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EXCAVATIONS AT THE FORTRESS OF LOUISBOURG
OF THE DE PENSENS-DE LA VALLIERE STOREHOUSE
AND NEW ENGLAND CRAFTSMEN'S SHOP, LOT D,
BLOCK 16, AND OF THE LOPPINOT-DANGEAC HOUSE
AND PROPERTY, LOT C, BLOCK 16

by Pierre Beaudet

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and Property, Lot C, Block 16

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Abstract

The 1977 archaeological excavations discussed in this report were concentrated on Lots C and D of Block 16 of the Fortress of Louisbourg National Historic Park. The excavation uncovered the remains of the de Pensens-de la Vallière masonry storehouse on Lot C and the Loppinot-Dangeac charpente house on Lot D, both erected prior to the 1745 siege, and a New England frame-built craftsmen's shop erected in 1746. Other features uncovered include the adjoining section of rue Royale, various piquet property boundaries and related water supply and drainage systems which play an important role in the explanation of the activities which occurred in Lot C and relevant portions of Lot D. Most of the archaeologically documented events were found to relate to the construction, repair and abandonment of the structure or features. Remains of edible fruit types provided a glimpse into the diet of the Louisbourg resident.

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Introduction

The 1977 archaeological excavations at the Fortress of Louisbourg National Historic Site were concentrated in Block 16 (Fig. 8), an essentially mixed civilian activity area situated at the heart of the town site. The purpose of these excavations was to uncover structural, stratigraphic and artifactual evidence of the events which took place in an area soon to be reconstructed or landscaped.

The following report pertains to the excavation of the de Pensens - de la Vallière masonry storehouse, the Loppinot-Dangeac charpente house, both erected prior to the 1745 siege and the New England frame-built craftsmen's shop constructed in 1746. Other features discussed in this report include the adjoining section of rue Royale, various piquet property boundaries and related water supply and drainage systems which play an important role in the explanation of the activities which occurred in Lot C and relevant portions of Lot D (Fig. 10).

The report essentially relates imprints on landscape and refuse discarded to the user-occupant of the site. Its focus is therefore limited to the tangible leftovers of events or activities which took place between man and his

environment and only incidentally touches upon human interchange. It describes little the daily life cycles but rather sets its context: house, walking surface, well, latrine, pots, and pans... rather than the daily occurrences which these structures and objects allow or suggest. The actions occurred but are not archaeologically explicit. A walking surface exists but not the walking, gate posts remain but not the opening and closing, the well still holds water but not the bucket in motion, the pipe but not the smoke. These actions are real but yet never truly documented in the remains uncovered.

The event designation system utilized throughout the archaeological discussion is an inevitable oversimplification of a more complex sequence of site occurrences. It is not exhaustive but rather selective of those events which appear to punctuate most significantly the archaeological history of the site. Construction, use, discard, destruction or abandonment are all generic terms which group hundreds of subordinate activities whose consistent description would be too time consuming and would often lead, in the absence of sufficient supportive data, from fact to fiction. For a further discussion of the event designation system and its use in matrix format see Appendix C.

The excavation and recording techniques utilized were basically those contained in Volume I of Parks Canada Archaeology Manual (1977). The area excavated was divided

into grid units of various sizes (Fig. 9) which corresponded approximately with the structural and property parameters derived from historical evidence, topographical observation and previous proximate archaeological excavations.

The crew was composed of three site assistants, Charles Burke, John Connolly and W. Bruce Stewart and up to 19 student and non-student excavators.

A brief relevant historical outline precedes the description and interpretation of the archaeological evidence.

Historical Evidence

The Fortress of Louisbourg served France as an administrative, military and economic stronghold in the New World from the early 1720s to 1758. It was twice besieged by the English. The first siege, in 1745, resulted in a four year occupation of the Fortress by New Englander and English troops while the second one, in 1758, saw the final defeat of the French at Louisbourg. The fortifications were systematically destroyed in 1760. A British garrison remained until 1768, following which the town was sparsely occupied until the twentieth century.

No attempt is made here to relate further these events which extend well beyond the scope of this report. However, a brief overview of pertinent historical data concerning Block 16 and more specifically Lot C and the relevant portions of Lot D will facilitate the understanding of the archaeological excavations.

Documentation concerning Block 16 is relatively scarce and reference to the buildings discussed in this report is far from complete leaving numerous questions unanswered.

"A History of Block 16, Louisbourg: 1713-1768," by Robert W. Morgan is the most extensive secondary source relating the events or history of Block 16. Morgan's report

provides a discussion of ownership, occupancy and structural features for each property in the light of what primary sources are available. It further includes relevant excerpts from "Block 16," a preliminary report on the architectural features of Lots D and E produced in 1968 by Brenda Marchant Dunn.

Despite the numerous gaps punctuating Block 16 history, a number of relevant facts are well documented.

The representation of a small building, a corps de garde, in a 1717 plan (Plan 1718-2; Fig. 1) marks the start of the history of Block 16. This structure, which is described in later plans as a poudrière, pre-dates the official demarcation of the block in 1722 and corresponds, as yet, to no archaeologically documented feature.

It was not until 1734 that Block 16 received its final dimension of 36 toises (70.17 m) along the rue Royale and Place Royale (rue d'Orléans) by 29 toises (56.53 m) on the rues St. Louis and Toulouse (Morgan 1975: 2). Interior property divisions until 1734 varied somewhat while sections of land were being bought and sold (Morgan 1975: 3). The final repartition of properties included five Lots (A,B,C,D, E) all of various widths and lengths. Lots C,D, and the earliest boundaries of B all rested partially, at least, in the area excavated this summer.

Lot B

Lot B was the earliest privately-owned portion of Block 16. It was to change hands and size numerous times during its occupation which ended with the destruction of its buildings probably during a fire in 1767 (Foster 1965: 2).

First granted to a Marie Joseph de Villejoin in 1722, Lot B originally included what was later to become Lot C to the west (Morgan 1975: 30). Prior to the grant, however, the de Villejoins had already built their house on the eastern part of the property in 1720.

The western part of the property (which became Lot C) was sold to Jean Chrysostome Loppinot in 1733. Loppinot was an officer in the military but he is known to have involved himself in business, most probably shipping. The property is said to have measured 44.5 pieds along the rue Royale and 70 pieds towards the interior of the block. The remainder of the Lot B property was sold a few weeks later to a Jean Richard who remained its sole owner until 1736. At that time Richard sold the northern part of the property to André Ballé. The latter is said to have had a well within his property while Richard kept the latrine. However, no clear reference is given by Morgan on the date of construction of either well or latrine, or their emplacement.

Lot C

Lot C came into being in March of 1733 when the original de Villejoin property (Lot B) was divided in half. The resulting Lot C property measured according to the bill of sale 44½ pieds along the rue Royale by 70 pieds towards the interior of the block. However, Morgan regards as more accurate a later 1750 property measurement of 45 pieds by 72 pieds (Morgan 1975: 67).

The most substantial structure built on Lot C was a house erected by Charles Joseph d'Ailleboust most probably in 1731, prior to the sale of the property to Loppinot. It was first illustrated in its correct alignment and proportions in a 1731 plan (Fig. 2: Plan 1731-3). The average dimension of the house scaled from eight "reliable plans" gave 42.9 pieds along the rue Royale by 23.63 pieds towards the interior of the block (Morgan 1975: 67). The only written description of the house dated to 1750 when it was described as "a wooden house, one storey only with the basement below" (Morgan 1975: 67). All plans with the exception of N.D. 24 showed the house to have had a gable roof. The only other reference to the construction details of the house comes from the 1736 bill of sale for the Lot D property which made reference to Loppinot's "maison de charpente" leaning against the storehouse next door. The

house was still standing in 1768 when it was described as being in only tolerable condition (Morgan 1975: 68).

Some historical evidence suggested the presence of various structures in the backyard area of Lot C. The largest of these structures was an unidentified building situated at the southern edge of the property. However, there was no written description of the structure and it was only found illustrated on two plans which may have shown structural features actually never built (Plans 1730-2 and N.D. 24; Morgan 1975: 65). "Appartenances et dépendances" were referred to in the 1733 bill of sale while that of 1750 mentioned "plusieurs cabanot, écurie, étable, cour et Jardin" (Morgan 1975: 68). Finally, reference was made in a 1736 bill of sale to a well situated near or on the property line with the north end of Lot B, designated by Morgan as Lot B-2, and which may, at some time, have been shared with Fizel.

A large number of people, possibly more than six families, lived in the house erected on Lot C. It is not known if and by whom the house was first occupied from the probable date of its completion in 1731 to that of the sale of the property to Loppinot in 1733. It is doubtful, however, that it remained vacant for a period of approximately two years.

The Loppinot family owned and lived in the house from 1733 to 1750 with the exception of the four years of New Englander occupation (1745-1749). His household numbered thirteen persons in 1745: eight children, one slave and her child, a servant and the parents (Morgan 1975: 60).

In 1750 Loppinot sold the house and property to an officer, Gabriel François Dangeac. In 1749 Dangeac's household numbered twelve members who all presumably moved into the rue Royale property. It is not sure whether or not the Dangeac family resided in the Lot C house for very long since in 1751 Dangeac was transferred to Port Dauphin. His family may have remained in the Louisbourg house, but Dangeac in 1756 rented the house to a Lieutenant Colonel Marin of the Bourgogne Battalion (Morgan 1975: 63). The size of the household of Lieutenant Colonel Marin is unknown.

The Lot C property was again sold in 1756 this time to Michel Dummoncel. It is not known who resided in Lot C after that date for Dummoncel never lived in the house and there is no indication as to the number and identity of British occupants from 1758 to 1768 or later.

In résumé, historical documents have provided some indication of the dimensions and scant description of the Lot C property and house as well as passing references to a well and a number of backyard features. There exists no description of the interior of the house nor are there any inventories

of any kind to suggest floor plan, space use or lifestyle of most of the occupants of the house.

Lot D

Lot D came into existence in 1720 when it was conceded to a career officer also engaged in business and commerce, Jacques de Pensens. It was then described as follows:

... un Terrain dans lad. Isle No 16 de 90
pieds de face sur la rue de Toulouse et de
126 de profondeur le long de la rue Royale
faisant en superficie 11340 pieds quarrés
borné (aun) par ladt. rue Royale, al'Est
par le terrain des. Lopinot laisné
Surrine longueur de 28 pieds, auS. par
le terrain réservé pour le Jardin du
Gouvernement, et al'O. par la rue de Toulouse
(Morgan 1975: 69-70).

Michel Le Neuf de la Vallière, also an officer engaged in business, bought Lot D in 1736. His family was to remain its owner until 1758 with the exception of the 1745-1749 period when the town was occupied by the New Englanders.

Numerous buildings were erected on Lot D some of which relate directly to the excavation discussed in this report while others do not. De Pensens had three main structures erected on Lot D, two of which, a house and storehouse, bordered on rue Toulouse while the third, another storehouse, the remains of which were excavated in 1977, was situated at the northeast corner of the property.

Little is known historically about the storehouse situated on the northeast corner of Lot D. It first appeared on a plan in 1727 (Plan 727-9) and was presumably constructed between 1724 and that date (Dunn 1968: 7, Plan 727-9). However, the storehouse was not illustrated in its proper alignment until 1730 (Plan 1730-2) and in proper relationship with the neighbouring Lot C house until 1731 (Plan 1731-2). The 1736 bill of sale described the storehouse as a masonry structure measuring 42 pieds by 23 pieds along a north-south alignment with a cellar running the entire length and width of the structure (Dunn 1968: 7 and 8). Morgan adds that the storehouse had two storeys above the basement (Morgan 1975: 80). It was further known that the east wall of the storehouse served as a support (if not the actual west wall) for the charpente house built on Lot C. No historical evidence indicated the location of windows or doors or the presence of chimney or porch. The last documentary evidence revealed that the storehouse was still occupied in 1767 while in 1768 it was described as "much out of repair" and no mention of occupancy was made (Dunn 1968: 89).

A craftsmen's shop was built in 1746 by the New Englanders along the eastern edge of the Lot D property immediately to the south of the storehouse (Dunn 1968: 10; Plan 1746-8). It was a two storey frame building "erected to provide shops

for carpenters, glaziers, and painters" (Dunn 1968: 10). The generally poor quality of English plans make it impossible to scale from them the dimensions of this building. It is believed that portable items such as sashes, coffins, doors, furniture, etc. would have been constructed or assembled in the craftsmen's shop (Dunn 1968: 11). The structure was still standing in 1767 when it was listed under "stores and stables occupied at present" (Plan 767-1; Fig. 6; Dunn 1968: 11). Finally, it was described as being in "tolerable" condition in 1768 (Dunn 1968: 11; Fig. 7).

A master carpenter's house was situated along the rue Royale immediately to the west of the storehouse. This structure which was constructed by the New Englanders in 1745 utilized the west wall of the storehouse as its own east wall. Lewis Tadlock excavated the master carpenter's house in 1767 but produced no archaeological report stating his findings. Historical sources have provided no indication of door or window emplacement nor was there any explicit historical reference to the relationship of the various structures of Lot D prior to, during or following the French occupation. One can only surmise that interchange existed and that openings in the buildings would have existed within the fenced-in property to allow movement of people, goods, and materials.

The Excavation

The construction of the de Pensens-de la Vallière storehouse on Lot D (late 1720s) and that of the Loppinot-Dangeac house on Lot C (ca. 1731) were the earliest significant human alterations to the natural landscape of the area discussed in this report. There was no archaeological evidence to suggest prior construction or major land filling activity. In this light, three functionally significant areas were isolated for the following archaeological analysis: the Loppinot-Dangeac house and its related Lot C property, the de Pensens-de la Vallière storehouse and finally, the New England craftsmen's shop.

The analysis of significant data will proceed, within each functionally significant unit, in the order of original soil deposition or event occurrence. Structural features of each functional area will be described and discussed within their stratigraphical and artifactual contexts in order to provide a temporal sequence of events for the entire occupation period of the site.

The de Pensens-de la Vallière Storehouse, Lot D (mid
1720s-1768)

The remains of a roughly rectangular structure were uncovered from the northwest corner of the excavation (Fig. 10,13,14). This area corresponded, historically, to the northeast corner of Lot D while the structural remains were found to be those of the de Pensens-de la Vallière storehouse (see historical introduction in this report). The exterior foundation remains of the storehouse were as follows:

north wall (along <u>rue</u> Royale	7.43 m; 22.9 <u>pieds</u>
south wall	7.44 m; 22.9 <u>pieds</u>
east wall (along Lot C	
property boundary)	13.41 m; 41.3 <u>pieds</u>
west wall	13.58 m; 41.8 <u>pieds</u>

These dimensions differ little from the 42 pieds in length by the 23 pieds in width given in the 1736 bill of sale.

All foundation walls were generally 75 cm to 85 cm in thickness while their extant height varied greatly from a maximum of 1.90 m along the south wall to a minimum of 53 cm along the north wall. The materials used in the foundation were mortared fieldstones (igneous rock) of varying sizes and shapes. The irregular size of the uncut stones resulted in a very uneven number of courses (Fig. 15). The extant height and thickness of walls, and large accumulation of loose mortar and stone rubble inside the

foundation walls suggested an entirely masonry storehouse shell.

The remains revealed the presence of only one basement level doorway for the entire structure. It was situated in the middle of the north wall (Figs. 11 and 16). The doorway flared inwards and measured 1.23 m in width at the opening and 1.81 m in width on the inside. The jambs of the door surround were made of roughly dressed local grey limestone blocks keyed into the masonry walls. The faces of the stones were cut to create a continuous relief border up each jamb. The check behind each jamb was 6 cm deep and the reveal was 17 cm wide. Since only the lower parts of the jambs survived it is not known whether the door was hung from hinges anchored in the masonry jambs or from a frame located immediately behind the jambs' checks.

The sill was made of two quite different, yellowish sandstone blocks 17 cm thick and 30 cm high. The base of these sill stones sat somewhat below the surface of rue Royale, which had been raised in 1730, yet flush with the pavé floor of the storehouse. The top of the stones, however, was only 5 cm above the level of the raised street surface. Consequently, if these stones constituted the original sill when the storehouse was erected prior to the raising of the street level, they would have created a 30 cm high obstruction between the street and the storehouse floor. But, if they were installed as a modification to raise the sill to meet

the raised street level which had buried the bottom part of the jambs, then they would have acted as a step from the roadway down into the storehouse. This second interpretation seems more likely and helps to explain the use of a different type of stone, their poor fit within the doorway and the rather poorly made brick and slab step immediately inside the sill. The original sill was probably made of wood and extended from the door opening inwards to the limit of the pavé floor. The basis for this statement is the total absence of pavé within the doorway embrasure and the absence of any evidence for any dressed stone sill bonded into the bottom of the jambs. It would appear that when the roadway was raised earlier sill was removed and replaced by a brick and slab step and the surviving sandstone block sill. Finally, brickwork repairs at the inner end of the east jamb indicate that at some time during its use the storehouse was damaged or deteriorated.

A well preserved pavé floor covered the entire storehouse basement surface. This floor was found to slope downwards 2 cm per meter towards the north end of the building in order to facilitate the evacuation of water. To direct the flow of water, a surface gutter-drain made up of a double row of large pavé stones extended from the inside edge of the south wall down the middle of the

floor before turning to exit through the base of the west end of the north wall (Fig. 14). From there the drain continued under rue Royale to join the interconnected drainage system which flowed into Block 2 (Fig. 14; Chitwood 1978).

Damage and repair to the storehouse masonry shell (probably connected with one or both of the sieges) was evident both along a short segment of the west wall and at the street front doorway. The doorway repairs consisted of the replacement of some of the grey limestone step segments with coursed loose bricks and the very rudimentary insertion of a number of unmortared and uncoursed bricks at the base of the interior corner of the east doorway jamb (Figs. 11, 16). Rudimentary, unstable and ill-designed to sustain prolonged usage, this patch work repair must have occurred towards the end of the shattered existence of the storehouse or, possibly, as the presence of a mortar shell suggested, following the 1758 siege of the Fortress.

The identity of the scant remains of a coursed and mortared brick feature precariously perched on top of a bulging 2 m long segment of the west wall was difficult to establish (Fig. 18). These remains could have been evidence of late and hasty repair to a breached segment of wall where bricks and stones were used indifferently as repair materials or they could have been the possible re-

mains of a more doubtful upper level aperture such as a basement window or a mezzanine doorway. The scantness of the remains and their partial prior excavation by Tadlock in 1967 (for which there is no report) made definite attribution impossible. In any event, the feature was obviously not part of the original construction of the storehouse.

The interior stratification in the storehouse was an isolated phenomenon unrelated, for the most part, to its exterior counterpart. The masonry shell segregated the layers that accumulated within the storehouse from those, altogether different, which accumulated around it. The only common binding stratigraphical elements were a rusty orange pre-cultural layer (sterile B horizon; event 16D9) which underlay the entire excavated surface, traces of mortar wall collapse which extended slightly onto the edge of Lot C (event 16D3) and the modern surface sod and humus (event 16D1). Only a 7 cm to 15 cm thick layer of artifact bearing organic soil (event 16D4) was identified as having accumulated during the occupation of the storehouse. It rested immediately above the basement pavé floor (event 16D5) and represented most probably the gradual accumulation of storage wastes and breakage within a base of dirt, grime and organic decay.

The successive elements of the French-New England-French-English Louisbourg occupation sequence were not discernable in the occupation period layer (event 16D4). However, some artifacts, through their intrinsic attributes and known historical context did suggest an approximate date of deposition. Very few artifacts offered direct information related to the function of the structure.

The only artifacts that could confidently be ascribed to the first period of occupation were the remains of a dark coloured semi-solid aromatic resinous substance believed to be waterproofing pitch which were found adhering to a small number of basement pavé stones. The presence of this substance upon the basement floor suggested its deposition very early in the accumulation period of the layer. However, in the absence of directly related supporting artifactual evidence, its relationship to a particular trade commodity sold, bought, stored or used by de Pensens or de la Vallière could not be positively defined. No other artifact recovered from the storehouse could be attributed solely to the period prior to the first English occupation.

The New Englander occupation is probably represented by a small number of crown window glass rim fragments recovered from the occupation layer of the storehouse. These fragments appeared similar to those found abundantly in and around the foundation of the New England

craftsmen's shop. As a result, fragments found within the storehouse could be attributed to the known glazing activity which occurred in the New England structure between its 1746 construction date and the departure of its New England occupants in 1749. The presence of the crown glass waste fragments in the occupation layer of the basement resulted most probably either from breakage of uncut glass crowns stored within the storehouse or from accidental strewing upon the floor through some sort of basement aperture.

Following the return of the French in 1749, occupation of the storehouse is attested to by a few third quarter 18th century fine earthenware sherds in the occupation layer. Sherds of Jackfield, Whieldon and agate ware, all with a third quarter 18th century mean date of manufacture (South 1977: 211), could be associated with either the French (1749-58) or British (1758-68) occupation. The absence of late 18th and early 19th century glass and ceramic types pointed towards an early date of collapse following the abandonment of the site.

Neither glass nor ceramic sherds uncovered from the occupation layer suggested any particular products which would have been stored within the structure. In fact, remains of utilitarian containers and tableware vessels were relatively few in number if viewed through the length of the accumulation period. The calculated hypothetical

annual rates of breakage for the ceramic and glass vessels uncovered were found to be the following:

	Minimum		
	no. of	40 year	25 year
	vessels	accumulation	accumulation
Ceramic vessels :	303	7.57	12.12
Bottle glass :	55	1.37	2.20
Table glass :	39	0.97	1.56
Totals :	397	9.92	15.88

The forty year and twenty-five year accumulation periods are two possible but hypothetical time spans during which the artifacts may have accumulated over the pavé. The first is a maximum and corresponds approximately to the entire occupation period of the storehouse up to 1768 while the second is a minimum and corresponds approximately to an accumulation which would have started in 1746 with the first English occupation of Louisbourg. Both illustrate what the author believes to be a relatively low number of broken objects for a relatively long accumulation period. This serves to de-emphasize the use of these artifacts as definite indicators of type of commodities stored. The presence of tableware and storage containers in the basement of a storehouse in such relatively small numbers cannot be used to determine whether such goods were stored, used or simply discarded there from elsewhere. The low rate of accumulation remains, however, a personal impression impossible to substantiate in the absence of comparative data from other similar accumulations.

Several types of ceramic wares and object shapes were present in the occupation layer (Table 1). Coarse earthenwares represented the largest number of vessels of the entire ceramic group. As illustrated in the following table nearly all coarse earthenware vessels were either tableware or cooking containers of which more than two thirds were of French manufacture. In fact, only 4 vessels were identified as storage containers in the entire occupation layer of the storehouse. Classification and nomenclature were based on Barton (1974).

Table 2. Coarse Earthenwares: National Origins and Vessel Types. (Count records minimum number of vessels)

Type	French	Italian	Anglo-American	English	Mediterranean	Totals
Bowl	50		2	2		54
Plate	1	5				6
Saucer		1				1
Jar	7		7	1		15
Porringer	1	2				3
Cooking pot	7		1	2		10
Platter		2				2
Bean pot	1					1
Jug		2				2
Pitcher			1			1
Tankard			1			1
Chamber pot			1			1
Mug			1			1
Olive jar					5	5
Uncertain	7	5	2			14
Total	74	17	16	5	5	117

The second largest ceramic group was comprised of tin glazed earthenwares. No precise national or regional attribution of manufacture was attempted. However, as for the coarse earthenware, it was found that nearly all vessels were associated with food preparation or serving. The following table provides a cursory breakdown of the vessel types identified.

Table 3. Tin Glazed Earthenwares: Vessel Types. (Count records minimum number of vessels)

Type	No. of Vessels	Type	No. of Vessels
Bowl	2	Platter	6
Chamber pot	4	Porringer	1
Cup	6	Salt cellar	1
Jar	5	Saucer	2
Plate	48	Unidentified	3

The variety of shapes and applied decorative patterns (floral, geometrical, plain white, blue or polychrome) indicated that the tin glazed earthenware vessels were not an homogeneous group, but all were found to be compatible with the date of occupation.

Stoneware constituted the third largest ceramic group. Here again, table and kitchen use vessels were the most numerous. White saltglaze stoneware accounted for 72.8% of all stoneware vessels.

Hard paste porcelain, Staffordshire slipware and the fore-mentioned fine earthenwares were also present in the occupation layer (Table 1). No complete ceramic vessel

was uncovered from the entire occupation layer of the storehouse. All were found to be compatible with the occupation period of the structure, but lent themselves little to precise dating.

Fragments of a minimum of twenty-three blue-green and thirty-two dark green glass bottles (French, English and Dutch) were present in the basement prior to the collapse of the storehouse walls (Table 4). These fragmentary remains provided no complete vessels and possessed no unusual characteristics.

Thirty-nine table ware vessels were counted -- seven of which were too fragmentary for precise identification. There were fragments of twenty-one colourless tumblers of which one was leaded, ten colourless stem glasses three of which were leaded and one leaded wine glass cooler or rinser of probable Low Countries manufacture (McNally 1974: 79). The non-leaded tumblers were of either French, Bohemian or Germanic manufacture. Some were pattern moulded, others plain dip moulded, while another bore the faint remains of a yellow and brown enamel design below the lip. The stemware remains were very fragmentary and consisted of moulded Silesian and corrugated conical stems, devitrifying collars and various small moulded feet segments. All glass vessels were compatible with the occupation period of the structure.

Aside from the previously discussed crown glass rims

little could be said concerning the window glass fragments present in the storehouse. It is not certain whether they related to the New England glaziers' activity or whether they were the remains of other glass stored in the storehouse or broken from its apertures. The same question applies to the short segment of window pane leadcasing and the other construction hardware, for it was impossible to ascertain whether they were used in the storehouse structure or simply stored there (Table 4).

Finally, a large number of loose, used and broken bricks rested here and there throughout the surface of the basement occupation layer and immediately below the masonry wall collapse debris. No pattern was apparent in their disorderly deposition and they appeared totally unrelated to the structural fabric of the de Pensens-de la Vallière storehouse. They may have been salvaged from elsewhere and then stored there prior to the collapse of the masonry walls of the storehouse or they may have been doorway and window surrounds from the upper storeys.

All other layers found within the confines of the storehouse foundation walls were post-abandonment accumulations. The stone rubble and mortar layer which was thickest at the edge and thinnest at the center of the foundation remains was no doubt debris fallen or collapsed from the upper portion of the masonry walls (Fig. 19, event 16D3). It contained no noticeable wood remains, cutstones

or any other significant artifact which could have provided indication of upper level construction design or aperture emplacement. The absence of wood remains could have been the result of a poor conservation environment or the result of its removal prior to the masonry wall collapse. Finally, no soil accumulation occurred on the surface of the masonry collapse other than the gradual development of a thin sporadic sod zone (event 16D1).

The New England Craftsmen's Shop (1746-1758)

The scant masonry foundation remains of a rectangular frame building were uncovered immediately behind the de Pensensde la Valliere storehouse. This area corresponded historically to the southeast corner of Lot D while the structural remains were found to be those of the New England craftsmen's shop erected in 1746 for the use of glaziers and carpenter (see historical introduction in this report). The exterior foundation remains were as follows:

north wall	7.44 m; 22.88 <u>pieds</u>
south wall (along Lot E property boundary)	7.54 m; 23.19 <u>pieds</u>
east wall (along Lot C property boundary)	15.59 m; 47.95 <u>pieds</u>
west wall	15.38 m; 47.30 <u>pieds</u>

The foundation walls averaged 40 cm to 50 cm in thickness while their extant height varied greatly from a maximum of 40 cm along the north wall to a minimum of less than 10 cm along

the south wall. This variation in the extant height of the foundation wall corresponds to a similar variation in the original height necessary to compensate for the downward slope of the original ground surface. The foundation was generally composed of dry laid irregular sized fieldstones. One exception was a mortared fireplace base which, in effect, blended into the reinforced northeast corner of the structure (Fig. 20). Its scant remains consisted of a triangular shaped and heavily mortared fieldstone pad measuring from 10 to 30 cm in height. No historical reference to the existence of such a feature was found in any of the known historical sources. Another exception rested on a short western segment of the north wall where a single course of bricks was mortared on top of the dry laid fieldstone foundation. Traces of mortar on the surface of the bricks indicated the possible presence of a more complex feature but too little remained to reveal its prior identity or functional significance.

The remains of a number of floor joist supports were uncovered from the interior of the workshop foundation. Four were located at approximately 2.45 m intervals along the northsouth center line of the structure while six more were found against the east and west foundation walls (Fig. 11). These complete stone or brick floor joist supports varied in height from 30 cm in the north to less than 5 cm in the south. This variation would have provided a level floor above a pre-existing sloping ground surface. These

floor joist supports further suggested the existence of a corresponding air space between ground surface and the planked floor. Traces of a joist and wall sill were uncovered from the southwestern corner of the structure. The sill segment lay on the foundation wall at an elevation of 6.64 m ASL while the joist lay almost directly upon the natural soil horizon at 6.62 m ASL. However, the sill must have rested above 6.68 m ASL, the highest point on the foundation wall.

Archaeological excavation and analysis failed to reveal the existence of interior partitions or the emplacement and design of any building apertures. However, the workshop must have had openings towards the interior of Lot D while apertures adjoining Lots C and E should not altogether be discounted in a building erected to serve the needs of an invading New England force which may not necessarily have respected pre-existing property boundaries.

The cultural soil layers which accumulated on the emplacement of the New England craftsmen's shop from its early occupation to 1977 formed a variably thick deposition (Fig.41). Thickest near the south wall of the storehouse (80 to 100 cm), it measured less than 40 cm towards the south end of the structure. Even though, for the most part, relatively shallow, this soil accumulation contained a number of significant elements of interpretation.

Little human activity prior to the construction of

the craftsmen's shop was revealed in the stratification inside the building. This activity (event 16D14) was confined to the deposition of variously textured thin isolated fills most probably unrelated to the actual use of the site. None of these soil depositions seem to have been directly related to the excavation of the basement of the de Pensens-de la Vallière storehouse and none of the sterile B horizon's granular orange sandy-loam displaced from the storehouse basement was deposited on the emplacement of the craftsmen's shop. Another soil deposition filled a natural shallow linear depression in the sterile horizon which extended across and on either side of the structure along an eastwest alignment. Soil layers related to the actual construction of the craftsmen's shop (event 16D3) were non-existent. The dry-laid stone foundation and mortared fireplace base both appeared to have been set directly onto the pre-existing soil surface since the construction trench was apparent. The presence of crown window glass rims and bull's eyes throughout the soil layers situated within the foundation walls strongly suggested the existence of an air space below the planked floor surface of the structure. This area could have been filled in with glass wastes and other fill material during the use or following the abandonment of the structure and destruction or removal of the planked floor. No complete window glass crowns could be reassembled from the various

rim fragments uncovered. However, extrapolations from the longest rim fragments available suggested crown diameters as small as 34 inches (8.6 m) but more often closer to 48 inches (1.22 m). The crown glass fragments were of various shades of brilliant bluish green but somewhat discolored by patination.

Isolated lenses of charcoal, ash, and a number of mortared bricks lying sideways were found sandwiched between two layers of post-abandonment fill. These lenses and bricks, however, could not be related to any known event which may have occurred on the site.

Most other artifacts situated within or above the confines of the foundation of the craftsmen's shop could not be related to the use of the structure because of the absence of a well-defined occupation layer. One possible exception was an orderly-packaged cluster of more than thirty nails uncovered atop the outside edge of the southern foundation wall. These forged nails measured 5.30 cm in length and had obviously been held together by rope or another type of binding but now were fused together by rust. These nails may well have related to the carpentry work undertaken by the New England craftsmen.

The Loppinot-Dangeac House, Lot C, Block 16 (1731-1768)

The Lot C property of Block 16 formed a functional unit as a result of its transformation from natural state to urban landscape. The house built upon it provided shelter and served other domestic and possibly commercial functions, a passageway gave access to the yard while the yard provided an access to the house, two wells, a latrine and space for work, storage and social activities. All cultural layers of Lot C were investigated during the excavation discussed in this report. The remains of the house, the major element of the functional unit will be first examined, followed by the other constituent elements of the property.

The wood and masonry remains of a roughly rectangular structure uncovered along the south side of rue Royale immediately east of and in alignment with the de Pensens-de la Vallière storehouse were identified as being those of the Loppinot-Dangeac house (Figs. 10 and 21). This structure was found to have only three major foundation walls of its own -- its western wall being the east masonry wall of the de Pensens-de la Vallière storehouse. Archaeological investigation confirmed the absence of a west foundation wall along the de Pensens-de la Vallière storehouse which had been hinted at in the 1736 bill of sale of the Lot D property. This bill of sale made reference to the Loppinot-Dangeac "maison de charpente appuyé" or leaning

against the Lot D storehouse (A.N., Outre Mer, G3, Carton 2039, No. 63, 12 sept. 1736). The use of the east wall of the storehouse was an additional proof that the house had been built following the construction of its next door neighbour.

The exterior dimensions of the structure were found to be the following:

north wall (along <u>rue</u> Royale)	13.04 m; 40.11 <u>pieds</u>
south wall	13.13 m; 40.38 <u>pieds</u>
east wall	7.12 m; 21.90 <u>pieds</u>
western edge (de Pensens-de la	

Vallièrè wall segment) 7.31 m; 22.49 pieds

The only historical sources which provide similar dimensions for the structure are two plans drawn by the British in 1746. All other dimensions scaled from other historical plans gave significantly larger sizes for the structure (Morgan 1975: 67). The three mortared fieldstone foundation walls, which had supported the charpente frame, were of varying heights and widths as a result of topography, design and post-abandonment deterioration. The rear or south wall was the least deteriorated and most informative. It was generally 30 cm to 40 cm in height and 60 cm thick. Its bottom course rested directly upon the compact sterile B horizon while its extant top course appeared, because of its relatively level surface, to have been its original surface at approximately 5.86 m ASL. This foundation wall offered a number of significant clues to the design of the structure.

The most important of these were the thin trace of a sill-plate which rested upon a three meter segment of the foundation wall and definite remains of four ground floor joists which nearly abutted the sill (Fig. 22). However, no evidence of joining of sill to joists was found. Calculations based on these fine ligneous structural elements suggested a rear ground floor elevation of 6.15 m ASL. This was calculated using historically documented plank and joist thicknesses of 2 pouces (5.4 cm) and 9 pouces (24.4 cm) respectively (Dunn 1972: 1 to 9). Two pockets, presumably for the anchoring of upright wooden members, were also found extending down to the base of the south foundation wall. The largest, measuring 35 cm square, was located immediately against the de Pensens-de la Vallière storehouse and probably served to hold in place a major corner post into which would have been mortised and tenoned into an end joist running along the storehouse wall. The second pocket or post hole measured 27 cm by 30 cm. It was situated immediately northeast of several large flat stones which rested up against the foundation wall on the backyard cobblestone pavé. The flat stone cluster was identified as a step leading up to a rear entrance, and the pocket as the hole into which the door post was anchored. The surface of the step rested 14 cm higher than both the underlying pavé and the top of the foundation wall at approximately half the calculated sill-plate height. Thus using the previously calculated floor level,

the height from step to floor would be approximately 16 cm. Finally, a small number of bricks were found mortared to the surface of a short western segment of the foundation of the south wall. The bricks, together with a corresponding narrow gap in the backyard pavé, suggest the possibility of some sort of repair work to the masonry foundation wall and/or the replacement of a deteriorated sill-plate segment with a brick and mortar support at some time during the occupation of the structure.

The east foundation wall offered little evidence of the structural design or appearance of the structure. It measured approximately 52 cm in thickness, while its deteriorated surface rested entirely below the elevation of the sill-plate remains of the south foundation wall. The east foundation wall served two auxiliary functions: that of interior to exterior drain connection and that of rear edge of a masonry fireplace foundation, both of which will be discussed later in this report.

The street façade of the Loppinot-Dangeac house was found to have suffered the worst damage or deterioration of all three foundation walls. Outward slippage was apparent along the entire length of its north masonry foundation. In fact, only the bottom course which was buried into the sterile "B" horizon had retained its original thickness and remained in its original alignment

with the de Pensens-de la Vallière storehouse. The thickness of its intact bottom course measured 66 cm while its extant surface rested at 5.15 m ASL or 71 cm lower than its probable original height -- that of the sill-plate remains of the south foundation wall.

A 1.50 m wide gap in the north foundation wall 35 cm from the northwest corner was identified as the probable street level front door entrance to the house. It was framed to the west with roughly shaped fieldstones and cut sandstone and to the east with roughly shaped fieldstones. Evidence of the design of the door was scant. Only the faint traces of a vertical post stump were uncovered within the western edge of the gap. Too little remained, however, to reveal its functional significance. The gap in the foundation wall served not only as doorway but also allowed sub-surface drainage from within the half basement of the house to flow into a connecting drain under rue Royale (Fig. 24; Chitwood 1978). Access from street to ground floor level, a minimum difference of 1.22 m must have been assured through some sort of interior wooden staircase, but no evidence of such a feature or any other street front access was found. It is possible that the rue Royale doorway gave access only to the basement level and that the rear doorway served as the only access to the ground floor of the house. The absence of absolutely conclusive archaeological or historical evidence makes it impossible to arrive at

more than a tentative answer.

Structural elements uncovered from within the foundation walls included a number of floor joist remains, two fireplace bases and a partial basement with cobblestone pavé, sub-surface drain and interior retaining wall (Figs. 21 to 24).

Only slightly more than the northern half of the interior of the structure was excavated by its builders to form the basement. No such excavation had taken place in the southern portion of the structure where the sterile "B" horizon appeared to have been left undisturbed. However, an air space most probably existed between the actual ground surface elevation and the ground floor joists which rested at approximately 1.10 m intervals from each other. This space would have served to prevent direct contact between the wet or humid soil and the ground floor joist thus retarding the rotting of the wood. A narrow mortared masonry wall restrained the sterile "B" horizon material from sliding into the adjacent street front basement. This eastwest, partially destroyed and bulging retaining wall which measured less than 30 cm in thickness most probably served the auxiliary function of intermediate support for the northsouth ground floor joists.

The basement of the Loppinot-Dangeac house measured 3.41 m by 12.58 m. Its floor surface was generally covered with a more or less level cobblestone pavé. The

cobblestone pavé rested at an average of 4.75 m. ASL or one step down from the actual 4.84 m ASL adjacent street surface and 1.11 m below the base of the rear ground floor joists. The basement may have been either full height or low ceilinged depending on the actual height of the front portion of the ground floor. If the joists whose remains were uncovered at the rear of the structure extended up to the north foundation wall the basement would have measured approximately 1.10 m in height. On the other hand the joists may have extended only up to the retaining wall and the front portion of ground floor could have lain at a higher elevation to allow a full height basement. In any event, no indisputable archaeological evidence existed to support unconditionally either of the two possibilities. A full height basement would have been more practical but a split level ground floor less so.

A rock and brick lined drain dug into the sterile "B" horizon ran eastwest across the basement of the house. It was capped with flat sandstone slabs whose surface rested a few centimeters below that of the bordering pavé cobbles. The resulting 10 cm deep depression was filled in with a layer of loose light orange sand (event 16C6) which provided a level surface for the basement floor while allowing water to percolate through to the drain. The sporadic replacement of some of the stone lining by loosely stacked bricks was a clear indication that repair work had

been performed to the drain at some time during its utilization. The drain evacuated its water into other connecting drains (Chitwood 1978) through both of its extremities, one leading out under the east wall and the other under the front door.

Evidence of two masonry fireplaces was uncovered inside the foundation walls of the Loppinot-Dangeac house. The first fireplace base was located along the inside of the east wall to which it was joined immediately south of the basement. Its horizontal measurements were 1.27 m by 2.20 m while it varied from .60 m to 1 m in height. No trace of the actual fireplace hearth was to be found on the deteriorated extant surface of this fireplace base. The second fireplace base was somewhat more centrally located within the basement portion of the house. It was situated 3.85 m east of the west wall and 1.70 m south of the north wall with its southern edge in alignment with the eastwest retaining wall. Its horizontal measurements were the following:

northern edge	1.46 m
eastern edge	1.89 m
southern edge	1.55 m
western edge	2.00 m

Its extant height varied from 53 cm to 87 cm as a result of post-occupation deterioration. Here again no trace of an actual fireplace hearth was found.

The stratification of the Loppinot-Dangeac house was

essentially composed of two major elements. These were the thin soil layers witness to the occupation of the house (events 16C4, 16C5, and 16C6) and the relatively thick post-abandonment depositions which overlay the entire foundation remains of the structure (event 16C3). The occupation period soil accumulations within the Loppinot-Dangeac house appeared, upon close examination of context and artifactual content, to have been concentrated within the confines of the basement. A thin sporadic layer of highly compacted red sandy-loam (event 16C4) was found throughout the basement area on or close to the surface of the pavé floor. Its compactness suggested that it may well have been some sort of walking or storage surface. While in some areas the removal of the red sandy-loam exposed the pavé this was not the case in the western half of the basement. There, a thin lens of sandy-loam darkened with organic content (event 16C5) was sandwiched between pavé and red sandy-loam.

These three relatively thin layers were the only soil accumulations from which artifacts could actually be related to the occupation period of the house. They constituted the only real but most unsatisfactory artifactual tie between the house and its occupants. As previously mentioned, more than six families may have lived in the house for various lengths of time during its occupation. Some of the householders were involved in trade and commerce and the

basement may well have been used for the storage of goods and staples not intended for the occupants of the house. No inventory of household goods belonging to any of the successive occupants of the house is known to exist. As a result, the impact of the material culture remains as an element of interpretation to particular occupants or events was considerably reduced.

The layer of loose orange sand which was intentionally deposited on the surface of the drain may have originally contained no artifacts whatsoever. However, when excavated, a number of small artifacts were uncovered (see Tables 8 to 12). These may well have been discarded onto the basement floor and gradually trampled through the permeable surface of the sand. In these circumstances the analysis of the artifacts revealed little of the use of the basement or the identity of the occupants of the house.

The artifacts recovered from the partially sealed black sandy-loam (event 16C5) were most numerous and diversified of all three occupation period layers. The presence of certain types of English fine earthenwares provided the most significant indication of the date of deposition of the layer. Creamware sherds of three undecorated saucers and one cup as well as a few sherds of Wheildon and Jackfield ware strongly suggested that the layer was either a third quarter 18th century accumulation or one still in formation near the end of the occupation period of the house. On the other hand, the large majority of ceramics

and glass was not exclusively attributable to such a late date of manufacture nor to the 1758-1768 English garrison occupation of the site. Coarse and tin-glazed earthenwares accounted for nearly two-thirds of the minimum number of ceramic vessels uncovered in the layer. Bowls, plates and cooking pots dominated the coarseware assemblage which included the remains of only one storage container, while the tin-glazed earthenware included mostly fragments of a variety of tableware vessels such as plates, platters, saucers and jars. White saltglaze stoneware, both monochrome and scratch-blue, provided evidence for a minimum of 24 vessels most of which, again, were for table use. Finally, there were a few sherds of Staffordshire slipware, of various French and English brown and grey stonewares, of the fore mentioned fine earthenwares and of hard paste porcelain.

Less than 25 glass objects were uncovered from the black sandy-clay (Table 10). Twelve of these were heavy dark-green bottles and five others lighter blue-green containers. Of the five possibly English dark green bottles one was found to have an iron wire fastened below its string rim presumably for the purpose of holding a cork stopper in place. Ivor Noel Hume suggests from archaeological evidence that "iron wire is occasionally found on bottles of the period of about 1740-1760" but that it is a more frequent occurrence during the nineteenth century (Noel

Hume 1961: 110-111). A base and body fragment from a low, squat 'onion' shape bottle more characteristic of the early 18th century than the third constituted something of a chronological discrepancy. However, as for many glass or ceramic objects, this container may have been in use for a long period of time prior to its breakage. A similar and nearly complete bottle was found in the backyard of the Loppinot-Dangeac house immediately above the narrow pathway leading to the possible masonry walled latrine (Fig. 32). It also was found to be chronologically at odds with its later archaeological context. Both lead and non-lead colourless table glass was found in the layer. The sherds included the fragmentary remains of three non-lead pattern moulded tumblers and those of two leaded stem glasses. The tumblers were of probable Bohemian manufacture and available throughout the French occupation period of Louisbourg (McNally 1974: 60-61), while the English stemware was too fragmentary for precise chronological attribution. A large number of blue-green and thin yellowish-green window glass fragments were uncovered. The later were very dissimilar in colour, thickness and texture to the crown window glass remains uncovered from the New England craftsmen's shop situated in the adjacent Lot D property. Finally, a 12 cm length of window glass leading was also uncovered from the black sandy clay.

A variety of other types of artifacts were uncovered

from the black sandy-loam occupation layer. The few artifacts related to cloth or clothing included a single brass thimble and three silver plated straight pins. The remains of two buttons were in a poor state of preservation while a small fragment of a brass buckle bore no decorative design. No military hardware as such was found, but rather a number of small artifacts related to the musket and its use. These included five gunflints, two of which were French, two others Dutch and one unidentified, as well as an unmarked brass side plate and a single musket ball. Fragments of a minimum of twelve clay tobacco pipes were uncovered (Table 12). The few fragmentary remains of construction hardware (Table 11) offered little insight into the design of the structure for they did not necessarily relate to the construction of the house.

The third and latest occupation period layer (event 16C4) was formed of compact red sandy-clay which rested directly in contact with the thick post-occupation accumulation and above the pavé and black sandy-clay. Ceramics provided the only solid dating indication for this, the uppermost, occupation layer. Two fragments of a creamware tea cup, the production of which did not start until the 1760s (Towner 1957: 3), were identified. A few sherds of Jackfield ware were also present in the layer but no vessel shapes could be distinguished. The remains of a minimum of eleven coarse earthenware and twenty tin-glaze earthenware

vessels were present in the layer. The white salt-glaze stoneware sherds comprised a minimum of seventeen vessels while other stoneware type sherds were present only in very small quantities. A few Staffordshire slipware and hard paste porcelain sherds were also found.

The fragmentary remains of eleven dark green and four blue-green glass containers were uncovered. Five of the dark green bottles were of probable English manufacture. The table glass remains included only two colourless non-lead fragments. Window glass similar to that uncovered in the black sandy-clay accounted for nearly one-third of all glass fragments. Two short segments of window leading were also found in the layer. The other construction hardware remains were too slight to add to the interpretation of the layer or to the design of the structure in which it was found.

All three occupation layers were found to contain a number of third quarter 18th century English artifacts. The assemblage reflected the historically known French and English occupations. However, as a result of the thinness and homogeneous texture of each of these layers they may reflect mixed French and English breakage accumulated over a relatively short period of time during the occupation period or even contamination from post-abandonment accumulations. Layers accumulated above the three occupation layers and elsewhere throughout the foundation of the

Loppinot-Dangeac house (events 16C3, 16C2, 16C1) give no evidence to suggest subsequent functional use of the area. The various sandy-loams with some rock, brick and mortar inclusions suggested that the area was not used following the abandonment of the house for any substantial dumping of household wastes from elsewhere on the site. The absence of substantial wood remains suggested the probable dismantlement and re-use of the wood frame of the house and possibly of its masonry hearth and chimney.

The Backyard and Passageway of the Loppinot-Dangeac House,
Lot C Property

The backyard and passageway of the Loppinot-Dangeac property were found to be relatively complex activity areas. Not all stratigraphic and structural features uncovered there could be definitely identified let alone explained in terms of function or precise sequence of events within a tight chronological framework. The identified soil layers and structural features uncovered in the property could be grouped for analysis into a number of categories: fence lines, early land fills, walking surfaces, latrines, wells, drainage facilities and post-occupation accumulations.

Fence Lines

The remains of two fence lines which defined the Lot C property boundaries were uncovered at the eastern and

southern edges of the excavation. The eastern fence remains (event 16C39) lay in line with the western edge of the Fize! house and extended up to the intersecting southern fence (event 16C31) at approximately 16 m south of the Loppinot-Dangeac house. The $44\frac{1}{2}$ pieds (14.46m) eastwest property dimension given in the 1733 bill of sale was found to correspond closely with the 14.68 m extrapolated from the archaeological data. These remains consisted of a few deteriorated round piquets stumps each measuring less than 10 cm in diameter (Fig. 26) set in a narrow rock lined trench dug into the sterile "B" horizon. There was no indication that the digging of the trench had truncated any substantial culturally deposited layers (Fig. 46, layers 12 and 32). The fence line uncovered during the excavation was found to be in the same alignment as that shown in a 1731 plan of Louisbourg (731-3). It was not found in the same alignment in any of the previous Block 16 illustrations. It is thus believed that the fence whose remains were uncovered was erected around 1731 following the construction of the Loppinot-Dangeac house. The fence was destroyed (event 16C38) before the abandonment of the site most probably during or soon after the second siege of the Fortress of Louisbourg which occurred in 1758. The stratigraphical sequence (Fig. 46) indicates that the fence line trench was overlain by a layer of sandy-loam which itself was truncated by a wooden drain (event 16C36). This wooden drain rested

close to the ground surface and was most probably built by the English during the second British occupation.

The fence situated to the south of the property left only scant remains of its existence in the form of a linear depression in the sterile "B" horizon. It was situated immediately south of a masonry-walled latrine (event 16C30) and adjoining pavé strip (event 16C27) in an alignment corresponding closely to that found in a number of historical plans, the earliest of which dates back to 1723 (Plan 1723-2). The 70 pieds (22.75 m) northsouth property dimension given in the 1733 bill of sale was found to correspond closely to the 22.90 m extrapolated from the archaeological data. It too was found to have been destroyed or removed prior to the construction of the wooden drain which overlay the depression for a two meter segment of its length. No evidence of fence line was uncovered along the western edge of the property where stood the de Pensens-de la Vallière storehouse and New England craftsmen's shop.

An L shaped linear depression uncovered within the property may indicate the emplacement of two other fence lines. The longest segment nearly bisects the Lot C property and extends from the south fence line depression up to a point 2.80 m from the south wall of the Loppinot-Dangeac house. It there makes a 90 degree angle towards the east up to the edge of the rectangular well feature. Only two faint piquets stumps were uncovered along the northsouth segment of this

linear depression. It may well have been the edge of a garden which is shown in that vicinity in a 1734 plan (Plan 1734-4). A narrow portion of the backyard pavé immediately adjacent to the house was found to overly the eastwest segment of the linear depression. If this linear depression corresponds to the garden fence line illustrated in the 1734 plan, then that portion of the pavé must have been laid at least three years after the construction of the Loppinot-Dangeac house.

Walking Surfaces

A number of walking surfaces were uncovered in the Loppinot-Dangeac house backyard and passageway. The first of these must certainly have been the original natural ground surface which sloped gently down towards the north. It may soon have been altered following the land development of neighbouring areas such as the emplacement of the guardhouse which was erected in 1717 and original Villejouim house which was erected in 1719 or 1720. The shallow soils accumulated on Lot C prior to the construction of the Loppinot-Dangeac house were probably waste material from these neighbouring property developments. None appeared purposely directed to the development of the site. The garden illustrated in the 1734 plan whose fence line may have been found may have existed prior to the construction of the Loppinot-Dangeac house but no other supporting archaeological or historical evidence was found.

The easiest walking surfaces to identify were a number of patches of pavé (Event 16C21) uncovered both in the backyard and the passageway (Fig. 10). The largest pavé surface was uncovered immediately south of the house. Its original dimensions were difficult to establish for its present surface was patchy with numerous areas where stones appeared to have been lifted or robbed from their original emplacement. In some cases the removal of pavé stones was apparent (event 16C16) but elsewhere it was unclear whether or not the pavé surface had ever existed. In any event, the remains uncovered extended for nearly the entire length of the house and up to 4.50 m from its southern foundation wall. It is possible that the pavé may have extended up to the central eastwest strip which presently looks more like a narrow pathway. The elevation of this pavé remains varies considerably from one area to the other but the surface generally slopes down from ca. 6 m ASL along the western edge of the property to ca. 5.60 m ASL at its eastern extremity. Drainage was assured through at least one surface drain or gutter made up of two rows of larger pavé stones which facilitated the flow of water towards the eastern edge of the property.

Historical evidence related to a possible garden fence which was discussed in a preceding paragraph indicated that some pavé may have been laid down a few years following the construction of the house (event 16C20). Alternatively,

it is possible, but not archaeologically evident, that the various areas of pavé may not have been laid at the same time. The vague historical reference to dependencies and other backyard structures discussed previously in this report further suggested that a number of alterations to the functional use and physical appearance of the yard may have altered the areas reserved for walking.

Another section of pavé (Event 16C27) was uncovered near the southwestern corner of the backyard (Bottom of Fig. 27). It apparently led, with a gently downward slope, towards what is believed to be a masonry-walled latrine. This small pavé surface differed somewhat from its larger counterparts to the north. Its extant remains measured only 75 cm in width by 2 m in length -- most probably its original size. This suggested that it had served a pathway surface function of some sort. The small pavé also possessed a major structural dissimilarity from the other backyard pavés: it rested in a shallow depression dug into the sterile "B" horizon while all others had been set on a variably thick pad of sandy-loam. As a result, the surface of the small pavé rested at approximately the same level as the surrounding natural "B" horizon. The date of construction of this feature was difficult to establish. Our only indication was that the layer of soil immediately above the pavé contained no fine earthenware sherds or other datable late material. This could be an indication that the feature

had ceased to be used as a pathway at some time during the occupation of the site and most probably prior to the English takeover in 1758. The adjacent functionally related latrine may, on the other hand, have been utilized until the abandonment of the site. This feature will be discussed later in the chapter. Very fragmentary remains of one other pavé walking surface were found situated in the passageway leading to the backyard (Fig. 25). Most of it had been moved at some time during the occupation period of the site most probably to allow sub-surface drainage construction or repair work. Only a short and narrow pavé strip remained on each side of the passageway. Both patches rested on a thick layer of sandy-loam fill at an average elevation of 5.29 m ASL. It appears that the pavé walking surface was not put back in place following the drainage repair work but replaced by a sandy-loam fill upon which a layer of ash material was eventually deposited following the English takeover of the site in 1758. Directly related to the passageway entrance were found the remains of a gate slightly recessed from the edge of rue Royale. The remains consisted of two sub-surface horizontal wooden braces against which stood the stump remains of two former vertical posts (Fig. 25). Both horizontal braces were found to rest in the sandy-loam fill at an elevation of 4.90 m ASL. Probable remains of the gate were uncovered out onto the street immediately above the ash thus suggesting that at least some portions of the

gate were still standing until the last decade of the occupation of the site (Chitwood 1978).

Latrines

Two latrines were uncovered during the excavation discussed in this report. However, only one was situated within the Lot C property boundaries. The other rested immediately against the eastern fence line in the Lot B-1 property (Top of Fig. 26) and was thus only partially excavated. The rectangular Lot B-1 latrine which was dug approximately 50 cm into the sterile "B" horizon measured 1.25 m in length by at least 1.05 m in width. Its walls were lined with horizontal planks the poorly conserved remains of which were uncovered during the archaeological excavation. The interior of the latrine was filled with a dark organic substance which was overlaid with a lighter coloured sandy-loam.

The other latrine (Event 16C30) was uncovered at the southwest corner of the Lot C property. It measured 1.40 m in length by 1.10 m in width while its base rested at 5.04 m ASL or nearly one meter below the surrounding soil surface. The rectangular pit was entirely lined with heavily mortared fieldstone walls while the bottom was covered with a tightly set but not mortared pavé. Masonry walled latrines with a pavé floor are described in the Coutumes de Paris which is known in some cases to have been applied in Louisbourg.

However, the circumstances referred to in the Coutumes de Paris are not exactly the same as those of the uncovered masonry latrine. It is not known whether the latrine was built before or after the construction of the adjacent New England craftsmen's shop. If the latrine predates the craftsmen's shop, it is not directly related to the Coutumes de Paris specifications. However, if built by the French following the construction of the craftsmen's shop, it may reflect, more or less, the Coutumes de Paris specifications concerning the construction of such facilities against standing structures of other properties. Alternately, the location of the latrine upslope from the well may have been the reason why it was deemed necessary to seal its contents with masonry walls and pavé.

Only a few centimeters of material uncovered immediately above the bottom pavé appeared to have accumulated during the utilization of the feature. The material was composed of a highly compacted organic substance believed to be human waste. The remainder of the fill uncovered from the interior of the latrine was a dark sandy-loam containing very few artifacts, all of which could have predated the abandonment of the site in the late 1760s or early 1770s.

A roughly rectangular depression was uncovered a few meters north of the masonry lined latrine. Its existence was revealed only upon reaching the level of the surrounding sterile "B" horizon. This suggests that it was originally

excavated relatively early during the occupation period of the backyard area (Event 16C23). The depression measured approximately 2.75 m in length by 2.50 m in width and 0.85 m in depth. The soil recovered from this man-made depression contained very few artifacts and was similar to the surrounding sterile "B" horizon save for its looser texture. The reason why the rectangular depression was originally excavated remains unclear and whether or not it ever served any purpose is unknown.

Wells

Two wells were uncovered in (or partly in) the Loppinot-Dangeac house backyard. One was situated on the property boundary between lots C and B(2) while the other was found in the northwestern corner of the yard (Fig. 10). The context, alterations and physical relationships of the boundary line well make it a complex feature in many ways difficult to explain. The other well, on the other hand, is a relatively straightforward structure lacking only in sufficient artifactual data for accurate dating.

The northwestern well is situated approximately 3.15 m from the south wall of the Loppinot-Dangeac house and 1.60 m from the east wall of the de Pensens-de la Vallière storehouse (Fig. 27). The interior and exterior diameters measure ca. 0.60 m and ca. 1.25 m respectively. Its base rests at ca. 3.80 m ASL while its extant height corresponds to that of the adjacent nearby pavé at ca. 5.90 m ASL. The well is

brick-lined for about .40 m or seven courses down from the surrounding pavé surface. However, mortar traces on the surface of the uppermost bricks suggests that the mouth of the well rested at a higher elevation than the surrounding walking surface. The remainder of the well underlying the brick courses was found to be lined with uncut fieldstones. Two soil layers were excavated from the interior of the well. The one which revealed the existence of the well and extended a few centimeters into it was very similar to the sandy-loam which covered the surrounding pavé walking surface. It contained a number of small artifacts but these were of no help in defining the date of abandonment of the well and were in no way related to the use of the feature. The remainder of the well shaft was filled with a sand and loose mortar material in which rested a number of flat sandstone slabs of varying sizes (event 16C17). These sandstones could not be related to any structural feature uncovered from the Lot C property and were most probably deliberately discarded into the well. Only a few small fragments of faience and corroded iron were found in this fill. These, however, were insufficient to define further the dates of construction or abandonment of the feature.

The partially brick-lined well was in close proximity to the de Pensens-de la Vallière storehouse and only extends approximately 1 m deeper than the storehouse basement floor level. Water levels in the well following its archaeological

excavation are known to have reached 80 cm in depth thus suggesting, if the water table was the same as today, that the well may have been functional despite its relatively shallow depth.

The rock-lined well and related features uncovered on the property boundary of Lots C and B(2) pose a number of questions of interpretation which are difficult to answer. Dates of construction, of subsequent additions and alterations and of abandonment are all historically undocumented while the ownership and function of certain of the structural elements remain archaeologically unclear. The following features were uncovered in the well area and all play a role in the understanding of the events which occurred in this, the most complex area of the site (Fig. 12):

- a) Well (original design), event 16C57.
- b) Rectangular masonry feature both surrounding and partially overlying the altered well, event 16C49.
- c) Fence line extending over well and its partially overlying rectangular masonry feature, event 16C53.
- d) Sub-surface masonry drain leading from the rectangular masonry feature through the passageway and into rue Royale, events 16C49 and 16C55.
- e) Loppinot-Dangeac house, 16C12.
- f) Lot B(2) house, 16C58.
- g) Lot B(2) house backyard pavé, 16C54.
- h) Grate and drain leading from Lot B(2) house backyard pavé down to the sub-surface masonry drain

- i) Drain outlet leading from Loppinot-Dangeac house basement to sub-surface masonry drain, event 16C8.
- j) Artifacts found in well and surroundings.
- k) All relevant soil depositions.

All the features listed above are physically related to one another through at least one physical tie though not necessarily a functional one. No simple order of superposition exists for many are the result of either alterations, excavation or truncation of others. To situate the well and related features it is first necessary to examine or attempt to define the immediate urban landscape to which they were progressively added. The Loppinot-Dangeac house is known to have been erected around 1730 (event 16C12). It constitutes our only clearly dated feature. The drain outlet leading from the basement and through the foundation wall of the house (event 16C8) was found structurally to have been an integral part of the original masonry construction, thus demonstrating that a drain of some sort existed as early as ca. 1730, at least that far south in the passageway. However, whether or not the connecting masonry drain that was excavated was the original drain feature remains unclear.

The eastern edge of the passageway is bordered by the foundation remains of the west wall of the Fizel house. This foundation wall is in direct alignment with the western property boundary of Lot B(2). The original house was

erected on this lot by the De Villejoins in 1720 (Morgan 1975: 30), however it is doubtful that the foundation wall uncovered during the 1977 excavations is from that original construction. Pending the archaeological excavation of the site which is scheduled for 1978 it is difficult to give a definite identity to the foundation wall for the historical evidence presents serious problems of interpretation and "the house, the first constructed in Block 16, underwent substantial modifications between its construction around 1719 and its destruction in 1758" (Morgan 1975:52). The historical sources suggest that the original house was a piquet construction, that it remained so until at least 1736 and that it was hit by a bomb during the first siege, in 1746 (Morgan 1975: 52). In 1757, the house (or its replacement) is described as a stone construction thus suggesting a transformation from piquet to stone at some time between 1736 and 1757. The actual dimensions of the original piquet construction and probable subsequent replacement are never textually spelled out and must be extrapolated from a number of more or less accurate maps and plans. The measurements for the frontage on the rue Royale are the most important here, inasmuch as they help define the identity of the uncovered masonry wall and the possible existence and width of an earlier passageway on the Lot B(2) property parallel to that of Lot C. According

to a 1734 plan of Louisbourg (1734-4) which has proven accurate in other instances, the Lot B(2) piquet house ran approximately 42 pieds along rue Royale leaving a narrow passageway between the western edge of the house and the boundary of the property. This corresponds with a statement made by Morgan (Morgan 1975:50) which suggests that access to the Lot B backyards was assured from rue Royale through Lot B(2). However, the 1736 bill of sale between Richard and Ballé for the Lot B(2) property gives the property dimension along rue Royale as 45 pieds or the same size as the house in plan 1734-4 (A.N., Outre Mer, G3, Carton 2039-1, No. 165, 12 octobre 1736). A passageway most probably existed but this significant discrepancy in two nearly contemporary documents cannot be resolved prior to further archaeological excavation of the Fizel house emplacement and property.

The piquet house is known to have been replaced no later than 1740. However, there is no specific historical document which makes reference to such a masonry structure prior to 1757. Two features dependent upon the existence of the Lot B(2) house play a direct role in the understanding of the boundary well area.

The first is the backyard pavé which is situated immediately south of the house while the second is a grate and downspout drain leading from the backyard pavé down to the passageway sub-surface masonry drain.

The first historical reference to a well situated on the boundary between Lots C and B is found in a diagram accompanying the 1736 bill of sale of the northern portion of Lot B from Jean Richard to André Ballé (A.N., Outre Mer, G3, Carton 2039, No. 165, 12 octobre 1736). This document includes an agreement for the shared use and upkeep of not only the well but also a latrine situated in the southern portion of the Lot (B1). No mention is made of any involvement of the owners of Lot C with the well despite its situation on the property boundary. Whether or not the well was in effect shared only between the residents of the two Lot B properties remains unclear, but it would appear that this was so at least until 1741. If so, this may possibly explain the existence of the partially brick-lined well but this tie is too tenuous to be stressed any further. The agreement signed between Richard and Ballé concerning the shared use and upkeep of the well and latrine is known to have been renewed at least once, in 1737, when Ballé sold his property to Fizel and terminated in 1741. The 1750 bill of sale of the Jean Chrysostome Loppinot house and property to Gabriel Dangeac

constitutes the latest known reference to the boundary line well (A.N., Outre Mer, G3, Carton 2041-1, No. 32, 1 septembre 1750). A section of this document referring to the well as being "mitoyen avec Ledit Fize1" (on the boundary with the said Fize1) is scratched out suggesting that the well is somehow no longer accessible from Lot B(2) occupants. This scratched out phrase may in effect be our only historical reference to the capping of the east or Lot B(2) half of the well which was uncovered during the 1977 archaeological excavations. The partial well cap and associated rectangular masonry feature may thus well be a reflection of a fait-accompl1 or pre-existing transformation.

To sum up, a well is either illustrated or mentioned as being on the property boundary between Lots B and C first in 1736, then in 1737 and again in 1741. In the first two instances the document states that the well is to be shared between the occupants of the two Lot B properties while in the third, the agreement is terminated. The final reference to the well dates to 1750 when it appears, because of a scratched out phrase, that the feature is in terms of accessibility no longer on the property boundary between Lots B and C. Finally, no historical sources state the exact emplacement or describe the physical attributes of the well, its subsequent transformations or its connecting drain system.

It remains now to analyse the stratigraphic, structural and artifactual evidence of the boundary well and those related features in its immediate vicinity. The well itself is at the core of the problem and should therefore be examined first.

The boundary well uncovered in 1977 is only in part the same as the one which was originally dug and built on that emplacement. The one uncovered is a reflection of major transformations which altered the design and possibly even the function of the well itself. The original design was most probably a simple rock lined cylindrical shaft with some sort of above-ground extension of which there remains no trace. The well uncovered, however, was shorter than its original height and was both partially covered and partially surrounded by a small rectangular mortared masonry feature composed of flattish rocks and cobbles. Its design is better illustrated than described but it essentially surrounded the Lot C portion of the well and covered that part on Lot B(2) (Figs. 12,28,29). The rectangular portion of the feature measured approximately 1.50 m northsouth by 1.28 m eastwest and 80 cm in height. Limited vertical access to the well shaft was possible through a 46 cm wide gap between the western edge of the Lot B(2) portion cover and the western edge of the well. Oblique access to the well was, however, somewhat less tight than the horizontal width alone would allow. Wood remains uncovered near the bottom of the well indicated that buckets with base

diameters of up to 29 cm and heights of up to 24 cm were being used. However, whether or not these were in use prior to or following the construction of the well alterations remains unsure. The vault-like portion of the rectangular feature (event 16C50) extended over slightly more than half the well shaft surface and blocked off access to the well from the Lot B(2) side. The surface of the partial well cover was itself overlain by the Fizel house backyard pavé (event 16C54). Provision for the extension of the boundary fence line over the well was assured through a narrow linear slot in the well cover surface in which may have rested some sort of fence sill (Fig. 28). However, none of the wooden members of the fence line were found. Whether or not the fence line extended up to the southwest corner of the Fizel house is not yet known. The laying of the pavé was most probably contemporary with the construction of the Fizel house sometime in ca 1740 (event 16C58) whose east masonry foundation was uncovered at the edge of the Lot C property passageway. This backyard landscaping was both functionally and structurally tied to the partial well cover and probably contemporary with its construction. Another tie between the pavé and well feature alterations was found in the form of the grate-covered gutter drain which led from the pavé surface down to the fieldstone-lined drain which extended below ground from the north wall of the rectangular masonry feature, through the passageway and under rue Royale (Chitwood

1978).

The identity and function of the rectangular masonry feature which surrounded the Lot C portion of the well remains somewhat unclear. Access to its interior was possible at ground level through a 70 cm wide entrance-like gap through the south wall of the structure. This opening gave access to the edge of the well shaft and may be evidence that the rectangular structure was a well house. Traces of wood on the surface of the masonry feature suggested that it may have been the support for a wood frame superstructure. The drain leading from the north wall of the feature may in effect have been a water run-off device which could have served to evacuate well water overflow. The base of the drain opening rests at an elevation which is slightly lower than the 4.60 m of the uncovered well mouth. This drain may have become necessary as a result of the alterations of the well which saw its mouth lowered nearly 1 m below the nearby walking surface. The lowering of the well mouth would have been necessitated by the need to use the well without infringing on the Lot B(2) property surface.

All boundary well area features were filled or covered, prior to excavation, with various soil layers. Some were accumulated during the use period of the well, others were witness to or possibly instrumental in its abandonment, while others still were post-domestic occupation

period accumulations.

The earliest soil accumulation uncovered in the boundary well area rested at the bottom of the well itself. All other nearby soils were either deposited or accumulated following the alteration of the well and the construction of the associated drains and well house. Two distinct soil layers were found in the well. The lower and thinner (event 16C48) accumulated during the use period of the well while the second was composed of material discarded following its abandonment as a source of water.

The soil at the bottom of the well was composed of a black sandy-loam high in organic content - some of which was in a fairly good state of preservation partly as a result of water-logged conditions. A large number of domestic artifacts were uncovered from this accumulation. Their in-depth analysis goes beyond the scope of this report, but could well be of use in a number of material culture comparative studies. Tables 13 to 17 give a rapid overview of the artifactual contents of the lower level of the well and provide a glimpse of the overlying accumulation which extends above and beyond the rectangular well house.

Some artifacts were most helpful in determining the nature of the event 16C48 which the lowest well shaft accumulation represents. A small lead seal bearing a 1744 date was found in the layer. However, whether or not it

was discarded into the well at that time is far from certain. It may have escaped subsequent cleaning of the well, sunk below the surface of the material accumulated at the time of its discard or even have been trampled down during the archaeological excavation which was performed at this level in partially submerged conditions. Other artifacts, though less accurately dated were found to be better indicators of the French origin of the accumulation. The wooden bucket fragments which have already been discussed in a previous paragraph strongly suggested that the layer was accumulated through French usage of the well for one of the bases was impressed with two facing fleurs-de-lis, a mark characteristic of French-made goods. These bucket fragments are presently undergoing conservation procedures and should provide complete examples of French bucket types when reassembled. Whether or not the buckets were lost in the well before or after the first English occupation of Louisbourg from 1745 to 1749 is not known. However, since the well underwent major alterations which would have necessitated a major clean-up following the first English occupation of Louisbourg it can be strongly suggested that the bucket remains and the entire layer uncovered at the bottom of the well was accumulated during the second French presence in Louisbourg in the 1750s, following the departure of the New England occupants and before the final British takeover.

A large group of pipe fragments uncovered at the bottom of the well support but do not necessarily confirm the 1750s attribution. The group consists of a large number of unsmoked Dutch pipes, apparently discarded into the well as a result of the partial destruction of an ill-fated shipment. These pipes, which are discussed further in Appendix A, were dated in their North American context between ca. 1749 and ca. 1759. The remains uncovered appeared to have been those bowl and stem fragments whose extent of breakage rendered them unusable for smoking.

Household use artifacts were quite numerous in the layer and of various natural origins. Glass tableware was generally of non-English origin while ceramics were of mixed French and English manufacture. However, no fine earthenwares suggestive of post-1758 accumulation were to be found. The heavy glass containers reflected mixed French and English manufacturing origin while the probably French blue-green glass dominated the lighter type of containers. This mixture in manufacturing origin of glass and ceramic artifacts may have been the result of trade patterns, local availability or the reflection of a recent military and civilian turnover rather than the clear cut indication of French or English context. Much still remains to be understood of the effects of the English occupations of Louisbourg on the material culture of its inhabitants before, during and after these dis-

ruptions in the peace time domestic life cycles.

The botanical remains uncovered in the bottom layer of the well were of particular interest, for their partial analysis by the Analytical Section of the Conservation Division of Parks Canada provided archaeological evidence for the consumption of a number of edible fruits and vegetables by the occupants of the Fortress of Louisbourg. The Rosaceae (Rose Family) made up the majority of the samples analysed and are listed first in the following enumeration of those identified as edible plants:

- Rose Family:
- a) Prunus L. (Cherry)-An edible fruit.
Not a native species.
 - b) Prunus cerasus L. (Sour Cherry)-
An edible fruit. Eurasian in origin.
 - c) Prunus sp. (Cherry)-An edible fruit.
Not a native species.
 - d) Prunus domestica L. (Common Plum,
European Plum)-An edible fruit.
Not a native species.
 - e) Prunus serotina Ehrh. (Wild Black
Cherry)-An edible fruit. Native of
Nova Scotia, but apparently not to
Cape Breton.
 - f) Prunus sp. (Most likely P. virginiana
or choke cherry)-An edible fruit.
Native species.
 - g) Prunus sp. (Plum)-An edible fruit.
Not a native species.
 - h) Prunus persica L. (Peach)-An edible
fruit. Not a native species.
 - i) Amelanchier sp. (Juneberry, Service-
berry)-An edible fruit. A native species.

- j) Fragaria virginiana Duchesne (Strawberry)-An edible fruit. A native species.
- k) Rubus sp. (Raspberry)-An edible fruit. A native species.
- l) Probably Malus sp. (Apple)-An edible fruit. Not a native species.

Dogwood Family: Cornus canadensis L. (Bunchberry)-An edible but insipid fruit. A native species.

Hazelnut Family: Corylus sp. (Hazelnut)-An edible nut. Not a native species.

Pea Family: Sample not sufficiently intact to be able to determine the genus or species.

Walnut Family: Carya ovata (Shellbark or Shagbark Hickory)-An edible kernel. Species not native to Nova Scotia or New Brunswick.

Palm Family: Coco nucifera L. (Coconut)-The endosperm is edible; the fibrous husk is also used for making rope and coconut matting. It is ubiquitous in the tropics and subtropics.

Grape Family: Vitis vinifera L. (Grape)-An edible fruit. Not a native species.

The complete botanical report is on file in the Archaeological Research Unit of the Fortress of Louisbourg National Historic Park. It includes the exact lot provenience, a discussion of each sample identified and a relevant

bibliography. These edible fruits and vegetables may have been consumed without preparation, but some most probably were imported into Louisbourg in the form of less perishable preserves.

Another important organic artifact was recovered from the lowest material accumulation in the well. It is the discoloured crusher claw shell of an american lobster (*Homarus Americanus*; Fig. 37). This is the first archaeological documented evidence of the presence of lobster in the occupation period of the Fortress of Louisbourg. It does not constitute absolute proof of its consumption by the Fortress inhabitants, but it is a strong indication that this was so. The absence of more lobster remains in the culturally deposited soil layers is most probably the result of a combination of factors: the normally poor conservation properties of the lobster shell in the Louisbourg soil environment and its probable crushing for use as feed or fertilizer.

Finally, a small number of leather footwear pieces were recovered including one heel, an outsole and welts.

The second possible accumulation layer within the well (event 16C47) was composed of a light brown sandy-loam with some rock and brick fragment inclusions. The distinction between the underlying layer (event 16C48) and the second accumulation layer was not definitely established either by the soil type change or the subsequent artifact analysis.

Furthermore, variations in organic content could not be utilized in this case for they reflected variable conservation within two different environments: one constantly waterlogged and the other generally above the local water table.

Differences in ceramic and other artifact types between the two accumulation layers were slight and most objects were compatible with a single deposition event. It was impossible to determine whether or not the single fragment of Whieldon ware and the two small creamware sherds were integral elements of the accumulation, later intrusions as a result of soil settling in the well or recent archaeological excavation procedures. The absence of nearly all metal artifacts was striking in comparison with those uncovered in the underlying layer. Whether as a result of rapid corrosion or their original non-existence, their absence constitutes the most noticeable difference between the two layers. This difference, however, was not sufficient to distinguish clearly two distinct deposition events.

A gap of more than one meter separates the surface of the second well accumulation and the bottom of the soil accumulated within the rectangular well house. It is probably the result of the existence of the partial well cover and the gradual compacting of the soil accumulated within the well. The separation corresponds most probably

with an actual soil type differentiation. This is indicated by the artifact content which differs considerably from that accumulated in the well. Artifacts recovered from the rectangular well house and from an area situated to the immediate southeast of the entrance to the feature include a larger percentage of English than French artifacts (event 16C45). They appear to be objects, or fragments of objects, discarded into what had then become an abandoned feature only good as the recipient of wastes. Whether these discarded objects were the result of a post-siege clean-up or a garrison occupation period deposition is not clear. What is known, however, is that it is a late accumulation probably post-dating 1758 as evidenced by the large number of English manufactured ceramics and glass including an opaque white twist stem drinking glass and a group of English Delft plates dated ca. 1760 (Caiger-Smith: personal communication). All other layers except for the partially overlapping passageway ash and sandy-loam (event 16C43) were found to be late accumulations unrelated to the domestic occupation of the site.

To sum up, the archaeological excavations uncovered a well whose construction pre-dates 1736 and most probably the creation of Lot C in 1734. The original well was found to have been subsequently lowered in height, partially surrounded by a rectangular well house and partially covered on the Lot B(2) side with a heavy masonry feature sufficiently

strong to carry a walking surface pavé. As a result of these alterations, though still on the actual property line as evidenced by a fence line slot integrated into the partial well cover, the well was no longer accessible from its Lot B(2) side but only from its Lot C portion. The relationship of well alterations to the masonry Fizel house and backyard features indicated that the change in well ownership from Lot B to Lot C and probably also the construction of the rectangular masonry structure and the associated drain occurred most probably immediately after the return of the French following the New Englander occupation of the site.

Conclusions

The remains of three major structures were uncovered during the Block 16 excavations discussed in this report. The first two, the de Pensens-de la Vallière storehouse which was erected between 1724 and 1727 and the New England craftsmen's shop which was erected in 1746 were uncovered in Lot D while the remains of the Loppinot-Dangeac house erected in 1730-1731 were found along the rue Royale street front of Lot C. Excavations in Lot D were almost entirely confined to the area covered by the two structures while that of Lot C uncovered the entire property area.

The excavation of the masonry storehouse uncovered a number of structural elements, but little of the storage activity which occurred within the roughly rectangular structure was revealed. Only a thin soil layer immediately above the pavé floor surface was identified as an occupation period accumulation.

The scant masonry foundation remains of the New England craftsmen's shop gave the layout of a rectangular frame structure with only one fireplace base at its northeast corner. The presence of a large quantity of crown glass wastes revealed that glazing was an important

shop activity. However, structural or material culture evidence of other building crafts was slight.

The excavation of the Loppinot-Dangeac house uncovered the remains of a charpente frame set on three mortared masonry foundation walls and confirmed the absence of a west foundation wall along the de Pensens-de la Vallière storehouse. Structural elements uncovered from within the foundation walls included a number of floor joist remains, two fireplace bases and a partial basement with cobblestone pavé, sub-surface drain and interior retaining wall. The occupation period soil accumulations within the Loppinot-Dangeac house were concentrated in the basement. They revealed little of the domestic and possibly commercial activities which took place within the confines of the house.

The backyard and passageway areas of the Lot C property were found to have been extensively landscaped during the existence of the Loppinot-Dangeac house. Walking pavé surfaces, wells, latrines, drains and a possible garden were all integral parts of the Loppinot-Dangeac house domestic unit at some time during its occupation. The boundary line well offered an unusual example of structural design alteration as a result of ownership transfer and an interesting accumulation of organic and non-organic artifacts which contrasted somewhat with those uncovered in and around the overlying rectangular well house. Lobster as well as a number of

edible fruit types were identified, providing a glimpse into the diet of the Louisbourg resident. More studies of this type should be conducted in order to complete this picture and possibly balance it with findings from other Louisbourg contexts.

Most of the archaeologically documented events were found to relate to the construction, repair and abandonment of the structures or features. Material culture remains provided little information related to everyday life or to the use of the uncovered structures or features which was not implicit or historically documented. The location, size and to some extent, design of the storehouse, craftsmen's shop, house and dependencies are better defined as a result of the archaeological excavation, but the identity of their user-occupants remains essentially the same as that drawn from the historical sources.

Appendix A. Analysis of the Clay Tobacco-Pipes from the Use-Accumulation Layer of the Boundary Line Well (event 16C48). For discussion of the context see the preceeding report. This study was carried out by Clarence Richie of the Material Culture Research Group of Parks Canada Archaeological Research Section, Ottawa.

The pipe material recovered may be divided into two Dutch bowl types, a single Dutch stem type and one English bowl type. A listing of the attributes of these types, along quantitative data, is given below and conclusions reached on the date ranges and possible reasons for the deposition of the pipes into the well.

I. Dutch Bowls (Fig. 1)

A) Dutch Bowl Attributes Type I

1. Bowl shape cylindrical in the body and rim with the base flowing symetrically into the stem at the shank-bowl juncture.
2. The plane of the bowl's mass leans 137° forward away from the plan of the stem with the pivot point being where both planes transect.

3. The bowl lip has been rounded off with a button tool.
4. The bowl rim has a thin line of rouletting running around it.
5. The whole bowl has been polished with thin, linear polishing marks running from the lip to the base.
6. The spur is of the peg style, very thin and round and has a carefully applied maker's mark on the bottom.
7. The maker's mark on the spur bottom is a carefully impressed circle within which is a robed figure with a staff held diagonally across the body.
8. There are 15 examples of this bowl type, 7 with a $4/64$ th inch bore diameter and 6 with a $5/64$ th inch bore diameter.
9. On most of the examples there was folding of the clay in the moulding process causing creasing and layering of the clay.
10. The bowls were made in a two piece mould and the mould seams nearly polished away.
11. Identification and date range: see conclusions.

B) Dutch Bowl Attributes Type II

1. Bowl shape cylindrical in the body and rim with the base flowing symetrically into the stem at the shank-bowl juncture.
2. The plan of the bowl's mass leans 137° forward away from the plan of the stem with the pivot point being where both planes transect.

3. The bowl lip has been rounded off with a button tool.
4. The bowl rim has a thin line of rouletting running around it.
5. The whole bowl has been polished with thin, linear polishing marks running from the lip to the base.
6. The spur is of the peg style, very thin and round and has a carefully applied maker's mark on the bottom.
7. The maker's mark on the spur bottom is a carefully impressed circle within which is a crowned rose.
8. A second maker's mark consists of a raised, mould imparted shield, the City of Gouda coat of arms, surmounted by an "S" on the left side of the bowl base. The shield had a row of stars on the left and right half, not visible in some cases because of imperfect moulding during manufacture.
9. There are 7 examples of this bowl type, all of which have a 5/64th inch bore diameter.
10. The bowls were made in a two piece mould and the mould seams nearly polished away.
11. Identification and date range: see conclusions.

II. Dutch Pipe Stems (Fig. 2)

A) Attributes

1. Probable length is at least 12 inches calculated from several fragments with overlapping attributes.

2. Diameter of the nearly round stems ranges from 0.70 to 0.78 cm at the shank-bowl juncture to 0.58 cm at the bit, with the diameter at the rouletting being approximately 0.61 cm.
3. The distance of the rouletting from the shank-bowl juncture varies from 5 to 6 inches or approximately one third of the hypothetical length of the entire stem. The rouletting is all of the same geometric design (Fig. 2).
4. The bite as manufactured is of the cut type made with a twist of the cutting tool against the bore tool.
5. The bore diameter varies from 4/64th of an inch to 5/64th of an inch.

B) Quantitative Data

1. 1010 stem fragments were recovered.
2. Out of the total number of recovered stem fragments, 61 were manufactured bites.
3. 98 of the recovered stem fragments had rouletting on them, some of which included the shank-bowl juncture, but none of which included a manufactured bite.

III. Possible English West Country/Bristol tradition shank fragments (Fig. 3)

1. West Country/Bristol tradition shape at shank-bowl juncture.

2. Bore diameter is 5/64th of an inch.

IV. Discussion and Conclusions

A) Dutch Bowls: overall configuration and date ranges

Both Dutch bowl styles date to post 1700 based on the angle of the bowl mass away from the stem-plane (137°) and the cylindrical bowl shape. The height of the bowl from the base to the lip in Type I and the "S" surmounted Gouda coat of arms in Type II (see Dutch Maker's Marks below) set the date of these bowls definitely after 1739 and most probably they date from ten to twenty years later (1749-1759) which is the time-lapse for some other pipe styles to appear in a North American context after appearing in a European one. The bore diameters vary from 4/64th of an inch to 5/64th of an inch and should have had a mean of 5/64th of an inch for this period; however, it has been considered that the use of bore diameters as a dating tool becomes unreliable for any material after ca. 1760 and this may apply to material from the second quarter of the 18th century as well.

B) Dutch Bowls: Maker's Marks

There has not been found any positive record of the spur maker's marks of either of the bowl types in the primary source on Dutch marks which is confined to the Gouda makers (Helbers and Goedewaagen 1942). Careful examination

of the printed plates of maker's marks in this reference produced nothing like the "crowned rose" or "robed figure" spur marks. Examination of photographs of the portable tableau of the Gouda Pipemaker's Guild (on which are the marks of registered guild members), and of permanent board for the same purpose, also revealed nothing like the spur marks of the two bowl types. These marks may be on the tableau and board, however, because many of the marks on these registers are faded or peeled away and are unclear. Finally, examination of other literature on Dutch pipes yielded no information on the marks in question (Friederich 1970; Douwes 1964; Atkinson 1972).

The bowl mark consisting of the Arms of Gouda surmounted by "S" dates to post 1739 when these marks were required by law to identify the pipes manufactured in that city. The "S" denotes that the pipe is of the lowest quality of pipes manufactured for export at Gouda.

It must be concluded that though the bowl type with the "crowned rose" mark has not been found in the literature, it most certainly is from a Gouda maker because of its association with the Gouda shield. The bowl type with the "robed figure" mark is possibly from Amsterdam, which was the other large Dutch pipe making center. This is suggested by the lack of the Gouda Coat of Arms in association with it, and the fact that all other attributes date it to a period when, if it was of Gouda manufacture

it would have had to have the Gouda marks according to law.

C) Dutch Stems and Rouletting

The stems recovered are most certainly Dutch in both finish, overall configurations, and in the rouletting applied after the pipe was removed from the mould. The stems were at least 12 inches long calculated by comparing fragments with overlapping traits, though they could have been up to 16 inches in length if other examples from the same historic period are taken into consideration (based on evidence from paintings, guild laws and actual artifacts recovered in Europe).

The rouletting is impressed and was applied by hand after the pipe was removed from the mould because the application is uneven from stem to stem and varies in site of application from five to six inches from the shank-bowl juncture. The rouletting is common to all Dutch pipes as far as is now known, and represents no specific city of manufacture. The bore diameters vary from $4/64$ th of an inch to $5/64$ th of an inch.

Finally, there is nothing in the attributes of these stems specific to a particular Dutch maker or center of manufacture and they could well be associated with either of the two Dutch bowl types, the probability being that the stems of both types are represented in the total number of those recovered.

D) General Conclusions

The pipes from the well were probably discarded before being used as part of the breakage from a shipment.

A certain amount of breakage was expected and had to be excepted by the purchaser or retailer; with stems as long as the ones from the Boundary Line Well, the probability of breakage would be high. It is suggested that only those pipes that had their stems broken off close to the rouletting, or between the rouletting and the bowl (roughly one third of the length from the end if the stems were 16 inches long) were discarded, the remainder, whether broken or not, being still serviceable and therefore distributed for use. The high number of stem fragments represent both material from unusable pipes and from pipes broken close enough to the stem end to still be useable. This would account for the large amount of stem material and low amounts of bowl material recovered.

Finally, the possible English West Country/Bristol tradition shank fragment, because of its overall configuration and archaeological context, probably dates between 1750 to 1770 and represents the usual English-made pipes found on sites, both French and English, of this period. This example is similar to other pipes of this style from Louisbourg (see example 1B3D7-53).

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Figure 1: Dutch Bowl Types Discussed in this Appendix.

A. Type I

B. Type II

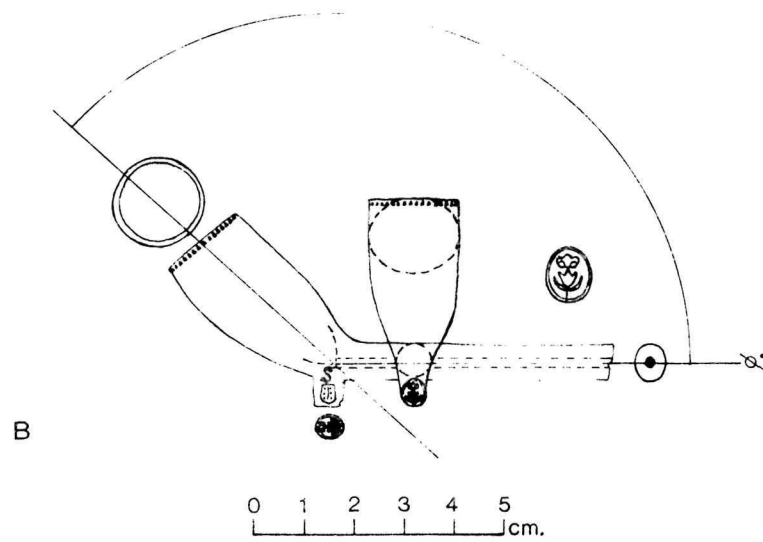
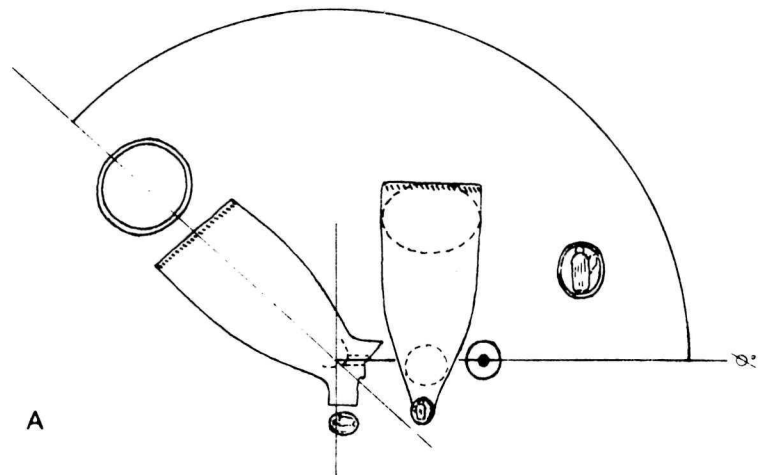


Figure 2: Dutch Pipe Stems Discussed in this Appendix.

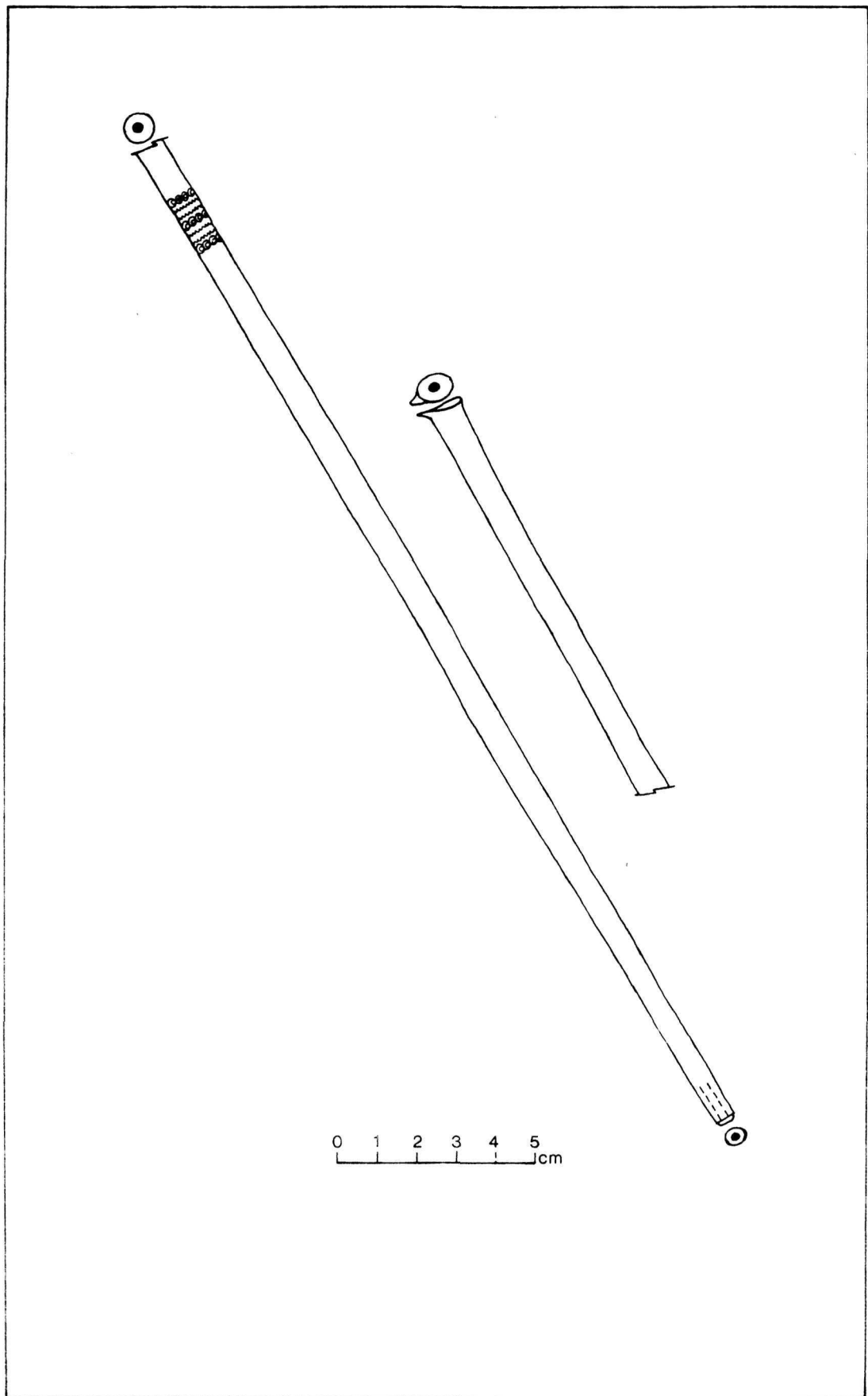
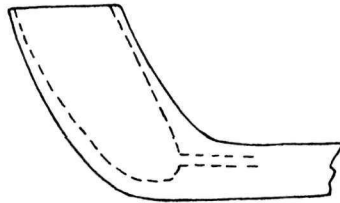


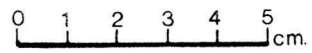
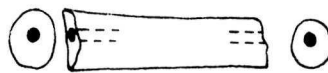
Figure 3: Possible English West Country/Bristol
Tradition pipe fragments.

- A. Bowl type which most probably belongs
to shank fragment discussed in this
appendix.
- B. Shank fragment discussed in this
appendix.

A



B



Appendix B. Criteria for Vessel Counts.

It is important to note that most often ceramic and glass sherds were small, often too small to be able to determine the exact number of objects involved. Therefore, all vessel counts were approximations from fragmentary remains. Criteria used in determining the ceramic vessel count included decorative patterns, glaze or slip colour, colour and texture of body, curvature, and base/rim fragments. Criteria for determining the approximate number of glass vessels included colour, shape, texture, composition (leaded or unleaded) and base/rim fragments.

Appendix C. Matrix Charts

Matrix charts are a device utilized in this report to bridge the gap between the mechanical excavation units and the post-excavation analysis. They situate the excavation units (lots and sub-operations) within meaningful, but simplified, sequence of events. They serve to illustrate the archaeological report discussion and to make more readily accessible for subsequent research the archaeological data and material culture remains. Graphically, the matrix chart provides both the chronological and physical relationships of the events and their constituting excavation units.

The event number is made up of the Louisbourg Block number, the historic Lot letter and the specific event number. For example, event 1 of Lot C of Block 16 is summarized as 16C1. Each event on the matrix chart is represented by a box which is subdivided in as many parts as there are constituting excavation units. Event boxes are set according to their chronological relationship with other events. The earliest event occurring on the site is at the bottom of the chart while the most recent one is at the top. Some events, however, do not fit neatly within a chronological sequence. When the

temporal relationship of an event is not known in relation to another event on the same chart, both are shown at the same level since they can only be seen as both occupying the same period of undefined time. When an event occurs over a period of time which chronologically overlaps a series of other events an elongated box without internal sub-division is used. But when an event occurs at an unknown point in time in relation to a parallel sequence of events an elongated box with a normal-sized internal box containing the event number is used. Finally, the connecting lines indicate physical superimposition of events or their constituting excavation units.

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55-123.

Table 1: Ceramics From the Occupation Layer of the de Pensens-
de la Vallière Storehouse

TYPE	NO. OF SHERDS	%	MIN. NO. OF VESSELS	%
<u>COARSEWARES</u>				
French	815	23.9	74	23.8
Italian	111	3.3	17	5.5
Anglo-American	137	4.0	16	5.2
English	9	.3	5	1.6
Wes. Med.	87	2.6	5	1.6
<u>TIN-GLAZE EARTHENWARE</u>				
Faience brune	8	.2	3	1.0
Other	1553	45.6	76	24.5
<u>SLIPWARES</u>				
Staffordshire	80	2.3	8	2.6
<u>FINE EARTHENWARE</u>				
Agate ware	4	.1	2	.6
Bennington	3	.09	1	.3
Jackfield	45	1.3	3	1.0
Whieldon	32	.9	9	2.9
<u>STONEWARES</u>				
White English Salt-Glaze homogeneous (excluding 'scratch-blue')	287	8.4	33	10.6
'scratch-blue'	34	1.0	10	3.2
Westerwald type	25	.7	3	1.0
Brown:				
English	12	.4	3	1.0
French	75	2.2	9	2.9
Rosso Antico	1	.03	1	.6
<u>HARD PASTE PORCELAIN</u>				
Blue and white	77	2.3	24	7.7
Polychrome	16	.5	8	2.6
TOTAL:	3411	100%	310	100%

Table 4: Glass From the Occupation Layer of the de Pensens-de la Vallière Storehouse

TYPE	NO. OF SHERDS	%	MIN. NO. OF VESSELS	%
<u>BOTTLE GLASS</u>				
Dark green	1074	72.3		
French			10	18.2
non-French			22	40.0
Blue Green	411	27.7	23	42.8
Total Bottle Glass	1485	100%	55	100%
<u>TABLE WARE</u>				
Stemware				
colorless lead			3	7.7
colorless non-lead			7	17.9
Tumblers				
colorless lead			1	2.6
colorless non-lead			20	51.2
Wine Glass cooler			1	2.6
Unidentified			7	17.9
Total Table Ware	183		39	99.9%
Mirror Glass	1		1	
Window Glass	955			

% of table glass vessels to bottle glass vessels : 41.5%

% of table glass sherds to bottle glass sherds: 11.0%

Table 5: White Clay Tobacco Pipes From the Occupation Layer of the
de Pensens-de la Vallière Storehouse

TYPE

STEM FRAGMENTS

Possibly green glazed	1
Rouletted	3
Stamped (REUB, ENSI, DNEY)	2
Plain	148

BOWL FRAGMENTS

Floral design	1
Stamped B.B.	1
Stamped B.A.	1
Plain	3

TOTAL No. of Fragments	170
------------------------	-----

Table 6: Arms, Clothing and Accessories, and Construction Hardware from Occupation Layers of de Pensens - de la Vallière Storehouse

ARMS

Cannons	
Ball	4
Mortar Shell	1
Fire Arms	
budshot	1
musketballs	34
flint	1
musket pick	1
powder container	1
Sword	
hilt	1
Total:	44

CLOTHING & ACCESSORIES

Buttons	
brass	5
wooden	2
Buckles	
brass	5
Creepers; ice	3
Straight pin	1
Total:	16

CONSTRUCTION HARDWARE

Anchor	
masonry	4
spike	2
Bolts	
barral	1
construction	2
Collar; iron	1
Door lock	1
Door hooks	2
Hasp	1
Hinges	10
Hook eye	2
Keys	2
Latch	1
Staple	1
Window pane leadcase	1
Total:	31

Table 7: Personal and Domestic Activity Items, Tools
and Miscellaneous Artifacts from Occupation
Layer of de Pensens-de la Vallière Store-
house

TYPE

PERSONAL ITEMSDOMESTIC ACTIVITIES

Copper coin	1
Silver coin	1
Fork	1
Lead Weight	1
Spoon	1
Scissors	1
Spigot	1
Metal Pots	4
Total:	11

TOOLS

Chisel	1
Pulley hook	1
Pulley wheel	1
Saw blade	1
Shovels	2
Total:	6

MISCELLANEOUS

Brass fragments	9
Cloth	1
Strapping fragments	6
Total:	16

Table 8. Ceramics From the Occupation Layers of the Loppinot-Dangeac House (Events 16C4, 16C5, 16C6). Count records number of sherds

TYPE	RED SANDY- LOAM	BLACK SANDY- LOAM	COARSE ORANGE SAND	TOTAL	%
<u>COARSE EARTHENWARES</u>					
French	47	293	85	423	25.6
Anglo-American	13	24	55	92	5.6
Northern Italian	3	22	1	26	1.6
Western Medit.		6		6	.4
Unidentified	48	4		52	3.1
<u>SLIPWARES</u>					
Stafforshire	10	46	24	80	4.8
<u>TIN-GLAZE</u>					
Faience brune	5	26		31	1.9
Other	101	459	48	608	36.7
<u>FINE EARTHENWARES</u>					
Agate		3		3	.2
Astbury			2	2	.1
Cream	2	11	1	14	.8
Jackfield	5	2		7	.4
Whieldon		3		3	.2
<u>STONEWARES</u>					
White English Salt-Glaze:					
grey core	2	13		15	1.0
homogeneous (excluding scratch-blue)	47	124	13	184	11.1
'scratch-blue'	2	29		31	1.9
Westerwald type	5	8		13	.8
Brown:					
Nottingham		6	1	7	.4
French		8	6	14	.8
English			1	1	.06
German		1		1	.06
Unidentified	1	13		14	.8
Grey:					
Unidentified		1		1	.06
<u>HARD PASTE PORCELAIN</u>					
Blue and White	1	15	3	19	1.1
Polychrome	1	7		8	.5
TOTAL	293	1122	240	1655	100%

Table 9. Ceramics From the Occupation Layers of the Loppinot-Dangeac House (Events 16C4, 16C5, 16C6). Count records minimum number of vessels

TYPE	RED SANDY- LOAM	BLACK SANDY- LOAM	COARSE ORANGE SAND	TOTAL	%
<u>COARSE EARTHENWARES</u>					
French	11	33	7	51	17.2
Anglo-American	7	8	1	16	5.4
Northern Italian	1	5	2	8	2.7
Western Medit.		1		1	.3
Unidentified	1	2		3	1.0
<u>SLIPWARES</u>					
Staffordshire	3	9	2	14	4.7
<u>TIN-GLAZE</u>					
Faience brune	2	7	1	10	3.4
Other	18	50	5	73	24.7
<u>FINE EARTHENWARES</u>					
Agate		1		1	.3
Astbury			1	1	.3
Cream	1	4	1	6	2.0
Jackfield	1	1		2	.7
Whieldon		1		1	.3
<u>STONEWARES</u>					
White English Salt-Glaze:					
grey core	1	1		2	.7
homogeneous (excluding scratch-blue)	48	17	2	67	22.6
'scratch-blue'	1	6		7	2.4
Westerwald type	2	2		4	1.4
Brown:					
Nottingham		4	1	5	1.7
French		1	1	2	.7
English			1	1	.3
German		1		1	.3
Unidentified	1	5		6	2.0
Grey:					
Unidentified		1		1	.4
<u>HARD PASTE PORCELAIN</u>					
Blue and white		7	1	8	2.7
Polychrome	1	4		5	1.7
TOTAL	99	171	26	296	100%

Table 10. Glass From the Occupation Layers of the Loppinot-Dangeac House (Events 16C4, 16C5, 16C6). A. Count records number of sherds. B. Count records numbers of vessels

TYPE	RED SANDY- LOAM	BLACK SANDY- LOAM	COARSE ORANGE SAND	TOTAL	%
<u>BOTTLE GLASS</u>					
Dark Green	106	411	229	746	79.4
Blue-Green	13	94	47	154	16.4
<u>TABLE GLASS</u>					
Tumblers:					
colorless lead					
colorless non-lead	1	19	3	23	2.4
Stemware:					
colorless lead					
colorless non-lead	1	10		11	1.1
Unidentified:					
colorless lead		2		2	0.2
colorless non-lead		2	1	3	0.3
					100%
<u>WINDOW GLASS</u>	66	519	28	613	
<u>TOTAL:</u>	187	1057	308	1552	
B.					
<u>BOTTLE GLASS</u>					
Dark Green:					
putative French	6	5	6	17	31.5
non-French	5	5	1	11	20.4
unidentifiable		2			3.7
Blue-Green	4	5	5	14	26.0
<u>TABLE GLASS</u>					
Tumblers:					
colorless lead					
colorless non-lead	1	3	1	5	9.3
Stemware:					
colorless lead		2		2	3.7
colorless non-lead	1			1	1.9
Unidentified:					
colorless lead					
colorless non-lead		1	1	2	3.7
<u>TOTAL</u>	17	23	14	54	100%

Table 11. Arms, Clothing and Accessories, Construction Hardware and Miscellaneous Artifacts Recovered From the Occupation Layers of the Loppinot-Dangeac House (Events 16C4, 16C5, 16C6)

TYPE	RED SANDY- LOAM	BLACK SANDY- LOAM	COARSE ORANGE SAND	TOTAL
<u>ARMS</u>				
Gunflints:				
Dutch		2		2
French (Fine)		2		2
Unidentified		1		1
Musket Ball		1		1
Pocket Knife			1	1
Side Plate from Musket		1		1
<u>CLOTHING AND ACCESSORIES</u>				
Buttons		2		2
Straight Pins (Silver)		3		3
Thimble (Brass)		1		1
<u>CONSTRUCTION HARDWARE</u>				
Barrel Bolt	1			1
Construction Bolt	1			1
Iron Bar	1			1
Key Plate (Copper)		1		1
Latch Keeper		1		1
Slate		2		2
Spikes		2		2
Staple	1			1
Strapping (right angle)		1		1
Vertical Strap Anchor	1			1
Washer	1			1
Window Leading	2	1		3
<u>MISCELLANEOUS</u>				
Barrel Hoop	1			1
Cooking Pot Fragments	2	1		3
Spigot Cook (Brass)		1		1
Unidentified Brass Fragment			1	1
Jew's Harp (Brass)		1		1

Table 12. White Clay Tobacco Pipes From the Occupation Layers of the Loppinot-Dangeac House (Events 16C4, 16C5, 16C6). Count records number of fragments

TYPE	RED SANDY- LOAM	BLACK SANDY- LOAM	COARSE ORANGE SAND	TOTAL
<u>STEM FRAGMENTS</u>				
Plain	29	102	15	146
Decorated	1			1
<u>BOWL FRAGMENTS</u>				
Plain	2	4	2	8
<u>STEM-BOWL FRAGMENTS</u>				
Plain		6		6
'T D'		3		3
'W M' crowned, 'Lion Guardant'		1		1
milling on bowl		1		1
TOTAL:	32	117	17	166

Table 13: Ceramics from Within the Boundary Line Well and Well House.
Shard Count

TYPE	Event 16C48 (16L92N 17,18,19)	Event 16C47 (16L92N 13,15,16)	Event 16C45 (16L92N 5,10,11,12)	Total
<u>COARSE EARTHENWARES</u>				
Anglo-American	10	30	53	93
French	30	20	39	89
Italian	2	--	2	4
Western Medit.	--	--	2	2
<u>TIN GLAZE EARTHENWARE</u>				
Faience brune	--	6	18	24
Other	140	40	189	369
<u>SLIPWARES</u>				
Staffordshire	14	9	--	23
<u>FINE EARTHENWARES</u>				
Agate	1	1	1	3
Astbury	--	3	27	30
Bennington	--	--	1	1
Creamware	--	2	--	2
Jackfield	3	--	2	5
Whieldon	--	1	4	5
<u>STONEWARE</u>				
English White Salt-Glaze	15	9	51	75
grey	21	17	2	40
scratch blue	--	1	2	3
English Brown	--	1	1	2
Rosso Antico	1	--	--	1
Westerwald	1	--	5	6
<u>HARD PASTE PORCELAIN</u>				
Blue and White	1	4	56	61
Polychrome	1	2	3	6
Total	240	146	458	844

Table 14: Ceramics from Within the Well and Well House.
Object Count. Minimum Number of Vessels Recorded

TYPE	Event 16C48 (16L92N 17,18,19)	Event 16C47 (16L92N 13,15,16)	Event 16C45 (16L92N 5,10,11,12)	Total
<u>COARSE EARTHENWARES</u>				
Anglo-American	2	5	3	10
French	3	2	15	20
Italian	1	--	2	3
Western Medit.	--	--	2	2
<u>TIN GLAZE EARTHENWARE</u>				
Faience brune	--	2	4	6
Other	7	5	27	39
<u>SLIPWARES</u>				
Staffordshire	1	1	--	2
<u>FINE EARTHENWARES</u>				
Agate	1	1	1	3
Astbury	--	1	--	2
Bennington	--	--	1	1
Creamware	--	1	--	1
Jackfield	1	--	1	2
Whieldon	--	1	2	3
<u>STONEWARE</u>				
English White Salt-Glaze	2	1	12	15
grey core	2	1	1	4
scratch blue	--	1	1	2
English Brown	--	1	1	2
Rosso Antico	1	--	--	1
Westerwald	1	--	2	3
<u>HARD PASTE PORCELAIN</u>				
Blue and White	1	2	9	12
Polychrome	1	2	2	5
Total	24	27	87	138

Table 15: Glass from Within the Boundary Line Well and Well House.
Count Records Number of Shards

TYPE	Event 16C48 (16L92N 17,18,19)	Event 16C47 (16L92N 13,15,16)	Event 16C45 (16L92N 5,10,11,12)	Total
<hr/>				
BOTTLE GLASS				
Dark green	101	147	298	546
Blue-Green	150	36	76	262
Dark brown-amber	134	--	--	134
<hr/>				
Total Bottle Glass	385	183	374	942
<hr/>				
TABLE GLASS				
Stemware				
colorless lead	34	--	29	63
colorless non-lead	100	1	8	109
verre fougère	4	--	--	4
Tumblers				
colorless lead	--	36	29	65
colorless non-lead	1	7	5	13
Wine Glass Rinser	--	14	--	14
Decanter (lead content)	--	--	5	5
Stopper (lead content)	--	--	1	1
<hr/>				
Total Table Glass	139	58	77	274
<hr/>				
Window glass	75	26	--	142
Mirror glass	--	1	--	1

Table 16: Arms, Clothing and Accessories, and Construction Hardware from the Boundary Line Well and Well House.

TYPE	Event 16C48 (16L92N 17,18,19)	Event 16C47 (16L92N 13,15,16)	Event 16C45 (16L92N 5,10,11,12)
<hr/>			
ARMS			
Bird shot	3	--	--
Cannon balls	1	--	1
Flint	--	1	--
Mortar shell	2	--	1
Musket ball	56	2	--
<hr/>			
Total	62	3	2
<hr/>			
CLOTHING AND ACCESSORIES			
Buckles			
brass	3	3	--
Buttons	--	--	--
brass	9	--	--
wooden	8	--	--
pewter	1	--	--
Leather-footwear fragments	16	17	--
<hr/>			
Total	37	20	nil
<hr/>			
CONSTRUCTION HARDWARE			
Door hook	1	--	--
Key	1	--	--
Rim lock	1	--	--
<hr/>			
Total	3	nil	nil
<hr/>			

Table 17: Personal and Domestic Activity Items, Tools, and Miscellaneous Artifacts from Within the Boundary Line Well and Well House

TYPE	Event 16C48 (16L92N 17,18,19)	Event 16C47 (16L92N 13,15,16)	Event 16C45 (16L92N 5,10,11,12)
<u>PERSONAL ITEMS</u>			
<u>DOMESTIC ACTIVITIES</u>			
Brass tacks	1	--	--
Brass curtain rings	2	--	--
Comb	--	1	--
Copper liards	3	--	--
Glass Beads	2	--	--
Iron pot fragment	--	--	1
Jews Harp	1	--	--
Knob	1	--	--
Lamp holder	1	--	--
Lead seal (1743 date)	1	--	--
Pewter spoon	1	--	--
Silver coin (1594 date)	1	--	--
Straight pins	8	--	--
Table knife	1	--	--
Tin bucket	1	--	--
Unidentified	9	--	--
Total	33	1	1
<u>TOOLS</u>			
Bucket handle	1	--	--
Femelle	1	--	--
Shovel	1	--	--
Wheel rim	1	--	--
Total	4	nil	nil
<u>MISCELLANEOUS</u>			
Lobster claw	1	--	--

Figure 1: 1718 Plan of Louisbourg:
"Habitations de Louisbourg."
Note the "corps de Garde" in
the middle of Block 16.
(A.F.L., 718-2) Archives Nationales,
France

Figure 2: 1731 Plan of Louisbourg:

"Plan Pour Servir au Projet Représente
en Jaune du Revêtement du Quay du
Port de la Ville de Louisbourg à
L'isle Royale, 1731."

Block 16 is at top center.

(A.D.L., 731-3) Archives Comité Technique
du Genie, France

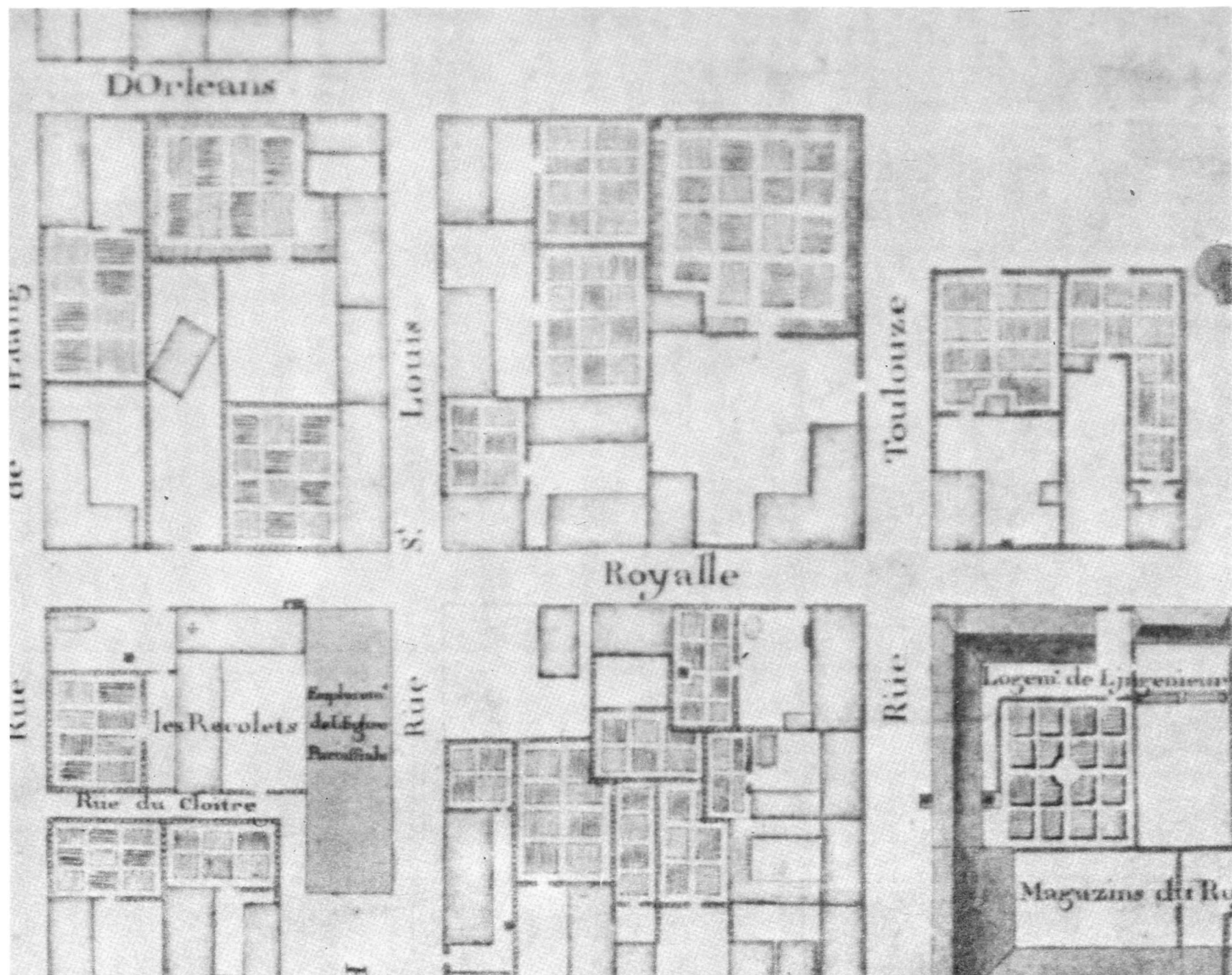


Figure 3: 1734 Plan of Louisbourg.

Note the rue Royale frontage of
Block 16 and the fenced-in garden
situated in the Loppinot-Dangeac
house backyard. (A.F.L., 734-4),
Archives Nationales, France

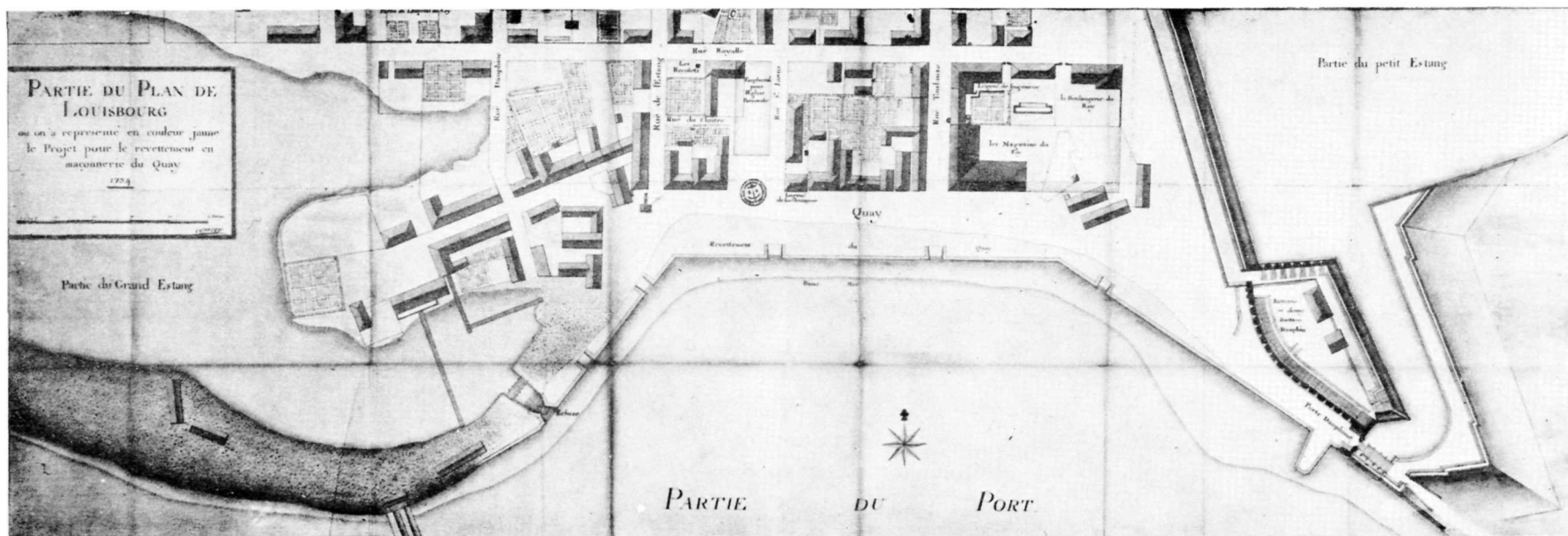


Figure 4: 1734 Plan of Louisbourg:

"Plan de la Ville de Louisbourg
suivant le toisé qui a este faite l an
1734." First official property de-
marcation showing Lot C of Block 16.
(A.F.L., 734-5), Archives Nationales,
France.

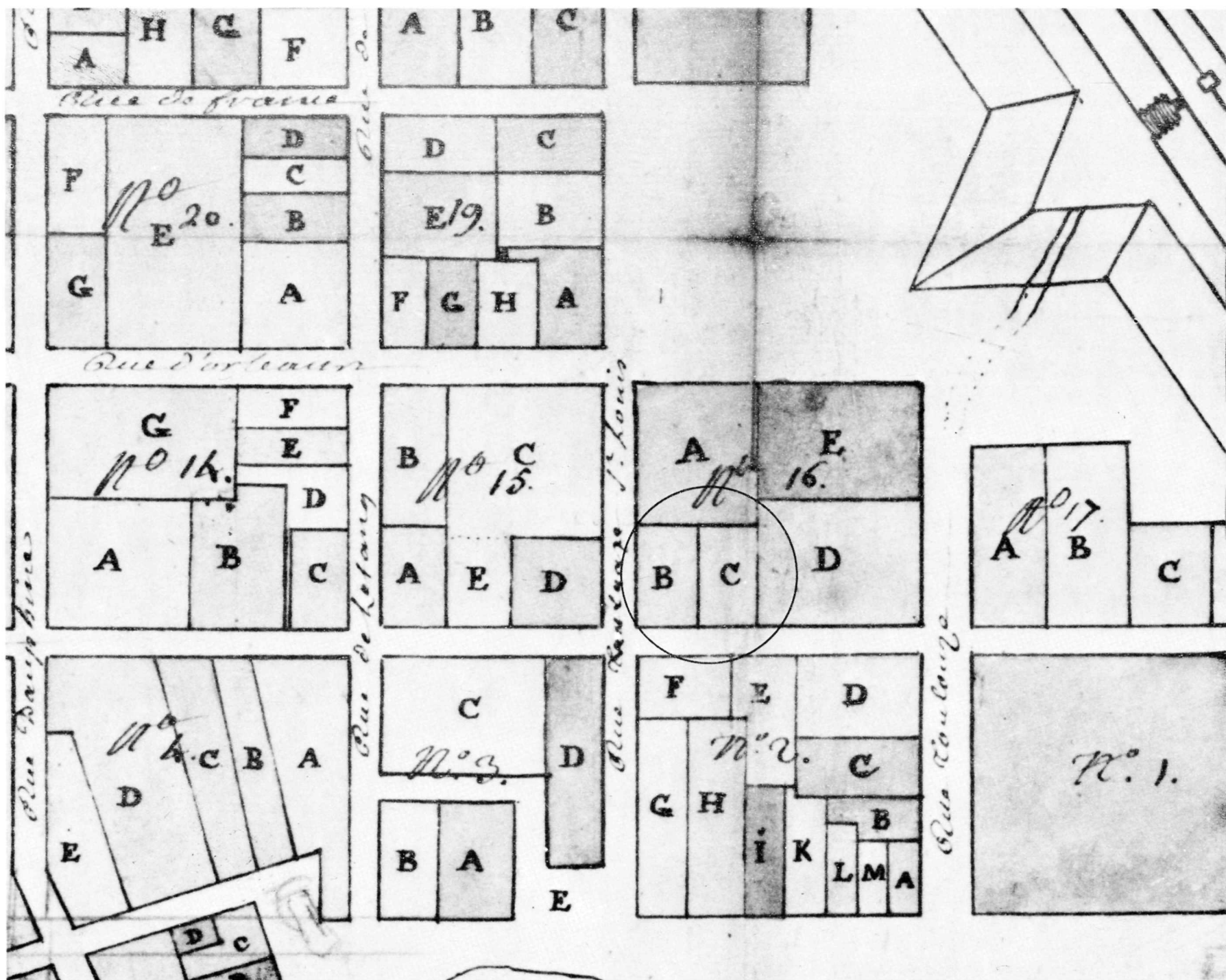


Figure 5: 1747 Plan of Louisbourg. Note first illustration of New England craftsmen's shop.

(A.F.L., 747-1), Archives Nationales, France.

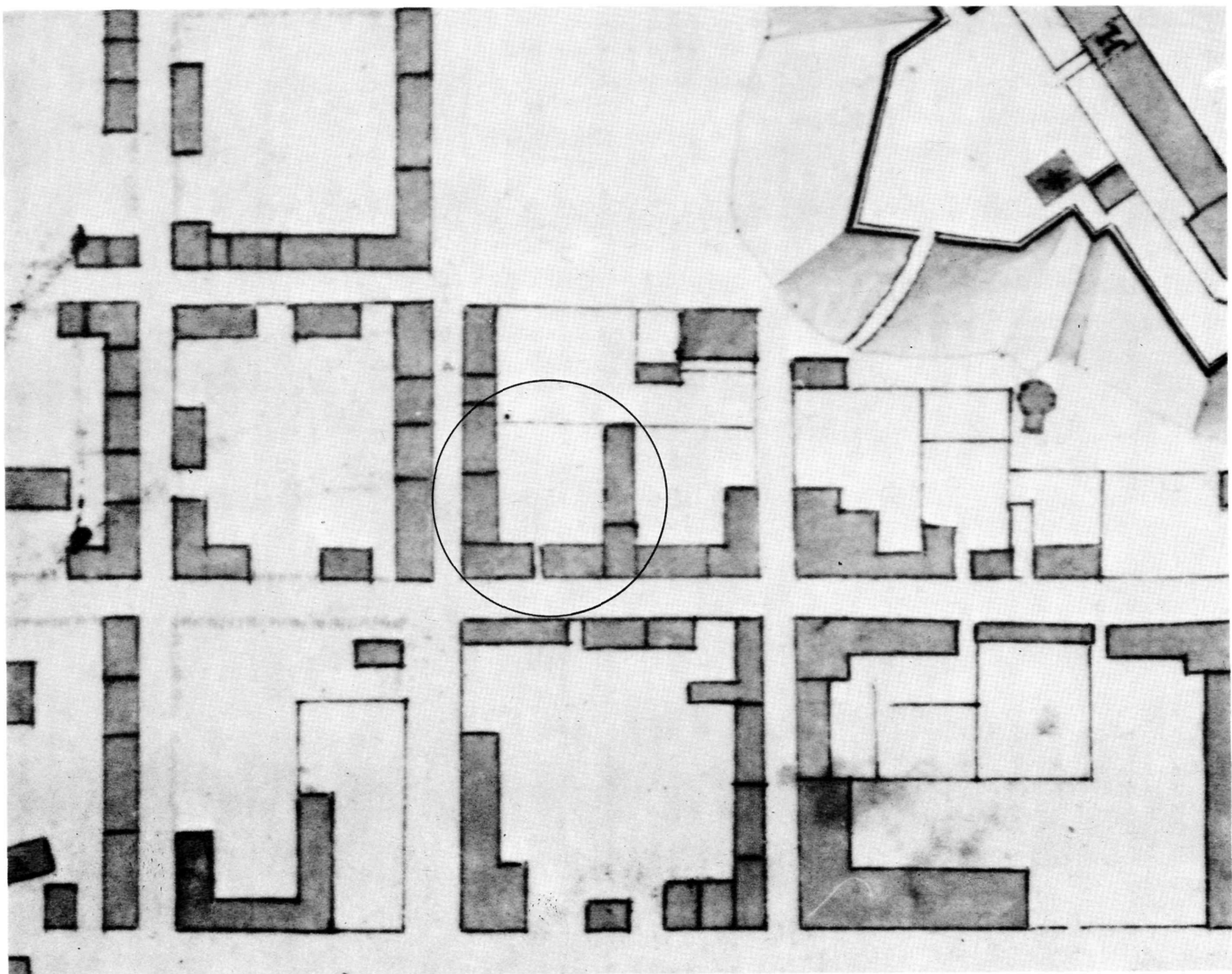


Figure 6: 1767 Plan of Louisbourg:

"A Plan of Louisbourg Survey'd and
 Drawn for His Excellency The Hon^{ble}...
 Major General Tho.^s Gage Commander in
 Chief of Majesty's Forces in America
 & c..."

A.P.C., H-240 (767-1)

This plan shows the Loppinot-Dangeac
 house, de Pensens-de la Vallière store-
 house and New England craftsmen's shop
 as still standing in 1767.

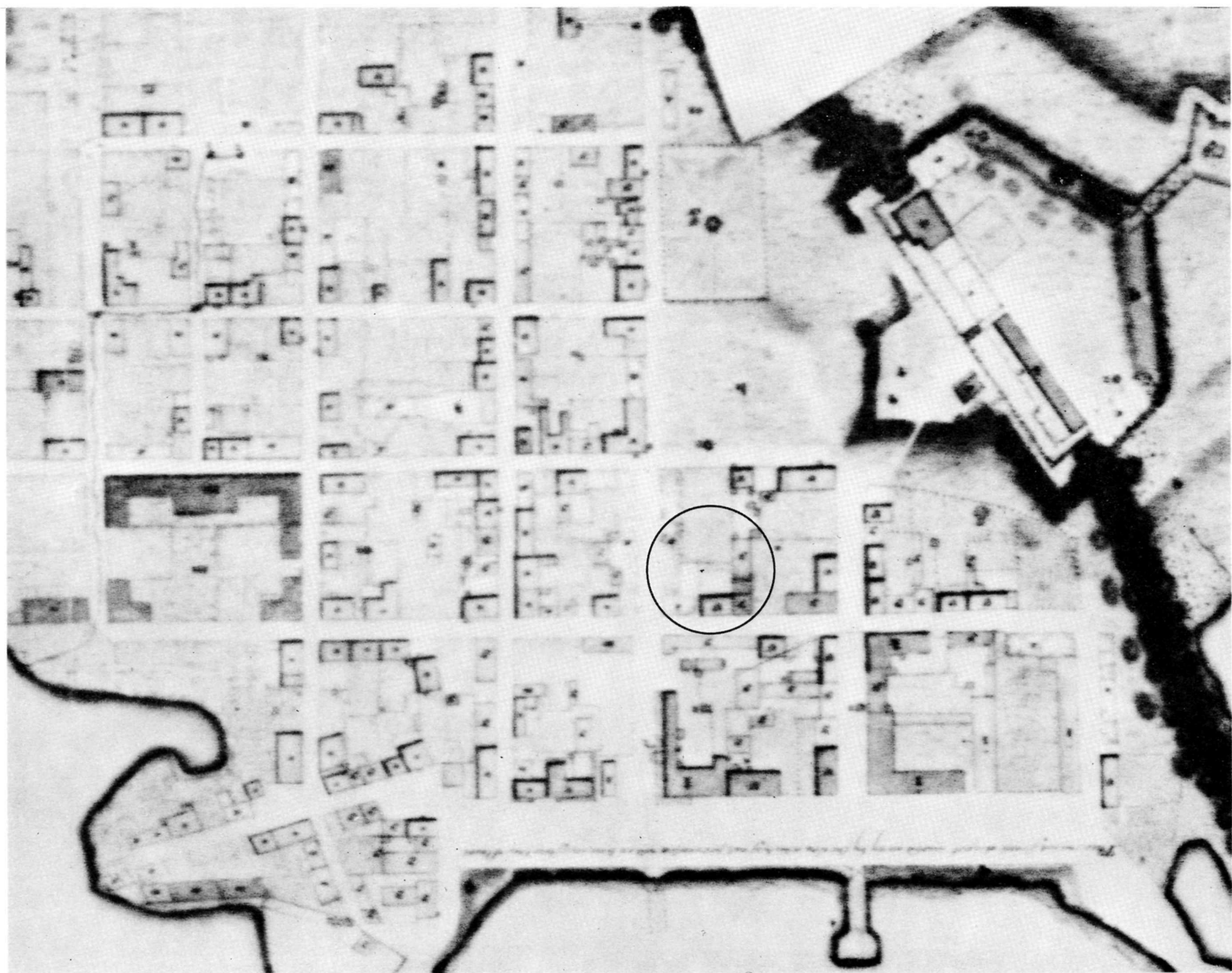


Figure 7: 1768 Plan of Louisbourg.

Number 84 corresponds to the Loppinot-Dangeac house while number 85 indicates the de Pensens-de la Vallière storehouse and possibly the New England craftsmen's shop as well. This constitutes the latest known illustration of these buildings.

(A.F.L., 768-1), Public Records Office, London, by permission of the Controller of Her Majesty's Stationery Office

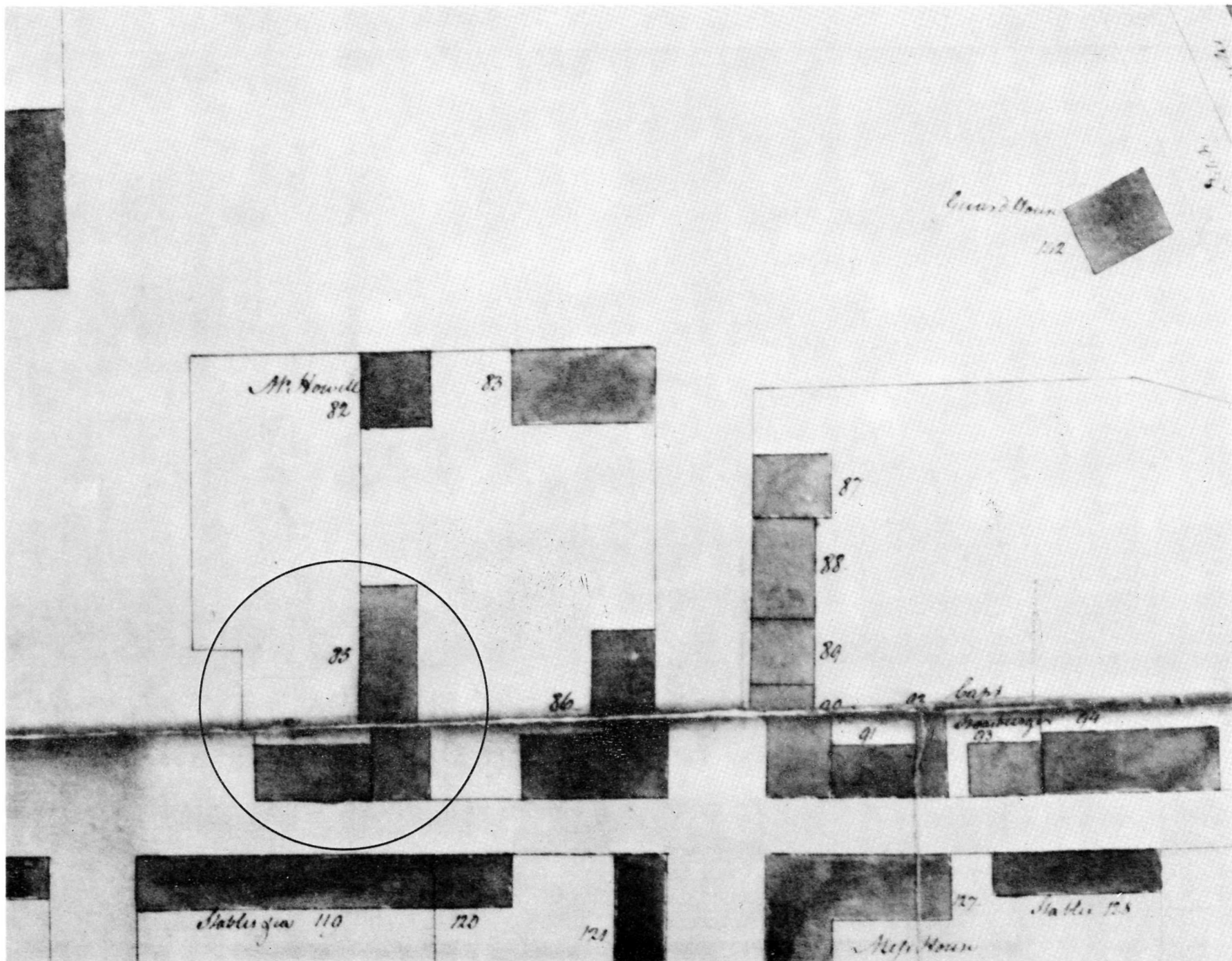


Figure 8: Topography and site plan of Block 16
and vicinity.

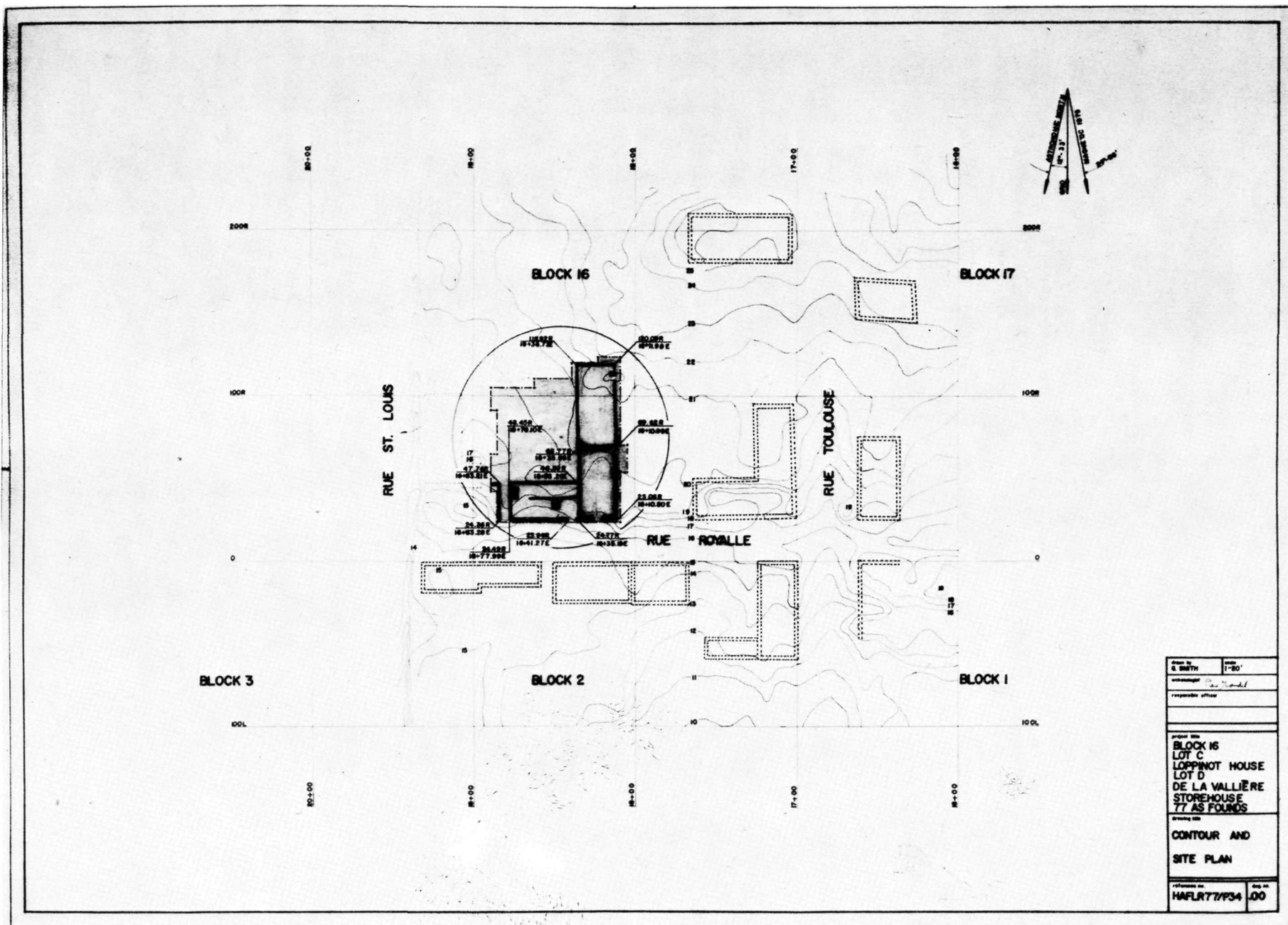
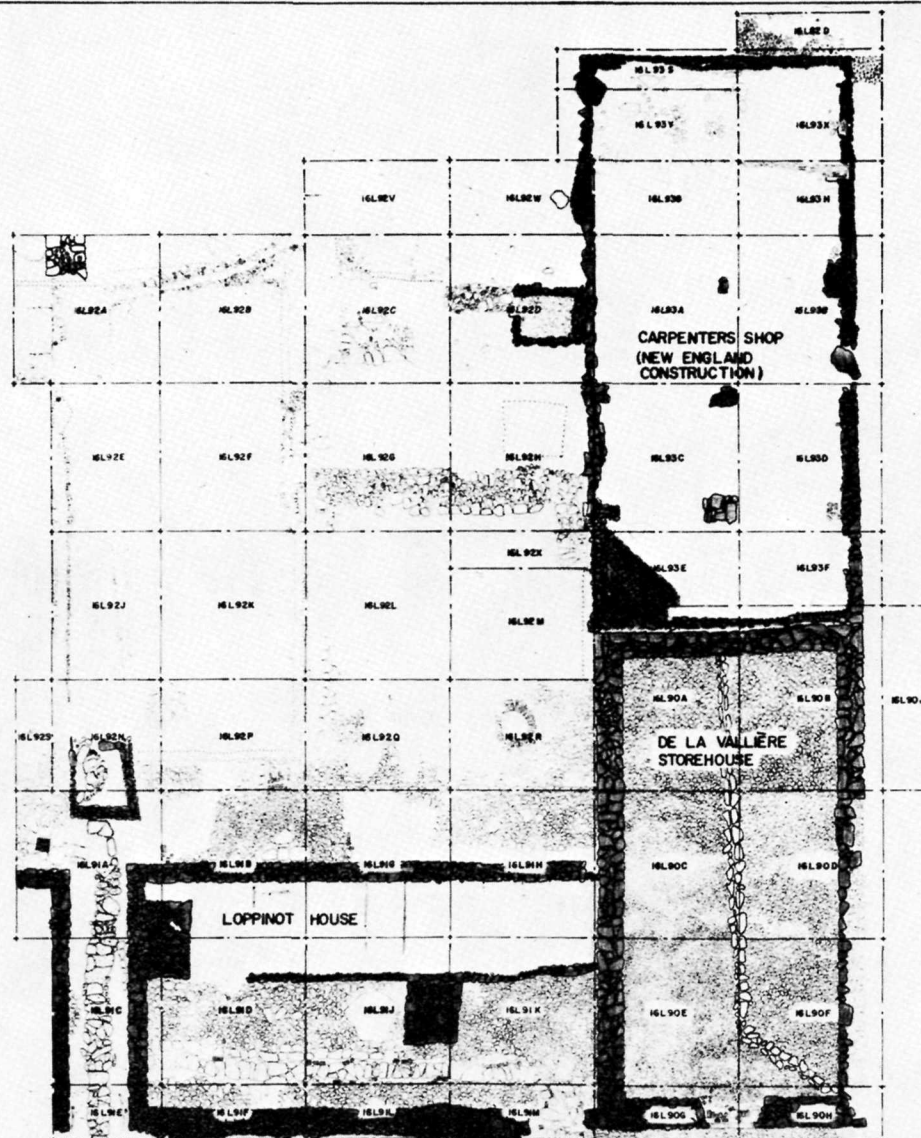


Figure 9: Plan of sub-operations used in the excavations discussed in this report. Uncovered foundations and other significant features may be seen within their excavation sub-operations.



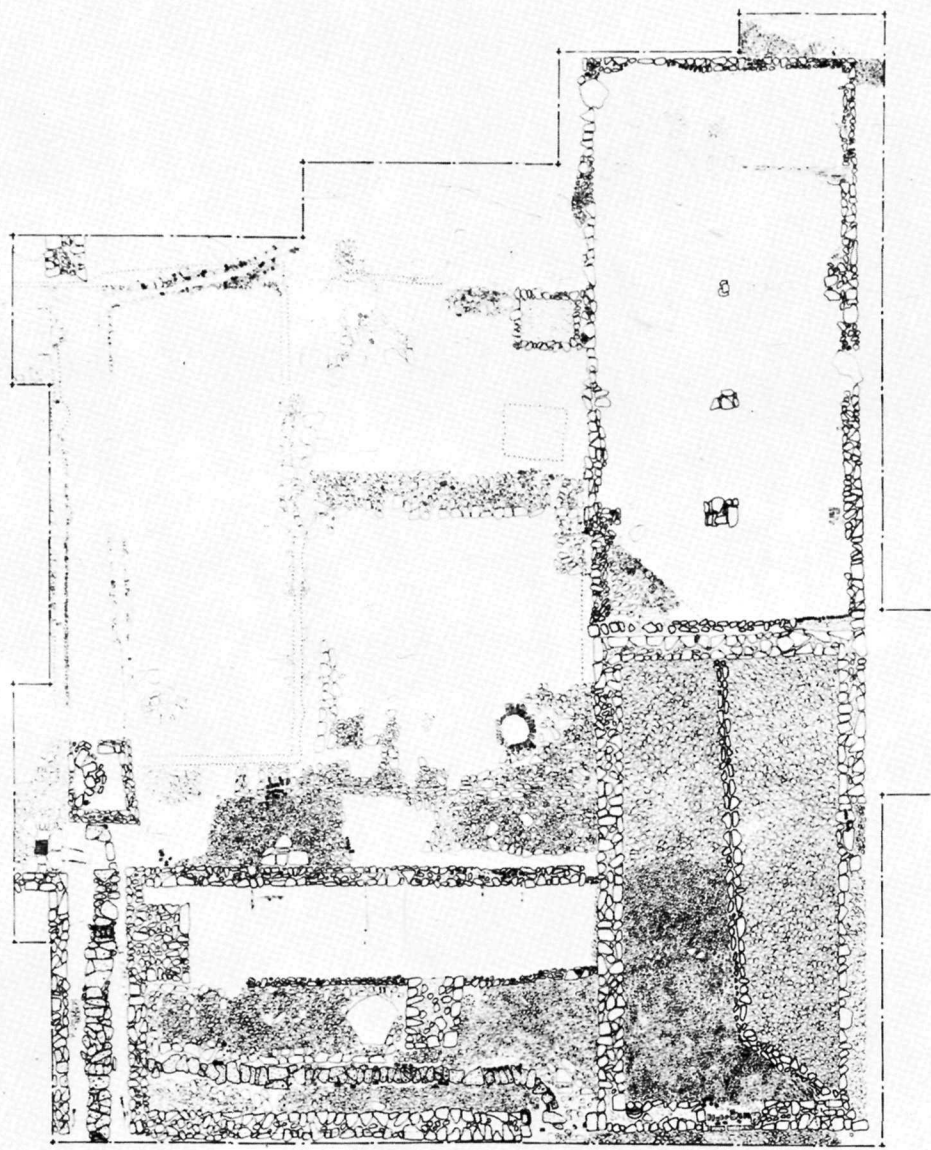
1:50 METRIC
 1 0 1 2 3 4 5 6 7 8 9
 1:50 FRENCH
 1 0 1 2 3 4 5 6 7 8 9
 1:50 ENGLISH
 1 0 1 2 3 4 5 6 7 8 9

BLOCK 16
 LOT C
 LOPPINOT HOUSE
 LOT D
 DE LA VALLIÈRE
 STOREHOUSE
 77 AS FOUND

KEY PLAN OF
 ARCHAEOLOGICAL
 UNITS

HAFLR77/P34 0

Figure 10: Plan of excavated features discussed
in this report.



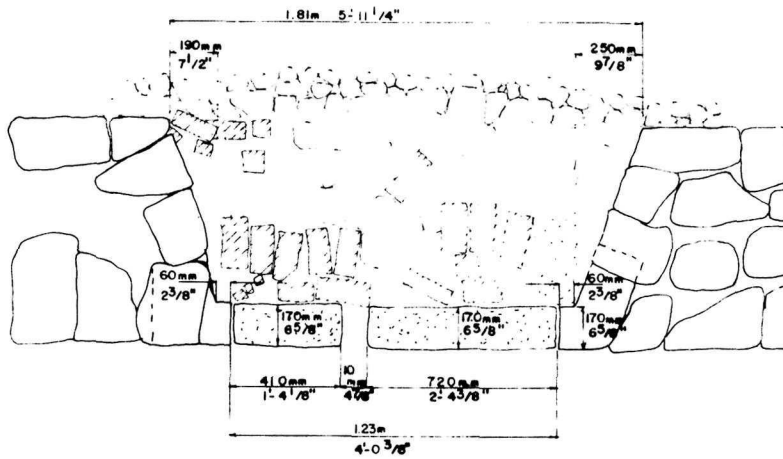
1 50 0 1 2 3
150 METRE
1 0 1 2 3 4 5 6 7 8 9
FRENCH METRE
1 0 1 2 3 4 5 6 7 8 9
ENGLISH FOOT

DATE 10/10/77	SCALE 1:50 METRIC
PROJECT CODE BLOCK 16 LOT C LOPPINOT HOUSE LOT D DE LA VALLIÈRE STOREHOUSE 77 AS FOUND	
ARCHAEOLOGICAL PLAN 'A'	
HAFLR 77/P34	1

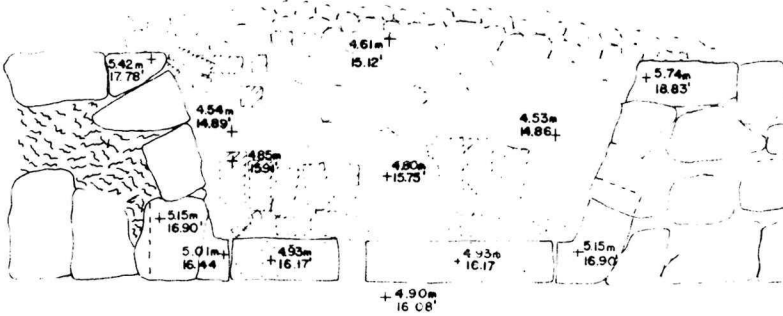
Figure 11: Top: de Pensens-de la Vallière storehouse.
Door detail with dimension.

Middle: Door detail with elevations.

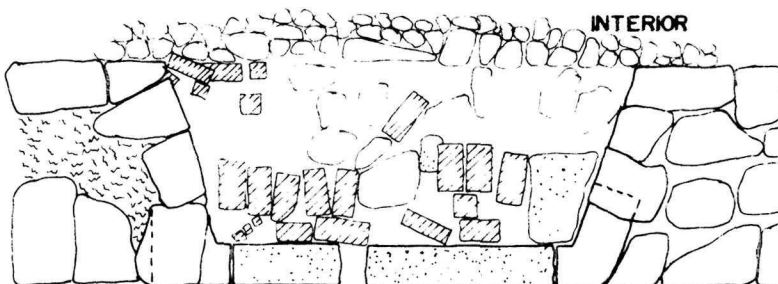
Bottom: Door detail.



DOOR DETAIL WITH
DIMENSIONS



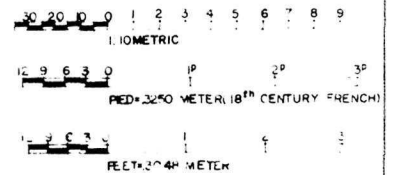
DOOR DETAIL WITH
SPOT ELEVATIONS



DOOR DETAIL



EXTERIOR
(SIDEWALK PAVE)

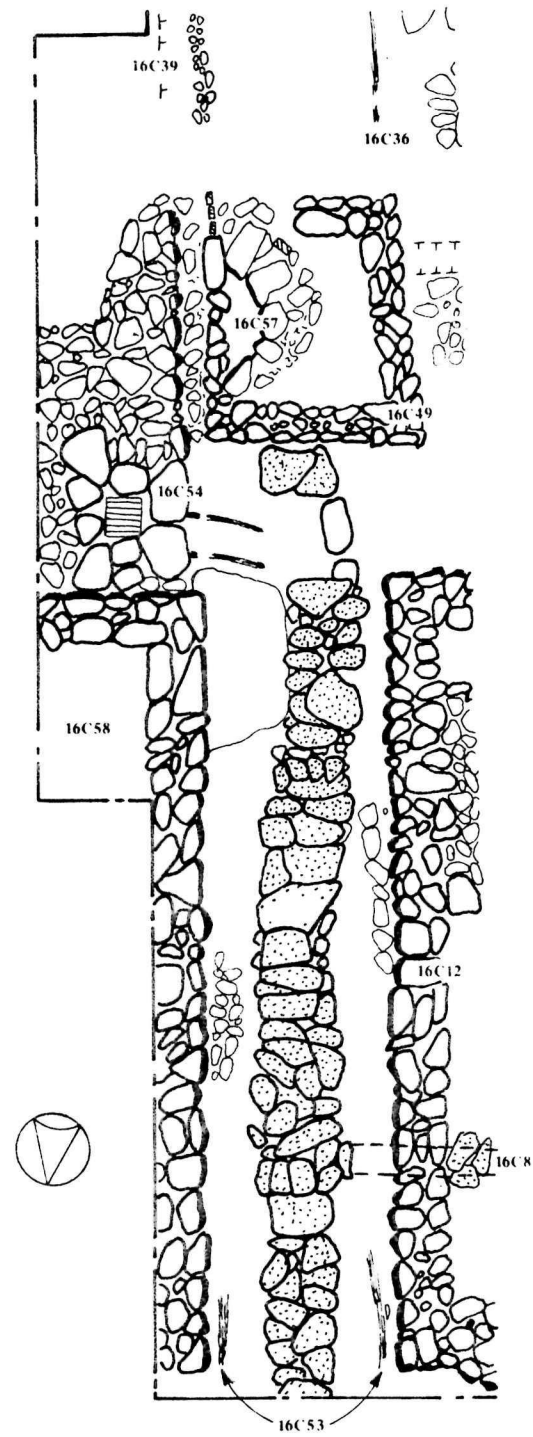


NOTE
SEE DRAWING NO. 6 FOR
DOOR DETAIL LOCATION

Drawn by G. SMITH	Scale 1:10 METRIC
Checked by J. J. J.	
Responsible Officer J. J. J.	
Project Title BLOCK 16 LOT C LOPPINOT HOUSE LOT D DE LA VALLIÈRE STOREHOUSE 77 AS FOUNDS	
Drawing Title DOOR DETAIL WITH DIMENSIONS AND SPOT ELEVATIONS	
Reference No. HAFLR77/P34	Page No. 8

Figure 12: Detail plan of Lot C passageway and boundary well area.

- 16C12 Loppinot-Dangeac house east foundation wall.
- 16C36 Scant remains of late English drain.
- 16C39 Remains of boundary fence line between Lots C and B.
- 16C49 Rectangular masonry foundation of well house.
- 16C53 Remains of passageway gate at the edge of rue Royale.
- 16C54 Pavé, drain and grate in Fizel house backyard.
- 16C57 Boundary line well.
- 16C58 Fizel house west masonry foundation wall.
- 16C8 Stone capped drain leading from
- 16C49 Loppinot-Dangeac house basement and rectangular well house.



0 1 2 3
Meters

Figure 13: Aerial photograph showing structural remains of de Pensens-de la Vallière storehouse and Loppinot-Dangeac house. Partially excavated New England craftsmen's shop can be seen in foreground. Direction: north.

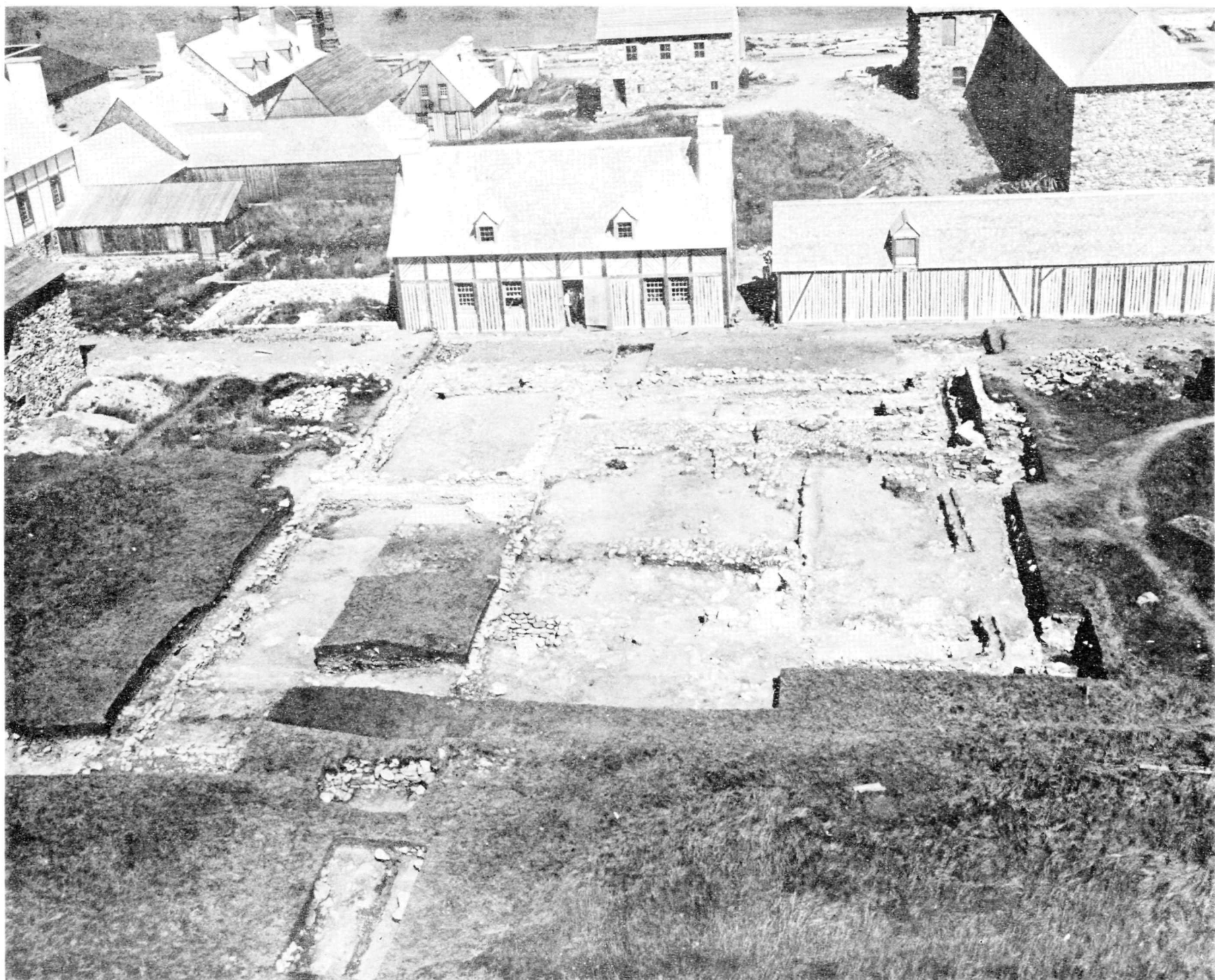


Figure 14: Top: de Pensens-de la Vallière storehouse remains prior to excavation. Note collapsed masonry remains and sporadic sod.

Direction: south

Bottom: Excavated remains of the de Pensens-de la Vallière storehouse. Note masonry wall remains, basement pavé, north-south surface drain, central doorway and rue Royale street pavé.

Direction: south



Figure 16: Top: de Pensens-de la Vallière storehouse.
 Detail of north wall and street front doorway.
 Note brick and sandstone sill and cutstone
 jam.
 Direction: south

Bottom: de Pensens-de la Vallière storehouse.
 Detail of street front doorway.

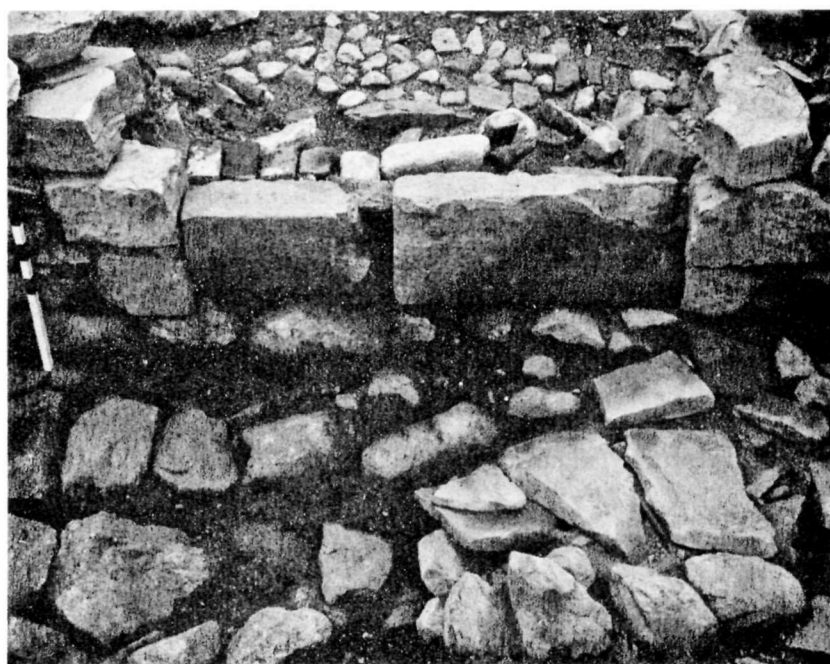


Figure 15: Top: de Pensens-de la Vallière storehouse.
Detail of interior masonry wall construction.
Direction: west.

Bottom: de Pensens-de la Vallière storehouse.
Detail of exterior wall construction. Note
that mortar is leached out.
Direction: east.

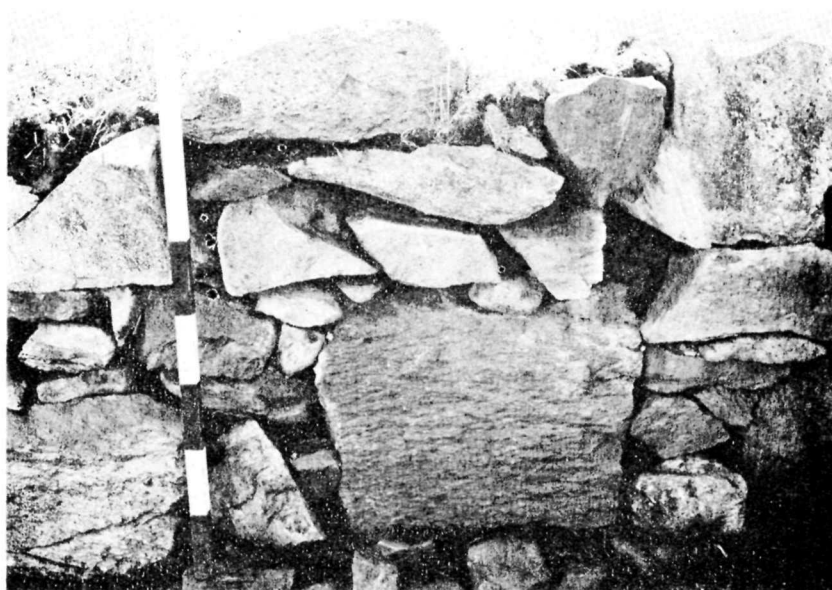
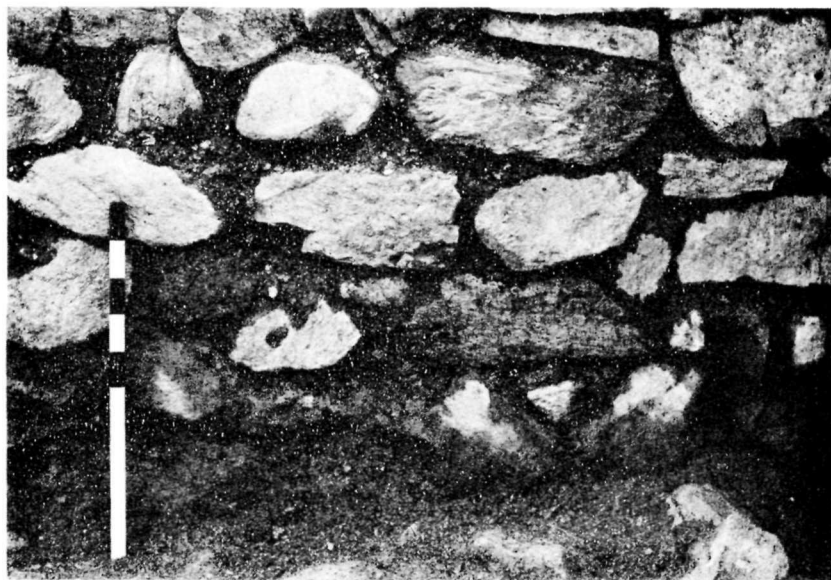


Figure 17: Top: de Pensens-de la Vallière storehouse.

Gap in north foundation wall through which exists basement surface drain.

Direction: south.

Bottom: Underground drain fork situated below rue Royale outside the north-east corner of the de Pensens-de la Vallière storehouse.

The top branch leads out of storehouse; the left branch leads from Loppinot-Dangeac house basement; combined drain leads to Block 2.

Direction: south.

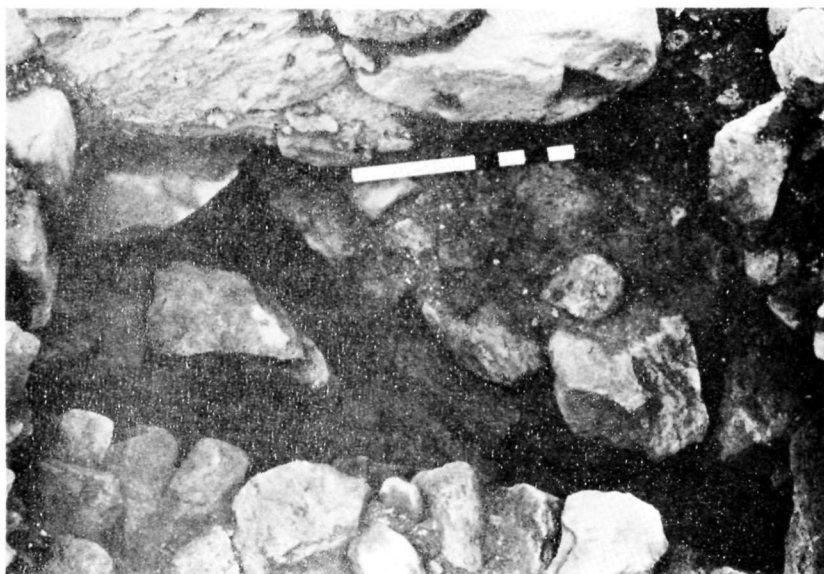
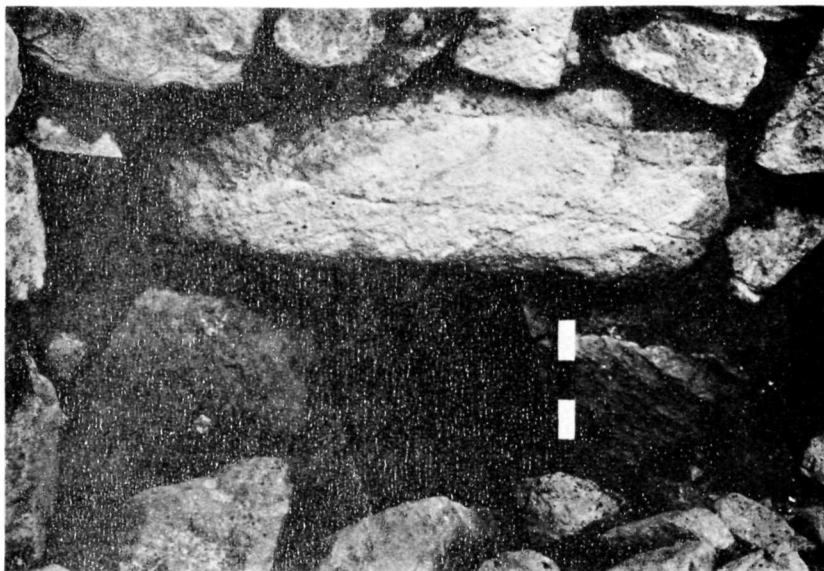


Figure 18: Top: de Pensens-de la Vallière storehouse.
Detail of possible brick repair work on
segment of west wall.
Direction: south; oblique view.

Bottom: Same as above, but viewed from
within storehouse.
Direction: west.



Figure 19: Top: de Pensens-de la Vallière storehouse.
Interior stratigraphy. Note slope of accumulation and relative thickness of mortar and stone debris. This occupation period layer rests immediately above pavé and below masonry collapse material.
Direction: north.

Bottom: de Pensens-de la Vallière storehouse.
Mortar and stone debris within storehouse in front of partially destroyed and bulging segment of west wall.
Direction: west.



Figure 20: Top: 1746 New England craftsmen's shop.

Detail of foundation wall construction.

Direction: north.

Bottom: New England craftsmen's shop.

Detail of north-east fireplace foundation
remains.

Direction: east.



Figure 21: Top: Loppinot-Dangeac house emplacement prior to excavation. Direction: west.

Bottom: Excavated remains of Loppinot-Dangeac house. Direction: south.

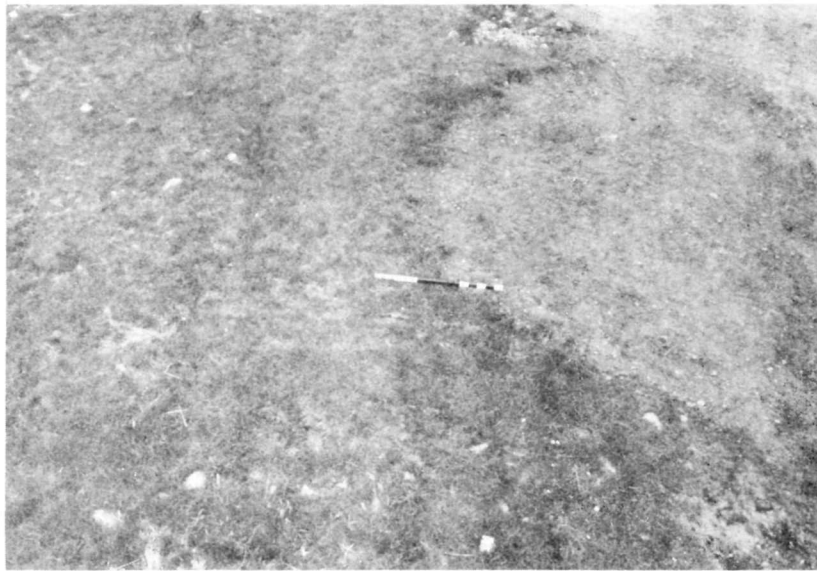


Figure 22: Top: Loppinot-Dangeac house. Segment of south wall. Note ground floor joist sill remains to the north and backyard pavé remains to the south. Direction: north.

Bottom: Detail of ground floor joist remains which extend onto south foundation wall.



Figure 23: Top: Retaining wall running eastwest across Loppinot-Dangeac house forming south wall of basement. Note fireplace foundation on left side of photo. Direction: south.

Bottom: Detail of retaining wall construction. Note heavy mortaring of wall. Direction: south.



Figure 24: Top: Basement of Loppinot-Dangeac house after partial excavation. Note retaining wall with fireplace foundation extending north from it, drain with capping stones in place and the partially collapsed north wall of the house. Direction: south.

Bottom: Drain existing through doorway in north wall of Loppinot-Dangeac house. Note use of cutstone on west jamb of doorway. Direction: north.

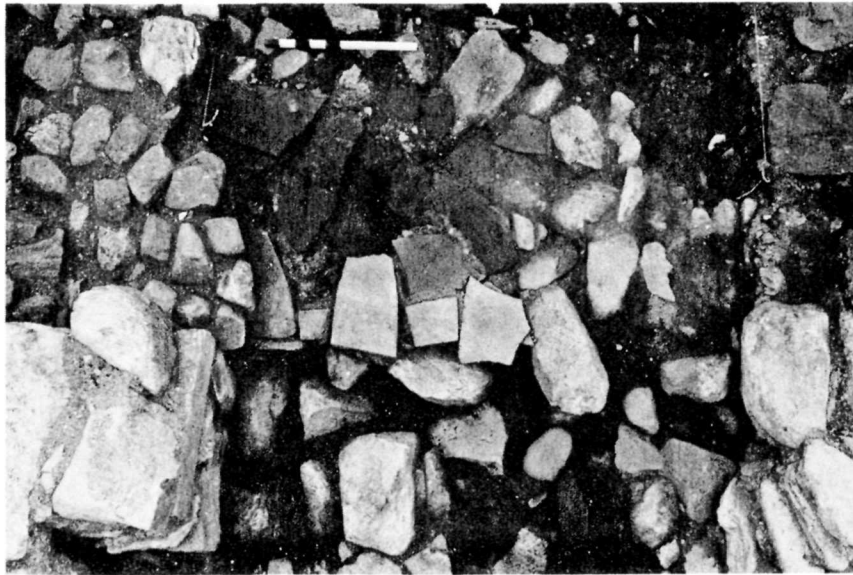
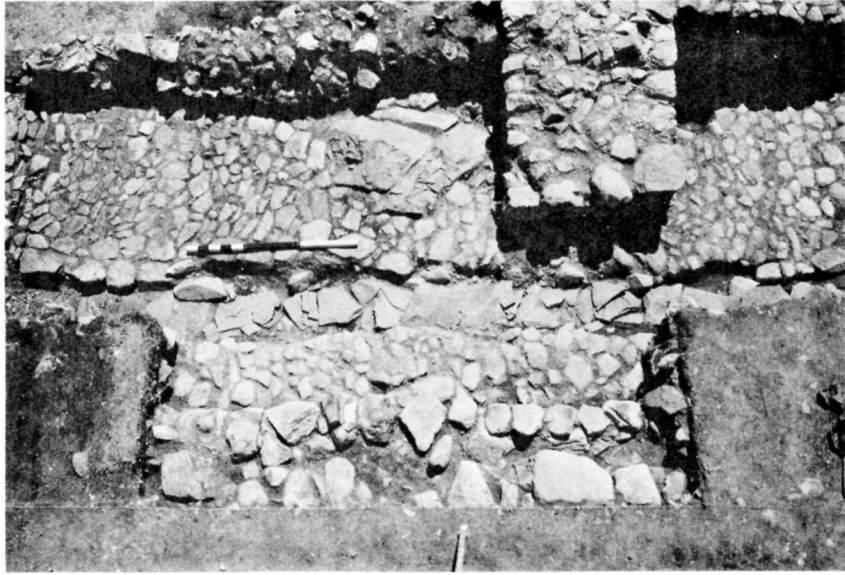


Figure 25: Top: Horizontal brace for vertical gate post
on west side of passageway between the Loppinot-
Dangeac and Fizel houses. Direction: west.

Bottom: Remains of pavé along passageway
between the Loppinot-Dangeac and Fizel houses.
Direction: west.

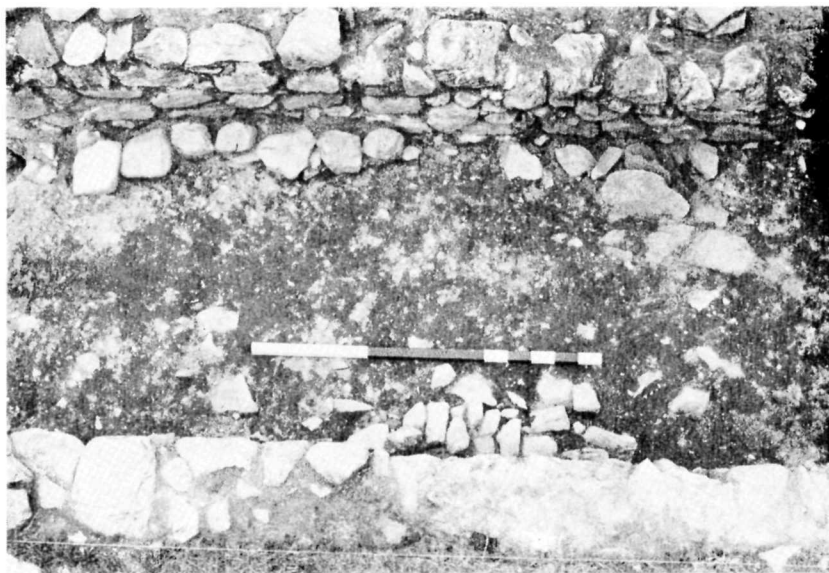


Figure 26: Top: Southeast corner of Loppinot-Dangeac backyard. Note wood lined latrine situated immediately east of Lot C fence line and L-shaped remains of drain. Direction: west.

Bottom: Detail of fence line trench along east boundary of Lot C property. Direction: south.



Figure 27: Top: Well remains uncovered on the west side of the backyard of the Loppinot-Dangeac house. Note brick and rock courses of well lining, surrounding pavé and faint surface gutter. Direction: south.

Bottom: Possible latrine remains uncovered at southwest corner of Lot C property. Note masonry walls and floor as well as possible short pavé pathway. Direction: east.



Figure 28: Top: Well and associated features along eastern boundary of the Lot C property before the removal of the covering section of the rectangular feature. Note relationship of well and drain to the rectangular feature, the Loppinot-Dangeac house to the west and the Fizel house, backyard pavé and grate to the east.

Direction: north.

Bottom: Detail of partial dome over well. Note fence line running north over partial well cover and drainage outlet in north wall of rectangular feature.

Direction: north.



Figure 29: Top: Construction detail of the rectangular feature above the well. Note drainage outlet on north wall of feature. The edge of the well can be seen in the bottom right.

Direction: northwest.

Bottom: Well and rectangular feature following the removal of the covering section of the rectangular feature. Note large stone protruding over well which formed the link between the rectangular feature and its dome like partial well cover.

Direction: west.



Figure 30: H-section turned lead made for holding window glass in place. This turned lead was found in the occupation period accumulation of the Loppinot-Dangeac house and de Pensens-de la Vallière storehouse basements. Provenience of illustrated strips: 16L90B5; event 16D4.

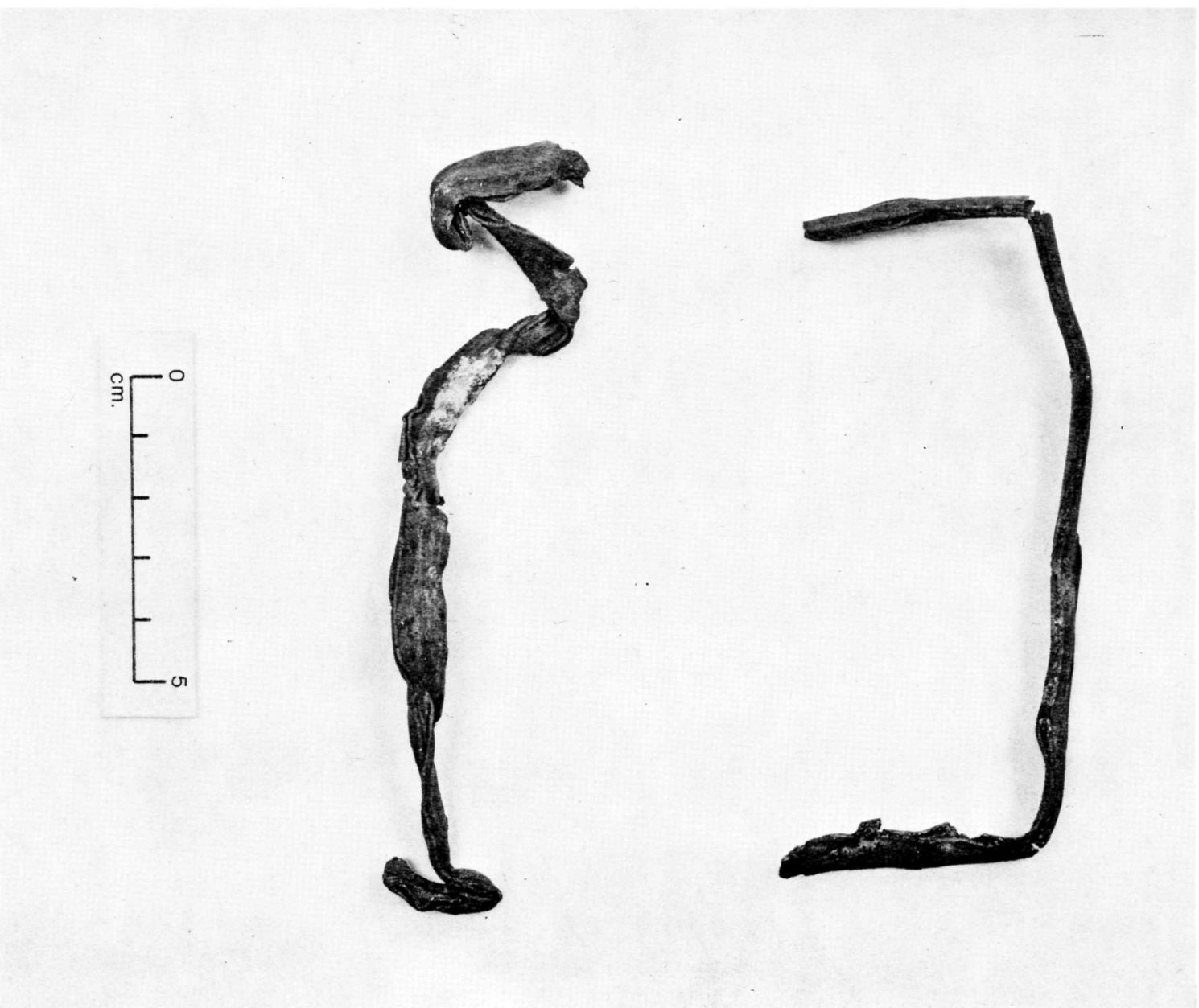


Figure 31: Dark green beverage bottle. Probably of mid 18th century Dutch manufacture. Note the unusual base with flat resting surface. Provenience 16L90A4; event 16D4.

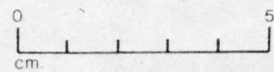


Figure 32: Two typical dark green beverage bottles. The heavily patinated example on the left (16L92N8; event 16C46) is of probable French manufacture while that on the right (16L92N19; event 16C48) is of probable English manufacture.



Figure 33: Dark green squat union shape bottle.
Early 18th century manufacture. Note
possible owner identification marks.
Uncovered immediately above pavé
connected with masonry lined latrine.
Provenience no. 16L92D8; event 16C26.



Figure 34: Two typical blue-green glass containers.
Probable French manufacture (16L92N16;
event 16C47 and 16L92N12; event 16C45).

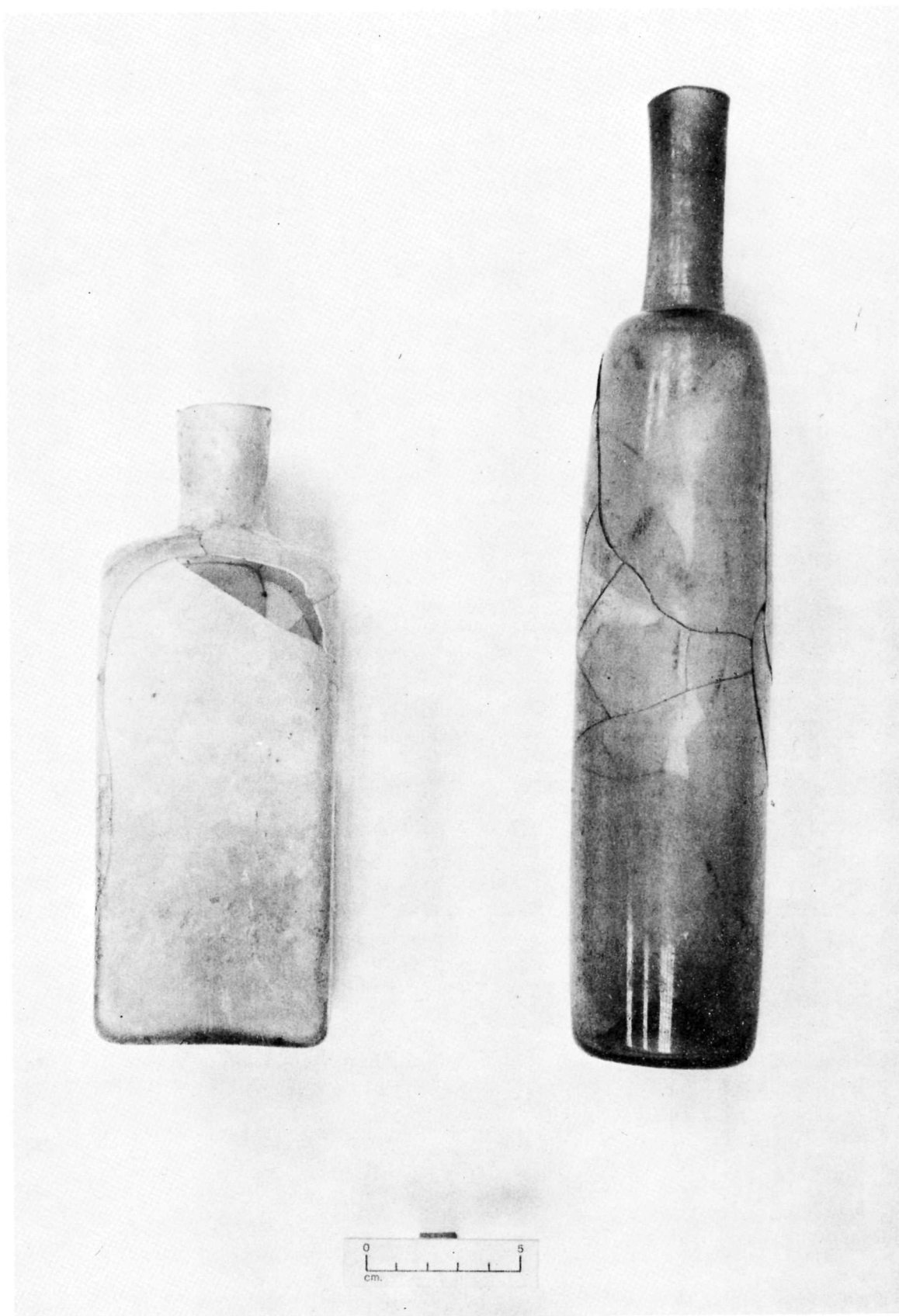


Figure 35: Tin bucket excavated from the bottom of the boundary line well (16L92N19; event 16C48).

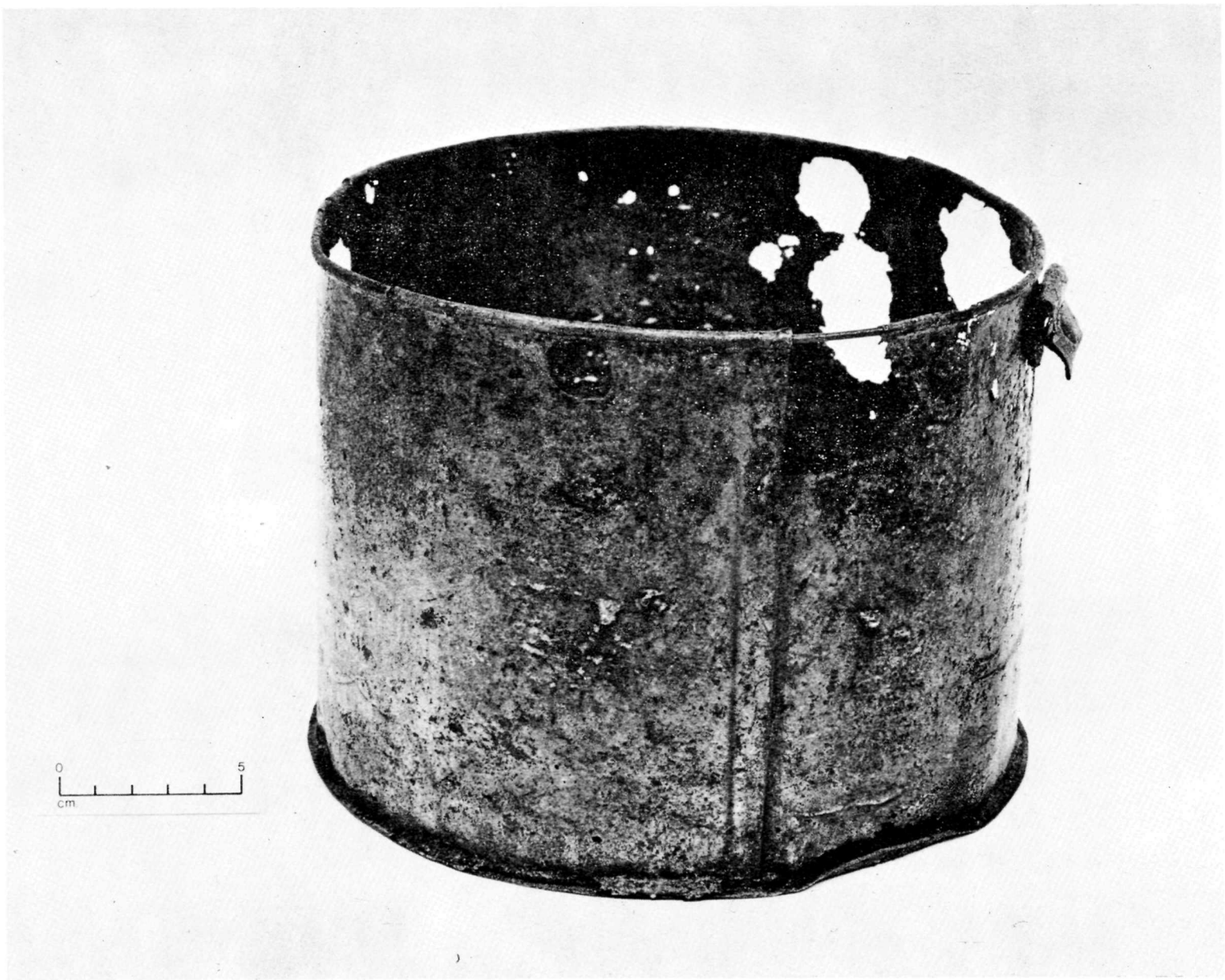


Figure 36: Iron shovel tip (16L91A9; event 16C43).

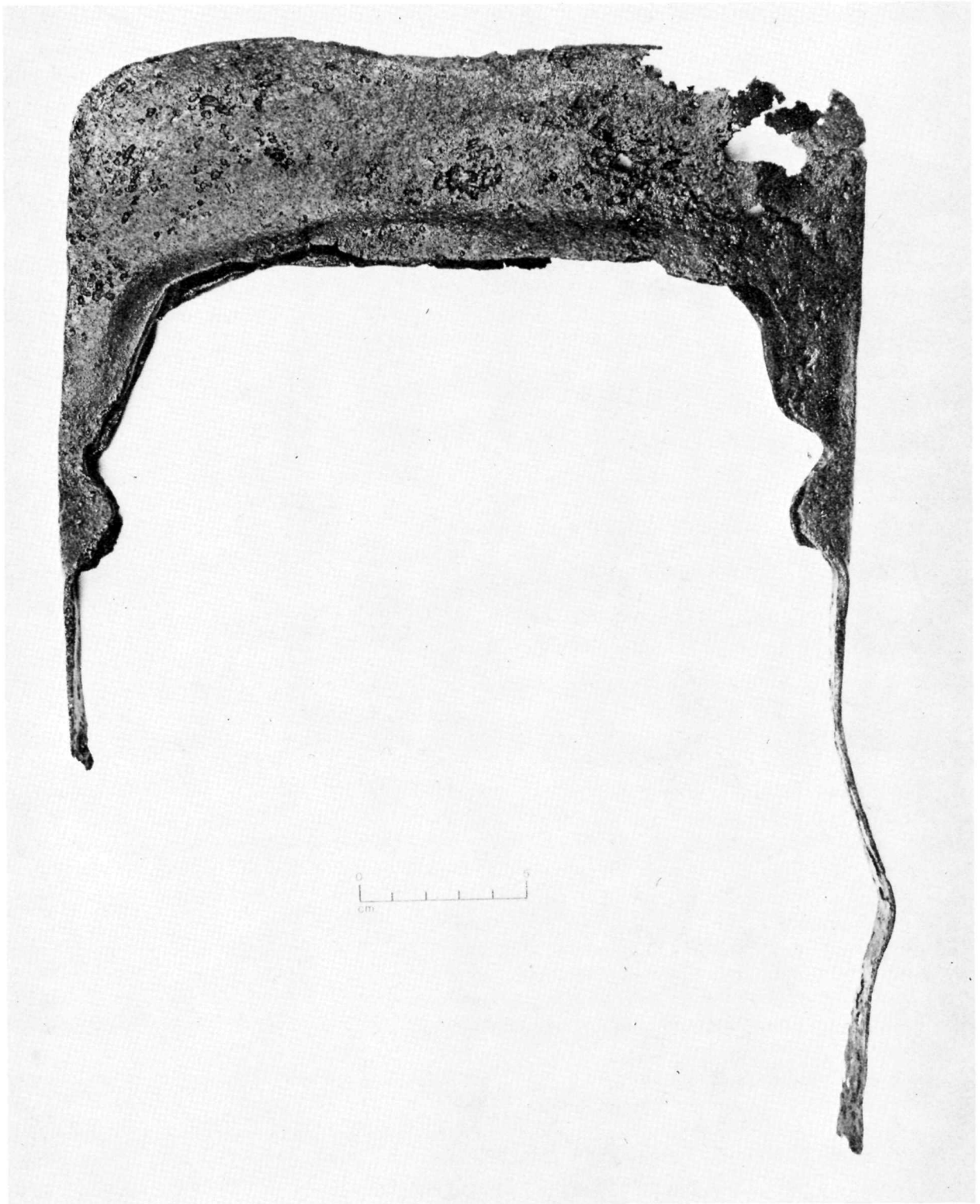


Figure 37: Lobster crusher claw (*Homarus Americanus*),
uncovered in lower level of fence line well.
Provenience 16L92N18; event 16C48)

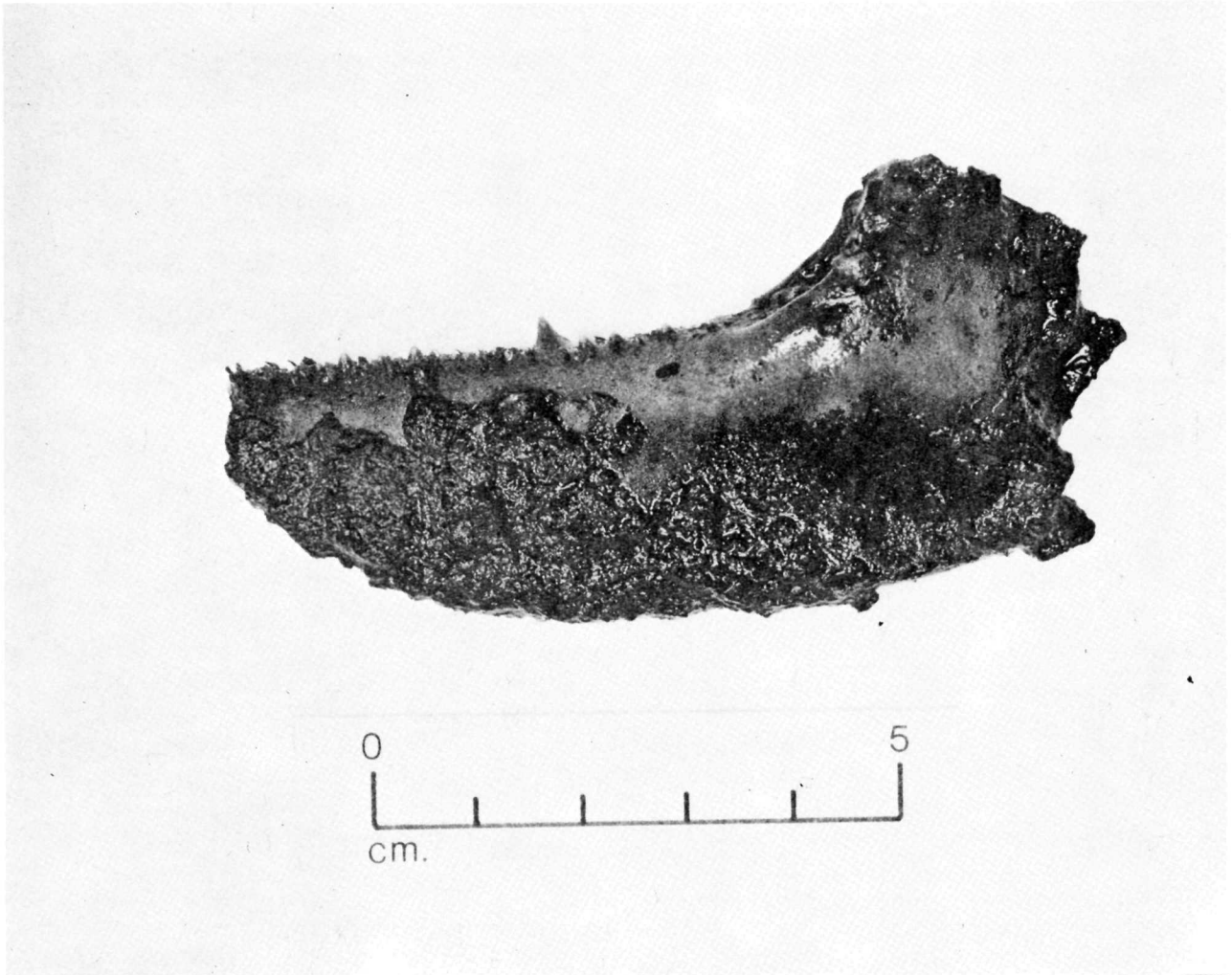


Figure 38: Wax seal. Archival research suggests that this is a French crest possibly from Normandy, but attribution is not definite. The seal was uncovered in the use-period accumulation layer within masonry lined latrine (16L92D18; event 16C29).

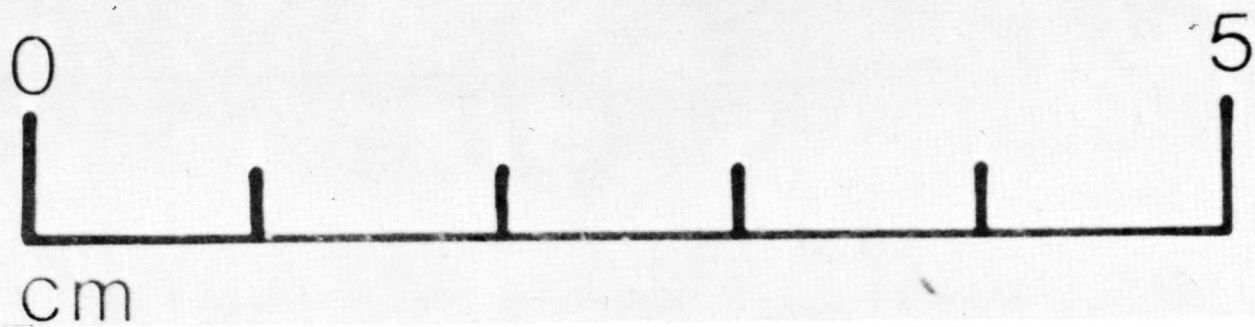


Figure 39: Northsouth cross-section through de Pensens-de la Vallière storehouse basement. East profile of 16L90B, 16L90D, 16L90F, 16L90H.

1. Sporadic sod and surface accumulation (16D1).
4. Mortar and stone collapse with large number of bricks at base of layer. Cut sandstones at left of profile are from front doorway jamb; post occupation accumulation (16D3).
6. Mortar and stone collapse with brick inclusions; post occupation accumulation (16D3).
7. Greasy organic material; occupation period accumulation; >1724 to >1768 (event 16D4).
8. Basement pavé floor resting on rusty orange compact granular sand (16D5).
9. South masonry wall remains (16D6).
10. Brick and sandstone doorstep feature (event 16D6).
11. Rue Royale pavé; post ca. 1725.
12. Small lens of ash; occupation period deposition (16D4).

Figures 39 and 40 are keyed to the same layer and feature number sequence.

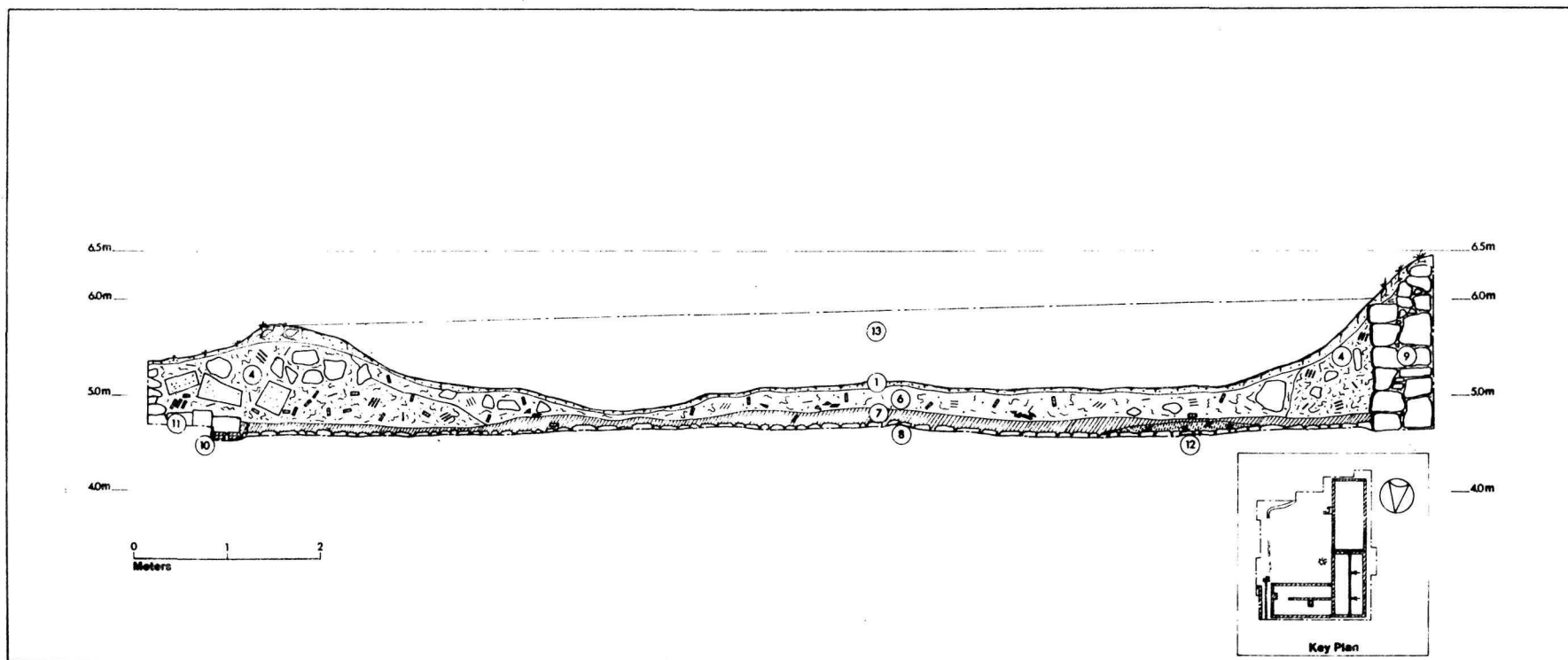


Figure 40: Eastwest cross-section through de Pensens-de la Vallière storehouse basement. North profile of 16L90B and 16L90A.

1. Sporadic sod and surface accumulation (16D1).
2. Sand lens; post occupation (16D3).
3. Sand and mortar; post occupation accumulation (16D3).
4. Mortar from collapsed masonry walls; post occupation accumulation (16D3).
5. Mortar from collapsed masonry walls but with some organic content; post occupation accumulation (event 16D3).
6. Mortar collapse with brick inclusions; post occupation accumulation (event 16D3).
7. Greasy organic material; occupation period accumulation, >1724 to >1768 (event 16D4).
8. Basement pavé floor (event 16D5) resting on rusty orange compact granular sand.
9. West and east masonry wall remains (event 16D6).

Figures 39 and 40 are keyed to the same layer and feature number sequence.

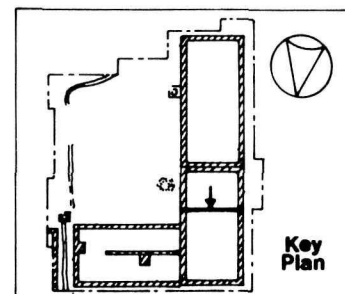
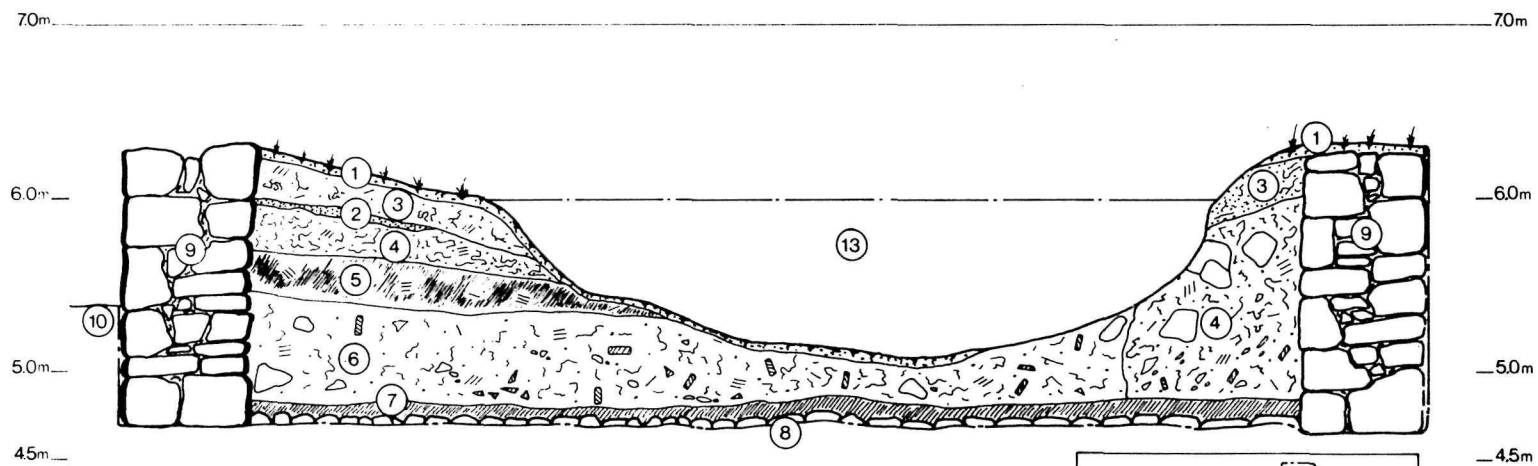


Figure 41: North-south cross-section through New England craftsmen's shop. East profiles of 16L93F, 16L93B, 16L93H, 16L93X.

1. Surface sod and humus (event 16D1).
 2. Mortar; post-destruction of de la Vallière storehouse.
 3. Dark sandy-loam with some organic content (event 16D10).
 4. Sandy-loam and humus; post-destruction of New England building (event 16D10).
 5. Sandy-loam with small charcoal fragments (event 16D11).
 6. Black ash and humus (event 16D11).
 7. Orange clay (event 16D11).
 8. Thin mortar lens; post construction (16D10).
 9. Thin lens of sand (event 16D14).
 10. Dark black organic soil with some wood remains (event 16D14).
 11. Light colored sandy-fill; pre 1746 (event 16D14).
 12. Sandy-loam with organic content; pre 1746 (event 16D14).
 13. Sterile B-horizon (event 16D9).
 14. Natural A-horizon (event 16D9)
 15. English craftsmen's building wall; 1746 (event 16D13).
 16. Part of central stone sill support; 1746 (event 16D13).
 17. Backyard pavé in late 1730 to ca. 1758.
- Figures 41 and 42 are keyed to the same layer and feature number sequence.

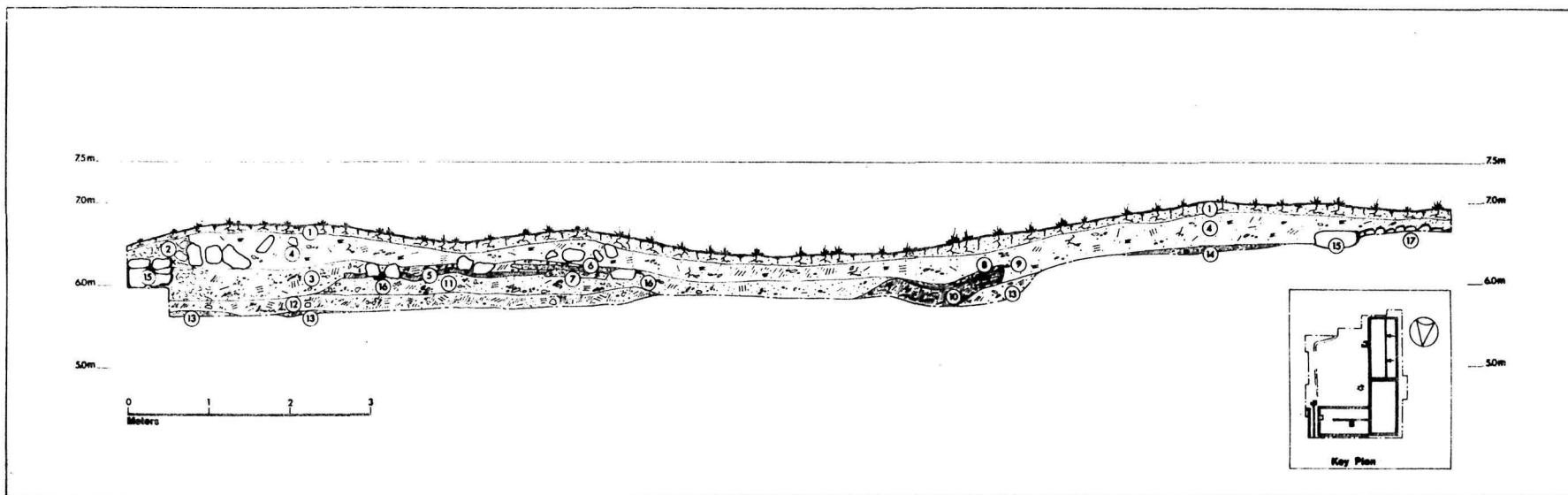


Figure 42: Eastwest cross-section through New England craftsmen's shop. North profiles of 16L93B and 16L93A.

1. Sod and humus (event 16D1)
4. Sandy-loam and humus; post-destruction accumulation (event 16D10).
12. Sandy-loam with organic content; pre 1746 (event 16D14)

Figures 41, and 42 are keyed to the same layer and feature number sequence

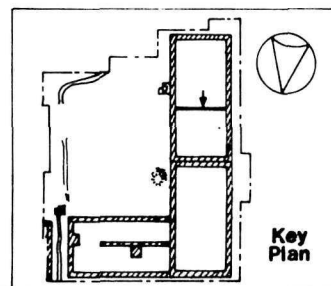
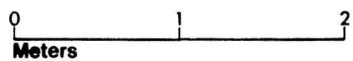
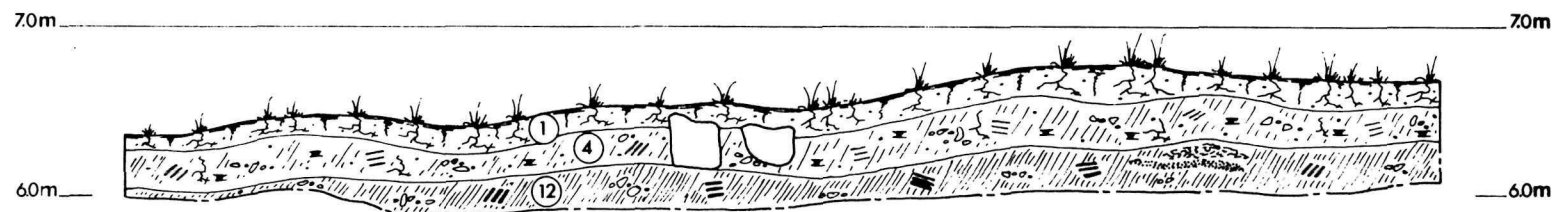


Figure 43: Eastwest cross-section through Loppinot-Dangeac house and passageway to backyard. North profile of 16L91A, 16L91B, 16L91G, 16L91H.

3. Surface sod; post occupation (event 16C2).
4. Greasy black organic sandy-loam; post occupation accumulation (part of event 16C2).
5. Coarse dark sandy-loam with brick, pebble and rock inclusions; post occupation accumulation (event 16C26).
7. Mortar from collapsed masonry storehouse (part of event 16C3).
8. Dark sandy-loam; post-occupation accumulation (part of event 16C3)
15. Dark brown sandy-loam drain fill; 1731 to 1977 (event 16C56).
20. Light brown sandy-loam with pebble and rock inclusions; post occupation accumulation (part of event 16C3).
21. Mortar possibly from the construction of the adjacent masonry storehouse; >1724 to 1727 (event 16D6).
30. Mortar and rubble from FizeL house; 1758 to <1768 (event 16C42).

Figure 43 cont'd

- 31. Light brown sandy-loam fill over drain;
>1745 to 1750 (event 16C51)
- 34. Tan grey natural soil horizon (events 16C14
and 16C24)
- 35. Rusty orange compact granular sand; natural
soil horizon (events 16C15 and 16C25).
- 36. Dark sandy-loam with some organic content
(integrated with event 16C15).
- 50. Floor joist remains; ca. 1731 (event
16C12)
- 51. Fireplace foundation and east foundation
wall; ca. 1731 (events 16C11 and 16C12).
- 52. West wall of Fazel house; >1745 to <1750
(event 16C58).
- 53. Capping stone of chain; >1745 to <1750
(part of event 16C49).
- 54. Drain wall stones; 1745 to 1750
(part of event 16C49).

Figures 43, 44, 45, and 46 all of Lot C, are keyed to the same layer and feature number sequence.

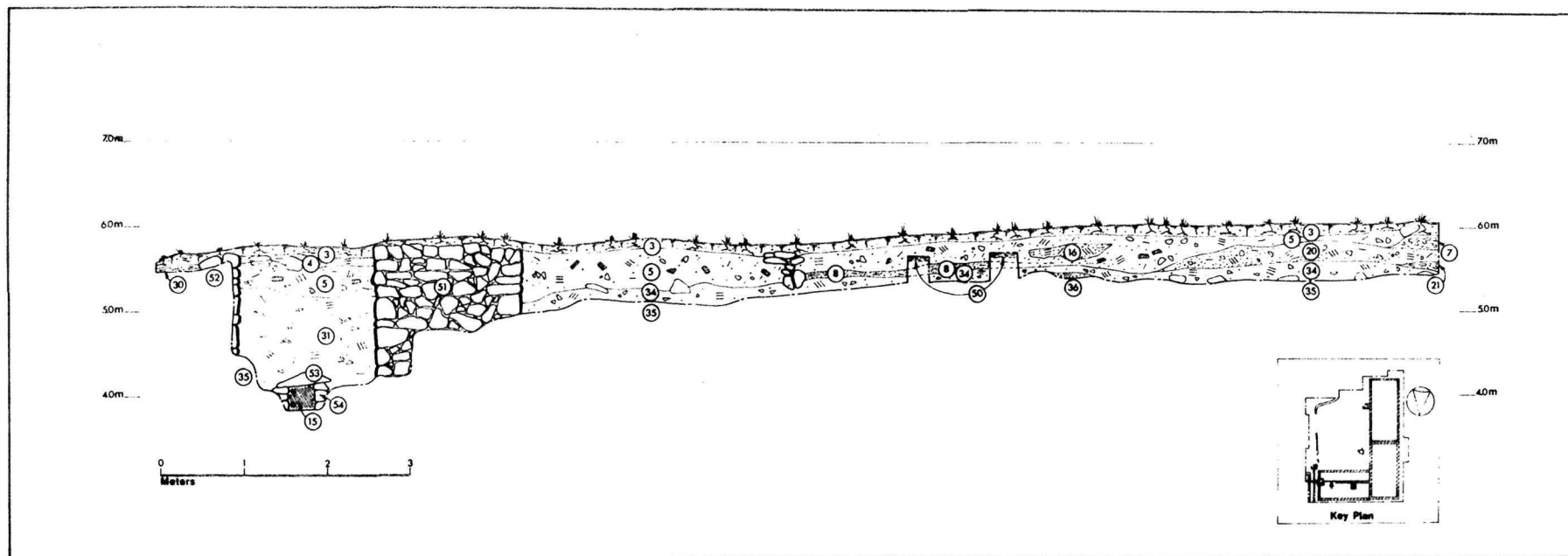


Figure 44: North-south cross-section through Loppinot-Dangeac house. Profile of the west face of 16L91L, 16L91J, and 16L91G.

1. Modern overburden composed of dark clay (part of event 16C1).
2. Modern overburden composed of redish-brown sand (part of event 16C1).
3. Surface or recently covered sod (event 16C2).
5. Coarse dark sandy-loam with brick, pebble and rock inclusions; post-occupation fill (event 16C26).
9. Medium brown sandy-loam with rocks and brick fragment inclusions. Post-occupation fill (part of event 16C16).
10. Loose mortar and rubble; post-occupation deterioration of south foundation wall of Loppinot-Dangeac house.
11. Medium brown sandy-loam with rock and brick fragment inclusions; post-occupation deposition (event 16C3).
17. Mottled dark sandy-loam with small brick and pebble inclusions; post-occupation accumulation (event 16C3).

Figure 44 cont'd

- 18. Black sandy-loam; possibly post-occupation accumulation (event 16C3).
- 19. Dark brown sandy-clay; occupation period accumulation (possibly associated with event 16C20).
- 28. Compact red sandy-loam; occupation period accumulation within Loppinot-Dangeac basement (event 16C4).
- 34. Tan grey natural soil deposition (event 16C14).
- 35. Rusty orange compact granular sand; natural soil horizon (event 16C15).
- 38. Backyard pavé adjacent to house; 1731 (event 16C20).
- 45. Interior eastwest retaining wall; construction in 1731 (event 16C9).
- 46. Fireplace foundation; construction in 1731 (event 16C10).
- 47. Basement pavé floor; construction in 1731 (event 16C7).
- 48. Capping stone of basement drain; 1731 (part of event 16C7).
- 49. North foundation wall of Loppinot-Dangeac house; construction in 1731 (event 16C12).

Figure 44 cont'd

49a. Loose mortar immediately above north
foundation wall.

Figures 43, 44, 45, and 46, all of Lot C, are
keyed to the same layer and feature number
sequence.

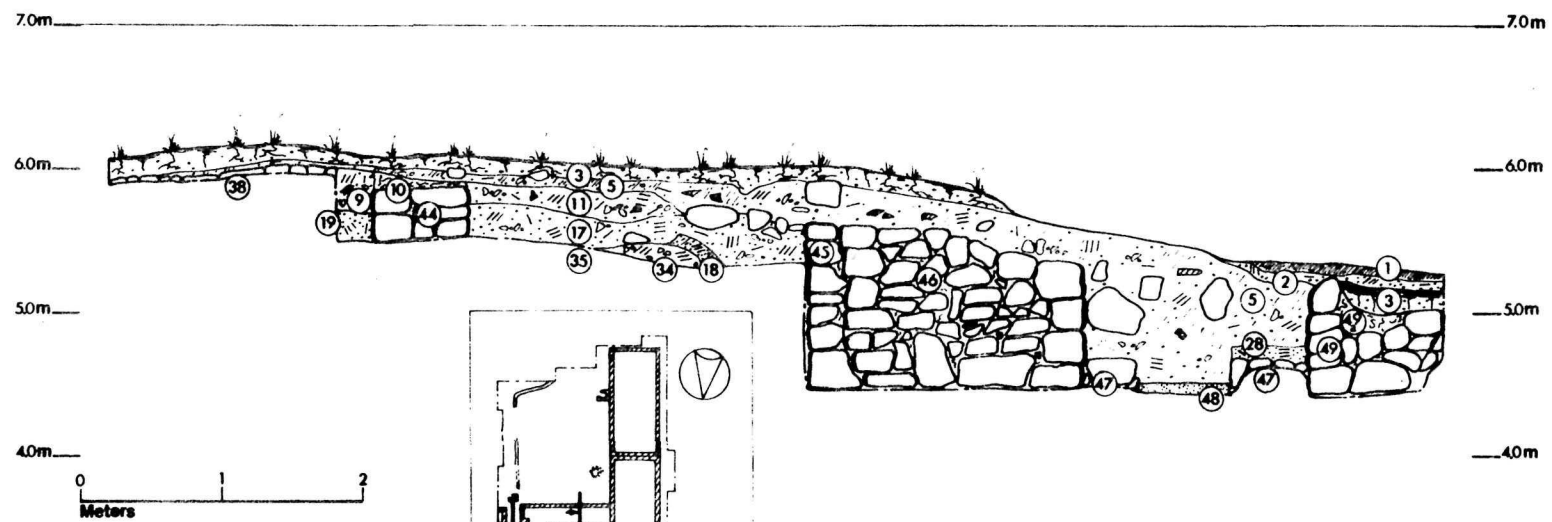


Figure 45: Northsouth cross-section through the backyard of the Loppinot-Dangeac house. West profile of 16L92V, 16L92C, 16L92G, and 16L92Q.

3. Surface sod and humus (event 16C2).
5. Coarse dark sandy clay with brick, pebble, and rock inclusions; post-occupation accumulation (16C26).
27. Dark coarse sandy-clay with pebble and rock inclusions; occupation period fill in Lot A.
29. Mottled dark and light coarse sandy-clay; occupation period fill in Lot A.
35. Rusty orange sandy-clay; natural soil horizon (event 16C25).
37. Backyard pavé; 1731 (event 16C20).
38. Backyard pavé adjacent to Loppinot-Dangeac house; 1731 (event 16C20).
39. Pavé walkway in backyard; >1731 to <1768 (event 16C27).

Figures 43, 44, 45, and 46 all of Lot C, are keyed to the same layer and feature number sequence.

7.0m _____ 7.0m

6.0m _____ 6.0m

5.0m _____ 5.0m

7.0m _____ 7.0m

6.0m _____ 6.0m

5.0m _____ 5.0m

0 1 2
Meters

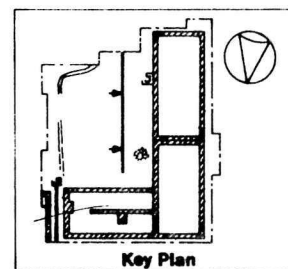


Figure 46: Eastwest cross-section through the backyard of the Loppinot-Dangeac house. South profile of 16L92E, 16L92F, 16L92G, and 16L92H.

3. Surface sod; post abandonment accumulation (event 16C2).
5. Coarse dark sandy-loam with brick, pebble, and rock inclusions; post occupation (event 16C26).
12. Light brown sandy-loam; >1750 to <1768 (events 16C37 and 16C59).
13. Dark organic sandy-loam; fill in drain; Post occupation accumulation (event 16C26).
14. Dark brown sandy-loam; >1731 to 1768 (event 16C37).
27. Dark coarse sandy-loam with pebble and charcoal inclusions; >1731 to 1768 (event 16C37).
32. Dark brown sandy-loam; fill in fence line; late occupation period fill (event 16C38).
34. Tan-gray sandy-clay; sterile (event 16C24).
35. Rusty-orange granular sand; sterile (event 16C25).
42. East wall of New England craftsmen's shop; 1746 (events 16C35 and 16D13).

Figures 43, 44, 45, and 46 all of Lot C, are keyed to the same layer and feature number sequence.

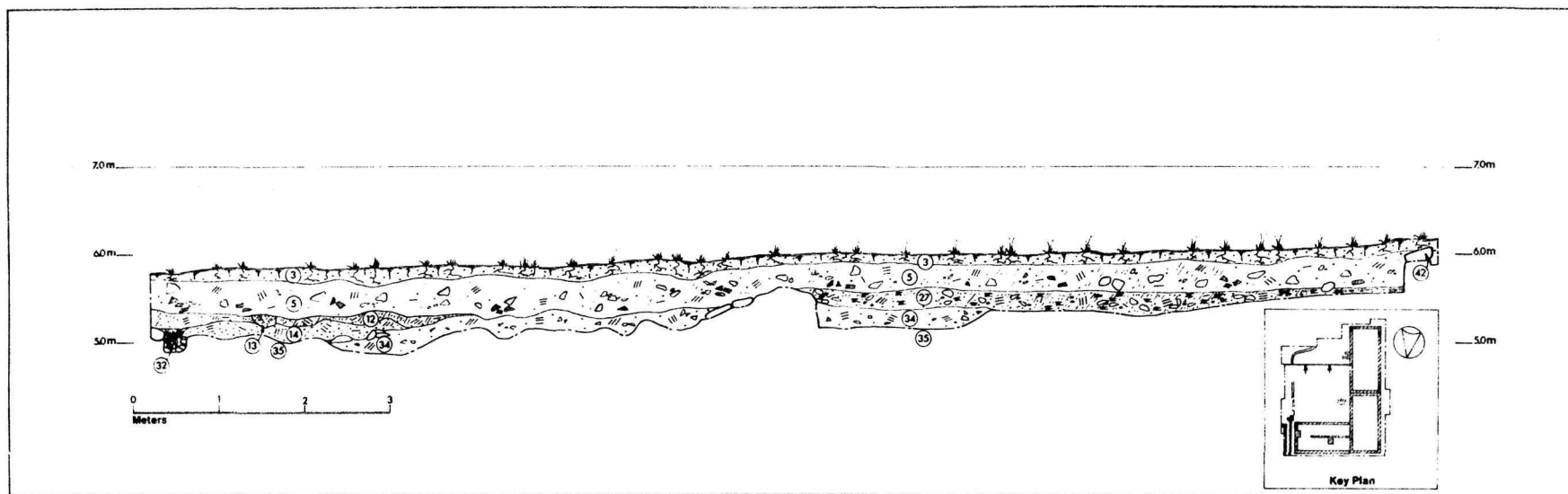


Figure 47: Matrix chart of the de Pensens-de la Vallière storehouse, Lot D, Block 16. Event numbers are keyed with the other Lot D matrix chart.

DE PENSENS DE LA VALLIERE STOREHOUSE, LOT D, BLOCK 16

DATE	EVENT DESCRIPTION	NO.	EVENT SEQUENCE
		0	<div>0000</div>
>1768 to 1977	Development of modern sod and humus	16D1	<div> <div>90A1 90B1 90C1 90D1</div> <div>90E1 90F1 90G1 90H1</div> </div>
>1768	Post-abandonment accumulation (sandy-loam and humus)	16D2	<div> <div>90A3 90C3</div> <div>90F3 90C4</div> </div>
>1768	Initial collapse of store-house (mortar and rubble)	16D3	<div> <div>90A2 90B2 90C2 90D2</div> <div>90E2 90F2 90H2 90B3</div> <div>90D3 90H3</div> </div>
>1724 to >1768	Accumulation of organic material during the occupation period	16D4	<div> <div>90G2 90E3 90A4 90D4</div> <div>90B5 90C5 90F5 90H5</div> <div>90A9</div> </div>
>1724 to <1727	Laying of basement <u>pavé</u> and surface drain	16D5	<div> <div>90F4 90G4 90E5 90D6</div> <div>90B7 90C7 90H7 90A8</div> </div>
>1724 to <1727	Construction of building walls	16D6	<div> <div>90F4 90G4 90D5</div> <div>90E5 90A7 90B7</div> <div>90C7 90H7</div> </div>
>1724 to <1727	Construction of drain outlet	16D7	<div>90H10</div>
>1724 to <1727	Excavation of basement	16D8	<div>Excavation of Basement</div>
-- to <1727	Development of natural soil horizons	16D9	<div>Development of natural soil horizons</div>

Figure 48: Matrix chart of the New England Craftsmen's shop situated at the southwestern corner of Lot D, Block 16. Event numbers are keyed with the other Lot D matrix charts.

NEW ENGLAND CRAFTSMEN'S SHOP SITUATED AT THE SOUTH-WESTERN CORNER OF LOT D, BLOCK 16																							
DATE	EVENT DESCRIPTION	NO.	EVENT SEQUENCE																				
		0	0000																				
>1768 to 1977	Development of modern sod and humus	16D1	<table> <tr><td>90A1</td><td>90B1</td><td>93A1</td><td>93B1</td></tr> <tr><td>93C1</td><td>93D1</td><td>93E1</td><td>93F1</td></tr> <tr><td>93G1</td><td>93H1</td><td>93S1</td><td>93X1</td></tr> <tr><td>93Y1</td><td></td><td></td><td></td></tr> </table>	90A1	90B1	93A1	93B1	93C1	93D1	93E1	93F1	93G1	93H1	93S1	93X1	93Y1							
90A1	90B1	93A1	93B1																				
93C1	93D1	93E1	93F1																				
93G1	93H1	93S1	93X1																				
93Y1																							
>1768	Accumulation of various post-abandonment materials	16D10	<table> <tr><td>90B3</td><td>90A6</td><td>93A2</td><td>93B2</td></tr> <tr><td>93C2</td><td>93D2</td><td>93E2</td><td>93F2</td></tr> <tr><td>93G2</td><td>93H2</td><td>93S2</td><td>93X2</td></tr> <tr><td>93Y2</td><td>93B3</td><td>93D3</td><td>93F3</td></tr> <tr><td>93F4</td><td>93H4</td><td></td><td></td></tr> </table>	90B3	90A6	93A2	93B2	93C2	93D2	93E2	93F2	93G2	93H2	93S2	93X2	93Y2	93B3	93D3	93F3	93F4	93H4		
90B3	90A6	93A2	93B2																				
93C2	93D2	93E2	93F2																				
93G2	93H2	93S2	93X2																				
93Y2	93B3	93D3	93F3																				
93F4	93H4																						
>1768	Deposition of initial post-abandonment brick debris and associated soil lense:	16D11	<table> <tr><td>93C3</td><td>93C4</td><td>93C5</td><td></td></tr> </table>	93C3	93C4	93C5																	
93C3	93C4	93C5																					
1746 to >1768	Trash accumulation outside west wall of New England craftsmen's shop	16D12	<table> <tr><td>90J2</td><td>93F5</td><td></td><td></td></tr> </table>	90J2	93F5																		
90J2	93F5																						
1746	Construction of New England craftsmen's shop	16D13	<table> <tr><td>93S3</td><td>93Y3</td><td>93A4</td><td>93B4</td></tr> <tr><td>93E4</td><td>93X4</td><td>93H5</td><td>93B6</td></tr> <tr><td>93C6</td><td>93E6</td><td>93F7</td><td>93D5</td></tr> </table>	93S3	93Y3	93A4	93B4	93E4	93X4	93H5	93B6	93C6	93E6	93F7	93D5								
93S3	93Y3	93A4	93B4																				
93E4	93X4	93H5	93B6																				
93C6	93E6	93F7	93D5																				
-- to 1746	Various minor soil depositions	16D14	<table> <tr><td>93A3</td><td>93D3</td><td>93E3</td><td>93G3</td></tr> <tr><td>93H3</td><td>93X3</td><td>93D4</td><td>93F4</td></tr> <tr><td>93G4</td><td>93B5</td><td>93F6</td><td>93C7</td></tr> <tr><td>93C8</td><td></td><td></td><td></td></tr> </table>	93A3	93D3	93E3	93G3	93H3	93X3	93D4	93F4	93G4	93B5	93F6	93C7	93C8							
93A3	93D3	93E3	93G3																				
93H3	93X3	93D4	93F4																				
93G4	93B5	93F6	93C7																				
93C8																							
-- to 1746	Development of natural soil horizons	16D9	<table> <tr><td>93S4</td><td>93Y4</td><td>93A5</td><td>93G5</td></tr> <tr><td>93X5</td><td>93D6</td><td>93H6</td><td>93B7</td></tr> <tr><td>93E7</td><td>93C8</td><td>93F8</td><td>90B6</td></tr> </table>	93S4	93Y4	93A5	93G5	93X5	93D6	93H6	93B7	93E7	93C8	93F8	90B6								
93S4	93Y4	93A5	93G5																				
93X5	93D6	93H6	93B7																				
93E7	93C8	93F8	90B6																				

Figure 49: Matrix chart of Loppinot-Dangeac house,
Lot C, Block 16. Event numbers are keyed
with the other Lot C matrix charts.

LOPPINOT-DANGEAC HOUSE, LOT C, BLOCK 16

DATE	EVENT DESCRIPTION	NO.	EVENT SEQUENCE
		0	
Recent	Deposition of recent overburden	16C1	<div> <div>3000</div> <div> <div>91D2 91E1 91F1</div> <div>91J2 91L1 91M1</div> </div> </div>
>1768 to 1977	Development of modern sod and humus	16C2	<div> <div>91A1 91B1 91C1</div> <div>91D1 91E1 91G1</div> <div>91H1 91J1 91L1</div> </div>
>1768 to 1977	Accumulation of post-occupation materials (sandy-loams and mortar)	16C3	<div> <div>91M4 91N7 91N9 91N10 91C2</div> <div>91C10 91C11 91C12 91D4 91D5</div> <div>91D6 91D7 91D8 91E1 91E5</div> <div>91E6 91F1 91F2 91F3 91F5</div> <div>91G2 91G6 91H2 91H5 91H7</div> <div>91H8 91J4 91J7 91J8 91K2</div> <div>91K4 91K5 91K6 91K7 91L1</div> <div>91L3 91M1</div> </div>
>1731 to >1768	Accumulation of red sandy-loam during occupation period	16C4	<div> <div>91D8 91D9 91F5</div> <div>91J9 91K8 91L4</div> <div>91M3</div> </div>
>1731 to >1768	Accumulation of coarse sandy-loam with organic content during occupation period	16C5	<div> <div>91J10 91K9 91K12</div> <div>91K15 91M4</div> </div>
>1731 to >1768	Deposition of coarse sand over drain during occupation period	16C6	<div> <div>91C13 91D9</div> <div>91J12 91K13 91M5</div> </div>
1731	Laying of basement <u>pavé</u> and surface drain	16C7	<div> <div>91C15 91D12 91D13</div> <div>91E8 91F6 91J11</div> <div>91K11 91L5 91M6</div> </div>
1731	Construction of sun-surface drain	16C8	<div> <div>91C16 91D10</div> <div>91J15 91K17</div> <div>91M7</div> </div>
1731	Construction of retaining wall	16C9	<div> <div>91D11 91J6</div> <div>91K3</div> </div>
1731	Construction of western fireplace foundation	16C10	<div> <div>91J5 91K3</div> </div>
1731	Construction of eastern fireplace foundation	16C11	<div> <div>91A3 91B5</div> <div>91C3 91D3</div> </div>
1731	Construction of foundation walls	16C12	<div> <div>91A3 91B3 91B5</div> <div>91C5 91B9 91F4</div> <div>91G5 91H6 91L2</div> <div>91M2</div> </div>
>1724 to >1727	Excavation of De Pensens - de la Vallière storehouse basement	16C13	<div> <div>91B14</div> </div>
-- to 1724	Development of Ae-horizon	16C14	<div> <div>91B11 91G12 91H10</div> <div>91J13 91K10</div> </div>
-- to 1724	Development of B-horizon	16C15	<div> <div>91B16 91D14 91G13 91H12</div> <div>91J14 91K14 91K16</div> </div>

Figure 50: Matrix chart of the Loppinot-Dangeac house backyard area covered or formerly covered with pavé Lot C, Block 16. Event numbers are keyed to the otherLot C matrix chart.

**LOPPINOT-DANGEAC HOUSE BACKYARD
AREA COVERED OR FORMERLY COVERED WITH PAVE; LOT C, BLOCK 16**

DATE	EVENT DESCRIPTION	NO.	EVENT SEQUENCE
		0	
>1768 to 1977	Development of modern sod and humus	16C2	
>1768 to 1977	Removal of some <u>pavé</u> stones and accumulation of fill (coarse sandy-loam),	16C16	
>1731 to 1768	Deposition of fill in partially brick lined well (sand, loose mortar and rocks)	16C17	
>1731 to <1768	Construction of partially brick lined well	16C18	
>1731 to <1768	Laying of stone step on <u>pavé</u> surface	16C19	
1731	Laying of backyard <u>pavé</u>	16C20	
< 1734 to 1740	Filling-in and covering over with <u>pavé</u> of linear trench following the removal of possible garden fence	16C21	
1731	Construction of Loppinot-Dangeac house	16C12	
-- to <1731	Various minor soil depositions	16C22	
>1719 to <1734	Excavation of linear trench for possible garden fence line	16C23	
-- to >1731	Development of Ae-horizon	16C24	
-- to >1731	Development of B-horizon	16C25	

00000

MEC2

92G1	92H1	92L1	92M1
92P1	92Q1	92R1	92X1
91G1	91G3	91H1	

MEC6

92G3	92H2	92H5	92H7	92H10
92L2	92L4	92L5	92M2	92M3
92M6	92M7	92M8	92P2	92P3
92Q2	92Q4	92R2	92R3	92R5
92X2	92X3	92X4	92X5	92X9
92X10	91B2	91B6	91B8	91G2
91G7	91H2			

MEC21

92P4

MEC17

92R8	92R9
92R10	92R1

MEC8

92R4

MEC19

92B13

MEC20

92G4	92H4	92L3	92P5	92Q1
92R6	92X8	91B14	91G4	91G8
91H3				

MEC12

91B3	91G5
91H6	

MEC23

92P6

MEC22

92H8	92H13	92L6	92L8	92L10
92M9	92M10	92M11	92M12	92X7
92X11	91B8			

MEC24

92G6	92L7
91G9	

MEC25

92G8	92H12	92L9	92M13
92P7	92Q5	92R7	92X12
91B16	91G13	91H11	

Figure 51: Matrix chart of the southeast corner of the Loppinot-Dangeac house backyard. Event numbers are keyed to the other Lot C matrix chart.

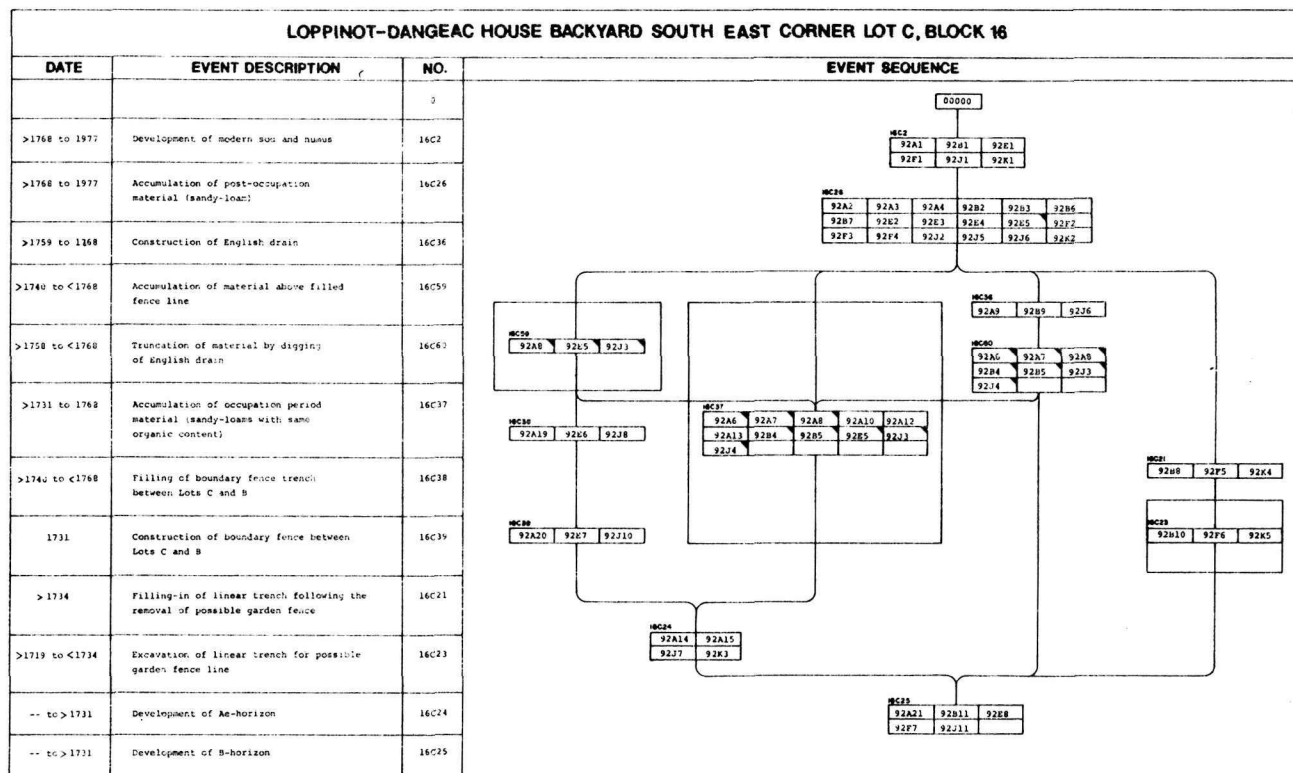


Figure 52: Matrix chart of the Loppinot-Dangeac house backyard southwest corner of Lot C, Block 16. Event numbers are keyed to the Lot C matrix chart.

LOPPINOT-DANGEAC HOUSE BACKYARD SOUTH WEST CORNER LOT C, BLOCK 16

DATE	EVENT DESCRIPTION	NO.	EVENT SEQUENCE
		0	<div>00000</div> <div> <div> <div>16C2</div> <div>92C1 92D1</div> <div>92G1 92H1</div> </div> <div> <div>16C26</div> <div>92C2 92C3 92C5 92C7</div> <div>92C9 92D2 92D4 92D6</div> <div>92D8 92G2 92G5 92H2</div> <div>92H6 92H9 92H11</div> </div> </div> <div> <div> <div>16C27</div> <div>92C6 92D10</div> </div> <div> <div>16C28</div> <div>92D13 92D14 92D15</div> <div>92D16 92D17</div> </div> <div> <div>16C29</div> <div>92D18</div> </div> <div> <div>16C30</div> <div>92D19</div> </div> <div> <div>16C31</div> <div>92C13</div> </div> <div> <div>16C32</div> <div>92C4 92D7 92D7</div> <div>92H14 92H16</div> </div> <div> <div>16C33</div> <div>92H15</div> <div>92H17</div> <div>92H18</div> </div> <div> <div>16C34</div> <div>92C12</div> </div> <div> <div>16C35</div> <div>92D5 92H3</div> </div> </div> <div> <div>16C24</div> <div>92C10 92C11</div> <div>92D9 92D7</div> <div>92G7</div> </div> <div> <div>16C25</div> <div>92C8 92D11</div> <div>92D12 92D9</div> <div>92H1</div> </div>

Figure 53: Matrix chart of Lot C property passageway
and boundary line well area, Block 16.
Event numbers are keyed with the other
Lot C matrix chart.

LOT C PROPERTY PASSAGEWAY AND BOUNDARY LINE WELL AREA, BLOCK 16

DATE	EVENT DESCRIPTION	NO.	EVENT SEQUENCE
Recent	Accumulation of recent overburden	16C1	
>1768 to 1777	Development of modern sod and humus	16C40	
>1768 to 1777	Deposition of post-occupation material (reddish-brown sand, over portion of sod)	16C41	
>1768 to 1777	Development of later buried sod and humus	16C2	
>1768 to 1777	Accumulation of post-occupation material (coarse sandy-loam)	16C24	
1758 to >1768	Accumulation of mortar and rubble from Fazel house (lot B2)	16C42	
>1758 to >1768	Accumulation of ash with varying contents of sandy-loam	16C43	
>1758 to >1768	Accumulation of dark sandy-loam	16C44	
>1758 to >1768	Deposition of trash inside and outside rectangular well house	16C45	
>1740 to >1768	Deposition of brown sandy-loam outside rectangular well house	16C46	
>1740 to >1768	Deposition of brown sandy-loam within boundary line well	16C47	
>1740 to >1768	Filling of boundary fence trench	16C38	
>1740 to >1768	Accumulation of black sandy-loam with some rich organic content within boundary line well	16C48	
>1737 to <1740	Construction of rectangular masonry well house and related drain	16C49	
>1737 to <1740	Construction of partial masonry well cover	16C50	
>1737 to 1740	Deposition of fill over passageway drain	16C51	
1731	Construction of boundary fence between lots C and B	16C13	
1731	Laying of <u>PAVE</u> in passageway	16C52	
1731	Erection of gate posts	16C53	
ca. 1731	Construction of east wall of the Benjamin-Dangeard house	16C12	
>1745 to <1750	Laying of <u>PAVE</u> , drain and grate in Fazel house backyard	16C54	
1731	Original construction of drain leading from Benjamin-Dangeard house basement	16C55	
1731 to 1777	Shifting of drain (event in spatial sequence only)	16C56	
>1719 to <1736	Construction of original stone lined boundary well	16C57	
>1745 to <1750	Construction of uncovered Fazel house west masonry foundation wall	16C58	
-- to 1719	Development of natural soil horizon	16C24 and 16C25	

Figure 54: Combined event matrix chart for de Pensens-de la Vallière storehouse and New England Craftsmen's shop. For corresponding lot no. see individual matrix chart for each analytical area.

Left: de Pensens-de la Vallière storehouse.

Right: New England Craftsmen's shop.

LOPPINOT-DANGEAC PROPERTY, LOT C, BLOCK 16

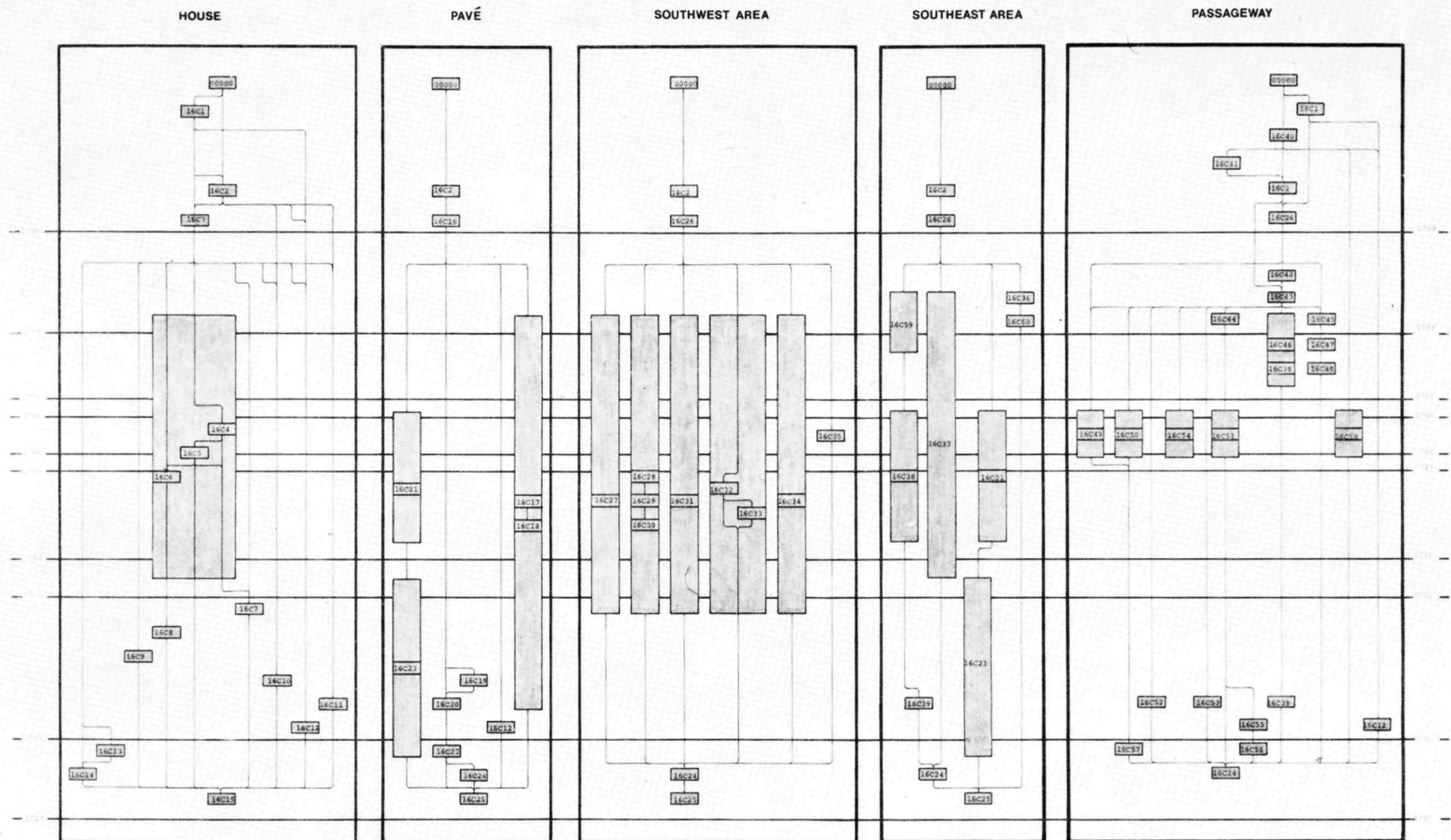


Figure 55: Combined event matrix chart for all Lot C, Block 16 analytical areas. For corresponding lot no. see individual matrix chart for each analytical area. The analytical areas on this figure from left to right are:

- a) Loppinot-Dangeac house.
- b) Loppinot-Dangeac house backyard area covered or formerly covered with pavé.
- c) Southeast corner of Loppinot-Dangeac house backyard.
- d) Southwest corner of Loppinot-Dangeac house backyard
- e) Lot C property passageway and boundary line well area.

WESTERN PORTION OF LOT D BLOCK 16

