the Gun Group Commanders in Upper and Lower Batteries. Other equipment in the room may have included a terminal board for the telephone circuits, an R.A./R. Sigs junction box on the R.A. dial circuit, and possibly the mechanical dials also on this circuit.

The building has undergone no major structural changes. The doors, window and observation slit shutters are missing. Several patches of concrete facing on the brick work at the rear of the building have broken away. See Figure 21.

The view from the building, which should be clear over the whole arc of fire covered by the three 6-inch disappearing guns, 60^0 to 214^0 , is now almost entirely obscured by trees.

Lower Battery Gun Position Chronology

	1894-5	Purchase of Rodd Hill Site
22 April	1895	Authority for construction
6 September	1895	Construction begins
	1895	Date on stone of magazine
12 March	1896	6-inch disappearing guns arrive Esquimalt aboard <u>Charmer</u>
29 April	1896	Master Gunner Wild and Sergeant Armament Artificer Watson of the Royal Garrison Artillery, Halifax arrive Victoria to supervise armament mounting
3 July	1896	One 6-inch gun mounted at Rodd Hill
22 October	1897	6-inch disappearing guns, Rodd Hill, proof firings.
31 March	1898	Official completion date Lower Battery
5-8 October	1898	Rodd Hill handed over to artillerymen of Esquimalt garrison
5 November	1898	6-inch disappearing guns, Rodd Hill, fired in practice for first time
	1902	Reserve water tank built
	1902	S.A.A. store reappropriated for lyddite shells
15 June	1903	Newly installed telephone system linking Lower Battery with the remainder of the defences tested in exercise
28 January	1903	First set of Record Plans
9 May	1906	Transferred from British to Canadian army
19 June	1917	Battery demobilized
from	1920s	6-inch disappearing guns designated "Fortress armament in reserve and allotted"
<u>circa</u>	1923	6-inch Q.F. gun mounted on glacis
	1924	Last firing of Rodd Hill 6-inch disappearing guns
<u>Circa</u>	1928	Mains water and electricity connected
	1928	Oil store built
	1939	Wire security fence along shore line
September	1939	Guard House used as N.C.O. accommodation and then as offices.

	1940	Changes and additions to skidding store
	1940	6-inch Q.F. gun removed
<u>circa</u>	1941	Plotting Room constructed
<u>circa</u>	1942	Two buildings erected on west glaci
	1942-43	6-inch disappearing guns removed
25 January	1943	Fortress Plotter shipped from Halifax
29 September	1943	40 mm light anti-aircraft gun emplaced
- 15 October		
	1943	War Shelter erected near water tank
<u>circa</u>	1943	Machine gun pit constructed between emplacements
by 21 December	1943	Plotting Room Operational
	1944-54	Skidding store area cleared of buildings
	1945	40 mm light anti-aircraft gun removed together with ancilliary buildings
	1951	Plotting room becomes A.A.O.R.
	1954	Fort redundant
	1958	Caretaker supervision severely restricted - considerable vandalism
	1962	Fort Rodd Hill declared National Historic Park
	1960s	Repairs and renovation of buildings, construction of steps by park staff and local contract
	1975	Fortress Plotter obtained by park installed in Fortress Plotting Room

Lower Battery 6-inch Gun Position

General

Lower Battery contains two distinct parts; Casemate Barracks and the 6-inch gun position. This and the following chapter cover the 6-inch gun position only. The barracks is the subject of a further chapter.

The gun position was completed in 1898 as a self contained work mounting two 6-inch disappearing guns. The guns were two of three in the Rodd Hill fire unit which existed from 1898 until circa 1941. The guns were then removed. Adaptive use of the position began circa 1923 and was intensified during the Second World War, but this involved few permanent changes. Most of the original works have survived, basically unchanged, to the present. Those works are the subject of this chapter the additions are described in the next chapter.

Main Entrance Gates (Figures 23, 24)

The original steel double gates are still in position, dating from 1898. One of the gates has a wicket. The following deficiencies are noticeable:-

Left gate	Loophole covers jammed shut
	Crossbar retaining pin missing from chain
	Bottom gunmetal roller missing
Right gate	Bolts on wicket missing
	Loophole covers jammed
	Bottom gunmetal roller missing

The gates, the wicket and their fittings are the same pattern as those in Upper Battery.

North Gate (Figures 24,26)

This double gate allows access to Casemate Barracks. There is no sure evidence of the design of the original unless it survived until 1938 when the gate appears clearly in the background of several photographs. See Figure 26. The 1938 gates were of wood. The present gates are also of wood but are of a different pattern from those of 1938.

Defensible Wall (Figures 24, 29)

The original defensible wall, dating from 1898, is intact. It is similar to the defensible wall of Upper Battery with regard to its height, thickness, material, foundations, types of loop-hole, coping and position on the north side of the battery to protect it from landward attack.

Unlike Upper Battery, the Lower Battery Guard House does not penetrate the wall. A bastion was constructed between the Guard House and the main gate to provide an opportunity for enfilade fire along the wall and across the main gate. There is a second gate in the wall at the north corner opening directly into Casemate Barracks. See 'North Gate' above. From the Main Gate to the North Gate there is an extensive concrete banquette behind the wall.

The defensible wall protects both the gun emplacement and Casemate Barracks. Internal passage between the two areas is via a tunnel which can be closed by a heavy iron gate. The gate is intact today. Above the passageway and gate is a levelled area with a concrete parapet forming a caponnier from which the rear of the defensible wall and the passageway to Casemate Barracks could be covered by fire. With the tunnel closed the gun emplacement becomes an inner defensive position bounded by earthworks and the defensible wall, a second line of defense if the Casemate Barracks fell to an attack. The hand rail up the steps to the level area of the caponnier, and at the back of it, is patterned on the 1898 railing in the park and was

installed by the park as a safety measure.

A noticeable weakness in the overall design of the emplacement area lies in the fact that the two gun positions are both open to the rear, and are higher than the defensible wall. They could therefore be made untenable by well aimed small arms fire from beyond the wall making a physical assault on the gun positions unnecessary and nullifying, to a great degree, the purpose of the defensible wall.

Earth Breastwork

When Lower Battery was completed the ground to the east of the glacis and immediately behind Casemate Barracks, now the site of the Fortress Plotting Room, sloped to the beach in a small low ridge. If it had been occupied by an enemy assault, Casemate Barracks would have been untenable for the defence. To prevent its occupation an earth breastwork was constructed on the ridge.

The exact date of construction of this work is not known. It may have been constructed as early as 1898. It appeared on site plans of the area drawn during the planning of the construction of the Plotting Room.¹ It was destroyed when the area was excavated before the Plotting Room was built.

Wire Fencing

Barbed wire was not included in the defences of Lower Battery except for a period during the Second World War when a coiled barbed wire fence was erected on the beach at the foot of the rock face of the battery.

In 1939 a wire security wire fence ran along the shore east and south of the battery from the jetty gate to the searchlight position.² It was mounted on metal posts set in concrete blocks and continued around the perimeter of what is now the park. By 1964 the fenceline in front of Lower Battery had moved up on the edge of the glacis.³ The fence was removed

by the park after 1964. Remnants of it are still visible at various points on the park perimeter.

Guard House (Figures 24,25)

Dating from 1898, this sunken building near the main gate of Lower Battery has survived without any apparent major structural change. The details of the original building are shown in the Record Plans of January 1903. It has the same general three room layout as the Upper Battery Guard House with the defensible wall acting as the rear wall of the building. There is a verandah along the front and a latrine on the south end.

The verandah has been repaired by the park and re-roofed twice, the first time using Duroid shingles and the second using cedar shingles.

The bedroom at the north end of the building has three loopholes in one wall. Their woodwork appears to be generally in good condition with the remnants of the original circular brass catches on two doors. The room is entered from the central living room. The door & frame appear to be original, but the door has been removed and is stored in the room while a half door has been installed in the frame by the park to allow public viewing of a temporary display without public access. The single window has been renovated by the park. There are two metal racks on the wall, one each side of the window. Apparently these are original. They could serve as the model for restoration of the racking in the Upper Battery guard house and in Casemate Barracks.

The centre room is entered from the verandah. The door appears to be original and has handles and an old lock which does not work. It is debased by a heavy modern hasp and padlock. The room's two sash windows are park renovated. There are four loopholes in one wall, three of standard size with a single door and one which is double doored. The latter has an angled loophole to allow fire to be directed across the entrance

to the gate. Only two of the loophole doors have remnants of catches. At the south end of the room there is a concrete pad for a stove with a wall flue above. A stove stands there at present complete with chimney pipe to the flue. It is not the original and most probably not even of the same type. The corner cupboard near the stove is of the same type as that in Upper Battery and probably dates from 1898. There are traces of electrical wiring on the ceiling.

The kitchen is at the south end of the building. Unlike Upper Battery it has an outside door as well as a door to the living room. Apparently, both doors are original. Both have old locks & handles. The outside door is sullied by a modern bolt. The single sash window is park renovated. There are two loopholes in one wall of the room, both having wooden doors with remnants of the original catches on them. The concrete floor pad for the stove was replaced by the park in the 1960s. A modern electrical conduit enters the room by the back door & then runs along the base board to a wall outlet. The original sink which was in the corner of the kitchen and probably dates from 1898 is broken and is stored by the park. Remnants of the plumbing remain.

All of the floors in the Guard House were present in 1962 when Fort Rodd Hill was declared a National Historic Park. The windows have been renovated by the park. Apparently all of the loophole door catches were originally of the same pattern as those in Upper Battery.

The external latrine on the southern end of the building originally contained a dry earth toilet and a urinal. Neither are present today. Originally, only the toilet was roofed. Now, a wooden roof covers the whole latrine, placed there before 1962. An outer door, a later addition, is missing, but the frame remains. The toilet has a door which may be the original. At some time, probably in the 1930s, a flush toilet replaced the dry earth toilet. This has now gone and the sewer pipe has been sealed with concrete. Other piping still exists

and there is an electrical fuse box on the same wall.

There is no record of the Lower Battery guard house being used for its original purpose. In 1899, the guard house was earmarked as temporary accommodation for two non-commissioned officers and six rank and file of the Royal Garrison Artillery while Work Point Barracks was being enlarged. In the 1930s it was used by the staff of the School of Artillery as an office and possibly a lecture room during summer training. In September 1939 Sergeant-Major McLeod and two non-commissioned officers used the building as their quarters for a short time until it was needed for battery offices. By 1944, it was allotted as quarters for eight men. For a while, it contained a Medical Inspection Room. The red cross painted on the defensible wall denoting this was in existence in 1962 and was removed by the park. The bed room was used for a period during the Second World War as a communications centre of some kind, perhaps related to anti-aircraft defence. There are a series of marks on the north wall of the room which indicate the position of a shelf which once held radio equipment.

Currently the guard house living and bed rooms accommodate a display of Royal Marine Artillery uniforms and equipment during the summer. This has promoted the substitution of a half door for the original connecting door and the fixture of a rifle rack to a wall of the living room. There appears to be no historic precedent for this display being located here,

Water Tank (Figure 24)

A 7500 gallon water tank is shown in detail on the Record Plan of January 1903. The same tank exists today, structurally unchanged. It is the twin of the tank in Upper Battery and was most probably built at the same time in 1902.

From 1898 until the tank was built the water for the battery was drawn from the reservoir outside the main gate. By 1905 a ram pump outside the battery was supplying the tank

with water from the reservoir. The stand pipe immediately outside the guard house front door may have been installed by 1905 also. In 1928 the tank was connected to the municipal water supply.

The tank's roof hole is closed by a thick concrete slab which may be a later refinement. Two pipes are still connected to the tank but not to any water supply.

Right Depression Range Finder Position (Figure 23)

The pedestal, concrete semi-circle wall and recess dating from 1898 are still in existence. A Depression Range Finder mounted there could have been used in the direction of the fire of the gun near it, or both guns of Lower Battery, or as an alternative for the instrument in the Battery Commanders Post in the direction of all three 6-inch guns at Rodd Hill.

The pedestal was modified at sometime, apparently to allow the installation of a switch box and power cable for the illumination of the instrument for night use. Further research should confirm this and establish an approximate date for the modification.

The recess was intended for Leclanché cells used to power the dial circuit by which data from the Depression Range Finder was passed to the gun. It was closed by double doors. Those present now may be the original. One of them is badly damaged and the other in need of repair.

According to the Record Plan of January 1903 a flight of steps led to the position from the nearby gun emplacement. These no longer exist. A flight of concrete steps was constructed by the park in approximately the same location in the 1960s.

The park also installed a flight of concrete steps from the Depression Range Finder Position to the glacis and concreted the area between the two flights of steps at the same time. There is no historic precedent for this work.

Immediately to the left of the top of the steps to the

glacis, on the parapet, there is a small concrete square. It was probably placed there as a pad for the front legs of the maxim machine gun parapet mounting.

Right Gun Emplacement. General. (Figures 23,24,25)

Completed by 1898, this work was designed to mount a 6-inch disappearing gun. It has undergone no major structural change since its construction. Most of its features are identical to those in Upper Battery although their juxtaposition within the emplacement is different.

Crew Shelter (Figure 24)

There is a crew shelter at the far right of the emplacement, set below the terreplein. Its structure is original. It had the same protective role as the shelter in Upper Battery. Concrete steps lead down to an entrance well off which there is an open fronted vault. A cable, probably dating from the Second World War, now leads into the vault. It has broken from the wall brackets which once held it. Its purpose is not known at present. The presence of the cable may indicate that at some time the shelter had another role.

Dial Recess (Figure 24)

Immediately to the left (east) of the crew shelter, between it and the gorge of the emplacement, there is a dial recess. It presently contains four damaged cables, once part of the dial circuit, fastened to three boards and two battens of the original panel which was once on the back wall of the recess. The recess was closed by double wooden doors. The doors that are present may be original. They are in need of repair and the door frame has rotted.

Right Gun Emplacement (Figure 24)

Dating from 1898, it is U-shaped and flared at the gorge and has undergone no structural change since construction. In the wall at ground level there are five recesses beginning with a large one on the right. They were intended to hold immediate use shells which were stored upright. Above the recesses are five 7" ringbolts for use in mounting and dismounting the gun & carriage. On the left of the gorge, at ground level, there is a cartridge recess closed by double wooden doors which are in good condition and may be original. Above and to the right of the cartridge recess there is a smaller recess closed by a hinged drop door which was for the storage of small gun stores. On each side of the gorge set high on the walls there were brackets which held the tube box. The bracket on the right wall is still there. It could serve as the model for any restoration of all of these brackets in all three 6-inch emplacements.

The gun and carriage originally mounted here were removed. The lower roller race, traversing rack and roller ring of the carriage were still in the emplacement when Fort Rodd Hill was declared a National Historic Park in 1962 and are present today.

To the left of the emplacement, high in the parapet wall, there is a small recess with a single door. It was used for fuse and tube storage and contained a shelf. The woodwork is in good condition today. On its left is the ammunition hatch through which shells and cartridges from the underground magazine were passed to the gun. Wall drillings indicate that the hatch once had a lintel. Near the hatch, on the end wall, there are drillings for two brackets in a similar position to those in Upper Battery. Their use is not known at present.

Traverse (Figure 25)

The mound between the two gun emplacements of Lower Battery was completed by 1898. It sheltered a path between the two emplacements,

was stepped to provide an observation or firing platform, and had a flight of steps to the glacis and a flagpole. The details are contained in the Record Plan of January 1903.

The step was probably the position from which the Gun Group Commander exercised his command of both 6-inch disappearing guns in Lower Battery. There is some doubt about this because if the Gun Group Commander was on the step he would have been too far from both of the Depression Range Finder positions in the battery and his field of view would have been obscured by gun smoke. It is more likely that the step and its parapet was intended as a position for riflemen if the battery was subjected to a frontal attack.

The step and original flight of steps to the glacis are not present today. A flight of concrete steps leads from the path to the glacis. They are not in the same place as the original steps and were built by the park in the 1960s. The original flagpole was on the step, today's pole is at the edge of the glacis. The original work was probably destroyed during the Second World War when an anti-aircraft machine gun position was constructed on the edge of the glacis. See 'Machine Gun Pit'.

The path between the two emplacements is present today. It slopes from the emplacement on the right (west), is lined by the original guard railing, but ends on the left (east) in a flight of concrete steps constructed by the park in the 1960s. There is no historic precedent for these steps.

Left Gun Emplacement (Figures 23,24,25)

Completed in 1898 and designed to mount a 6-inch disappearing gun, this emplacement is a mirror image of the right gun emplacement. The ammunition hatch and fuse and tube storage are on the right, and the crew shelter and dial recess are on the left. There have been no major structural changes to the emplacement since it was constructed. The details of construction

and layout are described in the Record Plan of January 1903.

The fuse & tube storage recess has one door broken and is sealed shut. The doors and frame of the cartridge recess and the dial recess are in generally good condition. The original data cables are inside the dial recess but the backboard has gone leaving only the wall plugs to mark its presence. The tube box brackets are gone from the walls on either side of the gorge.

The emplacement contains the same remnants of the carriage of a 6-inch disappearing gun as the right gun position. Most of these remnants were in position in 1962.

One curious feature unique to this emplacement is the step in the top of one section of the wall surrounding the gun pit. Research has so far failed to explain this feature.

The original flight of steps from the terreplein to the Left Depression Range Finder Position - see below - were replaced with concrete steps by the park in the 1960s.

Armament (Figure 27)

Two 6-inch disappearing guns were mounted in the two emplacements in Lower Battery between April 1896 and October 1897 by the Royal Marine Artillery garrison of Esquimalt under the supervision of Master Gunner Wild and Sergeant Armament Artificer Watson, both of the Royal Artillery stationed in Halifax, Nova Scotia, and temporarily posted to Esquimalt for this task.⁴ Both guns remained in their emplacements until they and their carriages were dismantled and cut up for scrap during 1942-3.

The correct nomenclature of these guns was:

Right: Ordnance B.L. 6-inch MK.VI. Registered
No. 842 on Carriage H.P. Mark IV Registered
No. A792.

Left: Ordnance B.L. 6-inch MK.VI. Registered
No. 844 on Carriage H.P. Mark IV. Registered
No. A796.

Both were manufactured in England and were shipped with the gun destined for Upper Battery. They arrived in Esquimalt aboard the S.S. Charmer on 12 March 1896.⁵

Both were proof fired with the Upper Battery gun by the Royal Marine Artillery on 22 October 1897.⁶ All of the Rodd Hill 6-inch disappearing guns were fired again in the first annual practice by militia gunners of the 5th B.C. Regiment Canadian Artillery on 5 November 1898.⁷ The Royal Marine Artillery of the Esquimalt Garrison fired the guns in practice on 11, 12 November 1898.⁸

All of the 6-inch disappearing guns in the Esquimalt-Victoria defences were manned between 1914 and 1917. They were then in fortress reserve until 1942-43 and reportedly were last fired in 1924.

The right (west) gun of Lower Battery always carried the fire direction designation "B/1" and was expected to engage targets within an arc of 83° to 216° . The left (east) gun carried the designation "B/2" and its arc of fire was 60° to 215° .

Left Depression Range Finder Position (Figures 23,24)

The Record Plan of January 1903 shows a Depression Range Finder position in the parapet of the salient on the left flank of Lower Battery. An instrument here could have been used to direct the fire of one or more of the 6-inch disappearing guns at Rodd Hill.

The original position for the instrument exists today. The pedestal has been modified to accommodate a switch box and cable needed when the instrument was adapted for use at night. The leclanché cell recess near the pedestal has lost its doors and door frame.

The earth parapet between the instrument pedestal and the emplacement has been disturbed. Two flights of concrete steps, built by the park in the 1960s, now lead to the glacis. They

have no historic precedent. The original arrangement of the parapet was photographed. See Figure 28. The small concrete pad to be seen in the photograph under the front of the Maxim machine gun parapet mounting exists today.

Thermometer Box

A thermometer box of the same pattern as that in Upper Battery is attached to the end wall of the Artillery store. The box is a park replica. The original contained a wet and dry bulb thermometer which was read twice daily by the District Gunner who used the information to adjust the ventilation of the magazine.

Artillery Store (Figures 23,24,25)

The details of this sunken concrete building are given in the Record Plan of January 1903. It dates from 1898 and is apparently unchanged structurally and internally. The two benches, door and window originally prescribed are present. The row of wall hooks above the longer bench appear to be original.

The store was intended to hold all of the artillery stores, tools and equipment associated with the operation and maintenance of the gun. It apparently shared this role with the skidding shed nearby until the 6-inch disappearing guns were dismounted, when it was used as general storage until 1954.

S.A.A. Store (Figures 23,24,25)

This sunken concrete building adjacent to the Artillery store dates from 1898. The details of its construction are given in the Record Plan of January 1903.

The building exists today, apparently in its original form. The outer door is complete and opens to a small lobby. This fulfilled the same purpose as the shifting lobby in the magazine.

It was a place where the regulations for the ammunition storage area were applied. The inner door to the storage area is missing. The door frame and remnants of the hinges remain. The store window is probably original and is heavily barred on the outside. The ammunition storage room is brick lined and has a wooden ceiling of narrow tongue and groove boarding which is a park replacement.

Although built originally to house 785 boxes of small arms ammunition, the store was reappropriated in 1902 as storage for 300 Lyddite shells which were issued at that time. This apparently did not require any change to the store. When the 6-inch guns were dismantled in 1942-43 and the ammunition removed the building was used for general storage until 1954.

Skidding Store (Figures 23,24,25,29)

This building appears on the Record Plan of January 1903 and most probably dates from 1898. It was sited between the Artillery Store and the main gate to house the larger artillery stores, such as repository equipment.

Apparently, it existed in its original form until 1940 when the sliding door at the west end was replaced with a small enclosed porch and the building was used as a mens mess. At the same time another building was erected on its north-west side and a lean-to on its south-east side. The former was accommodation for the cooks and the purpose of the latter has yet to be established. All three buildings were removed between 1944 and 1954.

Subterranean Magazine - General (Figures 24.)

The Lower Battery Record Plan of January 1903 indicates the location, extent, construction details and intended use of the various rooms and passages of the magazine area. There have been no major structural changes since. While the elements of

lamp room, shifting lobby, cartridge store and shell store are the same as those in the underground area of Upper Battery the layout is very different, a lamp passage is included and a crew shelter and R.A. store omitted. The latter are to be found elsewhere in the battery. The magazine was excavated from solid rock and dates, according to the stone over the entrance, from 1895. It was handed over to the garrison as part of the completed works at Rodd Hill in 1898.

Entrance (Figure 24,25)

Unlike Upper Battery there are no entrance steps. A gently sloping walkway leads from groundlevel, past the lamp room to the double entrance doors. At the bottom of the ramp, a rifle or carbine rack stood against the wall on the right, opposite the lamp room. Wall plugs and the bottom of the rack indicate the position of the original rack.

The double entrance doors are probably original. They are badly scarred where a variety of locks have been fitted and forced. Only two bolts remain. The lower one is probably a later addition. Both doors are now fixed permanently open.

Lamp Room (Figure 24)

This room is situated on the left of the entranceway immediately before the double doors. The candle lamps used in the magazine were stored and maintained here.

Except for a small area behind the door, the room is panelled with narrow tongue & groove boards. There is a bench and shelving. The door is in good condition and has a latch. The window has a broken sash cord. Everything is apparently original and is generally in good condition. The paint colour may not be correct. The woodwork here could serve as a model for similar woodwork that is now missing from Upper Battery.

Shell Storage Vaults (Figure 24)

Unlike Upper Battery where a single vault was devoted entirely to shell storage, the shells in Lower Battery were stored in two long narrow vaults joined in the form of a letter T which were also ammunition and entrance passages. The Record Plan of January 1903 indicates that shells were stored in two rows in one vault and in four rows in the other.

One vault, the vertical of the T, begins at the magazine entrance door. It is brick lined. The shells were stored against the left (east) wall in four rows. The opposite wall has been drilled and plugged at regular intervals and has several short pieces of wood fixed to it. These are believed to be the verticals of wooden brackets from which fire buckets hung. The variety of the pieces suggests a variety of fixtures and usage. A modern electricity conduit runs along the centre of the ceiling to a light fixture at the south end.

The cross vault is brick lined and slopes from its ends to the centre. Two lines of shells were intended to stand against the southern wall. At each end there is an ammunition serving hatch closed by a vertical sliding sash type door. The doors are park replacements and are fixed partly open. The sash cords are missing and the doors do not have handles. There is a lamp recess in the wall opposite each hatch. Neither have frames, grills or glass door. There are two ceiling ventilation holes, one above each sloping area.

The central part of this vault is level. The cartridge store hatch is in the north wall. Above it there is a line of wall plugs at ceiling height. Their purpose is unknown. There is a lamp recess in the opposite wall. It is without its frame, grill and glass door.

Most of the walls and ceiling of this long vault are apparently cement rendered. Thin metal sheeting covered the southern wall and half of the ceiling for much of the length of the vault. It has been partly removed & is damaged in places. Many of the wooden battens are missing.

There are displays of replica shells on heavy wooden framing in both sloping areas of the vault. That at the east end has 30 shells of one kind and 22 of another with a total of five shells missing. The other display has 31 of one kind and 30 of another with two apparently missing. The heavy wooden platforms provide a level surface on which the shells stand upright three abreast. The principle of the platforms is probably historically correct. Shell storage in the sloping parts of the vault would only be possible with some form of levelling platform(s). The existing platforms were present when Fort Rodd Hill was declared a National Historic Park in 1962. They may indicate a rearrangement of the original shell storage arrangements.

Shifting Lobby (Figures 10,24)

Just inside the magazine entrance doors, on the right, is a short passageway leading to the cartridge store. It functioned as a shifting lobby where clothing and safety regulations were applied by all personnel entering the cartridge store, the potentially most dangerous storage area in the magazine. The Record Plan of January 1903 shows an arrangement of barrier, seating, shelving and pegs very similar to that in the Upper Battery shifting lobby. The Lower Battery lobby is in better condition and would provide a model for any restoration of the Upper Battery lobby.

Two walls of the vault are panelled with the original narrow tongue & groove board. This is generally in good condition although some boards have warped. Thin metal sheeting covers part of the ceiling. There is a lamp recess at the end of the lobby. Its original metal frame is present, but the grill and glass are missing. The benches and barrier are present and in good condition, but the barrier bottom board is missing.

Cartridge Store (Figure 24)

This brick lined vault is centrally placed in the Lower Battery magazine and is entered from the shifting lobby. The details of its construction are given in the Record Plan of January 1903.

The store is entered by double doors. Those present are almost certainly original. The brass lock, handle and bolt plates are original and were specified for cartridge store use to reduce the risk of sparks from metal accidentally struck.

Just inside the door, in the right wall there is a small open recess. This was made in the Second World War to accommodate a battery powered bulls eye lantern then used for magazine work.

In the same wall there are two lamp recesses which have their original frames and grills but are without glass.

Opposite the door there is a service hatch at ground level through which cartridges were passed on the first stage of their journey to the guns. It is closed by a vertical sliding door now fixed in an open position. The door has two brass handles. These could serve as a model for the replacement of those missing, or omitted, from other hatch doors in both Upper and Lower Batteries.

According to the Record Plan the storage capacity of this vault was 60 cases. The fact that cases are referred to here and cylinders are referred to on the Record Plan of the cartridge store in Upper Battery is of no particular significance. Both cases and cylinders were used for storage and either, or more likely a mixture of both, could have been used at Rodd Hill. Further research should establish the type and total number of containers in the store when it held 6-inch cartridges.

The vault is now lit by electric light. The conduit enters through the central ceiling ventilation hole and leaves by one of the lamp recesses.

The vault has a surface ventilator with four louvred

openings closed by doors. Two doors are missing & some of the louvres require repair or replacement.

Lamp Passage (Figure 24.)

This narrow brick lined vault is on the west side of the cartridge store off the shell store/ammunition passage. Its sole purpose was to allow lamps to be placed in three lamp recesses, two lighting the cartridge store and one the store side of the shifting lobby, without entering the store or lobby, thus reducing the risk of explosion. One of the lamp recesses has a fitted frame and glass door which is a park renovation and the others are without frames, grills and glass.

The passage is now lit by electric light. The conduit passes from the cartridge store by a lamp recess to the shell store/ammunition passage along the centre of the ceiling.

Lower Battery 6-inch Gun Position Additions

General

The 6-inch disappearing guns of Lower Battery were demobilised in 1917 and from then on were mainly regarded as reserve armament. Beginning circa 1923, the battery began to be used for different purposes. First a 6-inch Q.F. gun was mounted for training purposes then, early in the Second World War, the fortress plotting room was constructed on the battery perimeter and a machine gun pit was placed on the traverse between the two 6-inch guns. During the later war years the left 6-inch gun emplacement was used as a light anti-aircraft gun site and several temporary buildings were erected. Only the plotting room and machine gun pit remain today. All other additions were removed before Rodd Hill was declared a national historic park.

6-inch Q.F. gun (Figure 31)

The 6-inch disappearing guns mounted at Fort Macaulay and Fort Rodd Hill were demobilised in 1917. From that time they were regarded as reserve armament. The first step toward their complete replacement occurred in the 1920s when four ex-naval 6-inch Q.F. guns were included in the defences. Two of these were mounted operationally on 15⁰ mountings at Macaulay, replacing two of the 6-inch disappearing guns there in 1922.¹ The other two were mounted for drill purposes at the Bay Street Armoury in Victoria and at Rodd Hill. They were intended to be interchanged with the two guns at Macaulay when those guns reached their condemning limit for firing.

The Rodd Hill gun was mounted on a wooden platform on the

south-east part of the glaciis circa 1923. The correct nomenclature of this gun is: Ordnance 6-inch Q.F. 'B' Mk II on P Mk II mounting. It is most probable that this gun and its carriage, like the other three incorporated in the defences, originally formed part of the main armament of H.M.C.S. Rainbow, a light cruiser and the first R.C.N. depot ship at Esquimalt. Rainbow was formally paid off on 1 June 1920 and towed away for scrap. The gun at Rodd Hill was a naval gun on a naval pedestal, between decks mounting.

The gun on the glaciis of Lower Battery was never fired, the mounting did not allow that. There are several accounts of it being used for gun drill during the 1930s. Today, the position of the gun is marked on the glaciis, but the gun was removed circa 1940 and the wooden platform disappeared sometime after March 1944.

Fortress Plotting Room (Figures 32,33)

This underground, bomb proof structure with its heating, air conditioning and air purification plant was built to provide a central computation area for the fortress system of range finding which would be able to operate while under attack by high explosive or chemical weapons. The fortress system of range finding was the most sophisticated developement of coast artillery gunnery and the fortress plotting room was the heart of the system.

Plans for building the fortress plotting room at Fort Rodd Hill were developed in 1939. They seem to have been finalised early in 1940. Construction occurred during 1940-41 on a site formerly occupied by a breastwork of the perimeter defences of Lower Battery, immediately east of Casemate Barracks. The structure contained a central large room for the plotter and other equipment with smaller rooms off it for a telephone exchange and degassing plant. It has an air lock entrance from the outside and a separate engine room. Details can be seen

in the plan in Figure 32.

An air conditioning plant was shipped from Maryland on 6 December 1941² and an air purification plant from Wedgewood Arsenal six days later.³ By 22 December 1941 the telephone exchange was installed and the main room was in use as accommodation for personnel of the Royal Canadian Corps of Signals operating the exchange.⁴ Almost a year later, in October 1942, 4th Fortress Company Royal Canadian Engineers lined the plotting room with wood panelling. The plotter, long delayed on its journey from England, was shipped from Halifax on 25 January 1943. Its official nomenclature was; Plotter Fortress No. 2 Mk I Type HB8 Regd. No. 25, and it weighed 1067 lbs with a height of 4', length of 5'10" and breadth of 4'8".⁵ With the plotter and an encoder (Encoder Fall of Shot Mk 1 Regd. No. 52A⁶) installed, and the regular complaints of cold and damp assuaged by the installation of heaters, the plotting room was operational on 21 December 1943.

After the end of the Second World War the plotting room was used occasionally during militia training until 1951 when it became an Anti-aircraft Operations Room. See Figure 33. It appears that the plotter and other coast artillery equipment were moved out at this time to allow the installation of large transparent panel maps of the west coast and controllers desks and tables. This new role lasted until 1954.

The plotting room was not turned over to the park until 1966 because of the presence of an operational telephone terminal board in the exchange room belonging to the Department of National Defence. This board exists today behind locked wooden doors covering one wall of the exchange room. It is believed to be operational still and access to it is forbidden to park staff.

The original fortress plotter was obtained by the Park in 1975 on long term loan from the Canadian Artillery Museum, Shilo, Manitoba, and placed in the plotting room. It is present today, is in need of renovation and has apparently had little

if any maintenance.

In addition to the plotter, the plotting room contains a wall display of numerous framed photographs of various aspects of the Esquimalt-Victoria defences, 53 rifles, mainly Ross, stored in racks and an old telephone exchange. The telephone exchange room is used for storage of many artifacts of the park collection. The wooden panelling in all of the rooms has been renovated & repaired by the park. The air conditioning and air purification equipment is missing.

Oil Store

This small brick building was built between the water tank and the Guard House and immediately in front of the former circa 1928. The earliest record of it is on a 1929 site plan.⁷

It appears to be in generally good condition. The double doors and shelving are quite probably original. A modern electric conduit runs to it from the Guard House. The store would have contained supplies of each of the many different oils and greases used in the maintenance and operation of the guns and equipment at Rodd Hill, and fuel oil for lamps and lanterns. It is possible that this building was constructed because the smaller original store in Casemate Barracks was inadequate for the increased quantity of oils and greases required for the greater quantity and diversity of equipment at Rodd Hill by the 1920s.

40 mm Anti-aircraft gun site (Figure 30)

A gun of this type was sited in the left (B/2) 6-inch disappearing gun emplacement of Lower Battery in the last years of the Second World War. It was one of several in the anti-aircraft defences of Esquimalt-Victoria. The history of those defences has yet to be researched. When it has then more information relating to the gun in Lower Battery, to another gun at Rodd

Hill, and perhaps to the anti-aircraft machine gun defence of Rodd Hill, should be available. The information presently available is merely a skeleton of the complete history, and an incomplete skeleton at that.

An aerial photograph dated 29 September 1943 shows the emplacement empty. Another dated 15 November 1943 shows several small buildings in the immediate rear of the emplacement.⁸ These can be identified using later plans and photographs as ancilliary equipment buildings associated with the 40 mm anti-aircraft gun, but the gun itself cannot be distinguished. A report by Major General Archibald on his inspection in February 1944 refers to the light anti-aircraft gun site at Rodd Hill as being a "good site" consisting of a gun, two oil units, one generator, one predictor, one F.A.S. and one check sight.⁹ These features and those in the November 1943 photograph are confirmed by a site plan of 1944. See Figure 30. The position was abandoned and the gun and its ancilliary equipment were removed in the summer of 1945. Although the gun itself cannot be clearly distinguished in any of the aerial photographs taken during the period, it seems certain that the left emplacement of Lower Battery was an operational 40 mm light anti-aircraft gun site from circa October 1943 until the summer of 1945.

An aerial photograph taken in March 1944 clearly shows a 40 mm light anti-aircraft gun near the sergeants mess in the Rodd Hill precinct.¹⁰ There are no ancilliary equipment buildings near it so that it could not be the gun referred to in Archibald's report and was most probably a non-operational weapon. The presence of such a training gun seems to coincide successfully with the acknowledged secondary training role of the anti-aircraft battery then stationed at Rodd Hill.

All of the small structures at the rear of the left emplacement of Lower Battery, and the wooden gun platform, have disappeared, almost without trace. Other buildings in the area were affected by the establishment of the position. The Artillery store had an eight feet square, flat roofed lean-to

shed built on its west end to house ammunition for the gun. The former skidding shed and its additions were used by personnel manning the gun. The ammunition lean-to and the skidding shed area were cleared after the Second World War.

There are cable ends and a conduit still attached to the corner room in Casemate Barracks which may indicate that the room housed a generator associated with the 40 mm gun. This has not yet been verified.

War Shelter (Figure 35.)

A small wooden, shed-roofed building was erected alongside the water tank in Lower Battery during the Second World War. It appears in photographs taken in 1943 and on a site plan dated 26 September 1944 where it is labelled "War shelter".¹¹ It had been removed by 1962. Nothing more is known about this building at present.

Glacis Buildings (Figure 35.)

Two buildings were erected on the western glacis of Lower Battery emplacement, near the Depression Range Finder position, between 1941 and 1943. One building had a verandah along its front and a distinctly residential appearance, the other was smaller, had a shed roof and one small high window or observation slit on the seaward side.¹² Both buildings were removed by 1950. Their purpose is unknown at present, although there is a suggestion that they were associated with anti-aircraft training.

Machine Gun Pit. (Figure 35.)

A square concrete pit for a machine gun on an anti-aircraft mounting was placed on the edge of the glacis midway between the two gun emplacements of Lower Battery during the Second World War. Photographs show it in position by the end of 1943.¹³

It is present today, boarded over by the park. Nothing more is known about it or the weapon it contained, if it was ever used.

Concrete Slab.

A square concrete slab with four small pyramidal projections, and a central survey marker, was placed on the edge of the eastern glacis of Lower Battery near the Depression Range Finder position at some time between 1945 and 1954. Its purpose is unknown at present.

Casemate Barracks Chronology

22 April	1895	Authority for construction
6 September	1895	Construction begins
31 March	1898	Official completion date
5-8 October	1898	Rodd Hill handed over to artillerymen of Esquimalt garrison
28 January	1903	First set of Record Plans
By	1905	Piped water to barracks
9 May	1906	Transferred from British to Canadian Army
	1914-18	Barracks occupied during war years
circa	1928	Barracks connected to municipal water supply
	1930s	One casemate used to store mobilisation stores Marquee pitched on parade when barracks occupied
	1939	Quartermaster Store, Signal Shelter & oil store constructed.
	1940	Latrine constructed
circa	1944	Ablution Room assigned as Warrant Officers quarter. Cook house now a store room. One casemate now an MI room
	1945-50	Miniature range installed in Quartermaster store
	1950	Verandah roofed with Duroid shingles. New interior for ablution room. Conduits to centre casemate. Electric light & heating
	1950s	Quartermaster store, Signal Shelter, oil store, ablution removed.
	1954	Redundant
	1958	Decreased watchman supervision. Vandalism.
	1962	Fort Rodd Hill becomes National Historic Park
	1960s	Park renovations

Casemate Barracks

General

Casemate Barracks lies within the defensible wall that marks the perimeter of Lower Battery, north-east of the gun emplacement and at a lower elevation. A gate in the defensible wall opens directly onto the barrack parade. The barrack buildings date from 1898 and were built to accommodate the artillerymen who would be permanently stationed at Rodd Hill during an emergency to man the three 6-inch disappearing guns mounted in Upper and Lower Batteries. All of the original buildings have survived to the present without major structural change.

The barracks was used during annual summer camps of the permanent force artillerymen stationed in Esquimalt. It was constantly occupied during both World Wars and received several temporary additions between 1939 and 1945. These additions are described in a separate chapter. This chapter refers only to the original structure.

North Gate (Figures 24,26)

This double gate in the defensible wall opens directly into the barrack area. There is no sure evidence of the design of the original gates unless they survived until 1938 when they appear clearly in the background of several photographs. See Figure 26. The 1938 gates were of wood. The present gates are also of wood but are of a different pattern from those of 1938. They were present in 1962 when Rodd Hill was declared a national historic park.

Barrack Building - General (Figures 23,24)

The details of the layout and construction of this building are give in the Record Plan of January 1903. The original structure, dating from 1898, has changed little. A brick chimney was constructed over the cook house after 1903 to replace the original metal pipe chimney shown in the record plan. The date of construction is not known. The verandah was re-roofed in 1950 with Duroid shingles and again in the 1960s by the park with the same type of shingles. Another re-roofing by the park was completed with cedar shingles after stripping of the old roof had revealed nail marks clearly indicating a cedar shingle roof before 1950. The original drains shown on the record plan, and later additions probably dating from 1928, still exist and function. The titles on the doors today were revealed during paint removal & renewal by the park and probably date from 1898. A plan dated 5 January 1950¹ suggests that the whole building had been renovated, or was scheduled for it, with the installation of electric lighting, outlets and heating and a new arrangement in the ablution room. This may have been related to the new role of the plotting room as an anti-aircraft operations room and the need to accommodate the larger mixed staff associated with the change. By the 1960s the buildings were once again in need of renovation and this task was completed by the park and under contract. Some as found drawings were completed at that time and are held at the park. There is no electricity in the building today.

Ablution Room (Figures 23,24)

This room is at the north-west end of the barrack block. Originally it contained a bath, partitioned from the remainder of the room, and a bench for wash basins along two walls. Water was first piped to the room circa 1905. It was connected to the municipal supply in 1928.

The room seems to have been gutted by 1944 when it was assigned as a Warrant Officers quarter. In the plan dated 5 January 1950 the room was once again an ablution with a urinal, hand basin, separate toilet and a central electric light. Most of these items were present in 1962.

The room is now empty. Various drains & pipes show in the concrete floor. The door appears to be the original, as does its lock, but the door knobs are missing. The window and frame have been reconditioned by the park.

Cook House (Figures 23,24)

Situated next to the ablution room, this room originally contained a stove and a sink in one corner. Water was first piped to the room circa 1905 and it was connected to the municipal supply in 1928.

The room was apparently used as a cook house until circa 1944 when it became a store room. In 1950 the room was empty of all furniture except for a coal heater.²

The door is apparently original. Its lock is missing. The two windows and their frames have been reconditioned by the park. There is a ceiling opening to the brick chimney. The chimney has been sealed by the park. The wooden floor was present in 1962 when Rodd Hill was declared a national historic park and may be original.

Outside the room on a verandah post there is a large metal hook. It is remembered as the place where the cook's, large iron triangle and striker hung. Sounding the triangle signalled a meal was ready.

Casemates (Figures 23,24,34)

These three rooms are alike. They were built originally as accommodation for the troops manning the 6-inch disappearing

guns of Upper and Lower Batteries and were intended to house eight men each in peacetime and a maximum of 19 men in war. This was to be accomplished by removing the stoves and by substituting hammocks for the iron beds used in barracks in peacetime.

The rooms were probably most frequently used as troop accommodation, particularly during the annual camp of the permanent force artillery battery of the Esquimalt garrison. Fortunately, a few photographs exist giving some details of how the rooms appeared when they were occupied. See Figure 34.

The rooms were adapted for other uses. The room at the north-east end of the block is remembered by some as a dry canteen in the 1930s. Circa 1944 it was a medical inspection room and may have also been a Medical Officer's quarters.³ At that time it had a telephone. The floor today indicates the subdivision of one part of the room into two smaller rooms. Next door, the centre room, in the 1950s, had a six inch pipe through the floor as a conduit for cable and two three inch conduits in the wall to the corner casemate. The purpose of these conduits is not known. The corner casemate housed the mobilisation stores for Military District No. 11 in the late 1930s and was allocated as cooks quarters in 1944. In a 1950 plan it is shown with two three inch conduits in the corner. Their purpose is unknown. According to the 1950 plan all three rooms were fitted or were intended to be fitted with four strip lights and two electrical wall outlets each.⁴ The wiring and fittings were not present in 1962 when Rodd Hill became a national historic park.

The rooms were renovated by the park in the late 1960s. The door to each is apparently original. There is a stove in each room. These are probably not original but appear to be of the same pattern. There are two rows of ring bolts high on each end wall, four rows of rings in each ceiling and a number of iron pintles of two different sizes in each window and door wall. The precise use of these is not known. The

popular story is that they were for hammocks but this needs verification. The floor of the corner casemate was replaced by the park in the 1960s copying the bottom layer of old finished flooring.

Parade (Figures 24,26)

The flat area between the barrack block and the defensible wall dates from 1898. In the 1930s it was customary to pitch a large marquee on the parade to be used as a mess hall by the troops accommodated in the barracks during summer camp. See Figure 26. Hooks were permanently fixed in the wall steps and the verandah posts for the guy ropes, to avoid driving pegs into the parade. Some of the hook holes are present today.

Oil Store (Figures 24,26)

This small brick walled, concrete roofed building in the corner of the barrack compound by the gate, dates from 1898. Originally intended to hold the supply of greases and oils needed for the guns and equipment, and for oil lamps, it probably became too small for this task as the guns and equipment at Rodd Hill increased. A new and larger store was constructed near the Lower Battery guard house circa 1928 perhaps as a replacement for this small store. This store exists today apparently as it was when it was built.

Coal Store (Figure 24)

It seems likely that this store was used for the storage of coal from 1898 until 1954. The doors are quite probably original. One of its walls is the defensible wall and has two loopholes, both without frames or doors. The floor of the store was a concrete pit approximately two feet deep. The park has placed a heavy plank flooring over this and uses the building as a grounds maintenance implement shed.

Provision Store (Figure 24)

This store exists today in the north-east corner of the barrack compound adjoining the coal store, probably much as it did in 1898. It was intended for the storage of vegetables and other provisions and is still equipped with most of the shelving and a small cellar installed for this. One wall is also the defensible wall and has two loopholes. Both are framed but the doors are missing. The entrance door may be original. It has a lock but no door knobs. The window was renovated and a new floor was installed by the park. The trap door to the cellar is sealed.

General Store (Figure 24)

This store is unique among all the buildings in the barracks in having a wooden roof. The proposed plan for the barracks of 1892 does not show a store in this position. It seems possible that the roofing of the area and fitting of a door and shelving occurred very soon after the construction of the barracks as a local expedient. The work was completed by the earliest Record Plan of January 1903. The store is in a corner of the defensible wall and has loopholes in two walls which have never been framed or shuttered. The doors, shelving and bench all appear to be original and in need of repair. The roof boarding was replaced by the park in the 1960s using the beams in place then and new boarding cut to the style and measurements of the old.

Latrine (Figure 24)

The Record Plan of January 1903 indicates that at that time the latrine had four dry earth toilets, each separately enclosed, and a trough urinal. The enclosures and urinal are present today. Remnants of piping and changes to the woodwork and concrete floor indicate the installation of two flushing

toilets at sometime, possibly in the late 1920s when the barracks was connected to the municipal water supply. Such toilets were present in the 1930s. There are no toilet fittings present today.

Casemate Barracks - Additions

General

Four buildings were erected in the area of the Casemate Barracks during the Second World War. They were removed after the war and little trace of them remains today.

Quartermaster Stores Hut (Figure 35)

This building was erected in 1939 opposite the cook house and ran the length of the barrack block. It had a telephone and electric light and apparently was used as a quartermaster stores throughout the Second World War. After the war a miniature coast artillery range was installed in it.¹ The building was removed circa 1950.

A square slab of concrete with a step exists today opposite the barrack ablution room. It may have been at the entrance to the hut.

Signal Shelter (Figure 35)

This was the largest of three temporary buildings erected against the outside of the north-east section of the defensible wall. It was sited at the corner of the wall near the north gate. It was built in 1939 and had gone by 1950. Nothing more is known about this building at present.

Oil Store (Figure 35)

The middle building of three on the outside of the north-east

section of the defensible wall was an oil store. Erected in 1939, it had gone by 1950. Nothing more is known about this building at present.

Latrine (Figure 35)

This building was erected in 1940 on the outside of the north-east section of the defensible wall close to the Fortress Plotting Room. It was connected to the 1898 drain from the latrine inside the wall. The building was removed by 1950.

Warrant Officer's Quarter

The Warrant Officers quarter dates from 1897. It was intended to accommodate a Master Gunner and his family, but this apparently did not occur until 1945. Instead, the quarter was allotted to the non-commissioned officer in charge of the out-fort detachment at Rodd Hill or, if the non-commissioned officer was unmarried, the senior married gunner of the detachment.

Master Gunners were highly trained armament stores experts. Normally, a Master Gunner was responsible for the accounting and maintenance of armament stores in a group of coast artillery fortifications. To assist him, and to carry out daily maintenance and custodial duties, each fort had a small detachment commanded by a non-commissioned officer. The detachment maintained a continuous military presence in the forts to protect the guns, ammunition and other stores kept there.¹

It seems that two Master Gunners were intended for the defences of Esquimalt-Victoria when the 6-inch disappearing guns were mounted.² The number of guns and batteries in the defences in 1898 was reason for one Master Gunner. Only the isolation of Rodd Hill from the rest of the defences could have justified two at that time. And yet to isolate a Master Gunner at Rodd Hill was a waste of skilled manpower and not likely to be a personal preference for a Warrant Officer and his family. It became the practice of the Master Gunners appointed to the Esquimalt-Victoria defences to operate from Work Point Barracks, regularly visiting the forts within their districts. The first Master Gunner known to have lived in the quarter at Rodd Hill did so after the Second World War when there was an acute shortage of housing in the garrison and he had exhausted all

alternatives.

For those who did live in the quarter and could appreciate them, there were the advantages of subsidised accommodation, regular ration supply and country living. But there was also the inconvenience of having to move out of the quarter for a short period each year, usually to the Upper Battery guard house, during the permanent force camp when the quarter was required as an Officers Mess.

The quarter was occupied by:-

1-29 September	1899	Bdr. W. Wheeler, Gnrs G.L. Wiseman, J. Sanders (Unconfirmed)
early	1900s	Major AA Warder. (unconfirmed)
	1910-1912	Sgt P.B.H. Buxton and family
First World War		Sgt L. Collins and family
	1918-1919	Sgt F. Buxton and family
	1919-1928	Sgt P.B.H. Buxton and family
April - September	1931	Sgt T. Eastic, wife and daughter
? - October	1936	Bdr W. Wharton and family
October 1936 -		Bdr W. Cameron and family
early	1938	
early	1938	Gnr. B. Henderson and family
late 1938 -		Gnr. S. Barker, wife and daughter
26 August	1939	
Second World War		Officers mess
October 1945 -	1946	W.O.1 (Master Gunner) G.T. McIndoe
	1946- 1947	W.O.1 (Master Gunner) J.E. Rippengale and family
	1947-1948	Sgt. M. Simmons R.C. Sigs., wife and two daughters

There were two births in the quarter during this time. Edith Phoebe Buxton (now Mrs. B. Simmons) was born there in 1911 and Judy Rippengale in 1946. Both have birth certificates showing the place of birth as Fort Rodd Hill rather than the local municipality. A copy of the Buxton certificate is held by the park.

The quarter is a two storey house built of brick. See

Figure 36. Undoubtedly it was built to the Royal Engineer specifications of the time. These are not known at present, nor have any early record plans come to light, but it may be possible to find more information about the house with research among Royal Engineer sources and with an aural history programme among the former occupants. Apparently there has not been any major change to the external appearance of the house since it was constructed. It appears that when a flush toilet was substituted for the original external dry earth toilet, the adjoining kitchen area was altered and this may have included a change in the arrangement of the windows. One window appears to have been moved from the rear to a side wall.

Internally, it was subject to periodic renovations between 1898 and 1954. A major renovation is known to have occurred in 1945 when, after war-time use as an officers mess, it was to be occupied by Master Gunner McIndoe. The Area Engineer Officer listed the work and estimated costs as:-

Renovation of house	233.00
Supply and install range and boiler	135.00
Move and instal bath	20.00
Cover Kitchen floor with lino	80.00
Cover kitchen ceiling with tentest	<u>30.00</u>
	<u>498.00</u> ³

Approval was granted for this work on 31 October 1945.⁴

Between 1958 and 1962 the building was almost completely wrecked internally by vandals. A series of photographs in the park records record the extent of the damage. A major renovation was undertaken in 1966 by the park and under contract with the work planned by the National and Historic Parks Branch Engineering and Architectural Division. This renovation was primarily a rehabilitation of a park building to provide urgently needed park office space although every effort was made to replace damaged features with exact copies. When the renovation was completed the quarter became the park headquarters building. In 1976 park administration moved to

the Cavendish house. Since then the quarter has provided temporary office space for extant recording teams and summer guides. Today it accommodates the park interpretive officer, some of the park's collection of historic records, a small display housed in a ground floor room and, during the winter, Royal Marine Artillery uniforms and display items from the Lower Battery guard house.

All of these facts amount to an emaciated history of this building and its use. There are still some documentary sources to be tapped for further information and the source with the greatest potential, the former occupants, has received little attention so far. Further research, including an aural history programme, could realise a considerable body of information about the Warrant Officers Quarter itself and its furnishings, about the life style of the occupants of the quarter and of the out - fort detachment, and about other buildings and the armament stores at Rodd Hill. The quarter and its occupants were at the centre of the ebb and flow of events during peacetime at Rodd Hill between 1898 and 1954.

Belmont Battery Chronology

July	1896	Muirhead - Boothby report on Electric Light and Q.F. guns. No recommendations for Q.F. guns at Rodd Hill.
16 March	1898	War Office recommends to Colonial Defence Committee additional four 12 pr Q.F. guns for Esquimalt defences - two of them to be at Rodd Hill.
2 April	1898	Admiralty approves recommendation.
30 April	1898	Secretary of State for War approves recommendation.
3 May	1898	Authority to construct emplacement.
3 September	1898	Construction of Belmont Battery begins.
3 September	1899	12 pr Q.F. guns shipped from England.
5 October	1899	Construction of Belmont Battery completed.
5 February	1900	Battery complete.
by	1903	Gun Group Commander Belmont Battery on Esquimalt - Victoria defences Fire Command Telephone line.
14 January	1903	Record Plans of Belmont Battery.
	1914-18	Battery Operational. Hutment at rear of position probably constructed in early years. Right (south) wall probably raised at this time and roof observation area created.
	1923-39	Designated Examination Battery.
	1928	Mains water supply connected.
September	1939	Battery Operational.
8 May - 8 October	1940	Observation area at right (south) of emplacement enclosed making building two stories high with observation slit above the wall. Concrete machine gun pit constructed on east glaxis.
5 February	1943	Authority for construction of 6 pr Duplex emplacement.

8 February	1943	Construction of 6 pr Duplex emplacement begins.
31 March	1943	Tender for Director Post (tower) construction submitted by Dominion Bridge Company Limited.
13 April - 15 November	1943	Central traverse and magazine entrance area roofed.
15 November	1943	Fire direction tower with one storey complete.
18 April	1944	Director No. 13. MkI Regd. No. 97. mounted in completed tower. Adjustment to concrete pedestal required.
by 31 May	1944	Ammunition storage now one room.
13 June	1944	6 pr Duplex emplacement complete except for engine, fans and horn.
6 July	1944	6 pr Duplex mounted. Manning of two 12 pdrs discontinued.
10 August	1944	Two 12 pdr Q.F. guns shipped to St. John N.B.
17 February	1945	Estimates for removal of original crew shelters and construction of new crew shelter and artillery store.
23 July	1945	Job No. HQC 8910-1 issued for demolition of 12 pdr emplacements, north & south shelter buildings.
by 13 August	1945	Fire direction tower has two storeys.
15 August	1945	Japanese surrender. Belmont Battery relieved of operational role.
27 December	1945	Request for authority to provide steps and rails for 6 pr Duplex emplacement.
by	1950	Original crew shelters removed. New crew shelter and new artillery store complete.
	1954	Belmont Battery redundant.
	1962	Fort Rodd Hill declared National Historic Park.

Belmont 12 pr Q.F. Gun Battery

General

By 1893 both the British War Office and the Admiralty had recognised that "...the most likely form of attack against most of our harbours is that of torpedo craft running in to attack ships at anchor."¹ To prevent this type of attack from succeeding an obstacle such as a minefield and/or a boom was placed at the harbour mouth, the obstacle and the approaches to it were illuminated and light quick-firing guns were placed to cover the obstacle and the approaches by fire. This system of defence did not change until the 1950s, but it was refined as techniques and equipment were improved.

In 1893 Esquimalt was a Royal Navy harbour. Anti-torpedo boat defences were considered to be necessary. In 1896 Major Muirhead, R.E. and Lieutenant Boothby R.N. submitted their "Report on Electric Lights and Quick-firing Guns" for Esquimalt recommending an increase of two 6 pdr Q.F. guns and an additional search light over the two guns , two electric lights and minefield already allotted to the defence of the harbour. The War Office discussed the report and the defences at some length and made various proposals including the mounting of two batteries each of two 12 pr Q.F. guns at the harbour entrance, specifically placing one of these batteries at Rodd Hill. The Colonial Defence Committee recommended acceptance of the War Office proposals and they were quickly approved by the Admiralty on 2 April 1898 and the Secretary of State for War on 30 April 1898.² Thus Belmont Battery was sited at Rodd Hill by the War Office as part of the anti-torpedo boat defences of the harbour and with no regard for any association with the 6-inch disappearing guns already positioned

there, except for the fact that all of the guns in all of the coast defence batteries were part of the defences of Esquimalt-Victoria.

Belmont Battery was completed as a barbette battery for two 12 pr Q.F. guns in 1900. It existed as such until 6 July 1944 when the guns were replaced by a better, modern weapon, a 6 pr Duplex. A description of the battery follows.

South Shelter (Figure 37)

This wood frame building, completed by 1899, was built behind the south wall of the battery. It was intended to accommodate seven men and was distinguished by having a "Warren" roof. The significance of the latter is not known at present but may have been related to a facility for observation and fire direction. Construction details of the shelter are contained in the Record Plan of January 1903. See Figure 37.

Sometime after 1903, perhaps at the beginning of the First World War, the concrete wall behind the shelter was raised and extended and an observation platform was constructed on the shelter roof with an access ramp or steps from the rocks at the west end of the building. This platform was the position from which the Gun Group Commander directed the fire of the two 12 pr guns and from which the defence electric lights were controlled. The position was used for this purpose in the 1930s.

The south shelter building was modified again in 1940 when the roof platform was enlarged, enclosed and roofed giving the building a second storey. The new storey was reached by an external stairway from ground level. It had three small windows on the landward side and a series of six observation windows on the top of the concrete wall on the seaward side. It was divided into small rooms each extending the width of the building and all with interconnecting doors. A pair of stereo binoculars, a Depression Range Finder and fire command and searchlight telephones

were to be found in these rooms.³

It is doubtful if the upper storey of the building was used for fire direction after the new observation tower was completed circa November 1943. In 1945 it had a searchlight telephone and orderly room on the upper level and a gun store on the lower level. When a new artillery store was constructed, and a second storey was added to the observation tower for searchlight direction, the South Shelter was scheduled for demolition. The building was demolished between 1945 and 1950.

There are traces of the original building and its evolution on the site today. The concrete floor and entrance step of the original lower storey remain and the roof line can be seen on the wall. The original limit of the wall and the subsequent extension can be seen. The top of the wall bears marks relating to the enclosure of the second storey, and the concrete pad on which the stairs to this storey rested is still in position.

Armament - 12.pr. Q.F.

Two 12 pr Q.F. guns were mounted in Belmont Battery between September 1899 and February 1900. They were replaced by more modern armament on 6 July 1944. The correct nomenclature of the gun and its carriage is: Ordnance 12 pr. Q.F. 12 cwt Mk 1 on Carriage Mk 1. The registered number of the right gun was 1025 and its carriage number was A1869. The left gun was number 1024 and its carriage was number A1870. For fire direction purposes the right gun was identified as A/1 and the left gun as A/2. Both guns were fitted with automatic sights. Full technical details of the gun, its mounting, operation, stores and ammunition should be the subject of a separate report. Only a summary is necessary here.

The gun was developed for use against torpedo boats and other light craft attacking a harbour. It was capable of rapid fire at the rate of 15 rounds per minute and could engage targets at ranges up to 8000 yards. Under service conditions it was expected to engage torpedo boats moving at more than 20 knots within a 2000

yard arc. The cartridge and shell were stored and handled separately but loaded as a single round. Cordite cartridges were used to reduce smoke and the shells were armour piercing or cast steel with base or time and percussion fuzes. At 1000 yards the projectile could penetrate four inches of steel plate.

The high rate of fire demanded close team work and a high standard of individual skill among the personnel manning the gun. A dummy loader was used as a training device to develop loading skills. One of these was a feature of Belmont Battery which is remembered by many who served there.

A 12 pr. Q.F. gun was obtained by the park on loan from the Royal Canadian Artillery Museum, Shilo, Manitoba, in 1975. It was first mounted on a concrete pad at ground level at the rear of Belmont Battery and then moved in 1978 to its present position in the right 12 pr emplacement of the battery.

Right Gun Emplacement (Figure 37)

This emplacement was built for a 12 pr Q.F. gun on a pedestal mounting. It was circular and had a low parapet allowing a clear field of fire through 235°. An iron railing lined the rear of the emplacement. Beyond the railing, at a lower level, there was an ammunition storage area. The construction details are given in the Record Plan of January 1903.

The ready use ammunition storage area had three recesses in the emplacement wall, two for cartridges and one for shells. Ammunition was moved to the recesses from the traverse between the two gun positions. The landward edge of the ammunition storage area had an iron railing.

The right gun emplacement did not change between 1900 and 1944. The 12 pr Q.F. gun was dismounted in 1944 when it was replaced by the 6 pr Duplex. About two years later almost half of the emplacement and its ammunition storage area was destroyed when a new artillery store was built on the site.

Sufficient of the emplacement remained unaffected by the new construction to allow a 12 pr. Q.F. gun to be remounted there in 1978. It is there today. Part of the old railing is behind it. A section of the ammunition storage area also survived with the extreme right cartridge recess and the central shell recess still intact but without their doors. The original railing at the landward edge of the ammunition storage area was replaced by a concrete wall.

Centre Traverse (Figure 37)

This level area between the two gun emplacements provided a protected ammunition supply route to both guns behind a high concrete parapet. Construction details are given in the Record Plan of January 1903.

At each end of the traverse a set of concrete steps led up to the gun emplacements. The steps could be by-passed at the traverse level to reach the ready use ammunition storage area for each gun. The landward edge of the traverse was protected by a railing along its full length. This was gapped at two points to allow the passage of ammunition from the shell and cartridge stores below. The gaps were closed by chains when not in use. Each gap had a davit for raising the ammunition. The traverse was reached by a flight of steps from ground level on the landward side. Two ventilators of the Howarth revolving type were situated on the traverse parapet for ventilating the magazine. They were removable during action.

The traverse retained its original form from 1900 until 1943. In 1943 it was roofed with a 12" slab of concrete which extended from the parapet to a new wall on the landward side. At about that time a doorway was cut into the parapet giving access to the new 6 pr Duplex emplacement. Circa 1945 the traverse was isolated from the two 12 pdr emplacements by the construction of a new artillery store and crew shelter.

The centre section of the traverse and parapet wall with a

date stone marked '1898' exists today, roofed over and bounded by the later crew shelter and artillery stores. The original railings with the two chained gaps and davits are present. The concrete steps from ground level to the traverse are still in use. Visitors climb them, pass along the traverse and through the doorway in the original parapet wall to reach the 6 pr Duplex emplacement.

Left Gun Emplacement (Figure 37)

This emplacement was a replica of the right gun emplacement at the opposite end of the traverse. Details of its construction are given in the Record Plan of January 1903.

Like the right gun emplacement, it mounted a 12 pr Q.F. gun and did not change between 1900 and 1944. After the gun was dismounted, the emplacement was almost entirely destroyed when a new crew shelter was built on the site. Very little is left of the ready use ammunition storage area behind the emplacement. Only the left cartridge recess can be seen. A concrete wall has replaced the iron railing at the landward edge of the area.

North Shelter (Figure 37)

This wood frame building was constructed behind the north wall of the battery. It was a single storey building with a shed roof, containing two rooms, a larger one for seven men and a smaller one for officers. Each room had its own entrance and windows. The building was completed by 1900. Construction details are given in the Record Plan of January 1903.

Very little is known about the use of this building. During the Second World War it was used as sergeants' quarters for a period circa 1944. It was demolished between 1945 and 1950.

The site is clear today. The concrete floor and the steps to the two doors are present. The location of the external and partition walls of the building can be seen on the concrete floor. The roof line shows clearly on the wall.

Machine Gun Position

A concrete pit for a machine gun was constructed on the glacis of Belmont Battery to the left of the left gun emplacement circa 1940. The type of weapon mounted there and its role is not known at present.

Semaphore Signalling Base

There is a small concrete pad near the machine gun position which was the site of some form of semaphore signalling device used in conjunction with the examination service for Esquimalt harbour during the Second World War. Nothing more is known about this at present.

Glacis Wall

The glacis ends on the seaward side of the battery in a rock wall. The original collapsed and was rebuilt by the park in the 1960s but to a different pattern.

Subterranean Magazine - General (Figure 37)

The original Belmont Battery magazine was similar in many respects to that in Upper Battery. The number and function of the various chambers was the same but their individual size and the overall arrangement was different. The details of the arrangement and of the construction are given in the Record Plan of January 1903. The magazine was completed by 1900 and has survived to the present, but has undergone a number of changes, almost all of them due to the adaptation of the battery for new armament in 1944.

Crew Shelter (Figure 37)

The original crew shelter was on the right of the magazine with its own entrance. It was intended to protect personnel of the two gun crews during quiet periods and casualties during an action.

Any furniture in the shelter would have been simple, perhaps a table and a bench or two. The structure seems to have been used as a crew shelter from 1900 until circa 1945. It was then used as an artillery store and was furnished with shelving and a 2KW heater. Later, when a new artillery store was built, it was used as a paint store.

The structure has survived in its original condition. The double entrance doors are most probably original and are equipped with bolts, a lock and a handle. The door frame has been drilled above the doors, perhaps for an electricity conduit. There is a ceiling vent which was connected to a Howarth ventilator on the traverse parapet. A rack of three shelves stands in the room, seemingly left over from the time when it was used as an artillery store.

Artillery Store (Figure 37)

This structure matched the crew shelter as the other 'wing' of the magazine. It was completed by 1900, had its own entrance and a window, and was intended to accommodate all of the tools and equipment needed to maintain and operate the guns in action. Originally it would have been equipped with a work bench. It seems to have been used as an artillery store until circa 1944 when it became an electrical equipment room.

The original structure has survived to the present, but is changed. It has double doors with a lock, bolts and a handle. They are probably all original. There is a central ceiling vent which was connected to a Howarth ventilator on the traverse parapet. The stove contains many remnants of cable and conduits, an empty terminal box, a magslip wall rack and a concrete generator bed with its hold-down bolts, all dating from circa 1944. It is probable that the window was filled in at that time. The outline of the window can be traced on the wall today.

Ammunition Storage Entrance (Figure 37)

The main feature of this open area between the crew shelter and the artillery store was a concrete ammunition handling bay. Ammunition was moved into the bay from storage and then hoisted by davit to the traverse above on the first stage of its journey to the guns. The area was roofed and given a new outer wall between the crew shelter and the artillery store in 1943. The original and the new features exist today.

Lamp Room (Figure 37)

This small room served the same function as the lamp rooms in the 6-inch disappearing batteries. Candle lamps for lighting the shell and cartridge stores were stored and maintained here. The room originally contained a bench and shelving.

The lamp room seems to have been used for its original purpose until the Second World War. In 1944 it was in use as a paint store.

The room appears to have survived in its original form. The door and its fittings, and the bench and shelf all seem to be original. An empty electrical conduit and outlet adorn the ceiling.

Shell Store (Figure 37)

The capacity of this store was 2000 shells. It seems that a maximum of 1000 shells for the 12 pr Q.F. guns were stored here. The Record Plan of January 1903 gives the details of its construction.

The store was brick lined and was entered from the outside by double doors. There were three lamp recesses in the walls for the candle lamps used for illumination. It was isolated from the shifting lobby and cartridge store by a concrete wall. There was a central ceiling vent connected to a Howarth ventilator on the traverse parapet. With the change of armament in 1944 the store was combined with the shifting lobby and cartridge store by removing the separating wall.

The shell store has survived in its altered form. Two of the walls have lamp recesses which are without their frames, doors and grills. The original doorway has been filled in.

Shifting Lobby (Figure 37)

This passageway to the cartridge store functioned in the same way as the shifting lobbies of Upper and Lower batteries. It was an area in which safety regulations were enforced before entering the magazine. A barrier divided the area. Like the Shifting Lobby in Upper Battery, this one had a cartridge issuing hatch in the outer half. There were two lamp recesses for candle lamps, one common with the shell store and the other with the cartridge store. The end wall had two lines of air bricks. In 1944, the shifting lobby was eliminated when the walls separating it from the shell and cartridge stores were removed.

Only traces of the shifting lobby remain today. The air bricks are still in the end wall and there are two bench leg holes in the floor. The shelves on the back wall post date the alterations. The original doorway exists but the frame and door are missing.

Cartridge Store (Figure 37)

This store was entered from the shifting lobby through double doors. It had a capacity of 150 cases of 12 pr Q.F. cartridges. These were issued through a hatch to personnel in the outer section of the shifting lobby waiting to take them to the guns. There was a lamp recess common with the shifting lobby and a ceiling ventilator. In 1944, the store was expanded by removing the common wall with the shifting lobby.

The cartridge store has survived in its altered form. High on one wall there is a small recess similar to those in the cartridge stores of Upper and Lower Batteries. It also dates from the Second World War and was intended to hold a battery powered

bullseye lantern, then a standard lamp for use in magazines. There are remnants of a heating system, electrical conduits and a fuse box on one wall.

Belmont 6 pr Duplex Battery

General

The original 12 pr Q.F. guns of Belmont were replaced on 6 July 1944 by a 6 pr Duplex equipment.¹ The structural alterations that were necessary were started while the two 12 pr guns were operational and continued after they were removed. On the changeover day all three guns were present in the battery. On 7 July 1944 the task of dismounting the 12 pr Q.F. guns began.

The 6 pr Duplex took over the operational role of the 12 pr Q.F. guns which had been established in 1900. There was no change in the role of the battery until coast artillery was declared redundant, the 6 pr Duplex was removed and the battery closed. A description of the 6 pr Duplex battery at Belmont follows.

Armament - 6 pr Duplex (Figure 39)

The official nomenclature of this armament is: Ordnance Q.F. 6 pr 10 cwt MkI Twin on Mounting Q.F. 6 pr. MkI. Because it has two barrels mounted side by side on one carriage it is often referred to as the "6 pdr twin," "twin 6 pdr" or "6 pr Duplex." It was developed in England prior to the Second World War as a replacement for the 12 pr Q.F. gun. The mounting was hand operated and was fitted with follow - the - pointer dials in addition to telescopic sights. The gun dials were linked by mag slip transmission cables to a Director No. 13 mounted in an observation tower. When directed at a target this instrument automatically transmitted data to the gun dial pointers which were then matched by the gun layer. The rate of fire was 36 rounds per minute per barrel. The maximum range was 5500 yards although it was expected that

engagements would normally occur at 2000 yards or less. It was a formidable weapon, perhaps the ultimate gun defence against motor torpedo boat and motor launch attack.

Although production of these guns started in England in 1941, Canada was not included in the initial allocation. The first to arrive for the Esquimalt-Victoria defences was mounted at Duntze Head in June 1943. The Belmont Battery gun was placed in action on 6 July 1944. It was operational until the Japanese surrender on 15 August 1945.

Shortly afterward, the gun was dismantled and its associated equipment and stores were removed when coast artillery was declared redundant. It was ordered remounted almost immediately as the harbour defence role was reestablished. Circa 1956 the gun, equipment and stores were released with other coast artillery guns and equipment to requesting NATO countries under the mutual aid programme. There are indications that it was the last coast artillery equipment of the Esquimalt-Victoria defences to be dismantled. A gun of this type, quite probably the last of its type, is known to exist in Norway today.

Emplacement - 6 pr Duplex

Although earlier defence plans for Esquimalt-Victoria prescribed the need for mounting a 6 pr Duplex at Belmont Battery as a replacement for the 12 pr Q.F. guns, serious detailed planning seems to have been delayed until 1942. The correspondence of that time is devoted to arguments about limited or all round arcs of fire, the need for overhead cover, obstacles in the line of fire such as Fisgard Lighthouse and, indeed, whether the equipment should be mounted at Belmont Battery at all. Some of the participants in the discussions preferred Fisgard Island as a site. They were overruled. Authority for construction of the emplacement was given by the Quartermaster General, Ottawa, on 5 February 1943.² Construction apparently started on 8 February 1943 and the emplacement was completed by 13 June 1944 at a cost of \$33,274.28, a saving

on the \$49,500 authorized for the work.³

The emplacement was constructed between the two 12 pr Q.F. positions and forward of them while these guns were operational. A circular concrete platform was provided for the gun and its carriage allowing the gun to engage targets through an arc of 189⁰. A ready use ammunition storage area was created behind the gun at a lower level. Both the gun emplacement and its ammunition area were constructed in front of the original traverse parapet. A doorway was cut in the parapet. A 6 pr Duplex was mounted in the emplacement and placed in action on 6 July 1944.

The emplacement and its ammunition area exist today, apparently unchanged since the gun was dismantled. The mounting hold-down bolts are still in the pit together with the steel platform carrying the traverse stops. There are five storage recesses in the ammunition area immediately behind the gun. Each recess is closed by double steel doors. On each side wall of the ammunition area there are recesses for electric lights with remnants of the cases and cables. The concrete floor is marked by patches of concrete and asphalt where attempts were made to solve a recurring problem of water leakage into the ammunition store below. Both the emplacement and its ammunition storage area are reached through a doorway cut in the original traverse parapet.

Adaptation of Magazine Storage

The 6 pr Duplex fired fixed round ammunition. There was no need for a separate shell and cartridge store or a shifting lobby. Circa 1943 these three original structures were joined by removing the shifting lobby and its walls. The door of the shell store was filled in leaving the former shifting lobby door as the entrance to a new, single room, ammunition storage area. The new store was heated and had electric light. Racking was built against the air-bricked back wall for fuzes and small stores. All of these features can be seen today.

Adaptation of Original Crew Shelter

Circa 1945 this shelter became an artillery store. It was furnished with a stand of three shelves and probably had electric light. This new use did not affect the original structure in any major way.

Adaptation of Original Artillery Store

The original store was adapted as an electrical equipment room circa 1944. The window was filled in when a wall was constructed outside it. Inside, a concrete block with holding down bolts was constructed for the Onan 2.75 KVA A.C. generator Regd. No. 395C which supplied power for the magslip system used with the 6 pr Duplex equipment. The floor, walls and ceiling were drilled for cable conduits. Many of these are still present together with a junction or switch box. The skeleton of a magslip rack is fixed to the rear wall.

New Building - Enclosure of the Magazine Area (Figures 37, 38)

Originally, ammunition and ammunition personnel were exposed to the elements and to enemy fire as soon as the ammunition left the underground storage. Between 13 April and 15 November 1943 a new wall was built between the old crew shelter and the old artillery store. The wall had a wide door and a window. A concrete roof was added and the enclosed area was equipped with electric light. All of these features exist today.

New Building - Director Tower (Figure 38)

Plans for a new director tower were developed during 1942. Such a tower was an essential feature of a 6 pr Duplex site. The main fire direction instrument, the No. 13 Director, was mounted there, high above & behind the gun, where it would not be obscured by smoke.

Tenders for construction of the tower were submitted on

31 March 1943.⁴ Within a month the Dominion Bridge Company had started construction. The tower was probably completed by August 1943. An oblique aerial photograph dated 15 November 1943 shows the completed tower.⁵

The Director Post in the single storey at the top of the tower contained a pedestal for the No. 13 Director. It did not conform to plan and was modified, probably in 1944. At the same time the large magslip conduit from the Director Post to ground level in the centre of the tower which had been exposed was encased in concrete.

At sometime after 13 August 1945 the wooden frames of the observation windows in the tower were replaced by the steel frames originally specified and a new door was cut in a rear corner of the Director Post to replace the existing trap door in the floor. A new steel staircase was built to the new door to replace the vertical ladder to the trap door.

The history of the tower then becomes somewhat confused. It appears that a second storey was added to the tower above the first and the staircase was extended to it. At some stage the pedestal for the No. 13 Director was moved from the lower storey to the upper. Presumably the Directing Station then occupied the upper storey and the searchlight directing station the lower. It should be possible to verify this sequence of events through interviews with men who served in the battery and manned the tower.

The tower stands today in its final form with two storeys and an external steel staircase to both.

New building - New Crew Shelter (Figures 37,38)

A new, larger crew shelter was constructed on the former left 12 pr Q.F. emplacement sometime after February 1945, perhaps between February and August of that year. The single room had three windows on the landward side, was panelled with plywood and narrow tongue and groove boards, and had a ventilator and a chimney for a stove.

All of these features exist today, but the panelling has been partially stripped. The original door has survived, together with electrical conduits and three wall and two ceiling outlets. At the back of the door at floor level there is a hole which appears to be part of an original open recess in the parapet wall shown on the Record Plan of January 1903.

The construction of this new crew shelter almost completely destroyed the left 12 pr Q.F. gun emplacement and its immediate use ammunition storage area.

New Building - New Artillery Store (Figures 37,38)

This smaller structure was built at the same time as the new crew shelter on the same level, but at the opposite end of the battery on the site of the right 12 pr gun emplacement. It exists today with its original door and window, a ventilator and a chimney, and the remnants of electric light conduits and sockets. It is furnished with a three shelf storage stand.

Construction of this store destroyed part of the right 12 pr Q.F. gun emplacement and immediate use ammunition storage area, but left sufficient to allow a gun to be remounted by the park.

Belmont Battery Hutment

General

At some time after Belmont Battery was completed in 1900 several huts were erected at the rear of the battery, between it and the searchlight engine room, as accommodation for the unit manning the battery. See Figure 47. It is not known exactly when these huts were constructed. There are indications that the majority of them dated from the beginning of the First World War. They were present in the early 1930s, existed during the Second World War, and were demolished between 1945 and 1962. All of the buildings were simply constructed and in 1943 were described by an inspecting officer as "...old, dark and dingy with a depressing atmosphere."¹ Some painting and renovation work was carried out but seemingly did not improve the situation very much.

Hut 9 (Figure 47)

Probably constructed during the First World War, it was present in the 1930s. Internally, a large room was used as a barrack room for soldiers and a smaller room at the end of the building nearest the emplacement accommodated the officer of the day during his period of duty. For a period in the 1930s the building accommodated the District Gunners permanently stationed at Rodd Hill.

Hut 11 (Figure 47)

This building was probably constructed during the First World War. It was present in the 1930s. During the Second World War it was

used at different times as an orderly room and as a lecture room.

Hut 6 (Figure 47)

This hut was erected in August 1940. It contained ablutions.

Hut 3 (Figure 47)

The only two storey building in the hutment, it may have been built during the First World War or perhaps as late as 1940. In the Second World War it accommodated two officers on the ground floor and two warrant officers or non-commissioned officers on the top floor.

Defence Electric Light and Searchlight Chronology

By	1896	Two Defence Electric Lights and two 6 pr Q.F. guns allotted to Esquimalt defences.
30 March	1896	Muirhead Boothby "Report on Electric Lights and Quick Firing Guns."
	1897	Plans and estimates called for Engine Room and No. 1 Defence Electric Light Emplacement
30 April	1898	Final approval by War Office, England to new plan for four Defence Electric Lights, two 6 pr Q.F. guns and four 12 pr Q.F. guns for defences. Two 12 pr guns to be sited at Rodd Hill.
7 May	1898	Construction of Engine Room begins.
5 February	1900	Belmont Battery of 12 pr Q.F. guns completed.
30 March	1901	Engine Room Completed. Two Hornsby-Ackroyd engines.
By	1902	Defence Electric Lights in temporary shelters.
15, 16 June	1903	Telephone Communications tested on exercise and found satisfactory.
	1903	Nos. 1, 2 Defence Electric Lights emplaced at Rodd Hill.
4 November	1904	Electric Light Directing Station completed in Upper Battery.
2 November	1905	Record Plan of Defence Electric Light Emplacements and Engine Room.
September	1939	18 inch commercial lights mounted at Rodd Hill.
<u>Circa</u>	1940	Searchlights No. 6, 7 replace Defence Electric Lights Nos. 1, 2. Three Gardner diesel engines replace Hornsby-Ackroyd engines in engine room.
4 December	1940	18 inch commercial lights moved to Holland Point.
	1941	Searchlights 6, 7 camouflaged, the former to blend with rocks and trees, the latter as a boathouse complete with ramp and boat.

Circa

- 1954 Searchlights and diesels removed.
- 1962 Fort Rodd Hill declared a National Historic Park.
- 1960s Engine room adapted for park use. Steps placed at emplacements.

Electric Lights and Searchlights.

General

The positioning of electric lights, their engine rooms, and the directing station, in the defences of Esquimalt was the subject of a continuous correspondence between the British Admiralty, War Office, Colonial Defence Committee and a local British Joint Naval and Military Committee from 1896 until 1898. Everyone agreed the lights, submarine mines and Q.F. guns should operate together to defend the harbour against torpedo boat and small boat attack, only quantities and locations were in dispute.

An initial recommendation that there should be an engine room and movable search beam light at Rodd Hill was supported. Plans and estimates for these were called for in 1897¹, while the total number and positioning of dispersed beam lights and of Q.F. guns was debated. The War Office recommendation of a total of four lights was finally accepted and these were positioned two on each side of the entrance to the harbour with engine rooms to serve them. An electric light directing station was sited on the upper terreplein level of Upper Battery, Rodd Hill. The arrangement was tried in a joint army and naval exercise in 1903² and permanent installations were completed by 1905.

The three dispersed beam lights in the defences illuminated an area across the approaches to the harbour out to about 2000 yards. The moveable beam light at Rodd Hill was intended to search for and illuminate boats approaching the illuminated area, giving warning to the Q.F. guns which would then engage them in the illuminated area. The moveable beam could also be used to cover any area left in darkness by the failure or destruction of a dispersed beam light. All of the lights could be turned on

or off, or adjusted for bearing and elevation by remote control from the electric light directing station in Upper Battery which was in telephone communication with and under the orders of the Fire Commander of the Esquimalt Defences.

The lights were operational in the First World War.³ The approaches to the harbour were illuminated all night and every night in the early years. Later the lights were turned on at the request of the examination service or for training exercises. After the war, during the 1920s and 1930s the lights were used during practice shoots with the Q.F. batteries, particularly Belmont Battery. In the Second World War they were operational until they were replaced by more powerful modern lights circa 1940.

Between the two World Wars the British army had developed the techniques for using searchlights with heavier guns than the 12 pdr Q.F. used in the anti-torpedo boat role. The new techniques were adopted by Canada in the Second World War. Beginning in 1939 all of the new batteries in the Esquimalt-Victoria defences were allotted their own searchlights and others were deployed on fortress tasks.

At Rodd Hill the two defence electric lights were reinforced temporarily by some 18 inch commercial lights and then replaced by two modern searchlights. All of the lights at Rodd Hill continued to be associated with the illuminated area across the approaches to Esquimalt harbour and with the Q.F. guns, particularly Belmont Battery. In the early years of the war they were controlled from the electric light directing station on the upper terreplein of Upper Battery. Later this control may have moved, in part at least, to Belmont Battery.

The defence electric lights and the searchlights have gone from Rodd Hill now. They were removed together with the engines before the area was declared a National Historic Park in 1962. But the engine room and three emplacements, one of them for a defence electric light and the other two for searchlights, remain.

Electric Light Directing Station (Figures 4,8,11,12)

This building on the upper terreplein of Upper Battery has already been described under the same paragraph title in the chapter "Upper Battery. Esquimalt-Victoria Defence Command Elements."

Engine Room (Figure 40)

The details of the construction of this building are given in a Record Plan dated 2 November 1905. Construction started in 1898 and was completed on 30 March 1901. It housed two Hornsby Akroyd 25 H.P. oil engines and two dynamos which supplied electric power to the two defence electric lights on the Rodd Hill foreshore. The engines were replaced circa 1940 by three Gardner diesels. The Gardners were removed circa 1954 . The building exists today with few structural changes since 1901.

The engine room was built below ground level and sited behind a rock hill so that it was concealed and well protected from the fire of enemy ships. The two Hornsby Ackroyd engines were large pieces of machinery featuring two large wheels connected by a belt drive to the dynamos. Large quantities of water were used for cooling and this was supplied to the engines by four 800 gallon circular tanks which stood on a raised concrete platform at the end of the engine room. The two smaller rooms off the main room were utilised as a store and a test room, the latter being fitted with a bench and cupboards. The main room had four roof ventilators of the Howarth revolving type.

Outside the building near the main door two large circular tanks were sunk into the pathway. They were connected to the engines by underground pipes and each had a tall pipe chimney fastened to the wall of the building. The engines were exhausted through the tanks, which contained water to reduce smoke emission from the chimneys.

At the end of the building there was a oil store. Sixteen circular tanks, each with a capacity of 800 gallons stood on a

concrete platform around the walls of the store. A corrugated roof protected them and access to the store was through iron gates which had windows above them.

Beyond the oil store and alongside it there was a 7500 gallon water tank of the same pattern as the reserve water tanks to be found in Upper and Lower Batteries. It was probably built at the same time, circa 1902. It was fed by pipe from a spring supply some miles away and was connected to the engine water tanks by a two inch pipe. The tank was connected to the municipal water supply in 1928.

Power cables connected the engine to the two defence electric lights. The cable to the light in front of Lower Battery ran underground, that to the light at the entrance to the lagoon had frequent inspection and test points where the cable ran in a concrete channel covered by a removable concrete slab.

When the defence electric lights were replaced by more modern searchlights circa 1940, the Hornsby Akroyd engines were replaced also by three Gardner diesel Type A 24.8 KW D.C. engines, Regd Nos. 36, 38, and 41, supplying 115 volts 60 cycle three phase power to the searchlights. The new engines were mounted on concrete beds and were exhausted through the windows of the engine room which were boarded in. They remained until circa 1954.

The building stands today in good condition. The engine room has lost the water tanks, but the platform remains. The Hornsby Akroyd engines and their generators are gone almost without trace. The concrete beds and hold down bolts for the Gardner diesels are present, but the engines themselves, their terminal panels and tool boards are gone. The three original windows and their protective bars are present and the double door appears to be original. Two of the four ceiling ventilators are blocked, one has a modern extractor unit and one functions as the flue for a modern oil heater. The store room and test room still exist and the latter still has its original bench and cupboards.

Outside, the location of the two underground tanks can be seen, but they have been filled in and their pipe chimneys removed.

Traces of the chimneys can be seen on the wall. The oil store still has its iron gates with windows over, a galvanised roof and the platforms for the oil tanks, six of which are in place. The 7500 gallon water tank is present and part of the two inch pipe to the engine room remains. The four distinctive Howarth ventilators are missing from the roof of the building. Two of them have been replaced by incongruous modern sheet metal chimneys.

The building has been in use for some time as a park maintenance storage area and workshop. Various materials and a 6 pr gun barrel are stored in the engine room which is equipped with a Coleman oil heater, an exhaust fan and strip electric lighting. Oil is stored in the oil storage area together with other equipment, some artifacts found in the park and some replica shells, while part of the overhead shield of a 6 inch disappearing gun lies in the grass between the store and the water tank.

Defence Electric Light No. 1 (Figures 41,42)

In 1897, the War Office authorised the positioning of a "moving" defence electric light on a site at the entrance to the lagoon adjacent to Rodd Hill. A 90 cm light with a 3⁰ beam traversing over 90⁰, and a range of 5000 yards, was allocated to the position. By 1902 this light was in a temporary shelter on the site. It was emplaced circa 1903 and was operational until it was replaced by a more powerful modern searchlight in a new emplacement on 4 December 1940.

Defence electric light No. 1 has gone but the emplacement remains. It has changed little since it was described on the Record Plan of 2 November 1905. A little of the wood panelling has been removed, the doors are missing, the bench and the stove have gone, and the steel shutters are warped. There are a number of cable ends showing in the building and the route of the cable connecting it to the engine room is easily distinguished. The building is reached by a pleasant path from Belmont Battery and the park has placed concrete steps at the rear of the emplacement to allow

easy access.

Defence Electric Light No. 2 (Figure 41)

Like Defence Electric Light No. 1 this light was first placed in a temporary shelter. It was not sited at Rodd Hill until circa 1903. It was emplaced on the foreshore at the right front of Lower Battery between 1903 and 1905. The details of the emplacement are given in the Record Plan of 2 November 1905. The light was a 90 cm, 45⁰ dispersed beam with a range of 2000 yards.

It was operational until 4 December 1940 when it was replaced by a more powerful modern searchlight. The emplacement was demolished and a new emplacement for the new light built on the site.

18 inch Commercial Type Lights

The Esquimalt-Victoria Defence Scheme of 1939 recognised the limitations of the Defence Electric Lights and arranged for fifteen 18 inch commercial type lights to be installed at the commencement of the Precautionary Period to supplement the old lights. Three of these lights were scheduled for Rodd Point. Two of them were apparently mounted in or near the Defence Electric Light emplacements until 4 December 1940 when they were moved to Holland Point.⁴

Searchlight No. 6 (Figure 42)

A 60 inch CGE Type B searchlight with a dispersed beam replaced Defence Electric Light No. 1 on 6 December 1940. A new emplacement was built for it near the old position. No record plan of this building has been found to date. The light was removed circa 1954. The emplacement was camouflaged in 1941 to blend with the rocks and vegetation around it.

The emplacement exists today and is apparently unchanged. Its general configuration is the same as that for Defence Electric Light No. 1, but it is larger to take the bigger equipment, the

front of the building is a half circle and the steel shutters slide instead of folding.

Searchlight No. 7

The emplacement for this searchlight is a replica of that constructed for No. 6 Searchlight. It was constructed on the site of Defence Electric Light No. 2 circa 1940. A 60 inch CGE Type B searchlight with a dispersed beam was mounted in the emplacement from 6 December 1940 until circa 1954. In 1941 the emplacement was camouflaged as a boathouse complete with a ramp and boat.⁵ The camouflage survived until 1957, but by then it was in poor condition.

The emplacement exists today with little apparent change. It is not camouflaged. Two short flights of concrete steps have been installed by the park immediately outside the door.

Rodd Hill Precinct Features Established Before 1939

General

By 1905, when several site plans were drawn of the area, Rodd Hill had acquired many of the formal aspects of a regular military station. Most of the area outside the batteries was carefully divided and allotted for specific use. See Figure 43. After the First World War the formal divisions disappeared, but the area continued to be used during annual summer training. Certain structures and features marked it. These are described in this chapter. A later chapter deals with the larger number of structures and features which appeared in 1939 and the following years.

Fitters Shop No. 6 (Figures 15,44)

A fitter's or smith's shop was considered to be a necessary adjunct to any coast battery at the turn of the century for making small repairs to the ordnance and mountings. It was sited in an area where it would be protected from the fire of enemy ships but within easy distance of the guns it served. The building was expected to contain a forge, anvil, grindstone, bench, vice and fitting tools.¹

The shop at Rodd Hill was authorised on 25 March 1901 and constructed between 30 April 1901 and 12 July 1901. The details of the building are given in the Record Plan of 7 March 1905. It was fitted with a cupboard, bench and forge, and had a wide central ceiling ventilator, a chimney for the forge, double doors, two windows and two patches of wood block set into the concrete floor. It was built at Rodd Hill because of the isolation of the batteries from workshops on the other side of the harbour.

The building was used as a fitters shop until circa 1944. It then became a motor transport office until the end of the Second World War.

The building exists today, apparently in its original condition. The bench and wooden floor patches are present. The cupboard is missing. The double doors to the building are replicas of the original constructed to the pattern of remnants of the old doors. The windows have been restored by the park.

When the Canadian Pacific Railway Steamship Workshops in Victoria closed in 1967 most of the tools were acquired by the park. They are displayed in the building, but it is very doubtful that many of the items would have been present in a gun fitters shop. It should be possible to establish the correct pattern and stock of tools and equipment for this building with further research.

Just inside the door there is a tall wire screen which allows visitors to view the display without having access to the display items. It was installed by the park.

Canteen (Figure 45)

This building is situated just outside the defensible wall of Lower Battery. It was built circa 1900 and has survived to the present with little change to the original structure.

Although it was constructed as a canteen, the building was assigned in the early defence schemes as a war time store for 14 days reserve of rations for emergency use by the troops at Rodd Hill and the infantry protective force at Colwood.² In these early years the building was divided internally with a large tap room to the left of the door, a non-commissioned officers room to the right and two small rooms at the back, one of which was a dry canteen and the other contained the trap door to the cellar. There was an outside entrance to the cellar as well and it had a small window. The cellar had a good reputation for keeping beer at a constant cool temperature in summer. Nearby, there

was an outside urinal separated from the building against the rock face of Lower Battery.³

By 1937, the internal layout had changed to one large room at the front of the building and two small rooms at the rear. The large room was equipped with tables and benches and was the mens barroom. The former dry canteen at the rear had become the non commissioned officers room and the small room with the trapdoor was the beer bar. The building was used as a canteen during the annual summer training periods.⁴

It is not known whether the building continued to be used as a canteen during the early war years. In 1943 it became an orderly room and the large frontal room was once again divided to provide a separate office for the officer commanding the unit using the building. It seems to have continued in this role until 1945.

After the Second World War the building had a variety of uses. In 1946 it was used as the Master Gunners office. In 1948 and 1954 it was occupied as a temporary married quarter during the summer months. After it became park property, it was used as a parks records office for a period in the 1960s.

The original structure survives today with the internal layout of 1943 and the addition of an external toilet on the back wall. The front doors are probably original. The park has renovated all of the windows except the cellar window which is original and still has its original hardware. The verandah was renovated also and the sheet metalling which once covered the roof fascia was removed leaving the drilled holes exposed. A telephone connection dating from the 1960s remains and a leaking roof persists despite the attentions of engineers.

Boat House and Slip (Figure 46)

Colonel V.R. Biscoe inspected the garrison between 11 and 17 June 1901. In his report he stated that "Boat houses have been provided at Rodd Hill, and Signal Hill."⁵ This is the earliest known

record of the boat house at Rodd Hill. The earliest Record Plan is dated 1924 and is a tracing. See Figure 46. The details on the Record Plan apparently coincide with the details of the building remembered by members of the park staff who helped demolish the decrepit remains of the structure in the early 1960s. It is quite possible that the boat house demolished then was the original structure dating from circa 1901.

Some of the wood was saved from the demolition. The foundations of the building and a small section of the slip are present today on the foreshore very near the temporary engineer offices.

Jetty (Figure 43)

The jetty on the harbour foreshore near Casemate Barracks was probably one of the first military structures erected at Rodd Hill because the shortest and most direct route to the area was by boat from the naval dockyard across the harbour, and a landing facility was required at Rodd Hill. It was constructed in 1895-6.⁶ The materials used were rock and earth fill with a concrete wharf, at the end. It was recorded on Site Plans of 1905 and shown to have a fresh water flume along its length from the reservoir near Lower Battery. There are indications that this flume was primarily for Royal Navy use and may have been present before the jetty was built. The flume was abandoned by 1902.

The jetty was used as the main access to Rodd Hill until the 1930s. Circa 1940 the wharf apparently underwent some changes or possible reconstruction. At the same time another smaller wooden jetty was constructed in the bay north of the old jetty.⁷ Both jettys had gone by circa 1952. It is possible that the material in the old jetty was used in the construction of the causeway to Fisgard Light.

The park built a small jetty on the old site in 1974. It shelters the park boat which is moored to a float on its north side.

Maxim Machine Gun Emplacement

This emplacement consists of a concrete wall about four feet high, grooved on the top and faced with rough rock. It is on the foreshore between Belmont Battery and No. 6 searchlight emplacement. The earliest known record of it is dated 1905, but it is most probable that it was constructed earlier, perhaps at the same time as the 6-inch disappearing batteries.

The position commands the spit which encloses the lagoon, and also the southern shore of Rodd Hill. It was part of the outer defences of Rodd Hill intended to defend the batteries against an assault by an infantry force landed from hostile ships.

The wall exists today in good condition.

Perimeter Fence (Figures 43,47)

There are indications that the boundary of the War Department property at Rodd Hill was fenced by 1905. There were two entrances then, the main gate north of Upper Battery and a second gate to the R.E. camp and field works ground. Both were on the old Belmont Road. See Figure 43.

In 1929 some of the Rodd Hill property on the north-west boundary was ceded to the provincial government for a new road to the new lagoon bridge. The provincial government provided a chain link fence along the new property line at the side of the road.

By 1944, a barbed wire strand fence ran from the ends of the chain link fence round the remainder of the perimeter with gates at various points. See Figure 47. This fence seems to have had angle iron posts set in concrete. By 1957 much of this fence was of page wire and it had a new line from the area east of the Fortress Plotting Room over the glacis of Lower Battery to No. 7 searchlight emplacement.⁸

In 1968 this fence was in a very poor state and was removed by the park from the shoreline. At the same time a new chain

link fence was built between the lagoon bridge and No. 1 Defence Electric Light and an iron fence recovered from Signal Hill was installed along the Belmont Road as far as the material would allow. The Belmont Road iron fence was extended round the new car park in 1969.

Today, there is a gate and posts near the Maxim machine gun position on the south shore which appears to be all that remains of the earliest perimeter fence. The 1929 fence along the bridge road, a section of the 1962 page wire fence along the old Belmont Road and the 1968-69 iron fence all exist today. Today's park entrance is at the edge of the 1969 car park.

Recreation Ground (Figure 43)

This was established by 1905. It is very doubtful that it was anything more originally than a cleared and grassed area used for various sports including cricket. Apparently it was fenced along its boundary with the R.E. camp and Field Works ground. Its formal boundaries seem to have disappeared during the First World War, but it continued to be used for sports until the end of the Second World War. An area near the old reservoir outside Lower Battery main gate was flattened in 1941, probably for a volley ball court. It was overgrown by 1950, but it can still be distinguished today.

The area opposite the Warrant Officers Quarter was graded and gravelled as a car park shortly after Rodd Hill was declared a National Historic Park. It was turned back to grass when a new car park was built in 1969.

The park maintains the whole area today as an open, grassed space.

R.A. Cookhouse (Figure 43)

This permanent facility for the artillery campground at Rodd Hill was built by 1905. By 1928 there were two buildings on the site

and a year later there were three, the third being a store. The building was still in use as a kitchen in 1931, but had disappeared by 1939 when new buildings were erected in the area.

R.G.A. Campground (Figure 43)

The boundaries of a summer campground for the Royal Garrison Artillery Company of the Esquimalt-Victoria garrison were formally marked on a site plan dated 1905. The boundaries were probably decided as early as 1900. By 1929, they were no longer recorded, although the general area was in use as a campground while the R.A. cookhouse building was in use. Today it is a grassed area.

R.A. Officers Cookhouse (Figure 43)

This hut was sited between the boat house and casemate barracks, immediately behind the present temporary engineer offices, sometime before 1905. It offered permanent mess facilities for the officers of the Royal Garrison Artillery company of the Esquimalt - Victoria garrison during summer camp and perhaps some accommodation for the senior officers. By 1929 it was used as the Royal Canadian Engineer cookhouse and later may have been used as accommodation for engineer families during summer camp. The building disappeared between 1944 and 1950.

Engineers Log Hut (Figures 43,48)

This hut was constructed by members of 2/44 Company Royal Engineers, mainly in their spare time, on a site on rocks above the beach overlooking Esquimalt harbour. It was built circa 1900, was enlarged with a kitchen wing circa 1908 and was demolished circa 1945.

The hut was used by officers as a quarter when troops were in summer camp at Rodd Hill, or as a vacation cabin. There is

one unconfirmed report that the Prince of Wales lunched at the cabin during his visit to Esquimalt in 1902.⁹

Today only the remnants of the long flight of steps from the cabin to the beach remain.

R.E. Officers Kitchen (Figure 43)

The Royal Engineer officers kitchen was built near the engineer's log hut, but closer to the shore of Esquimalt harbour. It offered permanent mess facilities for the officers of the Royal Engineer Companies during summer camp. It was built circa 1900 and disappeared between 1944 and 1950.

R.E. Officers Camp Ground (Figure 43)

Two areas were allotted for the tents of the Royal Engineer Officers in summer camp, one near the officers kitchen and log hut and the other on the foreshore near Casemate Barracks. The formal assignment of these areas appears on a Site Plan of February 1905, but not on plans after 1928. It is quite possible that the allotment of the foreshore area near Casemate Barracks to the Engineers promoted the construction of several temporary wooden buildings in the area. At least three shacks are known to have existed there in the 1930s.¹⁰ They were used by families during summer camps. Two of the buildings existed in 1944 but they had gone by 1962.

R.E. Camp Grounds (Figure 43)

The Royal Engineer Camp and Field Works Ground was formally allotted by 1905. The dividing line between it and the recreation ground seems to have been fenced. The area had a small reservoir fed by a pipe from Lower Battery reserve water tank and its own entrance from the old Belmont Road.

By 1929, it was no longer formally allotted to the engineers, but remained a camping area for troops under canvas at Rodd Hill

during summer training. Showers and ablutions were installed near the reservoir and latrines near the entrance from Belmont Road. A number of buildings were erected in the area in 1939.

R.E. Field Works Store (Figure 43)

This building near the Casemate Barracks gate was built by 1905. It existed as a store until circa 1939 when new buildings were erected on the site.

R.E. Enclosure Western Division (Figure 43)

An early photograph dated circa 1900 shows five buildings in the area between the Warrant Officers Quarter and Upper Battery.¹¹ Four of the buildings had shed roofs and were on the same side of the track as the Warrant Officers Quarter. The other two, one shed roofed and the other having a verandah, were on the opposite side. The purpose of these buildings is not known. It is probable that they were Royal Engineer buildings erected by the engineers supervising construction at Rodd Hill.

A Site Plan dated 1905 shows much of this area fenced as the R.E. Enclosure Western Division and having only two buildings. A photograph dated November 1916 shows only the building with a verandah in this area.¹² It may have continued to survive until 1950, but in a changed form. A building on the site is remembered from the 1920s as a "barn" used by occupants of the Warrant Officers quarter and later plans show an 'old building' in the area. A new building was erected in the area in 1939. See Figure 47.

No traces of the buildings of 1900, 1905, 1916 or the 1920s remain today. Their history probably could be clarified by interviews with all of the former occupants of the Warrant Officers Quarters.

Practice Butt (Figure 43)

This feature is shown on the Site Plans of 1905 in the centre of the R.E. Camp Ground. Nothing else is known about this rifle range. It was not shown on site plans of the 1920s, and there is no trace of the butt today.

Trenches

Trenches and firing bays of the First World War pattern were constructed by No. 3 Company Royal Canadian Engineers as part of their annual field training in August 1912. Two photographs exist of these works which show them to have been extensive and sited near the Belmont Road.¹³

An aerial photograph circa 1922 clearly shows a trench system near the main gate of Rodd Hill and close to the Belmont Road.¹⁴ This may have been the same site as that depicted in the earlier photographs.

No trace of any of these works remains today.

High Ground Defensible Post and Tree Clearance

The Esquimalt - Victoria Defence Scheme of 1902 called for the construction of shelter trenches, breastworks of stone and earth, and tree clearance to improve the field of fire on the high ground north of Upper Battery as a primary task of the Royal Engineers and infantry assigned to the landward defence of Rodd Hill when the defences were manned. Lines of abattis and wire entanglements were to be constructed at the rear of the batteries. These tasks remained in the Defence Scheme of 1913, but there is no evidence that the work was completed when war broke out.

Gas Chamber

A gas chamber, used for anti-gas training, was authorised for Rodd Hill in 1929.¹⁵ This would have been a small concrete or

brick structure displaced from regularly used accommodation. It is not known whether it was actually built. There is no known record of a building with this role and those with personal experience of Rodd Hill in the 1930s do not remember such a building, although one at Macaulay Point is clearly remembered. It is possible that the chamber, although authorised for Rodd Hill was built at Macaulay Point.

Small Bore Range

A small bore rifle range was established just inside the fence between Belmont Battery and No. 7 Searchlight Emplacement by the 1930s. The targets were immediately in front of the rock face of Lower Battery. The range was improved during the Second World War to include a wooden platform at the firing position. The location of the butts can be seen today in the bullet marks on the rocks.

Family Camping Area

This was never formally allotted, but it is clear from photographs and verbal reports that the area immediately north of Upper Battery was used as a camping area by families during annual training in the 1920s and early 1930s. A well was sunk in the area.

The site is almost entirely covered today by the car park and a picnic site. The well is filled in, but is distinguishable.

Rodd Hill Precinct Features Originating After 1939.

General

Before 1939 there were no major changes in the precinct of Rodd Hill. Certainly none that could equal the sudden appearance of numerous buildings in 1939 as hurried preparations were made for war. After war time service almost all of the structures were demolished before the area became a National Historic Park. Only two have survived to the present and one of those is changed considerably from its original form.

Second World War Hutted Accommodation (Figure 47)

In the weeks immediately before and after the outbreak of the Second World War, a number of huts were erected at Rodd Hill, outside the immediate emplacement areas, to accommodate the 17th Searchlight Battery and an infantry company. Within a short time they were also accommodating Fortress Plotting Room staff and light anti-aircraft gunners. By 1944, the accommodation was overcrowded. It had been the subject of numerous adverse reports by inspecting officers and concert parties had refused to perform in the camp because the recreational facilities were so bad.¹ Some improvements were carried out before the end of the war, but it was a measure of the ineffectiveness of these that all of the buildings were authorised for demolition by the Quarter Master General on 2 November 1945.² The final act of this clearance was completed by park staff in the 1960s.

Only the occasional remnant of a foundation remains of these buildings today. They were those marked in Figure 47 as:-

- 13 Mens Mess Sgts Mess.
- 30 Two buildings marked stores adjacent to 13.
- 17 Ablution Hut
- 31 Coal Store adjacent to 17.
- 18 Mens quarters
- 19 Mens quarters
- 20 Recreation Hut
- 8 Sergeants quarters and recreation.
- 35 Ablution Hut.
- 34 Mens Mess.
- 33 Mens Quarters.
- 30)
- 31) A group of three stores adjacent to 33 and 34.
- 36)
- 39 Lecture Room.
- 40 Coal Store.
- 41 Stores.
- 32 Sergeants mess and quarters.

Tented Accommodation (Figure 47)

In 1942, possibly earlier, a line of ten marquees was erected against the trees on the east side of the open central area, opposite the Warrant Officers Quarter.³ They were all gone by 29 April 1943. It is quite possible that they provided temporary accommodation for troops who were eventually accommodated elsewhere, outside Rodd Hill.

In November 1943, one marquee existed between buildings 39 and 41 against the Belmont Road fence. It had gone by early 1944.

Cable Inspection Box (Figure 47)

This small building at the base of the rock face of Lower Battery, on the foreshore, was in position in 1941. It was on the submarine

communication cables connecting the Fortress Plotting Room with Macaulay Point and Albert Head. It exists today, is banned to park personnel by an agreement with the Department of National Defense and is believed to be operational as the cables are operational.

Machine Gun Post and Rifle Pits (Figure 47)

A sandbagged Vickers machine gun post was constructed on the rocks alongside the old Maxim machine gun position between Belmont Battery and Defence Electric Light Emplacement No. 1 during the early part of the Second World War. Traces of the post can be seen today.

Two firing pits were sited overlooking the bay north of the old jetty during the Second World War. Traces of them can be seen today.

40 mm Anti - Aircraft Gun Position near Sergeants Mess

An aerial photograph taken in March 1944 clearly shows a 40 mm anti-aircraft gun near the Sergeants Mess hut close by the Belmont Road.⁴ See Figure 47 building 32. It is probable that this was a training gun. Nothing more is known about it at present.

Ramp and Open Shed near Casemate Barracks Gate

A vehicle inspection ramp and what was most probably a service building was erected near the gate to Casemate Barracks, on the opposite side of the track, by the end of 1941.⁵ Both features were still present in 1944. They seem to have been associated with signals personnel using the shelter on the outer wall of Casemate Barracks and the Fortress Plotting Room. No trace of these features exists today. The site of the ramp is now occupied by a recently installed electrical transformer.

Park Services Hut (Figure 47)

This building; situated alongside the Warrant Officers Quarters, was built in 1939 as officers quarters. It appears to have been used for this purpose throughout the Second World War. See Figure 47, building No. 4. In 1946 it accommodated the single men of the out fort detachment at Rodd Hill. By 1958 it was the quarter for a caretaker then living at Rodd Hill and contained a kitchen, dining room, two bedrooms and a living room. After Fort Rodd Hill was declared a national historic park it was converted to a park services building with mens and womens toilets and rooms assigned to registration, commissionaire and park superintendent. It is still the park services building although some of the rooms have been reassigned. It bears little resemblance now to the original building.

Water, Electricity, Sewers and Communications.

General

The early water supply system for Rodd Hill was unsatisfactory. Some improvement was achieved by 1905, but a dependable and ample supply was not available until 1928. In that same year sewers were installed and mains electricity was connected. Those installations sufficed until the area was declared a National Historic Park.

Data transmission cables were installed in Upper and Lower Batteries from the beginning, but telephone communications were not installed until 1902. They lasted until 1939 when new systems were installed to connect the new defence works. Almost all of the circuits were abandoned circa 1954.

Below ground level the park is a web of cables and pipes of various types and ages.

Water Supply (Figures 43,47)

In 1895, a fresh water flume from a spring to the west of Rodd Hill ran along the south shoreline cutting between the Upper & Lower Battery sites to the jetty.¹ It supplied the naval vessel Water Lilly which delivered water to Coal Island and Navy ships in the harbour. The flume was also used to fill the reservoir immediately outside the main gate of Lower Battery. By 1898, water was being supplied to Rodd Hill through a one inch iron pipe on the bed of the harbour from Esquimalt.² Neither the flume nor the pipe system was satisfactory, but they did provide the cheapest supply.

An indenture was signed on 26 November 1902 between Gilzean Roland Whately Stuart; J. Kenneth Crawley and the British War Department for a reservoir site next to a spring on property west of Rodd Hill and a three feet right of way from it to Rodd Hill. The agreement was for right of use in perpetuity with certain limitations and the price was 400 pounds sterling.³ That same year reserve water tanks were completed in Upper & Lower Batteries and at the electric light engine room. It is most probable that by then the navy had ceased to use the flume.

Two years after the first indenture a second one was signed between the Dominion and the War Department giving right of way in perpetuity for a price of 200 pounds sterling.⁴ This may have been, in effect, a renewal of the first arrangement with the property now in the Province's hands.

By 1905 the water supply system within the Rodd Hill area had changed considerably. A pipeline from the reservoir and spring to the west of Rodd Hill ran parallel with the old flume bringing water to the reserve tank in Lower Battery emplacement. Apparently from there it was gravity fed to the Lower Battery guard room, the R.A. Officers cookhouse and the R.E. campground. A ram pump outside Lower Battery, south of the canteen, supplied water to the Warrant Officers Quarter and Upper Battery reserve tank. The tank in Upper Battery supplied the Upper Battery guard house by gravity. This system did not change until 1928 although the source of supply was a constant trouble to the military authorities and a pain to the Dunsmuir family who had built Hatley Castle close to the spring. The pipeline cut through the gardens of the castle.

In 1913 a second spring and reservoir, apparently between the Dunsmuir property and Rodd Hill, was joined to the supply pipe.⁵ By this time the reservoir outside Lower Battery was apparently no longer in use and was surrounded by a picket fence.

In 1928 Rodd Hill was at last connected to the main at Colwood by a pipeline down the old Belmont Road and through the main entrance gate. The cost of the connection, 5000 pounds sterling,

was apparently paid by the Dunsmuir Estate in exchange for a return of the spring and right of way on the Dunsmuir property after matters had reached the point of a legal court battle.⁶

The 1928 mains connection brought a satisfactory supply to all points that required it in the Rodd Hill area. The system installed then was in use until the 1960s when the park replaced it with modern piping and outlets suited to the parks needs, particularly for fire fighting.

Electric Power Supply (Figure 47)

Mains electricity was connected to Rodd Hill in 1928.⁷ The British Columbia Electric Railway Company Limited constructed a pole line along Belmont Road to the main gate where they established a transformer and meter. Pole lines carried the power to various points in the Rodd Hill area. The system remained unchanged until 1939 when the construction of extra accommodation in the area necessitated additions to the system and its upgrading.

Defence electric Lights and the later searchlights were supplied with electricity by the electric light engine room, which also provided its own electric light.

In 1962 the park installed electric light in Lower Battery magazine to allow visitors to visit the underground vaults. The electric light engine room was connected to the system in 1966 when it was assigned as a park workshop and storage area. This year, 1978, work began on a project to put all power lines below ground.

Sewers (Figure 47)

Initially solid waste was collected for disposal. Circa 1929, after the mains water supply was connected and flush toilets were installed, disposal was by pipeline to the sea. The huts constructed in 1939 were connected to septic tanks with outlets

to the sea. Circa 1973 the park was connected to the Belmont housing area sewer and a lift pump was installed.

Communications (Figure 43)

Before 1902, there was no telephone communication within Fort Rodd Hill or between Rodd Hill and anywhere else. There were R.A. dial circuits between Upper & Lower Batteries and the Battery Commanders Post at Rodd Hill, but these were data transmission not telephone circuits. All communication other than by the R.A. dial circuits was by flag, lamp, semaphore or orderly.

In a report on his inspection of the defences in 1902 Lieutenant Colonel A. Grant stated "...A scheme of Telephonic Communication for the District has been approved by the War Office and the work of installation is well advanced. A Non-Commissioned Officer for Military Telegraphs has just arrived here for duty, and it is hoped that the various defence works will shortly be in Electrical Communication."⁸ A year later in a report on combined naval and military manoeuvres which had taken place at Esquimalt on 15 and 16 June 1903 there was the simple statement "The new installed telephone scheme worked without a hitch."⁹

The system provided Fortress Fire Command Lines which linked the Battery Commander of the 6-inch guns at Rodd Hill to his two gun group commanders and to the Fire Commander at Signal Hill, and the Gun Group Commander at Belmont Battery to the Fire Commander. Submarine Minefield Command Lines linked the Electric Light Director at Rodd Hill to the engine room and two lights at Rodd Hill, and to the Officer Commanding Submarine Mines and electric light establishments at Esquimalt. All circuits were buried at Rodd Hill except the line from the Fire Commander to the Albert Head look out.

Between 1903 and 1905 the remote control and power cables connecting the defence electric lights, the engine room and Electric Light Directing Station at Rodd Hill were permanently laid and buried.

All telephone, data, power and control cable circuits at Rodd Hill were complete in 1905 and were maintained in serviceable condition until circa 1939. The submarine cable across the harbour was renewed in 1918-19 and again in 1927 after the S.S. Highgate had dragged her anchor during a gale, fouling the cable and removing about 800 yards of it.¹⁰ In 1933 the R.A. Command line ceased to function on a number of occasions. The correspondence concerning this reveals that the fault lay in an overhead line to Macaulay Point. It also produced the interesting fact that a break in any command line put all other command lines out of action at the same time. Later correspondence shows that at least some of the telephones in use then were "Northern Electric Pattern."

Beginning in 1939, the whole communication system for the Esquimalt Victoria Defences was changed and improved as new positions were linked and new equipment brought into use. At Rodd Hill the RA dial circuits were abandoned after the 6-inch guns were removed, new searchlight power and control cables were installed as new equipment was brought into service, magslip transmission circuits and an alarm system were installed at Belmont Battery as the 6 pr Duplex was mounted, telephone lines were installed to many buildings, data transmission cables and numerous telephone lines connected the Fortress Plotting Room to all parts of the Esquimalt - Victoria defences and to the American defences at Port Angeles and Fort Warden, and radio linked the light anti-aircraft gun in Lower Battery with other elements of the anti-aircraft defence system. A 1946 circuit and instrument layout for all of the Victoria - Esquimalt defences reveals the extent and complication of the changes brought during the war years.¹¹

After the war all circuits were closed and maintained. Some changes occurred when the Fortress Plotting Room became an Anti-Aircraft Operations Room, but these were minor. When coast artillery was declared redundant circa 1956 almost all of the

circuits were abandoned. A few seem to have remained in operation for naval purposes and these necessitate Department of National Defence control of the circuit board in the Fortress Plotting Room and of the cable inspection box nearby.

Some of the "Northern Electric Pattern" telephones are in use in the park today on a park telephone circuit.

Outline History of Fort Rodd Hill.

Coast artillery defences to defend the port of Victoria and the naval harbour of Esquimalt were first erected in 1878, at a time of international tension, when a Russian naval attack was anticipated. In 1894, a British-Canadian cost sharing agreement was signed to modernise the defences. Rodd Hill, at the entrance to Esquimalt harbour, was chosen as a new site to be fortified as part of the modernisation program.

Upper and Lower Batteries, Casemate Barracks and a Master Gunners Quarter were constructed at Rodd Hill between 1895 and 1898. The batteries were armed with three 6-inch disappearing guns, one in Upper Battery and two in Lower Battery. The barrack was for the troops manning the guns in time of war and the quarter was intended to provide family accommodation for the Master Gunner (Warrant Officer) who would be responsible for the accounting and maintenance of the armament stores in peace and war.

Although physically separated in two battery positions, the 6-inch guns operated as one fire unit (battery) under the command of the Battery Commander. He exercised his command from the Battery Commander Post constructed on a small hill between Upper and Lower Battery in 1901. Data transmission cables and, later, telephone circuits linked the post with the guns.

While the 6-inch guns could be expected to successfully engage warships approaching or bombarding the harbour, they were unsuitable for defending the entrance against a high speed torpedo boat or launch attack. The British War Office allotted a mine-field, batteries of light Q.F. guns and defence electric lights for this task. A battery of these guns and two electric lights were sited on the Rodd Hill foreshore.

Belmont Battery with two 12 pr QF guns was completed in 1900. The two Defence Electric Lights and their engine room were emplaced by 1903. Both guns and lights functioned with similar guns and lights on the opposite side of Esquimalt harbour entrance with the submarine minefield between.

The electric lights in the defences illuminated all of the water surface at the harbour entrance and for some 2000 yards out to sea. They were controlled from an Electric Light Directing Station in Upper Battery, sited there because of the excellent view of the whole of the illuminated area.

By 1905 Rodd Hill was complete with its 6-inch and 12 pr guns, electric lights, accommodation, communications, a fitters shop and a canteen. There was a prepared and rehearsed defence scheme for the fort which assigned duties and procedures in the fortifications and to a landward defence force of infantry, artillery and engineers.

In 1906 the permanent British army garrison at Esquimalt was withdrawn. A much smaller Canadian army garrison replaced it. The militia artillerymen of Victoria, who had been linked with the defences from the beginning, continued their association and manned the defences in 1914.

Rodd Hill was manned by the local militia gunners throughout the First World War, but without any engagement with the enemy. Many men received their training at Rodd Hill before joining overseas units.

There was little change at Rodd Hill during the peaceful inter-war years. A 6-inch Q.F. gun was mounted on the glacis of Lower Battery for training only and the Fire Command Post for the whole of the Esquimalt - Victoria defences was moved alongside the Electric Light Directing Station in Upper Battery. Rodd Hill was almost empty of troops for most of the time with only three or four men of the outfort detachment looking after the installations, equipment and stores. It was a twilight period for the 6-inch disappearing guns which, though kept in position and maintained, were now regarded as obsolescent. By contrast Belmont Battery and the electric

lights were still considered to be of prime operational value.

In 1939, there was a cyclone of activity at Rodd Hill as the site was made ready for war. The spate of changes it brought continued throughout the war years. A large number of huts were erected throughout the site to accommodate the mobilised local militia. The 6-inch guns were dismantled as new batteries on new sites replaced them elsewhere. A 40 mm anti-aircraft gun was mounted in one of the 6-inch gun emplacements between 1943 and 1945. The electric lights were replaced by modern searchlights, a fortress plotting room was built and Belmont Battery was upgunned in 1944 by replacing the two 12 pr guns with a 6 pr Duplex equipment.

Many of the war-time changes were eliminated in the post war years. The 40 mm anti-aircraft gun was removed and all of the huts were scheduled for demolition. The process was accelerated in 1956 when coast artillery was declared redundant. All of the structures were emptied of stores and equipment and the 6 pr Duplex was dismantled. The vacant fort was placed in the care of a caretaker who lived on the site until 1958. When he moved out vandalism took its toll until, on the instigation of a committee of ex-officers of the local militia gunners, Fort Rodd Hill was declared a National Historic Park in 1962.

General site clean-up, landscaping and grounds and building maintenance have been the major activities of the park since 1962. With only one exception all traces of temporary wooden buildings were removed. The Warrant Officers Quarter was renovated for park use and a continuous programme gradually repaired much of the woodwork in the original fortifications. Landscaping effectively exposed the original buildings to the curious public eye and enhanced the scenic value of the site.

The park has collected a considerable number of documents and photographs relating to the history of Rodd Hill specifically and to the history of the Esquimalt - Victoria defences in general. There is also a growing collection of artifacts including various guns & parts of guns.

Conclusion

This study has examined the Fort Rodd Hill historic resource. It is largely an inventory of structures and features, described by their original form, their history and their appearance today. The resource speaks of:-

- a. The establishment and continuance of a coast artillery fire unit of 6 inch guns from 1895 to 1943.
- b. The establishment and evolution of a coast artillery fire unit of Q.F. guns and its associated searchlights from 1898 to 1954.
- c. The adaption of part of the coast artillery fortifications to a light anti-aircraft role from 1943 to 1945.
- d. The role of Rodd Hill in the Esquimalt - Victoria defences.
- e. The lengthy periods of maintenance by a small detachment and the shorter periods of full occupation by various troops.

Many, and certainly the most important, structures and features concerned with these histories have survived to the present in generally good condition. They tell their own story, they should be preserved, they could be enhanced by re equipment, and they should be explained to the park visitor.

The history of the structures and features of Fort Rodd Hill tells only a small part of the larger history of the Esquimalt - Victoria defences. The remainder of this larger history, if it is to be told, requires separate study and treatment.

Appendix A

Archival and Artifact Collections.

Archival Collection

There is a specialized collection of archival material held at Rodd Hill. It relates to the history of coast defence in general and to the defences of Esquimalt - Victoria in particular. There are approximately 22 metres of storage of manuscript material, two metres of storage of maps and plans, 18,000 photographs with negatives and some tapes, motion pictures and microform material. The collection is not properly catalogued and not properly stored. It is a unique research resource and it is slowly but steadily growing.

An archivist, Mr. M. Halleran, began work on the collection in September 1978. He submitted an initial report with his recommendations in October and since then has been cataloguing documents.

Artifact Collection

The total number of artifacts held in the park collection is now over 450 and the collection is growing. Many items have been recovered from within the park and the remainder are gifts and loans from various individuals and institutions. The collection is catalogued.

The collection policy is ill defined. Many of the items are not directly related to Rodd Hill or park requirements. Some items are held in numbers which appear to be far in excess of park needs now or in the future. Most of the items are stored rather than displayed.

The small arms and smaller items are stored in the Fortress

Plotting Room. Other items are stored in the oil store attached to the engine room. A few are on display and the remainder exist in offices, odd drawers and other unlikely places. Responsibility for their proper care and conservation is not clearly defined with the result that many of the items are deteriorating. Some items were removed to Ottawa in 1978 for conservation.

Appendix B

Ordnance in the Rodd Hill Collection

General

The fortifications at Rodd Hill have always been associated with artillery. Guns of various calibres and types were, and still are, a major feature. The park has ten pieces of ordnance at present. Some are directly related to the history of Rodd Hill, some to the history of the Esquimalt - Victoria defences and some to the history of coast artillery in general. They have been acquired from a variety of sources in accordance with an ill-defined collection and conservation policy.

12 pr Field Gun (Figure 49)

An example of an ordnance 12 pr 6 cwt B.L. Mkl on Carriage Field 12 pr 6 cwt B.L. Mkl is held by the park. It is badly rusted and some parts including the wheels are missing. It was recovered from a dump in Nanaimo in 1973 and was donated to the park in 1975 by Mr. & Mrs. Toft of Nanaimo. It is quite possible that this gun once belonged to 5th B.C. Regiment Canadian Artillery, the Victoria militia artillery regiment, which did have two of these guns in Nanaimo immediately before the First World War.

One battery of the regiment was equipped with guns of this type circa 1912 for the landward defence of the coastal fortifications of Esquimalt and Victoria and some of them were allotted to the mobile force of all arms positioned in the Colwood area for the landward defence of Rodd Hill. These guns were no longer part of the mobile force after 1928 when they were replaced by 18 pr field guns, but some were retained in the garrison for saluting duties at the entrance to Esquimalt harbour.

This gun also has a wider significance in the history of artillery and in Canadian military history. The following quotes from labels in the Canadian War Museum Ottawa referring to this type of gun explain this:-

This gun was revolutionary. It had a light steel carriage, giving great mobility; its screw breech mechanism speeded loading; it fired a forged steel elongated shell. The shell was particularly adapted for shrapnell; and its cartridge contained smokeless cordite which eliminated the cloud of smoke from black powder which had previously given away battery positions. The cartridge was fired by percussion. But as with old type guns, discharge threw back the carriage making it necessary to haul forward and relay it after every round. The problem of recoil had not been solved.

and on a restored gun:

The 12 - pounder field guns of 1896 were the guns which the Royal Canadian Artillery used in the South African War (1899 - 1902). Three Victoria Crosses were won at Leliefontein on 7 November 1900 when the Canadian guns were saved from capture. One of the guns came back to Canada and is preserved in this museum. The South African War demonstrated the need for heavier field guns: The 12 - pounder had been outranged by Boer Artillery.

There is considerable information available on this gun and its accompanying limber so that it should be quite possible to restore it if that is decided upon. It is one of only five known to exist in Canada today.

40 mm Light Anti-Aircraft Gun (Figure 50)

A gun of this type is held by the park. Its nomenclature is: Ordnance Q.F. 40 mm Mkl. It is not known at present whether this is exactly the same type of gun that was mounted in the left emplacement of

Lower Battery during the Second World War, or the gun mounted near the Sergeant's mess in the same period. Further research into the history of the air defences of Victoria - Esquimalt should be able to clarify this question. It is certainly a very similar weapon. The gun was mutilated before it was transferred from the Department of National Defence to the park.

The gun stands in the open with the 12 pr field gun and a 90 mm anti-aircraft gun at present. Its traversing and elevating gear is disconnected. It receives very little maintenance and is rusty. The stores for the gun are boxed and stored in the oil storage area of the engine room in the park at present.

90 mm Anti-Aircraft Gun

One of these American guns is held by the park. This type of gun replaced the British 3.7 inch Heavy Anti-Aircraft gun in Canadian artillery service in the 1950's. The gun has no direct historical connection with Rodd Hill and only a very tenuous connection with the air defence of Victoria - Esquimalt. It is displayed near the 12 pr field gun and 40 mm Light Anti-Aircraft gun. Its traversing and elevating gear is disconnected. It is not on a level platform.

6 pr Hotchkiss

An example of this gun: Ordnance Q.F. Hotchkiss 6 pr Mk1 on Carriage Garrison Q.F. recoil 6 pr Hotchkiss Cone Mk1** Barrel No. 502, is displayed in the temporary visitors reception centre at the park entrance. It was donated to the park by the Esquimalt garrison. Two guns of this type were mounted at Duntze Head, but none were mounted at Rodd Hill.

6 pr Hotchkiss Barrel

A barrel of this type is held by the park. It was recovered from

a junk yard in Victoria. The breech has been cut to render the gun unusable. It is presently stored in the electric light engine room.

6-inch Q.F.C. Barrel

One of these barrels: Ordnance 6-inch QFC Mk III/IV E.O.C. No. 302, is displayed in the park behind the temporary visitors reception centre. It was recovered by the park from its burial site behind the armoury on Menzies Street, Victoria. One of this type of barrel was on charge to the garrison for repository training. No guns of this type were mounted at Rodd Hill.

6-inch B.L. Mk VI Barrel

This barrel, registered No. 841, is displayed inside the main gate of Lower Battery. It was originally mounted in Upper Battery in 1897. Its history is fully described in the chapter "Upper Battery 6-inch Gun Position".

12 pr Q.F. Gun

A gun of this type: Ordnance 12 pr Q.F. 12 cwt Mk1 on Carriage Mk1, is mounted in the right Q.F. emplacement of Belmont Battery. It is the same type of gun as the original. The park has it on loan from the Royal Canadian Artillery Museum, Shilo, Manitoba.

3 pr Sub Calibre Gun

An example of this training weapon: Guns Subcalibre Q.F. 3 pr for B.L. 6-inch gun Mk V11, V11v, X1, X1*, X11, is held by the park on loan from the Royal Canadian Artillery Museum. It is stored/displayed in the Fortress Plotting Room. This weapon was not used at Rodd Hill, but was used by other batteries in the Esquimalt - Victoria defences during training.

1 inch Aiming Rifle

This weapon was used with the 12 pr Q.F. gun during training. The example held by the park: Rifles Aiming 1-inch Elswick Q.F.B. 12 pdr 12 cwt-Mk1 Serial No. 39, is of the type used with the 12 pr Q.F. guns of Belmont Battery. It is on loan from the Royal Canadian Artillery Museum.

Abbreviations Used

AAG	Assistant Adjutant General
AAOR	Anti Aircraft Operations Room
AQMG	Assistant Quartermaster General
Bde	Brigade
Bdr	Bombardier
B.L.	Breech Loading
BLC	Breech Loading Converted
CGE	Canadian General Electric
DAAG	Deputy Assistant Adjutant General
DEO	District Engineer Officer
D.11	District 11
Eoc	Elswick Ordnance Company
FRH	Fort Rodd Hill
FRH-HR	Fort Rodd Hill Historical Record
FRH-GRP	Fort Rodd Hill Graphic Record Plan
FRH-P	Fort Rodd Hill Photograph
FRH (LB)	Fort Rodd Hill Lower Battery
GGC	Gun Group Commander
GNR	Gunner
GOC	General Officer Commanding
GSO	General Staff Officer
HMSO	Her Majesty's Stationery Office
HP	Hydro Pneumatic
HQ	Headquarter
LAA	Light Anti-Aircraft
MD11	Military District 11
MI	Medical Inspection
OC	Officer Commanding
Pr	Pounder
QF	Quick Firing
QFB	Quick Firing Barrel
QFC	Quick Firing Converted

QMG	Quarter Master General
RA	Royal Artillery
RCA	Royal Canadian Artillery
RCE	Royal Canadian Engineers
RE	Royal Engineers
RGA	Royal Garrison Artillery
RMA	Royal Marine Artillery
R. Sigs	Royal Signals
SAA	Small Arms Ammunition
Sgt	Sergeant
W.D	War Department (British)
WOI	Warrant Officer First Class

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Upper Battery 6-inch gun position.

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"Fort Rodd Hill: A Structural History of Upper Battery and Lower Battery." Manuscript on file, National Historic Parks and Sites Branch, Parks Canada, Ottawa, 1964.

Lovatt, Ronald

"A History of the Royal Garrison Artillery in Esquimalt 1899 - 1906." Manuscript on file at Fort Rodd Hill National Historic Park.

"A History of the Royal Marine Artillery Detachment at Esquimalt 1893 - 1899." Manuscript on file at Fort Rodd Hill National Historic Park.

"The History of Submarine Mining and Boom Defences in Esquimalt Harbour 1893 - 1938. Manuscript on File at Fort Rodd Hill National Historic Park.

"A History of the Militia Gunners of Victoria." Master's Thesis, University of Victoria, 1972.

Figure 1. Upper Battery. Record Plan January 1903. Sheet 1.
Arc of Fire (Public Record Office, Great Britain.)

Nº 1 (OF III).

NORTH AMERICA - WEST COAST
VANCOUVER I.

ESQUIMALT & VICTORIA HARBOURS

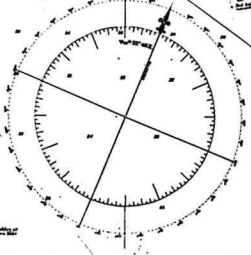
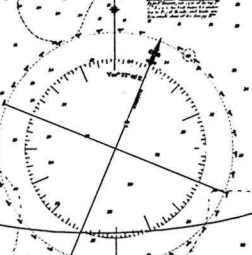
Surveyed by Capt. G. D. Richards, R.N.
Chief of Staff, Esquimalt Harbour, 1882
Victoria Harbour, 1883
Revised by Lt. Col. R. E. Esquimalt, R.N.
1893
Published by the Hydrographic Office, London, 1903.

105
2

Scale of Soundings
Scale of Latitudes & Longitudes
Scale of Distances
Scale of Heights & Depths
Scale of Currents & Winds
Scale of Tides & Winds
Scale of Fog & Rain
Scale of Ice & Snow
Scale of Clouds & Weather
Scale of Direction & Force of Currents
Scale of Direction & Force of Winds
Scale of Direction & Force of Fog
Scale of Direction & Force of Rain
Scale of Direction & Force of Ice
Scale of Direction & Force of Snow
Scale of Direction & Force of Clouds
Scale of Direction & Force of Weather
Scale of Direction & Force of Direction & Force of Currents
Scale of Direction & Force of Direction & Force of Winds
Scale of Direction & Force of Direction & Force of Fog
Scale of Direction & Force of Direction & Force of Rain
Scale of Direction & Force of Direction & Force of Ice
Scale of Direction & Force of Direction & Force of Snow
Scale of Direction & Force of Direction & Force of Clouds
Scale of Direction & Force of Direction & Force of Weather

VICTORIA, B.C. ESQUIMALT DISTRICT,
RODD HILL, UPPER OR ONE-GUN BATTERY
— ARC OF FIRE —
RECORD PLANS OF

ADMIRALTY OFFICIALS
4 JUN 1902
AGENT



Drawn by
Lt. Colonel
R. E. Esquimalt
18th January, 1903.

Figure 2. Upper Battery. Record Plan January 1903. Sheet 2.
Emplacement. (Public Record Office, Great Britain.)

VICTORIA, B.C. ESQUIMALT DISTRICT, —
 RODD HILL. UPPER OR ONE GUN BATTERY. — RECORD PLANS OF,
 EMPLACEMENT FOR ONE 6" B.L. GUN ON H.R. DISAPPEARING CARRIAGE. —

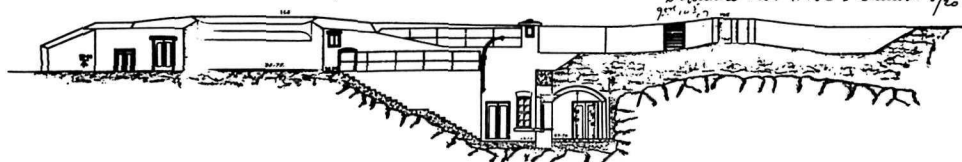
DRAWING N° 2 (OF III).

SCALE 10 FEET TO ONE INCH. (R.F. $\frac{1}{100}$).

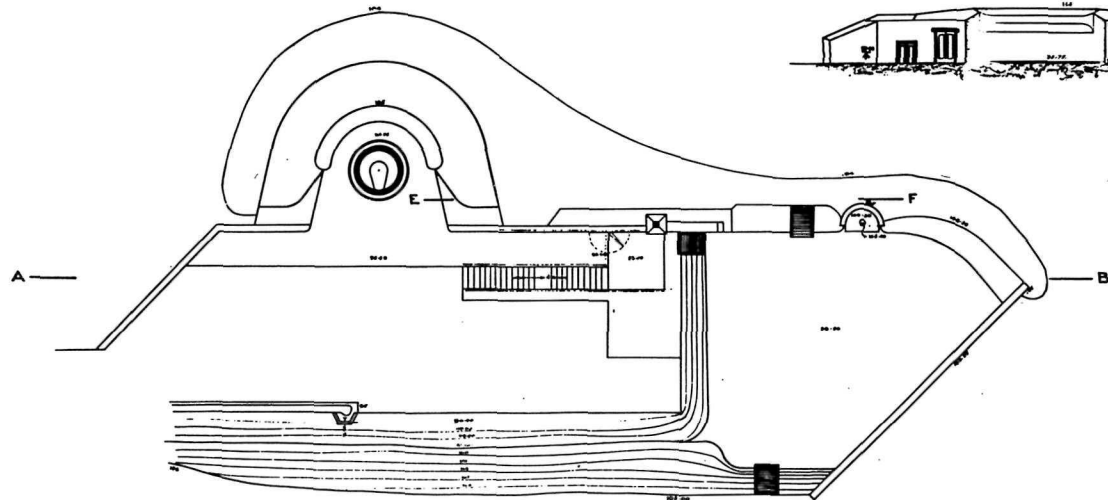
0 10 20 30 40 50 60 70 80 90 100 FEET.

GUN MARK VI, CARRIAGE MARK IV.

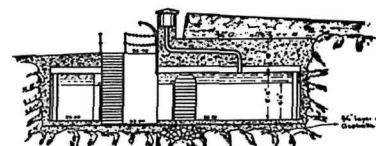
*Revised to meet requirements to transfer
 date 16th Dec + 17th April 1907, S. 510. Position
 Council of the District
 appropriate with T. Sol. - Canada 1/100
 1907/10/17*



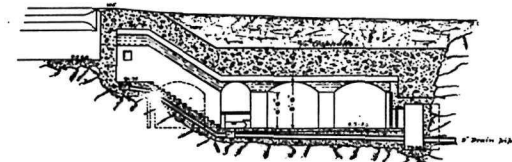
SECTIONAL ELEVATION ON LINE A. B.



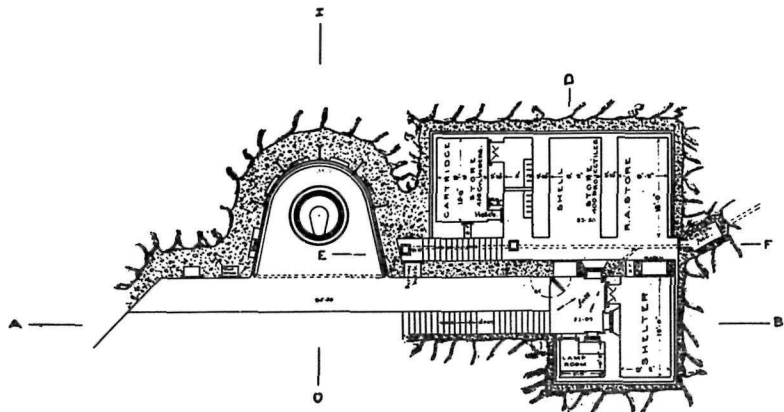
TOP PLAN.



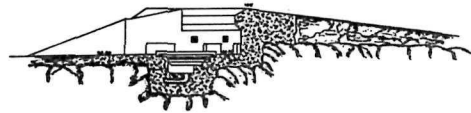
SECTION ON LINE C. D.



SECTION ON LINE E. F.



TERREPLEIN PLAN.



SECTION ON LINE C. H.

*See also drawing of
 of construction*

DRAWN BY.
 Geo. Foster, S.C.P.E.
 17 OCTOBER, 1902.

A. Prout
 LT: COLONEL
 O.C. R.E. ESQUIMALT
 28th January 1907

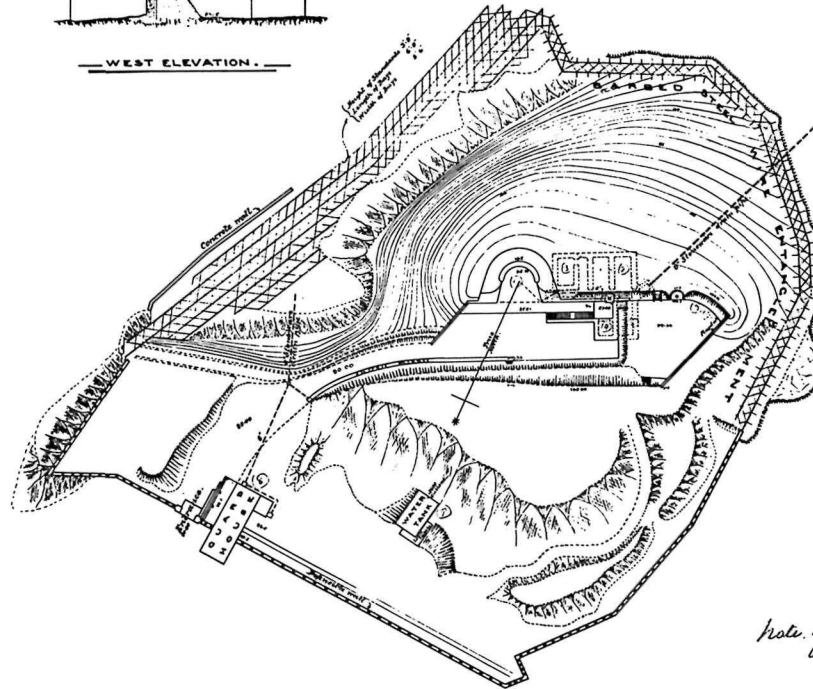
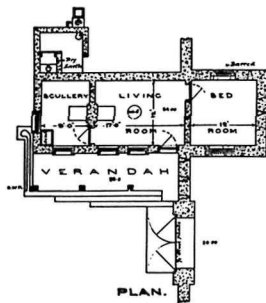
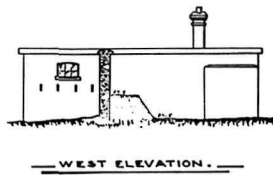
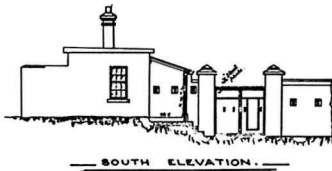
Figure 3. Upper Battery. Record Plan January 1903. Sheet 3.
Guard House and General Surface Plan. (Public
Record Office, Great Britain.)

VICTORIA, B.C. ESQUIMALT DISTRICT, —
 RODD HILL, UPPER OR ONE GUN BATTERY, — RECORD PLANS OF —
 EMPLACEMENT FOR ONE 6 INCH B.L. GUN ON H.P. DISAPPEARING CARRIAGE. —
 DETAILS OF GUARD HOUSE, AND GENERAL SURFACE PLAN. —

GUN MARK VI CARRIAGE MARK IV. —

DETAILS 10 FEET TO ONE INCH (R.F. $\frac{1}{120}$) —
 SURFACE PLAN 30 FEET TO ONE INCH (R.F. $\frac{1}{360}$).

AUTHORITY FOR COMMENCEMENT OF WORK, ~~ORDER~~ 22-4-95. /
 DATE OF COMMENCEMENT Do 6-9-95 /
 DATE OF COMPLETION Do 31-3-98 /
 ESTIMATED COST, Do £3508 /
 ACTUAL COST, Do £3465.



Note. Water supply under consideration.

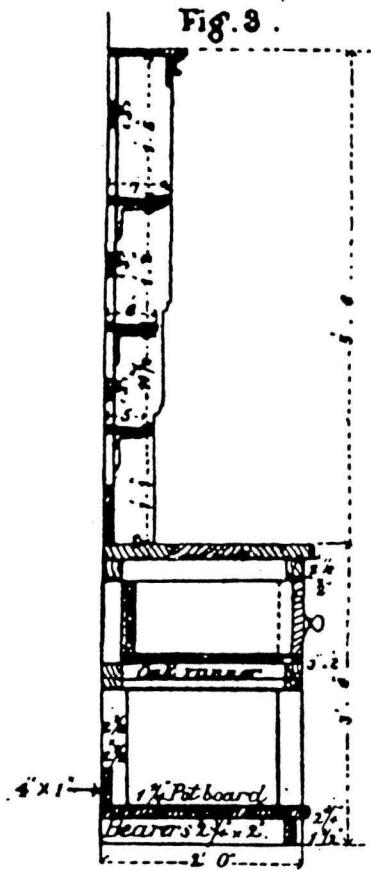
Asant.
 LT. COLONEL, —
 O.C.R.E. ESQUIMALT, —
 28th January 1903.

Figure 4. Aerial Vertical Photograph 10 March 1944. (Fort
Rodd Hill Collection FRH 001346)

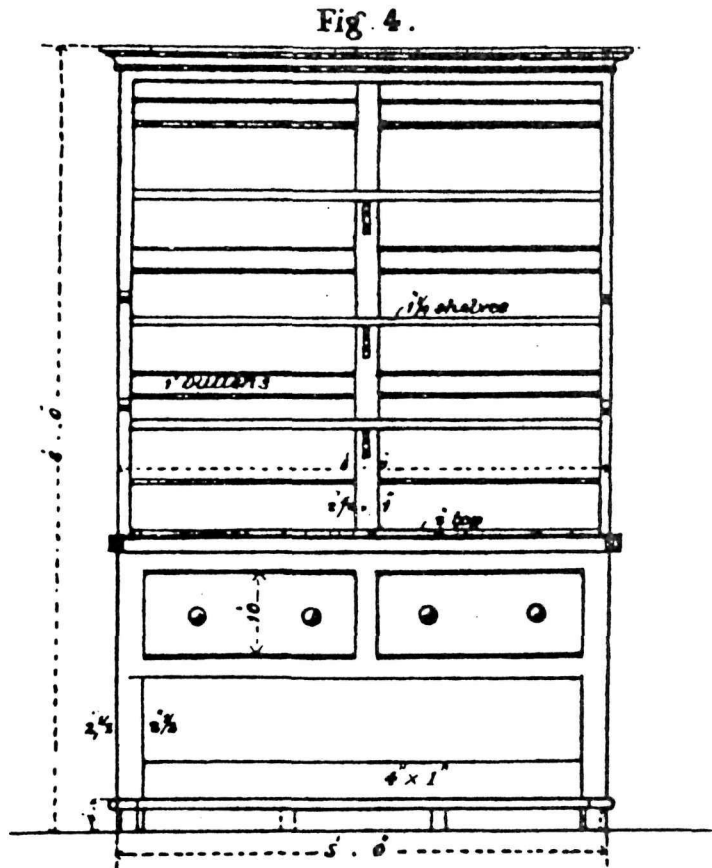


Figure 5. Drawing and Specification of Dresser for Small Kitchens. (War Office Pattern Book No. 2, 1892 - 1901. (Chatham, England: Royal Engineers Library), Plate 172.)

DRESSER FOR SMALL KITCHENS, &c.



Section.



Elevation.

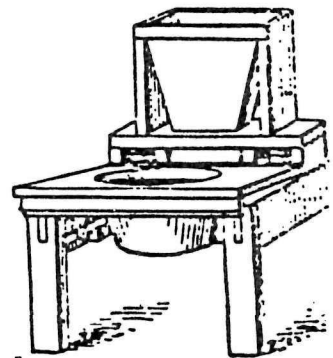
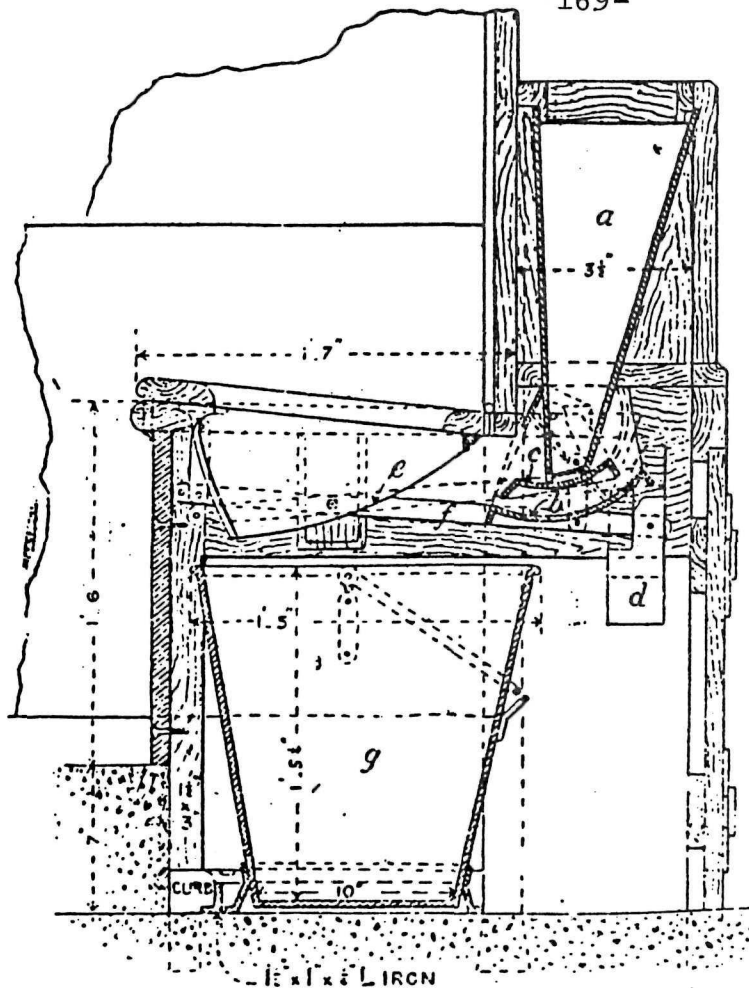
Scale of 1/4" = 1' 0" 1 2 3 4 5 6 7 8 9 Feet

Specification Plate 172

To be of wrought deal of the dimensions figured on the drawing, properly framed together and glued. The top to be 2" thick, ploughed and "(illegible 2 words)" tongued, top edge chamfered and corners rounded; grooved for standards, centre standards and stop board; the latter to be 1" x $\frac{1}{4}$ " board to top; "(illegible 2 words)" $2\frac{1}{2}$ " x $2\frac{1}{2}$ ", top rails $2\frac{1}{2}$ " x 2", rails under drawers 8" x 2". The pot board to be "(illegible)" and "(illegible)" rounded, grooved for riser and skirting, and fixed on crossbearers $2\frac{3}{4}$ " x 2". The risers to be "(illegible)" x $2\frac{1}{2}$ ". Skirting 4" x 1" tongued into pot board. The drawers to be enclosed by 1" deal, tongued "(illegible 2 words)" top and middle rails. To have 1" fronts, top and bottom edges beaded "(illegible)" and "(illegible 2 words)" angles and grooved for bottoms, which are to be "(illegible)" ploughed and "(illegible)" tongued splayed to "(illegible)" grooves and properly blocked. The runners to be of oak; each drawer to have two oak knobs; centre standards to be $1\frac{1}{4}$ " shaped as indicated, grooved for shelves, and "(illegible)" to top. The centre standard to be $2\frac{1}{2}$ " x 1" tongued into top. The battens to be 8" x 1" and skirting 7" x 1" chamfered on "(illegible)" edges, housed at ends into standards, and halved to centre standard, the skirting to be tongued to top. The whole to be securely fixed to wood plugs (cut to twist) driven into wall. The shelves to be 1"(illegible)" " thick and 5", 6" and 7" wide respectively, sunk for plates and dishes and housed into end standards. Each shelf to be supported at centre by a galvanised cast iron bracket weighing about 1 lb with No. "(illegible)" stout screws to each. The fascia to be 4" x 1" let in flush with the edges of standards and finished by a bead moulding, returned at ends and mitred at angles. The top board to be 9" x $\frac{3}{4}$ " secured to "(illegible)" and to chamfered fillet next wall. Provide and fix to edges of middle and bottom shelves, brass hooks with screw shanks. The hooks to middle shelf to be $1\frac{1}{4}$ ", spaced 6" apart. Those to bottom shelf to be 1" and 4" apart.

The whole to be painted (except dresser top) 4 times in oil, common colours. The pot board skirting and riser to be finished black.

Figure 6. Examples of Dry Earth Latrines. (Instruc-
tions in the Care of Barracks. (London,
England: War Office), pp. 44-47.)



a. Hopper. b. Circular tray. c. Chucker. d. Weights. e. Rim. f. Lever bar. g. Pail

Dry Earth Latrines.—See Figs. 63 and 64.—When the latrines in barracks are on the dry earth system, the following points should be particularly observed. The earth should be perfectly dry, and screened of all stones and other alien substances before use. If not dry, it will be of little use as a deodoriser, and will cake in the apparatus, become hard, and choke the throat of the hopper. Each morning the earth should be loosened in the hopper. Sometimes it is necessary to remove and re-dry the earth.

Stoves for drying the earth are provided at most barracks where this system exists. Screens also for screening the earth are supplied by the A.S. Corps. Where there is a contractor, he is responsible to the Officer in charge of barracks, A.S.C., for the supply of the earth properly dried and screened, and the removal of the soil daily. Where there is no contractor, the troops are responsible. The apparatus of dry earth closets are liable to get out of order if not properly attended to. Usually such adjustment as is required can be done by the Pioneers.

Figure 7. Upper Battery 6-inch Disappearing Gun emplacement 1978. Lower terreplein. (Photo by author.)

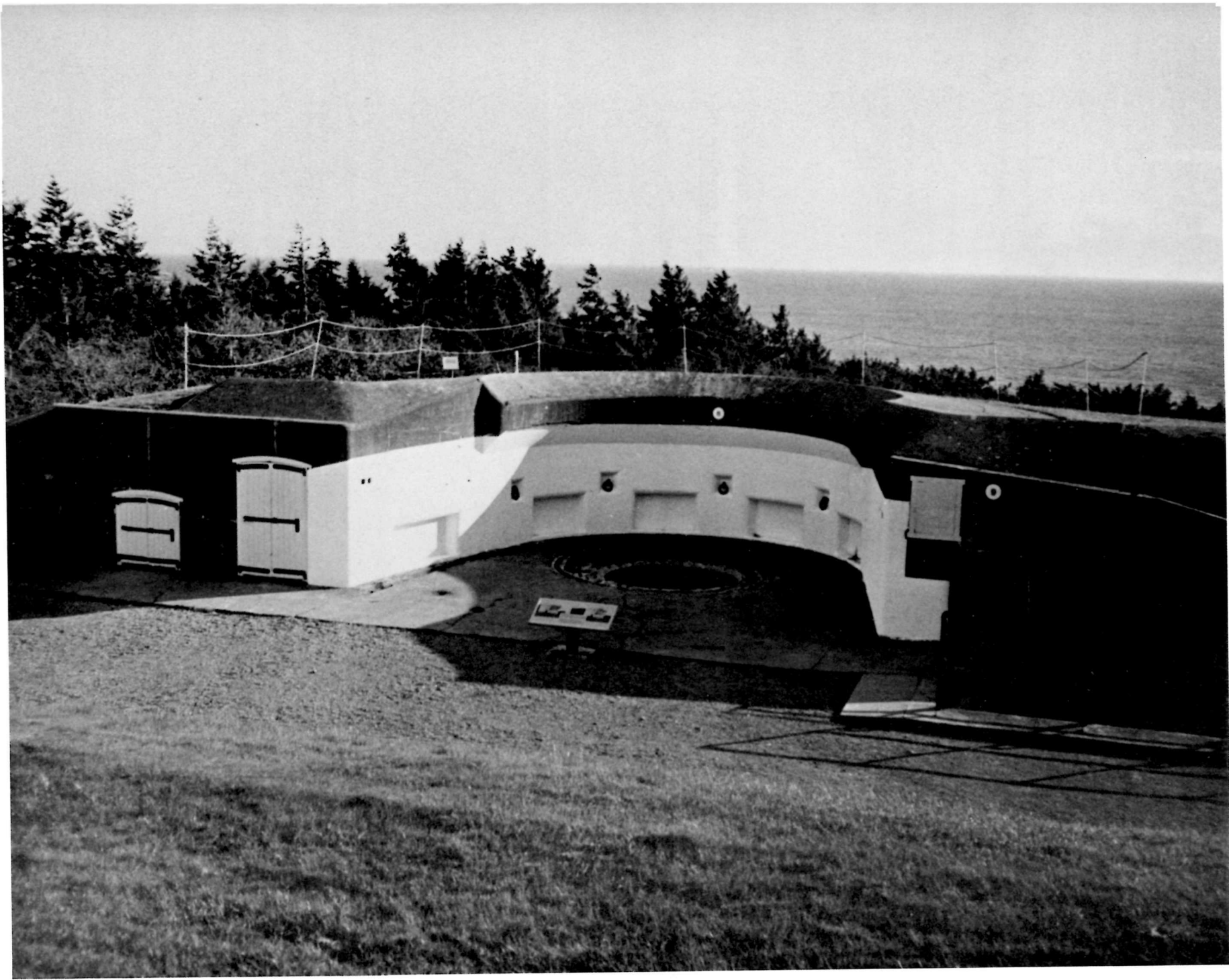


Figure 8. Upper Battery 6-inch Disappearing Gun emplacement 1978. Upper terreplein. (Photo by author.)

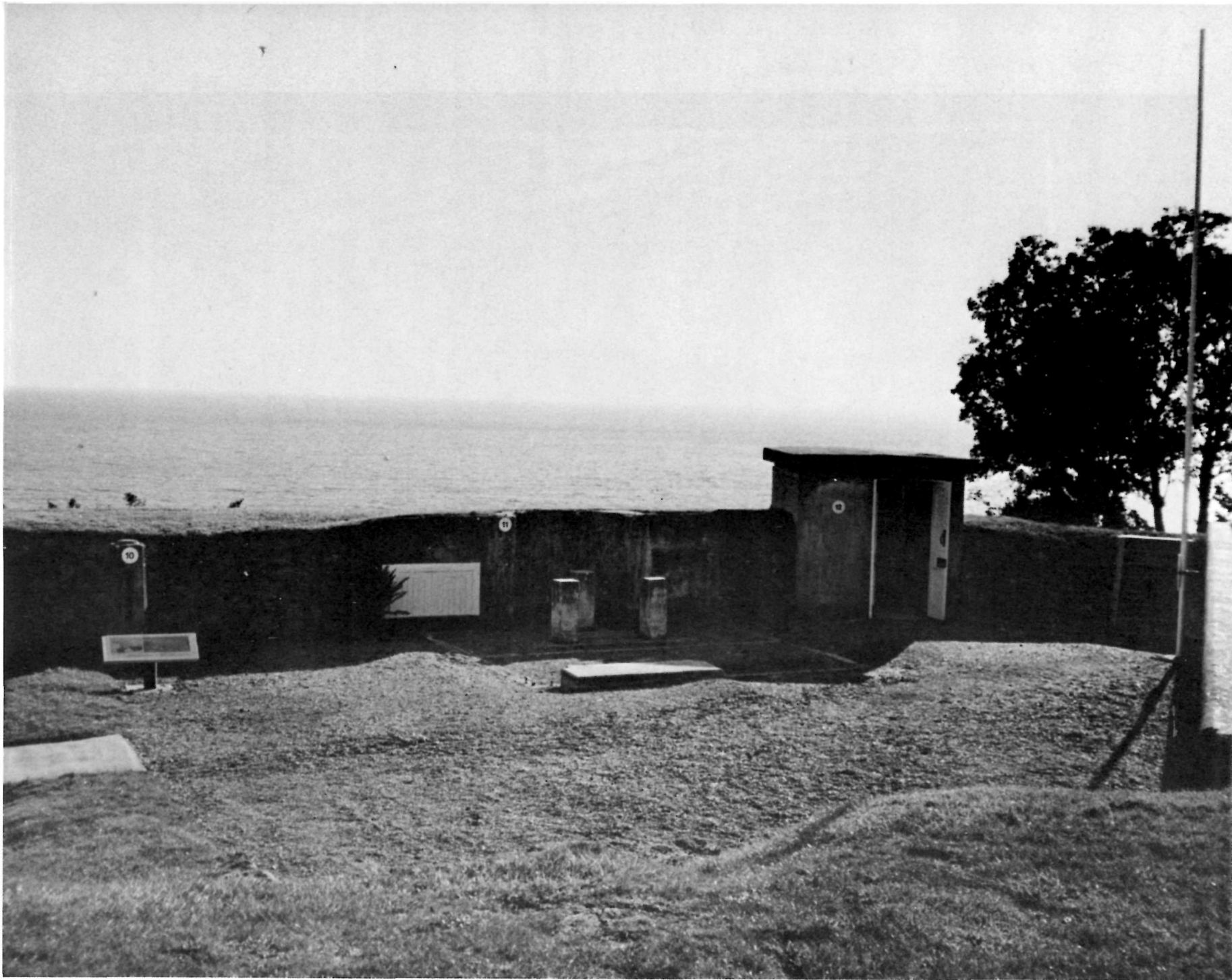
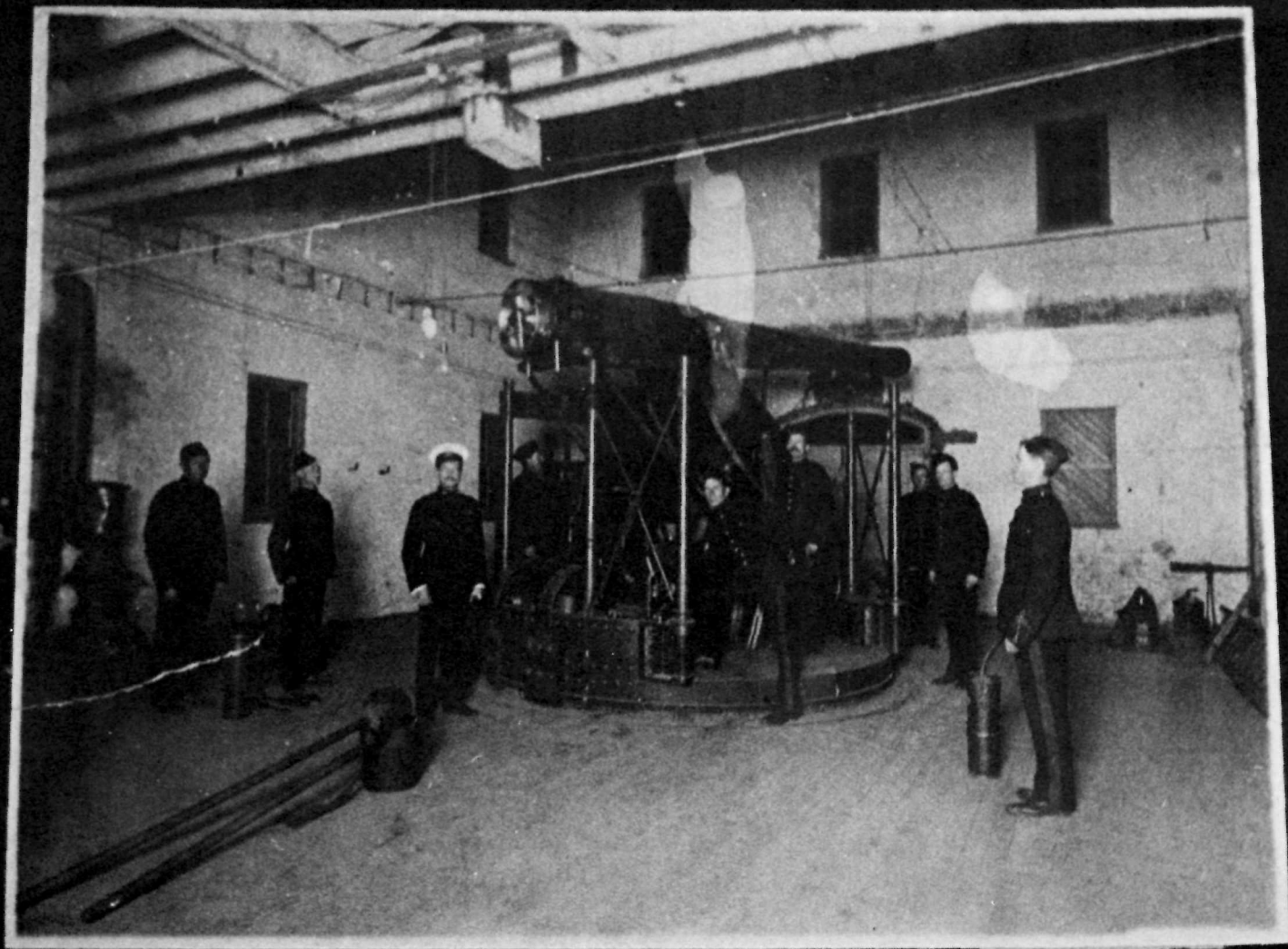


Figure 9. Upper Battery 6 inch Disappearing Gun in the Menzies Street, Victoria, drill hall. Circa 1914. (Fort Rodd Hill Collection)



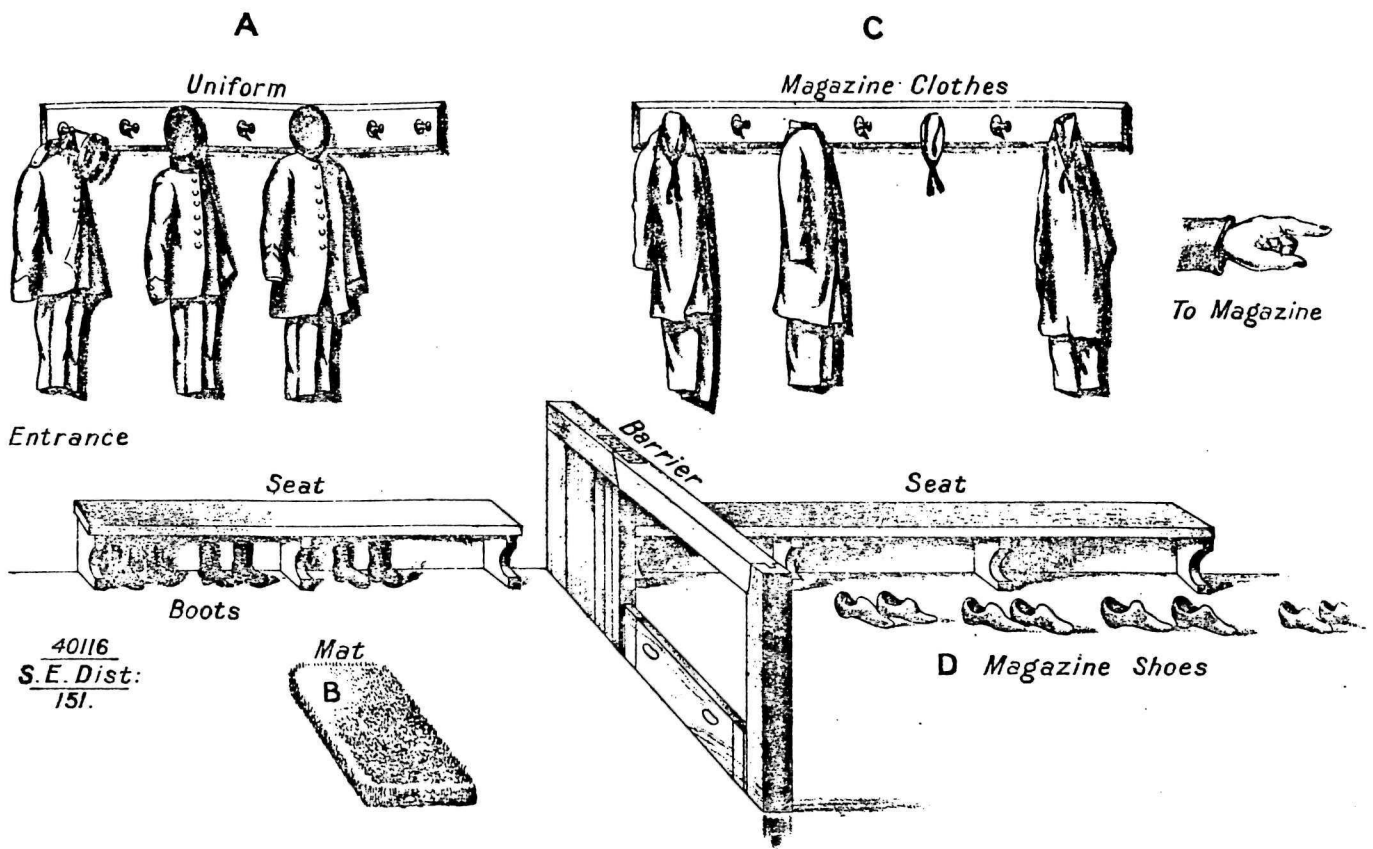
Fire Team at practice on sea with disappearing gun.
Drill Hall, Mengies St.
Lt. P. T. Stern.

Figure 10. Army form posted in magazines. (Regulations for Magazines and Care of War Materiel
(London, England: HMSO, 1913), facing p.15.)

Plate I.

To face page 15.

Army Form G. 949.

(Referred to in paragraphs 47, 60 and 61)TO BE READ AND EXPLAINED TO THE MEN.

40116
S.E. Dist:
151.

1. Wipe your boots on mat B and take them off.
2. Take off your uniform and hang it on the pegs A.
3. Pass over the barrier in your socks; then put on the magazine clothes C and shoes D and go to your work.
4. Inspecting officers should put each foot in succession past the barrier and draw the magazine goloshes over their boots.
5. On leaving the Magazine the order of the above directions will be reversed.

NOTE Neither Magazine Clothes nor Shoes must ever be taken outside the barrier nor must uniform or boots be ever brought inside it. If the magazine shoes are allowed to collect grit, they are just as dangerous and as likely to make sparks as boots.

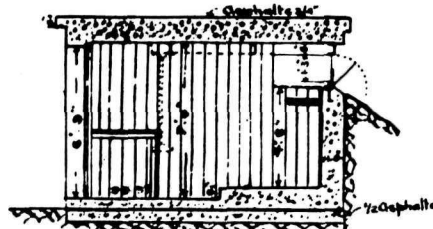
Figure 11. Electric Light Directing Station. Record Plan.
Extracted & enlarged from Upper Battery Record
Plan, 5 September 1903. (Public Archives of
Canada).

CARRIAGE MARK IV.

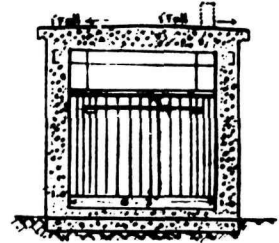
DETAILS OF E.L. DIRECTING STATION.

SCALE 5 FEET - ONE INCH (R.F. / 60)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 FEET



SECTION ON LINE A.B.



SECTION ON LINE C.D.

E.L. DIRECTING STATION
ONE GUN BATTERY

W.O Canada 5/200 - 4.12.02
Date of Commencement 29.8.03
Completed - - - 4.11.04
Estimated Cost \$ 104
Actual Cost - - \$ 104

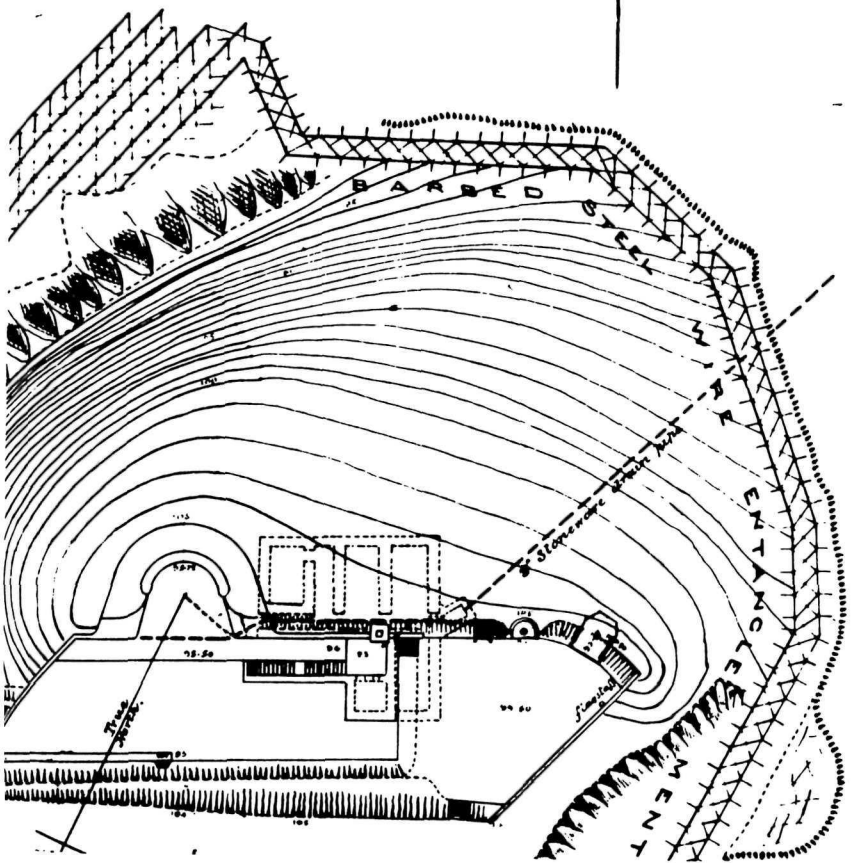
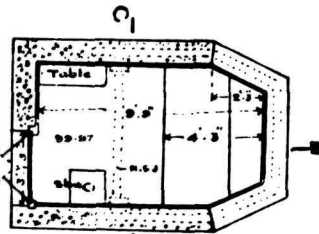


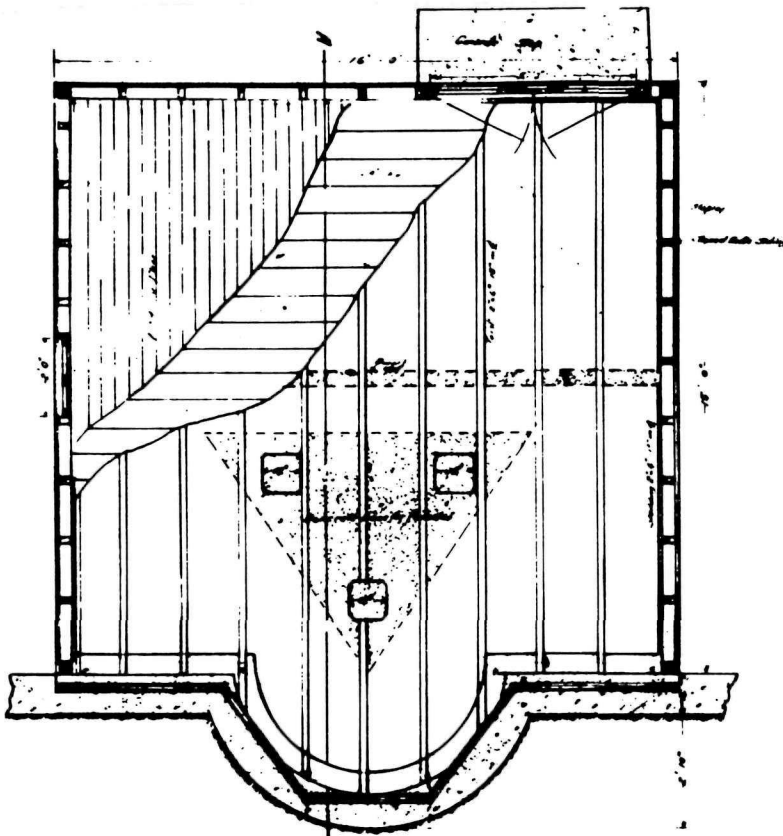
Figure 12. Electric Light Directing Station 1978.
(Photo by author.)



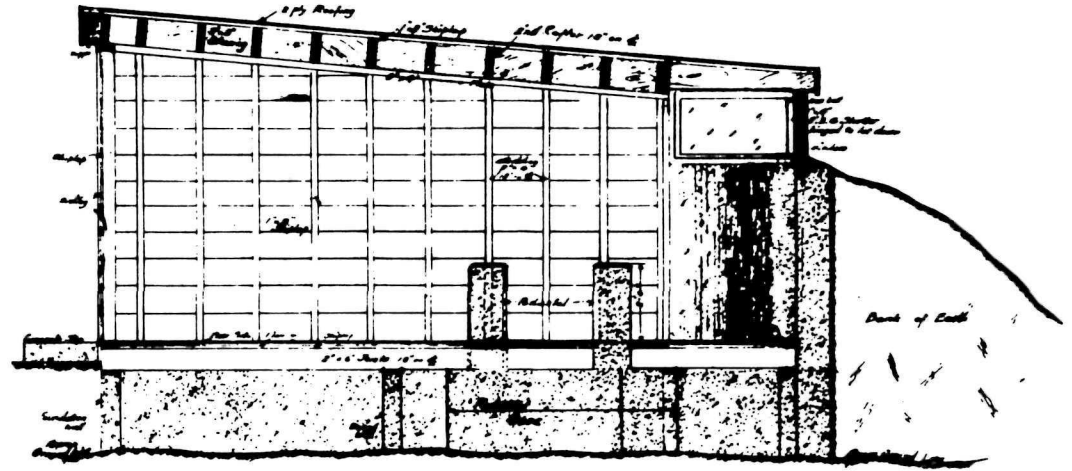
Figure 13. Fire Commanders Post. Record Plan. 27
September, 1933. (Fort Rodd Hill Collection.)

PLAN ETC OF FIRE COMMANDERS POST
"UPPER BATTERY" ROAD HILL
"ESQUIMALT BC

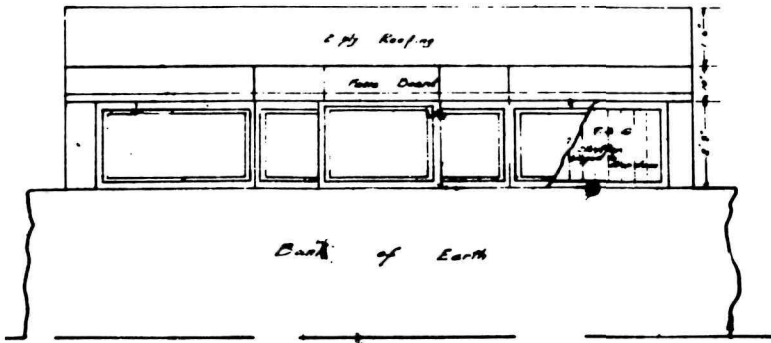
Scale 1/2" = 1' floor.



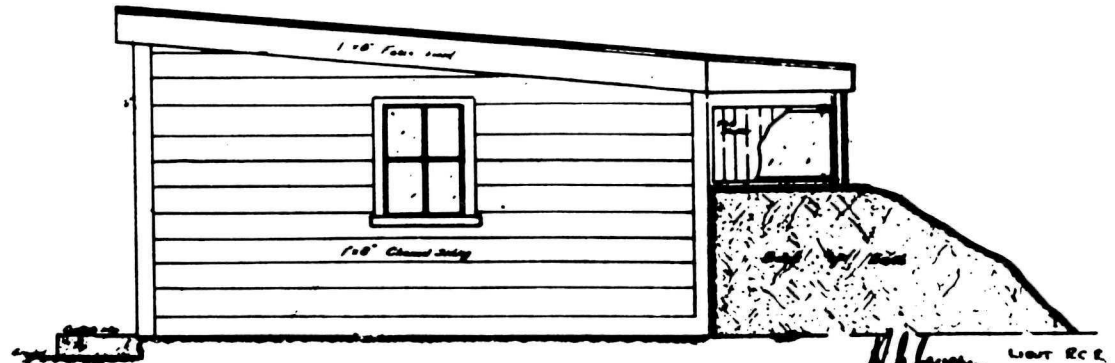
FOUNDATION AND FLOOR PLAN



SECTION THROUGH A-A.



FRONT ELEVATION



SIDE ELEVATION

R. H. Brown LIGHT R.C.E.
SUPER R.C.E.
D.E.O. M.D.V.

Designed by S. H. HARRISON S.M.S. (R.C.E.)
Drawn and Dimensioned by H. H. HARRISON S.M.S. (R.C.E.)

Figure 14. Telephone Exchange. Upper Battery. 1978
(Photo by author.)

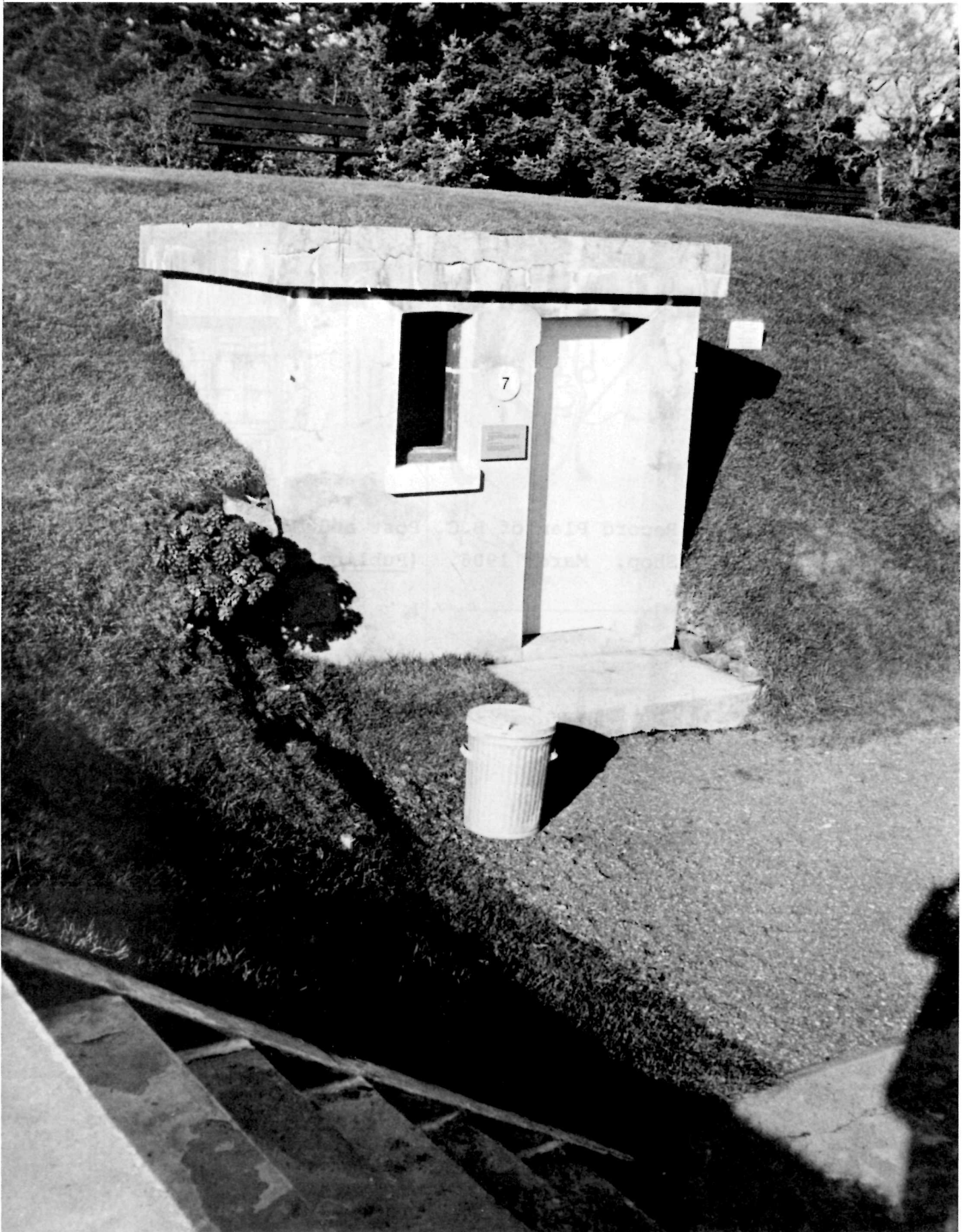


Figure 15. Record Plan of B.C. Post and No. 6 Fitters
Shop. March 1906. (Public Archives of Canada)

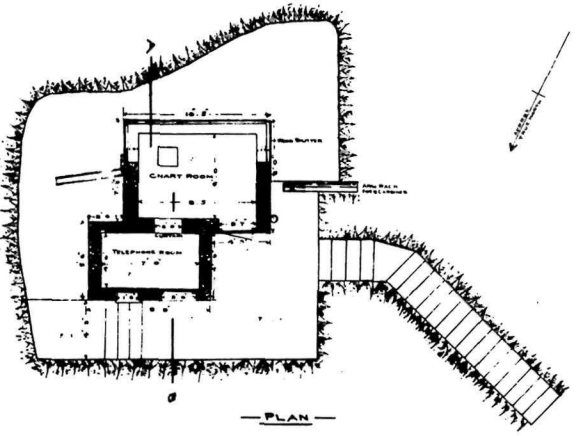
VICTORIA, B.C. ESQUIMALT DISTRICT
 RODD HILL, RECORD PLAN OF B. C. POST AND NO. 6 FITTERS SHOP.

DRAWING NO. 6
 RECORD PLAN - 6

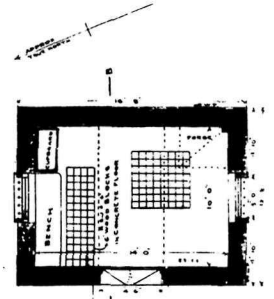
FITTERS SHOP NO. 6

SCALE 4 FEET TO ONE INCH (R.F. 1/48)

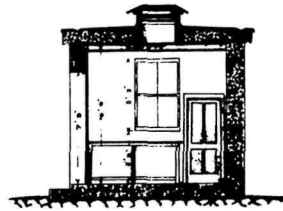
NOTE:
 RANGE TO DATUM POINT PILE ON BROTHERS ISLAND 180 YARDS
 TRAINING 24" HEIGHT OF INSTRUMENT ABOVE M.S.L. 77.50.
 THE WHOLE BUILT OF CONCRETE ON ROCK FOUNDATIONS ROOF
 ASPHALTED IN TWO LAYERS EACH 3/8" THICK



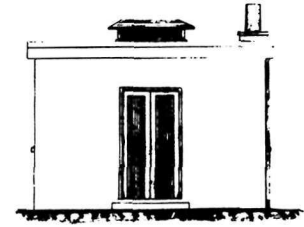
PLAN



PLAN

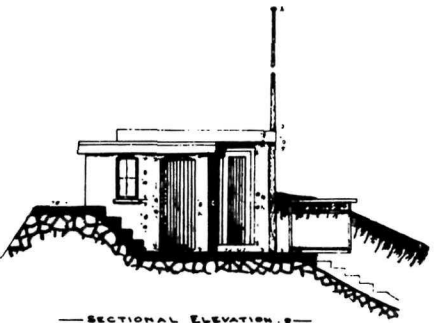


SECTION ON A. B.

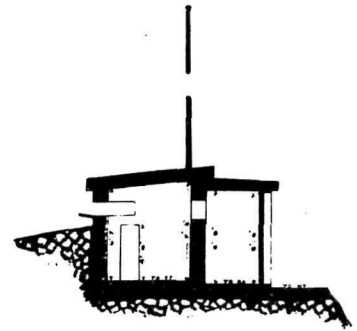


WEST ELEVATION

DATE OF AUTHORITY TO COMMENCE 23.3.01
 COMMENCEMENT 30.4.01
 COMPLETION 18.7.01
 ESTIMATED COST £ 144
 ACTUAL " " 144
 THE WHOLE BUILT OF CONCRETE ON ROCK
 FOUNDATION ROOF ASPHALTED, TWO LAYERS
 EACH 3/8" THICK

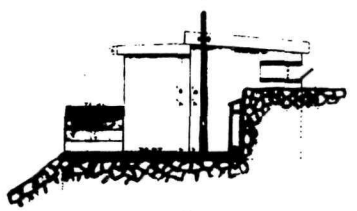


SECTIONAL ELEVATION



SECTION ON A. B.

DATE OF AUTHORITY TO COMMENCE B. C. POST
 RODD HILL CANADA 1902 20.10.00
 DATE OF COMMENCEMENT 1.2.01
 " " COMPLETION 30.9.01
 ESTIMATED COST £ 144
 ACTUAL " " 144.11
 THE WHOLE BUILT OF CONCRETE ON
 ROCK FOUNDATION ROOF ASPHALTED,
 TWO LAYERS EACH 3/8" THICK



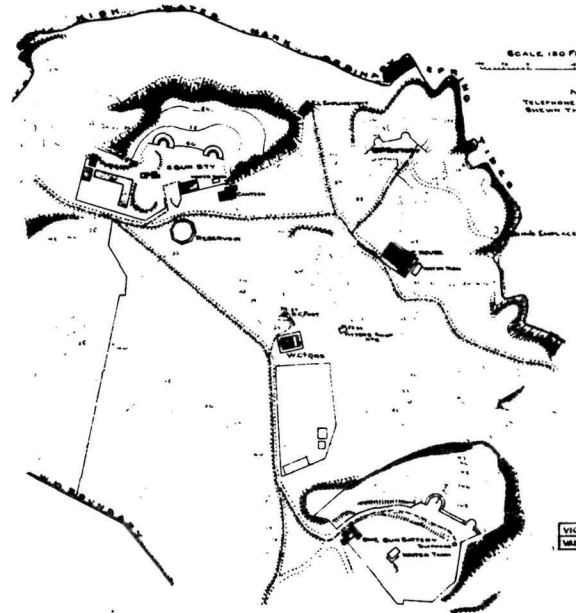
WEST ELEVATION

TRACED BY R. E. Sapper
 SAPPER R.E.
 1908

SITE PLAN

SCALE 120 FEET TO ONE INCH (R.F. 1/440)

NOTE
 TELEPHONE WIREBORING
 SHOWN THUS



VICTORIA DE 17 TRACING 17
 WILSON DE TRACING 17

MAJOR R. E.
 O. G. R. E. ESQUIMALT
 1908

RODD HILL
 FITTERS SHOP

Figure 16. Example of Fire Commanders Chart. (Garrison Artillery Drill Vol. 1 (London, England: HMSO, 1895), facing p. 204. Original owned by J. Rippengale.)

To face page 204.

FIRE COMMANDERS' CHART.

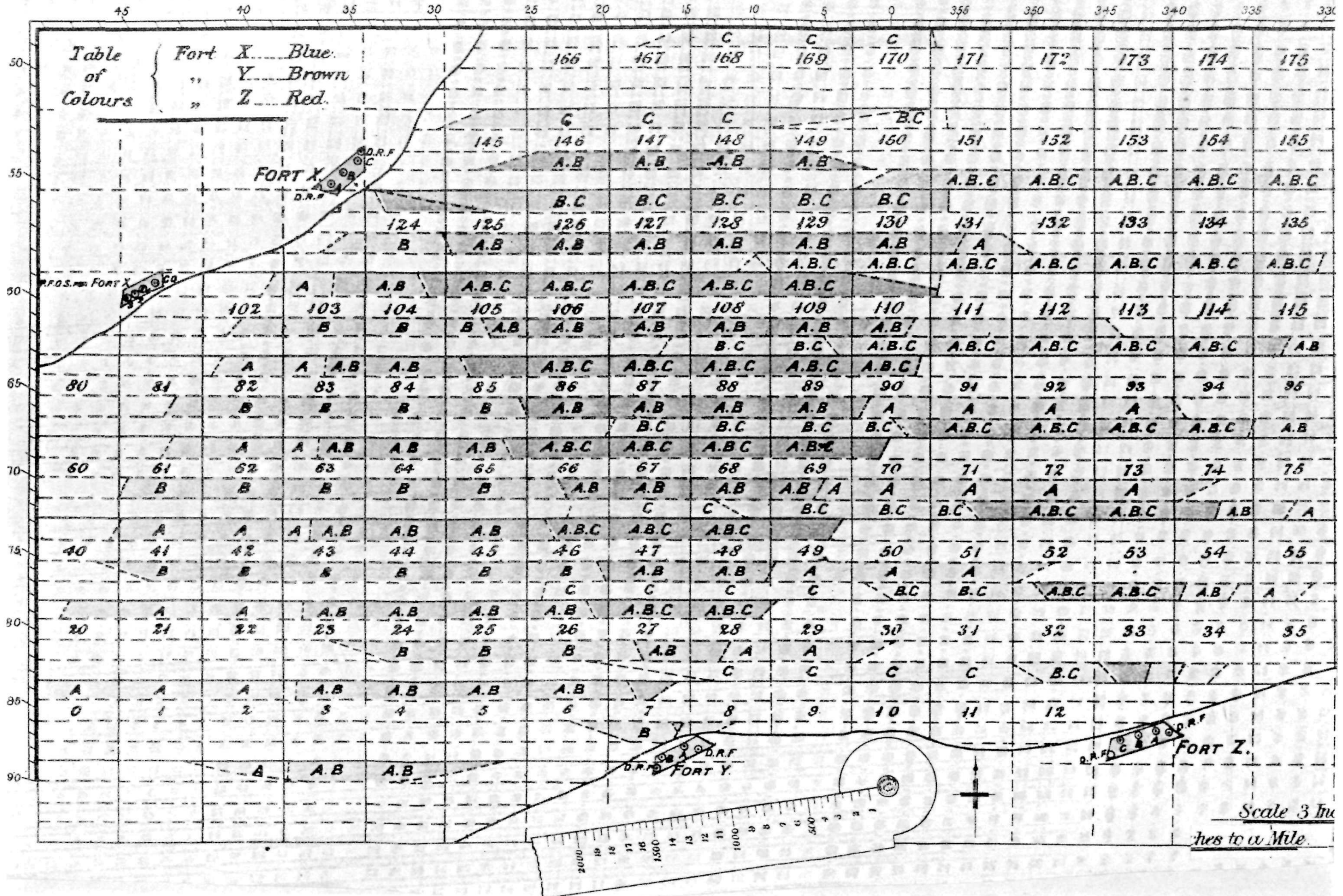


Figure 17. Battery Commanders Chart. (Garrison Artillery Drill Vol. 1 (London, England: HMSO, 1895), facing p. 206. Original owned by J. Rippengale.)

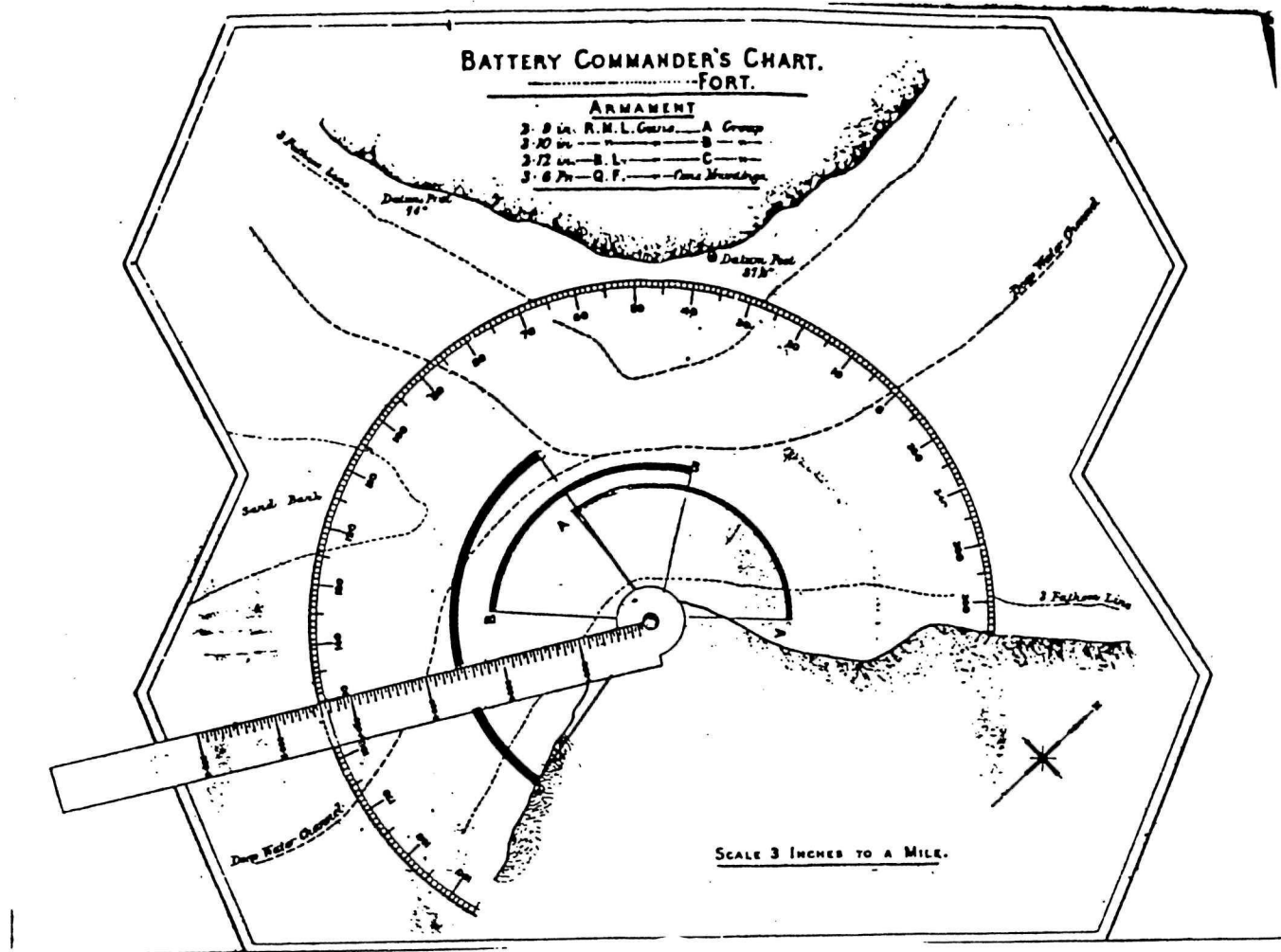
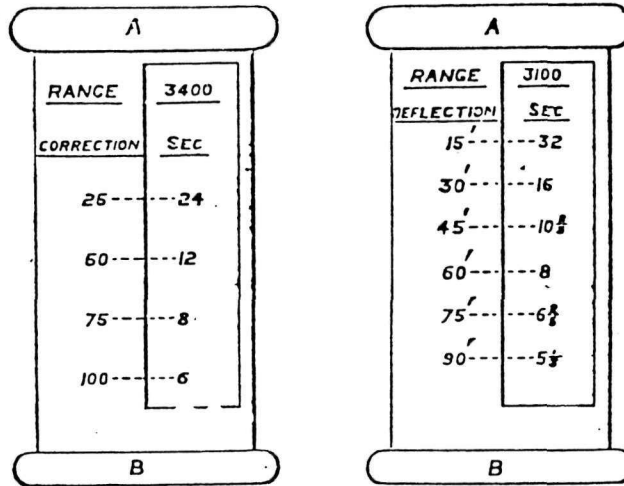


Figure 18. Target Indicator Card. (Garrison Artillery Drill Vol. 1 (London, England: HMSO 1895), p. 208 adapted. Original owned by J. Rippengale.)

Fort Rodd Hill

No. of Square	Range	Training	No. of Square	Range	Training
52	700	33	113	2000	3
53	800	7	114	2050	351
54	900	329	115	2100	341
55	1050	319	116	2300	331
1	1500	37	117	2450	328
72	1300	22	118	2750	316
73	1200	5	129	2950	35
74	1230	346	120	2750	27
...

Figure 19. Battery Commanders Drum. (Garrison Artillery Drill Vol. 1 (London, England: HMSO 1895), pp 210, 212. Original owned by J. Rippengale.)



Deflection Correction

Ranges	900	1,300	1,700	2,100	2,500	2,800	3,100	3,400
Deflection	secs.	secs.	secs.	secs.	secs.	secs.	secs.	secs.
15'	8	12	16	20	2½	28	32	38
30'	4	6	8	10	12	14	16	18
45'	2½	4	5½	6½	8	9 ¹ / ₃	10½	12
60'	2	3	4	5	6	7	8	9
75'	1 ³ / ₄	2 ³ / ₄	3½	4	4 ⁴ / ₅	5½	6½	7½
90'	1 ¹ / ₃	2	2½	3 ¹ / ₅	4	4½	5 ¹ / ₅	6

Figure 20. Group Difference Disc and Table. (Garrison Artillery Drill Vol. 1 (London, England: HMSO 1895), pp. 214, opposite 218. Original by J. Rippengale.)

GROUP DIFFERENCE DISC.

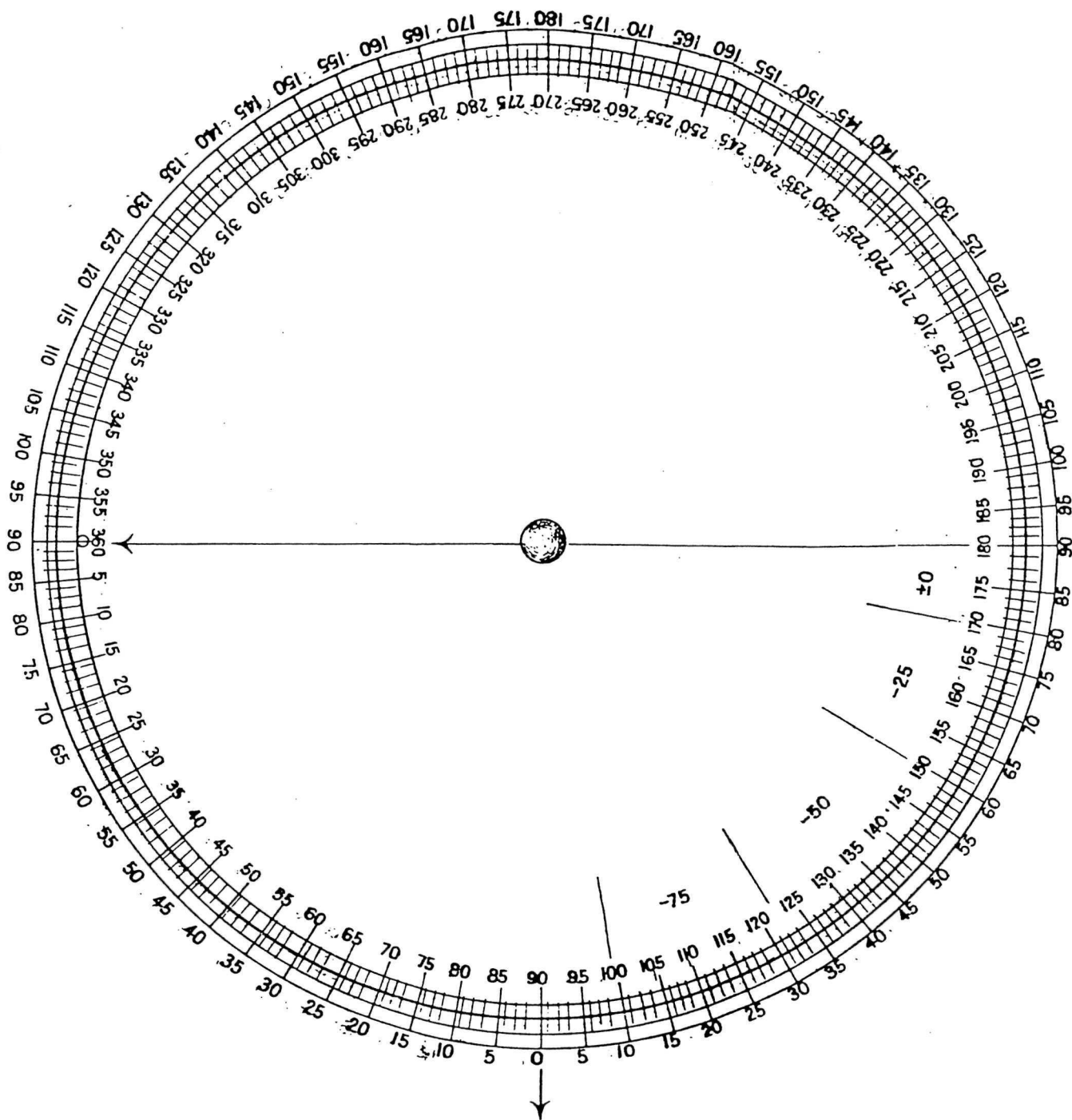


TABLE OF ANGULAR DISTANCES, RIGHT AND LEFT OF x, THROUGH WHICH CORRECTIONS FOR DISPLACEMENT MUST BE GIVEN

Displacement		200	187½	175	162½	150	137½	125	112½	100	87½	75	62½	50	37½	25
Correction	-200	20														
	-175	35	30	22												
	-150	47	43	38	33	23										
	-125	56	52	50	47	41	35	25								
	-100	64	62	60	62	54	50	45	39	29						
	-75	72	71	69	69	65	67	60	56	52	45	33				
	-50	80	78	78	77	75	74	72	71	68	64	60	53	41	71	60
	-25	86½	86	85	86	85	84	84	83	83	82	80	78	75	109	120
	<u>± 0</u>	93½	94	95	94	95	96	96	97	97	98	100	102	105	180	180
	+25	100	102	102	103	105	106	108	109	112	116	120	127	139		
	+50	108	109	111	111	115	117	120	124	128	135	147	180	180		
	+75	116	118	120	118	126	130	135	141	151	180	180				
	+100	124	127	130	133	139	145	155	180	180						
	+125	133	137	142	147	157	180	180								
	+150	145	150	158	180	180										
	+175	160	180	180												
	Correction	+200	180													
Displacement		200	187½	175	162½	150	137½	125	112½	100	87½	75	62½	50	37½	25

Figure 21. Battery Commanders Post. 1978.
(Photo by author.)



Figure 22. Lower Battery. Record Plan. Drawing No. 1.
Arcs of Fire. 28 January 1903. (Public Record
Office, Great Britain)

Nº1 (OF IV).

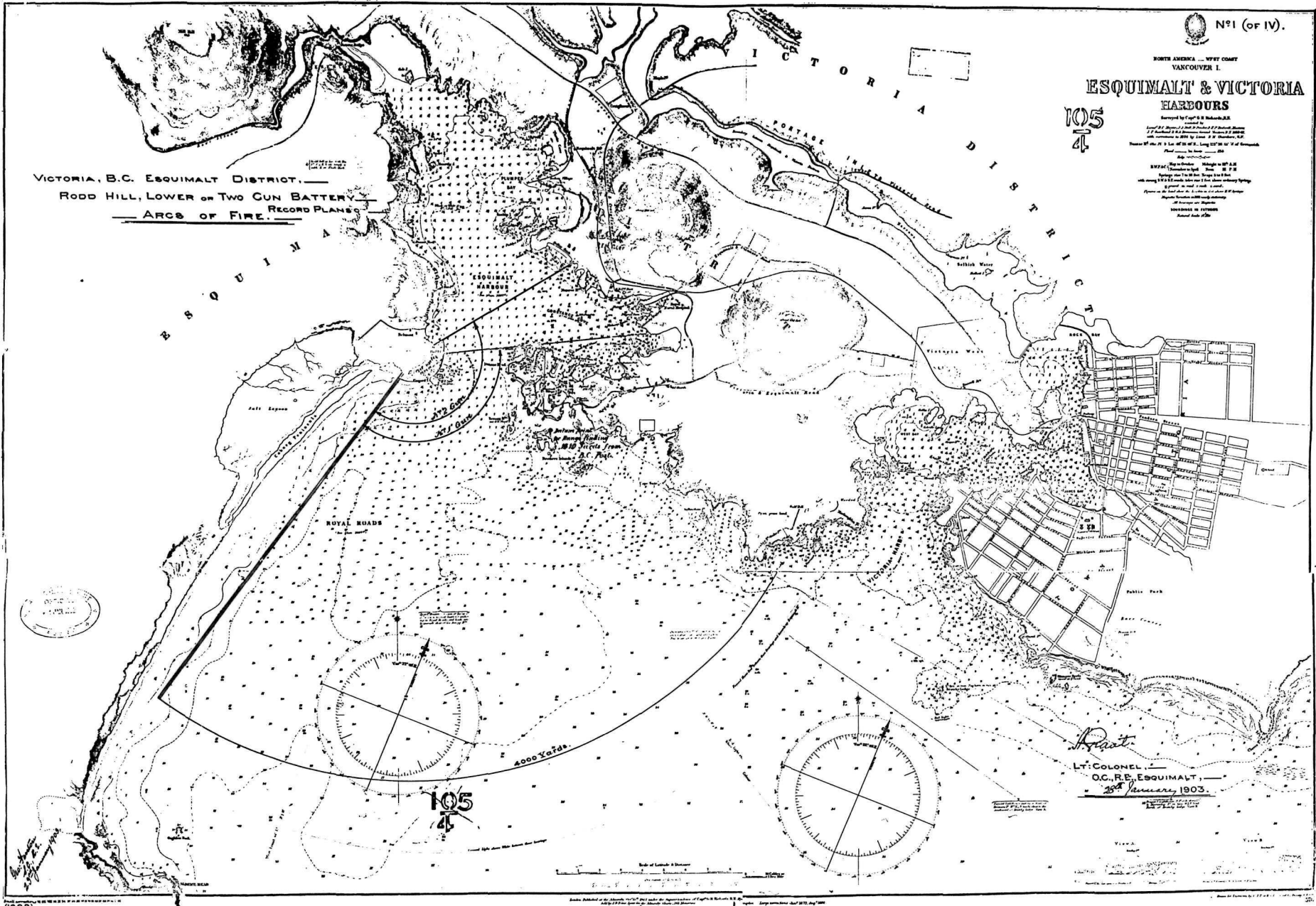
NORTH AMERICA ... WEST COAST
VANCOUVER I.

ESQUIMALT & VICTORIA HARBOURS

105
4

Surveyed by Capt. G. B. Bouchard, R.N.
From 1875 to 1885. Corrected to 1893.
Scale of the H. 1. Lat. 48° 25' N. Long. 123° 18' W. of Greenwich.
Depth in Fathoms.
Soundings in Feet.
Soundings in Meters.
Soundings in Fathoms.
Soundings in Feet.
Soundings in Meters.

VICTORIA, B.C. ESQUIMALT DISTRICT.
RODD HILL, LOWER OR TWO GUN BATTERY
ARCS OF FIRE.
RECORD PLANS



203

Figure 23. Lower Battery. Record Plan. Drawing No. 2.
Emplacement Plan and Sections of Casemates.
28 January 1903. (Public Record Office,
Great Britain.)

VICTORIA, B.C. ESQUIMALT DISTRICT, —
 RODD HILL, LOWER OR TWO GUN BATTERY, — RECORD PLANS OF,
 EMPLACEMENT FOR TWO 8 INCH GUNS ON H.P. DISAPPEARING CARRIAGES. —

DRAWING N° 2 (OF IV)

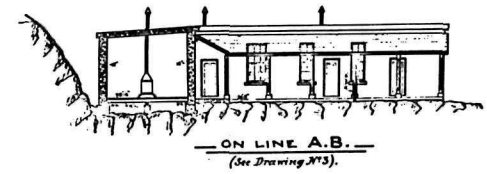
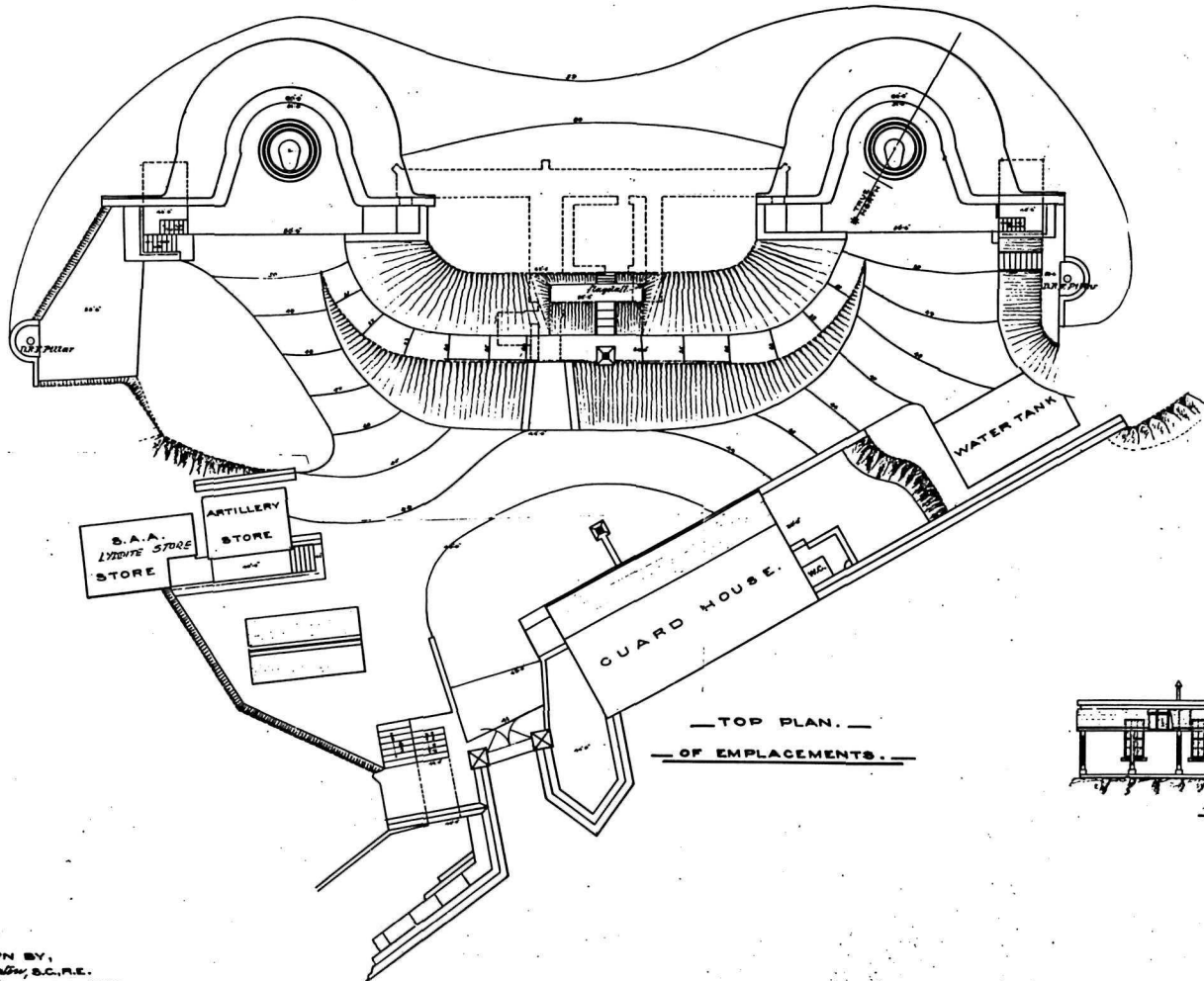
105/4

— SCALE 10 FEET TO ONE INCH (R.F. X₆₀) —
 0 10 20 30 40 50 60 70 80 90 100 FEET

CUNS MARK VI CARRIAGES MARK IV. —

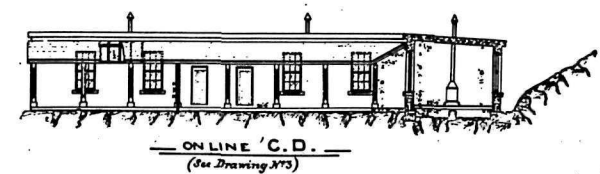
DATE OF AUTHORITY TO COMMENCE W.O. CANADA / 5/1657, OF 22-4-95.
 DATE OF COMMENCEMENT 6-9-95.
 DATE OF COMPLETION 31-3-98.
 ESTIMATED COST £4296.
 ACTUAL COST £4419. X

Refers to a memo agreement to transfer date 16th Feb 1904 April 1907, 58th Militia Engineer of Canada. Duplicate with T. Col. Canada 1/20 901 10 57



— SECTIONAL ELEVATIONS OF CASEMATES. —

NOTE: Not to scale for construction



A. Grant
 LT.: COLONEL, —
 O.C., R.E., ESQUIMALT. —
 28 January 1903.

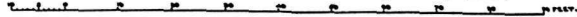
DRAWN BY:
 Esquimalt, B.C. R.E.
 12th NOVEMBER 1902.

Figure 24. Lower Battery. Record Plan. Drawing No. 3.
Terreplein Plan. 28 January 1903. (Public
Record Office, Great Britain)

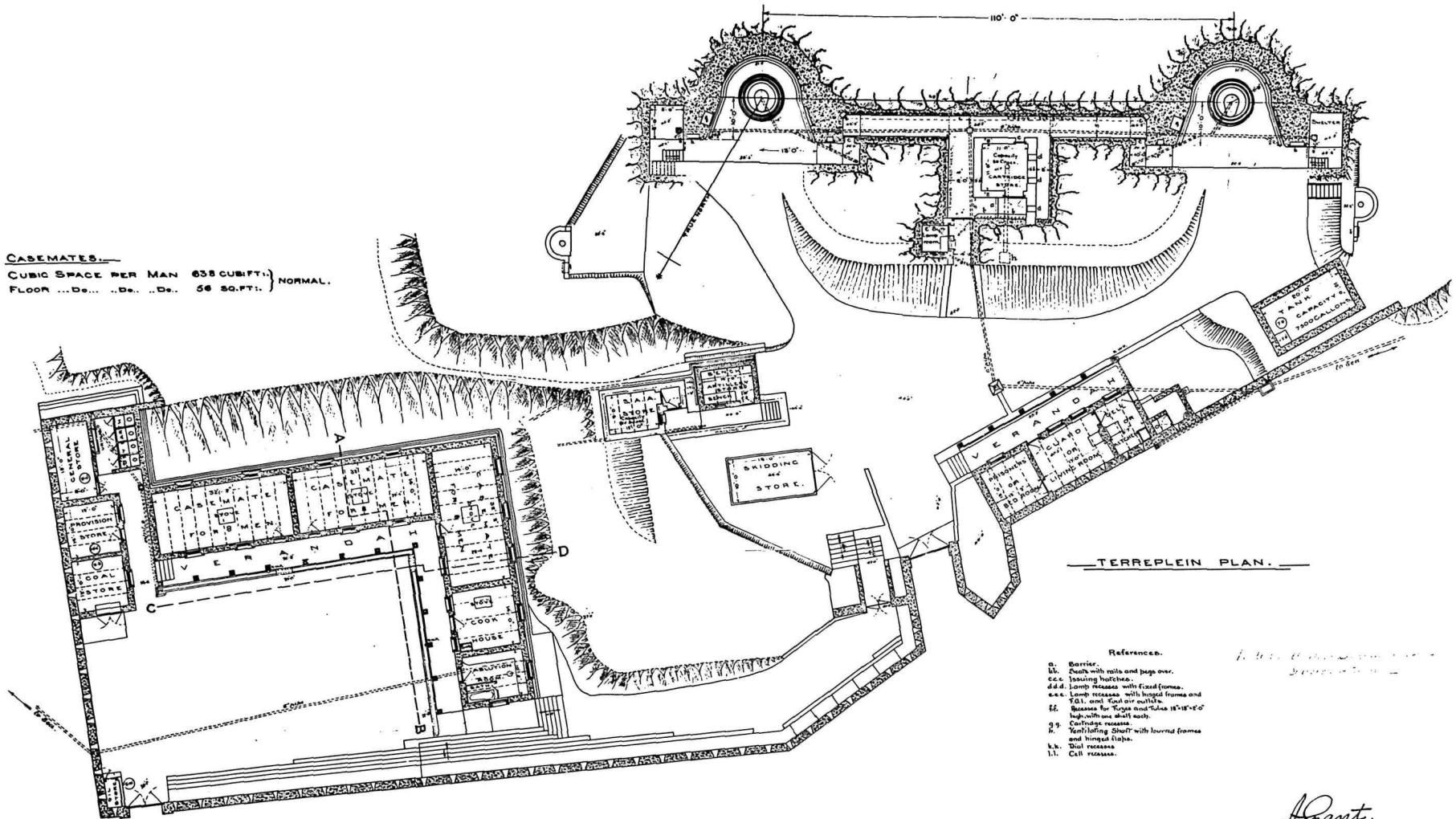
VICTORIA, B.C., ESQUIMALT DISTRICT, —
 ROOD HILL, LOWER OR TWO GUN BATTERY. — RECORD PLANS OF, —
 EMPLACEMENT FOR TWO 6 INCH GUNS ON H.P. DISAPPEARING CARRIAGES.

DRAWING N° 3 (OF IV).

SCALE 10 FEET TO ONE INCH (R.F. 1/120).



CASEMATES.
 CUBIC SPACE PER MAN 638 CUBIC FT.) NORMAL.
 FLOOR ... Do. ... Do. ... Do. 56 SQ. FT.)



- References.
- a. Barrier.
 - bb. Vault with rails and jags over.
 - cc. Issuing hatch.
 - ddd. Lamb recess with fixed frame.
 - eee. Lamb recess with hinged frame and T.G.I. and four air outlets.
 - ff. Recess for 'Kips' and 'Kips' 18" x 18" x 6" high with one abutment.
 - gg. Carriage recess.
 - h. Ventilating shaft with louvre frames and hinged flaps.
 - kk. Dial recess.
 - ll. Cell recess.

NOTE, IN WAR TIME THE ACCOMMODATION OF EACH CASEMATE CAN BE INCREASED, BY MEANS OF HAMMOCKS, TO 16 MEN WITH STOVE, 10 MEN WITHOUT.

ALL ALTITUDES ARE GIVEN IN FEET ABOVE M.S.L. AT ESQUIMALT, B.C.

DRAWN BY
 G. S. BENTON, O.C., R.E.
 21ST JANUARY 1903.

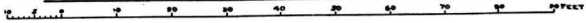
A. Grant.
 LT: COLONEL,
 O.C., R.E. ESQUIMALT,
 28TH JANUARY 1903.

Figure 25. Lower Battery. Record Plan. Drawing No. 4.
Elevations and Sections. 28 January 1903.
(Public Record Office, Great Britain)

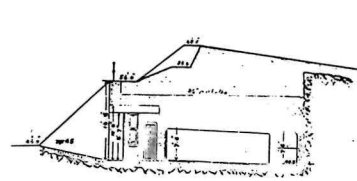
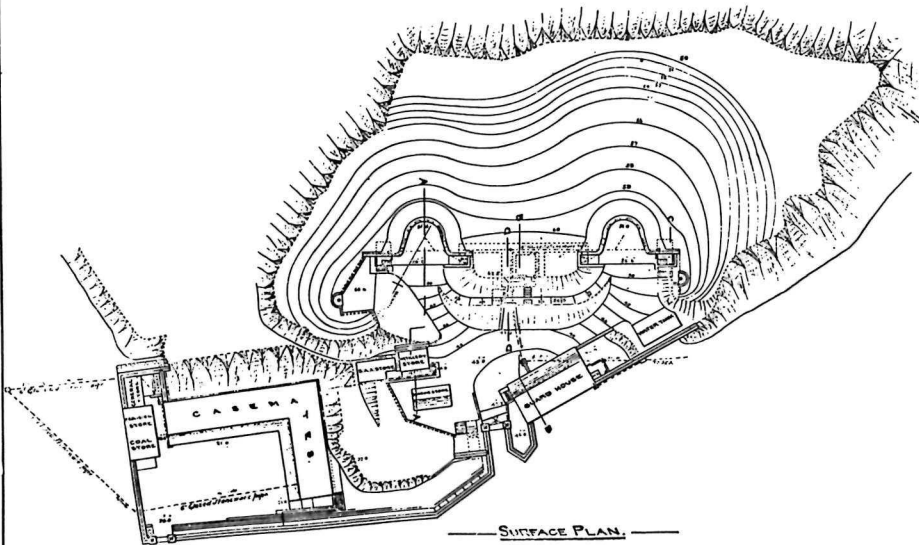
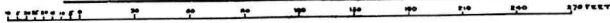
VICTORIA B.C. ESQUIMALT DISTRICT. —
 RODD HILL, LOWER OR TWO GUN BATTERY. — RECORD PLANS OF
 EMPLACEMENT FOR TWO 6 INCH GUNS ON H.P. DISAPPEARING CARRIAGES

DRAWING N^o 4 (OF IV)

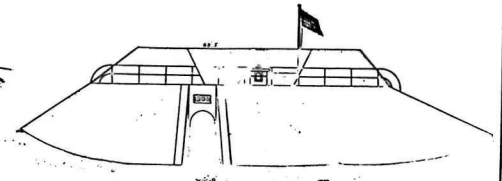
SCALE OF SECTIONS 10 FEET TO ONE INCH (R.F. 1/20)



SCALE OF PLAN 30 FEET TO ONE INCH (R.F. 500)



SECTION ON LINE D.D.



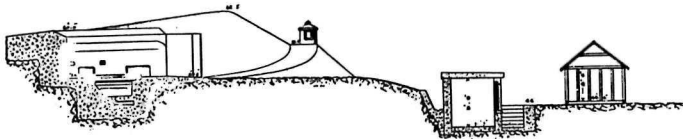
MAIN ENTRANCE TO MAGAZINE.



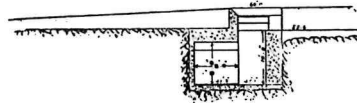
FRONT ELEVATION OF ARTILLERY & S.A.A. STORE.



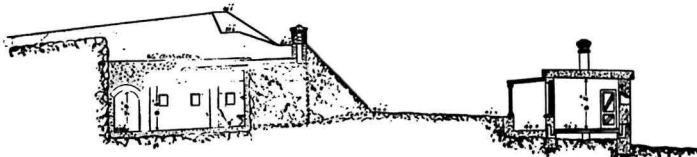
SECTIONAL ELEVATION OF EMPLACEMENT.



SECTION ON LINE A.A.



SECTION ON LINE C.C.



SECTION ON LINE B.B.

note - Water level is to be considered

A. Grant.

LIEUT. COLONEL. —
 O.C. R.E. ESQUIMALT. —
 28th January 1903.

DRAWN BY
 A. Sutherland Sapper R.E.
 21st JANUARY 1903.

Figure 26. Lower Battery North Gate. 1938. (Jasper Henderson album. Fort Rodd Hill Collection.)

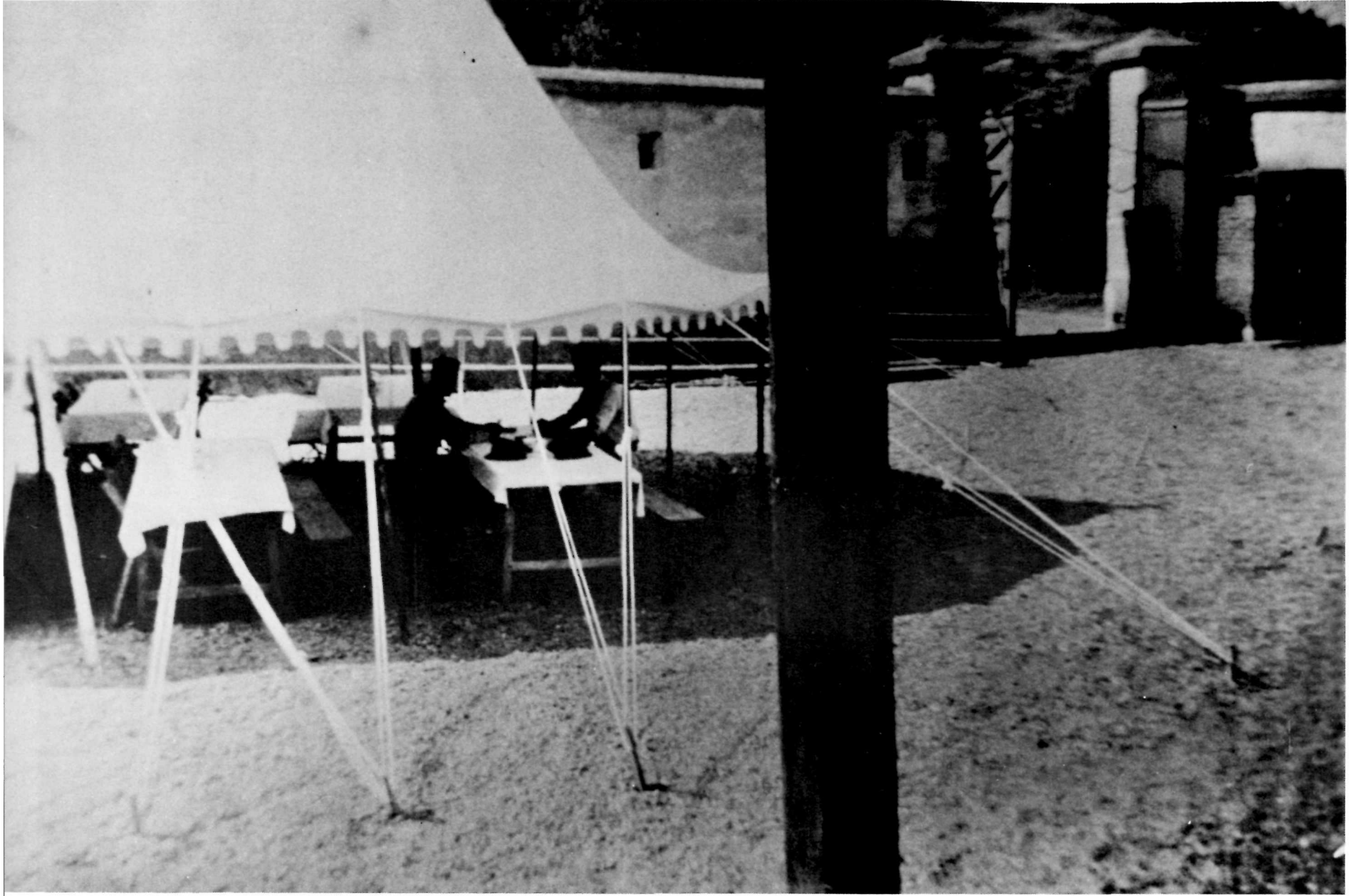


Figure 27. "B/2" 6-inch disappearing gun. Lower Battery.
30 September 1937 (Jasper Henderson album.
Fort Rodd Hill Collection)

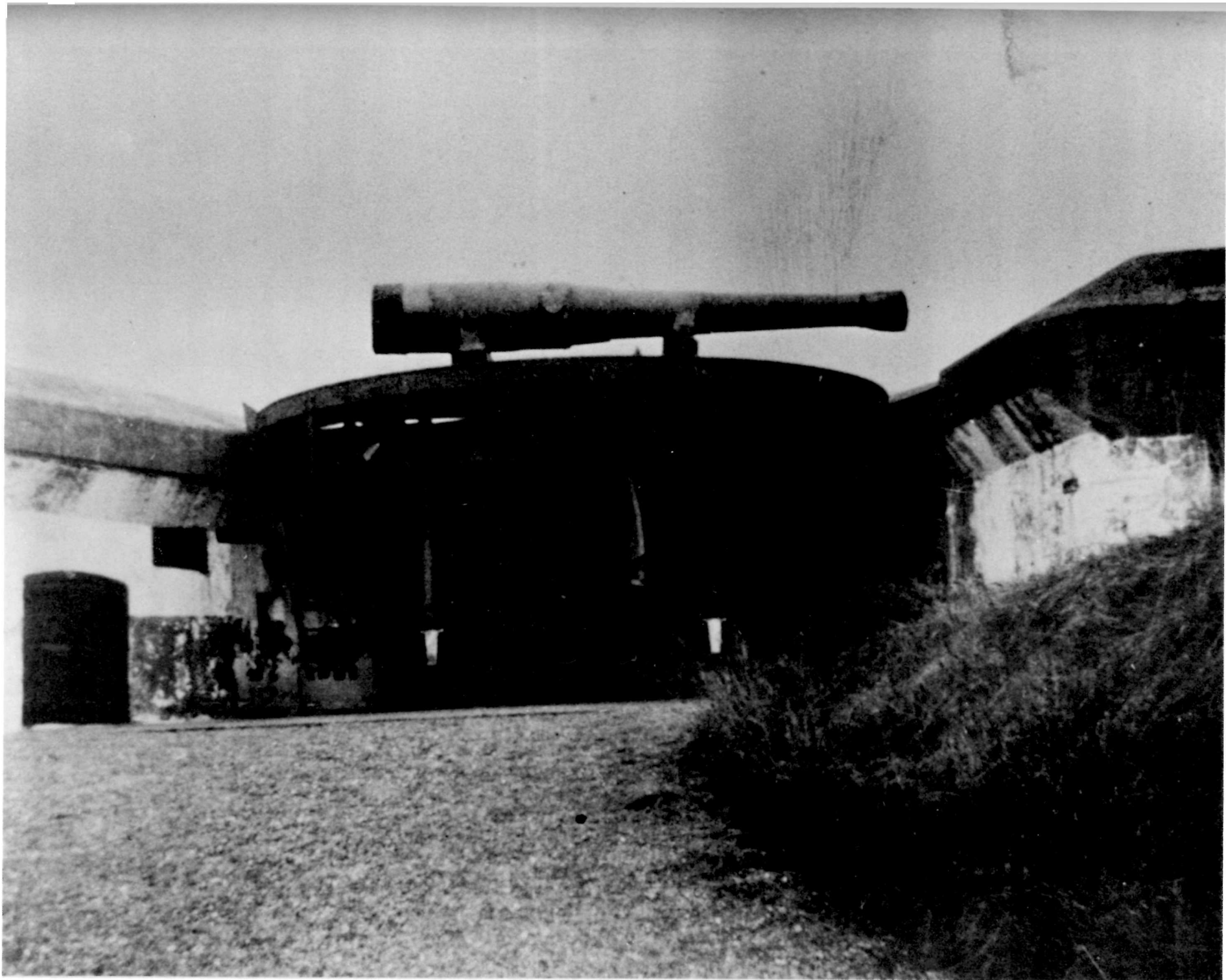


Figure 28. Maxim Machine Gun on Parapet Mounting. Lower Battery.
Between left gun emplacement and left Depression
Range Finder Position. Circa 1914. (Fort Rodd Hill
Collection.)



Figure 29. Skidding shed and main gate Lower Battery.
30 September 1937. (Jasper Henderson album.
Fort Rodd Hill Collection)

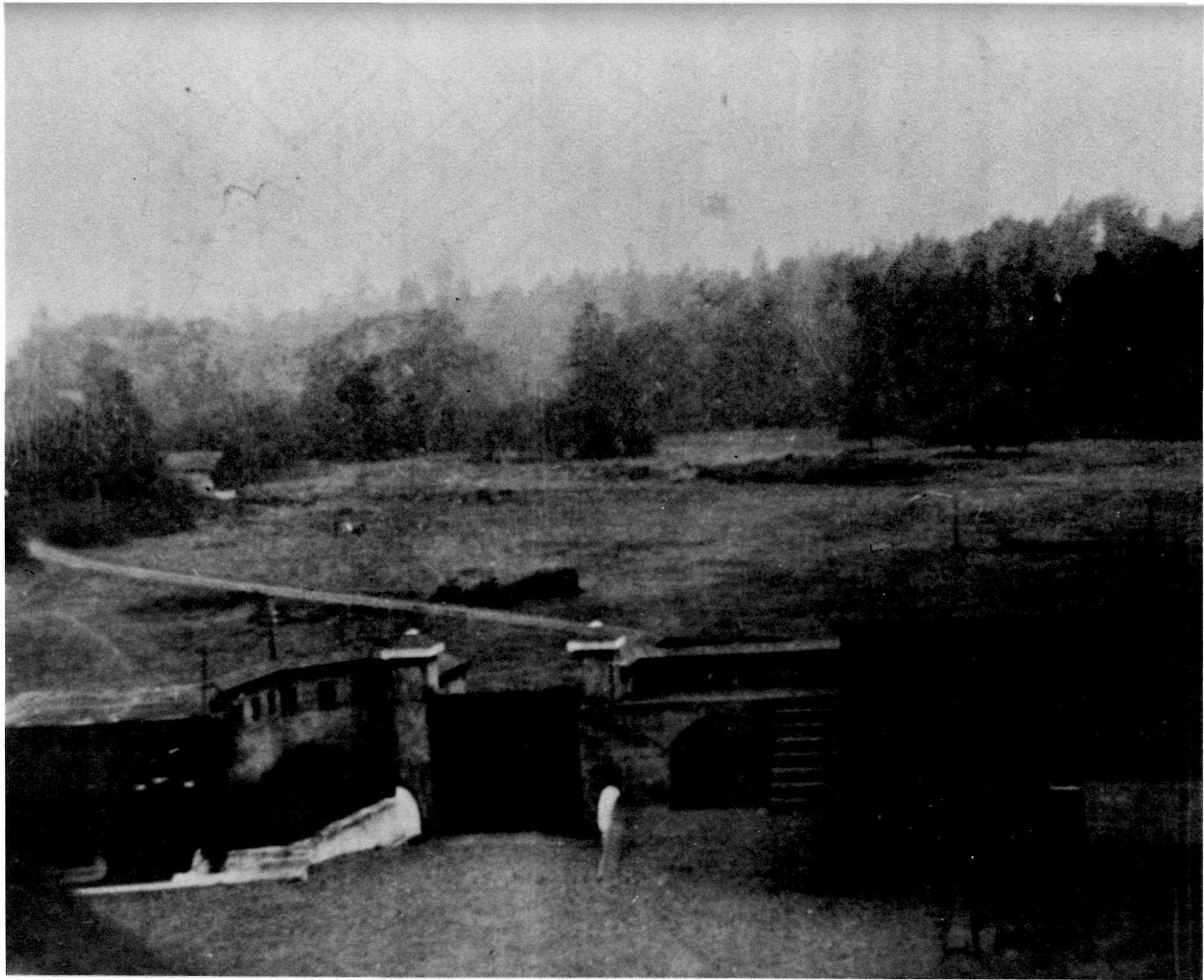


Figure 30. Site Plan VL1 - V&E LT. AA. Rodd Hill Fort.
6 June 1944. (Fort Rodd Hill Collection.) This
extract and enlargement shows the layout of the
40 mm anti-aircraft gun position in the left em-
placement of Lower Battery

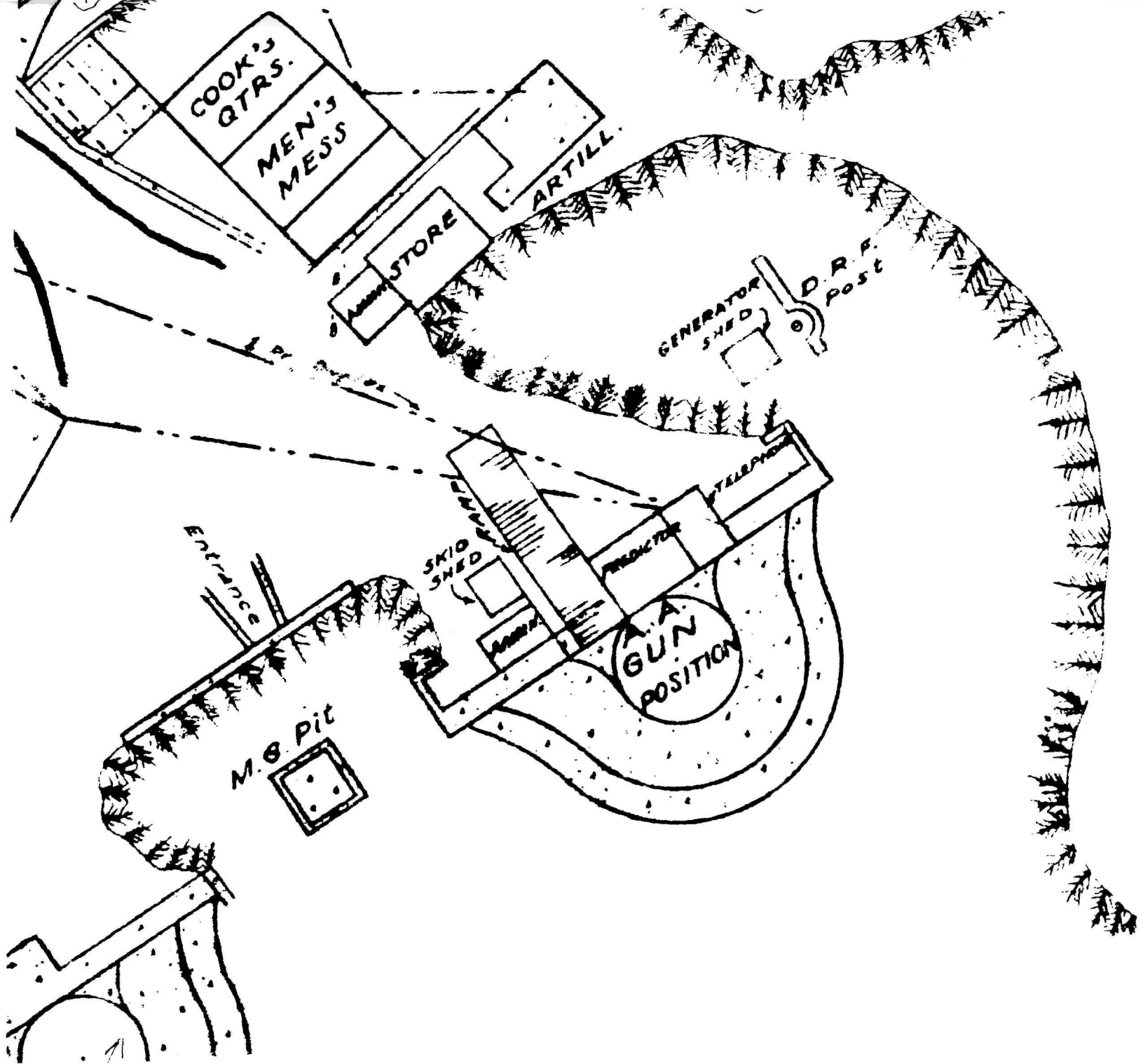


Figure 31. Rodd Hill. Lower Battery. 6-inch disappearing guns with 6-inch Q.F. gun in background. 1934.
(Fort Rodd Hill Collection.)

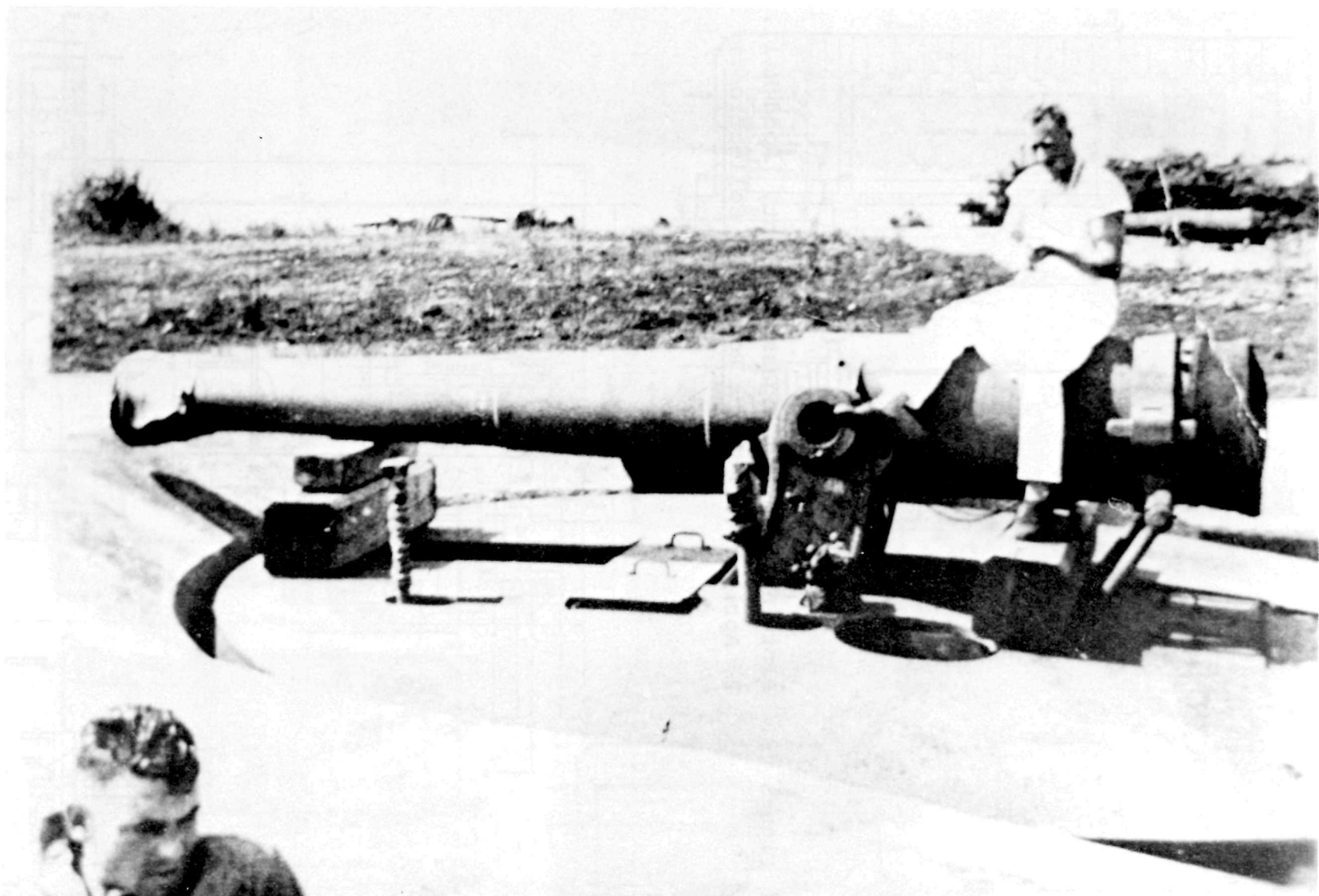
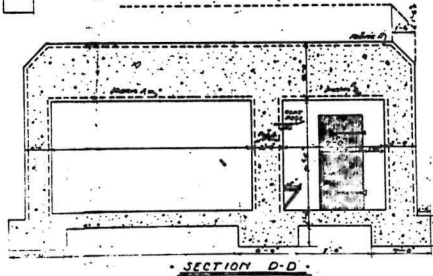
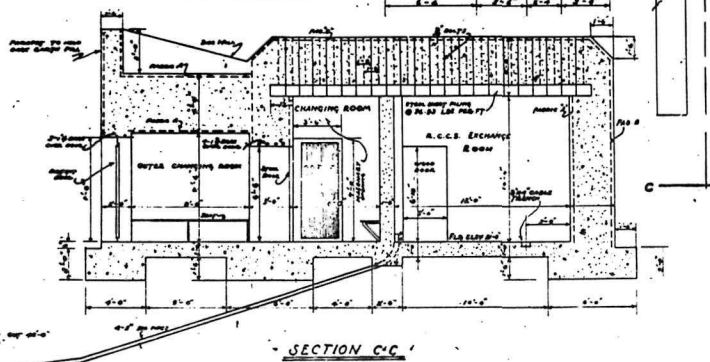
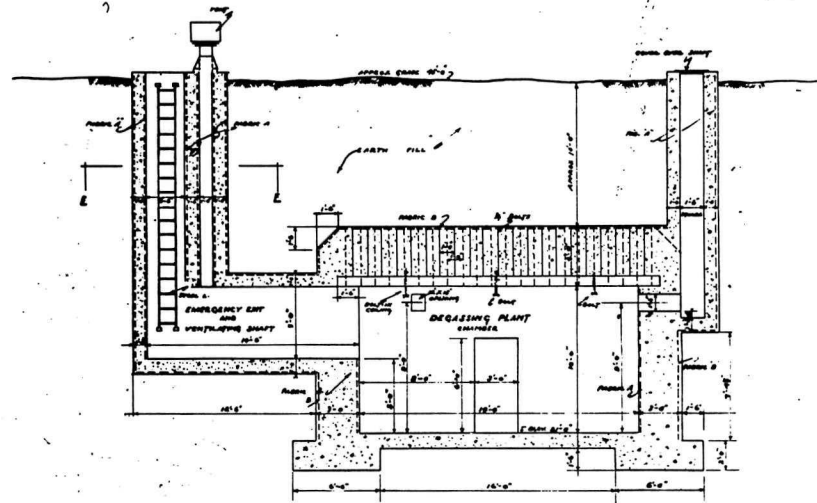
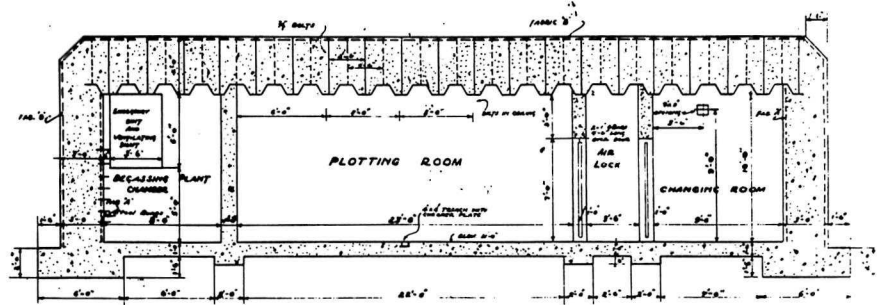
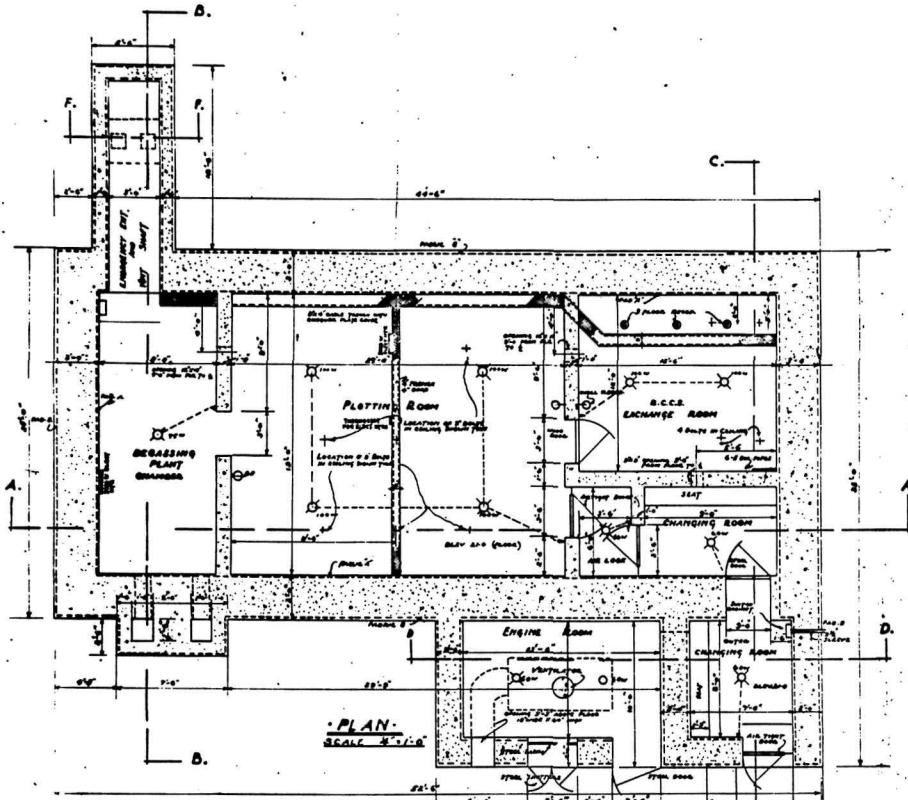


Figure 32. Plotting Room and Degassing Plant. Rodd Hill.
27 April 1940. (Fort Rodd Hill Collection.)



BLOG 1030

DEPARTMENT OF NATIONAL DEFENSE
OFFICE OF B.E. AND J.
ESQUIMAULT B.C.

PLOTTING ROOM & DEGASSING
ROOM FILL ESQUIMAULT B.C.

Scale 1/4" = 1'-0"

Traced by G.L. Taylor Sp. 10/11/40

Date: 2/11/41

FIG (LB) - 001 - 1940

Figure 33. Plotting Room Layout. Building 1030. Rodd Hill Victoria. 17 December 1951. (Fort Rodd Hill Collection.) A copy of the readable portion of this plan. It shows the Fortress Plotting Room adapted as an Anti-Aircraft Operations Room. The desks were stepped down providing a clear view of the map screens for all personnel.

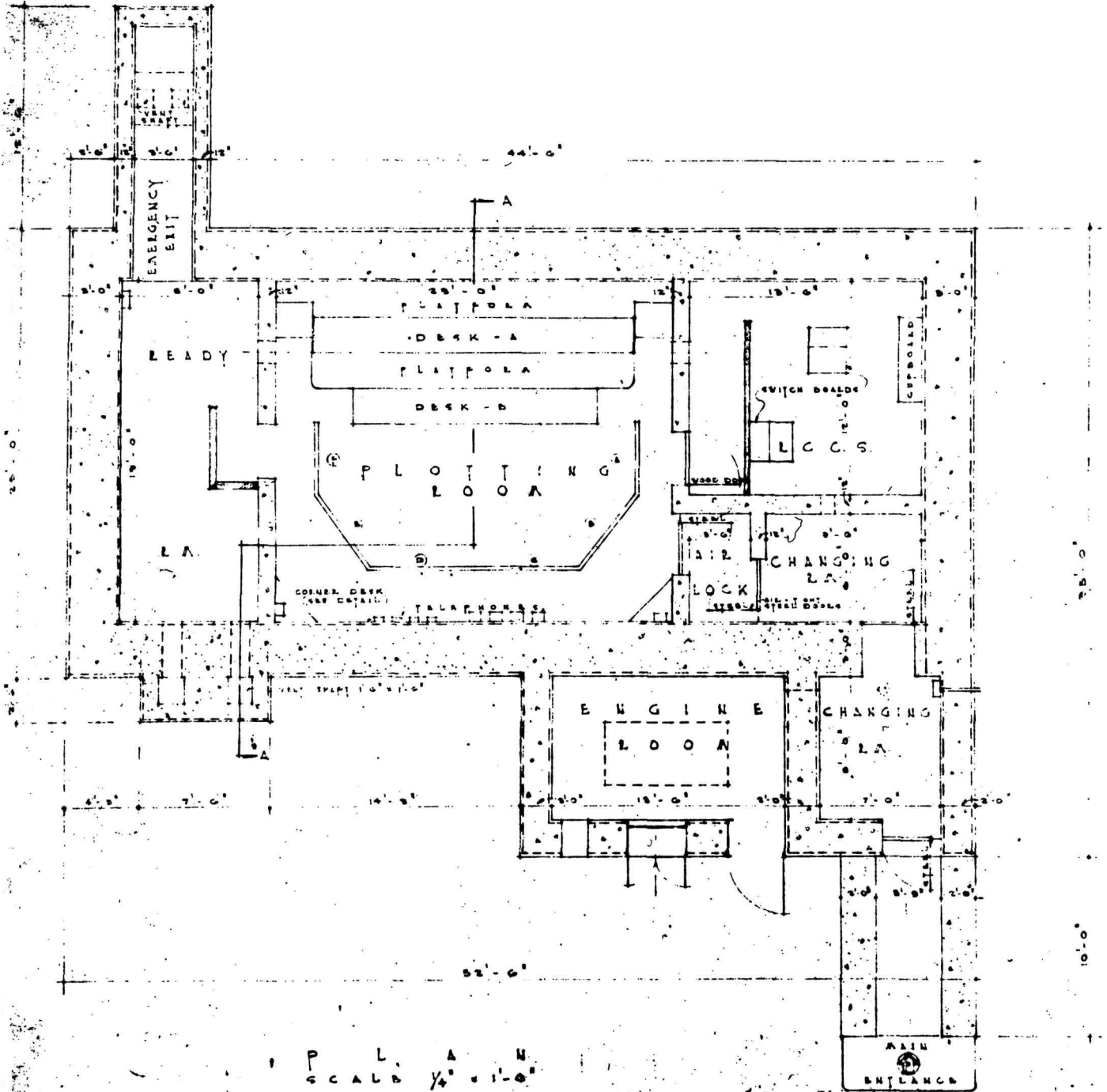


Figure 34. Casemate Barracks. The interior
of one of the casemates occupied by permanent
force artillerymen 12 October 1937 (Jasper
Henderson Album. Fort Rodd Hill Collection)

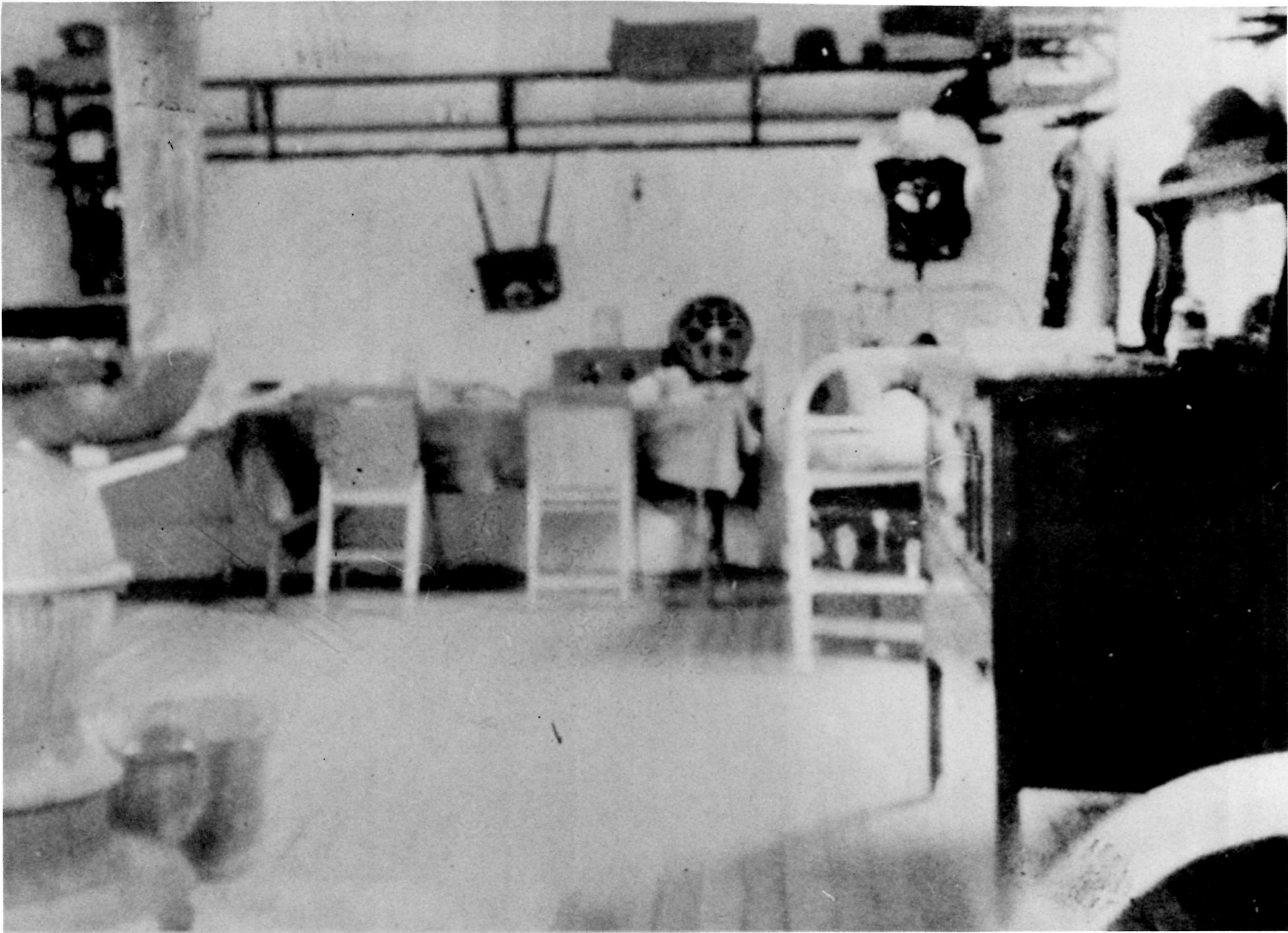


Figure 35. Lower Battery. Second World War Temporary Buildings. 10 November 1943. (Fort Rodd Hill Collection.)



Figure 36. The Warrant Officer's Quarter, Fort Rodd Hill.
16 November 1978. (Photo by author.)



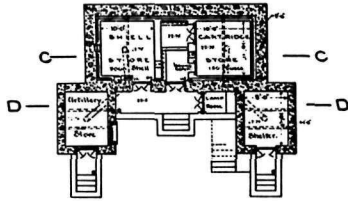
Figure 37. Belmont Battery. Record Plans of Emplacement for
two 12 pr Q.F. guns 14 January 1903. Sheet 2 of 2.
(Public Record Office, Great Britain.)

VICTORIA, B.C. ESQUIMALT DISTRICT, —
 RODD HILL, BELMONT BATTERY, — RECORD PLANS OF —
 EMPLACEMENT FOR TWO 12P.P.Q. GUNS. —
 SCALE 10 FEET TO ONE INCH (R.F. $\frac{1}{100}$). —

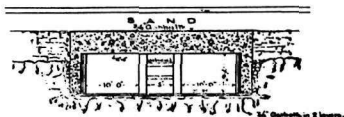
DRAWING No 2 (of 2).

Refer to memo of agreement to transfer
 dated 14th Feb & 1st April 1907, S.P.S. and
 militia Council of Victoria.
 Enclosed with 1st set - 6 copies of 20
 7th 10/10/07

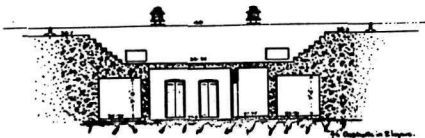
AUTHORITY FOR COMMENCEMENT OF WORK W.O. Canada No. 3. 9. 00.
 DATE OF Do Do 3. 9. 00.
 DATE OF COMPLETION Do 2. 10. 00.
 ESTIMATED COST Do \$1600.
 ACTUAL COST Do \$1233.



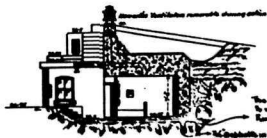
MAGAZINE PLAN.



SECTION C.C.



SECTION D.D.

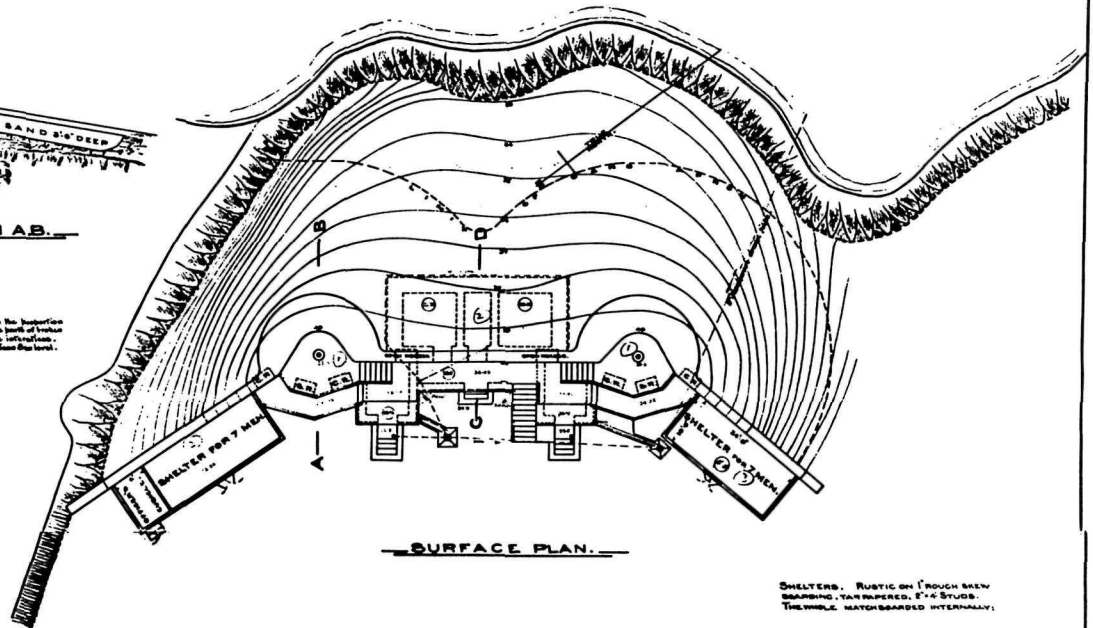


SECTION C.D.



SECTION A.B.

The drum is formed of Concrete, made in the interior
 of one part of Portland Cement to three parts of broken
 stone, with just enough sand to fill the interstices.
 Details are given in full above approx. Mean Sea Level.



SURFACE PLAN.

SHelters, rustic on 1" rough saw
 boarding, tar impregnated, 2" x 4" studs.
 The whole matchboarded internally.



REAR ELEVATION.

DRAWN BY
 Geo. Foster, C.E., R.E.
 7th JANUARY 1903

LT: COLONEL,
 O.C. R.E. ESQUIMALT,
 11th January 1903.

Figure 38. Belmont Battery. 23 November 1978 .
(Photo by author.)



Figure 39. 6 pr Duplex. Belmont Battery.
(Fort Rodd Hill Collection.)

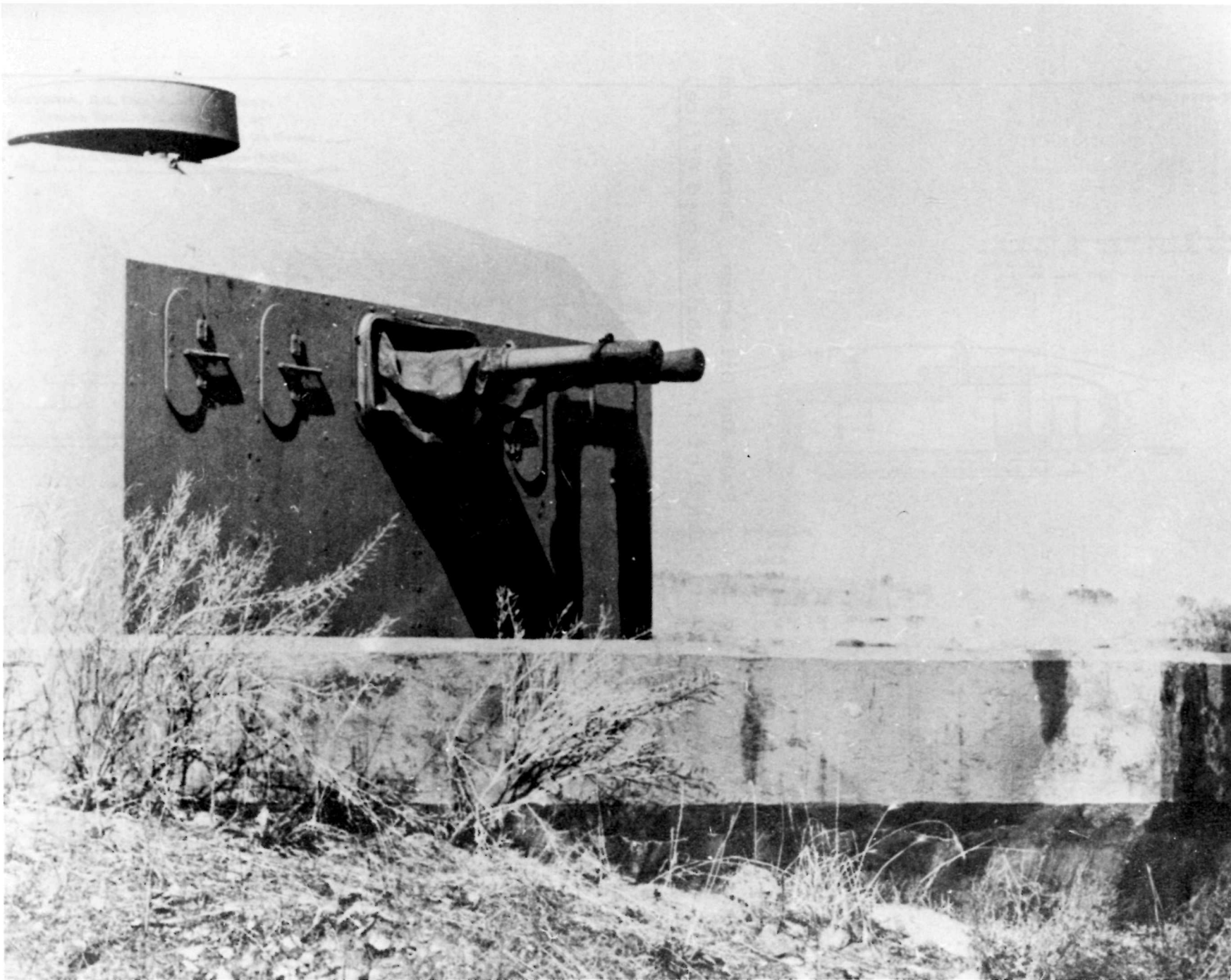
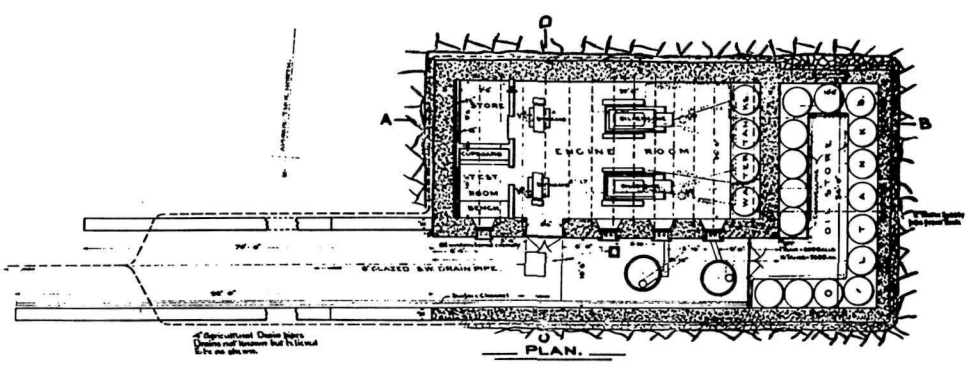


Figure 40. Electric Light Engine Room and Oil store. Record Plan
2 November 1905. Plan 2 of 3. (Public Record Office,
Great Britain.)

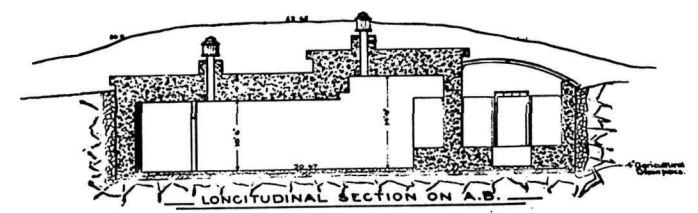
VICTORIA, B.C., ESQUIMALT DISTRICT,
 RODD HILL. RECORD PLAN OF
 ELECTRIC LIGHT ENGINE ROOM, AND OIL STORE.

SCALE EIGHT FEET TO ONE INCH (R.F. 8/1).
 0 10 20 30 FEET



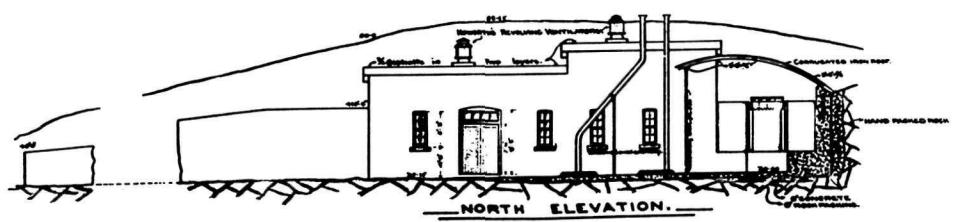
PLAN.

Refer to the memo of agreement to transfer
 dated 16th Feb 1907 - 885. and minutes Council
 of Comrade
 Supplies with T. Col. - Comrade 1/20
 7th 14 87

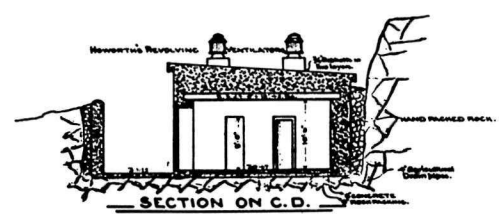


LONGITUDINAL SECTION ON A.B.

DATE OF AUTHORITY TO COMMENCE CONSTRUCTION OF 28-4-00.
 DATE OF COMMENCEMENT.....7-5-00.
 DATE OF COMPLETION.....30-3-01.
 ESTIMATED COST.....£1300.
 ACTUAL COST.....£1300.
 THE WHOLE BUILT OF CONCRETE ON ROCK FOUNDATION.



NORTH ELEVATION.



SECTION ON C.D.

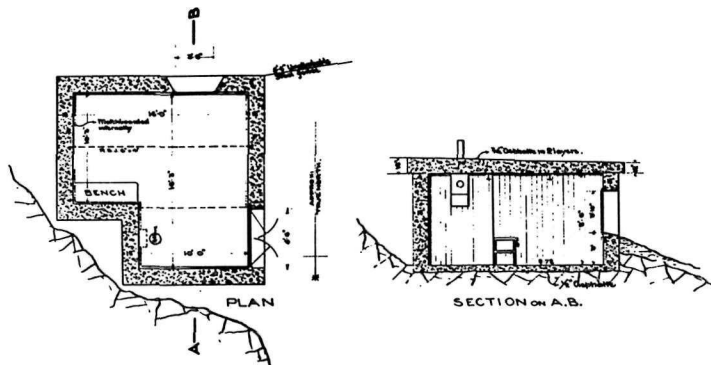
H. D. Staud
 MAJOR, R.E.,
 O.C.R.E. ESQUIMALT.
 2nd November 1905.

Drawn by,
 Geo. Smith, O.C.R.E.
 30th SEPTEMBER 1905.

Figure 41. Nos 1 and 2 Electric Light Emplacements and General Site Plan. Record Plan 2 November 1905. Plan 3 of 3. (Public Record Office, Great Britain.)

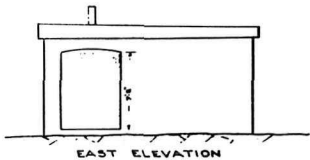
VICTORIA, B.C. ESQUIMALT DISTRICT, —
 RODD HILL, RECORD PLAN OF N^o 1 AND 2.
 — ELECTRIC LIGHT EMPLACEMENTS. —

SCALE FIVE FEET TO ONE INCH (R.F. 1/60)

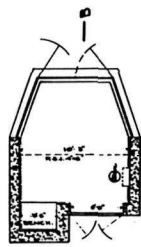


N^o 2 EMPLACEMENT. —

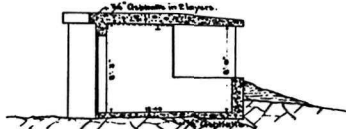
WALLS AND ROOF OF BROKEN ROCK AND CONCRETE, FLOOR OF CONCRETE. WALLS AND CEILING MATCHBOARDED INTERNALLY. OPENING FOR FIXED BEAM 2 6" x 6" STEEL SHUTTERS CONFORMING TO W.D. TYPE DRAWING N^o 36956 OF 5011-00. THE CONSTRUCTION IS A MODIFICATION OF W.D. TYPE DESIGN N^o 52541



EAST ELEVATION



PLAN.



SECTION ON A.B.

N^o 1 EMPLACEMENT. —

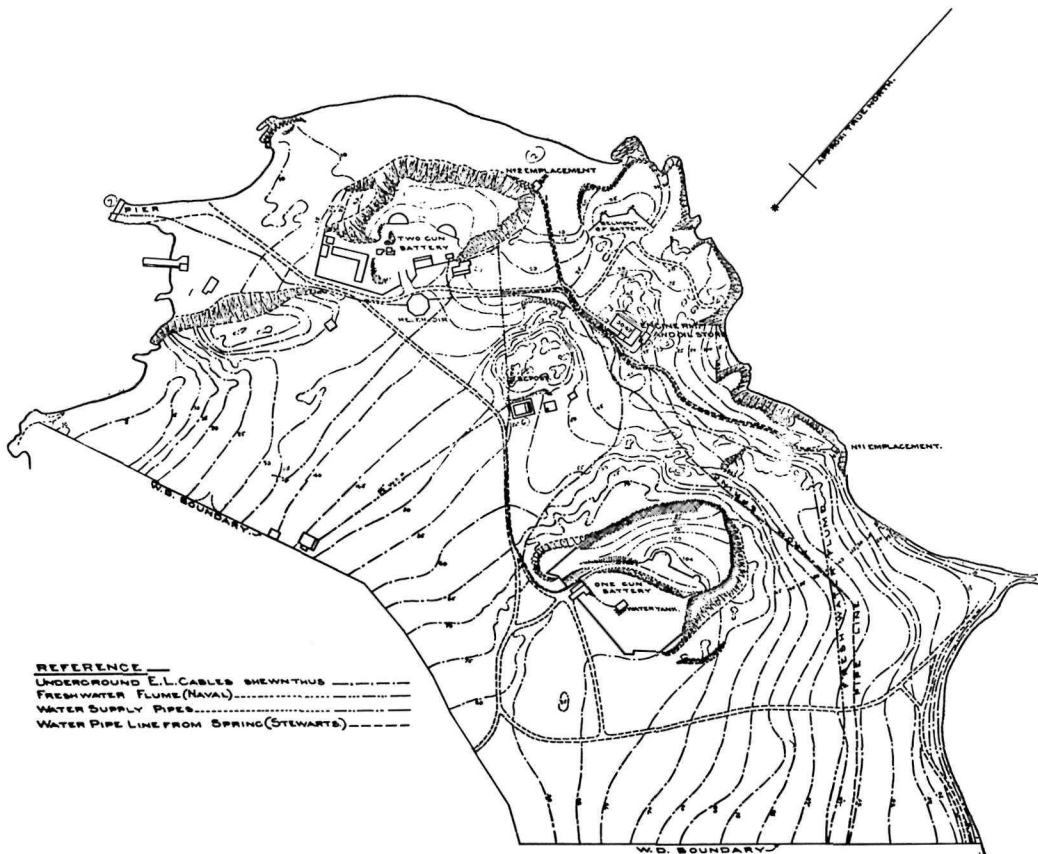
THE CONSTRUCTION OF THIS EMPLACEMENT IS A SLIGHT MODIFICATION OF W.D. TYPE DESIGN N^o 58643. STEEL SHUTTERS AS W.D. TYPE DESIGN N^o 37001. WALLS, FLOOR AND ROOF OF CONCRETE. WALLS AND CEILING MATCHBOARDED INTERNALLY.

DRAWN BY
 H. J. SIMON, B.C. R.E.
 15th OCTOBER 1905

PLAN N^o 3 (OF 3).

GENERAL SITE PLAN. —
 RODD HILL, E.L. ENGINE ROOM, —
 AND E.L. EMPLACEMENTS. —

SCALE 120 FEET TO ONE INCH (R.F. 1/40)



REFERENCE —
 UNDERGROUND E.L. CABLES SHOWN THUS ————
 FRESHWATER FLUME (NAVAL) ————
 WATER SUPPLY PIPES ————
 WATER PIPE LINE FROM SPRING (STEWARTS) ————

H. J. Simon

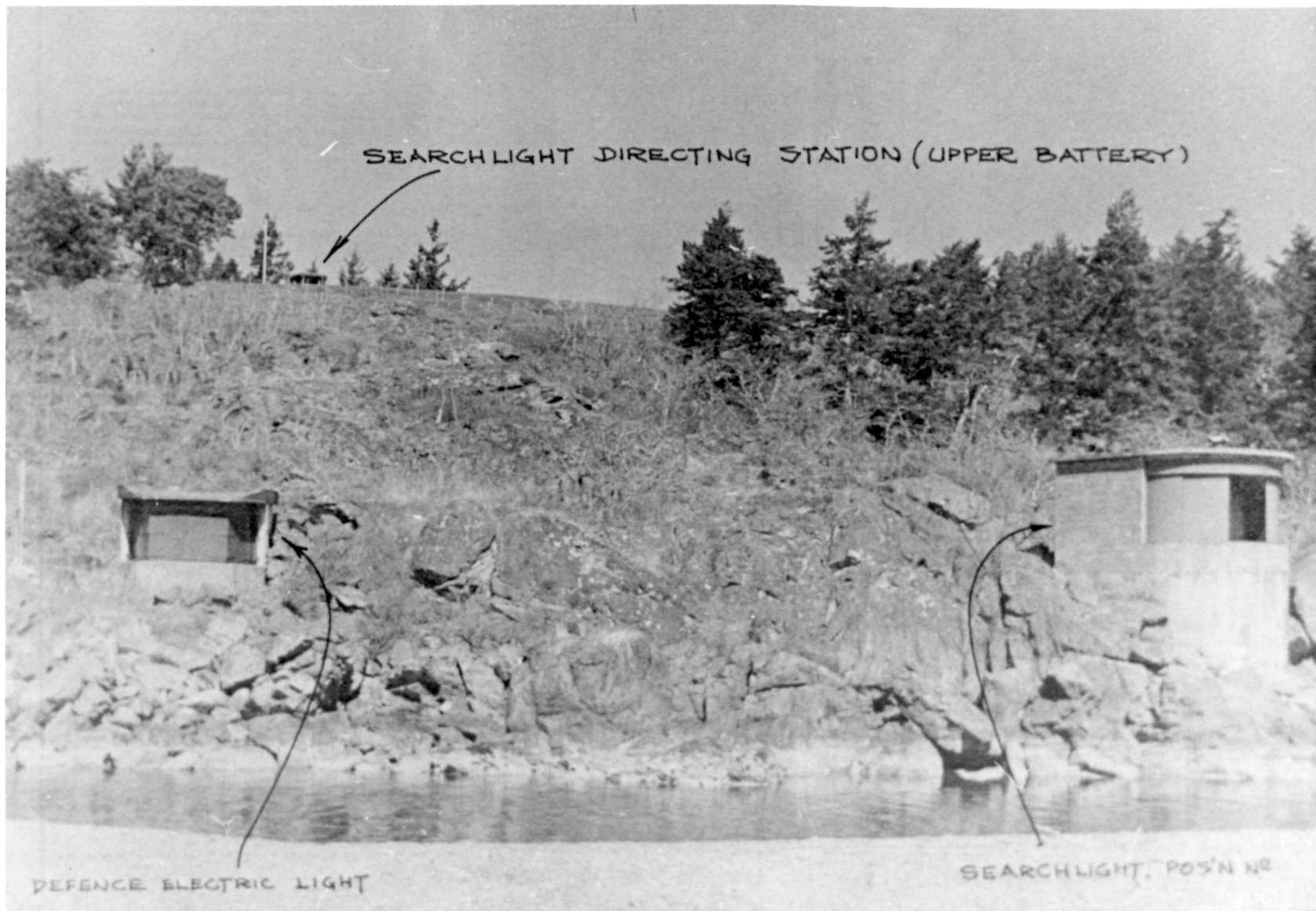
MAJOR, R.E. —

O.C. R.E. ESQUIMALT,

2nd November 1905.

319

Figure 24. Electric Light Directing Station No. 1
Defence Electric Light Emplacement and No. 6
Searchlight Emplacement, Rodd Hill. (Photo
by R. L. Clapp, Fort Rodd Hill Collection.)



SEARCHLIGHT DIRECTING STATION (UPPER BATTERY)

DEFENCE ELECTRIC LIGHT

SEARCHLIGHT, POS'N NO

Figure 43. Rodd Hill. General Site Plan. 18 February
1905. (Tracing by R. L. Clapp, 19 November
1971. Fort Rodd Hill Collection.)

VICTORIA, B.C. ESQUIMALT DISTRICT.
RODD HILL. GENERAL SITE PLAN

H.Q. 13-7-1

PAGE 40

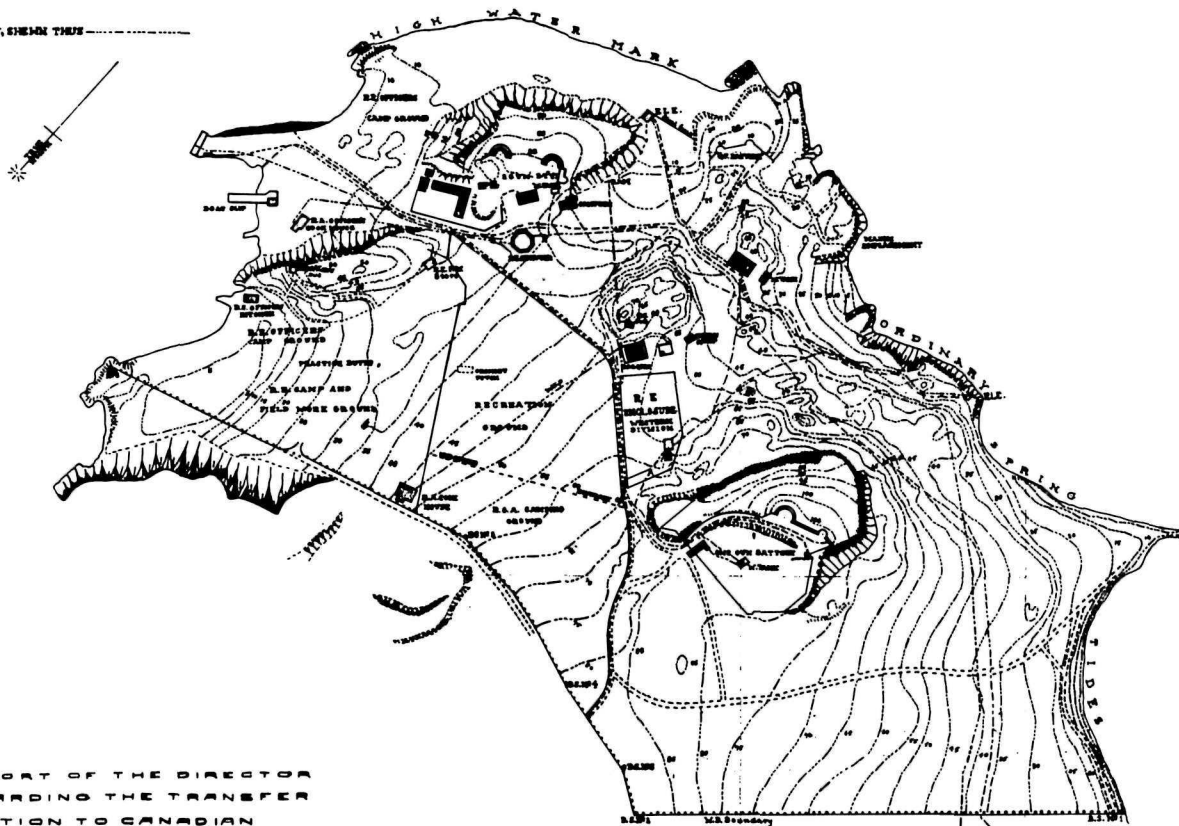
SCALE 120 FEET TO ONE INCH (27/640)



NOTE:

WATER SUPPLY PIPE SHOWN THIS	-----
FRESH WATER FLUME	-----
ELECTRIC LIGHT CABLE	-----
TELEPHONE AERIAL	-----
TELEPHONE UNDERGROUND	-----
PIPELINE FROM SPRING	-----
RADIAL CIRCUITS	-----

CONTOURS APPROXIMATE ONLY, SHOWN THIS -----



TO ACCOMPANY REPORT OF THE DIRECTOR
OF ARTILLERY REGARDING THE TRANSFER
OF ESQUIMALT STATION TO CANADIAN
CONTROL

Drawn by H. Littlewood
Supp R 6 10.2.00

Printed By E. L. CLAPP 29 NOV. 1911

106-10

Figure 44. Fitters Shop No. 6. Rodd Hill. 16 November 1978.
(Photo by author.)



Figure 45. Rodd Hill Canteen. (Fort Rodd Hill Collection.)
The building is shown here with its metal facia
in place.

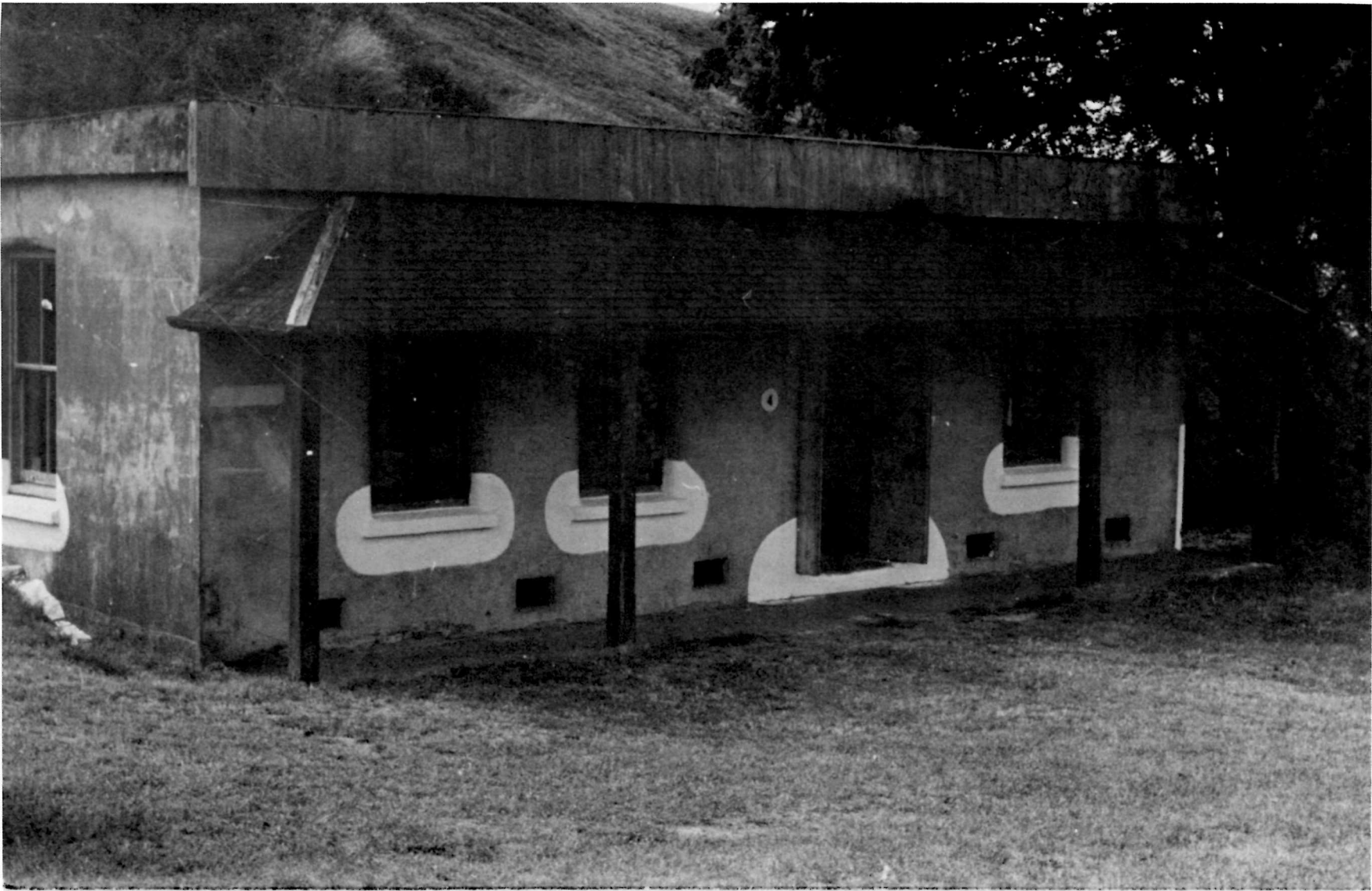


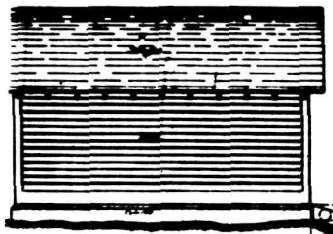
Figure 46. Rodd Hill. Record Plan of Boathouse and Slip. 1924.
(Fort Rodd Hill Collection.)

REAR VIEW.

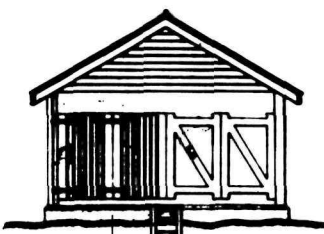
ROAD MILL, ESQUIMOT DISTRICT,
VICTORIA, B. C.
PLAN AND SECTION OF BAIT HOUSE & SLIP.

REAR VIEW-S.

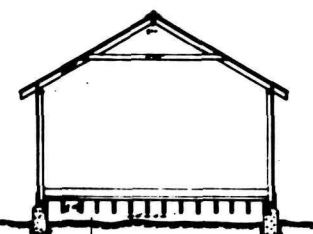
Scale 1/4" = 1'-0"



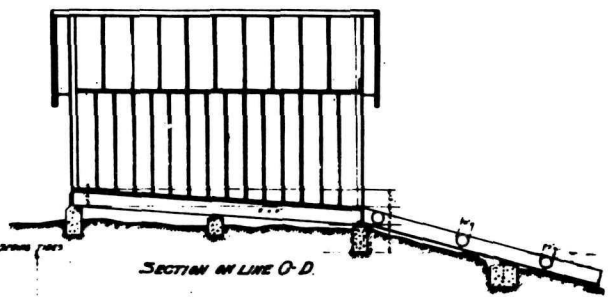
SIDE ELEVATION.



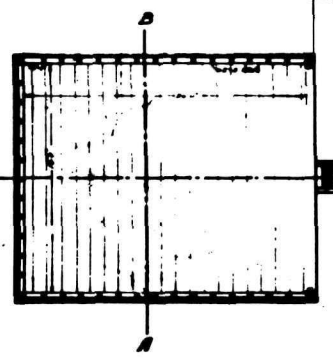
SIDE ELEVATION.



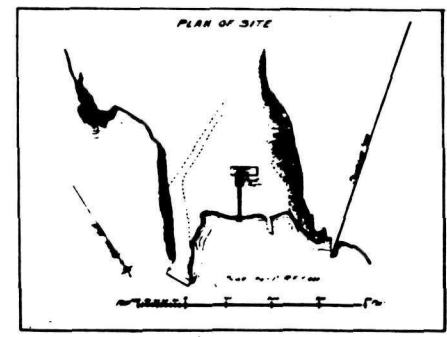
SECTION ON LINE A-B.



SECTION ON LINE C-D.



PLAN.



PLAN OF SITE

Figure 47. Rodd Hill. Scale 60' to 1". (Office of the Chief Engineer Officer, Pacific Command, Esquimalt, revised to 26 September 1944 . Redrawn by R.L. Clapp, March 1972. (Fort Rodd Hill Collection.))

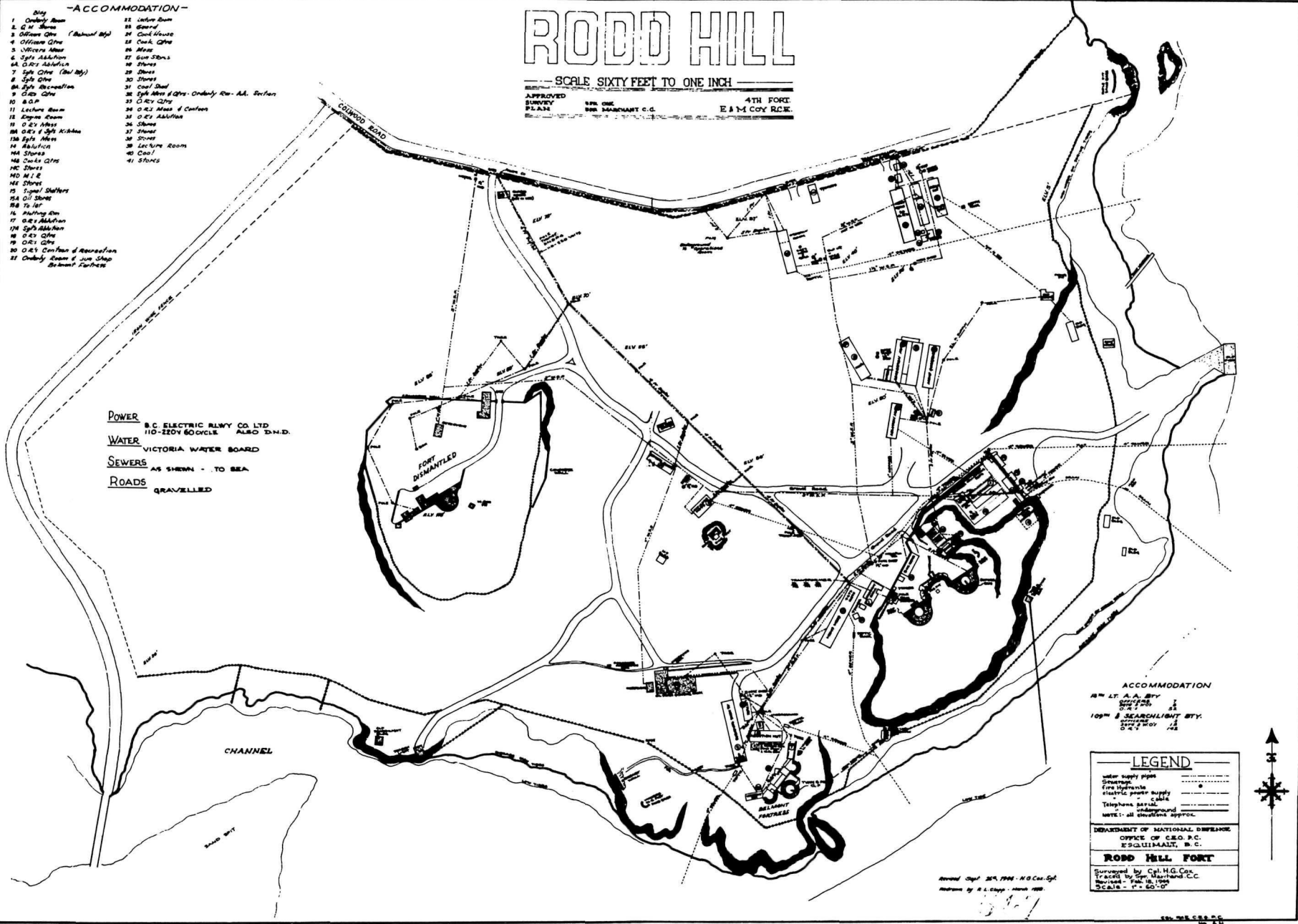
RODD HILL

SCALE SIXTY FEET TO ONE INCH

APPROVED SURVEY PLAN No. 1000 MARCHANT C.G. 4TH FORT E & M COY R.C.E.

- ACCOMMODATION-**
- 1 Outside Room
 - 2 G.M. Store
 - 3 Officers Qtrs (Belmont Mtg)
 - 4 Officers Qtrs
 - 5 Officers Mess
 - 6 Sp's Mess
 - 7 Sp's Mess (Bel Mtg)
 - 8 Sp's Qtrs
 - 9 Sp's Qtrs
 - 10 B.O.P.
 - 11 Lectures Room
 - 12 Engine Room
 - 13 O.E.'s Mess
 - 14 O.E.'s Qtrs
 - 15a Sp's Mess
 - 16 Mess
 - 17a Stores
 - 18a Stores
 - 19a Stores
 - 20a Stores
 - 21a Stores
 - 22a Stores
 - 23a Stores
 - 24a Stores
 - 25a Stores
 - 26a Stores
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 - 96a Stores
 - 97a Stores
 - 98a Stores
 - 99a Stores
 - 100a Stores

POWER B.C. ELECTRIC RLMY CO. LTD. 110-220V 60CYCLE ALSO D.N.D.
WATER VICTORIA WATER BOARD
SEWERS AS SHOWN - TO SEA
ROADS GRAVELLED



ACCOMMODATION
 100' L.A.A. BY
 100' SEARCHLIGHT BY.

LEGEND

- Water supply pipe
- Storage
- Fire hydrants
- Electric power supply
- Telephone aerial
- Underground
- Note: all situations approx.

DEPARTMENT OF NATIONAL DEFENCE
 OFFICE OF C.E.O. P.C.
 ESCALIMANT, B.C.

RODD HILL FORT
 Surveyed by Cpt. H.G. Cox
 Traced by Cpt. Marland C.C.
 Surveyed by Cpt. H.G. Cox
 Scale - 1" = 50' 0"

Revised Sept. 25, 1948. H.G. Cox. Spt.
 Made by S.L. Stapp. March 1949

Figure 48. Rodd Hill. Royal Engineer Log Hut.
(Fort Rodd Hill Collection.)



Figure 49. 12 pr field gun at Rodd Hill, 16 November 1978.
(Photo by author.)



Figure 50. 40 mm Light Anti-Aircraft Gun at Rodd Hill, 16 November 1978. (Photo by author.)



