

RESEARCH BULLETIN

No. 125

January 1980

Archaeological Investigations at Upper Fort Garry, 1978

Peter J. Priess, Archaeological Research, Parks Canada, Winnipeg

Construction of Upper Fort Garry, at the junction of the Red and Assiniboine Rivers, began in 1835 when it was realized that Lower Fort Garry, some 20 miles downstream on the Red River, would not succeed as a centre of operations for the Hudson's Bay Company in western Canada (Bell 1927: 32; Ingram 1970: 44). Lower Fort Garry had itself been constructed in the early 1830s as a replacement for the first Fort Garry (originally Fort Gibraltar) in an attempt to find a more suitable location for company operations (Miquelon 1970). During the mid 1850s Upper Fort Garry was considerably enlarged by an addition to the north side. In 1882, however, most of the fort property was divided into individual lots and sold for land development. The buildings and walls were taken down, leaving only the north gate surrounded by a small plot of land (Bell 1927: 37). The gate and surrounding property now form a small park, the responsibility of the City of Winnipeg, Department of Parks and Recreation. The remainder of the fort site is occupied by a variety of more recent buildings and a major thoroughfare.

As it now stands the gate consists of two mortared limestone walls, oriented at a slight angle to each other and approximately perpendicular to the line of the north palisade of the fort (Figs. 1, 2). At the front of the gate (side facing away from the interior of the fort) these two walls are joined by a stone arch (Fig. 1); at the back (side facing interior of fort) the walls are not joined (Fig. 2). The overall plan of the gate is that of a trapezoid. The walls are two storeys in height, castellated and with a number of gun ports and other, larger openings at the second storey level. The second storey has a wooden floor and the back of the gate is closed from the second floor to the top of the walls with a wooden wall. These wooden elements are presumed not to be original and are to some extent in bad repair. The ends of the floor beams, resting on a ledge in the wall, are deteriorated and the floor is now supported by



a number of recently installed beams and posts. The opening through the gate can be closed with two leaves of a wooden gate, situated at the front of the gate. These leaves are of plank construction and each is hung on pintles with two strap hinges. They are also of recent date as they are assembled with wire nails. The wooden gates are no longer operable because of the supports for the second floor and the level of the present path. Inside the main wooden gates there is a second set of wooden gates, constructed of vertical bars and also inoperable for the reasons already mentioned.

The gate now has a flower bed on either side. A gravel path runs through and around it and ultimately to the streets on either side of the park. The park is well maintained with flowers and grass and is apparently a popular location for wedding photographs. Some of the flower beds contain scattered limestone slabs but otherwise there is no longer any sign of other structures or palisade. Although many residents of Winnipeg know of the fort, surveys have shown that few have actually visited the gate or even know its exact location (McOuat Promotions 1978).

Plans have been prepared for restoration of the gate, reconstruction of the adjacent palisade and reconstruction or other development of parts of the fort as a means of interpreting and presenting its history to the public. As part of phase I of these plans small scale test excavations were carried out in August, 1978 by an archaeological crew on loan from Parks Canada, Prairie Region.

The idea of archaeology at the gate was prompted to some extent by reports of the discovery of a cavity under the path through the gate (McOuat Promotions 1978). Its function and date were not known although subjected to some interesting speculations. The excavations, although possibly initiated by the prospect of finding such a potentially spectacular feature, set out to accomplish slightly more. Two general objectives were established: to examine the existence and nature of the cavity and to examine areas of the gate and palisade for information on construction and present condition. Structural information for the gate and palisade was recovered. However, no evidence was found for a cavity and the reports of its existence are attributed to a misinterpretation of information.

Because of the possibility of considerable public interest in the archaeology, the project began with a press conference (and official sod turning) to provide an official explanation for the work including, among other things, the involvement of Parks Canada.

Two areas of the gate were tested: the roadway through the gate and a section of the north palisade of the fort, east of the gate. Both excavations were in search of information on construction and present condition; the one

in the roadway was also in search of the supposed cavity. In discussing the site the terms "occupation" or "occupation period" are used in reference to the period of occupation of the fort by the Hudson's Bay Company. For the fort in general this period is 1835-82; for the northern addition, of which the gate is a part, the period is from the mid 1850s to 1882.

In addition to structural information, the excavations recovered a quantity and variety of artifacts. These have been examined for diagnostic items or characteristics to assist in interpretation of site stratigraphy, the major purpose being to obtain dates for the various soil layers, especially those which may be associated with the occupation period of the fort. A complete inventory and interpretation of the artifacts were not attempted.

Roadway (Figs. 3, 5, 6)

The path through the gate is assumed to be in the same location as an occupation period roadway. The present path is intended primarily for pedestrians; the roadway would have been for all types of traffic. The cavity was reported to be in the middle of this roadway, approximately on the line of the wooden gate. It was "discovered" during the installation of a temporary snowfence barricade, using steel T-bars to hold up the fence. In driving one of these posts, after passing through some thickness of hard ground and rotted timber, workmen suddenly encountered what they considered to be a void, an underground cavity. It could not be determined whether the post had actually dropped of its own accord or whether the driving had only become suddenly much easier. The rotted timber was not actually seen; its existence was an interpretation of observations.

Some doubt was cast on the existence of a cavity even before any digging began. To provide some security for the excavations (mainly to prevent pedestrians from accidentally falling into one of the pits) a snow fence was installed around the gate. The posts were driven by a two man, manual pile driver, consisting of a section of pipe with one end closed and several handles attached. Such a device is capable of delivering a substantial blow on the end of a post. During driving of several of the posts it was observed that after being driven to some depth it suddenly became much easier to drive them. What started out as a post sinking a matter of inches or less with each blow suddenly changed into the post sinking up to a foot at one time. In some instances the post had to be pulled up because it had been driven too far. This had occurred in areas outside of the fort and the workmen reported that a similar thing had happened in other locations of the park even further removed from the fort interior. These events did not suggest that the posts were encountering a cavity but that there was a sudden and substantial change in the soil which allowed the posts to be driven with considerably less effort.

Initially the excavation consisted of a 2.0 by 1.0 m pit, approximately in the middle of the roadway, oriented north-south or along the longitudinal axis of the roadway and crossing the line of the wooden gates. This was expanded on the west side by a metre wide pit extending to the west wall of the gate. A relatively large number of soil layers were found as well as two structural features and construction details for the gate wall. In general, the stratigraphy consisted of a number of layers of post occupation fill, several layers which were probably part of the occupation period roadway and fill deposits associated with construction of the gate. Structural features consisted of a sill for the wooden gates, a scattering of wood fragments and information on wall construction and installation of the wooden gates. In the following discussion, the soil strata and structural features are each designated as a layer; relevant information on artifacts is included in the discussion of them.

Layer 1 (Figs. 9, 10) was a fine, sandy rounded gravel comprising the present surface of the path and an unknown number of past surfaces. This layer has probably been built up over the years as a result of efforts to maintain the appearance of the path and the park; as the surface of the path collected dirt, beginning to appear less attractive and less suitable for pedestrians, it was covered by another thin layer of clean gravel. Beyond the limits of the excavation, the path is now bordered by a flower bed (Fig. 5). The artifacts present are primarily recent, of the 20th century and occasionally dating within the last fifty years. Included are a fragment of soft drink bottle which, on the basis of its method of labelling, is dateable to post ca. 1930 (K. Lunn, personal communication) and another fragment of glass container marked 1936, possibly indicative of a date. Also included was a fragment of barbed wire and a wire fencing staple. The crown closure cap present is a type of cap patented in 1892 (Lief 1965: 17).

Layer 2 (Figs. 9, 10) was a heavy accumulation of cinders composed of slag-like residue from a fire. The artifacts it contained are generally not burned; therefore, the cinders are derived from elsewhere rather than the result of any fires *in situ*. The cinders may be residue from the operation of the Canadian National Railway or, as suggested by a City of Winnipeg employee, from the operation of an incinerator. This layer presumably was also deposited as a surfacing material. As with layer 1, some layering was apparent; the material must have accumulated as the result of repeated applications. This layer is above the bottom pintle in the west wall and since it is beyond question that this pintle was part of the gate hardware during the occupation period, the cinders were deposited some time after the occupation. Of the artifacts, one fragment of a

glass food jar was considered as probably 19th century and a bottle fragment as probably late 19th century (K. Lunn, pers. communication). There is then a suggestion that the layer, or at least part of it, was deposited in the 19th century but after the occupation period.

The north profile of the excavation (Fig. 10) shows that the distribution of layer 2 was not as extensive as that of layer 1. Whereas layer 1 extended beyond the limit of excavation, layer 2 stopped at a deposit of black soil (described later as layer 8). The path or road through the gate has thus varied somewhat in width; the gravel extends past the sides of the opening in the gate (Fig. 5) whereas the cinders do not. Since these differences presumably existed while the area was maintained as a park, the change in width of road/path was probably introduced as a matter of appearance rather than any major change in function.

Under the cinders there was a layer of mottled clay, layer 3 (Figs. 9, 10), approximately equal in thickness to layer 1 or 2. From the nature of the material it is difficult to suggest that it was deposited to provide a surface for a road or path. It is also above the level of the pintle in the wall and was, therefore, deposited after the occupation period. Since it is not suitable as a road surface it was presumably deposited as fill. It has approximately the same lateral extent as the cinders in the north-west corner of the excavation and is bordered by the same layer of black soil (Fig. 10). The artifacts generally suggest a post occupation date, possibly in the 19th century. A number of fragments of glass containers are possibly of a 19th century mode of manufacture (K. Lunn, pers. comm.). One bottle base is of the E. L. Drewry Brewery of Winnipeg established, according to labels on their bottles, in 1877 (Chopping 1978: 113). A small number of nails were present; the majority are machine cut and could date almost anytime during the occupation period. A few are wire and probably date after the occupation if not in the 20th century (Priess 1973). Elsewhere, as discussed below, the layer also contained artifacts of the 19th century but postdating the occupation.

For the most part the mottled clay, layer 3, was deposited on gravel mixed with mottled clay, layer 4 (Figs. 9, 10). This has approximately the same extent as layers 2 and 3 and presumably served as a road surface. The upper surface of this layer is approximately at the same level as the pintle on the wall. Deposition of gravel could, however, have begun while the gate was in operation and continued to a point where it began interfering with movement of the gate. Some of the artifacts suggest an occupation period date. Some glass food containers and bottles are considered as probably 19th century (K. Lunn, pers. comm.) although a bottle marked BLACKWOOD dates no earlier than 1883 (Chopping 1978: 155). Hand forged nails, as would have been used in some of the construction of the

fort, also appear for the first time although there is still a higher proportion of machine cut nails. There are, however, no wire nails, which would almost definitely date after the occupation.

The gravel and clay were deposited on a layer of rubble, layer 5 (Figs. 4, 7, 9) consisting of a single thickness of randomly distributed, irregular pieces of limestone. This was located primarily south of the line of the wooden gates (south of the wooden sill described below), and is likely the first attempt to create a road surface through the gate. Although such stones would be relatively rough surface, it would in time be smoothed by traffic. As use continued, clay would have come up between the stones and to correct this problem gravel was deposited. Repeated deposits of gravel ultimately produced layer 4. There are very few artifacts associated with this layer.

Below the limestone there was a thin layer of mottled clay, layer 23 (Figs. 9, 10) and in some instances between stones and clay there were randomly distributed fragments of wood (planking?), layer 22 (Fig. 9). The clay is considered as a disturbed upper portion of undisturbed soil and an accumulation on and around the limestone roadway. The wood, since it appears below the limestone, is probably debris from construction of the gate or other nearby structures.

Below the various deposits described above there is black soil grading into a yellow/gray clay, layer 18 (Figs. 9, 10). This is identified as being undisturbed, predating construction of the fort and having its origin in the natural history of the area.

Features

In addition to the basic stratigraphy described above there are a number of smaller features or deposits associated with construction and use of the gate. On the line of the wooden gates and set approximately on the undisturbed ground there was a wooden sill, layer 6 (Figs. 3, 5-7). Although it has now decomposed and settled, it appears to have been set approximately on the same level as layer 5 and has become covered with layer 4 (gravel). From the configuration of strata in the east profile of the excavation (Fig. 9), deterioration of the wood probably began after deposition of layer 4. Each layer would have been deposited with a level upper surface but in each case except layer 1 this upper surface has now slumped. In the case of layers 1-3, the deposit is slightly thicker over the sill, indicating that each layer filled a slight depression over the sill; therefore the sill was deteriorating and settling during and after deposition of each of these layers. Layers 4 and 24 are relatively uniform in thickness and were probably deposited before much or any deterioration of the sill.

Although this timber is being referred to as a sill there are no definite signs of such a use other than its location on the line of the wooden gates and approximately at the level of the historic roadway. For use as a sill it could have had catches for sliding bolts on the gates, to hold the gates in place when closed. However, there is no indication of such hardware or any other. The timber appears to have been set on the ground, possibly slightly into the ground or packed into position with clay. It does not extend to the wall of the gate and there is no indication of it being held down in any way. Presumably, it was at least intended to be exposed but could, over the years, have become covered by gravel used for surfacing the roadway. Since it does not appear to have served a direct purpose in operating the gates, there may have been less effort to keep it exposed.

In the northeast corner of the excavation there is a thin layer of mortar and limestone chips, layer 24, between layers 3 and 4 (Figs. 9, 10). To the south it overlies the sill but does not extend beyond it (Fig. 9). It is most likely construction debris resulting from repairs and deposited during the occupation period or even later. Its presence above layer 4 provides a stronger suggestion for layer 4 being an occupation period deposit.

At the northwest corner of the gate--the north end of the west wall--there are a number of layers related to construction of the gate. The stonework above ground consists of dressed pieces of limestone--squared with flat surfaces and feather ornamented edges. These dressed stones continue below the present ground level and rest on an undressed or irregular stone. The total depth of stone was not determined. Adjacent to this rough stone there is a relatively narrow deposit of yellow clay, layer 9 (Figs. 8, 11). The top of this layer is angled; at one side it is approximately at the point of transition from dressed to rough stone but it slopes upward to be approximately level with the top of undisturbed soil. Other yellow clay, layer 25 (Figs. 10, 11), is located on top of undisturbed soil and outside of the edge of layer 9. These two layers are probably the same material, having a common origin during construction of the gate. Layer 9 is fill in the trench dug for construction of the wall, the wall having been built into the ground for some depth to provide a proper footing. The clay was derived from the excavation and was used to fill the gap remaining in the trench once the wall was built. Layer 25 was dug out of the same trench and represents material left after filling the trench.

The slope in the top of layer 9 presumably represents settling, either of the fill or the wall itself. The top of layer 18 approximates ground level during construction. Since it is likely that dressed stone was to be only above ground level with rough stone below and since the transition from

dressed to rough stone is now below the top of layer 18, it is likely that the wall has settled, also causing a slump in layer 9. This slump has been filled and the ground level raised by deposition of a gravelly black soil, layer 7 (Fig. 11), and then black soil, layer 8 (Fig. 11).

As indicated above, the inner surface of the west wall was found to have a pintle set into it in line with two other pintles used to hang the existing gate but now below present ground level (Figs. 5, 11). The three pintles are of the same size and manufacture and are spaced approximately equidistantly. There is no alternative conceivable but that at one time these functioned together for hanging a wooden gate, the bottom pintle being near the bottom of the wooden gate. If, during the occupation period, the roadway was maintained with applications of gravel it is possible that the ground level rose to the extent that it began to interfere with the bottom of the gates. The top of layer 4 (gravel) now is certainly high enough to have interfered with the gate. If the gate was also settling into the ground, there is an even greater chance of the gate operation being hampered by the ground surface.

A feature encountered during excavation was a disturbance, approximately circular, in the middle of the roadway and immediately north of the sill. It began near the top of layer 1, extended to below the level of the sill and was filled with a clay/gravel mixture. No evidence was found to indicate its function although a post hole was suspected. Its presence near the top of layer 1 indicated it to be recent in origin.

Once undisturbed ground (layer 18) was encountered by the excavation it was assumed that no cultural features could be found by further digging. At this point no cavity or any sort of evidence for one had been found. However, as a final check a number of soil cores were taken from the floor of the excavation. As could be expected, the clay became less mottled and some was a relatively uniform yellow colour. The more important feature, however, was that this clay was relatively soft; after cutting through harder clay in the floor of the excavation it suddenly became very easy to push down the coring tool. The situation was similar to the one during driving of the fence posts. The softness allows interpretation of several phenomena.

The first is the existence of a cavity. The excavations did not provide any indication of it. Its existence was based on the interpretation of events involving the driving of steel posts. The presence of a layer of soft clay, however, provides an alternative and more plausible explanation for these events. The post did not encounter a void or any such feature; it penetrated the harder layers of gravel and cinders and when it reached the clay the difference was so sudden and

so great that to some it seemed as if there was nothing, i.e., a void. A more cautious consideration of the situation may have suggested that a cavity likely did not and could not exist; its location under a roadway is impractical, at the least, and the lack of any evidence for a supporting structure for the top of a cavity makes its existence improbable. The suggestion for its existence can now be attributed to a misinterpretation of information.

The softness of the clay also provides a possible explanation for the present tilt of the gate. The clay is simply too soft to support the weight of a stone wall. As described in greater detail later, the clay under the southeast corner of the gate is more compact and harder, probably more capable of supporting a stone wall. Therefore, one side of the gate, standing on soft clay, has settled whereas the other, on harder clay, has not. The soil profile at the northwest corner of the gate may provide some measure of the amount of settling. A supplementary feature of such a situation is that the walls could have settled during construction or shortly after its completion. The tilt may be an early development rather than an ongoing problem, the gate having achieved stability many years ago.

North Palisade

Two test excavations were made on the north palisade: one across the line of the palisade several metres east of the gate, and another on the line of the palisade against the wall of the gate at the southeast corner. Both were for the recovery of information on the palisade with the latter also to investigate the below ground condition of the gate wall.

Excavation across the line of the palisade (Fig. 3) encountered much the same stratigraphy as found in the roadway and also found scattered remains of the palisade itself. It was established that during the post occupation period this area had received much the same treatment as the roadway. An upper layer of gravel, layer 1, was deposited on a thick layer of cinders, layer 2, and this in turn was on a thick layer of mixed clay, layer 3 (Figs. 12, 13). In contrast to the roadway, layer 3 was on another layer of relatively clean or unmixed clay, layer 14 (Fig. 13). At the north end of the excavation layer 3 was found to be on another layer of mottled clay (Fig. 13), possibly the same as defined elsewhere as layer 23. Layers 14 and 23 rested on black soil grading into clay, interpreted as undisturbed, layer 18 (Figs. 12, 13). In this instance there was no layer 4 (gravel), suggesting that layer 4 is associated with the occupation.

The three major layers of fill (1-3) contain a variety of artifacts but none to suggest an association with the occupation period. Layer 1 contained such obviously recent items as an aluminum pull tab from a beverage can. Layer 3 provided a fragment of bottle from Blackwoods established approximately 1883 (Chopping 1978: 155) and some nails of

which the majority were machine cut but one was wire (probably post occupation).

In the southern half of the excavation there was a thin layer of mortared limestone, layer 16 (Figs. 12, 13) partly resting on and in layer 14 and partly on undisturbed soil. In the profile drawing (Fig. 13) layer 16 appears as a scattering of stones.

Layer 16 appears on what is considered to be the line of the north palisade and probably represents the base of the palisade. At this location there is definitely no below ground component for the stone; the base for the palisade was built on the ground level existing at the time. Since the stones are partly on layer 14 (clay), the clay is presumably material excavated elsewhere for construction. It was not deposited to level or raise an area but dumped and levelled simply to get rid of it. Layer 14 contained four hand forged nails and two machine cut ones, a situation not unlikely for deposition in the 1850s. The mortared stone (layer 16) contained one hand forged nail.

The excavation on the line of the palisade began with an initial expectation of a stone wall construction. The only remaining evidence for the palisade, above ground, consisted of two vertical slots in the east wall of the gate at the south end (Figs. 2, 19). These slots begin at the present ground level and continue to the top of the wall; their role in construction of a palisade was not understood at the outset. When it was established that the palisade had been built on the ground it became difficult to continue with the idea of a stone wall; the weight of a stone wall requires more support than that provided by the remains found. At that point in the excavations one of the more regular visitors to the site showed up with copies of early photographs as well as documentary evidence to show that the wall had been constructed of horizontal timbers with a rubble core (Bell 1927: 36); the illustrations showed a low stone base. The evidence excavated was insufficient to indicate such construction. The slots in the walls could, however, be seen as holding the ends of the logs.

The stratigraphy in this excavation (Figs. 12, 13) provides a clear indication that layer 3 is a post occupation deposit, after removal of the palisade. However, there are no further indications for its deposition. In general, it would have served to raise and level an area but further excavations will have to be carried out to determine whether the clay is associated primarily with the areas of present paths.

The second excavation in this area (Figs. 3, 19) was set against the east wall of the gate, at the south end of the wall. It was situated on the line of the palisade and included the two slots on the gate wall (Fig. 19). It was

intended to examine the slots and establish what other structural information was available. The area is now used as a flower bed, somewhat above the level of the adjacent footpath, with the topsoil containing a scattering of limestone slabs.

The stratigraphy here was different than that found elsewhere, providing evidence for construction activities associated with the gate and palisade and indicating that the area has probably had a lengthy use as a flower bed. The upper layer, layer 17 (Figs. 16, 17) was topsoil or black soil as could be expected in a flower bed. Its depth suggests a similar use over a lengthy period, soil having been added to keep up with the rising level of the adjacent path. Along the gate wall this layer had been disturbed by a trench dug along the wall and filled with a black soil and gravel mixture, layer 13 and further deposits of black soil, layer 17 (Figs. 14, 17). Since the trench was dug along the wall it probably has an association with the wall, such as being dug to examine or repair the wall. No signs of repairs were noted. The flower bed contained a variety of recent or 20th century artifacts including a fragment of post ca. 1930 soft drink bottle (K. Lunn, personal comm.). One hand forged nail was present but most nails were machine cut, suggesting a probable 19th century date. However, it must also be taken into consideration that any nails found are probably derived from the fort and, therefore, it should not be surprising to find hand forged or machine cut nails in any layer. On the other hand, the presence of wire nails almost certainly indicates a post occupation source and date. The fill in the disturbance, layer 13, also contained recent artifacts including a wire nail and a glass fragment probably from a light bulb.

Much of the excavation unit was taken up by a footing of mortared limestone, layer 15 (Figs. 3, 15, 19) beginning at the gate wall and extending beyond the east side of the excavation (Figs. 3, 16). Between the top of the footing and the flower bed there was a layer of mottled clay, considered to be layer 3 (Fig. 16). This again provided proof that layer 3 post dates the occupation period, being deposited after removal of the palisade. The top of the footing was irregular, the top stones having been removed. Only at the wall was the footing likely at an original level; the top of the footing there was level with the bottom of the slot in the wall (Fig. 19). The top of the footing did not retain any features to indicate the manner of wall construction. In width the footing extended to the outside edges of the slots in the gate wall (Figs. 3, 19).

Adjacent to the footing there was a narrow vertical layer of clay varying in colour from yellow to mottled to gray and identified as builders' trench fill. The wall of the builders' trench was near-vertical with no indication of collapse. Near the bottom the trench fill contained mainly

black soil, mortar and limestone chips. The presence of this material suggested that the bottom of the footing was near, the fill being material which would accumulate on the bottom of a builders' trench during construction. The pit was not excavated to confirm the location of the bottom of the footing because of limited space available for digging. The footing, builders' trench and trench fill are all contemporary, dating from the mid 1850s when the gate and palisade were constructed. The fill did not contain any artifacts.

The footing had served as a base for the palisade where it connected to the gate wall. It also extended under the gate wall to support the south end of the east wall. However, its width did not increase under the wall; the wall adjacent to the footing stood on the ground with no visible foundation (Fig. 18). Excavations at the north end of the west wall established that the stonework there also extended into the ground. Possibly the gate was built on footings at each corner, rather than on a continuous foundation. This question can be resolved by further excavations.

The natural, undisturbed stratigraphy was similar to that found elsewhere, consisting of black soil grading into yellow/gray clay, layer 18. However, because of the depth of excavation several changes could be noted in the clay. Below layer 18, which was primarily black soil, there was a layer of gray clay, layer 19 and below this a layer of fine, silty tan clay, layer 20 (Fig. 16). Layer 20 was compact and had a sandy texture, appearing to be able to support a stone wall or footing.

Directly on layer 18 there was a deposit of gravel and limestone chips, layer 11 (Figs. 16, 17), considered to be construction debris. Its location on undisturbed soil strongly suggests an association with construction of the palisade and gate. The presence of a stem fragment from a clay smoking pipe possibly also suggests a 19th century date. This layer probably approximates the ground level during at least part of the occupation period.

Below layer 17 and adjacent to the footing there was a deposit of mixed gravel/black soil filling a depression dug through layer 11 and into layers 18 and 10 (Fig. 16). The relationship of this disturbance to layer 3 is unclear but it probably predates the deposition of any part of layer 17 (Figs. 16, 17). There are no artifacts exclusively associated with this fill.

Summary of Findings

Beyond establishing that a cavity did not exist under the roadway, the excavations uncovered information relating to construction of the gate and palisade, use of the area during the occupation period and use of the area after the fort was

abandoned and dismantled.

The gate was built with only a partial foundation. One footing was discovered under the southeast corner and another probably exists under the north end of the west wall. It appears reasonable to suggest that similar footings were installed for all four corners of the gate. With such an arrangement the stones would have formed a corbelled arch to provide support for much of the wall. The gate had wooden gates hung on three strap hinges and on the ground below the wooden gates there was a wooden sill. There is no evidence to establish a functional relationship between the sill and the gates. From documentary sources it is known that the palisade was a rubble filled cribbing of horizontal logs. Illustrations show a stone base for the palisade. It has been established that this stone base was built on the ground. A stone below ground foundation for the palisade was present only adjacent to the gate wall.

The one footing investigated had been built into a vertical sided pit dug slightly larger than the size of the footing. The small gap between footing and pit was filled with clay, originally dug from the pit, once construction was completed. Some of the clay from the builders' trench was used later to fill the trench, some of it was spread and some may have been taken away.

Construction using limestone creates some debris; individual stones are chipped to size and shape and some mortar ends up on the ground. This results in scattered patches; adjacent to the construction it may result in a continuous layer, such as layers 11 and 24. These may be cleaned up but some are left and become part of the occupation period ground level or living surface.

To facilitate use of the gate the road leading through it was surfaced with limestone fragments and further with gravel. Gravel may have been part of the initial road surface; some was probably deposited later as a measure of routine maintenance.

When the fort was abandoned and dismantled the north palisade, including much of the stone base, was removed. The top of the footing at the east wall was taken down by the removal of some stones. Possibly as part of the dismantling procedure a layer of mixed clay was deposited on top of the footing, over and adjacent to the line of the palisade and on the roadway through the gate. This clay does not appear under the flower bed along the east wall. Further excavations will be required to establish what relationship exists between the extent of clay and the location of present paths. The purpose of the clay layer is not known; it would have raised and levelled the ground but would not have been a good surface for a road or pedestrian path in a park.

For maintenance of the area as a park, the paths were

surfaced first with repeated applications of cinders and later on with thin layers of a fine sandy gravel until the present surface was achieved. As the level of the paths rose, the level of the adjacent flower bed was adjusted with deposits of topsoil. At some time during development of the flower bed adjacent to the east wall a trench was dug along the wall. The purpose of the trench was not definitely established but is suggested to have been for inspection or maintenance of the wall.

General Discussion and Recommendations

Although the excavation did not confirm the presence of a cavity, it did establish that information on construction and land use is available in the ground, the amount of information recovered being a reflection of the limited excavations undertaken. At the moment it can be assumed that considerable archaeological resources exist at the site. The fort was large, had a large number of buildings and a lengthy history. All of these have left some physical signs of their existence in the ground. The presence of thick post occupation deposits of clay, cinders and gravel is a positive feature, especially if such deposits are relatively widespread, because they provide protection for the structural and cultural remains below.

Development of the site must consider not only the documentary and graphic sources of information but also the archaeological resources. In many instances it is probably only the latter which can provide information on building location, construction techniques and land use such as roads or fences. Development must also consider its effect on the archaeological resources. Any work which includes disturbance of the ground cannot be considered until the area to be disturbed has been examined and any archaeological remains excavated, recorded and ultimately interpreted. Development, including planning and implementation, should be done with care. Before deciding on a final plan an evaluation of all resources, including archaeology, must be done. The archaeology of an area must be done before development takes place and a plan which includes the destruction of archaeological resources cannot be accepted nor should it be suggested. Development should also call for what is possible, given the resources at hand, not what is desirable. An appealing but inaccurate work is not acceptable and will in time reflect on those who conceived it.

Present plans include reconstruction of the north palisade. Before work is begun on this, the line of the palisade should be excavated to locate whatever structural remains may be present, especially to locate other below ground footings, and to establish the possible presence of

other structural remains. Reconstruction can then draw on structural information provided by the archaeology and avoid disturbing structural remains which are not a part of the palisade.

Development of the gate and vicinity should include removal of the various layers of post occupation fill, such as the clay, cinders and gravel. The desired level is approximately that of the gravel, layer 4, over the limestone rubble. With this ground level it is also possible to install proper wooden gates, larger than the present gates and hung with three strap hinges rather than two.

Development plans will also consider the present condition of the gate and entertain the question of stabilization and restoration to an original upright position. Although this may prove to be necessary, a decision on it should involve consideration of a number of points. The first is whether the gate has already achieved stability and, therefore, whether an attempt to restore it to a vertical position is necessary or worthwhile. A reason for settling due to differences in the clay subsoil has been suggested above. If it can be established from historical documents that the gate has leaned for most of its life, it would be historically inaccurate to correct the condition. The gate would stand as conceived but not as it actually existed. Restoration in this case would be for cosmetic purposes rather than to achieve historical accuracy and would therefore be unnecessary and unacceptable.

It may be that a state of adequate stability does not yet exist for the gate. The question can then be asked whether it is necessary to undertake any attempts to restore the gate to a vertical position or whether stabilization "as is" would be adequate. For one thing, correcting the tilt would be an additional expense. Although the gate was not designed or built to lean to the north, the fact that it now has such a condition can be taken as a reflection of its age. In time any structure will show signs of age and these constitute a part of its character rather than something to be eliminated. However, the effort should be made to prevent a worsening of the condition as a means of prolonging its survival.

As part of the question of stability and the needs for restoration, the general condition of the gate was assessed although with the eye of a non-expert in structural matters. The most obvious feature is the tilt to the north, estimated to be in the order of less than half a metre. The stonework was examined for cracks but none were apparent. There are also no major repairs of previous cracks. A trench along the outside of the east wall may have been dug to allow repairs to be carried out but none were noted in the section of wall exposed by the excavations. Although the gate has a tilt it appears that it has settled more or less as a unit with

little opportunity for major cracks to develop. Since the woodwork is considered to be a more recent replacement its condition is of little concern here.

The archaeology was undertaken on relatively short notice and with little preparation in the form of background research. As a result, for example, the nature of the north palisade was not understood until some documentation became available. Continuation of development with or without archaeology should include adequate historical research to produce an assessment which is first and foremost historically accurate.

In summary, there are a number of recommendations for the development of Upper Fort Garry. Initially, the project must have some concept of its objective and how that objective is to be achieved. The purpose of restoring and reconstructing the site, or parts of it, must be defined so that all future suggestions or plans can in some way be related to an overall objective. The means of achieving the objective and a schedule for doing so must also be established. The need for accuracy has been stressed on several occasions. Plans for any reconstruction or other interpretation of structures, conditions or activities should be developed through a consideration of available sources of information. This includes historical research but also includes archaeological research to locate and interpret the physical remains in the ground. Only when this has been done can a particular plan be considered as the best possible, based on all available information and reflecting as closely as possible an original situation. Development must be based on and preceded by adequate research.

For the gate itself it is recommended that the need for stabilization and restoration be thoroughly examined before being carried out. Either or both may not be necessary if it can be established that the gate is now stable and that the tilt is an historic condition rather than a recent one. Stabilization may be unnecessary and restoration historically inaccurate.

References Cited

Bell, Charles Napier
1927

"The Old Forts of Winnipeg (1738-1927)." The Historical and Scientific Society of Manitoba, Transactions, No. 3 (n.s.). Winnipeg.

Chopping, George
1978

Bottles of the Canadian Prairies. Published by the author,
Spy Hill, Saskatchewan.

Ingram, George
1970

"Industrial and Agricultural Activities at Lower Fort Garry."
Canadian Historic Sites: Occasional Papers in Archaeology
and History, No. 4, pp. 43-92. Ottawa.

Lief, Alfred
[1965]

A Close-up of Closures; History and Progress. Glass
Containers Manufacturers Institute, New York.

McOuat Promotions
1978

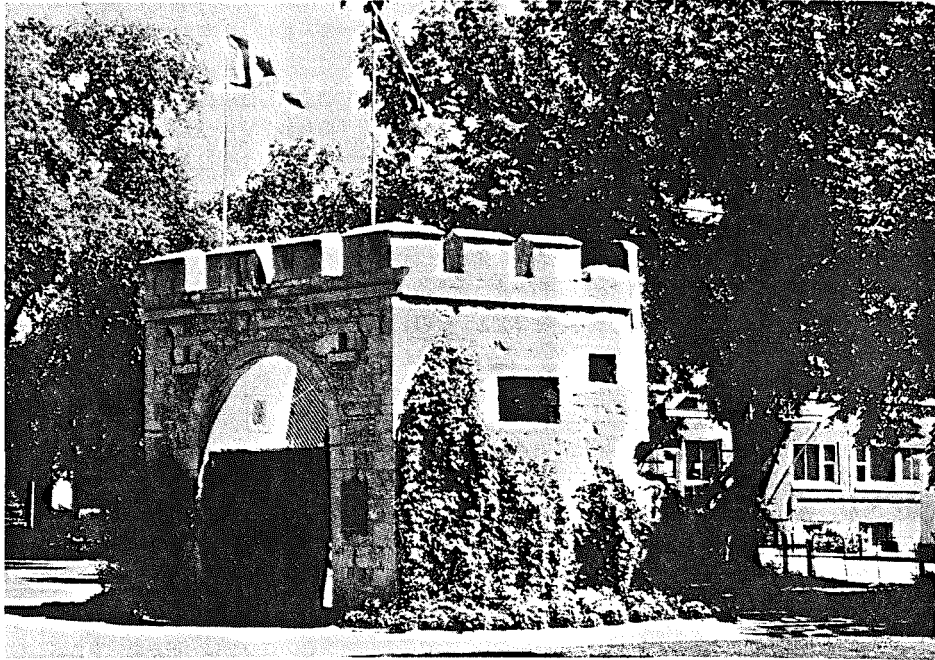
Upper Fort Garry, Notice of Press Conference, July 31, 1978,
Winnipeg.

Miquelon, Dale
1970

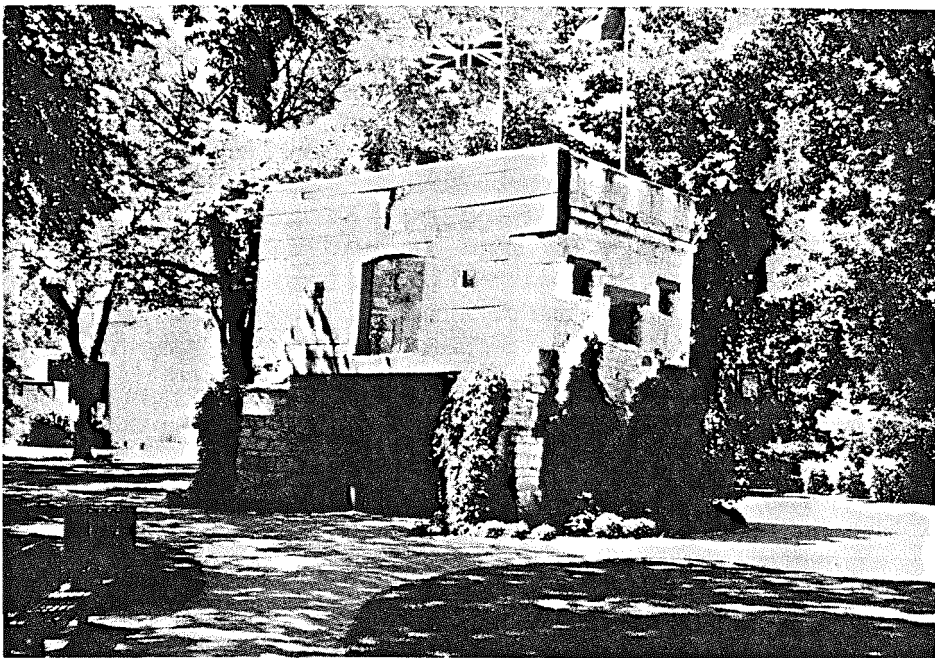
"A Brief History of Lower Fort Garry." Canadian Historic
Sites: Occasional Papers in Archaeology and History, No. 4,
pp. 9-41. Ottawa.

Priess, Peter J.
1973

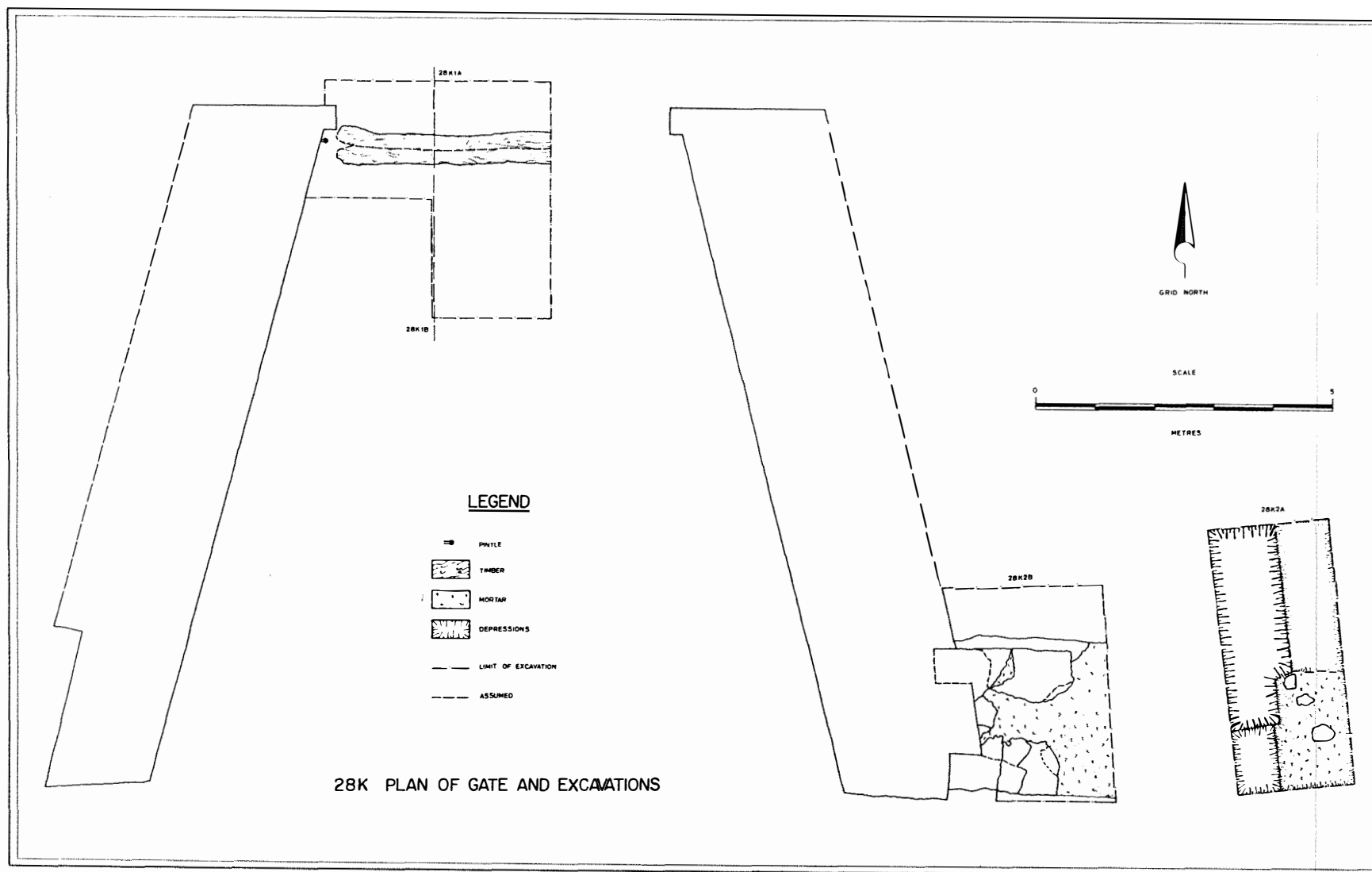
"Wire Nails in North America." Association for Preservation
Technology, Bulletin, Vol. 5, No. 4, pp. 87-92.



1 General view of gate from fort exterior.



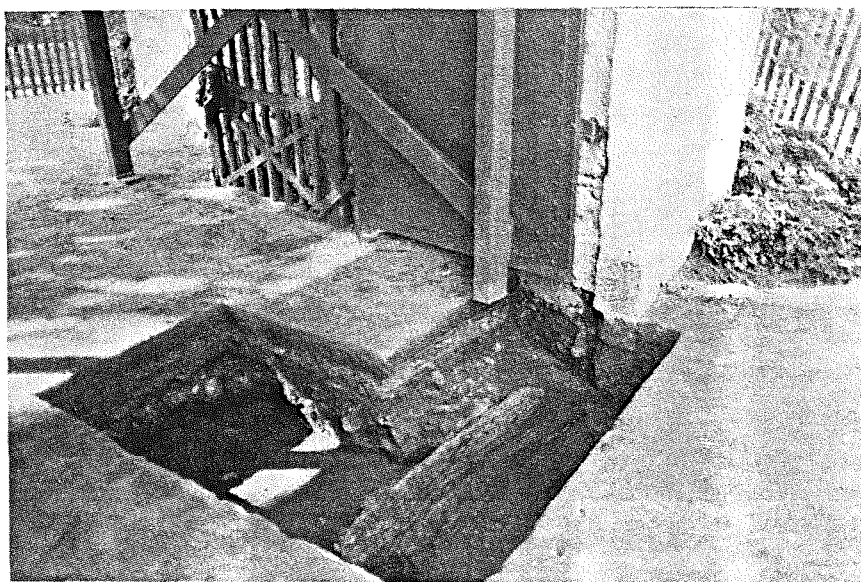
2 General view of gate from fort interior.



- 3 Outline of gate, location of excavations and plan view of excavated features (Draftsperson: K. Walton).



4 Plan view of top of lot, facing north, showing limestone rubble in roadway. (28K-1A6)



5 Oblique plan view, facing southwest. (28K-6M)



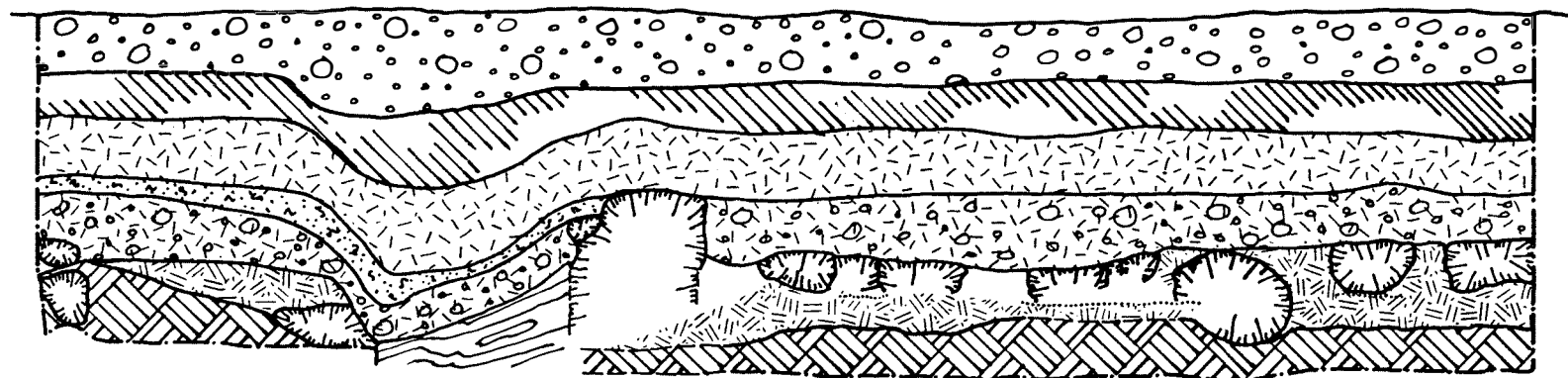
6 Possible sill across gate opening. (28K-3M)



7 West profile, showing fill and roadway relative to sill. (28K-1A)



8 Wall and associated builder's trench. (28K-7M)



LEGEND



1 Gravel



2 Cinders



3 Clay



4 Gravel



5 Limestone



6 Timber



18 Black Soil / Clay



23 Clay



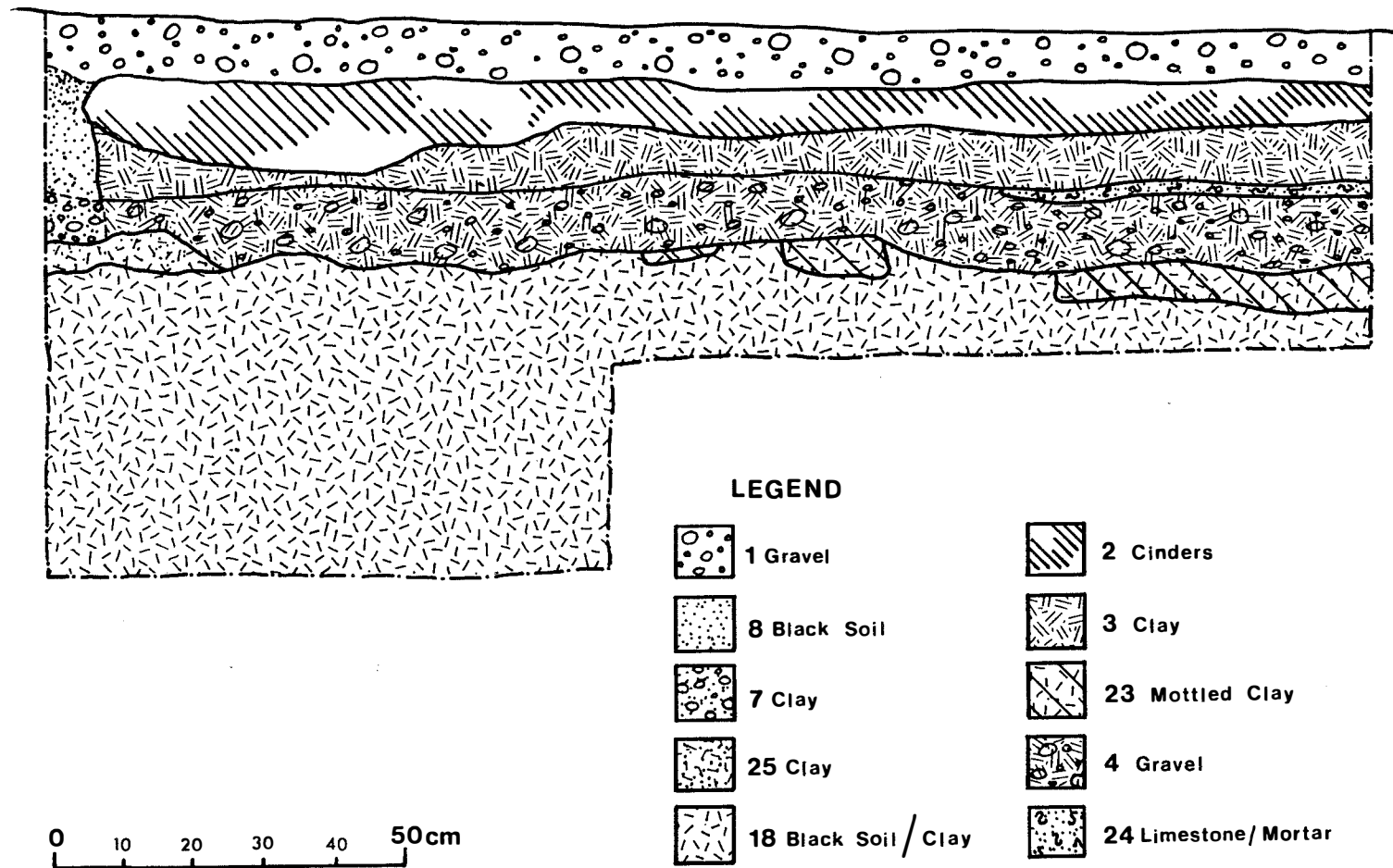
24 Limestone / Mortar



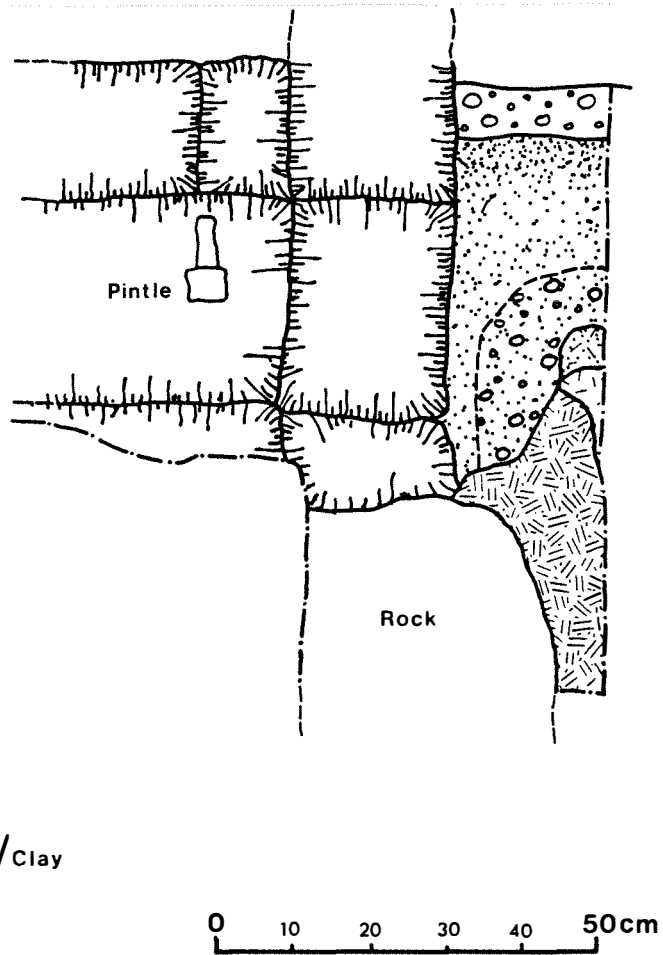
22 Planking

0 10 20 30 40 50cm

9 East profile of 28K-1A. (Drafting by K. Walton).



10 North profile of 28 K-1A and 28K-1B (Drafting by K. Walton).



LEGEND



26 Limestone



1 Gravel



8 Black Soil



7 Gravel/Black Soil



25 Clay

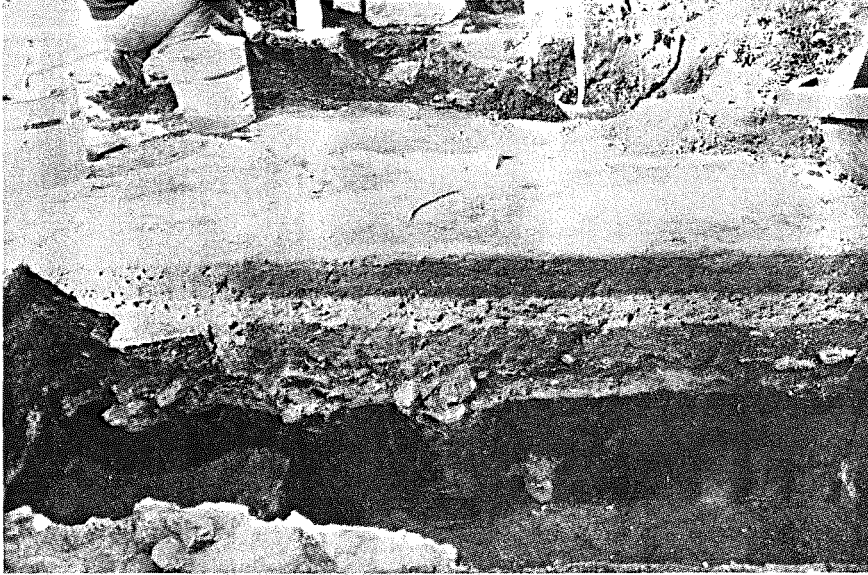


18 Black Soil / Clay

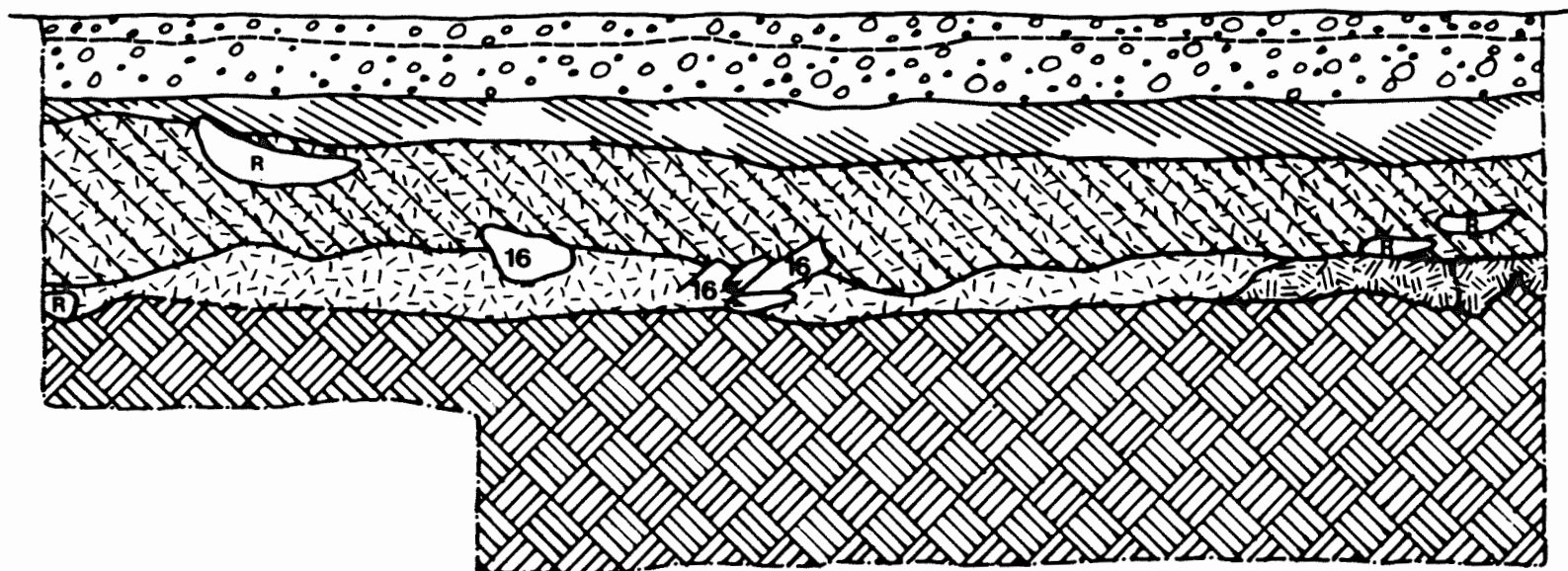


9 Clay

11 West profile of 28K-1B (Drafting by K. Walton).



12 28K-2A, west profile.

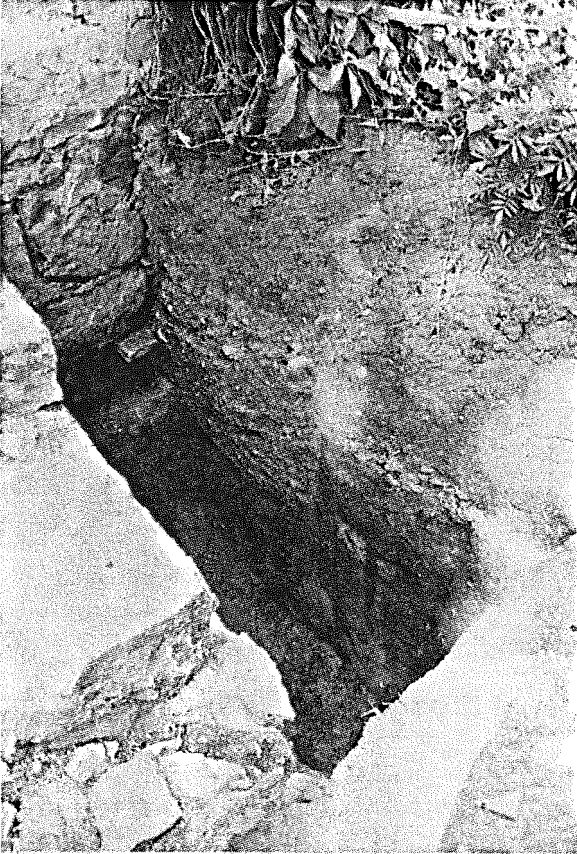


LEGEND

	1 Gravel		18 Black Soil/Clay
	2 Cinders		Rocks
	3 Clay		16 Limestone
	14 Clay		
	23 Clay		

0 10 20 30 40 50cm

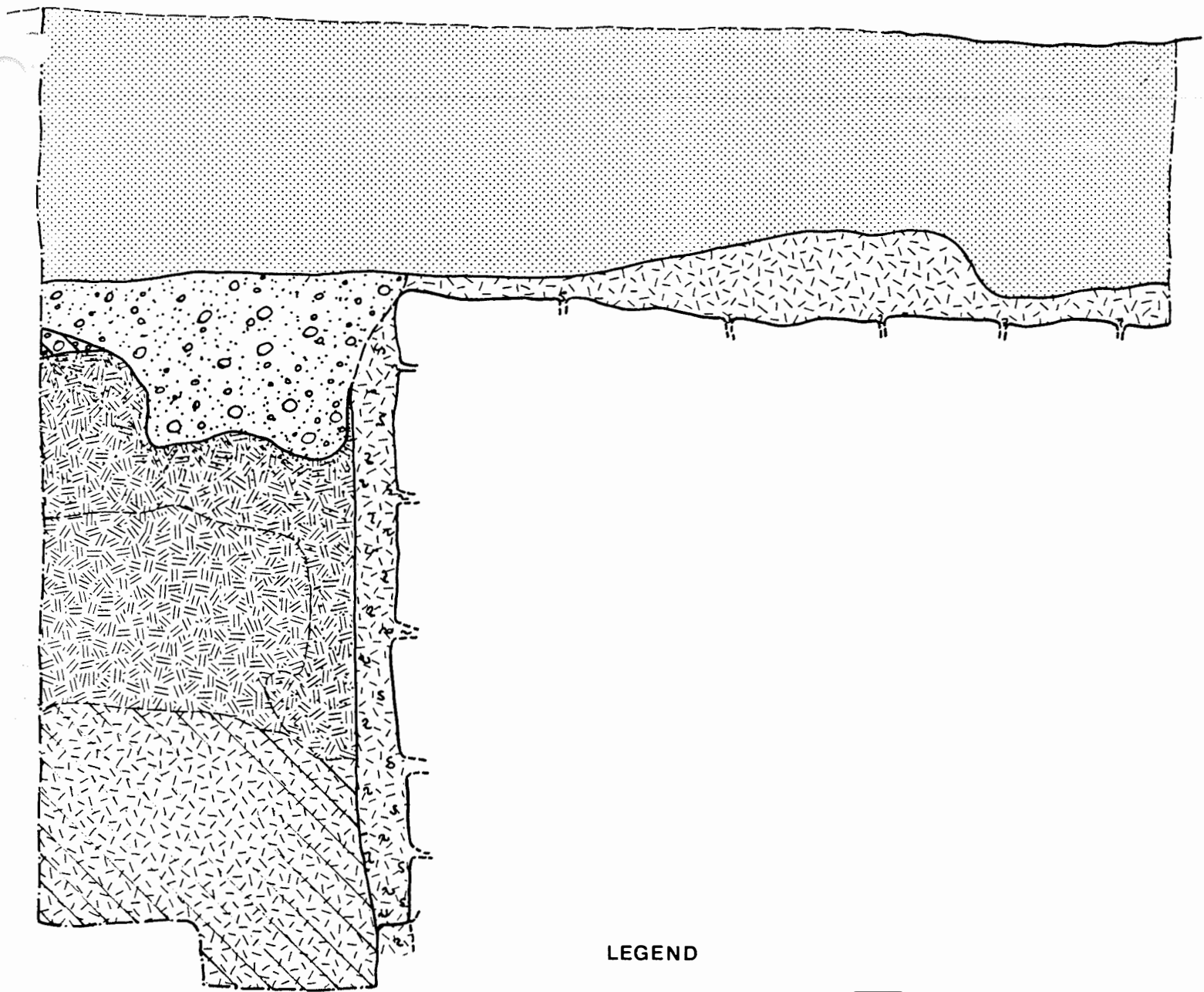
13 28K-2A, west profile (Drafting by K. Walton).



14 28K-2B, north profile.



15 28K-2B, east profile.



LEGEND



17 Topsoil



12 Gravel/Black Soil



11 Gravel/Limestone



10 Clay



15 Limestone



18 Black Soil/Clay



3 Clay



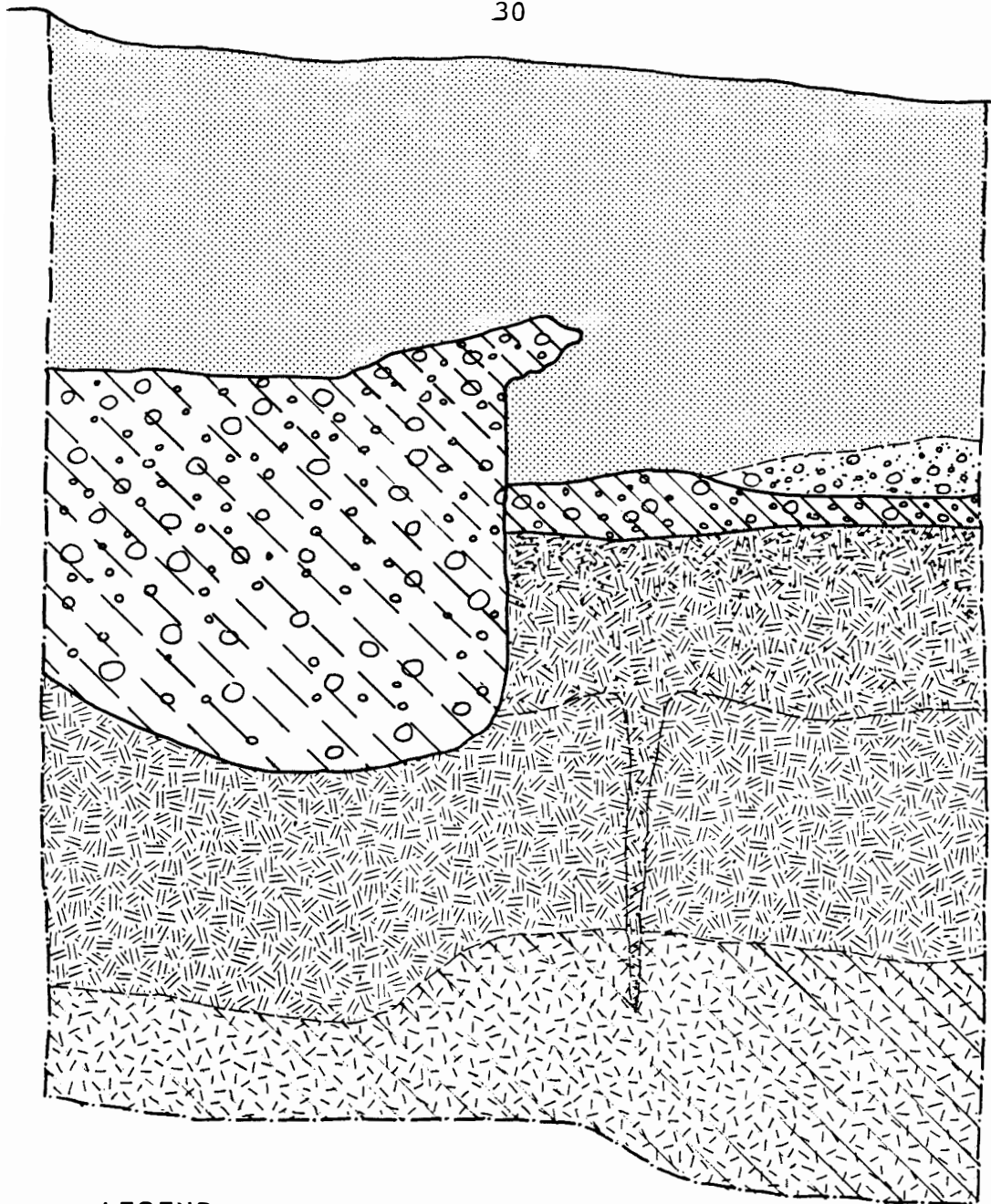
20 Clay



19 Clay

0 10 20 30 40 50 cm

16 East profile of 28K-2B (Drafting by K. Walton).



LEGEND

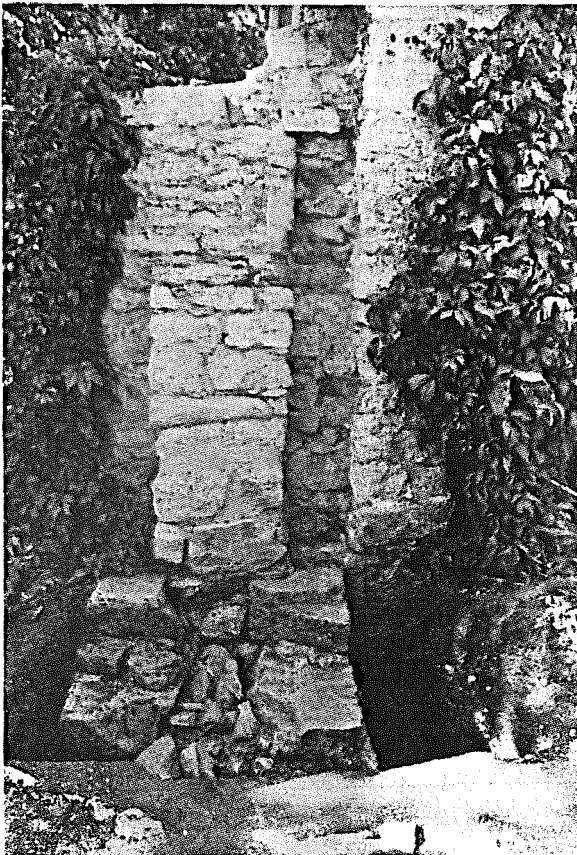
	17 Topsoil		18 Black Soil / Clay
	12 Gravel / Black Soil		19 Clay
	11 Gravel / Limestone		20 Clay
	13 Gravel / Black Soil		

0 10 20 30 40 50 cm

17 North profile of 28K-2B (Drafting by K. Walton).



18 28K-2B, west profile.



19 28K-2B, foundation block and connection between palisade and gate wall.