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FORT LENNOX, ILE-AUX NOIX

by

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(1968)

SALVAGE EXCAVATIONS AT
MONTMORENCY PARK, QUEBEC CITY: 1967-1968

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Quebec City: 1967-1968
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by
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Fort Lennox Salvage Excavation

- E. Frank Korvemaker

Chapter I

Introduction

This report concerns itself with salvage archaeology done on Ile-aux-Bois, Quebec between October 20, 1967 and November 11, 1967. During this period excavations were carried out in four main areas - designated operations 5G60 through 5G63. (See Appendix III - a for a map showing the location of these operations.)

Operation 5G60 is concerned with the excavation of a trench in which a metal fuel tank was to be placed. Two attempts were made to place the tank inside the north ravelin (sub-operations A and B), but these were unsuccessful due to certain discoveries, which will be discussed in this report. Sub-operation C eventually became the site of the tank and is located just west of the north ravelin. A fourth sub-operation - 5G60D - comprises a trench from 5G60C to the north bridge over the moat, in which a fuel line will be placed.

The other three operations are located within Fort Lennox itself. Operation 5G61 consists of trenches excavated in the Parade Ground; for a new drainage system. Operation 5G62 of the drainage trenches dug around the Men's Barracks; and Operation 5G63 of the trenches dug between the Powder Magazine, Men's Barracks, Officers' Quarters and north casemates for electrical wiring and fuel lines.

During my work there, I was assisted mainly by Mr. M. Sevigny and Mr. M. Gregoire (who operated the backhoe). Mr. Gregoire's accuracy with a backhoe where archaeological material is concerned must be commended.

Chapter II

Op. 5G60 - Fuel Tank Trenches


North Ravelin - S.W. Section


Located at the highest point of the South-western portion of the north ravelin, this trench was initially designed to cover an area 3' long E.-W. by 15' wide N.-S. Due to the uncovering of a large mass of wood at 6' B.S., excavation stopped at this level - 7' above the intended depth. Further investigation of this area revealed a portion of a wood structure, apparently composed of large wooden beams. As Appendix II-a shows, this wood is oriented in an E.-W. pattern, without any visible traces of cross beams.

The composition and location of this wood is worth noting. What appears to be a collapsed structure along the north wall of the excavation changes into an almost horizontal floor-like feature in the N.-W. corner and appears only as traces in the small area excavated just south of it. (The wood along the E. wall is at a different level and is discussed on page). The small southern section also contains one particular beam which, though heavily decomposed, has eleven spikes (6 pairs) nailed in it. (Appendix II-a) The 12th spike, not found in situ, was removed by the backhoe. Its position is indicated by a small arrow - (↓).

The wood in the N.-W. section was in much better condition, but lacked the heavy nail concentration. Only one large spike was found along the centre part of the north wall. This spike is located just at the line where the the wood begins to slope downward. One of the beams in the N.W. portion is

1.4' wide and 0.4' (min.) thick. It is a minimum of 8' in length and is in a excellent state of preservation. No nails or spikes were found in this beam, although just south of it, at a slightly lower level, five small square nails were found aligned parallel to this beam, partly driven in decomposed wood south of the wood beam.

The collapsed portion - that along the north wall - first appeared to consist of logs, but this effect now appears to be due to soil pressure. The wood in this area takes on a  shape, upon which the theory of collapse is based, (Appendix I-a).

The elevation of this wood ranges from 101.35' A.S.L. to 101.8' A.S.L. for the higher portions. The  shaped wood has an elevation of approximately 101.1' A.S.L. at the west end, 99.8 to 100.8' A.S.L. at the deepest point of the collapse, and from 100.05 to 101.1' at the east end. From these figures it can be calculated that the average level of this structure is 101.5' A.S.L. This is in comparison with from 101' to 103' A.S.L. for the average level of the ground north of the ravelin, where the foundations of other buildings were located during the 1964 and 1965 excavations.

The uncovering of this wood structure virtually beneath the centre of the north ravelin poses several questions. First, can a building (if it is such) with beams of this proportion, elude representation on any historical map? From a survey of the available historical maps, it would appear unlikely, since even small sheds are mentioned on one map or another. Yet no

building appears to have been recorded in or within 300' of the ravelin. In that case, it is possible that another map exists somewhere which does indicate such a structure; that the location of the other buildings is erroneous; or that this was not a building at all but just wood piled beneath the ravelin and used as fill.

By investigating the possibility of error on previous maps, we find that, by making a composite of all the other maps, the nearest building which would possibly be considered is a small square structure apparently located west of the present site of 5G60C. In that area an 1814 map records a Commissariat and two maps dated 1829 and 1833 record a Garrison Canteen in this area.¹ The fact that three separate maps indicate a structure considerably west of this site would most likely rule out the possibility of error.

This leaves only the chance of a separate unknown building existing here, or a pile of scrap wood. Unfortunately too small an area was excavated to affirm which of these two theories is most likely to be correct, hence the determination of this fact must be left to future excavation. The only occupational artifact besides the nails and spikes was a brass button with no markings on it. This button may be of use in the future but at present its significance can not be determined.

1. A Plan of the Works at Ile-aux-Noix - 1814
 Plan showing the Public Buildings at Ile-aux-noix - 1829
 Plan of Ile-aux-noix - 1833 (Public Archives MSS. W.O. 44).

As for the wood along the east wall, it does not appear to be directly associated with the rest of the wood in this trench for two reasons: one, it is of a different type wood; and two, it is at a different level, being found approximately 1.4' higher than the rest of the wood. Several nails were found with this wood and these were square and longer than the square nails found in the other section. Alfred Langois, the present caretaker of the Fort, reports that a barn existed on the ravelin in the 1930's, but this has not been confirmed by any photographic or written evidence. This seems unlikely, since the ravelin has existed here for over 150 years. However, this possibility should not be overlooked in the event that excavation should continue in this area, especially since it was found at right angles to the other wood. (Appendix II-b)

North Ravelin - S.E. Section

The excavation carried out in this area consisted of a test trench 2' wide by 21' long, designed primarily to determine whether or not any structure would prohibit placement of the fuel tank in this area. The scheduled length of this trench was 30' E.-W., but by the time a distance of 13' E was excavated, wood was encountered at an elevation of 104.0' A.S.L. Anticipating this wood to be an isolated feature, excavation continued eastward on the other side of the uncovered logs. However, more wood was encountered at an elevation of 102.8' A.S.L., and hence excavation terminated at the 21' length.

Although the area in question is relatively small, it appeared to contain sufficient material to warrant further archaeological investigation.

The wood in this structure has a N-S orientation. At the west extremity it consists of two logs or beams - one on top of the other, giving a total thickness of 1.5' (Appendix I-b). This wood is approximately 0.6' wide (exact measurements not available due to backhoe damage), and might form part of a wooden foundation for some building. A few wood traces in no particular pattern were discernable just west of these two beams for about 2 feet.

More definite evidence existed on the east side, where logs, apparently not worked, were found parallel to the 2 beams and at a lower level. The average width of these logs was 0.4' to 0.6' and one of them showed traces of charcoal on it.

Artifacts in this area were negligible, with only a small piece of pottery being found close to the wood.

An interesting feature, which was exposed due to the collapse of a portion of the South wall of the trench, was a narrow, vertical wooden post. It measured 4.75' in length, 0.1' in thickness and 0.3' in width, and there is a slope towards the west of 0.5' from top to bottom. A particular feature of this post is that it does not continue down on to the wood, but ends at 103.5' A.S.L. (Appendix II-c). No nails were found in association with either this post or the wood found on the trench floor.

The importance, or even usefulness of the wood in this area is very difficult to assess. The possibility even exists that it does not form a structure of any kind. Only a small area was excavated and so it could not definitely be determined if a structure existed here. However, the very fact that the logs were placed parallel to one another at a relatively constant level (from 102.6' to 103.5' A.S.L.) does suggest the presence of some structure.

As to the complete structure, these logs may form part of a building or perhaps some sort of wood stabilizer to prevent soil movement, which had already caused damage to one of the curtain walls in 1824. (Lambert, H. 1963, Fort Lennox and Ille-aux-Noix, Canadian Historic Sites Service, Ottawa. MS.)

Figure 2 also gives an indication of the stratigraphy of this trench, which runs uniform throughout the trench. This would not only indicate that the structure was in existence before the ravelin was erected, since no disturbance can be detected; but also that the post was most likely inserted after the ravelin was constructed and may possibly have protruded above the soil.

Wooden Log Feature

The trench in which the fuel tank was eventually placed is located west of the north ravelin and approximately 12' north of the moat. At from 6.45 to 7.5' B.S. a layer of logs was found laying parallel to each other and in an E-W orientation. These logs were located at an elevation of from 99.3' to 99.55' A.S.L. along the north wall of the trench, and from 98.05 to 98.55' A.S.L. along the south wall of the trench. The wood between the north and south walls is on a continuous sloping plane going from the flacis down to the moat. The wood covers the entire surface area of the trench (i.e. 25' x 15') and all indications are that it continues in all directions - following this basic patterns. (Appendix I-c). No crossbeams whatsoever were uncovered, nor way any other structure found above or below the wood to a depth of 13' B.S. (or 93' A.S.L.). These logs do not appear to be worked at all, nor were any nails found in them. The average width of these logs was 0.8' and the thickness depended largely on how much the wood was decomposed and replaced by clay. In some areas wood was only discernable as a trace or a bark shell around a clay mould. Yet some logs could definitely be measured, and their maximum diameter is 0.6'. Samples of the better preserved logs were removed for analysis. In several places along the south wall of the trench the wood was burned on the surface, having a charcoal layer up to 0.05' thick. This layer flaked off readily.

The length of the logs could not be determined, as no definite extremities could be located. A possible break could exist 8' west of the east wall

where there was a lack of wood. However, some logs do continue past this point, so these may just have decomposed entirely in this area. A similar area, where wood traces were scarce, was in the line where the backhoe trench is marked (Appendix II-d). However, in this case a definite relationship could be determined between the two sections, something which could not be accurately done in the other area.

Only two artifacts were found on this wood, which could definitely be attributed to this level. One was a flat piece of iron found in the SE corner, the other a lead object, cone shaped with a hole through the centre, found 4' west of the NE corner. Other artifacts attributed to this layer may possibly have fallen from the backhoe and hence cannot be used as conclusive evidence in this case.

Due to the scraping effect of the backhoe, a stratigraphic diagram of this trench was impossible. Hence, only an artificial strata could be compiled by estimating where the soil changes occurred. The result of this work was a strata as follows:

- 1st layer: Very dark greyish brown loam (10YR., 3/2); from 0.0' to 0.6' B.S. - Average.
- 2nd layer: Dark brown loamy clay (10YR., 3/3); from 0.6' to 3.0' B.S. - Average.
- 3rd layer: Greyish brown clay (2.5 Y, 5/2); from 3.0' to 3.8' B.S. - Average.
- 4th layer: Dark brown sandy clay (10YR, 4/3); from 3.8' to 6.3' B.S. - Average
- 5th layer: Greyish brown clay (2.5 Y, 6/3); from 6.3' to 7.3' B.S. - Average.

6th layer: Wood, from 6.3' to 6.7' and 7.3' to 8.1' B.S.

7th layer: Dark brown clay (LOYR, 4/3); from 6.7' to 13.0' B.S.
Average.

Besides the very existence of wood in this area, a puzzling factor here is the 0.8' slope of this wood down to the moat. There appears to be no question as to whether or not this slope is intended or accidental, since on accidental slope (i.e. one caused by soil pressure) would not be as uniform as this feature is. This wood unmistakably slopes down to the moat, but whether or not it reaches the moat is a different matter - one which can only be speculated upon until further excavation is carried out or documents are found which would indicate what this structure is, its size and its function.

The possibility of this being the remains of the Commissary Store or Canteen mentioned in the 1814, 1829 and 1833 maps does exist, though it is unlikely to be this. My objection to this theory is the extreme lack of artifacts, as well as the location of the wood - approximately 250 away from where the Canteen and Commissary Store are presumed to be. However it is mainly this lack of artifacts which virtually rules out any possibility of this structure being a building. (This statement is made in reference and relationship to other buildings already excavated on this island.)

If however, the wood is related to the defence structure of Fort Lennox, it could possibly be a part of the fortification works of the flacis

since it is almost at the same level as the rest of the island would have been prior to construction of the Fort (i.e. circa 101.0' A.S.L.).

Fuel Line Trench

Associated with the trench for the fuel tank was a small 1.5' deep trench from the east end of 5G60C to the N.W. corner of the north bridge over the moat. No structure was anticipated in such a shallow trench and one was uncovered. Artifacts were quite numerous, consisting basically of iron objects, nails, glass, pottery and bone fragments. This rather heavy concentration also occurred at the surface of the fuel tank, and is most likely due to the fact that this area has possibly been used as a road for nearly 150 years.

Chapter III: Operation 5G61 - Parade Ground

British Stone Drain: Test Trenches

The purpose of both sub-operations A and B was to locate the position of the British stone drain between the Men's Barracks and the cistern by the Sun Fial, so that a new modern drain could be placed next to it without disturbing the original.

Since the cistern was not at right angles to the central door of the Men's Barracks - the place where the drain emerged from the Barracks, two trenches were located in such a way as to determine whether the drain ran straight and then made a curve to the cistern; or whether it turned at the Men's Barracks and then headed straight for the cistern.

The former theory proved to be correct, however, besides finding the stone drain, a modern drain was also uncovered. This modern drain - made of 8" agricultural tile - was only found in sub - op. 5G61B, although the possibility does exist that it is also in the other trench (5G61A). The top of the agricultural tile drain was found 2.2' B.S. and it appears to be resting inside the stone British drain, which is located 2.3' B.S. (or 100.6' A.S.L.). All indications show that the top stones of the British drain were removed, thus raising the level of the top of the drain to 101.1' A.S.L. After the modern drain was inserted, the top stones were then replaced over the drain at random. This is deduced from the fact that a number of stones

were found covering the agricultural tile drain in no apparent order but all showing traces of mortar on them. (Appendix I-d).

The stone drain itself was found to be 3.0' wide and having an interior cavity of 1.3' square. The exterior depth or thickness of the drain was not attained due to the fact that water began to fill the trench at 3.2' B.S. The drain does, however, extend beyond the 3.5' depth of the trench. (Appendix I-d).

In the other trench, only the stone drain was excavated. The top stones again indicated that a modern drain was inserted in the stone drain; however, this theory was not investigated further due to a lack of time. The section uncovered was found 2.5' B.S. and it also appears to be 3.0' wide. Since the new drain was now to be placed north of this drain rather than beside it, excavation in this trench stopped. The stones in both of these trenches varied in size from 0.3' x 0.0' x 0.4' to 0.6' x 1.0' x 0.8'.

The work in these two trenches revealed several facts about the Parade Ground. First, there appears to be either a complete covering of gravel over the grounds at (from 101.8' to 102.3' A.S.L.) or the area excavated cut through a gravel path at this level. The gravel is quite heavily compressed and contains deposits of ash and wire nails in places - indicating a frequent and recent occupation. Most likely this layer does form part of a pathway, as is indicated on an 1863 map of the Fort.² (Appendix III-b).

2. Plan of Ile-aux-Noix and Fort Lennox - 1863.

As for the drains, the presence of the agricultural tile drain in the stone drain indicates that the entire area around the British stone drain was probably excavated recently (at least to a depth necessary to remove the top course of stones), and that artifacts from this area are very likely to be out of their original place. The damage to the stone drain does not appear to go beyond the removal of the stone covering over the drain although the position of the agricultural drain does suggest that more stones were removed. Since the stone drain has an interior cavity of 1.3' x 1.3', the modern drain with a 0.8' diameter should fit inside this drain comfortably and still leave room for the stone covering. Yet the agricultural tile drain is half way above the top course of stones from the other drain. This suggests that either more stones were removed than it appears, or that there is a fairly deep layer of sand or soil beneath the modern drain.

The stratigraphy of the parade ground appears to be uniform, consisting of 0.6' layer of top soil, covering a 0.5' layer of gravel. Beneath this a layer of sand (from 1.0' to 1.5' thick) can be found and below this a layer of sandy clay goes down to an undetermined depth. (Appendix II-g).

Footer trenches located next to the drain give a clear indication as to the location of the trenches dug to insert the agricultural tile drain. The soil in the footer trenches is basically top soil, but a mixture of the other two soils is noticeable.

British Stone Drain: Cistern and Barracks Extremities

The new drain will be located in the trench 5G61C and runs from the cistern to the right side of the centre entrance to the Men's Barracks. Three different structures were uncovered in this trench: The British stone drain at both extremities of the trench; a Bell and Spigot vitrified tile drain by the cistern; and an agricultural drain by the cistern, as well as a few feet east of the Men's Barracks.

At the east end of this trench, the stone drain was found with the 8" agricultural tile drain inside it - similar to the structure found in 5G61B. The stone drain, as much as was left of it - was located at 3.25' B.S. and entered the cistern at this level. The agricultural tile drain was located at 3.1' B.S. and a third drain was found at 2.2' B.S. This latter drain was oriented the same as the other two but appeared to consist of only a few pipes - since it was not uncovered in 5G61A, which crosses its path about 10 feet away, (Appendix II-e).

At the extreme west end of this trench, a portion of the stone drain was also uncovered. As Figure 5 shows, this section appears to have been disturbed considerably, since only two original stones appear to cover the drain in the conventional manner. The remainder of these stones appear to consist of a conglomeration of stone and rocks heaved back on top of the drain after it was uncovered, since several are located within the drain itself. No agricultural drain was found in this portion of the drain (as was expected) but the interior portion of the drain was filled with soil.

This drain was found at 0.8' B.S. and has an interior dimension of 1.3' x 1.3'. The exact exterior width of the drain was uncertain but it would appear to be 3.0' - as it is in other areas.

With the exception of the agricultural tile drain found 17.1' east of the Men's Barracks, no other structure was found in this trench. The drain was oriented in such a way as to eventually meet the catch basin by the NE corner of the Men's Barracks and probably join up with the other modern drain inside the stone drain. Located at 0.8' B.S. it appeared to be heavily damaged, probably due to frost, since it was so close to the surface.

An interesting fact relating to this entire drainage system at Fort Lennox is that, according to Mr. G. Lafrance, the British stone drain starts at the cistern, goes below the Men's Barracks and casemates, through the ramparts and empties into the moat. Hence drainage would be from the cistern to the moat. Yet, all the modern drains empty into the cistern and from there appear to go to the Main Gate. The reason for this change it is not known, but if the present situation is comparable to the time when the other modern drains were put in, it would appear that the people involved were ignorant of the fact that the stone drain leads to the moat - and not from the Men's Barracks to the cistern, as they believed.

The artifacts in this trench were quite numerous, coming mainly from the top 1' of soil. On the whole these artifacts were quite modern, consisting of round nails, tin cans, metal bottle top, etc. Some old pottery, glass and bone fragments were also uncovered, as well as a large quantity of square nails just west of the cistern. The modern nails were generally

found in association with an ash deposit, which probably came from the incinerators where scrap wood, etc. was burned.

Two particular artifacts were found just north of the stone drain by the Men's Barracks. One was an iron bar 3.55' long by 0.9' wide and 0.9' thick. Directly west of it an iron chain, containing 9 links plus an anchor like end, was found. Both of these objects were found in the top soil at 0.4' B.S. The iron bar appears to have a notch in two sides of one end. (Appendix I-e) The function of these two objects has not yet been determined, but it has been speculated that the chain has a self-locking link attached to one end--such as is sometimes used on a smaller scale for a dog leash.

Chapter IV: Operation 5G62 - Men's Barracks.

Catch Basins

In various places around the Men's Barracks there existed small brick catch basins. Specifically these were located at each corner of the building and one in front of the Barracks between the central entrance and the southeast corner. These were all removed to make way for a new perforated drain to be placed around the barracks. As these catch basins take a relatively long time to excavate, only the one in the N.E. corner was excavated in detail.

Due to the fact that the catch basins were in a deteriorated condition, a 0.6' thick cement cap was placed over the catch basins several years ago to stabilize them. Adding this level to what remains of the actual brick work, it is estimated that the catch basins were 2.3' deep on the interior and 1.0' square. The exterior dimensions were 2.5" square and 2.6' deep. The catch basin was two bricks (or 0.7') wide and cemented together with mortar, (Appendix II-f). The interior appears to have been carefully finished, whereas the exterior has mortar jutting out in large chunks. A layer of mortar (0.05' thick) covers the interior brick base of the catch basin. No original entrance or exit could be found in the catch basin, but it is highly possible that these once existed in the places where two modern drainage pipes are located. One pipe enters the north wall of the catch

basin at 2.2' B.S. and the other leaves the basin in the south wall at 0.5' B.S. This latter pipe is headed for the Men's Barracks instead of the cistern. However, it joins an agricultural tile pipe in the southwest corner of the trench, which appears to head to a similar pipe found in 5G61B.

Besides these structures, 2 wooden planks 0.45' wide and 0.2' thick were found at 1.8 B.S. just east of the catch basin. These apparently cover electrical wiring, which was found 0.5' lower down. (Appendix I-f).

The east side of a portion of the runoff drain was also excavated in this trench. The stone slabs vary in thickness from 0.4' to 0.5' and rest on regular top soil. However, approximately 0.5' below the top soil a conglomeration of stones was uncovered. These are irregularly shaped and joined with mortar. However, there is no course layer, such as a brick wall would form. The average size of these stones was 0.6' x 0.7' x 0.5', with smaller rocks filling in the gaps. These stones most likely form part of an external support for the foundation of the Men's Barracks. Such stones were also found at other places around the Men's Barracks, as is discussed on p. 21.

The catch basins would appear to have been an important feature in the drainage system of Fort Lennos, although there are some puzzling facts associated with them. One is the structure by the southeast corner of the Barracks. Here the six inch thick cement capping comprised the total

evidence of a catch basin. No bricks would be found either below the cement or in the vicinity. Then too, there is the extra basin located in front of the Barracks, between the S.E. corner and centre of the building. Possibly this one replaced the missing catch basin by the corner, as no other such structure was located around the Men's Barracks. Finally, no drains were found to exit from these two catch basins, although drains did exist in connection with the other three. These facts leave the question of location quite uncertain, should any future attempts be made to reconstruct the catch basins.

Artifacts uncovered in the northeast catch basin area consisted of glass, pottery and bone fragments, iron nails, a round shot and a clay marble. Within the catch basin itself a large quantity of glass and pottery fragments were found, as well as two knives, two spoons and a fork. Most probably these artifacts will date from 1939 to 1967, as the new pipe drains were probably installed during World War II and hence the catch basins would have been cleaned out at that time. The fork had four prongs on it and the initials R.C.C.O. on the back (which might stand for Richard Carrington and Company, a British cutlery firm).

Building Foundations - External

In addition to the trench dug by the northeast corner of the Men's Barracks, three test trenches were also dug one by each of the other three sides of the building. All of these trenches revealed a quantity of rock apparently

acting as a support for the building's foundations. On the north side these rocks extended out 4.25' from the building wall, whereas on the south and west sides it extended only 3.75' out. (The east wall foundation supports also extend 3.75' out). The stones in all of these cases were approximately 0.7' x 0.5' x 1.0' in size and joined together with mortar. Generally these stones were found at around 1.0' to 1.5' B.S.

Along the north wall, two wooden beams were uncovered in addition to the rocks. There were found at from 2.3' to 2.5' B.S. and were uncovered by removing some of the smaller rocks. Located side by side and parallel to the north wall, one of these beams, or planks is 0.7' wide, 0.15' thick, and at least 2' long -- continuing into both the east and west walls of the trench. The other beam is only 0.5' wide, but may have been wider, as it was damaged when it was uncovered. At 0.15' gap separates the two planks. (Appendix I-g)

No trace of such wood was found in any of the other trenches, but the rocks were not removed in these cases due to a lack of time. Hence the wood found in the north trench could possibly be a separate structure not related to the Men's Barracks at all. However, it might also be part of a wooden form placed around the rocks at the time when the mortar was setting, or have been used to cover electrical wiring. However, the latter seems unlikely since there are two planks present and both were covered with apparently undisturbed stones. Although no nails were found in these two planks, the possibility that they exist can not be overlooked as only two feet in length of the wood was measured.

Modern Drainage and Brick Rubble

Other structures found around the Men's Barracks include a modern agricultural tile drain behind the Barracks, several planks south of the N.E. catch basin, some pipes south of the building and a layer of mixed stone and broken bricks behind the Barracks.

The agricultural tile drain extended between the N.W. and S.W. catchbasins and was constructed of 1' lengths, held in place by nails driven through wood planks. (Fig. 1). The top of this drain was located 2.7' B.S.

The pipe was of the 8 inch variety and covered by a thin coating of tar paper. The tar paper was quite fragile and generally flaked off when the soil was removed.

Planks, similar to the ones on which the above drain was situated, were found just south of the catch basin by the N.E. corner of the Men's Barracks. These were 0.5' wide and extended for at least 15' parallel to the Barracks. Located 3.2' B.S., they were found in association with wood chips and a layer of very dark grey logs (7.5 YR. 3/0).

These planks may have covered electrical wiring, as no drain or nails were found which would indicate a structure similar to the drain found west of the Barracks.

In the trench dug along the south wall of the Men's Barracks several pipes were uncovered. One of these, a sewage pipe, was 1.0' in diameter and located approximately 1.5' B.S. It extended from the centre of the south end of the Men's Barracks and probably empties into a septic tank in the S.W. corner of the Fort. The other pipes are located just east

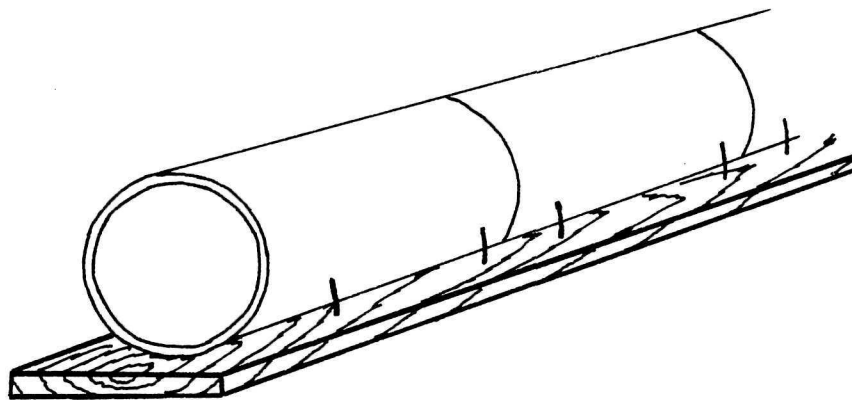


Figure 1. View of modern drain as found on wood planks with nails used as supports.

of this and these are two water pipes for the showers which were located south of the Barracks and a water pipe for the well by the S.E. corner. The latter three pipes were all located around 1.0' B.S.

The final feature found in association with the Men's Barracks was a layer of brick and stone, mixed in no apparent design, and located between the Men's Barracks and the West Casemates. A similar layer was found between the Officers Quarters and the North Casemates, also at from 1.5' to 2.0' B.S. These layers may have been dumping areas for left over rubble and broken bricks after the construction of the casemates. No specific artifacts were found in direct relationship to these two layers, although a large amount of pottery and glass fragments were found throughout the trench.

Chapter V - Operation 5G63 Area in Front of Powder Magazine

Magazine Defence Wall

Besides the intricate drainage system that was uncovered in this area, a stone wall was also found. This wall runs parallel to the front of the Powder Magazine at a distance of 28'. Located 0.5' B.S., it is 3.0' wide and 2.8' thick. This structure is constructed of field stone, possibly worked but more likely selected, as no definite courses can be determined. The stones are joined with mortar and the entire portion of the uncovered structure is in a very durable condition. (Appendix I-j).

On both sides of this wall, at 3.5' B.S., traces of wood could be found. This wood ran N-S in the area west of the wall and E-W in the area east of the wall. No definite pattern could be discerned as the traces were very faint. Though the wood traces existed for only 1' east of the wall, the western section extended for a total of 6.0'. No nails or other artifacts were found in direct association with either the stone wall or the wood traces.

This stone structure would appear to be the foundation remains of a wall which existed in front of the Powder Magazine. Historical records indicate the presence of such a wall, although these vary as to its actual structure. The earliest map (1823) shows the wall as having a doorway in the centre with a shifting room at each end of the wall. An 1829 map indicates only a thin straight wall across the entrance of the bastion with

a central entrance, and an 1863 version indicates the wall having an entrance just left of the centre of the wall, with shifting rooms at the ends. The 1841 map shows no entrance at all and the others (1833 and 1852) indicate the entrance at the centre of the wall. A map with a plan of alterations shows the wall to have even a different shape from the others, but this plan was apparently never carried out, (Fig. 2) By 1939 no wall is shown at all on the map dated at that time, however one of the attendants at Fort Lennox, Mr. A. Longois, recalls such a wall in existence in the 1930's. From his description of the wall, it very closely resembles the one shown on a painting of the area (Appendix I-h).

From this historical evidence plus the fact that the wall uncovered lies directly in line with the location of this wall, it would appear that this structure is indeed the same wall. The exact date of the wall will be difficult to determine until future excavation can determine the entrance and shape of the shifting rooms.

In determining the location of the entrance, the locations of the various drains in this area might help, as there is a possibility that the drains passed through the entrance of the wall where no foundations existed below the ground. However, if the foundations continued below the ground even under the entrance, then an interesting structure should be uncovered in the place where the brick drain would pass through the wall. Again, all this will have to be left to further excavation.

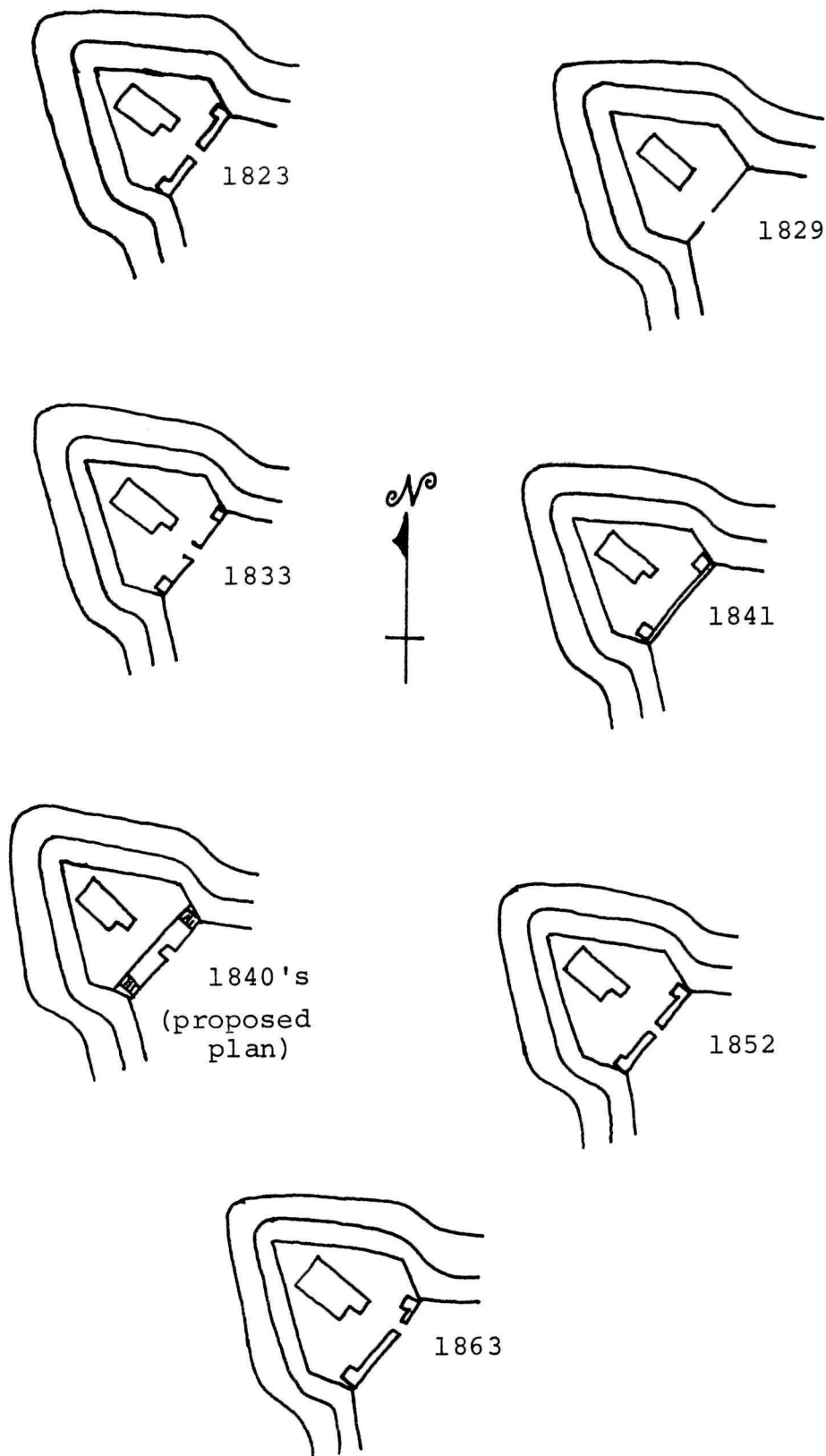


Figure 2. View of various defence walls used and proposed in front of the Powder Magazine.

Brick Drain

One of the major events of this excavation was the uncovering of various portions of the drainage system at Fort Lennox. Not only have sections of the original drains been located but also modern pipes. The area in front of the Powder Magazine added to this pattern by producing three more modern drains and two British drains.

Of the two British drains, the brick was the more surprising feature. The portion uncovered is situated SE of the defence wall for the Powder Magazine. Located 1.8' B.S., it has an exterior diameter of 1.45' and an interior one of 0.85', Fourteen (14) courses of bricks (measuring 0.65' x 0.3' x 0.15') from the drain, all of which are joined by mortar. (Appendix I-k).

The structure of the bottom half of the drain differs somewhat from that of the top in that there is a sudden widening of space between the bricks along the exterior wall on the bottom half, (Fig. 3). This compression of the bricks forces the bottom of the drain to be flatter than the rest of the structure.

This portion of the drain is located almost in the centre of the area between the powder Magazine, Men's Barracks and Officers Quarters. All indications show that the drain runs from the Powder Magazine toward the cistern in the centre of the Powder Ground. At the time of excavation no water was flowing in the drain, however, the presence of a very moist layer of mud (0.05' thick) did indicate that some water flow did still occur and that probably the drain is not blocked.

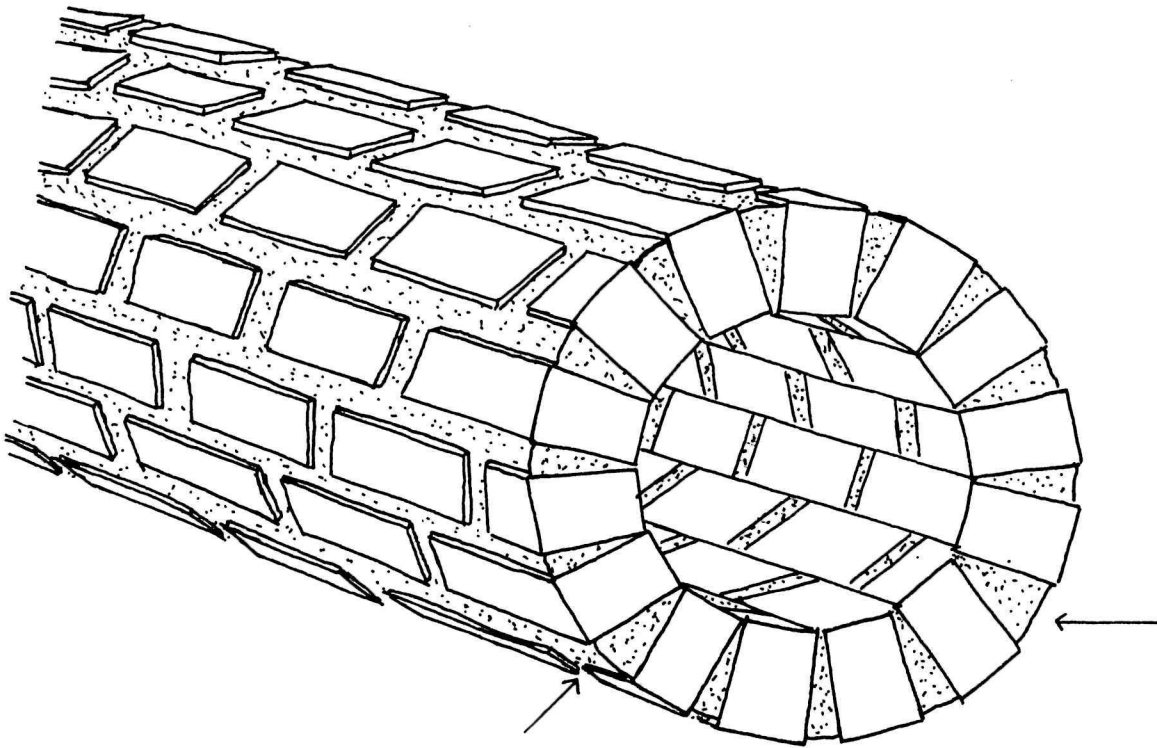


Figure 3. View of brick drain structure. Arrows indicate a widening of mortar joint.

Stone Drain

A second British drain, constructed of stone and similar in fashion to the one beneath the Men's Barracks, lies between the Men's Barracks and Officers Quarters. in an E-W direction. Located around 2.0 to 2.5' B.S., it is 4.5' wide and has an estimated interior diameter of 1.3' square. It appears to be constructed of selected field stones which are joined together with mortar. The size of the stones varies considerably from 0.3' x 0.3' x 0.3' to 2.4' x 0.6' x 0.8' (Appendix I-1). The exterior depth of this drain was not determined as the top of the drain lay about 0.5' about the bottom of the excavation. The exact level of the top of this drain is uncertain due to the damage done by the backhoe but it could possibly be estimated to have been at 2.0' B.S., since several stones were found at this level.

This drain, like the brick drain would still appear to be in use. Water was detected through a crack in the drain and it measured to a depth of 0.3' However, the fact that the water was that deep could suggest that the drain is blocked somewhere. This drain appears to go from the SW corner of the Officers Quarters to the ramparts between the Men's Barracks and Powder Magazine. However, it, like the brick drain and several of the modern drains may be associated with a stone feature located just SE of the brick drain. This will be further discussed under the section "Stone Feature" on p. 32 .

Modern Drains

Three modern drains were found in this general area, two of which appear directly associated with previously mentioned structures. The first, a Bell and Spigot vitrified tile drain, located between the Magazine defence wall and the brick drain was found 0.7' B.S. It would appear to lead from the Powder Magazine to the N.W. corner of the Officer Quarters. However, no such drain was located anywhere along the west wall of the Officers Quarters.

The second modern drain was made of 8" agricultural tile and is located 1.3' south of the stone feature found in this area. It is found 2.7' B.S. and consists of 2 one foot sections plus fragments of two others. This drain is so placed as to apparently go from the N.W. corner of the Men's Barracks to the N.W. corner of the Officers Quarters. However, again no such drain was found in the latter location.

The third modern drain, a combination Bell and Spigot vitrified tile and cement drain, is found 2.6' B.S. and extends due north from the catch basin by the NE corner of the Men's Barracks. The direction of this drain would lead it directly into the north ramparts of the Fort. It is at this point that the previously mentioned stone feature might play a very significant part in the drainage system of Fort Lennox.

Stone Feature

The stone feature, which might be the key to the drainage system in this part of the Fort, is located SE of the brick drain. It is constructed in similar fashion to the stone defence wall and the stone drain, and is

found 1.5' B.S. This particular structure is unique from all the others as a corner is exposed, (Appendix I-m). This structure was severely damaged by the backhoe and hence the actual top of the structure could possibly be located around 0.5 or 0.7' B.S. The bottom depth of this structure was not excavated, as water began to pour into the trench from the stone structure as soon as a level of 3.2' B.S. was reached. A particular feature of this structure was the tendency for course overlap (Appendix II-h). Although this may have been the result of deterioration, the mortar is rather firm and the stones do appear to jut out purposely near the base.

From the small section uncovered, the south wall of this structure would appear to run parallel to the collonade of the Officers Quarters and the West wall of the structure runs almost directly in line with the East wall of the Men's Barracks.

There are three possibilities as to what this structure might be. One is a wall, the second a drain, the third a cistern. If this structure is a wall, then its location poses several problems, one of which is the failure of any maps to indicate such a wall in this area. Also, a wall in this location, extending from half way between, the Men's Barracks and the Officers Quarters due north into the ramparts would seem quite useless. Similarly, the possibility of this being a wall of a building is quite remote, as any building with walls that thick would undoubtedly have been shown on one of the many maps of Fort Lennox. Thus the possibility of this being a wall can almost certainly be discarded.

The second possibility however, is more difficult to discard. The fact that water poured from this structure certainly suggests that it does have some direct relationship either to a drain or a cistern. The main problem here is, if it is a drain, why does it stop, or have a right angle, in the middle of an open area? Since this is very unlikely to occur, this question of a drain can most probably be put aside also, especially since the majority of facts would favour the existence of a cistern.

If the brick drain, stone drain and three modern drains are all extended in a straight line toward the centre of this area, it is found that most of them meet within a relatively small area - the area where the stone feature is located (Fig. 4). This would explain why the brick drain was not found crossing the trench between the Men's Barracks and Officers Quarters, why the 3rd modern drain goes due north; why the 1st and 2nd modern drains head to the N.W. corner of the Officers Quarters but never reach it, and why the stone drain heads toward the ramparts beside the N.W. corner of the Men's Barracks.

Furthermore, during excavation work in the moat by Walter Zacharchuk from September 21 - October 2, 1967, it was noted that a drain emptied into the moat northeast of the stone feature.

The possibility does exist that this is merely a large drain into which all the other drains empty, however, the theory of a cistern sounds more logical. In further association with this, there is also a slight

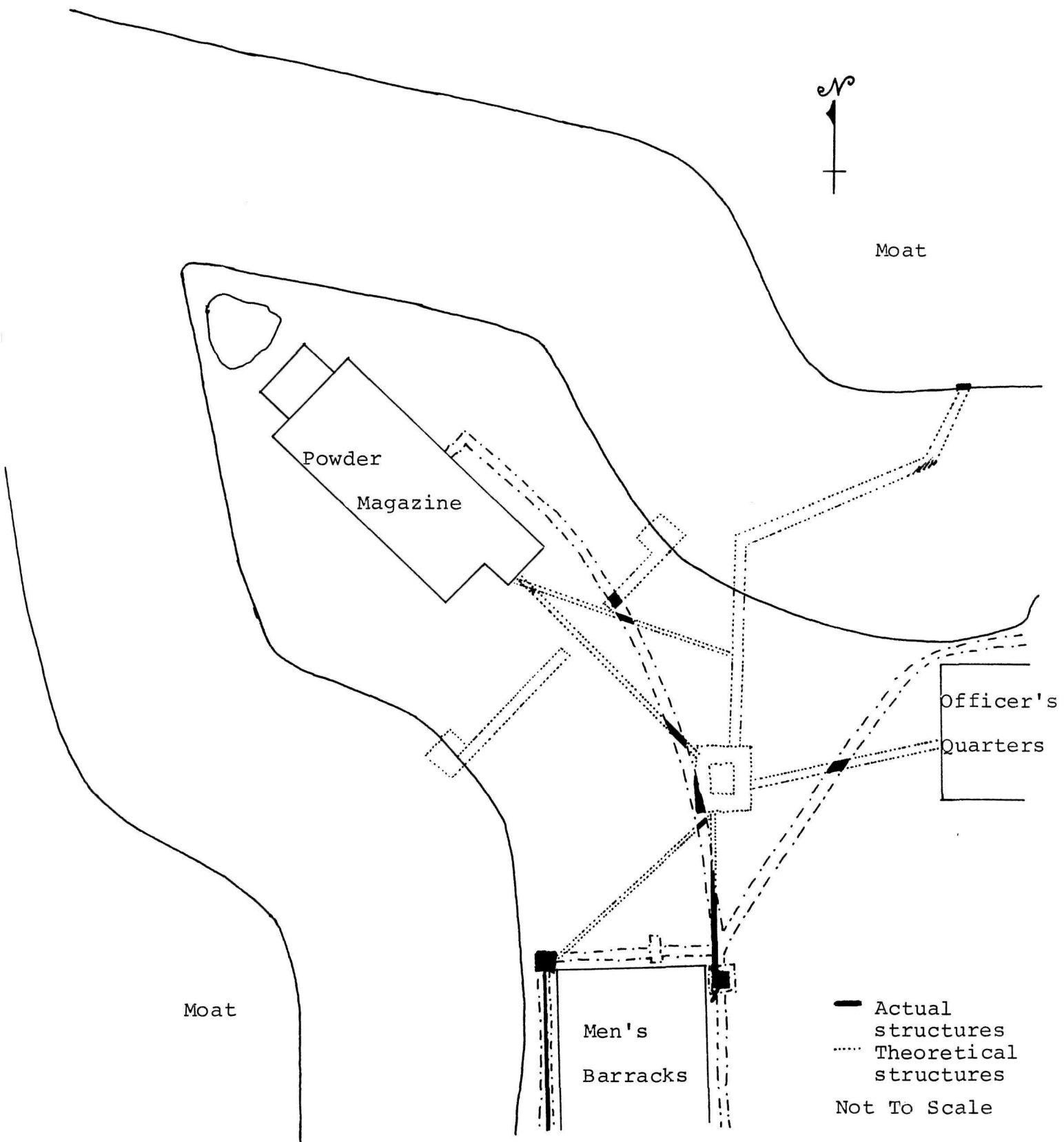


Figure 4. View of possible location of structures in Fort Lennox.

possibility that this in fact a well transformed into a cistern. This theory comes from the location of a well just west of this stone structure on a map of 1863. This well, however, is shown to be round, whereas this structure is most likely square - which is unique in itself as the other cistern is round.

Wood Feature

Approximately eight feet southwest of the stone drain, a series of logs were uncovered, these logs, 5 in all, were laying in a N-S direction at 2.0' B.S. They averaged about 8' in length and appeared to be laying on top of a sixth log at right angles to them. This latter log is wider than the other five, having a diameter of 0.7' compared to from 0.4' to 0.6' for the other logs.

The exact location of the logs was uncertain, due to their removal by the backhoe. However, other logs could be detected in the walls of the trench, and these were used to determine the original position of the other logs. These logs do not appear to be shaped, although they did taper (apparently naturally) at the south end.

The purpose of these logs is quite puzzling, especially if they have anything to do with the drainage system of the Fort. At the present time, I have no idea what these logs might be. Here especially, more excavation work will be necessary before any theories can be projected.

Brick Rubble

Between the Officers Quarters and the north casemates, a layer of fractured bricks and stones was found at from 1.5' to 2.0' B.S. This layer is very similar to the one found behind the Men's Barracks and again a similar theory is put forward: namely, that this area was a dumping ground for rubble left over after the construction of the casemates.

No structures were found in this area, although several interesting artifacts were uncovered. One was an L shaped brace. It has arms 1.3' and 1.45' long and 0.45' long spikes in it. The other artifacts were two relatively modern electrical boxes. These were found on top of the brick layer, whereas the iron brace was found below it.

The uncovering of the electrical boxes at this level suggests that possible these bricks were deposited here after repair work was done on the casemates in the 1930's. However, no definite records exist of such work being done.

Chapter VI

Conclusion

From the work carried out during my stay at Fort Lennox, two basic conclusions can be reached. First, some sort of building existed in the area of the north ravelin which has not been documented as far as I can presently able to determine. Second, the drainage system of Fort Lennox consists of an intricate pattern of both modern and original British drains. Once uncovered, these drains could help determine where other structures were located, as well as give an insight into the possible drainage methods of British forts of similar design.

Recommendations

In order to fully understand the significance of these structures, it will be necessary to excavate these areas to a greater extent. However, prior to doing so inside the Fort, a thorough attempt should be made to uncover any maps which would indicate the location of this drainage system. Such sources as the Department of National Defence, and the Department of Lands and Forestry, etc. should not be overlooked, as each of these departments were in control of the Fort at one time or another.

In the actual excavation, a two foot wide test trench, stretching over long areas at various intervals (like the ones dug in front of the Powder Magazine) would most likely be sufficient for the location of the drains. Once this is accomplished and possible cisterns are located, which I believe do exist in addition to the one in the centre of the Parade Ground, then separate excavation work can be carried out in these areas.

Appendix I
Photographs



Appendix I - a. View of collapsed wood structure in the North ravelin. 5G-43-M



Appendix I - b. View of two beams on top of one another in test trench south of the sally port. Note wood chips in front and wood logs behind this structure. 5G-50-M



Appendix I - e. View of iron rod which was found near the East end of the stone drain in the Parade Ground. Damaged drain seen at top left corner. **5G-67-M**



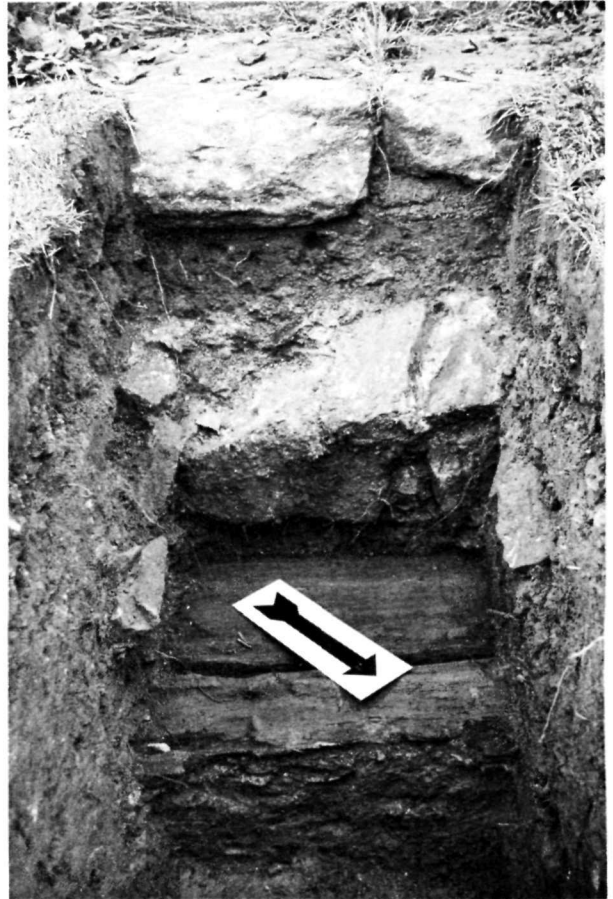
Appendix I - f. View of North east catch basin after excavation, showing two modern pipe inlets plus wood plank covering electric wiring. Surface runoff drain is seen at top of photograph. **5G-92-M**



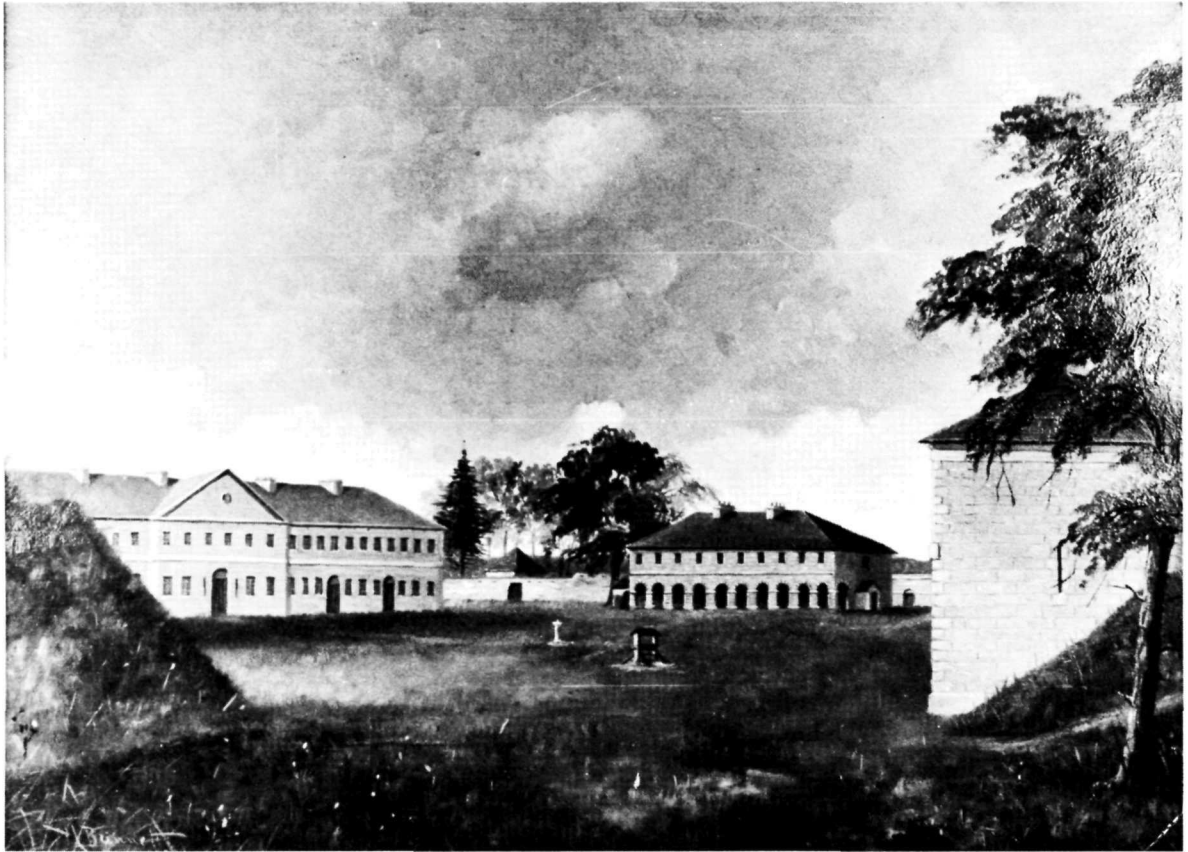
Appendix I - c. View of continuous wood feature found parallel to the moat, west of the north ravelin. Slope goes down to the moat. **5G-8-M**



Appendix I - d. View of modern agricultural tile drain inside old British stone drain, with stones covering the drain protruding from both trench walls. **5G-63-M**



Appendix I - g. View of two wood planks
north of stones forming exterior
support for the foundation of the Men's
Barracks. **5G-83-M**

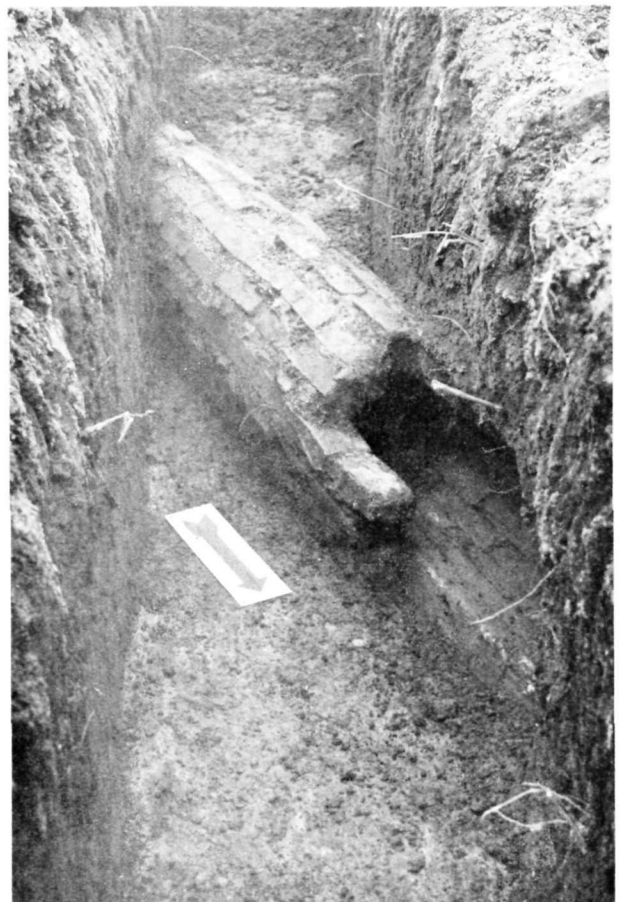


Appendix I - h. Photograph of a painting by Bunnet, ca. 1880's, showing the magazine defense wall between the Men's Barracks and Officers' Quarters. (Original at McGill University, 872.)

Appendix I - j. View of
stone magazine defence
wall between the Powder
Magazine and the Men's
Barracks. **5G-105-M**

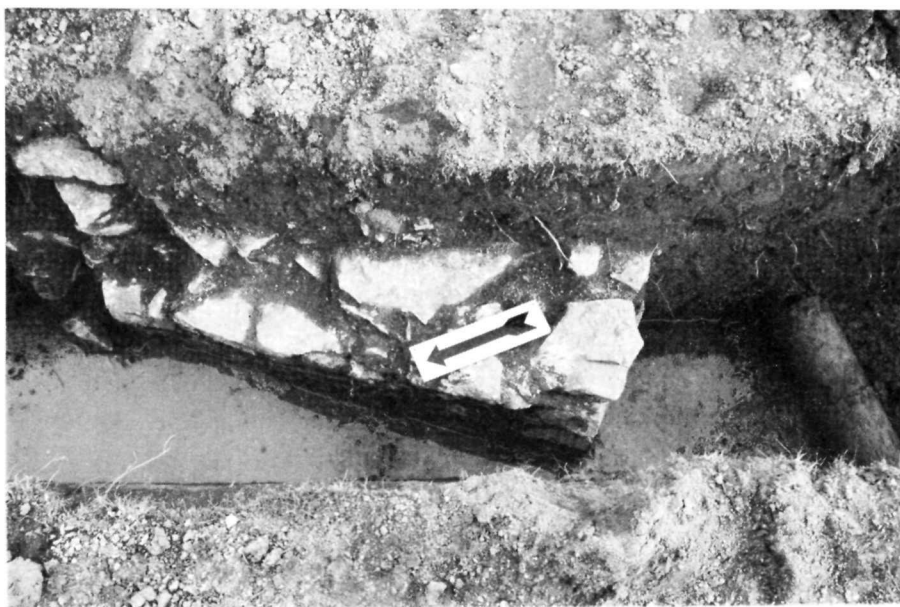


Appendix I - k. View of
the brick drain between
the Powder Magazine and
the Men's Barracks.
5G-111-M





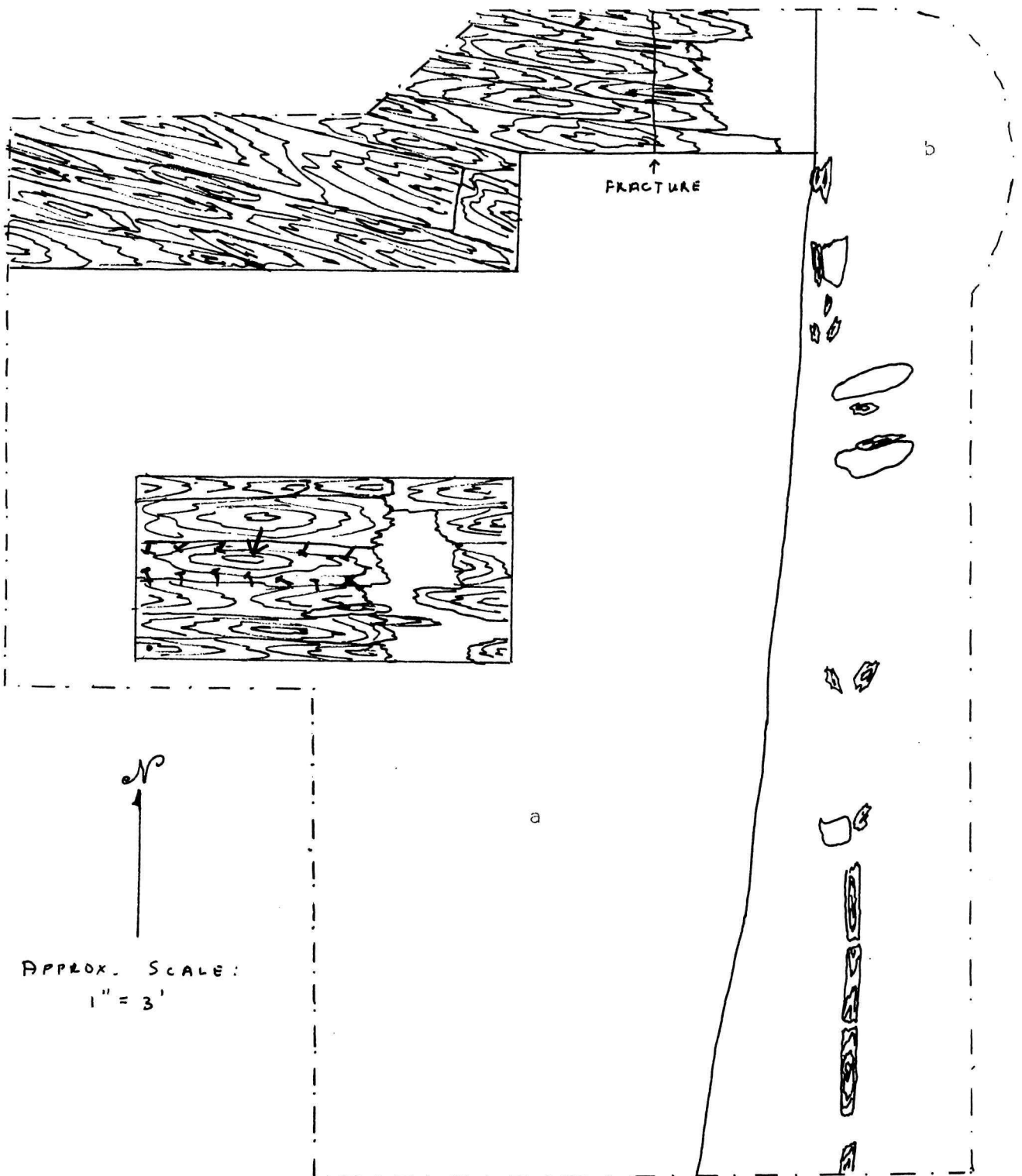
Appendix I - l. View of stone drain
between Officer's Quarters and Men's
Barrack. 5G-133-M



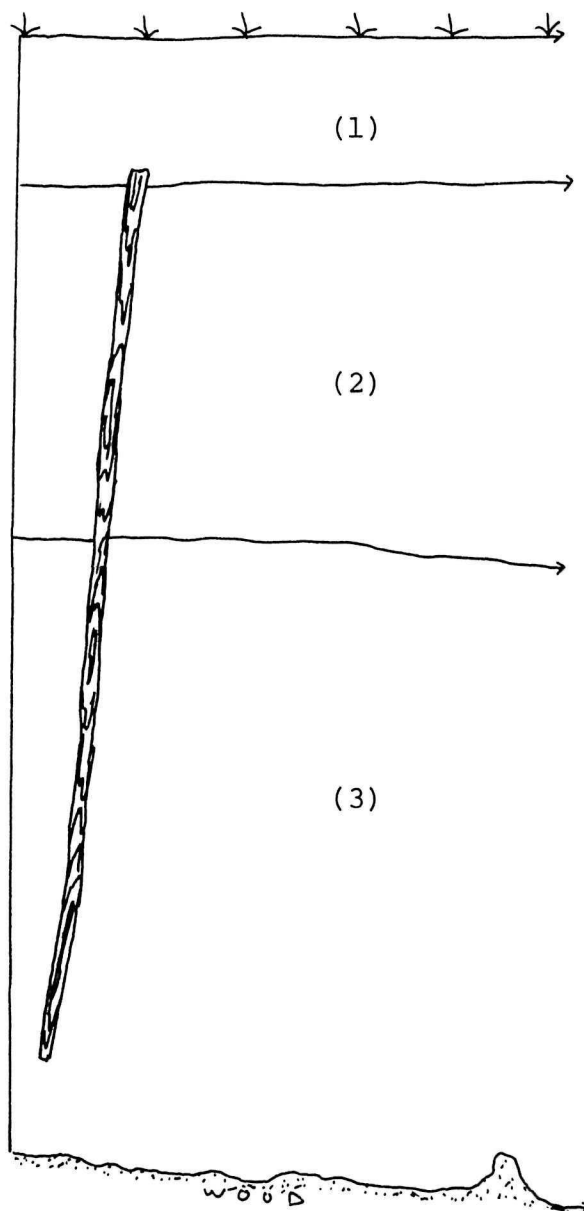
Appendix I - m. View of stone feature between the Powder
Magazine and Men's Barracks, with a modern drain on the
right. 5G-116-M

Appendix II

Drawings

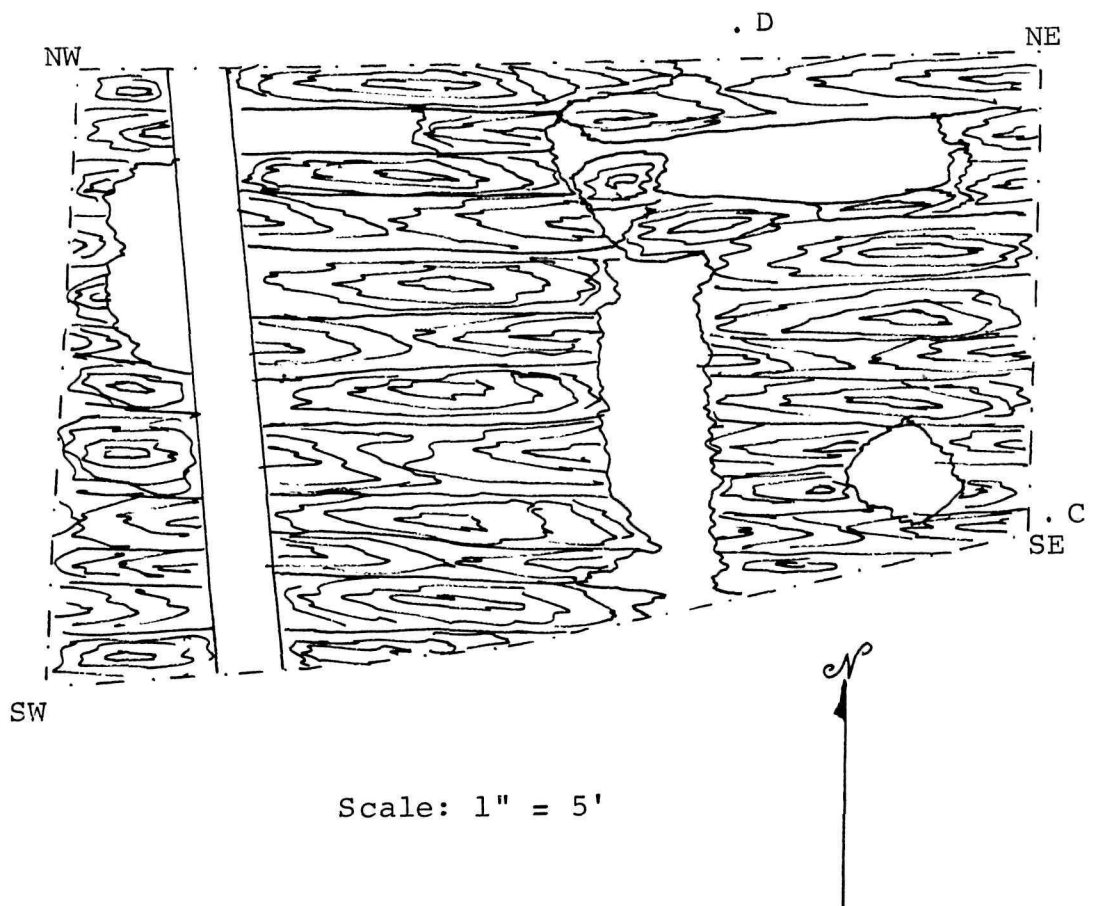


Appendix II - a & b. View of wood structure(s) found in the north ravelin. Note spikes in small trench of section "a". Wood in section "b" is at a higher level.

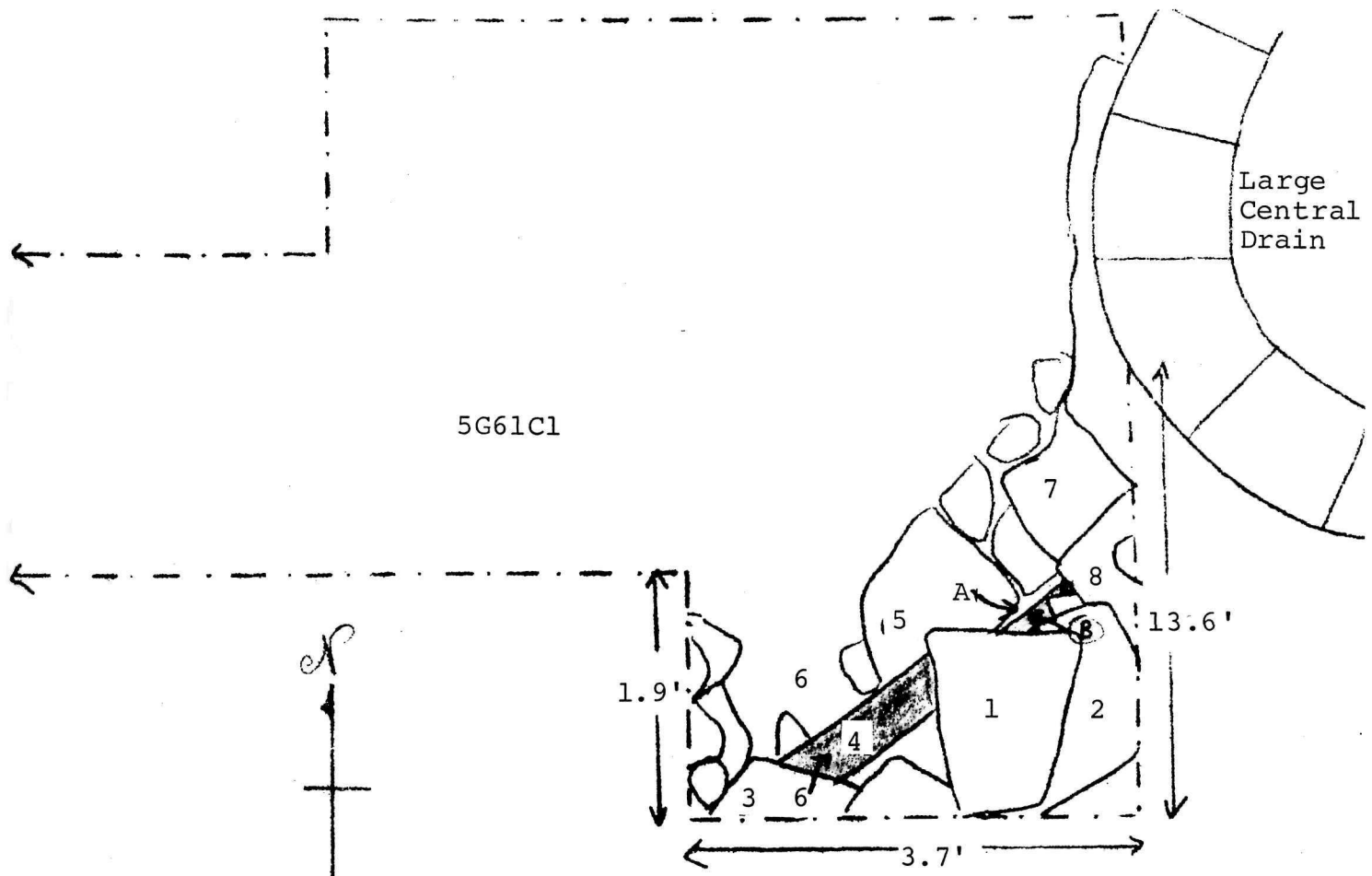


- (1) Very dark greyish brown loam (10 YR, 3/2)
- (2) Very dark greyish brown loam (2.5 Y, 3/2)
- (3) Olive brown loamy clay (2.5 Y, 4/4)

Appendix II - b. View of wood post found in south wall of 5G60B.



Appendix II - d. 5500C- View of wood feature found parallel to the moat.



Not to Scale

1 0.6' B.S.	5 3.25' B.S.
2 0.75' B.S.	6 3.85' B.S.
3 1.1' B.S.	7 1.6' B.S.
4 2.2' B.S.	8 3.1' B.S.

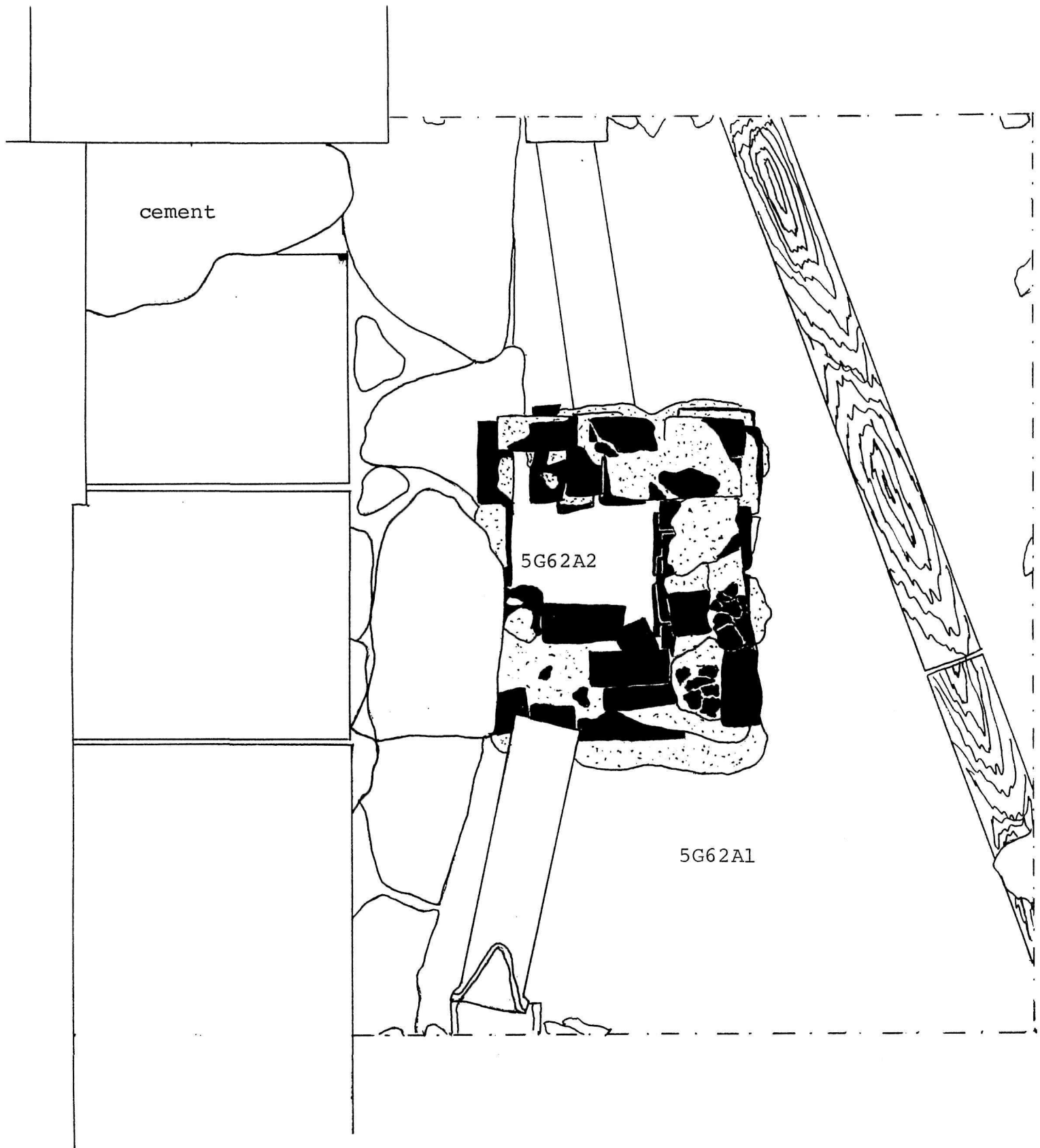
A N.Wall of British Drain

B Modern Drain

C More Modern Drain

Note: Surface Level is same as large central drain wall.

Appendix II - e. View of area west of main cistern where different drains were found.



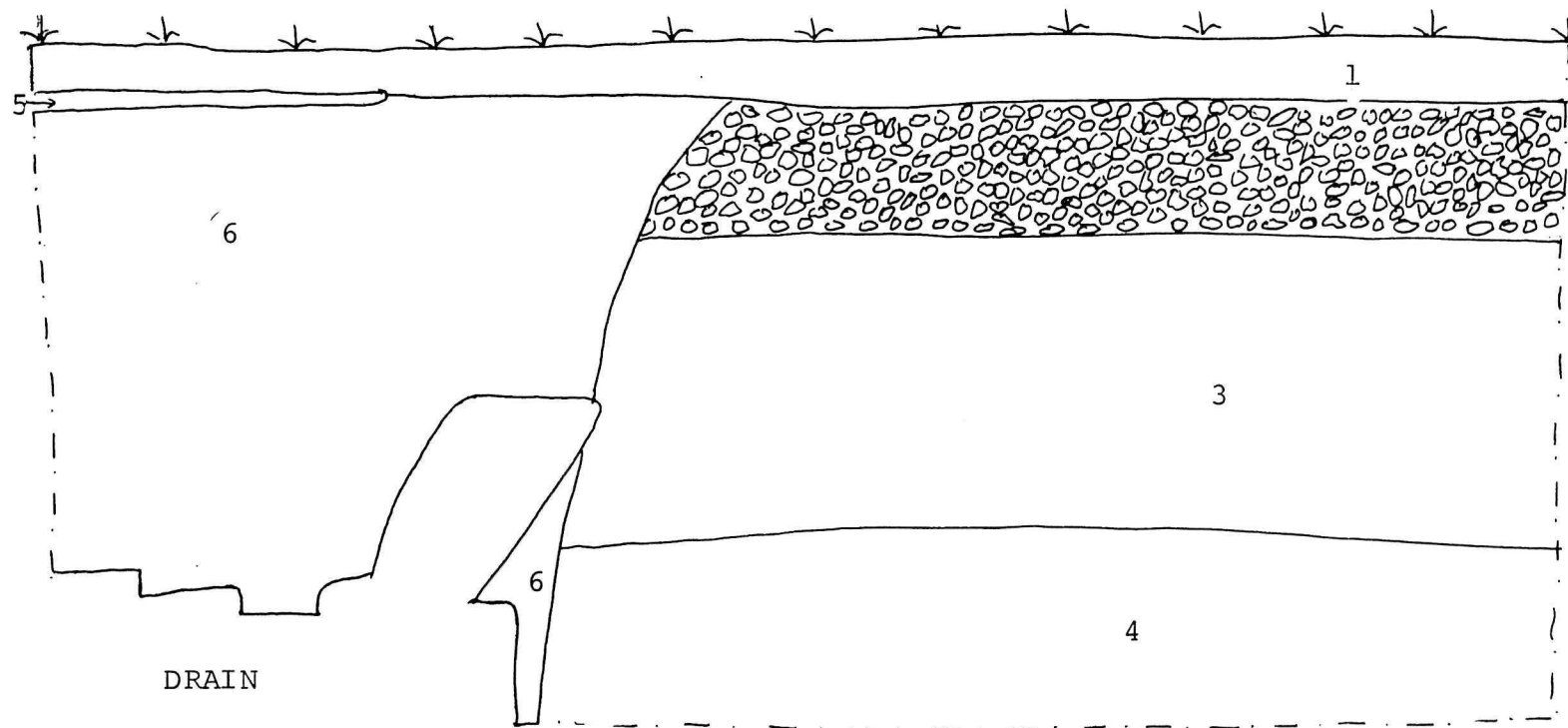
Appendix II - f. View of northeast catch basin.

67-23-D16

5G61A - West Face

Scale 1" = 1'

→ N

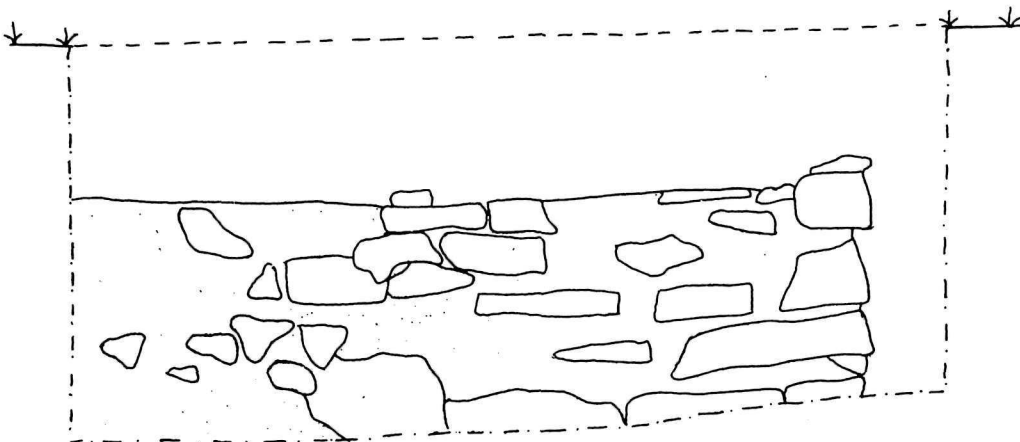


- 1 Very dark greyish brown loam (10 YR, 3/2)
- 2 Very dark greyish brown loam (10 YR, 3/2) / a heavy concentration of coarse gravel
- 3 Dark brown sand (10YR, 4/3)
- 4 Dark greyish brown sandy clay (10YR, 4/2)
- 5 Very dusky red ash (2.5 YR, 2/2)
- 6 A mixture of soil types # 1, 3 / 4.

67-23-D31a

5G63A - West Wall of Sone Feature

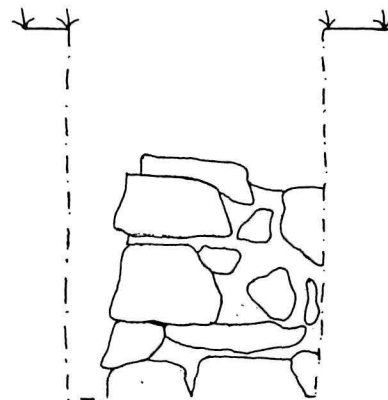
N ←



67-23-D31b

5G63A-South Wall of Stone Feature

→ E



Scale: 1" = 1'

Appendix III

Maps

Appendix III - a. Map of 1967 Excavation at Fort Lennox, P.Q.
(5G-67-101-1)

Note: Trench locations are approximate. For exact locations
see drawing number 67-23-D33 A & B.

Salvage Excavations at Montmorency Park,
Quebec City: 1967-1968

by

E. Frank Korvemaker

INTRODUCTION

Emergency excavation was carried out in the southeast corner of Montmorency Park under the direction of Mr. R. Grenier, Mr. L. Chevrette and myself prior to the reconstruction of the Fortification Wall. Our purpose was to excavate this area of the park in order to determine if any structures existed west of the east Fortification Wall and if any burials of the old French cemetery still lay there - both of which might possibly be disturbed by the reconstruction work.

No burials were discovered during the course of the excavation but several stone walls and part of a casemate was uncovered. Historic maps of the early 1800's and a model of Quebec City (dated 1806) identify most of these walls as being part of a gun platform.

Although the excavation was terminated before the desired depth of 25' B.S. was reached in the southeast corner of the excavation, sufficient evidence was uncovered in this portion of the park to determine the purpose of the structures as well as satisfy the purpose of the excavation.

A handwritten signature in dark ink, appearing to be 'J. L. Chevrette', written in a cursive style.

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LIST OF ILLUSTRATIONS

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- Fig. 2 - Drawing of the north face of Wall # 3 showing
overhang over the Fortification foundation wall.
- Fig. 3 - Drawing of the brick casemate ceiling and the
stone slabs above it.
- Fig. 4 - View of possible Gun Platforms in the southeast
bastion.
- Fig. 5 - Photo of the ledges along the base of the stone
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- Fig. 6 - Photo of the north face of the curved stone wall.
- Fig. 7 - Photo of the damaged west face of the curved
stone wall.
- Fig. 8 - Photo of the cement layer between Walls # 2 and 3.
- Fig. 9 - Photo of the cement layer between Wall # 3 and the
recess in the sloping Fortification Wall.

CHAPTER I

Montmorency Park - Structures

Gun Platform Foundations

The southeast corner of Montmorency Park forms one of two bastions in this section of the Grand Battery of Quebec City (the other bastion being located in the southwest corner of the park). Excavation was carried out in the east half of the former bastion and it revealed, among other things, three stone walls constructed parallel to the south wall of the bastion. For convenience, these walls are named east-west walls numbers 1, 2 and 3 respectively from south to north.

All three walls are damaged on the east side, apparently being broken deliberately, forming a downward slope from west to east. Wall number 1 is in the weakest condition, having been damaged on the south face as well as the east. This wall is located 4.5' north of the south wall of the bastion and varies in thickness from 2.1' to 2.3'. This variation appears to be due more to the loose composition of the south face of the wall than to any increase in size. What remains of the north face is completely intact, whereas the south face has been broken off to a depth of 6.5' below the top of the wall (or 123.4' A.S.L.). The remaining portion of the south face, going down to a minimum depth of 119.5' A.S.L., is in stable condition, except for the top two stone courses.

The south face of Wall No. 1 is 9.1' long and ends abruptly at its west extremity. At this point the wall probably forms the southeast interior corner for the casemate which was found directly west of the three east-west walls. Since excavation was not carried out farther in this area and since the casemate was partly destroyed, this theory was not definitely proven correct. However, the corner

falls directly in line with the anticipated location of the casemate's interior east wall.

Further evidence of this was found in association with the north face of Wall No. 1 - which was only 7.7' long. At the west end of this wall (which is located 1.4' east of the west end of the south face), the north face is bonded with another stone wall of similar construction and at right angles to it. This new wall would appear to be the exterior face of the east wall of the casemate. Additional proof of this theory was the discovery of a similar wall between east-west Walls No. 2 and 3, which was also directly in line with the other wall (Fig. 1). The north-south wall between Walls No. 1 and 2 is 4.9' wide, and the one between Walls No. 2 and 3 is 5.0' wide. Both walls are at least 12.4' high, with the tops of the wall coming level with the tops of the three east-west walls, being at 129.9' A.S.L.

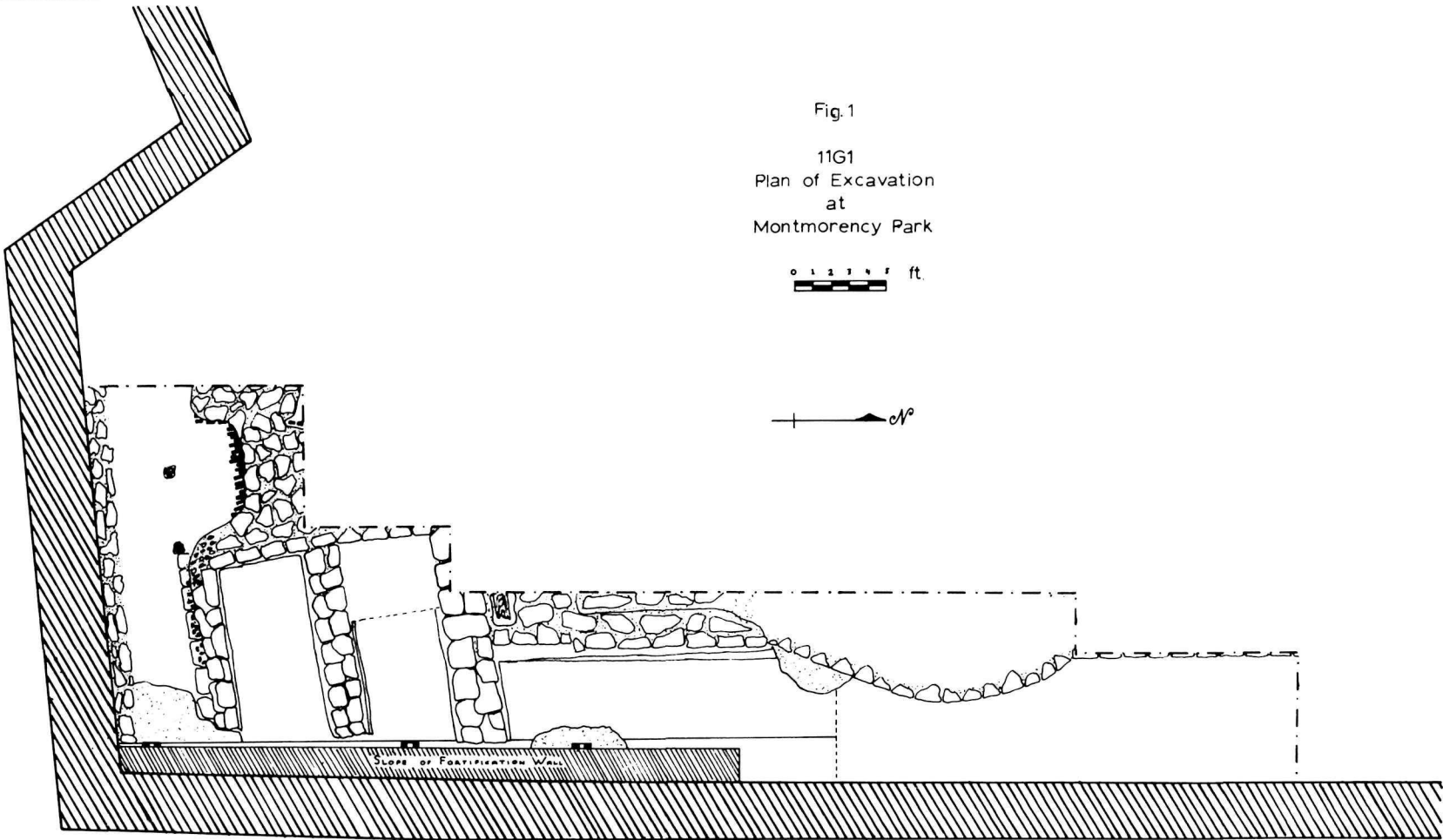
A ledge (or enlargement of the wall foundation) was found at from 119.1' to 119.3' A.S.L. on the north face of Wall No. 1. This ledge has a covering of mortar on it approximately 0.02' thick and, like the main wall, is constructed of shaped stones joined with mortar. Both the wall and the ledge are very straight. A similar ledge was found in the north-south wall between Walls No. 1 and 2 at 119.7' A.S.L. This ledge was only 0.1' wide at the south end and 0.2' wide at the north end - where it joins with another ledge on Wall No. 2.

Wall No. 2 is the thinnest of the three walls, being an average of 1.5' wide. Only one small section near the top of the wall is 1.7' wide. This wall is 9.4' long along the south face and 9.6' long along the north. Two ledges were found on the south face of this wall. The upper, located at 119.7' A.S.L. is 0.2' wide. The lower, located at 118.5' A.S.L. is also 0.2' wide. Because of the differing

Fig. 1

11G1
Plan of Excavation
at
Montmorency Park

0 1 2 3 4 5 ft.



widths and elevations of these ledges, they do not appear to have been used for any other reason than to serve as a foundation for the walls above them. The fact that they do occur at varying levels eliminates the possibility of their being used as floor supports for a floor between the two walls.

On the north face of Wall No. 2, two ledges were also excavated. The top ledge was found at from 119.7' to 119.9' A.S.L. and was 0.25' wide. The bottom ledge was found at 119.4' A.S.L. and was 0.3' wide. Excavation on this side of Wall No. 2 was carried out to a greater depth than on the south side, and, as a result, the bottom of the wall was found. This was located at 117.5' A.S.L. and appears to be resting on a 0.2' thick layer of wood. Below this, for at least 1.5', a mixture of shale and mortar debris is present. Hence, the total height of this wall would appear to be 12.5'.

Wall No. 2, like Wall No. 1, is bonded to a portion of the exterior face of the east casemate wall. The portion of the casemate wall between Walls No. 2 and 3 is 5.0' wide. The actual solidity of this wall is somewhat questionable, since a large tree is located directly on top of the north corner. Hence this wall is partly held together by mortar and partly by tree roots.

Wall No. 3 is the thickest wall, ranging from 2.5' to 2.6' in width. It is 10.8' long on the south side and has a single ledge 0.6' wide at 120.0' A.S.L. The base of this wall was also uncovered, and this was located at 117.4' A.S.L. The bottom 0.5' consisted of roughly shaped stones held together by an excess of Mortar. Below this wall, no wood was found, as was the case with Wall No. 2, but just rocks and soil.

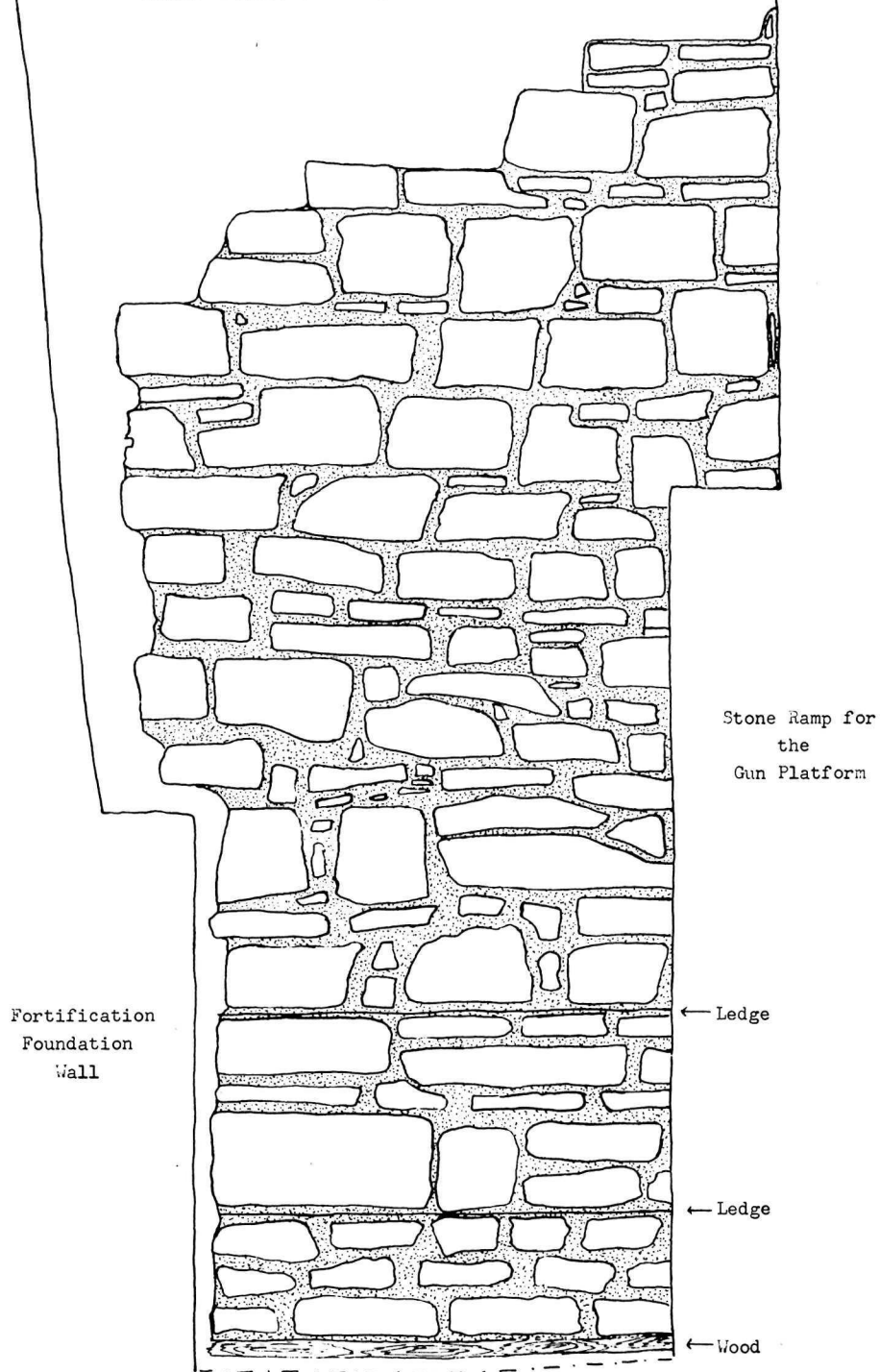
However, the north face of this wall differs again. Since the west end of this face is bond to a different north-south wall (parallel to the east Fortification Wall), its length is only 6.0'. Again, several ledges were found on this wall, these being located at 119.7' A.S.L. and 118.0' A.S.L. respectively. The former was 0.4' wide and the latter 0.2'. Also, this side of Wall No. 3 ended at 116.7' A.S.L. and was resting on wood approximately 0.3' thick. Therefore, since there is a difference in elevation as to where the two sides of this wall end, it would appear that the base of Wall No. 3 is either poorly constructed or else built on a slope.

A particular feature of this wall is its overhang over the foundation wall of the east Fortification Wall. (Fig. 2) This overhang (0.7' maximum) plus the irregular ending of the rest of the wall just 0.2' west of the foundation wall, suggests that this wall extended farther east at one point - probably meeting the Fortification Wall.

All three gun platform foundation walls are constructed of shaped stone and joined with mortar. The mortar is still quite hard except near the tops of the wall, which are located 1.1' B.S. This deterioration is probably due to water and frost action in the soil.

The general pattern of construction for these walls consists of several courses of small stones alternating with a course of larger stones. As was mentioned, all the walls are bond where they meet any of the north-south walls, but none are bond to or abutted with the Fortification Wall. Since Wall No. 3 overhangs the foundation of the Fortification Wall, and since all three east-west walls are constructed in a similar fashion, it is highly possible that Walls No. 1 and 2 also overhung the foundation wall at one time. The stones

Fig.2 View of the north face
of Wall # 3 showing the overhang
over the Fortification foundation
wall. Scale: 1" = 1'.



forming these walls vary in size from 0.7' by 1.5' to 0.1' by 0.3', and consist in part of a poor quality shale which flakes off on contact and has an exceptionally strong odour.

The tops of the three walls, plus that of the casemate and east casemate wall, is covered, or shows sufficient evidence of having been covered, by thin slabs of stone and shale held in place with mortar. This entire area was then once more covered with a thin layer of mortar about 0.02' thick. This combination was probably used to level off any irregularities left at the top of the foundation walls and casemate prior to the placement of a wooden gun platform on them. A second reason for this covering may have been to prevent or slow down, the natural decay of the stone walls and casemate by water and frost action. Such a covering would have greatly reduced the amount of water which could penetrate and loosen the stones.

Casemate

The structures thus far described would appear to cover 1/3 of the entire bastion. The other 2/3 apparently consisted of several casemates - possibly as many as four. A small portion of one of these casemates was excavated, however, due to a lack of time, excavation ceased at 128.1' A.S.L. - or 1.0' below the centre of the vaulted casemate ceiling. Hence no portion of the actual interior casemate walls was uncovered - only a fractured ceiling. From the excavated portion of the casemate, the following observations were recorded.

The vaulted ceiling consists of red bricks, varying in size from 0.72' by 0.36' by 0.17' to 0.65' by 0.33' by 0.11'. The

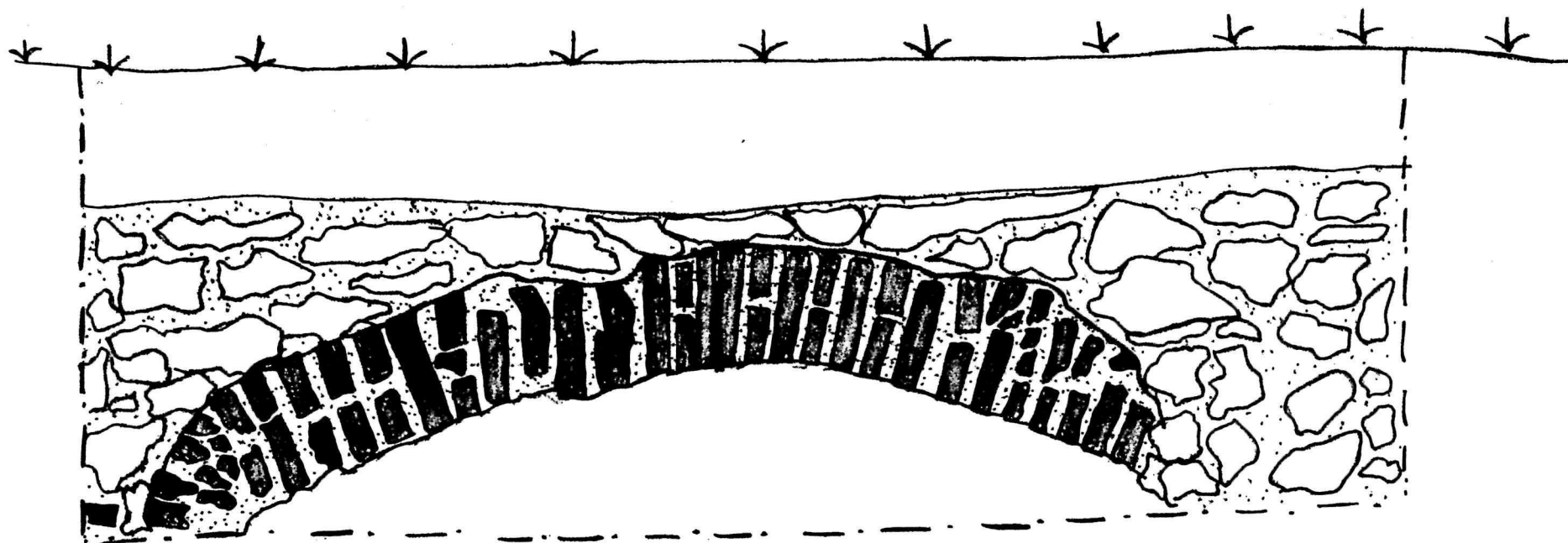
bricks are arranged in alternating rows of horizontal and vertical bricks in a north-south pattern. A fragile yellowish mortar was used to cement the bricks together. The brick vault was 0.75' thick and covered with shale and stone slabs, again joined with mortar. Like the three east-west walls, a thin layer of mortar (max. 0.02' thick) covered these stones in order to make the entire area level for the gun platform on top. Thus the stone slab and mortar layer attains a maximum thickness of 0.3' directly over the keystone of the ceiling, and 1.75' over the two sides. (Fig. 3)

The casemate itself is almost entirely filled with soil--apparently deposited there on purpose rather than due to collapse, as most of the ceiling is still intact. However, one portion of the vault, located 4.0' north of the existing brick feature, does appear to have collapsed. At this point the soil continues to the top of the ceiling and several bricks are missing in the vault. Further, on top of the stone slabs covering this part of the casemate, two cement ends of a park bench protrude through the top of the casemate. This again suggests that this part of the casemate collapsed.

The interior of the casemate appears to have been white washed at one time, as a portion of this vaulted ceiling still shows this characteristic.

As was mentioned earlier, this casemate was damaged to some degree, and, although the present structure is mainly located 7.4' north of the south bastion wall, several of the bricks on the west side

Fig. 3 View of the brick ceiling
of the casemate and the stone slabs
on top. Scale: 1" = 1'. Facing W.



of the vault continue south for 1.4'. This fact, plus the discovery of a corner at the west end of east-west Wall No. 1 in the location where the southeast corner of the casemate should be, suggests that the casemate did, at one time, continue to this wall (which is located 4.5' north of the south bastion wall. However, the presence of this corner also leaves open the possibility that this casemate is, in fact, a postern between the courtyard north of the gun platform and a shooting gallery below the platform. Such a gallery undoubtedly existed as loop holes in the south bastion wall exist just below the calculated level of the gun platform. In addition, two wooden posts were found in this area - one at the west end of Wall No. 1 and a second 4.5' west of it. These posts may have been part of a door frame at the south end of the casemate (or postern).

The exact function of the casemate cannot yet be determined, as an insufficient portion was excavated. However, according to a model of Quebec City (built in 1806), four casemates are shown to exist below the gun platform west of the ramp. (Fig. 4a). However, the difference in their sizes suggests the possibility that some of these entrances were not for casemates but for posterns. Yet, according to the excavated casemate, which has an approximate interior width of 6.0', only two such structures could exist west of the gun platform ramp (Fig. 4b). Therefore, either the model is inaccurate or else the present feature is a reconstructed casemate. However, until further evidence is found or excavated, the exact function of this structure will have to remain unexplained.

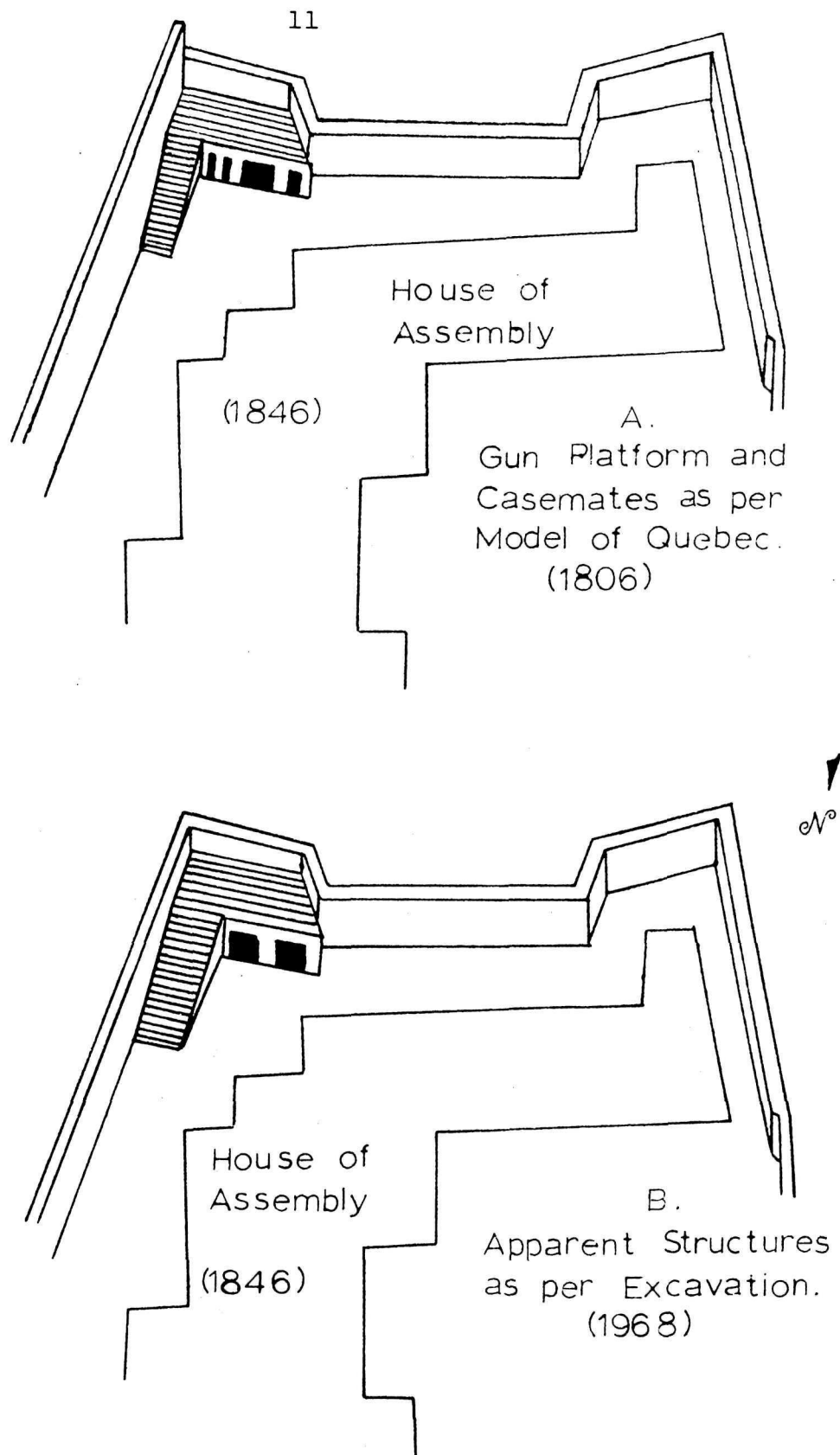


Fig 4 View of southeast Bastion with possible Gun Platforms. Not to Scale.

Gun Platform Ramp

Adjoining east-west Wall No. 3, there is a north-south wall parallel to the east Fortification Wall. This wall appears to have been constructed in various stages - the earliest of which would consist of a sloping wall - presumably used to support a ramp leading up to the gun platform.

Apparently not all of this ramp foundation is still in existence, as several stones have been broken away at the south end near the top of the slope. Also, the north end where the ramp should meet the original ground level at some point, is covered or replaced by an additional structure - a curved wall. Thus that portion of the ramp exposed to view is 14.0' long from north to south. The slope of the ramp starts 2.0' north of Wall No. 3 and is 13.3' long when it becomes obscured by the curved wall.

By producing the straight line formed by the ramp and one of the horizontal ledges lower down on the wall, an angle of 19° is formed. This compares with an angle of 18° on the 1806 model of Quebec City. Hence, it would appear that in this respect, the excavated structure complies with the model.

Two ledges, or foundation extensions, exist on this wall. However, these ledges differ from those of the east-west walls in that they both taper, and, as a combination, form a straight wall (Fig. 5). The uppermost ledge, located at 124.2' A.S.L., extends from Wall No. 3 to the curved wall. At its south end it is 1.0' wide and from there it tapers to 0.2' at the north end. The lower ledge, located 1.5' below the upper one, starts 1.7' north of Wall No. 3 and it too continues to

Fig 5



11G1D: View of ledges along the
base of the stone ramp. 2' scale
Facing southwest. 11G-103 & 104-X

the curved wall. At its origin (south end) it is 0.1' wide, whereas at the north end it is 0.8' in width. Hence this wall has a continual width of 1.0' when the two ledges are combined. This wall is exactly 4.2' west of the Fortification foundation wall, and goes parallel to it. The reason for this peculiar construction is not known, as its only apparent function is that of a foundation wall.

The actual structure of this wall is similar to that of the three east-west walls, with the exception of the base of the wall which is located 1.8' below the lower ledge (or 120.9' A.S.L.). From there to the bottom of the wall (located at 118.2' A.S.L.) the wall is composed of roughly worked stones which are held together by a mass of mortar - similar to the base of the south face of Wall No. 3. Also, like the north face of Walls No. 2 and 3, wood was found directly below the poorly constructed base. This wood was apparently no more than 0.2' thick and did not extend completely beneath the stone wall, but was located just along the exterior edge. These latter two structures (the crude stone wall and wood) may be part of an earlier wall. However, not enough evidence was uncovered during the excavation to make any definite statement. The very fact that this feature does occur beneath Walls No. 2 and 3 also, suggests that perhaps this is all part of the same structure.

Gun Platform Addition(s).

The gun platform, as thus far described, is shown on historical documents to have existed first in 1804. In 1831 this

platform is shown to have a north extension parallel to the east Fortification Wall.

During the course of the excavation, such a wall was uncovered, part of which existed on top of and overhung the original stone ramp foundation wall. In addition, a section of this wall - apparently constructed at a different date again - curves east and then back to join the wall again. None of the maps uncovered so far reveal such an irregularity and hence its purpose remains unexplained. Furthermore, the top of the north-south wall directly over the ramp foundation wall does not come level with the stone slabs and mortar which cover the three east-west walls and casemate, but contains what appears to be part of a broken wall. These stones exist at an elevation of 130.6' A.S.L. - about 0.7' higher than the rest of the walls. Only a few stones are still in existence in this area; all of which are joined with mortar, but these are enough to suggest that some sort of structure existed on top of this wall.

This southern portion of the gun platform addition is constructed in similar fashion to the other main walls already mentioned, and hence there was probably little time lapse between the construction of the original gun platform and this later addition - as the historical maps indicate. It should be noted, however, that this wall overhangs the ramp foundation wall by 0.4'. Why this was done is not known, but it was obviously done intentionally, since the 0.4' width is constant along the slope of the ramp. The southern portion of the gun platform ramp ends 13.3' north of Wall No. 3, at the place where the curved wall begins.

The curved wall covers a linear distance of 17.0' and a curved distance of 19.2'. The curve of the wall is somewhat pear shaped (Fig. 1), which virtually rules out the possibility of it being part of a traversing gun platform, since these are generally semi-circular in shape. Hence, its function remains a mystery - even more so after examining its unorthodox construction for this particular area.

The top 2.5' are constructed in much the same manner as the previously mentioned walls, being well built and vertical. However, this wall lacks the alternating course arrangement present in the other walls and has along the top of the wall (located at 130.1' A.S.L.) a series of thin stones measuring 1.0' by 0.1' by 1.1', with a few smaller stones filling the cracks.

Below this well constructed portion of the wall (i.e. from 127.5' A.S.L. to 124.0' A.S.L.) the wall becomes highly irregular and leaves the smooth face of the top section, (Fig. 6). The stones are quite large - averaging 2.0' by 0.9' as compared with 1.5' by 0.3' or 0.9' by 0.2' in the top section. It is not known whether the wall continues in this fashion all the way down to the base, as excavation ceased at 124.0' A.S.L. However, a small portion of the south end of the curved wall was excavated for an additional 3.0' and here the stones become smaller again, ranging in size from 0.6' by 0.1' to 1.2' by 0.7'.

Both the north and south extremities of the curved wall have a jagged ending and do not appear to have ever been constructed with straight vertical corners (Fig. 6). This irregularity suggests that the straight wall was broken down or collapsed in this area and



Fig. 6: View of north face of curved stone wall, facing southwest. 2' scale
11G-102-X



Fig. 7: View of the west face of the curved stone wall showing damaged area. Facing south. 2' scale. 11G-100-X

that the curved wall was built in its place, filling in the irregular break left by the destruction of the straight wall.

About $1/3$ of the area west of this wall was also excavated for a few inches, to determine where the west face of this wall was located. However, all that was revealed was a highly damaged west face of this wall (in somewhat the same condition as the south face of Wall No. 1). (Fig. 7.) Rubble and soil was all that was found in this area, besides the first apparently undisturbed stratigraphic layer of the site. Hence artifacts from this location may be useful later on, whereas artifacts from the rest of the excavation consist of a mixture of old French and British and modern pieces throughout.

The final excavated addition to the gun platform consists of a straight wall located directly north of the curved wall. It is situated 6.9' west of the east Fortification Wall and may be a continuation of the previously mentioned addition to the ramp foundation wall. This wall is a minimum of 12.0' long and is 7.1' west of the east Fortification Wall. Both this wall and the other straight addition appear to continue behind the curved wall, but whether or not they actually do was not satisfactorily determined.

The stone courses again follow the alternating pattern established in the east-west walls, with stones ranging in size from 0.2' by 0.1' to 1.2' by 0.7'. This wall like the curved stone wall, is located at from 1.3' to 1.5' B.S. (or approximately 130.0' A.S.L.) and was excavated to a depth of 124.0' A.S.L. This wall continues north beyond the limit of excavation, as well as further down. Unlike the curved wall, the stones forming the top of this portion of the north-

south wall are larger, being about 0.8' by 0.3' as opposed to 1.0' by 0.1'.

Rubble Wall plus Modern Drainage

Besides the aforementioned structures, two other notable features were also uncovered during this excavation. One was a roughly shaped wall along the south bastion wall; the other a series of sloping concrete layers against the east Fortification Wall.

The "rubble wall" consists of field stones placed on top of one another in a rough fashion and held in place by what appears to be modern concrete. Most of the concrete is found between the south bastion wall and these stones, thus suggesting that the concrete was poured between these two walls. The rubble wall is located 1.0' B.S. (or 130.0' A.S.L.) and is approximately 1.0' thick. The stones forming this "wall" range in size from 0.8' by 0.7' by 1.0' to 0.3' by 0.4' by 0.2'.

Whether or not this formation is an original wall is questionable, as no such wall should exist in this location, since the shooting gallery below the gun platform is here. However, this "wall" may be the result of a reconstruction of the south bastion wall; in which case it may have been used as a temporary retaining wall for the soil behind it, or else it may have been an earlier wall and the present bastion wall was built immediately south of it. However, the presence of concrete suggests some sort of modern work rather than the existence of an old wall.

The final feature of this excavation concerns a group of three concrete layers - concave in shape - which were attached to the east Fortification Wall. One layer was located between the southeast corner of the bastion and Wall No. 2. It covered part of Wall No. 1 and had a cut stone drain at its lowest point (123.2' A.S.L.) which led into an opening in the east Fortification Wall. The second layer was located between Walls 2 and 3, and this one had the cut stone drain at 123.0' A.S.L. (Fig. 8.) The third section lay north of Wall No. 3, with the drain located at 122.7' A.S.L. (Fig. 9). In all cases the layer of concrete was approximately 3.0' wide, from 0.2' to 0.3' thick and gradually sloped down to the Fortification Wall in a cone shape. They apparently served to remove excess water from the park as well as prevent such water from damaging the foundation wall below.



Fig. 8: View of cement layer between
Walls # 2 and 3, facing east. 2' scale
11G-78-X



Fig. 9: View of cement layer north
of Wall # 3 plus cut stone drain at
base of depression. 2' scale, Facing
east. **11G-85-X**

CHAPTER II

Summary and Conclusions

In short, the excavation in Montmorency Park revealed, besides the west face of the Fortification Wall, the foundation walls of a gun platform, a portion of a brick casemate, a possible rubble wall, and evidence of modern drainage attempts within the park.

The structures excavated were, on the whole, in very good condition, showing little decay in the mortar. The only two fragile features were the south face of east-west Wall No. 1 and the casemate. Both of these structures might collapse during further excavation and hence would require shoring in such an undertaking.

The artifacts from this excavation were moderate and to a large degree useless, since modern artifacts were mixed in with British and French pieces right down to the bottom of the excavation. Hence the discovery of such articles as Kodak paper and Export A cigarette box fragments proved that this area had been excavated recently (within the last 20 years) and hence the stratigraphy here was invalid for dating artifacts.

In the event of any reconstruction of this gun platform, a fair amount of documentation would appear to exist which could assist in this matter. Although all the features of this excavation have not yet been explained (i.e. the curved sections of the North-South Wall and the rubble wall by the south bastion wall) it is possible that their functions may be recorded in some documents in the Quebec or Ottawa archives, since new information was continually being found during the excavation. A particular problem which would have to be solved would

be the location and type of foundation that existed for the east half of the ramp, since no such structure was found, next to the Fortification Wall.

To conclude, the discovery of these relatively well preserved structures leaves high hopes that the foundations of the old Parliament Buildings in this park are in a similar state, despite their ruin by fire and subsequent burial to form the present park.

