D-15

FORT VANCOUVER EXCAVATIONS - IV

Chief Factor's House and Kitchen

by

J. J. Hoffman

and

Lester A. Ross

United States Department of the Interior

National Park Service

Fort Vancouver National Historic Site

September 1973

NATIONAL PARK SERVICE
DENVER SERVICE CENTER
BRANCH OF MICROGRAPHICS
LIBRARY COPY

Color Scans
9/21/2004

CONTENTS

page

I - Introduction.....1

II - Excavations.....3

The Components.....3

Chief Factor's House.....17

Footings.....17

Sills.....36

Joists.....38

Chimney.....39

Cellar.....41

Other Internal Features.....43

Porch.....45

Fences.....51

Guns.....55

Chief Factor's Kitchen.....56

Floor.....57

Cooking Facility.....57

Superstructure.....58

Fence.....59

Post-1852 Kitchen.....61

North Gate Road.....63

Privies.....64

page

III - Artifact Descriptions.....66

Ceramic Ware and Container Items.....66

Ceramic Personal Items.....84

Glass Items.....88

Metal Items.....107

Construction Material.....133

Stone Items.....135

Bone Items.....137

Wooden Items.....137

Shell Items.....137

IV - Preliminary Interpretations.....138

Distributional Evidence.....142

Specifics.....162

Internal Arrangement of the Chief Factor's House.....167

Furnishings of the Chief Factor's House.....171

V - Summary and Conclusions.....176

Appendices

I: Summary of Miscellaneous Materials.....181

II: Glass Bead Measurements.....182

III: List of Provenience Units with their Corresponding Lot and FOVA Catalog Numbers.....198

References Cited.....216

ILLUSTRATIONS

Figure		page
1.1 & 1.2	Archeological features exposed in and around the Chief Factor's House and Kitchen	4
2.	Hudson's Bay Company features exposed in and around the Chief Factor's House and Kitchen	15
3.1 thru 3.9	Enlarged sections of map showing Hudson's Bay Company features in and around the Chief Factor's House and Kitchen	18
4.	Structural footings of the Chief Factor's House	28
5.	Structural remnants of the Chief Factor's House	31
6.	Structural remnants of the Chief Factor's House	37
7.	Excavations around the chimney foundation of the Chief Factor's House	40
8.	Vertical position of the cellar inside the west wall of the Chief Factor's House	42
9.	Structural remains of the Chief Factor's House and Kitchen	49
10.	Southwestern elevation of the Chief Factor's House as photographed in May 1860	50
11.	Ceramic spitoon and vegetable dish cover	80
12.	Ceramic wares and product container lid	81
13.	Clay pipes, bone buttons, shell buttons, and tortoise shell hairpin	85
14.	Clay pipes and gunflints	87
15.	Bitters bottles	89
16.	Miscellaneous bottle fragments	91
17.	Bottle rims	94

Figure page

18. Bottle bases....96

19. Tumblers, stoppers and lids....97

20. Tumblers, stemmed glassware and pressed glass dish....98

21. Freeblown and pressed stemmed glassware....100

22. Frequency of window glass thickness for the area of the Chief Factor's Residence....102

23. Frequency of mirror glass thickness for the area of the Chief Factor's Residence....104

24. Hand forged tacks, brads, nails and spikes....109

25. Hand forged tacks, brads, nails and spikes....110

26. Hand forged tacks, brads, nails and spikes....111

27. Machine cut tacks, sprigs, brads and nails....113

28. Cast tacks and nails, wedge fastener, brass-headed iron screw, and wire tack....114

29. Frequency distribution of all complete hand forged and machine cut nails....115

30. Shutter latches and shutter latch nails....117

31. Hinges, pintles and hasps....118

32. Miscellaneous hardware items....120

33. Metal button types....122

34. Keys and escutcheon....124

35. Keg cocks and keys....126

36. Post, key and socket shapes for brass cocks....127

37. Miscellaneous household and weaponry items....128

38. Lead shot, buckshot, and ball from the Chief Factor's Residence....132

Figure page

39. Imported, local and unknown brick.....136

40. Structural positioning in the area of the Chief Factor's House.....139

41. Schematic arrangement of the foundations for the Chief Factor's House.....140

42. Relative frequencies of window glass.....144

43. Relative frequencies of imported brick #1001.....145

44. Relative frequencies of imported brick #1002.....146

45. Relative frequencies of local brick #1004.....147

46. Relative frequencies of coral.....149

47. Relative frequencies of coal.....150

48. Relative frequencies of hand forged nails.....152

49. Relative frequencies of machine cut nails.....153

50. Relative frequencies of ceramic wares.....154

51. Relative frequencies of bottles, tumblers, and stemmed glassware.....156

52. Relative frequencies of beads.....158

53. Relative frequencies of bone fragments.....159

54. Relative frequencies of shell fragments.....160

55. Relative frequencies of kaolin pipes.....161

56. Hypothesized plan views of the Chief Factor's House.....168

TABLES

page

1. Archeological features excavated in the area of the Chief Factor's House and Kitchen.....7

2. Footing characteristics of the north wall of the Chief Factor's House.....29

3. Footing characteristics of the east wall of the Chief Factor's House.....32

4. Footing characteristics of the south wall of the Chief Factor's House.....33

5. Footing characteristics of the west wall of the Chief Factor's House.....34

6. Support characteristics for the south porch line of the Chief Factor's House.....46

7. Support characteristics for the southern fence of the Chief Factor's House.....52

8. Support characteristics for the western fence of the Chief Factor's House.....53

9. Support characteristics for the western fence of the Chief Factor's Kitchen.....60

10. Quantitative distribution of artifacts by descriptive categories.....67

11. Varieties of lustre decorated wares.....66

12. List of marked, undecorated earthenware fragments.....74

13. Quantitative distribution of identified and classified transfer printed patterns.....75

14. List of marked transfer printed earthenware fragments.....78

15. Bottle rim types as defined by manufacturing attributes and forms.....93

16. Bottle base types as defined by manufacturing attributes, forms and colors.....95

page

17. Comparison of beads with Kidds' identification numbers.....105

18. Varieties of hand forged tacks, brads, nails and spikes.....108

19. Varieties of machine cut tacks, sprigs, brads and nails.....112

20. Varieties of cast tacks and nails.....112

21. Types of buttons.....121

22. Lead shot, buckshot, and ball populations.....131

23. Identification of brick varieties on the basis of comparative compositions.....134

24. Paint color found on Variety #1002 imported brick fragments.....134

25. Items probably used in the Chief Factor's House.....172

26. Transfer printed pearlware patterns most frequently found in the area of the Chief Factor's House.....175

ERRATUM

page number 16 not used

I - INTRODUCTION

This is the fourth in a series of interim reports detailing the findings and analyses of the Fort Vancouver Archeological Project. Purposes, scope, and methods of the current project are outlined in the initial report of this series (Hoffman and Ross 1972).

This fourth report is concerned with remains of the Chief Factor's House, also known as the Big House, the governor's mansion, and a variety of other names (Hussey 1972:87) that indicate the building's importance as the social focus of Fort Vancouver. This report also details remains of a large kitchen that served as a functional auxiliary to the Big House.

In addition to housing the senior officers and their families, the Chief Factor's House served as a common dining hall for the gentlemen of the Fort, as a visitors' center, as a social and economic center for Hudson's Bay Company activities in the Department of the Columbia, and even as a public center of political activity in the Oregon country. Much of this has been outlined by John A. Hussey but cannot be overemphasized. Indeed, "...merely to summarize the events which took place in the manager's residence from 1838 to the 1850's would practically amount to the writing of a history of Fort Vancouver..." (Ibid.:94).

The archeological remains detailed in this report are those of the second Chief Factor's House built within the Fort. The presence of two successive structures of similar appearance and function, but in different locations, was strongly suggested by Hussey (1957:145) in his original published report, and demonstrated by more recent research (Hussey 1972:88-94). It is the second house that is germane to the 1845 period of Fort Vancouver, the period selected by the National Park Service for reconstruction of major buildings.

Built during the winter of 1837-38, the second Chief Factor's House was in use by 19 March 1838 and continued to stand until 15 June 1860 (Ibid.:93-94) or later. The associated Kitchen was immediately north of the Chief Factor's House; that is, between the house and the northern wall of the Stockade (Hussey 1957:Pls. II, IV). It was probably built at the same time as the Big House, but its exact location cannot be fully indicated before July 1841 in light of current historical research (Hussey 1972:165). While its main function was that of a kitchen for the common dining hall, the building also served as living quarters for cooks and stewards

(Ibid.:165, 168, 170). This particular kitchen stood in one location from the time it was built in 1838 or 1841, until its destruction in 1852 or 1854 (Ibid.: 167-68). It was replaced sometime before 1854 by a smaller structure located immediately northeast of the Chief Factor's House. We have termed the later kitchen the post-1852 Kitchen and discussed portions of it in a previous report (Hoffman and Ross 1973). Other portions will be briefly discussed in this report.

Throughout this report we use the term "Chief Factor's Kitchen" when referring to the structure that stood behind the Big House from about 1838 to sometime before 1854 and the term "post-1852 Kitchen" when referring to the small building that replaced the Chief Factor's Kitchen.

Various portions of the Chief Factor's House and Kitchen were exposed during exploratory operations of 1948 and 1950 (Caywood 1955:sheet 9 of map 2). These features included several wooden footings of wall lines, stone remains interpreted as a fireplace foundation within the Kitchen area, and two privy pits located north of the Chief Factor's House and Kitchen (Ibid.:15-16, sheet 9 of map 2). It is unfortunate that the published versions of Caywood's maps do not show the full details of his field maps. The latter, which are still on file at Fort Vancouver National Historic Site, include certain data that we will show to be significant to a structural understanding of the Chief Factor's House.

II - EXCAVATIONS

Remains of the Chief Factor's House and Kitchen were exposed by a continuation of the stripping process previously used in the northeastern sector of the Fort. This technique consisted of excavating all areas on or adjacent to the House and Kitchen by means of contiguous 10 ft. squares. Fill of each square was removed in various levels or units until we were assured that excavations were below the occupational surface of the Hudson's Bay Company. In many areas, excavations were carried well into culturally sterile flood plain gravels in order to fully define archeological remains.

The top layer or unit of each square consisted of fill and debris from National Park Service and United States Army activities. This unit, whose depth varied from square to square, was stripped out as a single level and labeled "Vancouver Barracks Level." Cultural deposits below this level were removed in 0.5 ft. increments, including U.S. Army deposits that intruded below the Hudson's Bay Company deposits.

A total of 102 complete or partial 10 ft. squares was stripped to varying depths below the surface of summer 1971. These units and their exposed remains are illustrated on the excavation map, Figs. 1.1-1.2. Thirteen additional 10 ft. squares were excavated west and southwest of those shown on Figs. 1.1-1.2. These are not included on the excavation map since they were not completed; that is, the squares were not carried to depths considered sufficient for full description and interpretation. Other than sectioning an HBC road (to be discussed), the incomplete squares yielded little useful information on Hudson's Bay Company occupation and merely showed continuation of USA features.

The stripping process succeeded in exposing the foundations of the Chief Factor's House, fence lines and a porch associated with the House, as well as certain remains of the Chief Factor's Kitchen and the post-1852 Kitchen. Added to the above were intrusions from various periods of Vancouver Barracks activity, and disturbances from more recent National Park Service activities.

The Components

All exposed archeological features are summarized in Table 1.

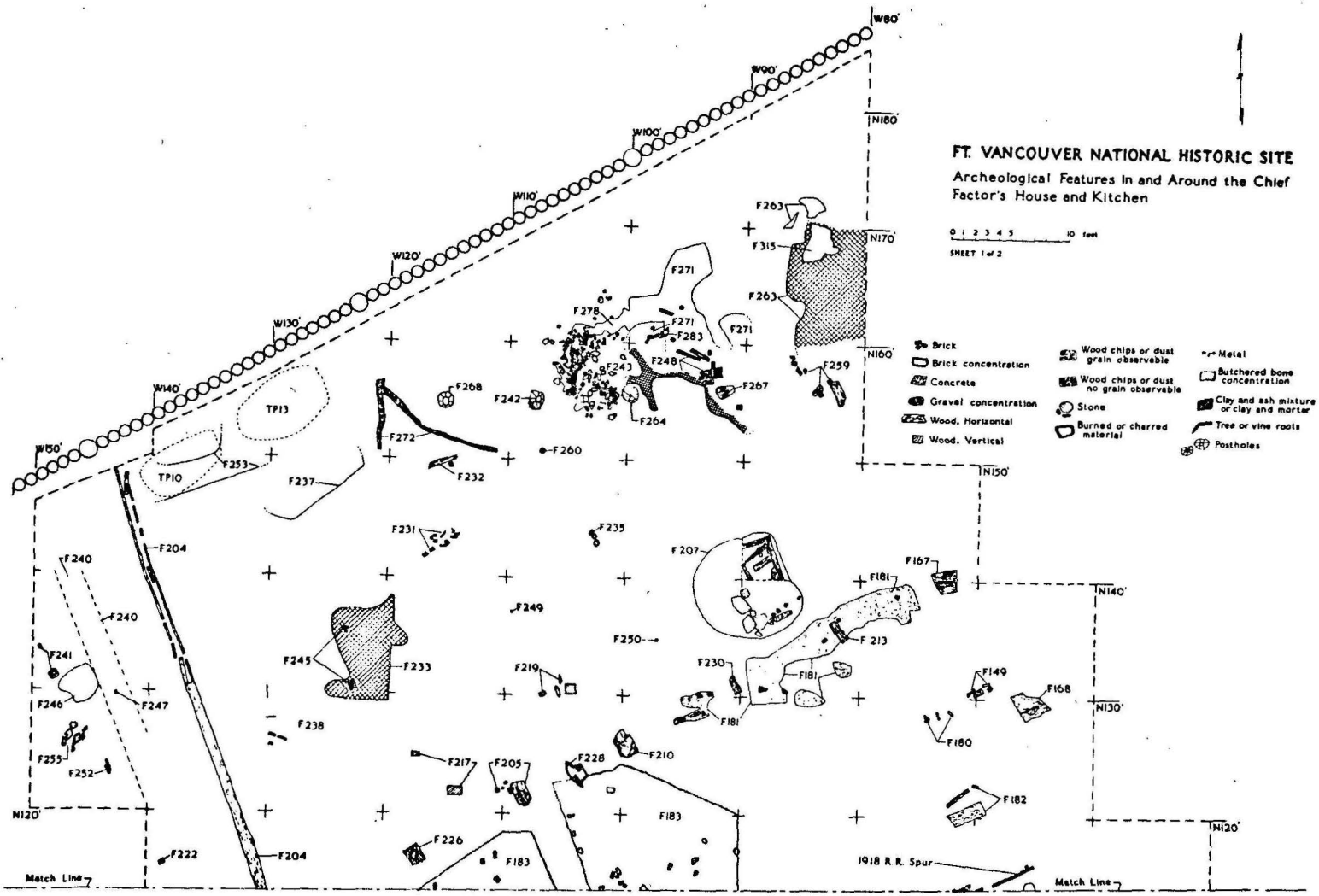

FT. VANCOUVER NATIONAL HISTORIC SITE
Archeological Features In and Around the Chief Factor's House and Kitchen
0 1 2 3 4 5 10 feet
SHEET 1 of 2
Brick
Brick concentration
Concrete
Gravel concentration
Wood, Horizontal
Wood, Vertical
Wood chips or dust grain observable
Wood chips or dust no grain observable
Stone
Burned or charred material
Metal
Butchered bone concentration
Clay and ash mixture or clay and mortar
Tree or vine roots
Postholes
W80'
W90'
W100'
W110'
W120'
W130'
W140'
W150'
N180'
N170'
N160'
N150'
N140'
N130'
N120'
TP13
TP10
F253
F237
F204
F240
F241
F246
F247
F255
F252
F222
F268
F242
F272
F260
F232
F278
F271
F283
F243
F248
F264
F267
F263
F315
F259
F231
F235
F249
F250
F245
F233
F219
F238
F217
F205
F228
F210
F226
F183
F207
F167
F181
F213
F230
F149
F168
F180
F182
1918 R.R. Spur
Match Line
Match Line

Fig. 1.1

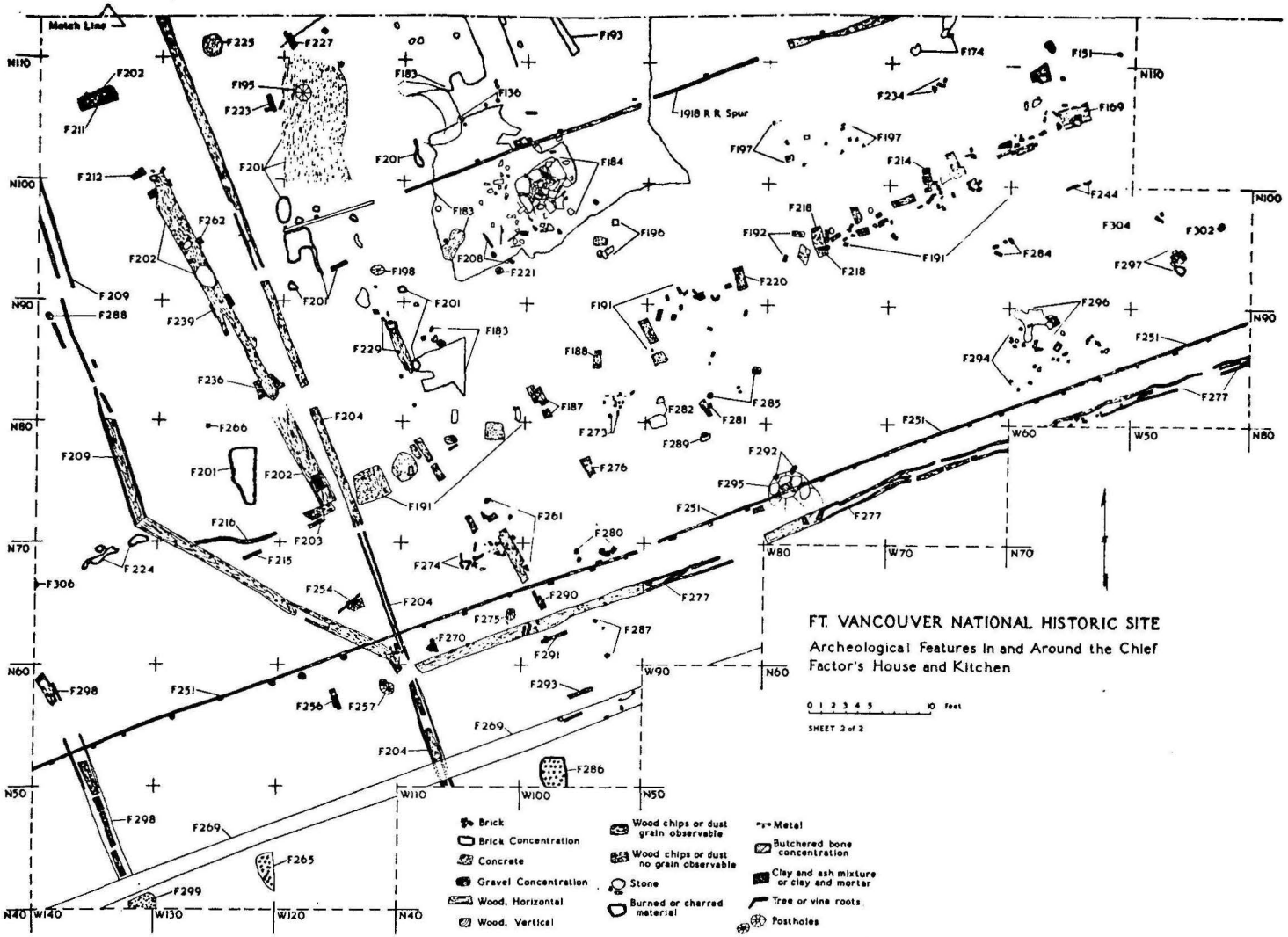

Match Line
1918 R R Spur
N110
N100
N90
N80
N70
N60
N50
N40
W140
W130
W120
W110
W100
W90
W80
W70
W60
W50
FT. VANCOUVER NATIONAL HISTORIC SITE
Archeological Features in and Around the Chief Factor's House and Kitchen
0 1 2 3 4 5 10 Feet
SHEET 2 of 2
Brick
Brick Concentration
Concrete
Gravel Concentration
Wood, Horizontal
Wood, Vertical
Wood chips or dust grain observable
Wood chips or dust no grain observable
Stone
Burned or charred material
Metal
Butchered bone concentration
Clay and ash mixture or clay and mortar
Tree or vine roots
Postholes

Fig. 1.2

Most can be identified as to their cultural affiliation or component on the basis of associated artifacts, stratigraphic position, or documented location. Some features, such as tree roots and charcoal found in sterile flood plain gravels, cannot be confidently identified or they are non-cultural items.

The latest cultural remains found were those of the NPS. These consisted largely of stake, post, or peg butts left in the ground from previous archeological excavations. Also noted were both slumped and intact lines of previous excavations.

Remains of Vancouver Barracks activity were located at depths from sod level to well within the flood plain gravels underlaying the HBC occupation. The more outstanding remains of the USA component were a series of wood-lined drains or culverts located south and west of the Chief Factor's House. One such drain intruded the western sector of the House, nearly parallel to the latter's west wall (Figs. 1.1-1.2). The drains were built within deep trenches which penetrated well below the HBC remains (Fig. 6a).

Areas of carbonized straw and grain were noted in western sectors of excavation. These appeared to be burnt shocks, possibly oats, dating from use of the Fort area by the military for agricultural and pastoral purposes. Another possible pastoral use by the Army was represented by 5 large postholes of a putative horse picket intrusive to the northeast corner of the Chief Factor's Kitchen (Fig. 1.1). The postholes were spaced at intervals of 7.75 to 8.00 ft. for a total length of 31.55 ft. Their alignment was skewed to HBC remains, although there is general agreement with other USA alignments.

Vancouver Barracks remains of the 1918-19 period were amply found in the southern areas of excavation. Wooden ballast dividers of 2 railroad spurs were found crossing portions of the Chief Factor's House (Fig. 1.2). The northern divider was a continuation of one discussed in the first and third reports of this series (Hoffman and Ross 1972, 1973). The southern divider crossed over the wood-lined drains of an earlier period. Also crossing the drains was a narrow trench that appeared to have been dug by machinery and was probably intended, if not used, as a water line. Paralleling the south side of the trench were trash pits and a concrete footing of a World War I lumber mill. A large posthole of a utility line was found north of the northern ballast divider, and intrusive to the carbonized straw deposits. Wooden pieces

Table 1 -- Archeological features excavated in area of the Chief Factor's House and Kitchen.

Feature	Description	Component
136	Four postholes and a post butt; postholes suggest lathe-like stakes, possibly part of previous excavations	NPS?
149	Wood footing plus wood and brick fragments in east wall of Chief Factor's House	HBC
151	Wood stake of a ballast divider from a 1918 R.R. spur	USA
167	Wood sill on footing; NE corner of Chief Factor's House	HBC
168	Wood footing in east wall of Chief Factor's House	HBC
169	Wood sill on footing; SE corner of Chief Factor's House	HBC
174	Charcoal fragments in sterile floodplain deposits plus an upright 2x4 of undetermined cultural provenience	-
180	Two small concentrations of wood fragments and a brick near east wall of Chief Factor's House	HBC
181	Irregular scattering of brick and wood fragments mixed with gravels; parallels inside of north wall of Chief Factor's House	HBC
182	Concentration of wood fragments; possibly a footing for a repair prop under a floor joist of Chief Factor's House	HBC
183	Concentration of brick fragments from the collapsed chimney of Chief Factor's House	HBC
184	Stone foundation for chimney of Chief Factor's House	HBC
187	Mortised wood footing in south wall of Chief Factor's House	HBC
188	Wood footing in south wall of Chief Factor's House	HBC
191	Wood remnants of 7 footings and many sill fragments in south wall of Chief Factor's House	HBC
192	Charred remnant of sill from south wall of Chief Factor's House	HBC
193	Brick stain from collapsed chimney of Chief Factor's House plus several small rocks	HBC
195	Large posthole of a modern utility line; probably 1918-1919	USA

Table 1 (cont'd.)

Feature	Description	Component
196	Three large rocks, a piece of concrete, and a rectangular post butt from a ballast divider of a 1918 R.R. spur; rock may be redeposited from chimney foundation of Chief Factor's House	USA & HBC
197	Concentration of brick, metal, and wood fragments in SE sector of Chief Factor's House; largest wood piece is from ballast divider of 1918 R.R. spur	USA & HBC
197a	Rectangular post butt from ballast divider of a 1918 R.R. spur	USA
198	Large posthole between west wall and chimney foundation of Chief Factor's House; possibly a repair prop for floor joisting	HBC?
201	Scattered pockets of carbonized straw and grain (oats?) intruded by utility pole, F195; appear to be shocks burnt before 1918	USA
202	Charred remnants of wood foundation sill in west wall of Chief Factor's House	HBC
203	Wood sill on footing; SW corner of Chief Factor's House	HBC
204	Intrusive wood-lined drain of Vancouver Barracks	USA
205	Wood footing in north wall of Chief Factor's House; west edge of one of the probable Kitchen doors	HBC
207	Intrusive wood-lined trash pit with large stones and concrete	USA
208	Green-painted wood fragments associated with collapsed chimney of Chief Factor's House; possibly remains of an interior wall	HBC
209	Intrusive wood-lined drain of Vancouver Barracks	USA
210	Wood footing in north wall of Chief Factor's House; east edge of one of the probable Kitchen doors	HBC
211	Wood footing; NW corner of Chief Factor's House	HBC
212	Redeposited fragment of west wall sill of Chief Factor's House	HBC
213	Wood footing in north wall of Chief Factor's House	HBC
214	Two wood footings in south wall of Chief Factor's House; one contains expended musket balls	HBC
215	Mortised wood footing of a fence line on west side of Chief Factor's House	HBC
216	Large vine (?) root, possibly from vines that grew on Chief Factor's House	HBC?
217	Two small concentrations of bovid (?) bones in an area between Chief Factor's House and Kitchen	HBC

Table 1 (cont'd.)

Feature	Description	Component
218	Wood footing and post tenon in south wall of Chief Factor's House	HBC
219	Concentration of wood fragments, window glass, and mammal bones below one of the probable passages between Chief Factor's House and Kitchen	HBC
220	Wood footing in south wall of Chief Factor's House	HBC
221	Rectangular wood post butt set into a prepared round hole; one of the supports for a ballast divider of a 1918 R.R. spur	USA
222	Rectangular wood post butt of a fence aligned with west wall of Chief Factor's House	HBC
223	Wood board fragments in NW sector of Chief Factor's House, possibly associated with F195	USA?
224	Alignment of wood fragments and burnt wood perpendicular to and below the HBC road entering Fort from North Gate	HBC?
225	Wood footing in north wall of Chief Factor's House	HBC
226	Wood footing in north wall of Chief Factor's House	HBC
227	Wood board fragment in NW sector of Chief Factor's House; possibly associated with F195	USA?
228	Charred wood footing in north wall of Chief Factor's House; east or west edge of Kitchen door	HBC
229	Wood joist remnant in SW sector of Chief Factor's House	HBC
230	Wood footing in north wall of Chief Factor's House	HBC
231	Linear pattern of wood fragments near center of Chief Factor's Kitchen; possibly remains of ceiling or flooring	HBC
232	Linear wood fragments near center of Chief Factor's Kitchen; possibly remains of ceiling or flooring	HBC
233	Irregular pattern of clay and ash in SW sector of Chief Factor's Kitchen; a remnant of Kitchen ground floor	HBC
234	Charred wood fragments under SE sector of Chief Factor's House; appear to be roots or bark	-
235	Intrusion of charred wood fragments and concrete near center of Chief Factor's House	NPS or USA
236	Charred wood footing under west wall sill of Chief Factor's House	HBC
237	Slumped upper limits of a Privy Pit (TP 13) previously excavated; cf. Caywood 1955:24	NPS
238	Linear wood fragments in SW sector of Chief Factor's Kitchen	HBC

Table 1 (cont'd.)

Feature	Description	Component
239	Charred wood footing under west wall sill of Chief Factor's House; southern edge of cellar door	HBC
240	A north-south trench of previous archeological excavations	NPS
241	Two rectangular wood post butts of a fence aligned with west wall of Chief Factor's House	HBC
242	Large posthole aligned with similar posthoies in NE sector of Chief Factor's Kitchen; alignment appears intrusive, possibly a horse picket	USA?
243	Rubble concentration of brick, stone, mortar, coal, scorched metal, and wood fragments mixed with clay and ash, and resting on clay and ash or sand; collapsed and disturbed remains of cooking facility of Chief Factor's Kitchen	HBC
244	Vine (?) roots under east end of porch of Chief Factor's House	HBC?
245	Two concentrations of wood fragments, and wood on concrete; intrusive from Vancouver Barracks activity	USA
246	Small compacted pockets of clay and gravel outside western end of Chief Factor's Kitchen; possibly a dishwater dump	HBC?
247	Tapered 2x4" wooden stake butt; a marker from previous excavations	NPS
248	Rubble layer of brick, stone, mortar and wood board fragments resting on clay and ash layer; more remains of the cooking facility mixed with possible ceiling or flooring remains and laying on floor of Chief Factor's Kitchen	HBC
249	Small wood peg driven into ground; probably from previous excavations	NPS
250	Small wood peg driven into ground; probably from previous excavations	NPS
251	Wood ballast divider of a 1918 R.R. spur	USA
252	Two rectangular wood post butts and remnants of collapsed wood posts from a fence aligned with west wall of Chief Factor's House	HBC
253	Collapsed and backfilled portion of a Privy Pit (TP 10) previously excavated; cf. Caywood 1955:24	NPS
254	Wood footing for SW corner of porch of Chief Factor's House, plus a vine (?) root	HBC
255	Fragments of charcoal, wood and bark; appears to be redeposited tree parts	-
256	Small wood post-in-sill set on brick footings; SW corner of a fence in front of Chief Factor's House	HBC

Table 1 (cont'd.)

Feature	Description	Component
257	Rectangular wood post butt set into a prepared hole and adjacent to a rectangular wood post butt driven into ground; supports or repairs for a fence in front of Chief Factor's House	HBC
258	Brick resting on light grey soil and sand; a detached portion of F248	HBC
259	Large fragments of wood boards, and a rectanguloid posthole; boards are part of post-1852 Kitchen, posthole is part of intrusive, putative picket line	HBC & USA?
260	Small rectangular wood post driven into ground; probably from previous excavations	NPS
261	Wood footing in south porch line of Chief Factor's House, brick fragments, and a wood board; board may be siding or flooring from porch	HBC
262	Wood footing under west wall sill of Chief Factor's House; northern edge of cellar door	HBC
263	Irregularly shaped surface of clay, mortar and coral fragments; floor of post-1852 Kitchen	HBC
264	Split wood post set into a prepared hole; part of putative horse picket intrusive to NE sector of Chief Factor's Kitchen	USA?
265	Redeposited trash of Vancouver Barracks	USA
266	Rectangular wood post butt; support for a fence paralleling west wall of Chief Factor's House	HBC
267	Rectangular wood post butt set into a prepared hole; part of putative horse picket intrusive to NE sector of Chief Factor's Kitchen	USA?
268	Post cast within a prepared hole; east end of putative horse picket intrusive to NE sector of Chief Factor's Kitchen	USA?
269	Narrow, machine-dug (?) trench paralleling R.R. spurs and transecting upper portions of wood-lined drains of Vancouver Barracks; possibly prepared for a water line in 1918	USA
270	Small wood post-in-sill on brick footings; a support for fence in front of Chief Factor's House	HBC
271	Coral-derived lime surface containing kitchen debris; a NE portion of Chief Factor's Kitchen floor	HBC
272	Root system of a large tree; probably precedent to HBC occupation	-
273	Concentration of wood, brick and metal fragments under porch of Chief Factor's House	HBC
274	Vine (?) roots and concentration of wood, brick and tarpaper fragments; most associate with porch of Chief Factor's House but some Vancouver Barracks intrusion present	USA & HBC

Table 1 (cont'd.)

Feature	Description	Component
275	Two rectangular wood post butts set into a prepared hole, one post appears to be a shim; a support for a fence in front of Chief Factor's House	HBC
276	Wood footing in southern porch line of Chief Factor's House	HBC
277	Intrusive wood-lined drain of Vancouver Barracks	USA
278	Irregularly shaped surface of clay, mortar and ash containing brick, stone, cinders and coral fragments; an additional part of cooking facility in Chief Factor's Kitchen as altered by previous excavation	HBC
279	Small wood board in NE sector of Chief Factor's Kitchen; possibly collapsed ceiling or flooring	HBC
280	Concentration of large brick fragments; probably bracing for fence line in front of Chief Factor's House	HBC
281	Mortised wood footing in southern porch line of Chief Factor's House; part of western stairway head	HBC
282	Large angular rock along southern porch line of Chief Factor's House; appears to be redeposited from chimney base of house	HBC
283	Wood board plus cast of a rectangular wood stake driven into ground; board appears to be part of Chief Factor's Kitchen while stake may be from previous excavations	HBC & NPS?
284	Concentration of wood fragments, a mammal vertebra and a brick under porch of Chief Factor's House	HBC
285	Two postholes, one with wood fragments, in southern porch line of Chief Factor's House; parts of eastern and western stairway heads	HBC
286	Intrusive trash deposit of Vancouver Barracks	USA
287	Concentration of brick fragments outside southern fence of Chief Factor's House; possibly discards from fence building or repair	HBC
288	Posthole and a wood board; board is part of an intrusive drain, posthole is part of a R.R. spur	USA
289	Two large smooth stones; possibly redeposited from F295 (q.v.)	HBC?
290	Mortised wood footing and a wood post fragment; one of supports of a fence in front of Chief Factor's House	HBC
291	Two wood boards laying outside of fence in front of Chief Factor's House; possibly pickets from fence	HBC

Table 1 (cont'd.)

Feature	Description	Component
292	Cannonball and trunnion plate of garrison or marine gun carriage; remains of guns displayed in front of Chief Factor's House	HBC
293	Wood board laying outside of fence in front of Chief Factor's House; possibly picket from fence	HBC
294	Concentration of stone, brick and trash outside of fence in front of Chief Factor's House; appears to be mixed and redeposited	USA & HBC
295	Large rectangular wood post butt set into a prepared hole and braced with large rounded stones; flagstaff (?) beneath southern porch extension of Chief Factor's House	HBC
296	Rectangular wood post butt braced with stone and brick adjoining a small surface of coral-derived mortar; a support for fence in front of Chief Factor's House	HBC
297	Rectangular wood post butt braced with stone; one of SE corners of fence in front of Chief Factor's House	HBC
298	Intrusive wood-lined drain of Vancouver Barracks	USA
299	Intrusive concrete footing of Vancouver Barracks; probably 1918-19 lumber mill	USA
302	Rectangular wood post butt set into a prepared hole; one of SE corners of fence in front of Chief Factor's House	HBC
304	Three grouped, rectangular wood post butts, one with traces of white paint, associated with vine(?) roots; a support for eastern fence of Chief Factor's House	HBC
306	Rectangular wood board or plank; associated with road entering Fort from North Gate and paralleling west side of Chief Factor's House	HBC
315	Irregularly shaped surface of coral and mortar partially overlaying and partially mixed with F263; appears to be repair to floor of post-1852 Kitchen	HBC

Following features were not found during current excavation, but are included because of their significances. Information derives from exploratory field maps dated 09-10-50.

-	Line of vertical puncheons extending ca. 10 ft. south of former SE corner of chimney base of Chief Factor's House, south end of line coincides with a footing in south wall; probably a varmint barrier	HBC

Table 1 (cont'd.)

Feature	Description	Component
-	Linear pattern of wood fragments that form an extension of puncheon line above, but outside south wall; southern end of pattern coincides with outside head of western stairway of Chief Factor's House; probably a collapsed floor joist from porch	HBC
-	Wooden footing or a rectangular post butt plus an adjoining wood piece ca. 4 ft. south of the SW corner of chimney base of Chief Factor's House; aligns with a footing in south wall; possibly base of a prop for a floor joist	HBC
-	Linear pattern of wood fragments ca. 12 ft. long that parallels above puncheon line at a distance of ca. 7 ft. west; south end of line makes a right angle and extends ca. 3 ft. east; possibly a collapsed floor joist	HBC

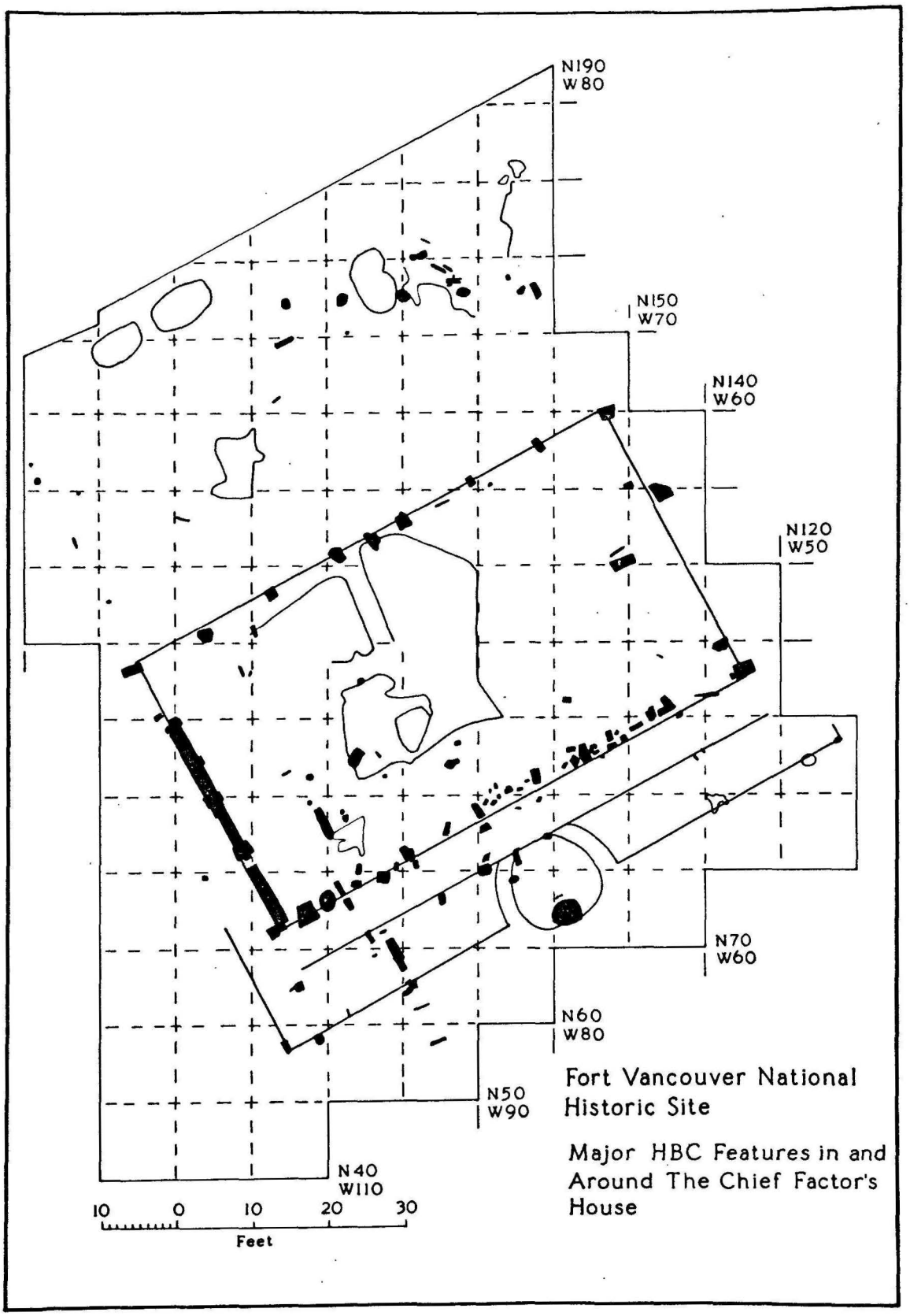

N190
W80
N150
W70
N140
W60
N120
W50
N70
W60
N60
W80
N50
W90
N40
W110
10 0 10 20 30
Feet
Fort Vancouver National Historic Site
Major HBC Features in and Around The Chief Factor's House

Fig. 2

found near the hole were probably remnants of cross arms for the utility pole. Other postholes of this line have been noted (Hoffman and Ross 1972) at intervals of approximately 120 ft. Less easily datable is a large wood-lined trash pit located immediately north of the Chief Factor's House (Fig. 1.1). Excavation of the pit was halted once its affiliation was recognized. The pit was most similar to one found during excavation of the HBC Wash House area (Hoffman and Ross 1972). Both probably stem from "dog duty" or busy work of the peace-time Army.

Balance of remains found in excavation were attributable to the Hudson's Bay Company occupation. These are illustrated on Figure 2 which show only the HBC features. Figs. 3.1 through 3.9 are enlarged sheets of the feature map that are included for clarity of illustration.

Chief Factor's House

The Chief Factor's House of the 1845 period was located near the north wall of the Stockade, a short distance east of the north gate (Hussey 1972:Pls. III, VI-VIII). From an inventory of 1846, it is known that the plan dimensions of the House were 40 by 70 ft. (Ibid.:107), with the greater length oriented east-west. These details are confirmed archeologically (Fig. 2).

Footings

Basic foundation of the House consisted of a series of wooden block footings set at approximately regular intervals around the 40 by 70 ft. perimeter (Tables 2-5). Many of the footings were noted to have been subsurface at the time of installation; that is, they either lay below the level of HBC trash concentration or they occasionally showed evidence of being set into prepared holes. Because of site disturbance we were unable to distinguish the sizes and depths of the original holes. However, depths of the individual footings were invariably below the bottom of the collapsed chimney rubble (to be discussed) which ranged from 1.0 to 1.4 ft. below modern surface. It seems reasonable to hypothesize that all original footings of the House were set into individual holes by the builders.

Our preliminary observations of footings at the corners of the House led to an error of interpretation that was repeated in the Historic Structures Report of the Chief Factor's House (Hussey 1972:108). When the corners were dug by the present project, 3 were found to contain upright wooden posts packed in rock and the fourth had a

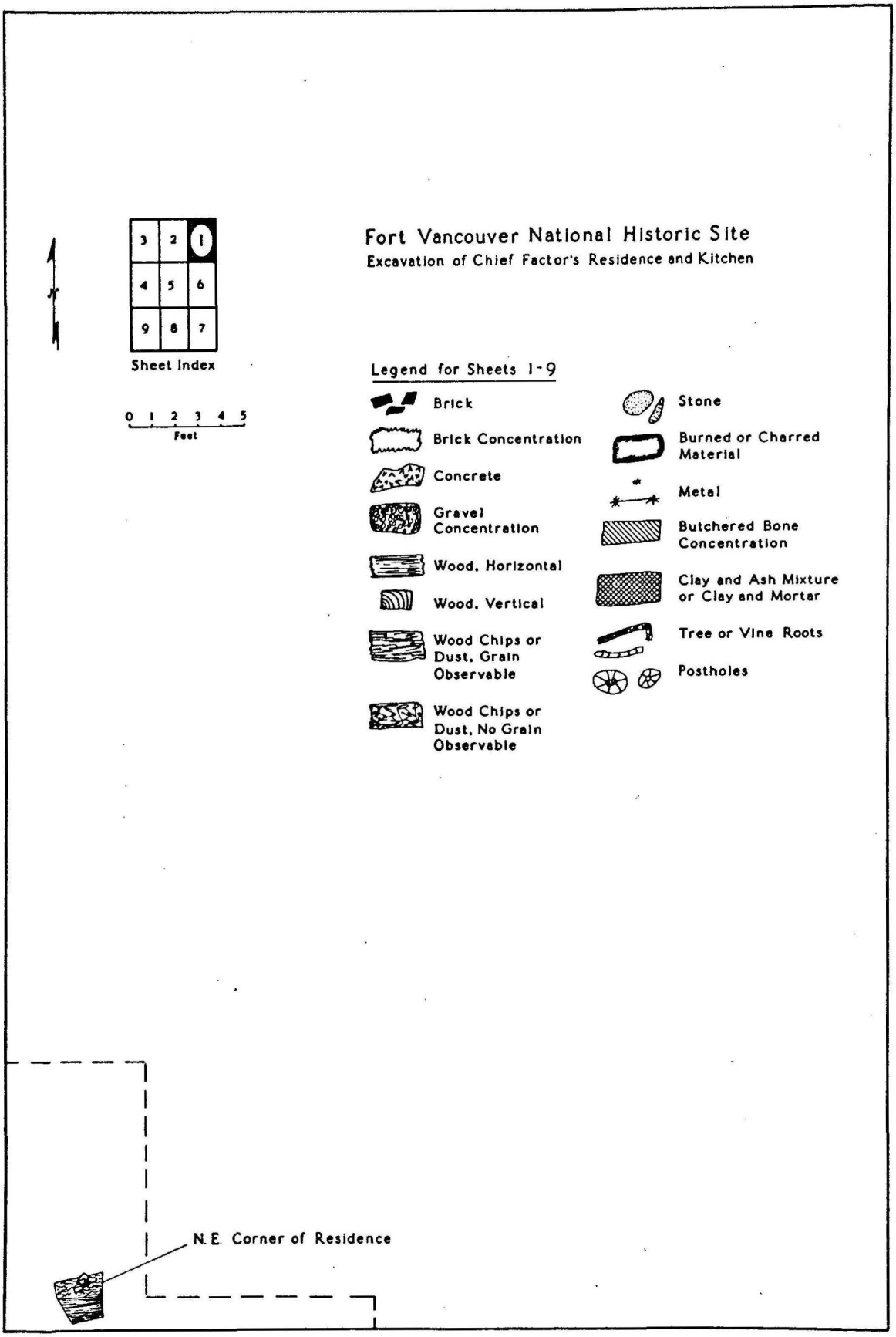

3 2 1
4 5 6
9 8 7
Sheet Index
0 1 2 3 4 5
Feet
Fort Vancouver National Historic Site
Excavation of Chief Factor's Residence and Kitchen
Legend for Sheets 1-9
Brick
Brick Concentration
Concrete
Gravel Concentration
Wood, Horizontal
Wood, Vertical
Wood Chips or Dust, Grain Observable
Wood Chips or Dust, No Grain Observable
Stone
Burned or Charred Material
Metal
Butchered Bone Concentration
Clay and Ash Mixture or Clay and Mortar
Tree or Vine Roots
Postholes
N.E. Corner of Residence

Fig. 3.1

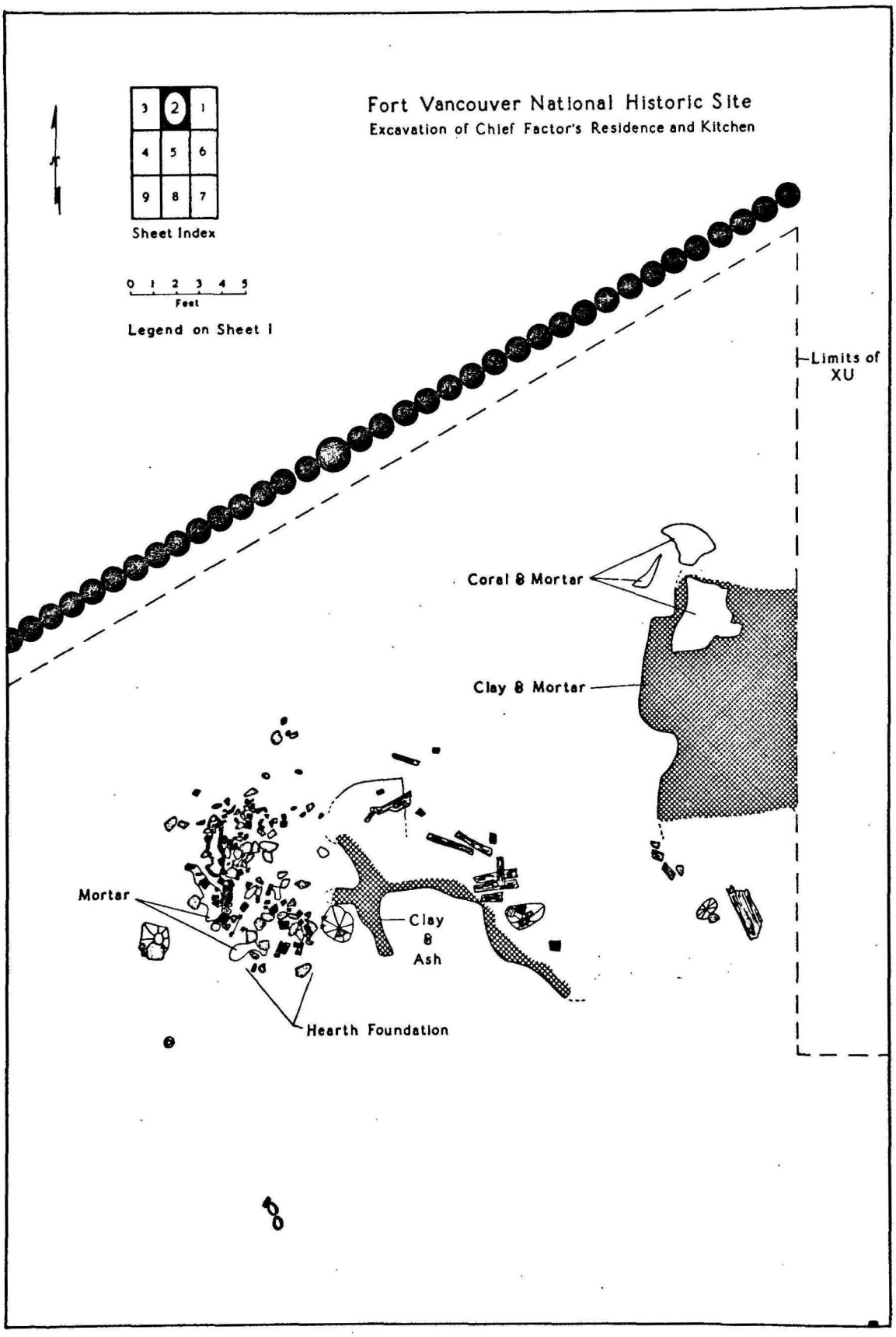

Fort Vancouver National Historic Site
Excavation of Chief Factor's Residence and Kitchen
3
2
1
4
5
6
9
8
7
Sheet Index
0 1 2 3 4 5
Feet
Legend on Sheet I
Limits of XU
Coral & Mortar
Clay & Mortar
Mortar
Clay & Ash
Hearth Foundation

Fig. 3.2

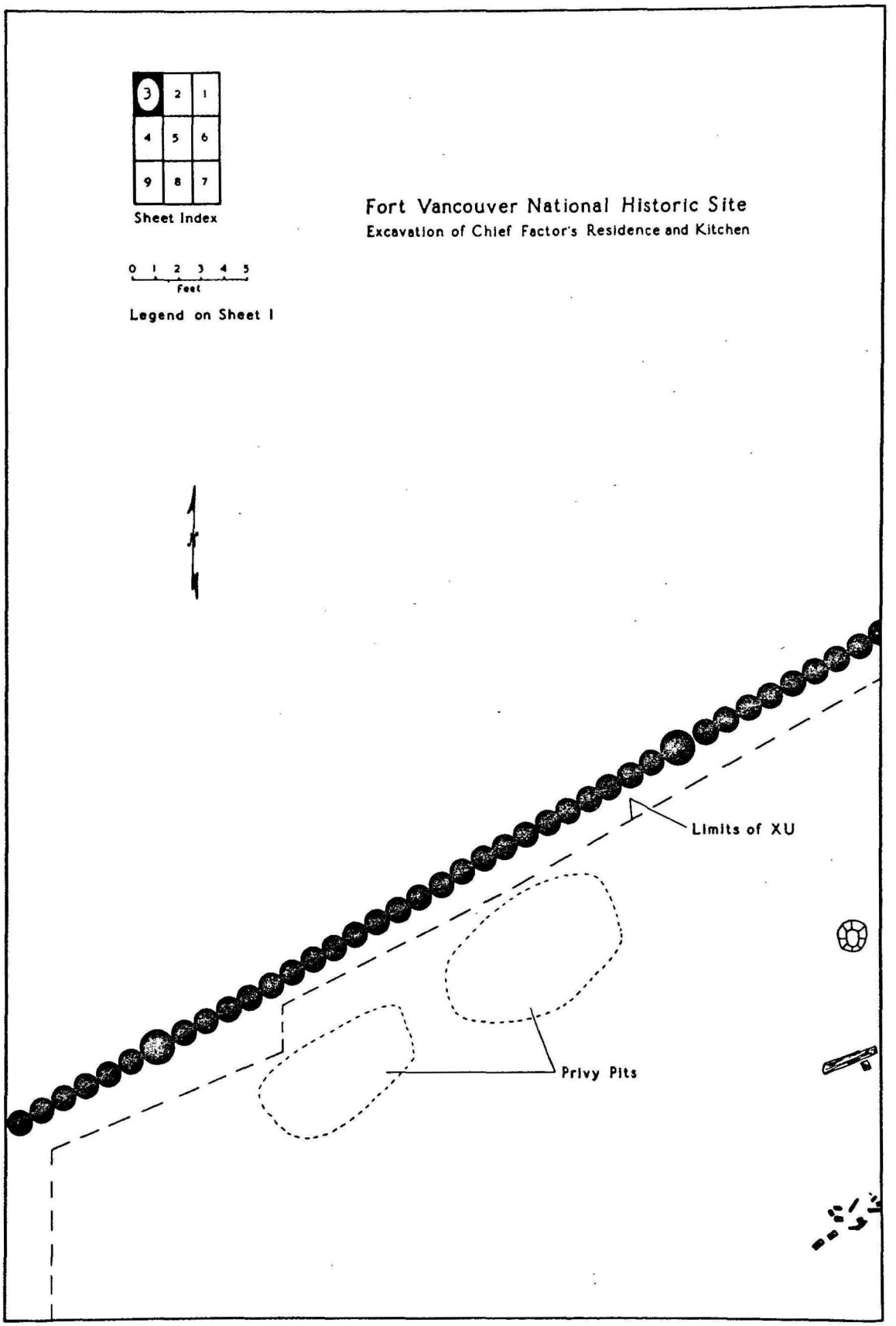

3
2
1
4
5
6
9
8
7
Sheet Index
Fort Vancouver National Historic Site
Excavation of Chief Factor's Residence and Kitchen
0 1 2 3 4 5
Feet
Legend on Sheet 1
Limits of XU
Privy Pits

Fig. 3.3

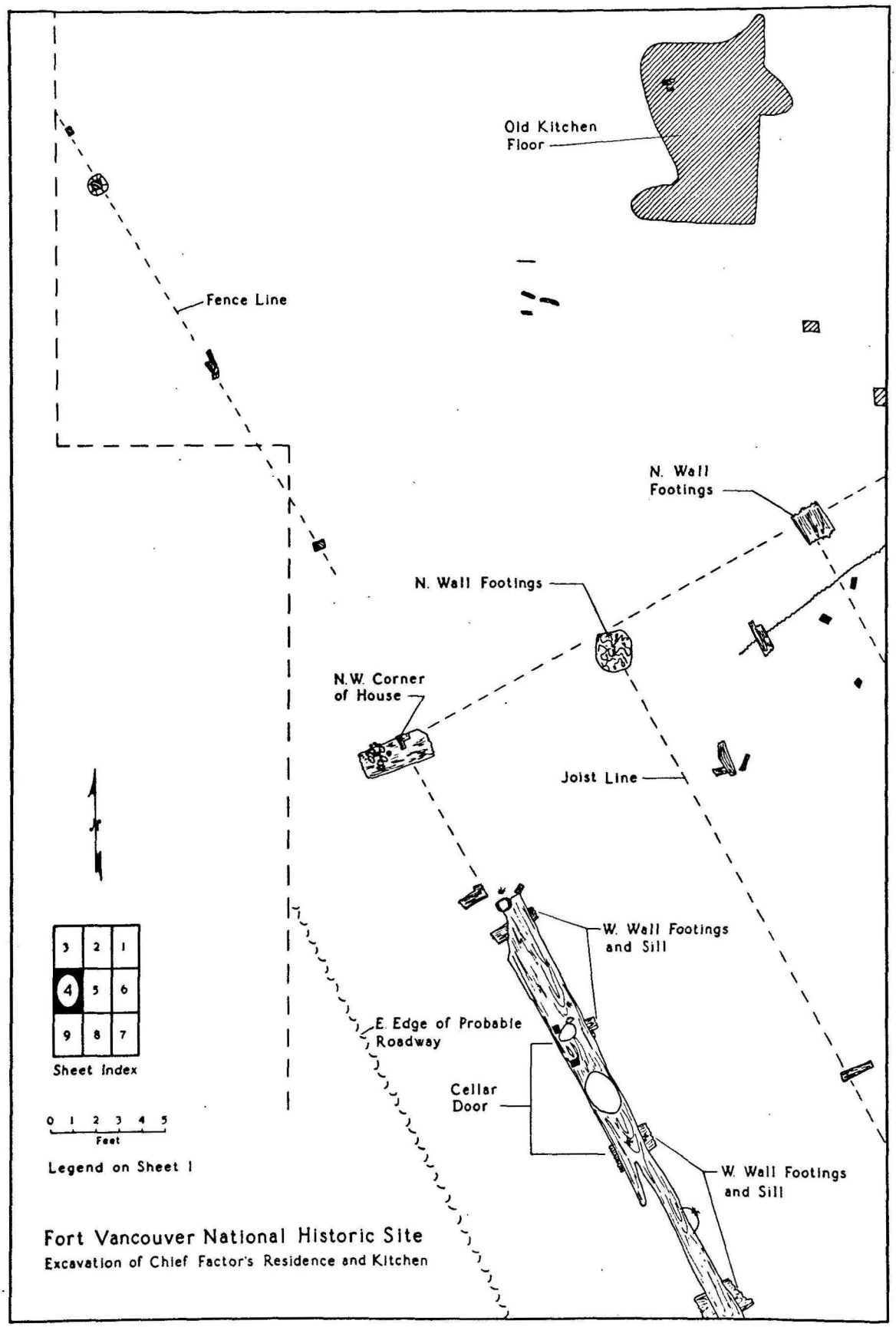

Old Kitchen Floor
Fence Line
N. Wall Footings
N. Wall Footings
N.W. Corner of House
Joist Line
W. Wall Footings and Sill
E. Edge of Probable Roadway
Cellar Door
W. Wall Footings and Sill
3 2 1
4 5 6
9 8 7
Sheet Index
0 1 2 3 4 5
Feet
Legend on Sheet 1
Fort Vancouver National Historic Site
Excavation of Chief Factor's Residence and Kitchen

Fig. 3.4

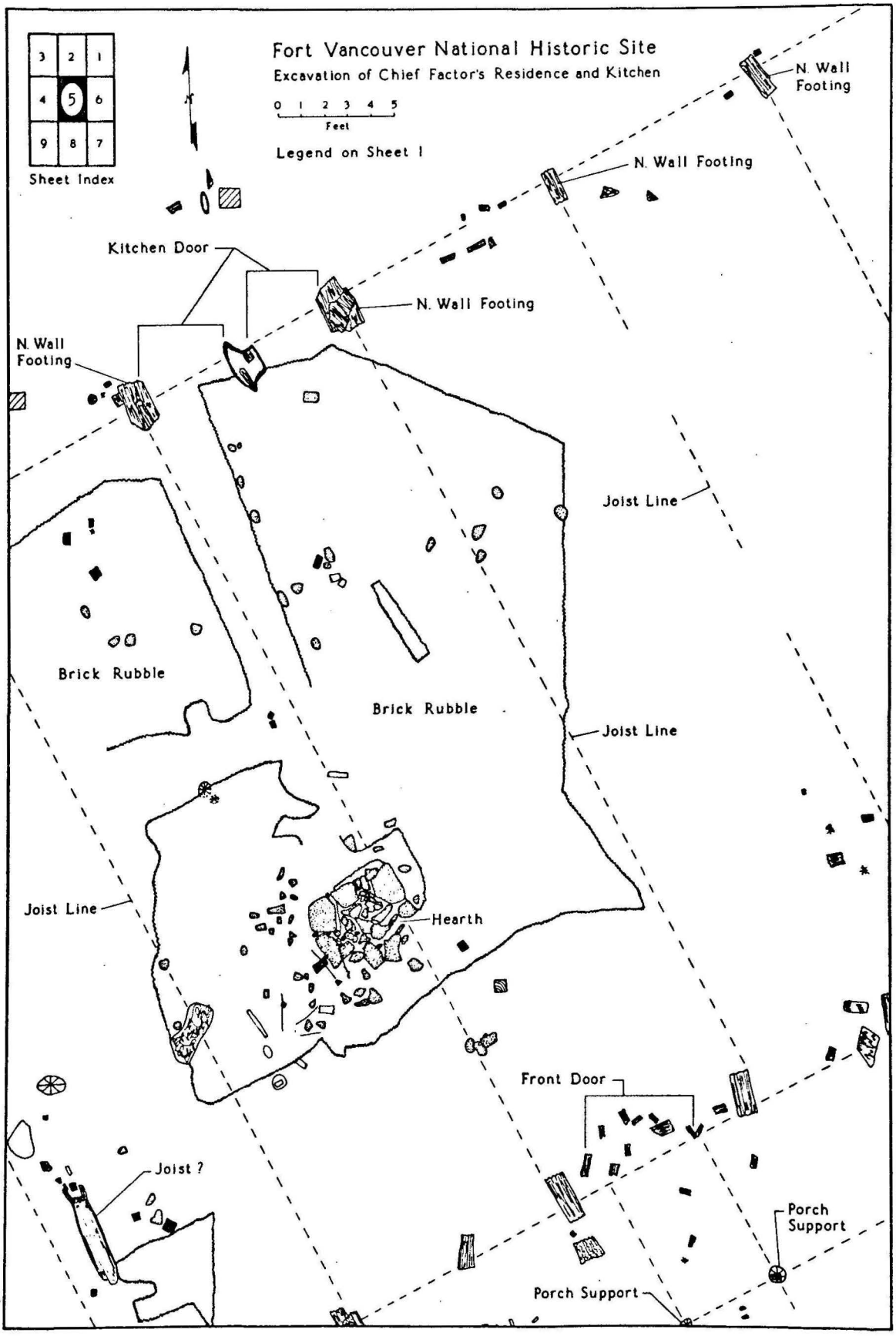

Fort Vancouver National Historic Site
Excavation of Chief Factor's Residence and Kitchen
0 1 2 3 4 5
Feet
Legend on Sheet 1
3 2 1
4 5 6
9 8 7
Sheet Index
N. Wall Footing
N. Wall Footing
Kitchen Door
N. Wall Footing
N. Wall Footing
Joist Line
Brick Rubble
Brick Rubble
Joist Line
Joist Line
Hearth
Front Door
Joist ?
Porch Support
Porch Support

Fig. 3.5

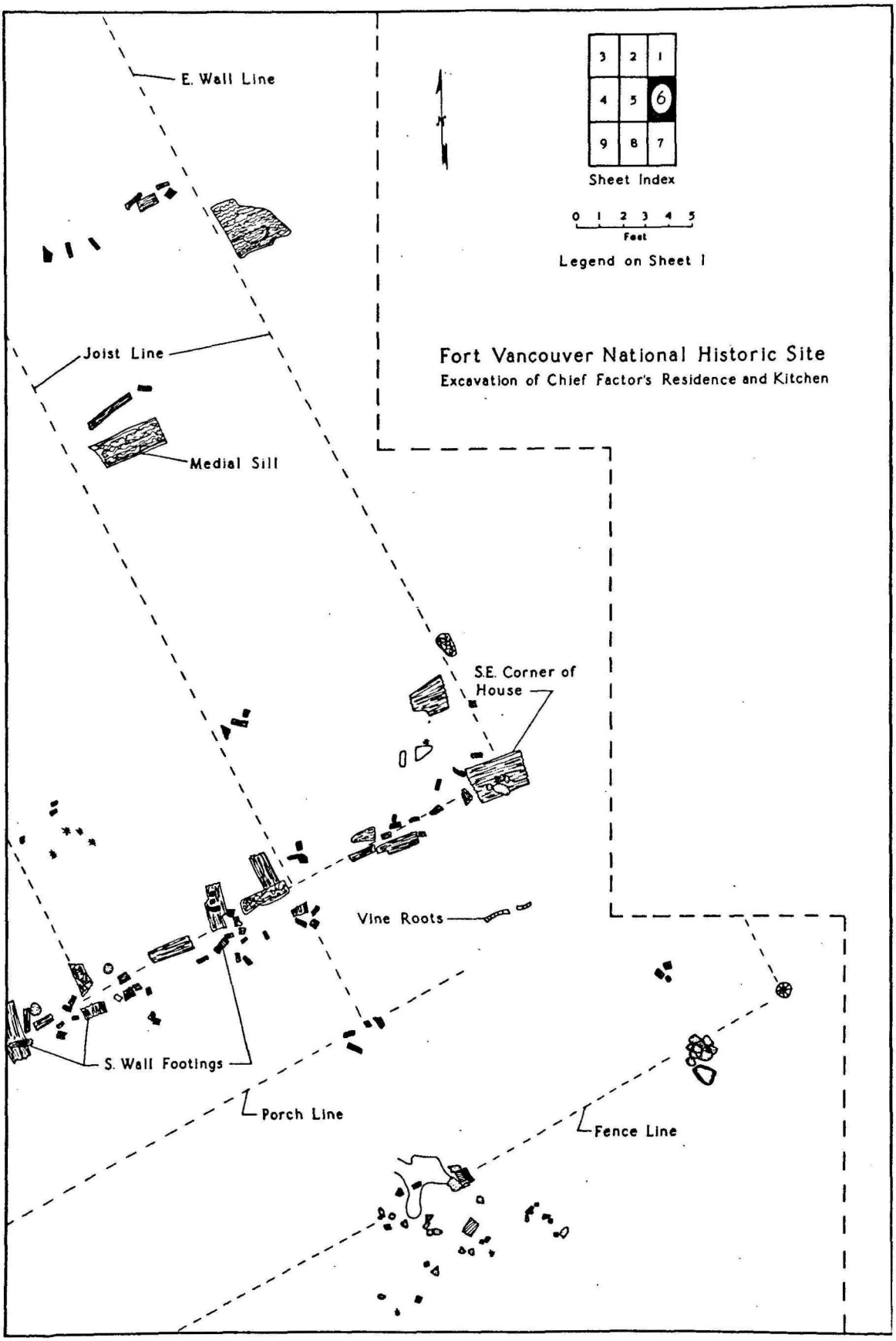

E. Wall Line
Joist Line
Medial Sill
S.E. Corner of House
Vine Roots
S. Wall Footings
Porch Line
Fence Line
3 2 1
4 5 6
9 8 7
Sheet Index
0 1 2 3 4 5
Feet
Legend on Sheet 1
Fort Vancouver National Historic Site
Excavation of Chief Factor's Residence and Kitchen

Fig. 3.6

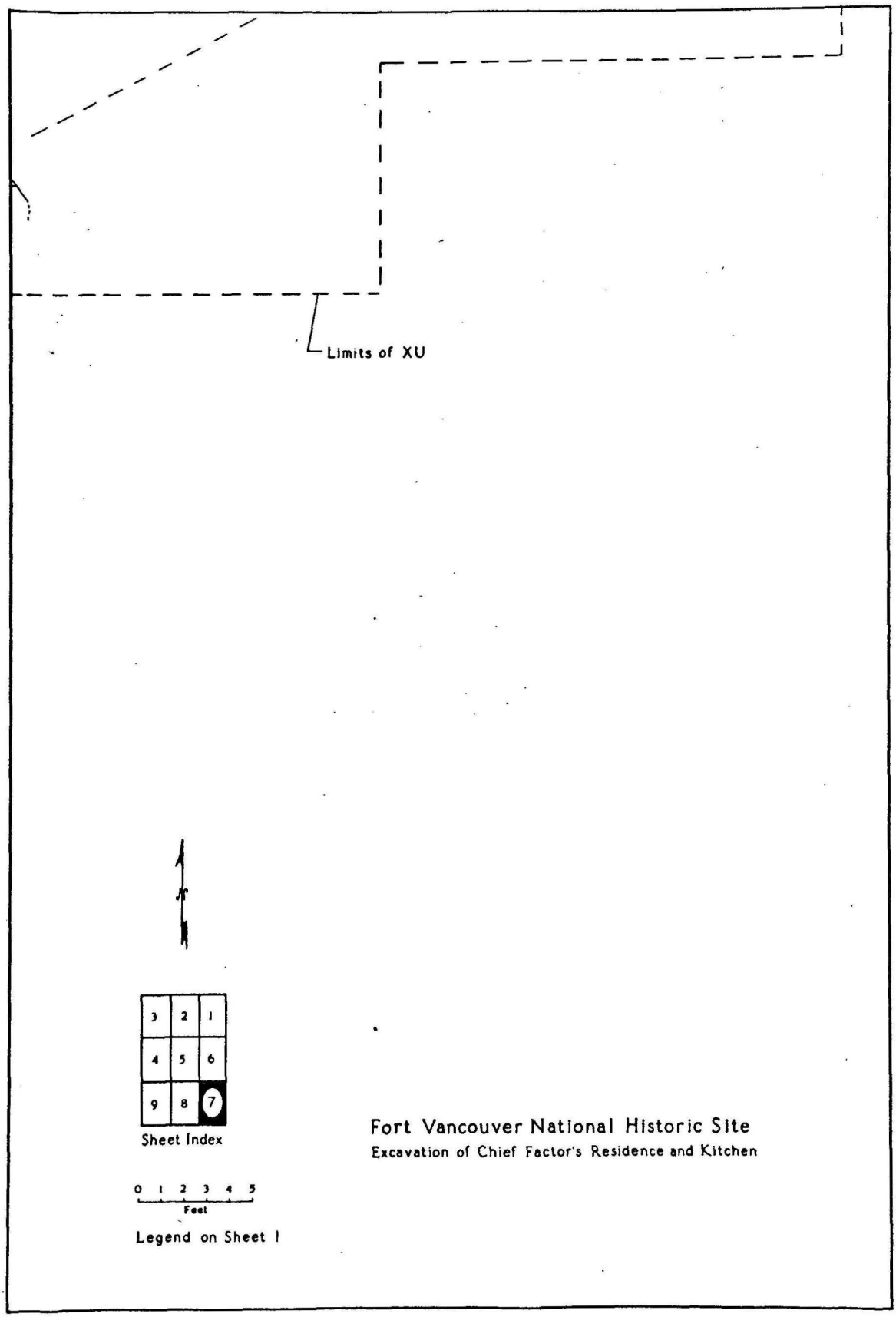

Limits of XU
3 2 1
4 5 6
9 8 7
Sheet Index
0 1 2 3 4 5
Feet
Legend on Sheet 1
Fort Vancouver National Historic Site
Excavation of Chief Factor's Residence and Kitchen

Fig. 3.7

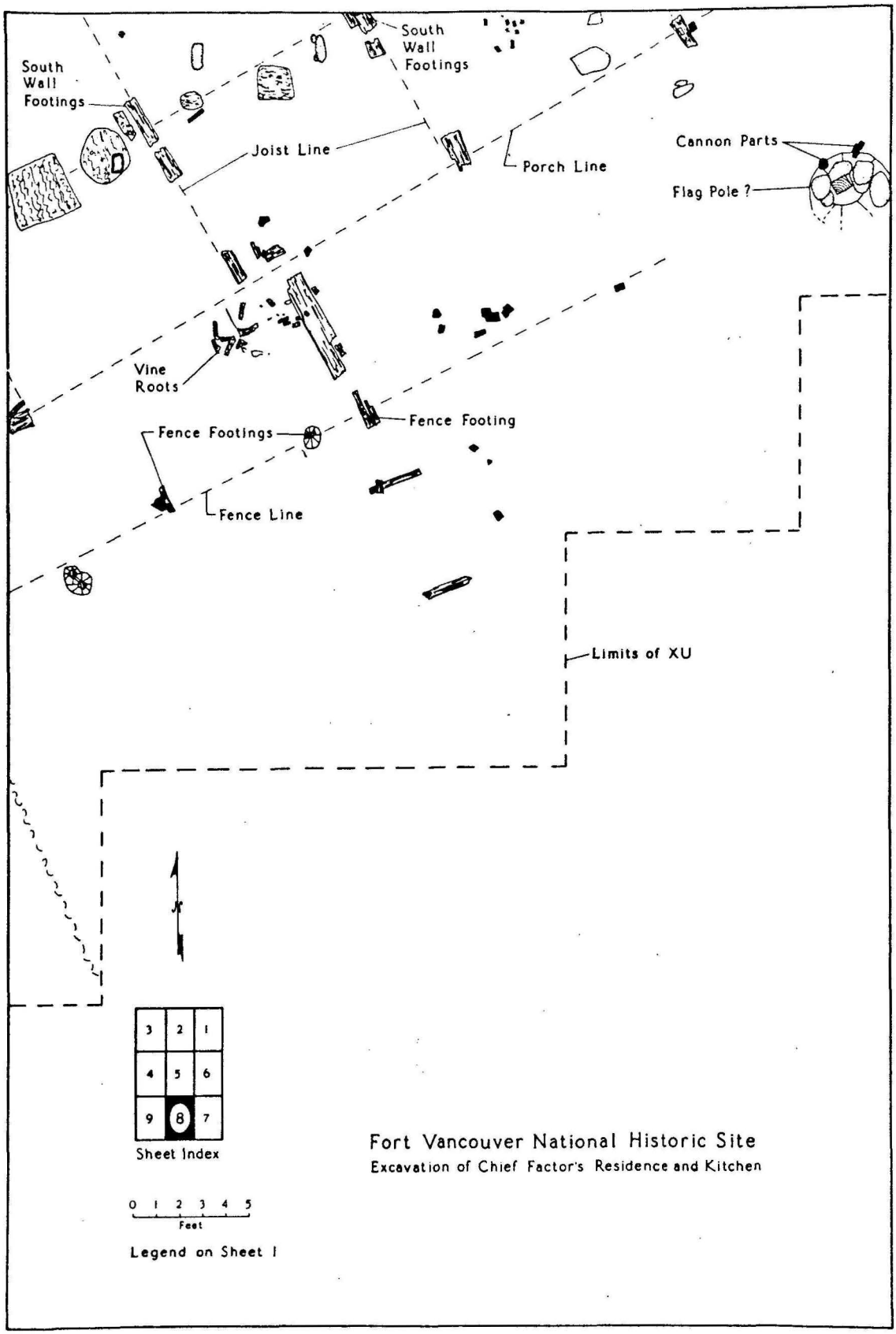

South Wall Footings
South Wall Footings
Joist Line
Porch Line
Cannon Parts
Flag Pole ?
Vine Roots
Fence Footings
Fence Footing
Fence Line
Limits of XU
3 2 1
4 5 6
9 8 7
Sheet Index
0 1 2 3 4 5
Feet
Legend on Sheet 1
Fort Vancouver National Historic Site
Excavation of Chief Factor's Residence and Kitchen

Fig. 3.8

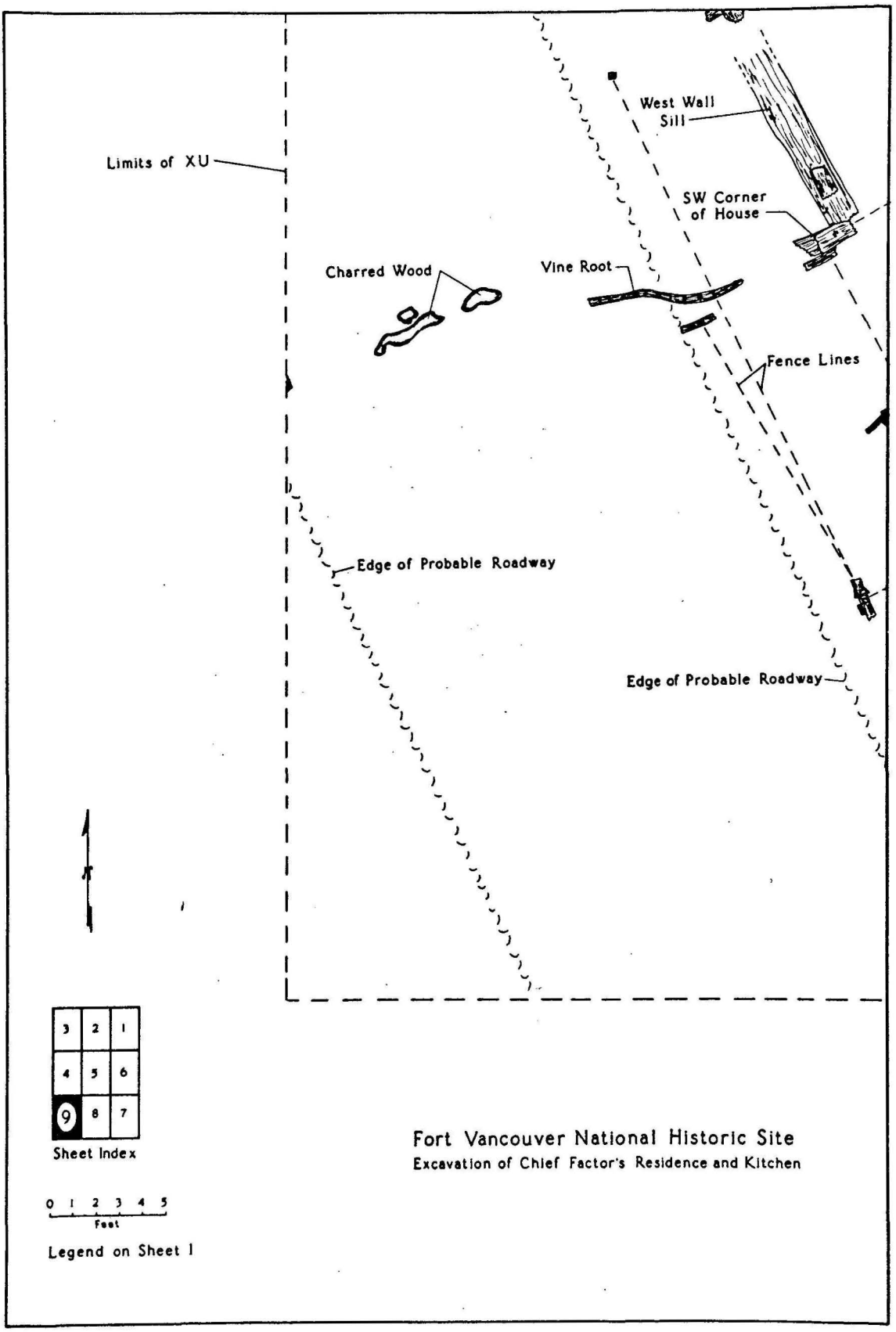

West Wall Sill
Limits of XU
SW Corner of House
Charred Wood
Vine Root
Fence Lines
Edge of Probable Roadway
Edge of Probable Roadway
3 2 1
4 5 6
9 8 7
Sheet Index
0 1 2 3 4 5
Feet
Legend on Sheet 1
Fort Vancouver National Historic Site
Excavation of Chief Factor's Residence and Kitchen

Fig. 3.9

suggestion of a post. These phenomena were interpreted as remains of packed post tenons and thus, an interesting variation of the usual post-in-sill construction technique used at Fort Vancouver. We were puzzled that this detail was not mentioned in the final exploratory report (Caywood 1955); neither could we find mention of it in field notes of past explorations. A thorough search of past archeological records finally produced a penciled copy of a letter between members of the exploratory crew. Dated 11 September 1950, the letter mentions that corners of the Chief Factor's House (among other structures) were marked by installation of wooden 2x4's after excavation. Apparently these were driven down into the original footings, packed in rock, and backfilled. The short span of 20 years between excavations was sufficient to deteriorate the 2x4's to the point that they closely resembled wooden remains of the House. Examples of this situation are illustrated on Fig. 4.

Some of the more regularly positioned footings were in the north wall (Figs. 3.1, 3.4, 3.5). The northwestern corner (Fig. 4b) was the best preserved; most other footings were defined from fragmentary remains (Table 2). All appear to have been rectangular blocks that varied from 0.65 to 2.00 ft. wide, 1.40 to 3.20 ft. long, and 0.10 to 0.70 ft. thick in remnant dimensions. Distances shown in column 5 of Table 2 were obtained as individual straight line measurements on remnant centers. Hence the cumulative length of 71.0 ft. as opposed to the historically known length of 70.0 ft. This merely tells us that many of the blocks have deteriorated in size and alignment since installation. With the exception of a supernumerary footing (discussed below), maximum depths of all blocks varied only 0.5 ft.

Spacings of footings along the north wall indicate an attempt by the builders to set the blocks at 10 ft. intervals (Table 2). This regularity is broken at the center of the north wall by a supernumerary footing, F228 (Fig. 3.5). We believe this footing to mark one edge of a door or passage that is historically known to have connected the north wall of the House to the Kitchen (Hussey 1972:121). Unfortunately, we have no evidence as to which side of the door is represented by the extra footing; it could be either east or west. One thing appears certain -- this back door was not at the center of the House wall. Moreover, it was likely no wider than 3.3 to 3.725 ft., the effective clearance between the footings on either side of the extra footing.

Fig. 4 - Structural footings of the Chief Factor's House.

a - Southeast corner footing, a wooden block oriented east-west and overlain by a probable sill remnant of the south wall. Vertical post and rock packing are markers from previous excavations (FOVA neg. 069.51-71/196)

b - Northwest corner footing, a wooden block oriented east-west, and overlain by a north-south fragment of the west wall sill. Vertical post and rock packings are markers from previous excavations (FOVA neg. 069.51-71/215)

D-15

FORT VANCOUVER EXCAVATIONS - IV

Chief Factor's House and Kitchen

by

J. J. Hoffman

and

Lester A. Ross

United States Department of the Interior

National Park Service

Fort Vancouver National Historic Site

September 1973

NATIONAL PARK SERVICE
DENVER SERVICE CENTER
BRANCH OF MICROGRAPHICS
LIBRARY COPY

CONTENTS

page

I - Introduction.....1

II - Excavations.....3

The Components.....3

Chief Factor's House.....17

Footings.....17

Sills.....36

Joists.....38

Chimney.....39

Cellar.....41

Other Internal Features.....43

Porch.....45

Fences.....51

Guns.....55

Chief Factor's Kitchen.....56

Floor.....57

Cooking Facility.....57

Superstructure.....58

Fence.....59

Post-1852 Kitchen.....61

North Gate Road.....63

Privies.....64


FOVA 1971
FEATURE 169
S E CORNER
FACTOR HOUSE
22 JUNE
HOFFMAN

a


FOVA 1971
FEATURE 211
NW CORNER OF
FACTORS HOUSE
16 JULY
HOFFMAN

b

Table 2 -- Footing characteristics of the north wall of the Chief Factor's House.

Footing	Type	WidthxLength xThickness	Depth bs(ft)	Dist. from Last Footing	Remarks
F211	Wooden Block	1.25 x 3.20 x 0.50 ft.	2.05-2.55	0.00 ft.	NW corner; overlain by portion of west wall sill; block may be 2 superimposed pieces; subsurface?
F225	Wooden Block	1.60 x 1.65 x 0.20 ft.	2.20-2.40	10.50 ft.	Defined from wood chips & organic stain; subsurface?
F226	Wooden Block	1.40 x 1.60 x 0.65 ft.	1.75-2.40	10.10 ft.	Subsurface
F205	Wooden Block	1.20 x 2.00 x 0.50 ft.	2.10-2.60	10.25 ft.	West edge of a probable door between House & Kitchen; block may be 2 superimposed pieces; metal pin horizontally positioned in east side; subsurface
F228	Wooden Block	1.35 x 2.60 x 0.70 ft.	1.10-1.80	5.00 ft.	West or east edge of door between House & Kitchen; block defined from burnt earth & charcoal fragments; subsurface
F210	Wooden Block	1.55 x 2.45 x 1.10 ft.	1.40-2.50	4.75 ft.	East edge of a probable door between House & Kitchen; block defined from wood & charcoal fragments, may be 2 superimposed pieces; subsurface
F230	Wooden Block	0.65 x 1.40 x 0.60 ft.	1.70-2.30	10.50 ft.	Top of block is charred; subsurface
F213	Wooden Block	0.75 x 1.80 x 0.40 ft.	1.80-2.20	9.85 ft.	Subsurface
F167	Wooden Block	2.00 x 2.15 x 0.20 ft.	2.40-2.70	10.05 ft.	NE corner; block overlain by portion of north wall sill; subsurface

Footings along the east wall of the House were not well defined with exception of the corners (Table 3). Both the northeastern and southeastern corners were clearly wooden blocks (Fig. 4a). The other footings were defined from concentrations of wood fragments or, where more solid remains occurred, were found offset from the probable sill line between corners (Fig. 3.1, 3.6). There is little consistency of dimensions, elevations, or spacings among the footings of the east wall. Only the first block south of the northeast corner falls into a 10 ft. interval, and it is offset. Other blocks are set at intervals of 4.5 ft. which, coupled with their offset positions, lead to the inference that they are repair footings rather than the original footings. Cumulative spacings of the east wall blocks in Table 3 total 42.7 ft., rather than the historically known length of 40.0 ft., because of straight line measurements on remnant centers of the offset blocks. This merely reflects poor preservation of east wall footings.

Due to the unclear situation along the east wall, we cannot make any conjectures regarding surface level openings in the east wall of the Chief Factor's House. Certainly we are not aware of any historic evidence for such openings.

Excavations along the south wall of the House disclosed a high density of wood remains (Fig. 5a). Other than corners, those pieces oriented north-south and found at lower elevations were considered footings, while pieces found at higher elevations and oriented east-west were considered remains of the south wall sill (Figs. 3.5, 3.6, 3.9). The southeastern and southwestern corner footings were oriented the same as the northeastern and northwestern corners. Footings of the south wall were all wood blocks that varied from 0.65 to 2.95 ft. in width, 1.40 to 4.00 ft. in length, and 0.10 to 1.75 ft. thick in remnant dimensions (Table 4). Spacings of the footings indicate an attempt to set the original blocks at 10 ft. intervals.

In addition to the original footings, there are supernumerary blocks that suggest repair or additional support for the south wall. These extra footings are spaced at approximate intervals of 5.0 and 2.5 ft. (Table 4). In other words, there was an effort to place repair footings approximately midway between pre-existing footings. Maximum depths of blocks set at 10 ft. intervals varied as much as 1.3 ft. while depths of the midway blocks varied only 0.8 ft. However, there was only 0.13 ft. difference between the mean maximum depths of blocks set at 10 ft. intervals and those

Fig. 5 - Structural remnants of the Chief Factor's House.

a - Excavations along the south wall of house; earthen pedestals contain wooden footing and sill remnants (FOVA neg. 069.51-71/200)

b - Wooden footing in the south wall of the house; small arrows point to musket balls embedded in the wood (FOVA neg. 069.51-71/227)



a



b

Table 3 -- Footing characteristics of the east wall of the Chief Factor's House.

Footing	Type	WidthxLength xThickness	Depth bs(ft)	Dist. from Last Fooring	Remarks
F167	-	-	-	0.00 ft.	NE corner; see characteristics in Table 2
F149	Wooden Block?	0.50 x 0.90 x 0.20 ft.	2.10-2.30	10.00 ft.	Defined from concentration of wood fragments; offset west of sill line; subsurface
F168	Wooden Block?	2.50 x 2.80 x 0.10 ft.	1.50-1.60	4.50 ft.	Defined from concentration of wood fragments; offset east of sill line; subsurface
(in F191)	Wooden Block	1.35 x 1.50 x ? ft.	1.70-?	23.70 ft.	Incomplete information; offset west of sill line
F169	Wooden Block	1.70 x 2.60 x 0.10 ft.	2.00-2.10	4.50 ft.	SE corner; block overlain by portion of south wall sill; subsurface

Table 4 -- Footing characteristics of the south wall of the Chief Factor's House.

Footing	Type	WidthxLength xThickness	Depth bs(ft)	Dist. from Last Footing	Remarks
F203	Wooden Block	1.00 x 2.40 x 0.40 ft.	2.00-2.40	0.00 ft.	SW corner; block is overlain by portion of south wall sill; subsurface?
F191a	Wooden Block?	2.95 x 2.60 x 0.50 ft.	1.50-2.00	4.85 ft.	Repair footing; defined from concentration of wood fragments; subsurface?
F191b	Wooden Block?	2.00 x 2.40 x 1.75 ft.	1.00-2.75	3.10 ft.	Repair footing; defined from concentration of wood fragments; subsurface
F191c	Wooden Block	0.65 x 4.00 x 0.80 ft.	2.20-3.00	2.10 ft.	Aligns with footing in south wall of porch; musket balls embedded; subsurface
F191d	Wooden Block?	1.50 x 1.40 x 0.85 ft.	1.10-1.95	5.75	Repair footing; defined from concentration of wood fragments; subsurface
F187 upper	Wooden Block	0.80 x 2.70 x 0.20 ft.	1.50-1.70	4.55 ft.	Aligns with footing in south wall of porch; mortised for post tenon; overlays F187 lower but slightly offset east; subsurface
F187 lower	Wooden Block	0.80 x 1.70 x 0.60 ft.	2.10-2.70	-	Aligns with footing in south wall of porch; overlain by F187 upper; embedded musket ball; subsurface
F188	Wooden Block	0.70 x 1.60 x 0.10 ft.	1.90-2.00	5.80 ft.	Repair footing; skewed from orientation of other south wall footings; subsurface?
F191e	Wooden Block	1.15 x 3.85 x 0.60 ft.	1.70-2.30	4.95 ft.	Coincides with south end of puncheon line that extends to chimney base, also with north end of collapsed porch floor joist; aligns with exterior head of west porch stairs; subsurface
F220	Wooden Block	0.70 x 1.60 x 0.30 ft.	2.10-2.40	8.90 ft.	Aligns with exterior head of east porch stairs; embedded musket ball; subsurface
F218	Wooden Block	0.85 x 2.40 x 0.85 ft.	1.85-2.70	7.15 ft.	Repair footing; consists of 2 superimposed pieces; upper piece contains post tenon extending through sill remnant overlaying footing; subsurface
F191f	Wooden Block	1.10 x 2.55 x ? ft.	1.70-?	3.75 ft.	Incomplete information; partially defined from concentration of wood chips; subsurface?

Table 4 (cont'd.)

Footing	Type	WidthxLength xThickness	Depth bs(ft)	Dist. from Last Footing	Remarks
F214	Wooden Block	0.80 x 1.90 x 0.20 ft.	1.70-1.90	6.50 ft.	Repair footing; embedded musket balls; overlain by fragments of south wall sill; subsurface?
F191g	Wooden Block	0.70 x 1.50 x 0.35+ ft.	2.45-2.80+	2.50 ft.	Incomplete information; south end coincides with portion of south wall sill; subsurface
F169	-	-	-	10.75 ft.	SE corner; see characteristics in Table 3

Table 5 -- Footing characteristics of the west wall of the Chief Factor's House.

Footing	Type	WidthxLength xThickness	Depth bs(ft)	Dist. from Last Footing	Remarks
F211	-	-	-	0.00 ft.	NW corner; see characteristics in Table 2
(in F202)	Wooden Block	0.75 x 2.10 x 0.35 ft.	2.30-2.65	9.00 ft.	Subsurface; overlain by west wall sill
F262	Wooden Block	1.00 x 1.65 x 0.10 ft.	2.00-2.30	5.35 ft.	North edge of cellar door; subsurface; overlain by west wall sill
F239	Wooden Block	2.00 x 1.85 x 0.20 ft.	2.10-2.30	5.45 ft.	South edge of cellar door; subsurface; overlain by west wall sill
F236	Wooden Block	1.50 x 2.45 x 0.55 ft.	1.75-2.30	7.65 ft.	Subsurface; overlain by west wall sill
F203	-	-	-	11.60 ft.	SW corner; see characteristics in Table 4

set at midway intervals (Table 4). This suggests a considerable degree of skill at setting repair blocks. Actually, the work of slipping repair footings under an existing building would be relatively simple with the use of screw jacks for lifting the framing sills. Both "Jack Screws" and "double jack screws" are known to have been used at Fort Vancouver in 1844 and 1845 (Hussey 1972:258-59).

One of the more highly elevated footings, F187 upper, had remains of a mortise cut for a post tenon that must have extended through the framing sill of the south wall. Another footing, F218, was overlain by a remnant of the framing sill that contained a post tenon (Table 4). These details lend added credence to the inference of post-in-sill construction for the Chief Factor's House.

Despite fragmentary conditions and occasionally skewed alignments of footings, the cumulative length of the south wall based on straight line measurements between remnant centers is 70.64 ft., which is remarkably close to the historically documented length of 70.0 ft. An inexplicable curiosity of the south wall was the presence of 4 footings containing embedded musket balls (Fig. 5b). Three of the footings were originals; that is, they were located at 10 ft. intervals in relation to wall corners. The fourth was a repair footing set 13.25 ft. west of the southeast corner.

Footings of the west wall were largely overlain by charred remnants of a framing sill (Figs. 3.4, 3.9). However, sufficient exposure was made to show that the footings were wooden blocks that varied from 0.75 to 2.00 ft. wide, 1.65 to 3.20 ft. long, and 0.10 to 0.60 ft. thick in remnant dimensions. Maximum depths of the blocks varied only 0.35 ft. (Table 5). Spacing of the footings was not as regular as seen in the northern and southern walls, but there did seem to be an attempt to set the blocks at 10 ft. intervals. Cumulative length of the west wall footings, measured on remnant centers, was 39.05 ft. as compared with the historically documented length of 40.0 ft.

One supernumerary footing, F262, was noted 14.35 ft. south of the northwestern corner and 5.45 ft. north of the next closest block, F239 (Table 5). We believe the position of these footings to mark the location of a door in the west wall (Fig. 3.4). A surface level door in this position was known to exist in 1860 at the latest (Fig. 10). It is quite likely that the door existed during the 1845 period and was used to gain access to

a cellar and storage space under the Chief Factor's House. Based on effective clearance between remnant footings, this door was likely no wider than 3.95 ft. (Table 5). The probable appearance of the cellar is discussed below.

One apparent footing not found during current excavations was noted and mapped during explorations of 1948. Located along the east-west centerline of the House at a distance of 30 ft. east of the west wall (Caywood 1955:sheet 9 of map 2), this footing neatly aligns with others in all four walls. Position of the footing is suggestive of medial or transverse sills within the House. However, no other credible evidence of such sills was found. The footing may have been the base of a repair prop for floor joisting.

Sills

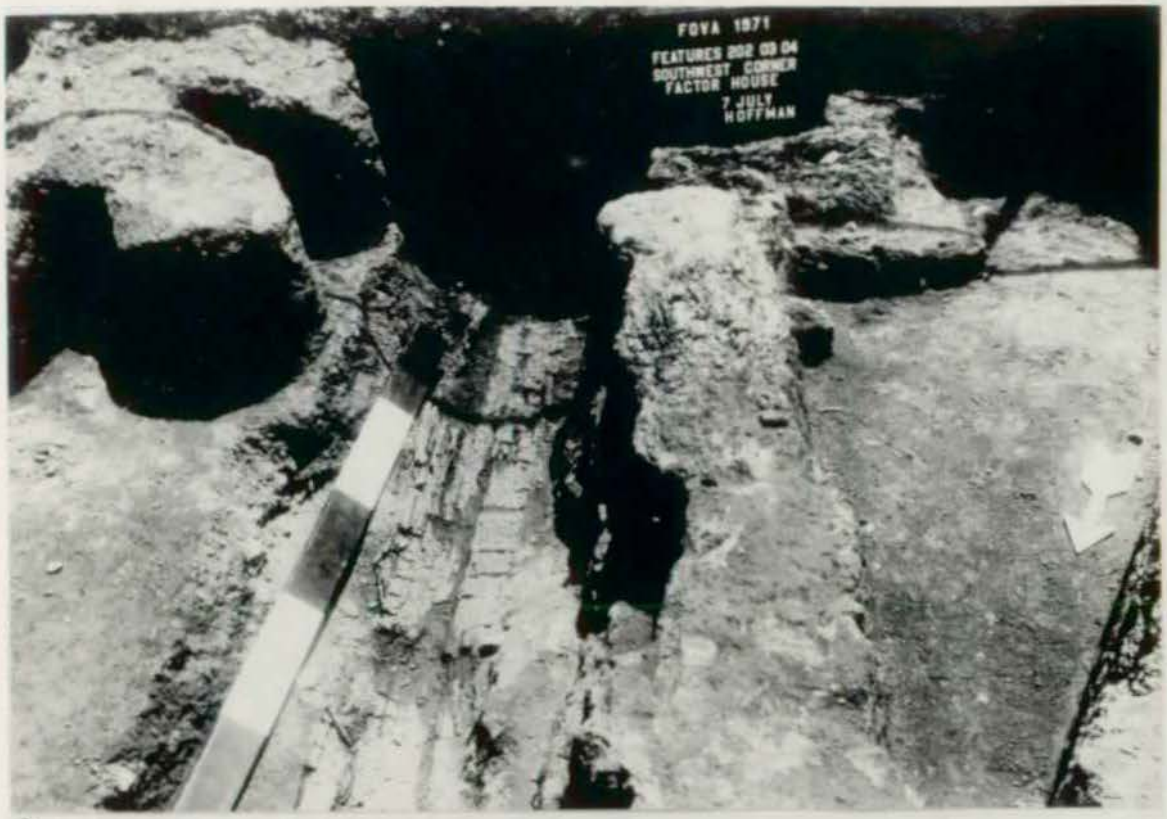
The best evidence for framing sills was found along the west wall of the House (Fig. 6a). Here, the charred remains of a sill were found laying directly on the subsurface footings (Figs. 3.4, 3.9). The remnant length of 30.5 ft. contained sufficient wood to establish that the grain ran north-south. The remnant sill had a maximum width of 1.75 ft. but its thickness varied from only 0.10 to 0.50 ft. An irregularly shaped piece of the same sill was found directly overlaying the northwestern corner footing (Fig. 3.4); again, the wood grain was north-south. This piece was 0.60 ft. wide and 0.25 ft. thick. No evidence of the sill remained along the east wall of the House.

A small piece of the northern framing sill was found overlaying the northeastern corner footing (Fig. 3.1). This situation was interpreted during exploratory operations as a two-piece, superimposed footing (Caywood 1955:16). However, the relative rarity of two-piece footings in the wall lines (Tables 2-5) plus the discovery of a west sill fragment laying on the northwestern corner footing suggest otherwise. We now believe that the two-piece corner footings reported from exploratory operations consisted of sill fragments laying on footings. The northern sill fragment we found on the northeastern corner footing was oriented east-west. Remnant dimensions were 1.75 ft. long, 1.20 ft. wide, and 0.30 ft. thick. A photograph of this corner taken during exploratory operations (Ibid.:Pl. III B) indicates these data to be virtually identical as seen by two different excavations.

Fig. 6 - Structural remnants of the Chief Factor's House.

a - Charred remains of the west wall (right), a wooden sill resting on wooden footings. Sign board rests on wooden block of the southwestern house corner. Intrusive, wood-lined drain of Vancouver Barracks (left) parallels house wall (FOVA neg. 069.51-71/208)

b - Stone-packed post butt under the southern extension of the porch; possibly the base of a flagstaff (FOVA neg. 069.51-71/286)


FOVA 1971
FEATURES 202 03 04
SOUTHWEST CORNER
FACTOR HOUSE
7 JULY
HOFFMAN

a



b

A mass of small wooden fragments was found along the position of the south wall sill (Figs. 3.5, 3.6, 3.8). Most were too small or badly skewed for meaningful description. Some were charred, others were badly rotted. A large fragment was found overlaying the southeast corner footing. This piece, oriented east-west, was 1.7 ft. wide, 1.9 ft. long, and 0.3 ft. thick.

Another portion of south wall sill was found overlaying the southwestern corner footing (Fig. 3.9). Oriented east-west, this fragment was 1.7 ft. long, 1.0 ft. wide, and 0.4 ft. thick. Due to the charred and rotted conditions of the various pieces, it was not possible to tell how the southern and western sills were joined at the corner.

The object labeled "medial sill" in Fig. 3.6 is not a sill, but a concentration of wooden fragments that may have formed the base of a repair prop for a floor joist. These fragments were found in the center of an exploratory trench dating from 1950 operations.

Joists

A putative joist fragment was located within the southwestern sector of the House at 11.75 ft. east of the centerline of the west wall (Fig. 3.5). Oriented north-south, the piece was 4.6 ft. long, 0.7 ft. wide, and 0.1 ft. thick in remnant dimensions. The northern end was charred and mixed with brick and other wooden fragments. The piece appeared to be remains of a first floor joist that collapsed and was mixed with rubble during destruction of the House.

What may have been the base of a repair prop for floor joisting was noted during exploratory operations (Caywood 1955:sheet 9 of map 2). Abutted by a narrow wooden piece oriented north-south, the apparent base was found about 15 ft. east of the west wall centerline. This would align the prop base with the west side of the chimney foundation (discussed below) and a repair footing in the south wall.

Exploratory operations also revealed a right-angled alignment of wooden fragments whose longer leg was oriented north-south and located about 22.5 ft. east of the west wall centerline. This alignment does not appear on the published maps, but is well marked on a field map of explorations dated 10 September 1950 (Table 1). These fragments may be remains of one or more collapsed floor joists.

Judging from the positions and orientations of sill footings in the Chief Factor's House, it is likely that the first floor joists were oriented north-south and set at intervals of no more than 10 ft. in relation to the eastern and western walls. There is no archeological evidence as to the elevation of the joists, although it is known that the first floor was raised well above surface level in 1846-47 and 1860 (Hussey 1972:Pls. XI, XXVII, XXIX). Historic data suggest that the elevation was as much as 5 or 6 ft. (Ibid.:105).

Chimney

The stone foundation of the chimney was found in the southwestern sector of the House surrounded by masses of brick and mortar rubble (Fig. 3.5). Center of the foundation was 27.5 ft. east of the west wall and 14.5 ft. north of the south wall, well offset from the intersection of the House centerlines. The foundation consisted of a single course of large, angular stone laid and fitted originally to form a rectangle about 4 to 5 ft. on a side (Fig. 7a). Only the northern side plus the northern portions of the east and west sides were found intact; the other sides were either missing or badly disarranged by construction of 1918-19 railroad spur (Fig. 7b).

The brick rubble surrounding the foundation appears to derive from the chimney proper which collapsed during House destruction. Few whole or large pieces of brick were recovered, and we assume that much of the chimney brick was salvaged after collapse. Bottom of the rubble surrounding the stone base lay 1.0 to 1.4 ft. below modern surface, or the approximate top of the HBC surface in this area. Since the bottom of the stone base lay 1.1 to 1.9 ft. below modern surface, we believe the foundation to have been laid originally on the HBC surface and subsequently depressed by the weight and settling of the chimney.

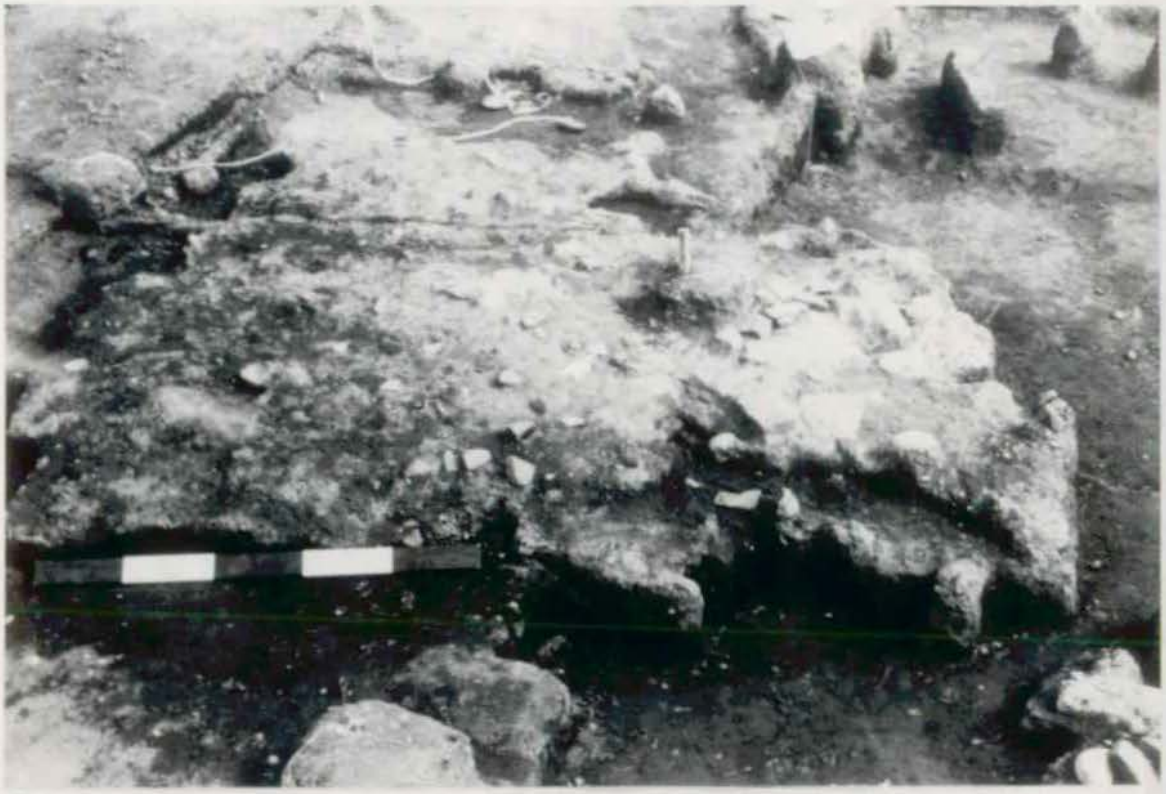
The single course of the foundation was only 0.45 to 0.85 ft. high and seemingly fitted without mortar, although mortar was used at the top of the foundation to set the brick (Fig. 7a). While ex situ pieces were noted adjacent to the foundation, they did not form a sufficient quantity to suggest that the chimney base originally was built more than a single course high.

The archeological evidence provided no clue as to the original height of the chimney. Presumably, the initial or sub-floor courses of the chimney were laid to fit the stone foundation; that is, a rectangle about 4 to 5 ft. on a side.

Fig. 7 - Excavations around chimney base of the Chief Factor's House.

a - Stone foundation of chimney base surrounded by brick rubble of the collapsed chimney; eastern portion of rubble is largely removed (FOVA neg. 069.51-71/202)

b - North side of the stone chimney base after removing the brick rubble (FOVA neg. 069.51-71/232)



a


FOVA 1971
FACTORS CHIMNEY
BASE IN FEATURE
184
29 JULY
HOFFMAN

b

Cellar

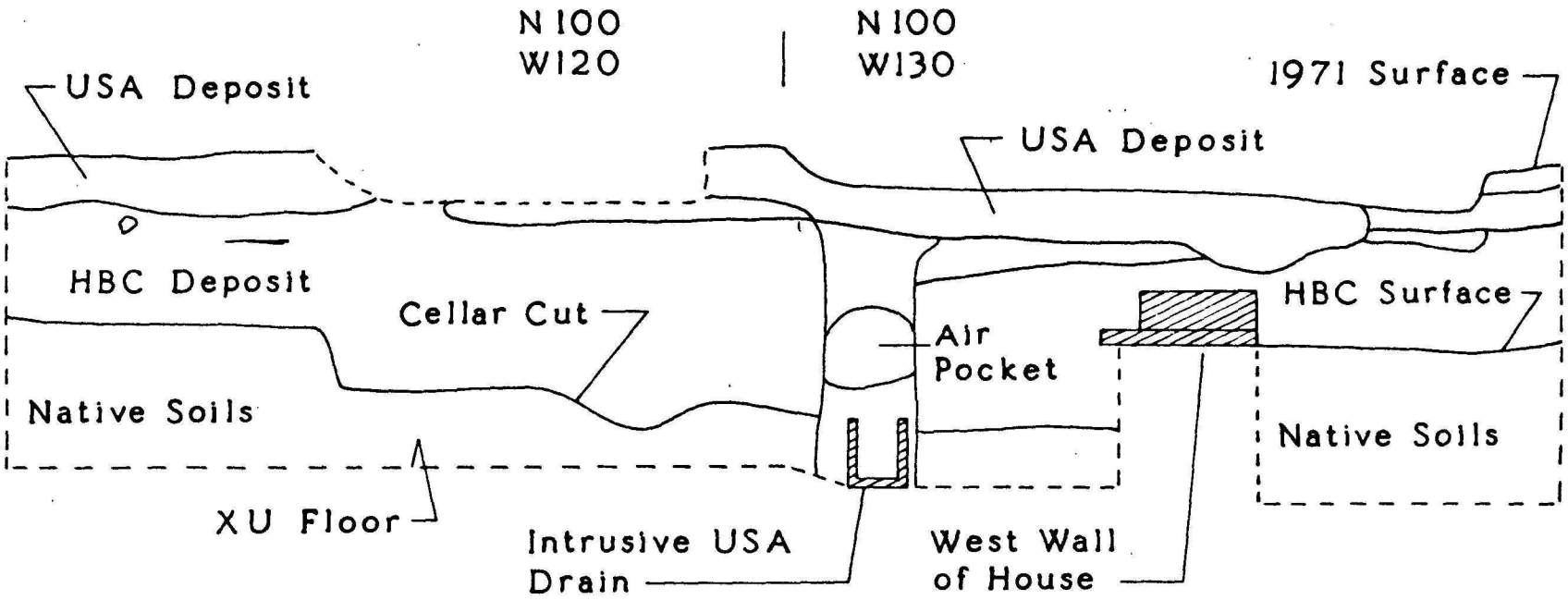
Portion of a dugout space or cellar was found immediately inside the western wall of the House, adjacent to the position of the cellar door previously noted in the discussion of west wall footings (Fig. 3.4). Full extent of the cellar could not be determined because of USA disturbances, primarily a railroad spur and a wood-lined drain (Fig. 1).

Best evidence of the cellar stemmed from a soil section recorded for an excavation wall that crossed the southern footing of the cellar door (Fig. 8). The section was part of our excavation grid; thus, it was angled 30° south of the east-west centerline of the House. The soil section showed a well marked removal of native soils immediately inside the west wall. Exact western limit of removal was not determined horizontally since the soils supporting the west wall remains were left intact. The eastern horizontal limits were found at 11.00 to 11.35 ft. east of the west wall centerline along the excavation wall (Fig. 8). Correcting for the angle of excavation, the eastern horizontal limit of the cellar was 10 ft. east of the west wall centerline. We have no direct archeological evidence for the northern and southern limits of the cellar.

Depth of the cellar varied from 3.6 ft. below present surface inside of the western wall to 3.0 ft. below present surface at the eastern horizontal limit. Since brick rubble of the collapsed chimney rested at 0.7 to 1.0 ft. below present surface in excavations adjacent to the cellar, we believe the cellar to have been originally dug 2.0 to 2.9 ft. below the top of the HBC surface. The trash laden soils within the cellar suggest that it was deliberately filled after House destruction. Additional filling may have taken place during various periods of land leveling between ca. 1918 to 1947.

In the previous discussion of joists, it was noted that historical evidence suggests that the first floor of the House was elevated as much as 5 or 6 ft. Thus, a combination of historical and archeological evidence suggests that the effective vertical clearance of the cellar could have been as little as 7 ft. or as much as 9 ft.

The cellar appears to be only the deeper part of the storage space utilized under the Chief Factor's House. Distribution of certain items stored under the House (discussed in Chapter IV) indicate



Fort Vancouver National Historic Site

Elevation of Cellar Cut at West Wall of The Chief Factor's House

0 1 2 3 4 5
Feet

Fig. 8

that actual storage space may have occupied most of the western half of the available space under the House. Some support for this hypothesis can be found in results of previous archeological work.

At the end of Table 1 we listed a structural feature found during exploratory operations, but not during current excavations. This feature was a north-south oriented line of small vertical puncheons near the center of the Chief Factor's House (Caywood 1955:sheet 9 of map 2). By superimposing maps of past and current excavations, we now know that the puncheons extended from near the probable southeast corner of the chimney foundation to a footing in the south wall. We also suggested in Table 1 that the puncheon alignment was a varmint barrier. This suggestion is derived from Hussey's (1972:56) logical interpretation of a similar alignment found during current excavations of the 1845 period Bakery (Hoffman and Ross 1972:9, 75).

If the alignment is indeed a barrier, it probably connected the chimney foundation with the southern House wall. Viewed in this light, the barrier may well have represented the effective eastern limit of storage space under the House. This limit would be 30 ft. east of the west wall centerline. Unfortunately, comparable evidence is lacking in the area north of the chimney foundation and the hypothesis cannot be fully satisfied by means of structural remains.

Other Internal Features

As shown on the features maps (Figs. 2, 3), many small items of structural debris were found within the Chief Factor's House. Most were scattered fragments of wood and brick; others were postholes, large stones, and large pieces of metal (cf. Figs. 3.5, 3.6). All were plotted on maps in order to determine their structural relevance. This attempt was not overly successful as a purely observational approach due to the scattered positions of the debris. However, certain items were either sufficiently clustered or possessed other attributes that suggested structural significance.

One such item was a large, oval posthole containing wooden fragments and located immediately north of a putative joist fragment (Fig. 3.5). Position of the posthole was 13 ft. west of the west edge of the chimney foundation, and 16 ft. north of the south wall centerline. The posthole was straight-sided with a diameter of 0.8 to 1.1 ft. and a depth of 2.65 ft. below present surface,

well below the HBC surface. The feature may represent a post that was used to prop floor joisting. Such posts could be easily set with jack screws.

A cluster of wooden and brick fragments was found between footings of the north wall between the northeast corner and one of the kitchen door positions (Fig. 3.5). Where observable, the wood grain was oriented mostly east-west and the fragments may have been remains of the north wall sill. The brick was probably scattered pieces of the chimney rubble.

A number of rectangular wooden fragments were found clustered between two footings of the south wall under the probable position of the front door (Fig. 3.5). The grain of most of these pieces was skewed to the alignments of the footings and sill. The fragments appear to have collapsed out of context and may possibly have been flooring remnants.

Other collapsed and out of context fragments were located immediately west of the chimney foundation. These consisted of thin, elongated wooden pieces that resembled laths (Fig. 3.5). They varied in length from 0.35 to 1.75 ft. but were too small and fragile to measure for width and thickness. Primary significance of the fragments was that they lay below the brick rubble of the collapsed chimney and retained traces of variously colored paint. The painted pieces are the only wooden archeological remains that we would attribute to the interior walls of the House.

Also found adjacent to the chimney foundation were pieces of a highly corroded, non-ferrous sheet metal. One piece was a rectangular strip 1.50 ft. long and 0.35 ft. wide with adhering fragments of wood. Another was too small for significant measurement but was perforated by a small, ferrous square-shank nail. These appeared to have been remains of zinc flashing used to seal points of contact between chimney and House in order to prevent water running down the chimney exterior.

An 1860 photograph of the Chief Factor's House shows the use of flashing boards on the roof where it meets the chimney (Fig. 10). These boards most likely held the upper portions of metal flashing. This common technique may have been used inside of the House as well as on the roof, and probably was used during the 1845 period.

Porch

The south side of the Chief Factor's House was fronted by a long porch that was variously termed a gallery, a piazza, or a veranda. A short, southern projection of the porch was located at the latter's midlength. The outer face of the projection appears to have been curved, while the eastern and western sides consisted of curved stairways that led from ground level to the porch and the first floor of the House (Hussey 1972:102, 104, 119; Fig. 10). Portions of the porch and its projection were torn down and rebuilt during the period of early 1845 to late 1846 (Ibid.:102). Nevertheless, the porch was an integral part of the Chief Factor's House throughout the latter's existence and a valid aspect of study for the 1845 period.

Archeological evidence of the porch consisted of a series of supports that paralleled the south wall of the House (Figs. 2.2, 3.5, 3.6, 3.8). These supports were either wooden blocks similar to the House footings, or inferred wood posts (Table 6). Most of the supports were found along the western length of the porch. Spacings of the wooden blocks suggest an attempt, at least, to set the supports at approximately 10 ft. intervals. Two of the blocks directly aligned with footings in the south wall of the House and may indicate that porch joists were also spaced at no more than 10 ft. intervals.

The posts appeared to mark the interior supports at the heads of the curved stairways. They did not align with footings of the south wall of the House, but were positioned directly in front of the probable location at the front door of the House (Fig. 3.5). Remnants of the southwestern corner of the porch were not in perfect alignment with other supports. This may be the results of documented renovation; that is, supports found in current excavations may represent more than one period of porch construction. The southeastern corner was not found; indeed, little evidence was found along the eastern length of the porch (Table 6).

The limited archeological evidence suggests the following dimensions along the porch's south side. The eastern and western lengths outside of the stairways were each 30 ft. long. The interior of the porch projection was 5 ft. wide. Since the porch appeared to be the same length as the House wall, or 70 ft., this leaves 5 ft. unaccounted for. While there is no direct archeological evidence, we believe that the 5 ft. was occupied by the curved stairs, each of which was 2.5 ft. wide.

Table 6 -- Support characteristics of south porch line of the Chief Factor's House.

Support	Type	WidthxLength xThickness	Depth bs(ft)	Dist. from Last Support	Remarks
F254	Wooden Block	0.75 x 1.20 x 0.10 ft.	1.35-1.45	0.00 ft.	SW corner; vine (?) root directly associated
F261	Wooden Block	0.50 x 1.45 x 0.10 ft.	1.00-1.10	11.50 ft.	Associated with brick rubble
F276	Wooden Block	0.85 x 1.65 x 0.15 ft.	1.30-1.45	10.70 ft.	Associated with brick rubble
F281	Wooden Block	0.60 x 1.50 x 0.40 ft.	0.80-1.20	10.75 ft.	Mortised for post tenon; associated with brick rubble
F285 west	Wooden Post?	0.30 x 0.55 x 0.70+ ft.	2.00-2.70	1.30 ft.	Post missing, measurements made on hole; interior head of western stairs; subsurface; true upper limit of hole not determined
F285 east	Wooden Post?	0.65 x 0.70 x 0.85+ ft.	1.95-2.80	4.35 ft.	Interior head of eastern stairs; wood fragments present but measurements made on hole; subsurface; true upper limit of hole not determined
F284	Wooden Block	0.25 x 0.60 x 0.50 ft.	0.95-1.05	23.70 ft.	Associated with brick rubble; defined as support based on alignment with western porch supports
-	-	-	-	-	SE corner not found

The supports found in excavation mark only the southern side of the porch. The north side of the porch was doubtless attached to the south wall of the House, probably by setting the north ends of the porch joists into horizontal members of the House wall. As previously suggested, the porch joists may have been set at no more than 10 ft. intervals and aligned with the first floor joists of the House. At the end of Table 1, we listed certain features noted on field maps of exploratory excavations. One of these features was a linear pattern of wooden fragments that extended from a footing in the south wall of the House to where the outside head of the western stairway should have been. This pattern is 30 ft. east of the southwestern porch corner and may well represent a collapsed joist.

Additional joists may have been used to connect the supports of the stairway head interiors to the House wall, as diagrammed on Fig. 3.5, but there was no direct archeological evidence of such. If the additional joists existed, they were set 2.5 ft. inside of the adjacent joists. In any event, the alignment of known porch supports in relation to the southern House wall indicates that the porch was no wider than 7 ft., exclusive of the latter's southern projection.

Archeological evidence for the southern projection of the porch was virtually nil. It is known from contemporary illustrations that the curved stairways on either side of the projection connected with a fence line (discussed below) in front of the porch (Fig. 10; Hussey 1972:Pls. XI, XII). These illustrations also suggest that the curved southern face of the porch projection was either located in the same line as the fence or beyond it. In no case was the southern face of the projection less than the distance from the fence to the southern line of the main porch.

The only structural feature found in the area of the porch projection was a large, rectangular butt of a wood post set into a deep hole and heavily braced with large rock (Fig. 3.8). Measuring 0.5 by 0.7 ft., the base of the butt rested 4.6 ft. below present surface, well below the porch supports. The 1.6 ft. remnant length of the post was set into a prepared hole and braced with smooth stones up to 1.5 ft. in length (Fig. 6b). The remains indicated the former presence of a well set timber such as would be used for a flag pole or a bell mast.

It is difficult to interpret this single post butt as a structural support of the porch projection since it is both too massive and yet inadequate by itself. However, the position of the braced butt

may lend some clue as to the southern limit of the porch extension.

The contemporary illustrations of the porch cited above suggest that the projection served as some sort of observation deck. The 1860 photograph shows a vertical white-painted object rising above and inside of the deck railing (Fig. 10). The object appears to have a rounded shaft and a flat top. It is tapered from its flat top to its lower length which appears to emerge from the deck floor. Hussey (1972:119) notes that this "...central ornament or feature of undetermined use shown in the railing in the 1860 photograph seems to be of different shape in the 1846-1847 picture..." The photo also shows the "ornament" to be slightly west of the maximum curvature of the deck face; the object is offcenter and distinct from the railing.

While it is difficult to judge range or perspective on old photos, the horizontal position of the strange object compares favorably to that of the large post butt found archeologically. If the butt is indeed the base of the "central ornament", then the south face of the observation deck must have projected about 10 ft. south of the main porch line. Unfortunately, this does not identify the function of the post butt-central ornament; neither does it tell us how the south face of the porch projection was supported at ground level. Such evidence may have been present at one time, but the immediate area was badly disturbed by the intrusion of a USA railroad spur and drain (Fig. 1).

No evidence of a basal framing sill was found along the south line of the porch. The 1860 photograph indicates that such a piece was probably not used. An upper sill probably framed the south side of the porch at floor level and was supported by individual posts (Fig. 10). In turn, these posts rested on the wooden block footing previously discussed. One such block was found to be mortised for a post tenon (Table 6). Four of the five blocks were associated with brick rubble. The rubble appears to have little structural significance to the porch and may be only part of the general brick debris found in and around the Chief Factor's House.

A possible piece of porch superstructure was found in the area between the porch and the southern fence line about 13 ft. east of the southwestern porch corner. This was a large wooden fragment oriented north-south that was 4.7 ft. long, 0.9 ft. wide and 0.2 ft. thick (Fig. 3.8). Its size and position suggested that it was an out of context piece of flooring or siding from the collapsed porch.

Fig. 9 - Structural remains of the Chief Factor's House and Kitchen.

a - Wooden post-in-sill on brick footing support for the southwestern corner of the fence in front of the Chief Factor's House (foreground); 2 rectangular wooden posts of the fence support (background) to right of photo scale. Intersection of 2 intrusive Vancouver Barracks drains to left of photo scale (FOVA neg. 069.51-71/279)

b - Stone, brick, and metal rubble of collapsed cooking facility in the Chief Factor's Kitchen (FOVA neg. 069.51-71/280)

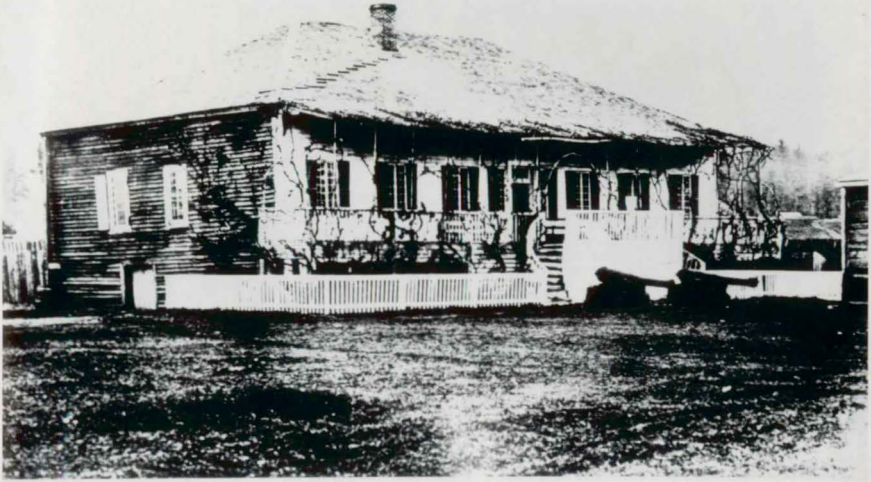


a



b

Fig. 10 - Southwestern elevation of the Chief Factor's House as photographed in May 1860 (FOVA neg. 069.55-73/99). Courtesy, Archives of the Royal Engineers, Brampton Barracks, Kent, U.K.



As noted in Table 1, 6 archeological features consisted of probable vine roots found either associated or in direct contact with remains of the Chief Factor's House. For the most part, these features were located along the southern sector of the House and associated with the porch or fence areas (Figs. 3.6, 3.8). One large root was found immediately west of the southwestern House corner (Fig. 3.9).

We have yet to obtain positive identification of the roots, but we believe them to represent domesticated vines that grew on the southern face of the porch and the adjacent areas of the House. That at least some of these vines were grapes and were planted by 1841 is well documented in the historical research (Hussey 1972: 104, 136). The vines were largely supported by the porch superstructure as well as devices connecting the porch railing with the southern roof eave (Fig. 10).

Fences

Remains of several fence lines were found along the southern and western sides of the House. Suggestion of at least one other line was found along the east side (Figs. 3.6, 3.8, 3.9). The southern line, including the area of the porch projection, was measured on remnant centers of individual supports and found to be no less than 83.0 ft. long and possibly 87.25 ft. long. By the same criterion, the western fence was 25.0 ft. long, and the definable eastern line was 3.5 ft. long (Tables 7, 8).

There is a real question as to how many fence lines are represented archeologically. For instance, the alignments of the southern and western fences seemed erratic as drawn between individual supports. While there was a definite southwestern corner (Fig. 3.9), there seemed to be 2 southeastern fence corners (Fig. 3.6). Most disturbing was the presence of 2 distinct styles of fence supports (Tables 7, 8).

The minority style was a miniature post-in-sill such as used at the southwestern corner (Fig. 9a). These supports consisted of north-south or east-west oriented wooden blocks 0.25 to 0.40 ft. wide, 1.15 to 1.75 ft. long, and 0.15 to 0.25 ft. thick. Each was mortised to receive a post tenon; three still had the tenons in situ, and one had a closely associated tenon. The sills were supported and leveled by either brick or wooden footings (Tables 7, 8).

Table 7 -- Support characteristics for southern fence of the Chief Factor's House.

Support	Type	WidthxLength xThickness	Depth bs (ft)	Dist. from Last Support	Remarks
F256	Post in Sill	0.40 x 1.75 x 0.15 ft.	1.50-1.70	0.00 ft.	SW corner; sill leveled with subsurface brick footing; 0.15 x 0.40 ft. post tenon mortised into sill
F257 north	Wooden Post	0.30 x 0.30 x 0.55+ ft.	2.40-2.95	4.15 ft.	Rectangular post set into prepared hole; subsurface; see remarks for F257 south
F257 south	Wooden Post	0.20 x 0.30 x 1.05+ ft.	2.45-3.05	0.60 ft. (4.40 ft. from F256)	Rectangular post driven into prepared hole; subsurface; both posts of F257 are offset south of main fence line and may be a single repair support or another SW corner
F270	Post in Sill	0.25 x 1.15 x 0.15 ft.	1.30-1.55	5.00 ft.	Sill leveled with subsurface brick footings; 0.075 x 0.300+ ft. post tenon remains in 0.10 x 0.35+ ft. sill mortise
F275	Wooden Post	0.15 x 0.25 x 0.60+ ft.	1.80-2.40	6.85 ft.	Rectangular post set into prepared hole; subsurface; smaller post on west side of hole appears to be a shim
F290	Post in Sill	0.25 x 1.70 x 0.25 ft.	1.70-1.95	2.35 ft.	South end of sill leveled by wood footing 0.10W x 0.30L x 0.05T; sill mortise is 0.1 x 0.3 ft.; post tenon of same size present but not in mortise; subsurface
F296	Wooden Post	0.70 x 0.70 x 1.20+ ft.	1.30-2.50	48.50 ft.	Rectangular post braced with stone & brick; no evidence of prepared hole; subsurface

Table 7 (cont'd.)

Support	Type	WidthxLength xThickness	Depth bs(ft)	Dist. from Last Support	Remarks
F297	Wooden Post	0.35 x 0.50 x 1.30+ ft.	1.60-2.90	11.75 ft.	SE corner; rectangular post braced with stone & brick; no evidence of prepared hole; subsurface
F302	Wooden Post	0.20 x 0.30 x 0.60+ ft.	1.50-2.10	4.25 ft.	Rectangular post set into prepared hole; subsurface; either another SE corner or an eastern extension of fence
F304	Wooden Posts	0.20 x 0.25 x 0.85+ ft. 0.50 x 0.20 x 1.10+ ft. 0.25 x 0.40 x 0.90+ ft.	1.65-2.90 as a group	3.50 ft. (from F297)	3 rectangular posts grouped as a single subsurface support; no evidence of prepared hole; one post has traces of white paint; group is north of F297 & may be remnant of fence along east side of the house

Table 8 -- Support characteristics for western fence of the Chief Factor's House.

Support	Type	WidthxLength xThickness	Depth bs(ft)	Dist. from Last Support	Remarks
F256	-	-	-	0.00 ft.	SW corner; see characteristics in Table 7
F215	Post in Sill	0.25 x 1.65 x 0.20 ft.	1.40-1.60	13.80 ft.	Post tenon 0.15 x 0.20 x 0.50 ft. high set into sill mortise 0.20 x 0.30 x 0.20 ft. deep
F266	Wooden Post	0.30 x 0.30 x 0.20+ ft.	1.50-1.70	11.20 ft.	Rectangular post; no evidence of prepared hole; NW corner; balance of fence probably attached to house wall by extension of ca. 5 ft.

The majority style consisted of rectangular wooden posts set or driven into the ground. These varied from 0.05-0.35 to 0.25-0.50 ft. on a side, with the exception of an 0.70 ft. square post located 11.75 ft. west of one of the southeast corners. In the southern line, the posts were invariably deeper than the sill supports. At 2 positions, the posts were grouped in twos and threes. Some were braced with stone and brick, and one post retained traces of white paint (Tables 7, 8).

The above factors suggested the presence of at least 2 different periods of fence construction. But attempts to sort the periods on the basis of intervals of the 2 support styles were not successful. There is a suggestion that the supports as a whole were set at intervals that were multiples of 2.5 ft. Indeed, the 1860 photo of the southern fence suggests that supports were set at intervals of about 7.5 ft. (Fig. 10). Viewed in this light, the alternative explanation is that one style of support represented the original construction while the other style represented subsequent repair to the fences.

In any event, the southern fence was set 7.5 ft. south of the porch. It consisted of 2 discontinuous sections that connected with exterior railings at the feet of the curved porch stairs. The western section was about 31.5 ft. long, while the eastern section was about 23.5 and 33.5 ft. long measured from the 2 southeastern corners. A definable eastern fence was provided by 3 grouped posts located 3.5 ft. north of the westernmost southeastern corner (Fig. 3.6). Another eastern fence may be suggested by the easternmost southeastern corner, but no archeological evidence was found.

The western fence line(s) extended north of the southwestern corner for a length of 25 ft.; if a single fence, it was erratically set (Fig. 3.9). Judging from the 1860 photo, the northern end of the western fence was probably connected to the western House by a closure of about 5 ft.

In 1860 the southern and western lines were picket fences painted white. Top and bottom rails were attached to the outsides of the supports, and pickets attached to the insides of the rails (Fig. 10). During the 1846-47 period, the western length of the southern fence, at least, appeared to lack a bottom rail and the pickets looked more like bannisters. In form, this fence is virtually identical to the railings of the porch and stairs (Hussey 1972: Pls. XI, XII). While this earlier fence may be only artistic reduction on the part of the illustrator, it may also reflect the

reconstruction and/or repair of the fence that we suspect on archeological grounds.

Putative evidence of the picket style fence was found 3.5 to 8.5 ft. outside of the southern fence line in an area about 18 ft. east of the southwestern fence corner (Fig. 3.8). Two wooden pieces were found laid parallel to each other, but perpendicular to the fence line. The northern piece was 2.2 ft. long, 0.25 ft. wide, and 0.15 ft. thick with a short, transverse piece of the same width attached to its western end. The southern piece was 2.15 ft. long, 0.30 ft. wide, and 0.05 ft. thick. The combination of the 2 pieces suggested a 5 ft. section of the fence that was thrown aside during destruction of the House. The longer pieces may have been pickets, while the transverse piece may have been remains of a connecting rail.

As presently understood, the primary function of the fence was to protect a garden in front of the porch. This garden contained the vines previously discussed as well as several small flower beds (Hussey 1972:104, 135).

Guns

Part of the landscaping in front of the Chief Factor's House consisted of 2 large caliber guns mounted on either marine or garrison carriages and accompanied by piled shot. These were positioned directly in front of the porch observation deck between the feet of the stairs (Fig. 10; Hussey 1972:Pls. XI, XII). The guns were inoperable and served primarily as symbols of authority. While various calibers are reported for the guns, they were most likely 18 pounders during the 1845 period (Hussey 1972:134).

Archeological evidence consists of 2 gun pieces found on the HBC surface, but slightly out of context. The pieces were a 6 lb. solid shot and a trunnion plate such as those used in marine or garrison carriages. Both pieces overlaid the position of the large post butt under the porch projection (Fig. 3.8). This find spot was very close to the documented positions of the guns. Despite a discrepancy in the caliber of the shot, we are confident that the ball and plate are parts of the 1845 display guns.

Chief Factor's Kitchen

As noted in the introduction, there is no positive indication as to the size and location of the Chief Factor's Kitchen previous to mid-1841. However, there is strong inference from historic research (Hussey 1972:165) that the Kitchen was completed at about the same time as the House, that is, in early 1838. As indicated by the Vavasour map of 1845 (Ibid.:Pls. VI-VIII), the structure was rectangular in plan and measured 60 ft. east-west by 24 ft. north-south. The Kitchen was between the House and Stockade; its southern wall was about 8 ft. north of the northern House wall, and its northern wall was about 13 ft. south of the northern Stockade wall. The eastern walls of the Kitchen and House were in line. Since there was a 10 ft. difference in lengths, the western wall of the Kitchen was set 10 ft. east of the western wall of the House (Ibid.:167). The building may have been two-storied with the upper story actually being a garret space used for servants' living quarters (Ibid.:176).

References in the historic record are ambiguous as to the general construction style of the Kitchen. Some sources describe the building as a frame structure, although the framing style is not defined (Hussey 1957:172; 1972:174). If balloon framing was meant, this was a most unusual style at Fort Vancouver. More likely, the framing consisted of heavy timbers laid in the usual post-in-sill style (Hussey 1972:175). For reasons not yet known, the Hudson's Bay Company apparently demolished the Chief Factor's Kitchen sometime before November 1852 (Ibid.:168). Presumably, parts of the Kitchen were salvaged for further use within the Fort.

Archeological evidence sheds little light on the exact size and position of the Chief Factor's Kitchen. Neither current nor past excavations revealed regular alignments of footings and sill fragments such as found in the House. One wooden fragment was found along the probable eastern wall of the Kitchen (Fig. 3.2). Subsequent analysis indicated that the fragment was actually a part of the post-1852 Kitchen.

Such evidence as was found was highly disturbed and fragmentary. It should be pointed out that the historically documented position of the Kitchen lays in an area of extensive USA disturbance as revealed by past and current excavations. For instance, a large USA trash pit was located along the eastern length of the historically documented position of the western wall (Fig. 1). Disturbances plus HBC destruction of the building left few credible remains of the building.

Floor

Several portions of an apparent floor were found in the southwestern and northeastern sectors of the Kitchen. These consisted of compacted and laminated surfaces of clay and ash (Figs. 3.2, 3.4). Some coral and mortar were associated with the portions, but mainly in the northeastern sector where the surfaces were overlain by debris of the cooking facility (discussed below). As found in current excavations, the surfaces were irregular in outline and quite thin. Mean maximum thickness was 0.35 ft. and the edges of the outlines blended into surrounding soils. The elevation of the floor was remarkably consistent as determined from maximum depths of the remnant surfaces. These depths varied from 1.0 ft. below present surface in the southwestern sector to 1.2 ft. in the northeastern sector.

While the floor portions were largely disjointed, they were well within the historically documented position of the Kitchen. As indicated by exploratory operations (Caywood 1955:15), the compacted surfaces represent the original ground floor of the Kitchen.

A small and well defined lens of water-compacted clay and gravel was found immediately west of where the west wall of the Kitchen should have been. The ovoid lens was 1.3 to 1.7 ft. below present surface and adjacent to a fence line (discussed below). We speculatively labeled the lens as a dishwater dump attributable to HBC (Table 1). This speculation leads to another, namely the presence of an opening in the west wall of the Kitchen. As suggested in Chapter IV, there may have been windows in the west walls.

Cooking Facility

A large concentration of rubble was found in the northeastern sector of the Kitchen area, near the historically documented north wall, and overlaying the floor (Fig. 3.2). The rubble consisted of stone, brick, mortar, coal, and scorched metal pieces; all of which were so badly disturbed as to defy recognition as a readily identifiable feature (Fig. 9b).

Some sort of cooking facility must have been used in the Chief Factor's Kitchen and we assume the rubble to be the remains of that facility. The rubble was not emphasized in the final report of exploratory operations (Caywood 1955:15), possibly because of its scattered and unrecognizable form. Since we believe the Kitchen to have been torn down by the HBC, we must assume

that the cooking facility was destroyed at the same time. Possibly parts of it, mainly the brick, were salvaged for re-use.

It is difficult to determine the exact nature of the cooking facility on the basis of the disjointed rubble. Based on our past observation of Fort features, we assume the stone of the rubble to have been parts of a foundation. The brick and mortar may have represented the body and/or the chimney of the facility. The scorched metal fragments were probably internal parts. It should be noted that the only credible evidence of burning within the Kitchen position was limited to the rubble concentration.

In a previous report, we inferred the cooking facility of the succeeding post-1852 Kitchen to have been a large metal stove (*Hoffman and Ross 1973:62*). *Remains of the facility within the* Chief Factor's Kitchen did not seem to represent a stove or a stove base. It is our impression that the facility was more on the order of a large open hearth or grill built of mortared stone and brick with internal parts (cooking surfaces?) made of heavy sheet iron.

Superstructure

Linear fragments of wood were found in the southwestern corner, center, northeastern sector, along the north wall, and mixed with the cooking facility of the Kitchen (Figs. 3.2, 3.3, 3.4). These either laid on the floor or were slightly depressed into the floor. Generally the fragments were either parallel or perpendicular to each other. In at least 2 instances, the fragments overlaid each other at right angles. With few exceptions, the wooden pieces were oriented east-west or northwest-southeast.

We believe the fragments were remains of the second floor of the Kitchen. While lengths were highly variable, widths and thicknesses of the linear pieces were quite consistent. For instance, widths ranged from 0.10 to 0.45 ft. with most about 0.2 to 0.3 ft. Thicknesses ranged from 0.05 to 0.20 ft. with most about 0.10 to 0.15 ft. The fragments appear to be structural remains not salvaged from the demolished Kitchen. If this is valid, the remains were probably not joist fragments since joists could be re-used in one form or another. More likely, the fragments were remains of second story flooring or possibly first floor ceiling; the remnant measurements were suggestive of such identification as opposed to joists or other supportive features.

Fence

Remains of a fence line were found west of the historically documented position of the Kitchen west wall (Fig. 3.4). These consisted of rectangular wooden posts set into the ground for a known length of 20.95 ft. (Table 9). The fence line was parallel to, but slightly east of, the outer west wall of the Chief Factor's House. In relation to the documented position of the Kitchen west wall, the fence was 9.5 to 10.0 ft. west.

The posts varied from 0.10 to 0.50 ft. on a side, with a mean of 0.26 ft. They were set 2.0 to 2.8 ft. below present surface; most were set 2.5 to 2.8 ft. deep or approximately 1.5 to 1.8 ft. below the HBC surface in this area. There is a suggestion that the posts were placed at intervals of about 9 ft., but the limited number of posts found makes it difficult to defend this suggestion (Table 9).

It is also difficult to directly associate this fence with the Chief Factor's Kitchen. It is known that a fence of closely fitted vertical boards occupied this position in 1860 (Fig. 10). Apparently, the boards were attached to the west faces of horizontal rails that in turn were attached to vertical supports. We assume that this late period fence connected the northwestern corner of the Chief Factor's House to the northern wall of the Stockade at about the latter's eastern gate post. The existence of a gate in the fence is undetermined.

Whether this fence existed during the 1845 period is problematical. One of the Vavasour maps of 1845 (Hussey 1972:Pl. VI) shows the use of fences connecting buildings in the southwestern sector of the Fort. This use may have been a device to prevent ready access to areas between buildings and Stockade from a road than ran through the southwestern gate. It is known that a road (discussed below) ran through the northern gate of the Stockade past the western sides of the Chief Factor's House and Kitchen (Ibid.). It is also known that 2 adjacent Privies (discussed below) were located between the Kitchen and the Stockade (Fig. 3.3; Caywood 1955:sheet 9 of map 2). For reasons discussed below, we believe the Privies to be contemporary with the Kitchen. Therefore it is at least conceivable that the fence line found archeologically did exist during the 1845 period. If so, the fence served to screen the Privies from the north gate road as well as to control, if not prevent, ready access to the Kitchen and the general area between the House and the Stockade.

Table 9 -- Support characteristics for western fence of the Chief Factor's Kitchen.

Support	Type	WidthxLength xThickness	Depth bs(ft)	Dist. from Last Support	Remarks
F222	Wooden Post	0.30 x 0.45 x 0.60+ ft.	1.90-2.50	0.00 ft.	Rectangular post; subsurface but no evidence of prepared hole; southern-most support found of this fence; balance may extend south to NE corner of House or east to SW corner of Kitchen
F252	Wooden Posts	0.10 x 0.10 x 0.35+ ft. 0.10 x 0.25 x 0.45+ ft.	2.25-2.70 on both	9.25 ft.	2 rectangular posts; subsurface but no evidence of prepared hole; 0.35 ft. between post butts filled by wooden block that may be a spacing device
F241 south	Wooden Post	0.35 x 0.50 x 0.75+ ft.	2.05-2.80	9.10 ft.	Rectangular post set subsurface into prepared hole
F241 north	Wooden Post	0.20 x 0.25 x 0.30+ ft.	1.70-2.00	2.60 ft.	Rectangular post; no evidence of prepared hole; possible repair or replacement for F241 south; northern-most support found of this fence, balance probably attached to stockade by extension of ca. 15 ft.

Post-1852 Kitchen

Remains of the post-1852 Kitchen were also found in current excavations. These were partially discussed in a previous report and the balance of the remains are described in this report. In our previous report, we implied the Kitchen to have been a frame structure as opposed to a heavy timber structure. We inferred the ground floor to be an earthen surface covered with a lime product. A brick chimney was located on the eastern wall with a large, coal-fired metal stove connected to it. We also suggested the presence of glass windows in at least the southern and eastern walls. Since we were dealing with only a portion of the remains, we refrained from interpreting the dimensions and framing style of the building (Hoffman and Ross 1973:53, 62, 67).

Presently, we are aware of only a single historic reference to the external appearance of the post-1852 Kitchen. This source identified the structure as a two-story frame building (Hussey 1972: 174). The use of the work "frame" at this late date implies a structural style not common at Fort Vancouver; the building may well have been a modern balloon frame.

The archeological remains described in this report are largely a continuation of those previously reported. Further evidence of the lime-surfaced ground floor was found at the apparent western extremity of the Kitchen (Fig. 3.2). Portions of this surface appeared to have been built up as if repaired. North-south oriented wooden fragments were found immediately south and southwest of the ground floor. The largest of these was 2.45 ft. long and 0.9 ft. long, but only 0.05 ft. thick. Moreover, it laid at an elevation 0.4 ft. above the elevation of the Kitchen floor. It is most unlikely that the wood represented foundation remains; rather, it was probably remnants of the superstructure covering or scantling.

The only other sizable structural element noted for the area was found during exploratory operations of 1948 (Caywood 1955:sheet 9 of map 2). This was a north-south oriented piece of wood 15 ft. long, 1 ft. wide, and about 0.2 to 0.3 ft. thick. By plotting data from past archeological maps onto current maps, we found that the linear fragment was positioned over the area of the Kitchen floor discussed above, although we found no evidence of the wood in current excavations. The long wooden piece was generally parallel to the stove location of the post-1852 Kitchen and exactly parallel to the documented position of the east wall of the Chief Factor's Kitchen. However, the piece was well east and north of the latter's wall line.

Because of its position and size, the wooden fragment was thought to be a length of plank that may have been part of the footing for either the east wall of the Chief Factor's Kitchen or the west wall of the post-1852 Kitchen (Caywood 1949:7). As demonstrated by current excavations, the plank laid east of the western limits of the post-1852 Kitchen floor. Also, photographs of the 1948 excavations in the Fort Vancouver museum files clearly show the plank to lay well above the Kitchen floor. Rather than a foundation, the long wooden piece is more likely another fragment of collapsed superstructure.

Lacking foundations or adequate historical data, it is difficult to determine the plan dimensions of the structure. The best available map that we can use for scaling the structure is the USA sketch of 15 June 1860 (Hussey 1972:Pl. XXX). While riddled with inaccuracies, this sketch depicts the Kitchen as square in plan, about 30 ft. on a side, and directly abutting the northeastern corner of the Chief Factor's House. Three other maps of the 1854 to 1859 period either clearly show or appear to show the southwestern corner of the Kitchen abutting the northeastern corner of the House (Ibid.:Pls. XIX, XXIII, XXIV). At least two of these maps also show the Kitchen to be rectangular in plan and oriented north-south.

A reasonable estimate of plan dimensions can be gained by combining the archeological evidence with that of historic maps and sketches. The latter generally agree that the southwestern corner of the Kitchen abuts the northeastern corner of the House; the south Kitchen wall and the north House wall are in the same line. In a previous report, the eastern wall of the post-1852 Kitchen was established on the basis of the stove position (Hoffman and Ross 1973:62). This position is exactly 10 ft. east of the east wall of the Chief Factor's House. The distance from the east wall of the Kitchen to the western limit of its lime-surfaced floor is about 22 ft. The distance from the historically documented south wall of the Kitchen to the northern limit of its lime-surfaced floor is about 34.5 ft.

The above measurements are somewhat odd, and we suggest that the original plan of the Kitchen was 25 ft. east-west and 35 ft. north-south. As diagrammed in a later chapter of this report, the suggested plan dimensions produce a rectangular structure that directly abuts the northeastern corner of the Chief Factor's House. Moreover, the western wall of the post-1852 Kitchen overlaps the former eastern wall of the Chief Factor's Kitchen by 5 ft. By postulating a door in the western wall of the later Kitchen, we can

say that there was still a relative ease of access between the Kitchen and the back door of the Chief Factor's House.

North Gate Road

Several contemporary illustrations clearly depict a road leading into Fort Vancouver from the north (Hussey 1972:Pls. V, XIII, XV, XIX, XXII). These illustrations reflect the period of 1844-55 and are pertinent to the 1845 period. Obviously the road from the north did not end at the gate. Yet, historic research has found only one generalized illustration that depicts the road system within the Fort (Ibid.:Pl. XXIV).

Previous attempts to define the road archeologically had been made by cross sectioning the presumed location of the road with narrow trenches (Caywood 1955:sheets 8 & 9 of map 2; Combes 1966:5). Although these sections were no more than 25 ft. south of the gate, they were not successful.

Excavations on the west side of the Chief Factor's House recovered sufficient archeological information to define a road as it entered the north gate. This information was found in the "incomplete" units west of the House that are not shown on the excavation maps. However, the road position as determined from the unmapped units is indicated on the feature maps (Figs. 2, 3.4, 3.8, 3.9).

Seven vertical sections were made of the road over a horizontal length of 60 ft. These sections were obtained from the vertical walls of our gridded excavation units which do not generally intersect Fort features at right angles. Thus, the obtained sections were oblique views rather than true cross sections of the road. Still, they were informative.

The road consisted of a compacted layer of silty clay often mixed with small gravels. These materials were identical to the general matrix of HBC deposits in the area. The primary difference was compaction which, according to field notes, ranged from "hard" to "extreme." The layer was 0.1 to 0.8 ft. thick with a mean of 0.28 ft. Top of the layer varied from 1.00 to 1.65 ft. below surface of 1971, with a mean top depth of 1.36 ft. This placed the road top on or slightly below the general HBC surface of the area.

Most of the material overlaying the layer consisted of mixed gravels and coarse sands that appeared to be deliberate aggradation by USA activities. The overlaying material was often impregnated with silty clays similar to the road layer, but it lacked the

compaction. Another strong characteristic was the presence of wooden fragments, iron oxides, and even iron objects along the top of the layer. This in itself did not distinguish the top of the layer from the general HBC living surface, but it did confirm that the compacted layer was an HBC road.

As indicated by the excavation sections, the road entered the north gate and paralleled the Chief Factor's House and Kitchen. Full length and width of the road were not determined. However, sections indicated it to be no less than 10 ft. wide and probably closer to 20 ft. wide where it paralleled the House. The probable eastern edge of the road was about 2 ft. west of the western fence that served to separate the House from the north gate traffic (Fig. 3.9).

Our sections did not clearly indicate the presence of parallel ruts in the road such as would be expected from wagon traffic. However, what appear to be parallel ruts are shown on the 1860 photo of the House where they are located at about the center of the road (Fig. 10).

Privies

Two Privy Pits were located between the north wall of the Stockade and the historically documented northwest corner of the Chief Factor's Kitchen during exploratory work of 1950 (Caywood 1955: Fig. 4, sheet 9 or map 2). Both were important find spots of tableware deliberately dumped by HBC personnel during the 1860 evacuation of the Fort. Large amounts of restorable earthenware and glassware were recovered from TP10 and TP13 (Ibid.:24).

The pits were initially inferred to be trash pits on the basis of their rich artifact yields (Ibid.:Fig. 4). However, our experience with excavations in the northeastern sector of the Fort strongly suggested that the pits were privy remains. The presence of paired "two-holer" privies was discussed previously and inferred to be a definite patterning for convenience within high activity areas of the Fort (Hoffman and Ross 1972:85). The Privy Pits located north of the Chief Factor's Kitchen fitted the inferred functional patterning. Neither past nor current excavations found additional privies so close to the House and Kitchen. Since the latter structures definitely constituted an area of high activity within the Fort, we must infer the Privies to have been contemporary with the House and Kitchen. Despite their long period of use, the Privies were part of the 1845 period.

It has also been our experience that privy pits dug in past explorations were not completely cleaned out (Ibid.:82). Therefore, we extended our excavations north of the Chief Factor's Kitchen in order to re-expose TP10 and TP13, as well as search for additional pits.

No additional pits were found, and our re-exposure of the known pits revealed only slumped excavation walls from the exploratory work (Fig. 1.1). No additional information was obtained over that originally detailed by Caywood (1955:Fig. 4). Superstructural data were entirely absent. Because of the pit sizes, we suggest that the Privies were compartmented "two-holers" such as we have previously inferred. Their general appearance was quite similar to those we found adjacent to the 1845 period Bakery (Hoffman and Ross 1972:12-13). For purposes of illustrations, we have plotted the position of the Privies on our feature maps using data from past excavation (Figs. 2, 3.3).

III - ARTIFACT DESCRIPTIONS

A total of 75,354 artifacts was recovered within the area of the Chief Factor's Residence. A quantitative distribution of these artifacts by their descriptive category appears as Table 10.

Ceramic Ware and Container Fragments

The ceramic ware and container fragments found totaled 20,085 fragments which have been classified into 5 ceramic categories (Table 10).

Common Pottery

Lustreware

Of the 112 fragments found, none were large enough to permit identification of specific patterns or vessel shapes. Descriptive varieties of lustreware decoration have been established for fragments found during the present excavation, and those varieties found in the Chief Factor's House area are listed in Table 11.

Table 11 -- Varieties of lustre decorated wares.

Variety #	Exterior Glaze	Interior Glaze	f
2001	Blue, Gold	White, Purple	15
2002	Blue, Brown w/White & Yellow Applique	White	1
2004	Yellowish Brown, Brown & Gold	White, Purple	6
2005	Green, Brown	White, Brown	2
2006	Dark Brown w/Multicolored Sand	White	2
2007	Brown, Gold	White	73
2008	Dark Brown, White & Purple	White	2
2009	Brown w/Blue Transfer Print	White	1
-	Unknown	Unknown	10
TOTAL			112

Earthenware

Earthenware fragments, which totaled 19,191 items, have been classified into descriptive subcategories based upon the color of surface glaze -- white, yellow, and brown (Table 10).

Table 10 -- Quantitative distribution of artifacts by descriptive category.

Descriptive Category	Sub-total 4	Sub-total 3	Sub-total 2	Sub-total 1	Total
CERAMIC WARE & CONTAINER FRAGMENTS					20085
Common Pottery Fragments				114	
Red &/or buff ware fragments			2		
Lustreware fragments			112		
Earthenware Fragments				19191	
White glazed fragments			18964		
Undecorated ware fragments		5552			
Transfer printed ware fragments		13090			
Pattern identified	7373				
Pattern unidentified	409				
Pattern unidentifiable	5308				
Transfer printed container fragments		11			
Hand painted ware fragments		143			
Molded ware fragments		140			
Mold applique ware fragments		28			
Yellow glazed ware fragments			99		
Undecorated fragments		41			
Hand painted fragments		2			
Mocha fragments		10			
Molded fragments		11			
Transfer printed fragments		2			
Snuff bottle fragments		33			
Brown glazed fragments			128		
Stoneware Fragments				673	
"Read's Ale" bottle fragments			133		
Ale &/or ink bottle fragments			154		
Chinese ginger jar fragments			66		
"Canton" ware fragments			23		
Hand painted Chinese ware fragments			6		
Unidentified ware fragments			291		
Vitreous China Fragments				82	
Unidentified ware fragments			32		
Undecorated container fragments			1		
"Chinese Export" ware fragments			39		
Hand painted ware fragments			8		
Transfer printed ware fragments			2		
Porcelain Fragments				25	
Undecorated fragments			14		
Hand painted			11		

Table 10 (cont'd.)

Descriptive Category	Sub-total 3	Sub-total 2	Sub-total 1	Total
CERAMIC PERSONAL ITEMS				5520
Common Pottery Items			3	
Tobacco pipe fragments		3		
Earthenware Items			5500	
Kaolin tobacco pipe fragments		5497		
Doorknob fragments		2		
Unidentified fragments		1		
Vitreous China Items			6	
Doll fragments		3		
Unidentified fragments		3		
Porcelain Items			11	
Buttons		11		
GLASS ITEMS				21887
Bottle, Tumbler & Stemmed Glassware Fragments			14837	
Bottle fragments		13122		
Tumbler fragments		318		
Stemmed glassware fragments		137		
Unidentified curved glass fragments		1260		
Glass Stopper Fragments			9	
Cut Glass Lid Fragments			1	
Glass Jar Fragments			2	
Decorative Glass Fragments			73	
Window Glass Fragments			6030	
Mirror Glass Fragments			105	
Beads			612	
Rods			2	
Strip			1	
Stirring Rod Fragment			1	
Thermometer Glass Fragment			1	
Ring Settings			2	
Taillight Fragments			6	
Flaked Glass			5	
Unidentified Glass Fragments			200	
METAL ITEMS				18258
Hardware Items			15154	
Square nail fragments		11214		
Hand forged	4015			
Machine cut	3435			
Cast	48			
Unidentified fragments	3716			
Wire nail fragments		2197		
Wire tacks		3		

Table 10 (cont'd.)

Descriptive Category	Sub-total 2	Sub-total 1	Total
Forged staples	11		
Wire staples	14		
Brass headed screws	2		
Screws	26		
Shutter latch nail (HBC)	1		
Wedge fastener	1		
Rivets (USA)	21		
Docking bolts (USA)	11		
Bolts (USA)	47		
Nuts (USA)	39		
Washers (USA)	33		
Bolt washer (USA)	1		
Bolts with nuts (USA)	4		
Bolts with washers (USA)	4		
Bolts with nuts & washers (USA)	2		
Lead washer	1		
Tie rods	2		
Cotter pins	3		
Clevis pin	1		
Strap hinges (HBC-USA)	3		
Butt hinges (HBC-USA)	8		
Simple sheet metal hinge (USA)	1		
Hinge hasps (HBC-USA)	3		
Pintles (HBC)	2		
Shutter latches (HBC)	4		
Copper countersunk plate	1		
Door lockplates (USA)	3		
Escutcheons (HBC & USA)	3		
Lock parts (HBC)	10		
Padlock parts (HBC & USA)	3		
Straping fragments	364		
Copper band	1		
Wood binding straps	32		
Barrel hoop	1		
Conduit strap	1		
Cable fragment	1		
Chain links	16		
Chain and nail	1		
Cable eye	1		
Cable separators	3		
Hand forged gate hooks	6		
Hand forged wall hooks	2		
Miscellaneous hooks	6		
Hand forged eyes	5		
Rings	5		
Pipe fragments	17		
Pipe fittings	8		

Table 10 (cont'd.)

Descriptive Category	Sub-total 3	Sub-total 2	Sub-total 1	Total
Gaskets		7		
Springs		6		
Handles (HBC-USA)		3		
Stake		1		
Axe heads		4		
Wedge		1		
Offset awls		3		
Saw blades		4		
Chain saw teeth		357		
Center drill bits		4		
Drill bits		4		
Reamer		1		
Gimlets		5		
Chisel		1		
Wood plane blade		1		
Flat bastard files		3		
Half round bastard file		1		
Flat smooth bastard file		1		
Three square file tangs		1		
Unidentified files		3		
Punches		2		
Pike tip		1		
Blacksmith tongs		2		
Trap parts		14		
Jaw posts	7			
Ketches	3			
Springs	2			
Pan	1			
Base and ketch	1			
Funnel		1		
Oil can spout		1		
Curry comb (HBC-USA)		1		
Horse bit (HBC-USA)		1		
Horseshoes (HBC-USA)		10		
Muleshoes (USA)		3		
Unidentified wagon part (HBC-USA)		1		
Automobile parts (USA)		15		
Temperature gauges (USA)		4		
Fuse strips		3		
Metal sheeting fragments		60		
Wire		448		
Foil		6		
Lead castings		17		
Brass castings		2		
Lead bar		1		
Copper bar		1		

Table 10 (cont'd.)

Descriptive Category	Sub-total 2	Sub-total 1	Total
Household and Personal Items		399	
Buttons	60		
Snap fragments	2		
Buckles	9		
Coat hanger	1		
Finger ring fragments	7		
Watch parts	10		
Iron bracelet	1		
Hair pin	1		
Pocket knife fragments	17		
Clothing hook eyes	3		
Mirror stand (USA)	1		
Decorative chain	1		
Jews harps (brass)	5		
Harmonica parts	2		
Musical instrument valve key	1		
Straight pins	40		
Single edge safety razor blade	1		
Keys	7		
Coins & tokens	5		
Utensils	33		
Cup with handle (USA)	1		
Keg cocks & keys (HBC)	13		
Candle douters	3		
Salt & pepper shaker lid	1		
G.I. canopener	1		
Jug handle	1		
Container (HBC or USA)	1		
Can fragments (USA)	127		
Container lid	1		
Bottle cap	1		
Bottle cork wires	2		
Cannister handle	1		
Lead seals (HBC & ?)	16		
Foil cigarette wrapper (USA)	1		
Door & drawer pulls	2		
Stove parts	4		
Light bulb bases	8		
Toothpaste tube ("Senreco") (USA)	1		
Toy jeep (USA)	6		
Lead tea or coffee pot lid handle	1		

Table 10 (cont'd.)

Descriptive Category	Sub-total 2	Sub-total 1	Total
Weaponry Items		229	
Cartridges (USA)	24		
"Winchester, Leader, No. 10" shotgun shell (USA)	1		
Lead bullets (USA)	2		
Ball & shot (HBC)	190		
30-06 cartridge clips (USA)	2		
Percussion caps (HBC)	3		
Gun parts (HBC & USA)	5		
Cannon mount (HBC)	1		
Cannon primer (HBC-USA)	1		
Unidentified Lead Object		1	
Unidentified Metal Objects		145	
Unidentified Metal Fragments		2330	
CONSTRUCTION MATERIAL			9318
Brick Fragments		7303	
Imported brick	5083		
Local brick	2198		
Unknown brick	22		
Brick Tile Fragments		23	
Earthenware Tile		1	
Mortar Fragments		1823	
Plaster Fragments		1	
Paint		18	
Concrete Fragments		46	
Tar Paper Fragments		30	
Window Putty Fragments		18	
Ceramic Insulators		40	
Glass Insulators		15	
STONE ITEMS			118
Slate Pencil Fragments		39	
Slate Tablet Fragments		33	
Incised Slate Fragments		2	
Unidentified Slate Chunks		13	
Gun Flints		16	
Carved Stone Pipe Fragments		3	
Catlinite Pipe Preform		1	
Carved Stone		1	
Projectile Point		1	
Scraper		1	
Flaked Stone		1	
Detritus		2	
Mica Washer		1	
Amethyst Ring Setting		1	
Carved Bowl Fragments		3	

Table 10 (cont'd.)

Descriptive Category	Sub-total 1	Total
LEATHER ITEMS		28
Shoe Fragments	14	
Glove Fragments	2	
Stitched Fragments	1	
Unidentified Fragments	11	
BONE ITEMS		8
Buttons	5	
Toothbrush Handle Fragments	2	
Unidentified Fragment	1	
PLASTIC ITEMS		26
Toothbrush Fragments	2	
Bottle Cap Seal	1	
Surveyors Flagging	1	
Laminated Auto Glass Fragments	20	
Rods	2	
RUBBER ITEMS		21
Shoe Sole Fragments	2	
Comb	1	
Pipestem	1	
Golf Ball	1	
Gasket Fragments	3	
Seal Fragments	2	
Insulation Fragments	8	
Bushing	1	
Unidentifiable Fragments	2	
WOODEN ITEMS		25
Bottle Cork Fragments	10	
Caywood Excavation Stakes	2	
Oak Doweling (1966 reconstruction)	10	
Unidentifiable Fragments w/Paint	3	
SHELL ITEMS		5
Button Fragments	4	
Tortoise Shell Hairpin	1	
MISCELLANEOUS ITEMS		55
Amber Pipestem	1	
Sealing Wax Fragments	2	
Pencil	1	
Marking Crayon Fragments	23	
Graphite Lumber Pencil	1	
Printed Paper Fragments	7	
Fabric Fragments	10	
Carbon Arc Rods	3	
Unidentified Plaster Object	1	
Unidentified Material Objects	6	
GRAND TOTAL		75354

White Glazed Earthenware Fragments

White glazed earthenware fragments totaled 18,964 items and have been classified according to function (i.e. ware vs. product container) and decoration (Table 10).

Undecorated Wares. No complete or partially complete wares were found among the 5552 fragments recovered. A list of the marked specimens appears as Table 12.

Table 12 -- List of marked undecorated earthenware fragments.

FOVA #	Manufacturing Mark
10401	"...les Mann & Co." impression with registration mark dated 1853 (Venables Mann & Co.)
11502	"...na, .earl" black transfer print (Ironstone China, Pearl, J. Wedgwood)
13399	"Venables Mann & Co, Burslem" impression with registration mark dated October 5, 1853

Transfer Printed Wares. Of these 13,090 fragments, 7373 have patterns which have been either identified or classified, 5308 have patterns which are too fragmentary to be identified, and the remaining 409 fragments have patterns or marks which might possibly be identified or classified in the future (Table 10). A list of the patterns either identified or classified appears as Table 13, and a list of marked patterned specimens appears as Table 14.

Partially complete wares included:

Platter: Four fragments (FOVA 7817) of a large serving platter were found with a grayish-blue transfer printed scenic pattern (Fig. 12c). This pattern is classified as Variety #7034 and tentatively identified as "Seasons". Impressed in the base is a crown, and other specimens in the FOVA comparative ceramic collection have "Copeland, Late Spode" transfer printed manufacturing marks (coded C-TP-2). W. T. Copeland used this mark between 1847-1867 (Godden 1964:171).

Vegetable Dish Cover: Twenty-three fragments (FOVA 7607, 11697, 12188 & 12223) of a rectangular shaped vegetable dish cover were found with a blue transfer printed scenic pattern (Fig. 11c). This pattern is classified as Variety #7017 and identified as "Continental" (or "Louis Quatorze"). A blue transfer printed "Copeland, Late Spode" manufacturing mark (coded C-TP-2) was found on the underside together with a blue transfer printed

Table 13 -- Quantative distribution of identified and classified transfer printed patterns.

Manufacturer; Pattern Name and/or Variety #	Total
Spode; Copeland & Garrett, and/or Copeland (N=6734)	
"Acorn" ("Ruins")	30
"Aesops Fables"	74
"Alba"	181
"Alba" or "Continental" (blue only)	13
"Aster" ("Chinese Plants")	6
"B700"	21
"B772"	73
"B772" or "B773"	9
"B773"	7
"Beverly"	47
"Blue Italian" ("Italian")	146
"British Flowers"	477
"Broseley"	734
"Broth"	16
"Camilla"	816
"Chatsworth"	1598
"Chinese" ("Chinese Flowers")	19
"Continental" ("Louis Quatorze")	140
"Geranium"	69
"Hop"	58
"Italian Church"	2
"Marble" ("Mosaic" or "Cracked Ice and Prunus")	2
"May" ("Fruit and Flowers")	295
"Pagoda"	10
"Pagoda" or "Pekin"	169
"Pekin"	14
"Portland Vase"	92
"Queen Mary"	833
"Rose" ("Blue Rose")	43
"Rose & Sprigs"	192
"Tower"	31
"Union Wreath" ("Union Wreath, Third")	33
"Warwick"	23
Variety #7034 ("Seasons"?)	146
Variety #7035	26
Variety #7036	13
Variety #7037	218
Variety #7038	16
Variety #7039	6
Variety #7040	27
Variety #7096	10

Table 13 (cont'd.)

Manufacturer; Pattern Name and/or Variety #	Total
Davenport (N=43)	
"Tyrol Hunters"	18
"...n Vase"	14
Variety #7043	11
Thomas Dimmock (N=22)	
"Peacock"	22
Hicks, Meigh & Johnson (N=1)	
"Teniers' Vignettes"	1
John Maddock (N=4)	
"Fairy Villas"	4
J. Meir & Son? (N=19)	
"Wild Rose"?	19
Minton (N=13)	
"Swiss Cottage"	4
"Claremont"	9
Unknown Manufacturer (N=536)	
Variety #7051 ("Semi China")	4
Variety #7053 ("Italian Seaport")	2
Variety #7056 ("Blue Willow")	71
Variety #7059	3
Variety #7060	2
Variety #7061	55
Variety #7065	91
Variety #7066	1
Variety #7069	8
Variety #7070	53
Variety #7071	9
Variety #7072	8
Variety #7073	68
Variety #7074	2
Variety #7075	1
Variety #7076	5
Variety #7079	1
Variety #7081	4
Variety #7082	7
Variety #7083	11
Variety #7088	1
Variety #7090	2
Variety #7091	30

Table 13 (cont'd.)

Manufacturer; Pattern Name and/or Variety #	Total
Unknown Manufacturer (cont'd.)	
Variety #7092	18
Variety #7093	6
Variety #7096	10
Variety #7097 ("... and Hill")	6
Variety #7098	3
Variety #7099	4
Variety #7100	5
Variety #7101	7
Variety #7102	17
Variety #7103	5
Variety #7104	5
Variety #7105	5
Variety #7106	6
TOTAL	7373

Table 14-- List of marked transfer printed earthenware fragments.

FOVA Catalog #	Variety # and Pattern Name	Manufacturing Mark & FOVA Code
11635	7015; Chatsworth (#3)	"Copeland & Garrett" (CG-TP-1)
12318	"	"
12523	"	"
12608	7003; Alba	"Copeland and Garrett, Alba" (CG-TP-3)
7607	7027; Queen Mary (#1)	"Copeland and Garrett" (CG-TP-4)
10332	7024; Pagoda	"
11635	7025; Pekin	"
2071	7028; Rose	"Copeland & Garrett, Late Spode" (CG-TP-5)
7607	7015; Chatsworth (#2)	"
7771	7016; Chinese	"
11554	7015; Chatsworth (#3)	"
12053	7013; Camilla	"
12053	"	"
12053	7015; Chatsworth (#3)	"
12117	7011; Broseley (#1)	"
12117	7015; Chatsworth (#3)	"
12188	7011; Broseley (#1)	"
10450	7013; Camilla	"Copeland & Garrett, New Blanche" (CG-TP-6)
10450	7025; Pekin	"
11150	7033; Warwick	"
11207	"	"
11798	7013; Camilla	"
12021	7015; Chatsworth	"
12223	"	"
12704	7013; Camilla	"
13304	7015; Chatsworth (#1)	"
9203	7003; Alba	"Copeland & Garrett, New Fayence" (CG-TP-7)
12123	7015; Chatsworth (#3)	"Saxon Blue, Copeland and Garrett" (CG-TP-8)
12142/2	"	"
12053	7004; Aster	"Copeland & Garrett, Late Spode" (CG-IM-2)
9876	7010; British Flowers (#3)	"Copeland & Garrett, New Blanche" (CG-IM-3)
10004/2	7010; " (#1)	"
11554	7015; Chatsworth (#2)	"
11697	7010; British Flowers (#1)	"
12188	7013; Camilla	"
12456	7010; British Flowers	"
12752	7015; Chatsworth (#2)	"
9217/2	7003; Alba	"Copeland & Garrett, New Fayence" (CG-IM-4)
10332	7008; Beverly	"

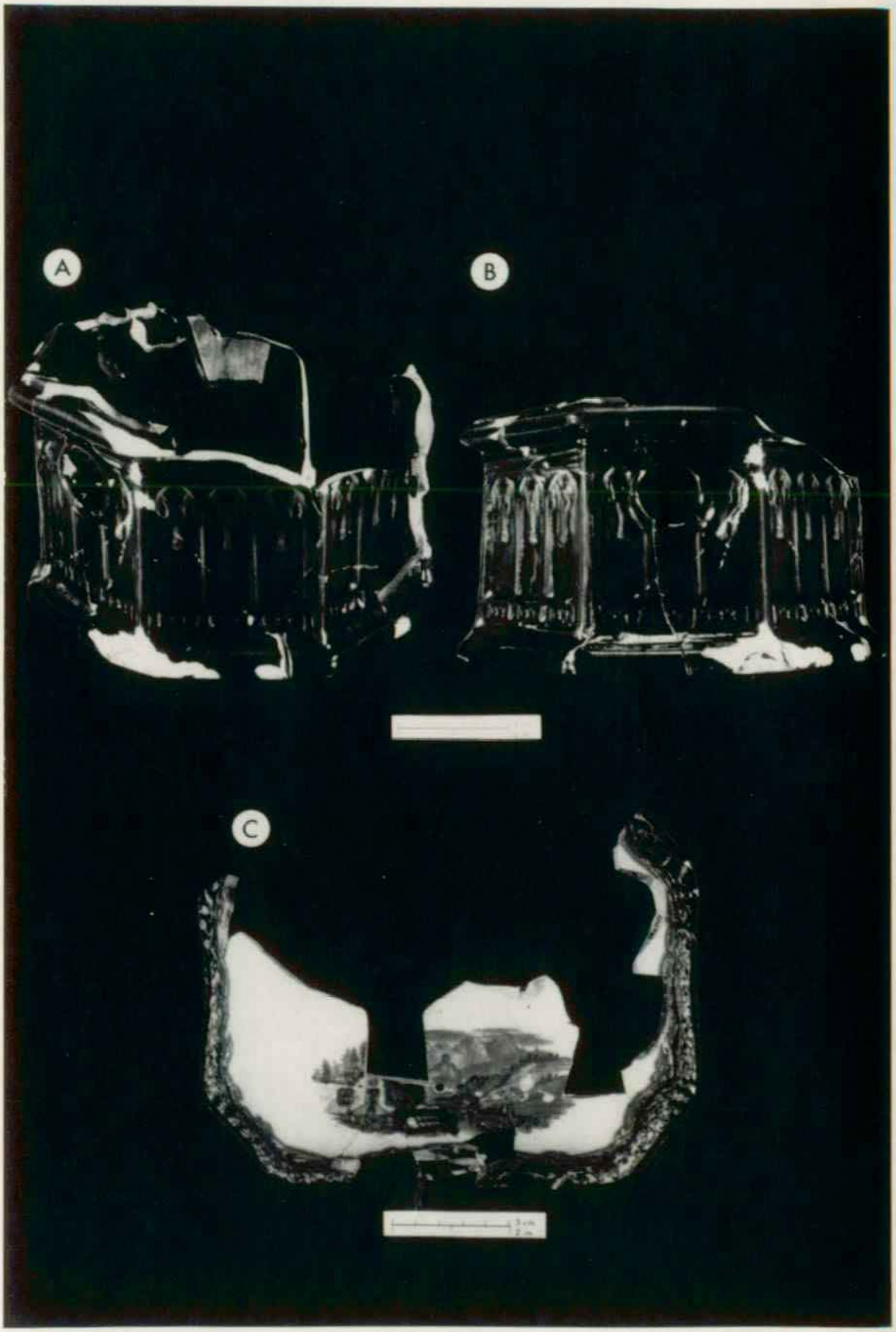
Table 14 (cont'd.)

FOVA Catalog #	Variety # and Pattern Name	Manufacturing Mark & FOVA Code
12162	7015; Chatsworth (#3)	"Copeland & Garrett, New Fayence (CG-IM-4)
12494	"	"
12523	7003; Alba	"
13048	7019; Fruit and Flowers	"
12780	7015; Chatsworth (#2)	CG-TP-6 with CG-IM-3
12053	7013; Camilla	CG-TP-5 with CG-IM-4
12117	7015; Chatsworth (#3)	CG-TP-8 with CG-IM-3
12118	"	CG-TP-8 with CG-IM-4
10894	7011; Broseley (#1)	"Copeland" (C-TP-1)
10894	7013; Camilla	"
7348	7015; Chatsworth	"Copeland, Late Spode" (C-TP-2)
10870	7010; British Flowers (#4)	"
10933	7027; Queen Mary (#1)	"
11070	"	"
11174	"	"
11207	"	"
11265	7006; B772	"
11265/3	7011; Broseley (#1)	"
11315	7027; Queen Mary (#1)	"
11444/2	7011; Broseley (#1)	"
11467	7027; Queen Mary (#1)	"
11502/3	"	"
11554	7011; Broseley (#1)	"
11554	7027; Queen Mary (#1)	"
11635	"	"
12053	7017; Continental	"
12188	7027; Queen Mary (#1)	"
12275	7013; Camilla	"
12923	7011; Broseley (#1)	"
12188	7029; Rose & Sprigs	C-TP-2 with "Rose & Sprigs"
12456	"	"
12684	"	"
12752	"	"
11207	7019; Fruit and Flowers	"Copeland, Late Spode" (C-TP-3)
11697	"	"
11697	7027; Queen Mary (#1)	"
12952	7019; Fruit and Flowers	"
11583	7027; Queen Mary (#1)	"Copeland" (C-IM-1)
11677	7007; B773	"
9916	7019; Fruit and Flowers	C-TP-3 with C-IM-1
12439	"	"

Fig. 11 - Spitoon and vegetable dish cover.

a-b - Spitoon (FOVA 7607, 11070, 11103, 11635, 11697, 12053, 12117, 12188 & 12223)

c - "Continental" vegetable dish cover (FOVA 7607, 11697, 12188 & 12223)


A
B
C

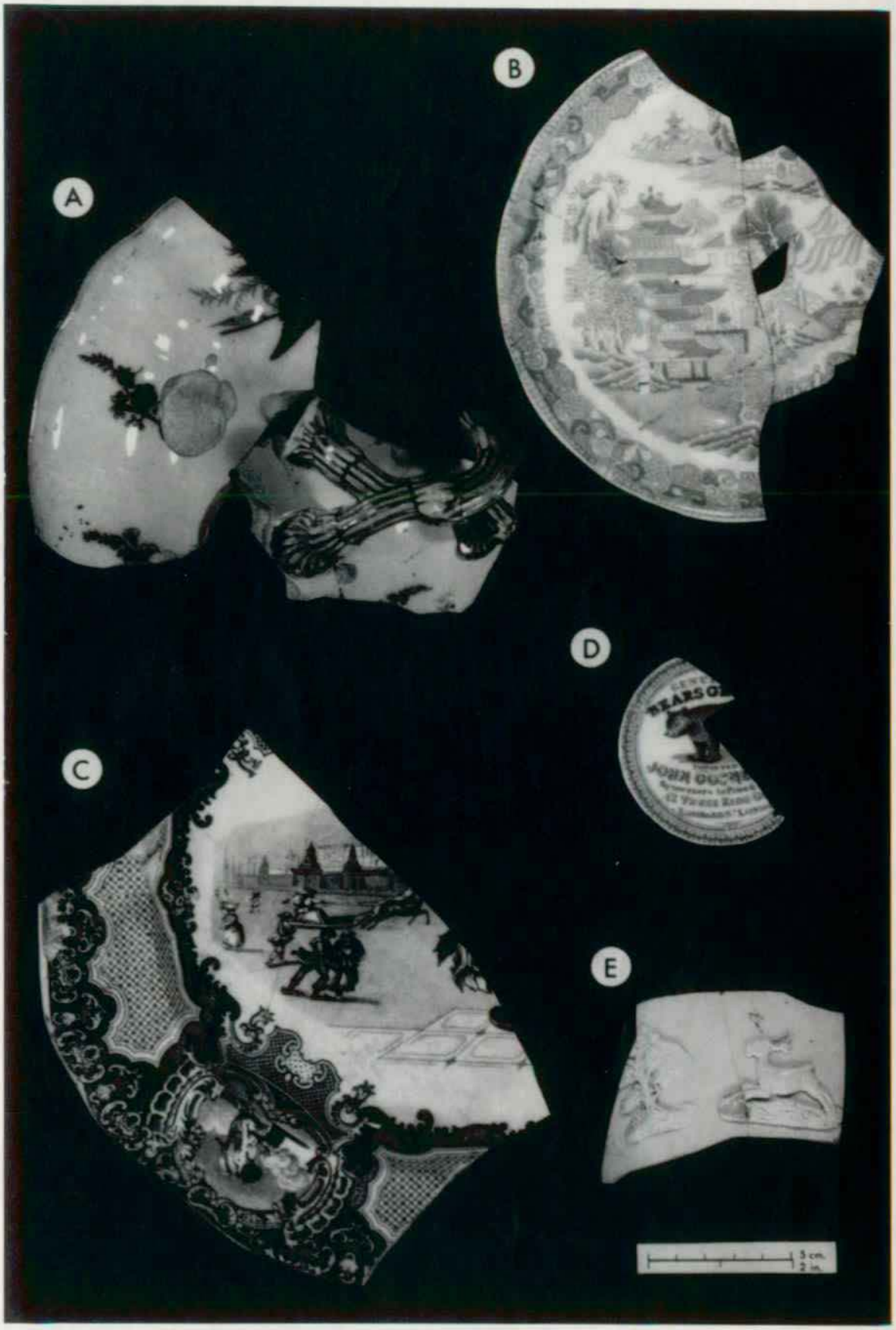

A
B
C
D
E
5 cm.
2 in.

Fig. 12 - Ceramic wares and product container lid.

a - "Rose & Sprigs" tureen lid (FOVA 11229, 11635, 11697, & 12223)

b - "Broseley" saucer (FOVA 11583)

c - "Seasons" platter (FOVA 7817)

d - "Genlune Bears Grease" hair dressing jar lid (FOVA 11619 & 11635)

e - Mold applique stoneware fragment (FOVA 11584)

registration mark. The registration date is partially missing, but the day is in the 20's while the year is 1845. Other specimens with an identical pattern and an 1845 registration mark are dated October 21, 1845. Thus, the pattern was registered by Copeland & Garrett in 1845, and following the three-year registration period, was retained by W. T. Copeland until 1848. Since this specimen has both the Copeland manufacturing mark and registration mark, it must have been manufactured between 1847-1848.

Soup Tureen Lid: Five fragments (FOVA 12291) of an oval soup tureen lid were found with a similar pattern to the above vegetable dish lid. The central scene varies, but presumably it belongs to the same pattern. No manufacturing marks were observed.

Vegetable Dish Cover: Eleven fragments (FOVA 11229, 11635, 11697, 12223) of an oval vegetable dish cover or tureen lid were found with a greyish-brown transfer printed floral pattern (Fig. 12a). This pattern is classified as Variety #7029 and identified as "Rose & Sprigs." Both a green transfer printed "Copeland, Late Spode" manufacturing mark (coded C-TP-2) and a "Rose & Sprigs" pattern name appear on the underside together with an impressed registration mark dated January 9, 1847. This registration mark presumably dates the ware shape rather than the pattern.

Saucer: Five fragments (FOVA 11583) of a saucer were found with a light blue transfer printed scenic pattern (Fig. 12b). This pattern is classified as Variety #7011 and identified as "Broseley." A blue transfer printed "Copeland" manufacturing mark appears on the base, signifying it was manufactured by W. T. Copeland between 1847-1867.

Transfer Printed Containers. Eleven container fragments were found, nine of which (FOVA 9753, 11150, 11728, 11619/4, 11635/2) represent two blue transfer printed hair dressing jar lids (Fig. 12d). A complete lid would contain the following information: "Genuine Bears Grease, Imported by John Gosnell & Co., Successors to Price & Gosnell, 12 Three Kings Court, Lombard St., London."

Two fragments (FOVA 11554, 12965) of a black transfer printed "Ambrosial Shaving Cream" jar lid were recovered. From comparison with similar specimens in the FOVA Museum, the following information would have been printed on this type of lid: "Ambrosial Shaving Cream, Patronized by Prince Albert, Invented & Prepared Only by John Gosnell & Co., Perfumers by Appointment to Her Majesty, 12 Three Kings Court, Lombard Street, London."

Hand Painted Wares. Of the 143 fragments recovered, no complete or partially complete wares were found. No manufacturing marks were observed, and no significant patterns have yet been identified.

Molded Wares. Of the 140 fragments recovered, no complete or partially complete wares were found, and no manufacturing marks were observed.

Mold Applique Wares. Of the 28 fragments recovered, no complete or partially complete wares were found and no manufacturing marks were observed. The appliques consist of a blue floral motif applied to a white bodied ware. At least 2 ware shapes can be discerned -- a saucer and a mug.

Yellow Glazed Earthenware Fragments

Of the 99 yellow glazed earthenware fragments recovered, no complete or partially complete wares were found. A variety of decorations were observed (Table 10), but only 2 varieties could be identified -- mocha wares and "R. Currey & Co." snuff bottles.

Brown Glazed Earthenware Fragments

Of the 128 brown glazed earthenware fragments found, 91 were from an octagonal one-piece spitoon (Figs. 11a-b), 27 from a pumpkin-shaped one-piece spitoon, and 10 from unidentified wares. The octagonal spitoon consists of a molded chamber with a funnel-shaped bowl extending from the rim to the center. In one of the side panels is a hole which served as an outlet for cleaning the chamber. Cleaning was accomplished by flushing the chamber with water and inverting the spitoon allowing the liquid to run out the hole. Width of the chamber is 8 inches across panels and height is 4 1/2 inches.

Fragments from the second spitoon fit fragments in the FOVA Museum (#234) and indicate that this spitoon was round with vertical ridges. Overall appearance is that of a pumpkin, and its construction similar to the above spitoon.

Stoneware

Of the 673 fragments of stoneware found, no complete or partially complete wares were recovered. The types of fragments found included portions of "Read's India Pale Ale" bottles, various ale and/or ink bottles, Chinese ginger jars, and "Canton" plates (Table 10).

Two fragments (FOVA 11584) of a large unidentified jar or bowl were found with a mold applique decoration (Fig. 12e).

Vitreous China

Of the 82 vitreous china fragments found, no complete or partially complete wares were recovered. The types of fragments found included portions of "Chinese export" plates and a variety of unidentified wares (Table 10). One fragment of a mortar rim (FOVA 10046) was found, as well as one fragment of a mug with a blue transfer printed "Q.M." This is an abbreviation for "Quarter Master" and represents a USA ware.

Porcelain

Of the 25 porcelain fragments found, no complete or partially complete wares were recovered.

Ceramic Personal Items

The ceramic personal items found totaled 5520 fragments which have been grouped into 7 descriptive categories (Table 10), 4 of which are detailed below.

Common Pottery Items

Three fragments of common pottery clay pipe bowls were found, but no complete or partially complete pipes could be reconstructed.

Earthenware Items

Kaolin Tobacco Pipe Fragments

Kaolin pipe fragments totaled 5497 specimens, but no complete or partially complete pipes could be reconstructed.

Bowls. Marked bowl fragments included 6 varieties of impressed "Ford, Stepney" marks (Figs. 13a-f); one variety with an impressed "Bishop" (?) mark (Fig. 13g); one impressed mark with the following letters: "CRITO..., FIP..." (Fig. 13h); and two varieties of molded "TD" marks.

Four specimens have been molded in the shape of human heads, and one bowl was completely intact (Fig. 14a). No manufacturing marks

Fig. 13 - Clay pipes, bone buttons, shell buttons, and tortoise shell hairpin.

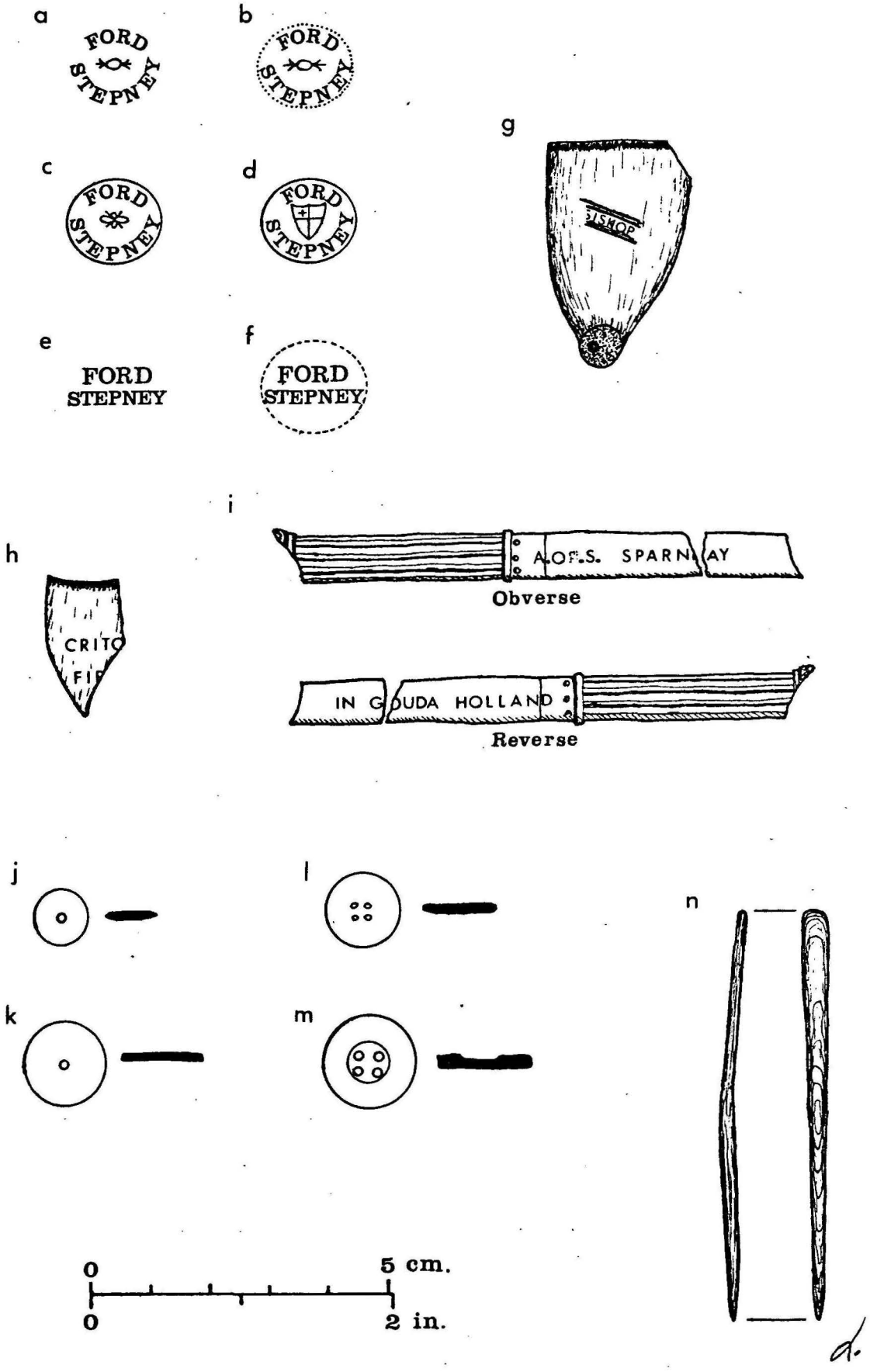
a-f - J. & T. Ford clay pipe marks

g-i - Unidentified clay pipe marks (FOVA 9348, 12925, 9297)

j-k - Bone buttons (FOVA 12477, 7788b)

l-m - Shell buttons (FOVA 7834, 10551)

n - Tortoise shell hairpin (FOVA 9111)


a
FORD
STEPNEY
b
FORD
STEPNEY
c
FORD
STEPNEY
d
FORD
STEPNEY
e
FORD
STEPNEY
f
FORD
STEPNEY
g
BISHOP
h
CRITO
FI
i
A.OF.S. SPARN AY
Obverse
IN G UDA HOLLAND
Reverse
j
k
l
m
n
0
5 cm.
0
2 in.

were observed on these specimens.

Thirty-four fragments of fluted-floral decorated bowls and eighteen fragments of miscellaneous floral decorated bowls were recovered. Three of the eighteen floral decorated bowl fragments have been associated with spurs marked "I/F" and presumably manufactured by "Ford."

Four fragments of glazed bowls were recovered, three of which came from a green glazed bowl and one from a yellow glazed bowl (Fig. 14b).

Stems. Five combinations of stem manufacturing marks were found including a raised "J. T./Ford" mark with a geometric line and dot pattern; a raised "A. O?. S. Sparn?ay/in Gouda Holland" mark (Fig. 13i); a raised "...rince/in Gouda..." mark; an impressed "Gambier à Paris, m X M" mark; and a raised "66".

Six unmarked varieties of decorated stems were found, but none have been linked with bowl designs or manufacturing marks.

Some items have been glazed, presumably to keep the clay dry while being smoked. Glaze colors included red, black, and yellow with red glaze the most common.

Fourteen stem fragments were ground down after their initial breakage and subsequently reused. Three stems are ground to within an inch of the bowl, and these specimens may have been reused in conjunction with a reed or secondary stem.

Spurs. Nine combinations of raised letters and symbols occur on spurs including "I/F", "I/M", "M/G", "M/X", "R/L", "S/I", "T/R", "6/ ", and "☼/☼" (the first letter is found on the smoker's left).

Doorknob

One fragment (FOVA 8089b) of a brown glazed doorknob was recovered, but its complete size could not be determined.

Porcelain Items

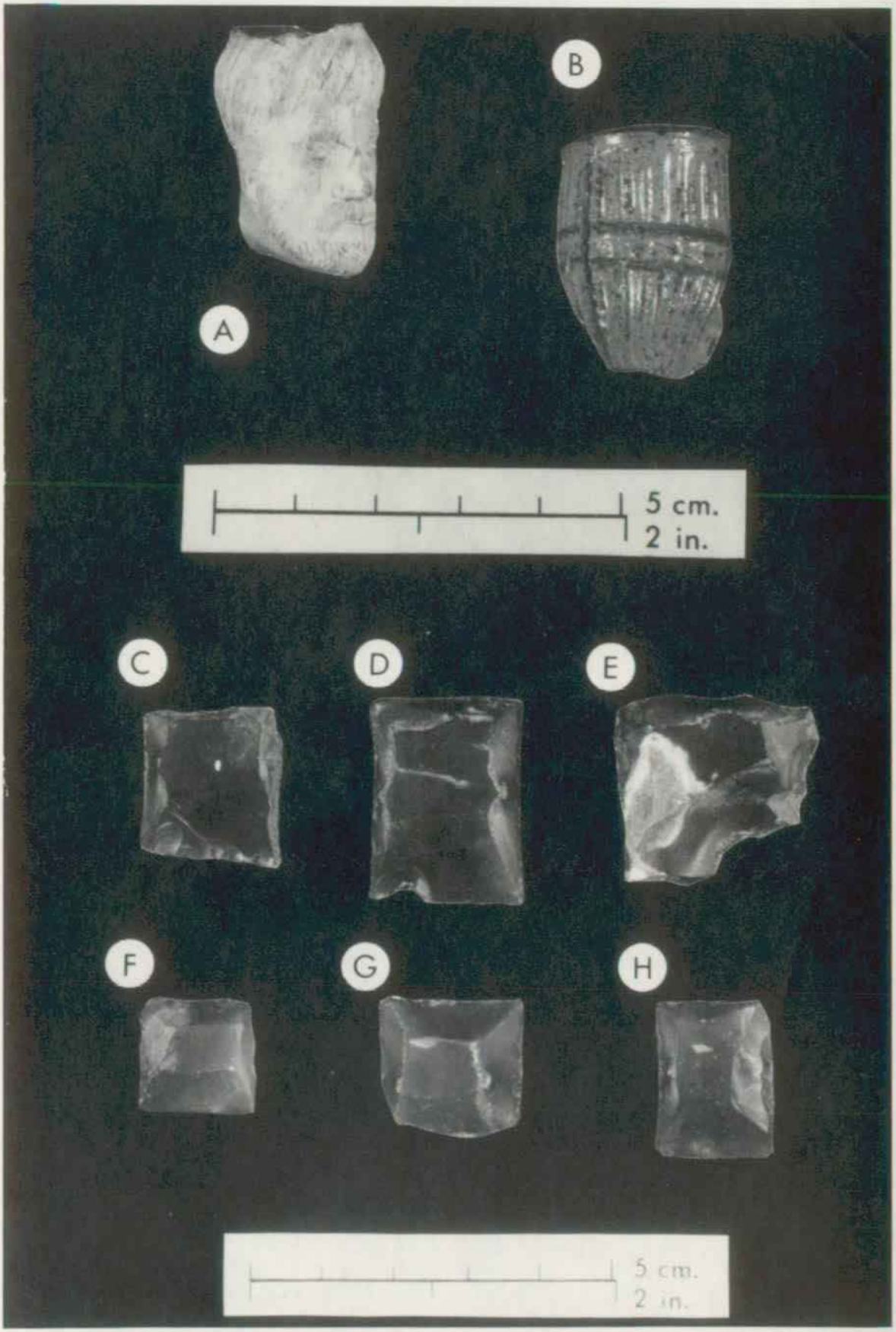
Buttons

Of the 11 buttons found, all were of the plain variety with recessed holes. There was one 7/16 inch 2-hole; one 5/16 inch

Fig. 14 - Clay pipes and gunflints.

a-b - Clay pipe bowls (FOVA 12057 & 12192)

c-h - Gunflints (FOVA 13079, 12243, 12211, 9512, 12146 & 12476)


A
B
5 cm.
2 in.
C
D
E
F
G
H
5 cm.
2 in.

3-hole; one 3/8 inch, two 7/16 inch and six 1/2 inch 4-hole buttons.

Glass Items

Glass items totaled 21,887 fragments which have been grouped into 19 categories (Table 10).

Bottle Fragments

Of the 13,122 bottle fragments found, one complete and 6 partially complete bottles have been reconstructed. Following the descriptive format adopted in our first two reports, the 7 bottles are described below:

B13 "Hostetters" bitters bottle -- partially complete (N=52)
FOVA Field Catalog Number: FOVA 9018
Provenience: F280
Illustration: Fig. 15b
Dimensions: 3 1/8" (W) x ca. 3" (Th) x 9 5/8" (H)
Manufacturing Marks: "Dr. J. Hostetter's Stomach Bitt"ers (raised letters). Remnant of a paper label on opposite side, but writing could not be distinguished.
Color: Olive brown
Comments: Formed in a 2-piece mold with mold junctures on the diagonal. Applied Rim Type 12 with a Type 22 base.

B14 "Hostetters" bitters bottle -- partially complete (N=9)
FOVA Field Catalog Numbers: FOVA 4069, 6857, 6905, 6910, 10618, and 11886
Provenience: F149 (N140 W80); F180 (N130 W80); N110 W80; N140 W70; and N140 W80
Manufacturing Marks: "Dr. J. Hostette"r's "Stomach Bitte"rs
Color: Amber

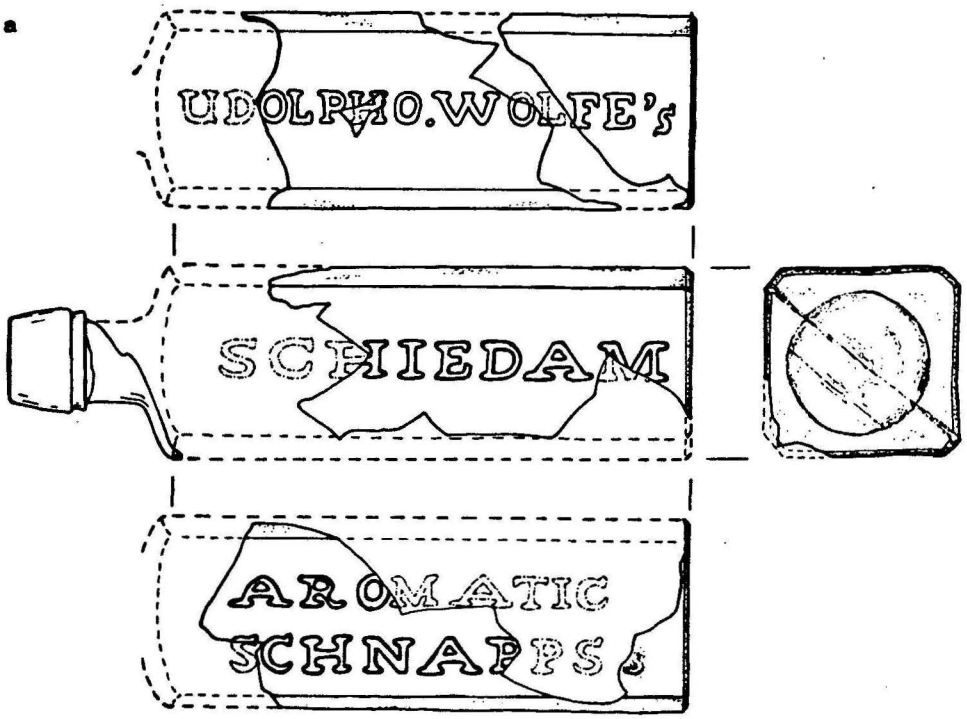
B15 "Schiedam" bitters bottle -- partially complete (N=24)
FOVA Field Catalog Numbers: FOVA 7283, 7298, and 10406
Provenience: F202 (N100 W130) and N100 W130
Illustration: Fig. 15a
Dimensions: 2 1/4" (W) x 2 1/4" (Th) x ca. 8" (H)
Manufacturing Marks: Ud"olpho. Wolfe's", Sc"hiedam, Aro"matic "Schnap"ps
Color: Olive green
Comments: Formed in a 2-piece mold with mold junctures on the diagonal. Applied Rim Type 15 and a Type 21 base.

Fig. 15 - Bitters bottles.

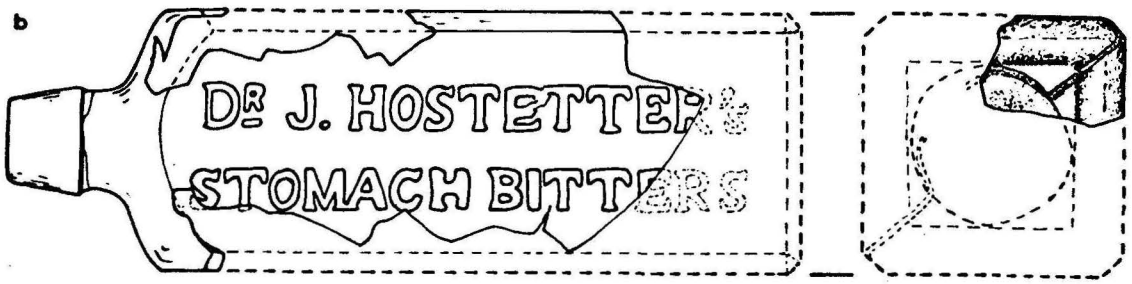
a - "Udolpho. Wolfe's Schiedam Aromatic Schnapps" bottle (B15)

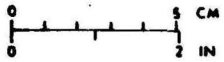
b - "Dr. J. Hostetter's Stomach Bitters" bottle (B13)

a


UDOLPHO.WOLFE'S
SCHIEDAM
AROMATIC
SCHNAPPS

b


Dr J. HOSTETTER'S
STOMACH BITTERS


0
5 CM
0
2 IN

B16 Bottle -- partially complete (N=1)
FOVA Field Catalog Number: FOVA 12173
Provenience: N140 W120
Illustration: Fig. 16g
Dimensions: 15/16" (D)
Manufacturing Marks: "...cks ...ce"
Color: Aqua
Comments: Formed in a 2-piece mold with a pontil marked flat base (Type 17).

B17 Bottle -- partially complete (N=1)
FOVA Field Catalog Number: FOVA 11778
Provenience: N130 W140
Illustration: Fig. 16d
Dimensions: 13/16" (D)
Color: Clear
Comments: Pontil mark on base (Type 7)

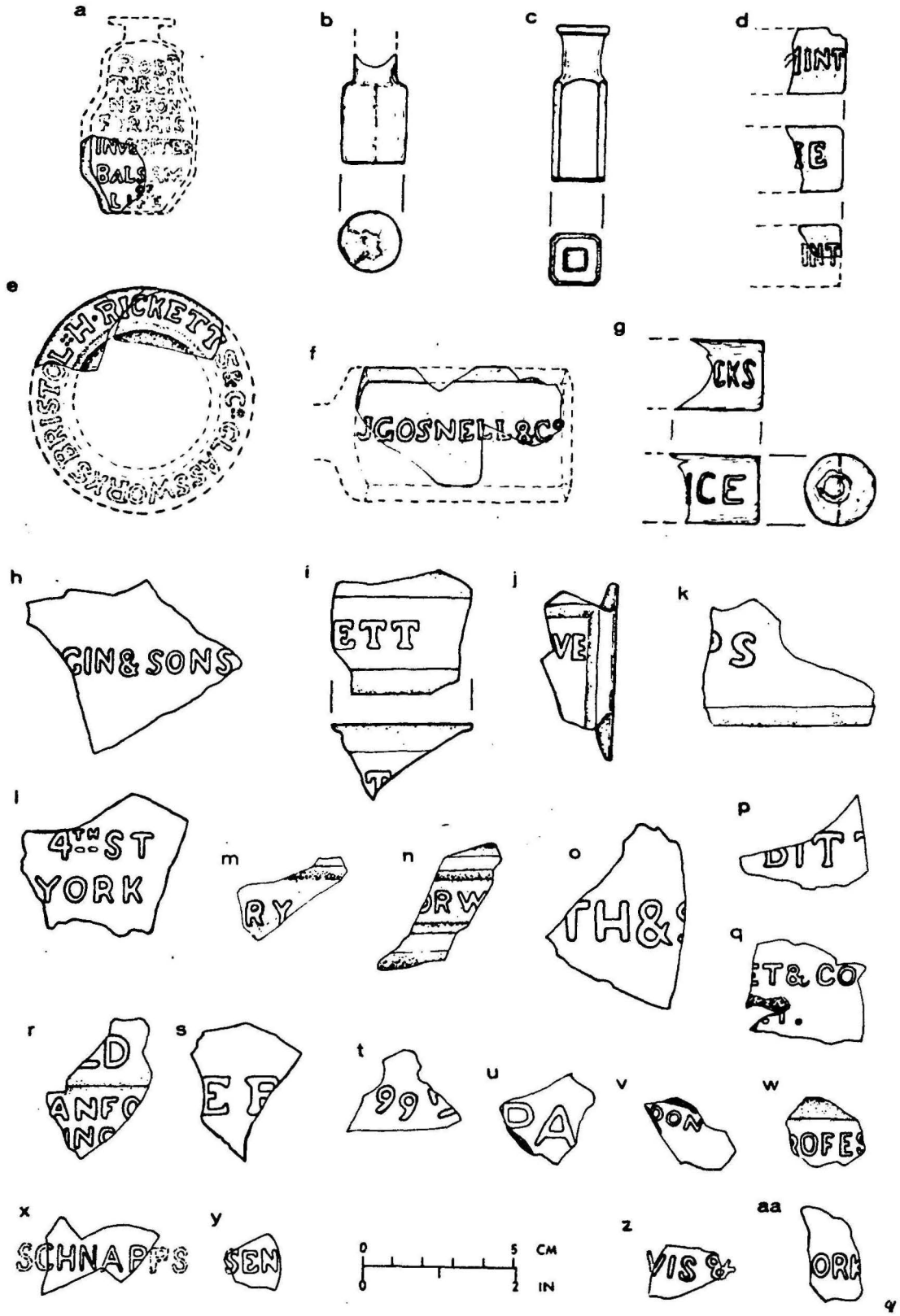
B18 Bottle -- complete (N=1)
FOVA Field Catalog Number: FOVA 9727
Provenience: N90 W50
Illustration: Fig. 16c
Dimensions: 11/16" (W) x 11/16" (Th) x 2" (H)
Color: Clear
Comments: Type 3 rim with a Type 15 base

B19 "Essence of Peppermint" bottle -- partially complete (N=1)
FOVA Field Catalog Number: FOVA 11507
Provenience: N130 W100
Illustration: Fig. 16d
Dimensions: 7/8" (W) x 7/8" (Th)
Manufacturing Marks: Essence of Pepperm"int", by t"he" Kings Pate"nt"
Color: Clear
Comments: Type 19 base

In addition to the above bottles, numerous fragments were recovered with partial manufacturing labels. Identified labels included within these fragments were one fragment (FOVA 12124) of a Turlington's Balsam of Life bottle (Fig. 16a); 3 fragments (FOVA 11680, 11702) of a J. Gosnell & Co. bottle (Fig. 16f); and 2 fragments (FOVA 4057, 11996) of a H. Ricketts Whiskey bottle (Fig. 16e). Olive Jones (1971:66-67), citing a British patent by H. Ricketts, argued that this type of Ricketts bottle base could have been produced as early as 1821. Unidentified fragments of labeled bottles which contained 2 or more letters are shown in Figs. 16h-aa.

Fig. 16 - Miscellaneous bottle fragments.

a - Turlington's Balsam of Life bottle fragment (FOVA 12124)
b - Unidentified bottle (B17)
c - Unidentified bottle (B18)
d - Essence of Peppermint bottle fragment (B19)
e - H. Ricketts whiskey bottle base fragments (Base Type 27)
f - J. Gosnell & Co. bottle fragments (FOVA 11680, 11702)
g - Unidentified bottle fragment (B16)
h-aa - Unidentified bottle label fragments
  h - FOVA 10769
  i - FOVA 9528
  j - FOVA 4351
  k - FOVA 7253
  l - FOVA 12383
  m - FOVA 11886
  n - FOVA 11908
  o - FOVA 12636
  p - FOVA 11702
  q - FOVA 12529
  r - FOVA 11886
  s - FOVA 9993
  t - FOVA 11920
  u - FOVA 10804
  v - FOVA 12334
  w - FOVA 12847
  x - FOVA 10825, 10898
  y - FOVA 12060
  z - FOVA 11045
  aa - FOVA 11640


a
b
c
d
INT
E
INT
e
BRISTOL·H·RICKETTS&CO
f
J.GOSNELL&C°
g
CKS
ICE
h
GIN&SONS
i
ETT
T
j
VE
k
S
l
4TH ST
YORK
m
RY
n
ORW
o
TH&
p
DIT
q
ET&CO
r
D
ANFO
INC
s
E F
t
99
u
DA
v
DON
w
ROFES
x
SCHNAPPS
y
SEN
0 5 CM
0 2 IN
z
VIS &
aa
ORK

Bottle Rims

Numerous bottle rim fragments were recovered, and have been classified into 19 descriptive types based upon rim manufacture and form (Table 15 and Figs. 17a-aa; 16c and 15a-b).

Bottle Bases

Numerous bottle base fragments were recovered, and have been classified into 28 descriptive types based upon manufacturing techniques, form and color (Table 16 and Figs. 18a-j; 16a-c, e, g; 15).

Tumbler Fragments

Of the 318 tumbler fragments recovered, 6 varieties of tumblers have been identified including 3 varieties of freeblown tumblers and 3 varieties of pressed glass tumblers.

Freeblown Tumblers

Three varieties of freeblown tumblers were identified comprising both plain and cut (faceted) specimens.

Plain Tumblers. One variety (#2003) represents a freeform cylindrical with a polished and ground base (Fig. 19a). This variety occurs in 2 sizes, but only one size was found in the area of the Chief Factor's House and the only obtainable measurement was the base diameter of approximately 2 3/4 inches. This variety compares directly with the partially complete specimen (T1) reported in our first report (Hoffman and Ross 1972:46, Fig. 16d).

Caywood found a second variety (#2004) of plain tumblers which has an empontiled base (Fig. 20b), but this variety has yet to be found by our excavations.

Cut Glass Tumblers. Of the 2 varieties of cut glass tumblers, both are freeform cylindrical tumblers with polished and ground bases and vertically ground facets around the bowl. Variety #2001 (Fig. 19d) has 10 facets around its circumference and its basal diameter is approximately 2 1/2 inches. One basal specimen of this variety (FOVA 11683) has the following freehand inscription: "A. L. Lewes ". This may represent the name A. L. Leues, A. L. Lewes, or A. L. Lewis; but no such employee has been found in published manuscripts.

Table 15 -- Bottle rim types as defined by manufacturing attributes and form.

Attributes	Rim Types 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Rim Manufacture																			
Rim Shaped from Neck Glass																			
Nonoverlapping	X	X	X	X	X	X													
Overlapping							X	X	X	X									
Rim Shaped from Additional Glass																			
Outside Application											X	X	X	X	X				
Inside Application																X			
Wrapped						X				X					X				
Rim Molded																	X	X	X
Interior Ground				X	X														
Rim Form																			
Single Lipped																			
Straight from Mouth	X						X				X						X		
Flared from Mouth								X				X							
Convex from Mouth		X							X										
Extended from Mouth			X	X												X			
Straight Below Mouth						X							X						
Double Lipped																			
Straight										L								U	
Flared										U				L	B				L
Convex					L									U				L	U
Extended					U														
Frequency	5	2	5	3	2	39	7	1	1	1	5	9	3	2	120	1	1	1	2

U = Upper Lip
L = Lower Lip
B = Both Lips

Fig. 17 - Bottle rims.

a-f - Rim Type 15

g - Rim Type 10

h-l - Rim Type 15

m-n - Rim Type 12

o-p - Rim Type 13

q-r - Rim Type 14

s-v - Rim Type 6

w - Rim Type 16

x - Rim Type 2

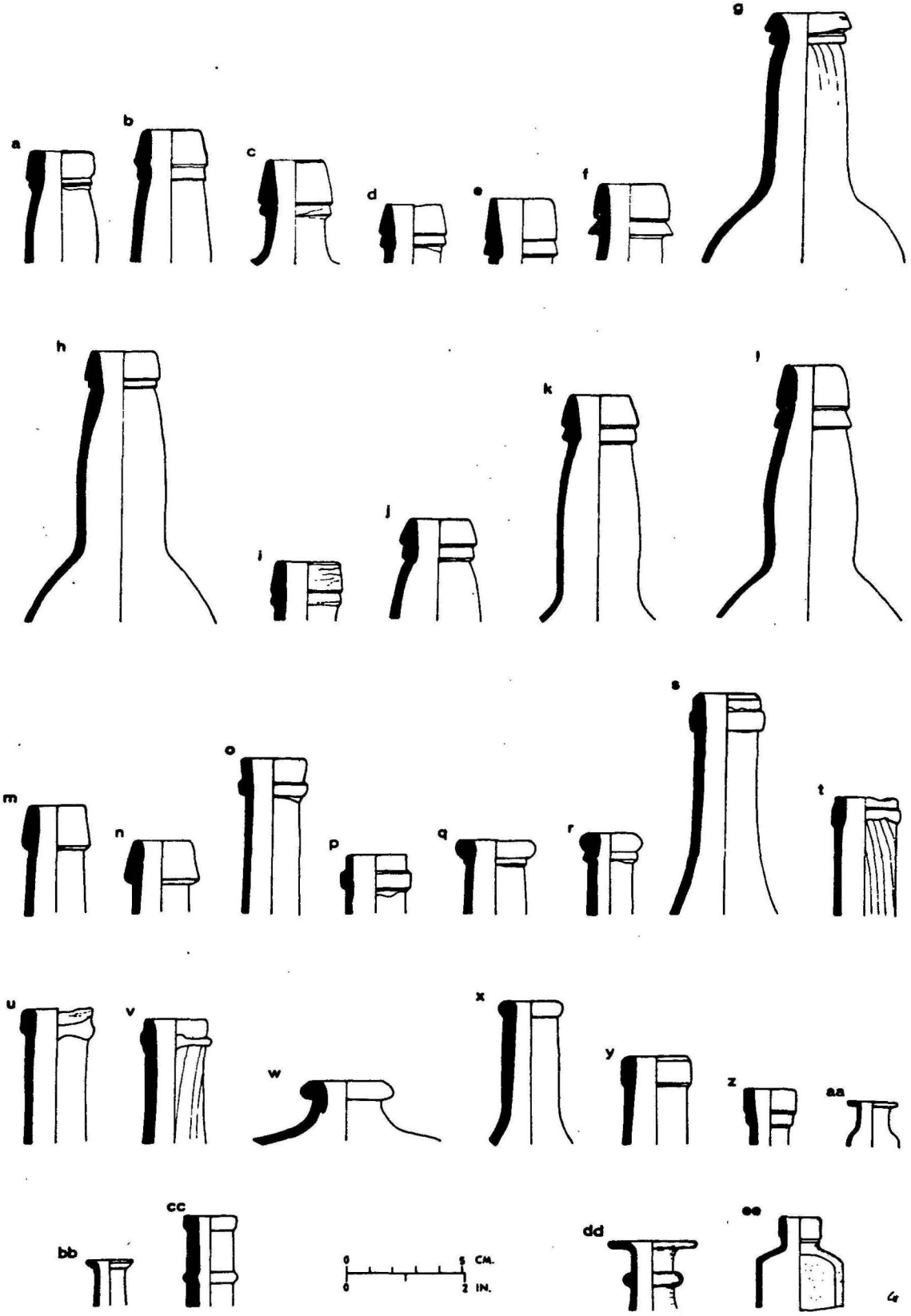
y-z - Rim Type 1

aa-bb - Rim Type 3

cc - Rim Type 18

dd - Rim Type 5

ee - Rim Type 17



4

Table 16 -- Bottle base types as defined by manufacturing attributes, form and color.

Attributes	Base Type 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Manufacturing Type																												
Freeform	x	x	x	x	x	x	x	x																				
1-piece mold									x	x	x	x	x	x	x	x												
2-piece mold																	x	x	x	x	x	x	x	x	x			
3-piece mold																										x		
"Ricketts" mold																											x	
"Owens" process																												x
Pontil Type																												
Bare iron	x	x	x						x																			
Blowpipe				x						x							x	x										
Sand					x	x																					x	
Glass							x												x									
Absent								x			x	x	x	x	x	x				x	x	x	x	x	x	x		x
Bottle Shape																												
Round	x	x	x	x	x		x	x	x		x	x	x				x			x						x	x	x
Square						x								x	x				x		x	x						
Rectangular																x							x	x				
Polygonal										x								x							x			
Basal Crossection																												
Conical ("push-up")	x	x						x																				
Concave			x	x	x				x	x	x	x	x	x		x	x	x	x	x	x	x	x		x	x	x	
Flat							x								x									x				x
Circular indent			x			x					x			x							x							x
Square indent															x							x						
Rectangular indent																							x					
Central nipple												x		x						x								
Color (Translucent)																												
Dark olive (opaque)	x																											
Olive green		x			x		x					x		x							x	x				x		
Olive brown												x																
Bluish green									x																			
Aqua				x						x							x	x		x			x	x				x
Blue																										x		
Colorless			x	x	x		x				x		x		x	x			x						x			
Frequency	57	2	1	8	1	2	1	9	1	1	3	5	1	2	1	1	1	3	1	1	24	52	3	1	1	1	2	1

Fig. 18 - Bottle bases.

a - Base Type 1 (FOVA 10007)

b - Base Type 8 (FOVA 9504)

c - Base Type 2 (FOVA 10406)

d-e - Base Type 12 (FOVA 11640, 10994)

f - Base Type 14 (FOVA 10146)

g - Base Type 6 (FOVA 11269)

h - Base Type 4 (FOVA 11778)

i - Base Type 7 (FOVA 11778)

j - Base Type 17 (FOVA 12173)

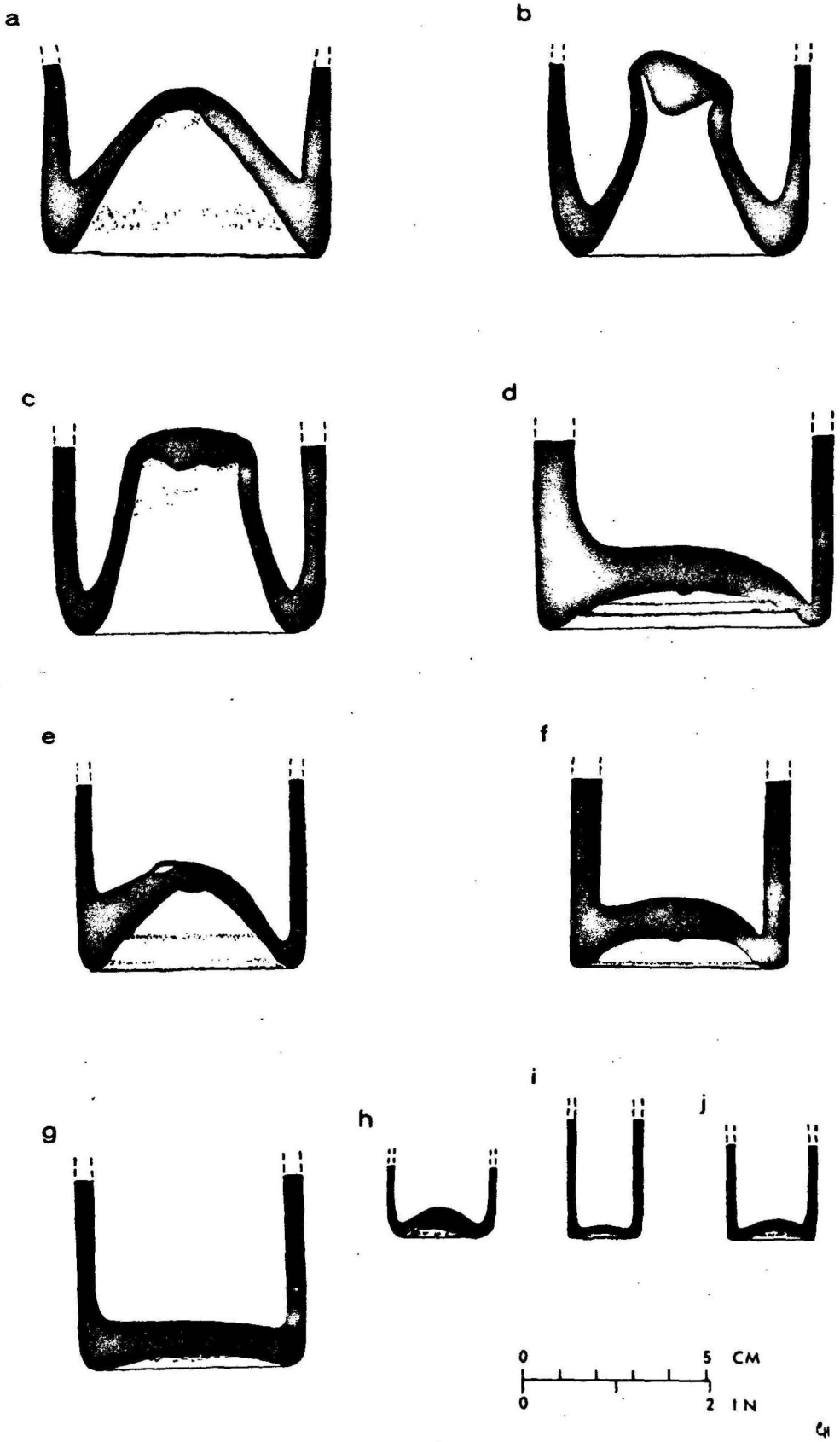

a
b
c
d
e
f
g
h
i
j
0
5 CM
0
2 IN

Fig. 19 - Tumblers, stoppers and lid.

a - Plain tumbler, Variety #2003 (FOVA 7351)

b - Faceted tumbler, Variety #2002A (Caywood, #1741)

c - Faceted tumbler, Variety #2002B (FOVA 12532)

d - Faceted tumbler, Variety #2001 (FOVA 10878)

e - Pressed tumbler, Variety #2005 (FOVA 12194)

f - Pressed tumbler, Variety #2006 (FOVA 13202)

g - Pressed tumbler, Variety #2007 (FOVA 11560)

h - Pressed and ground stopper (FOVA 11511)

i - Pressed stopper (FOVA 9322)

j - Bowl lid (FOVA 7776)

k - Pressed and ground stopper (FOVA 11945)

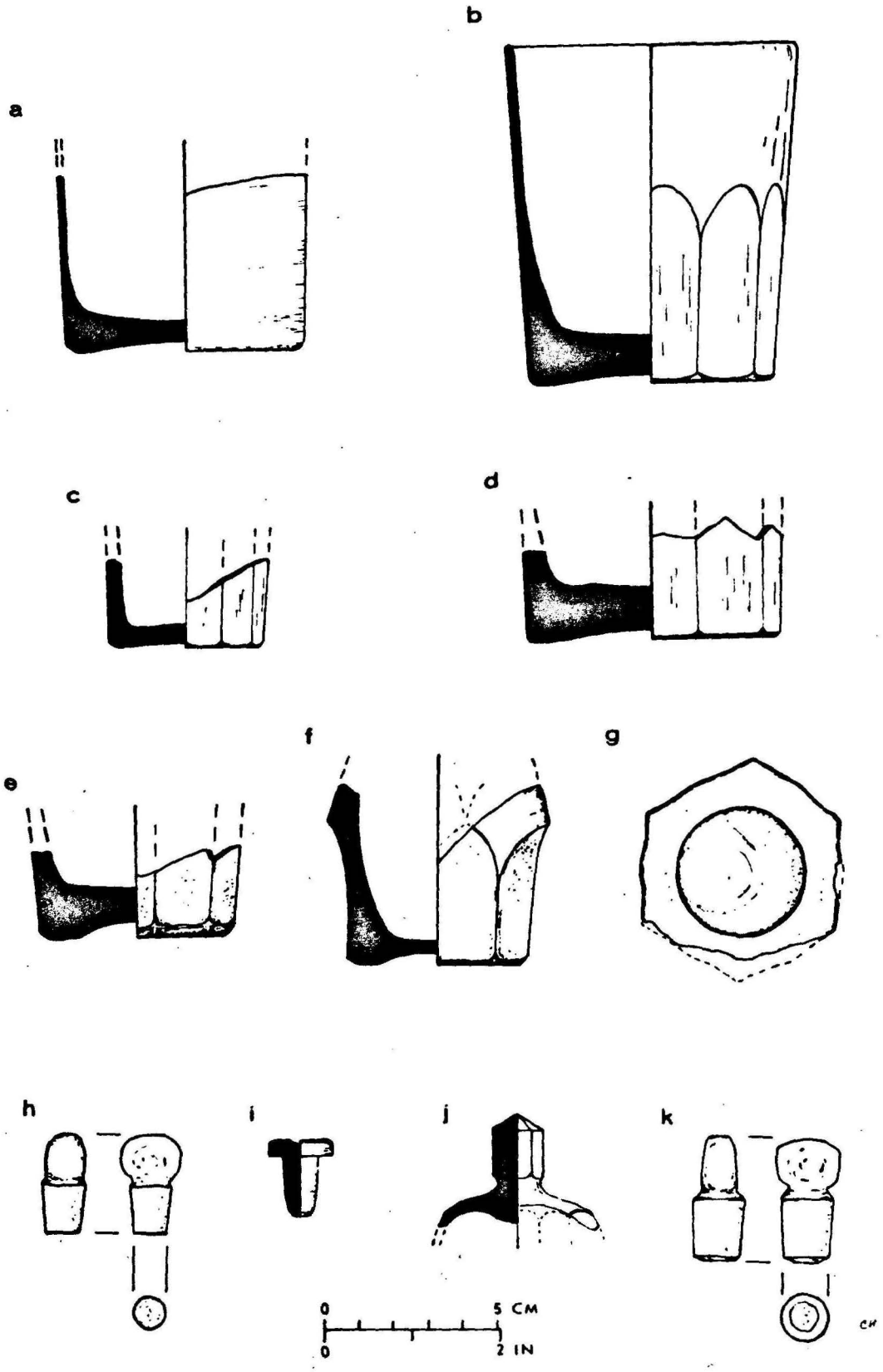

a
b
c
d
e
f
g
h
i
j
k
0
5 CM
0
2 IN

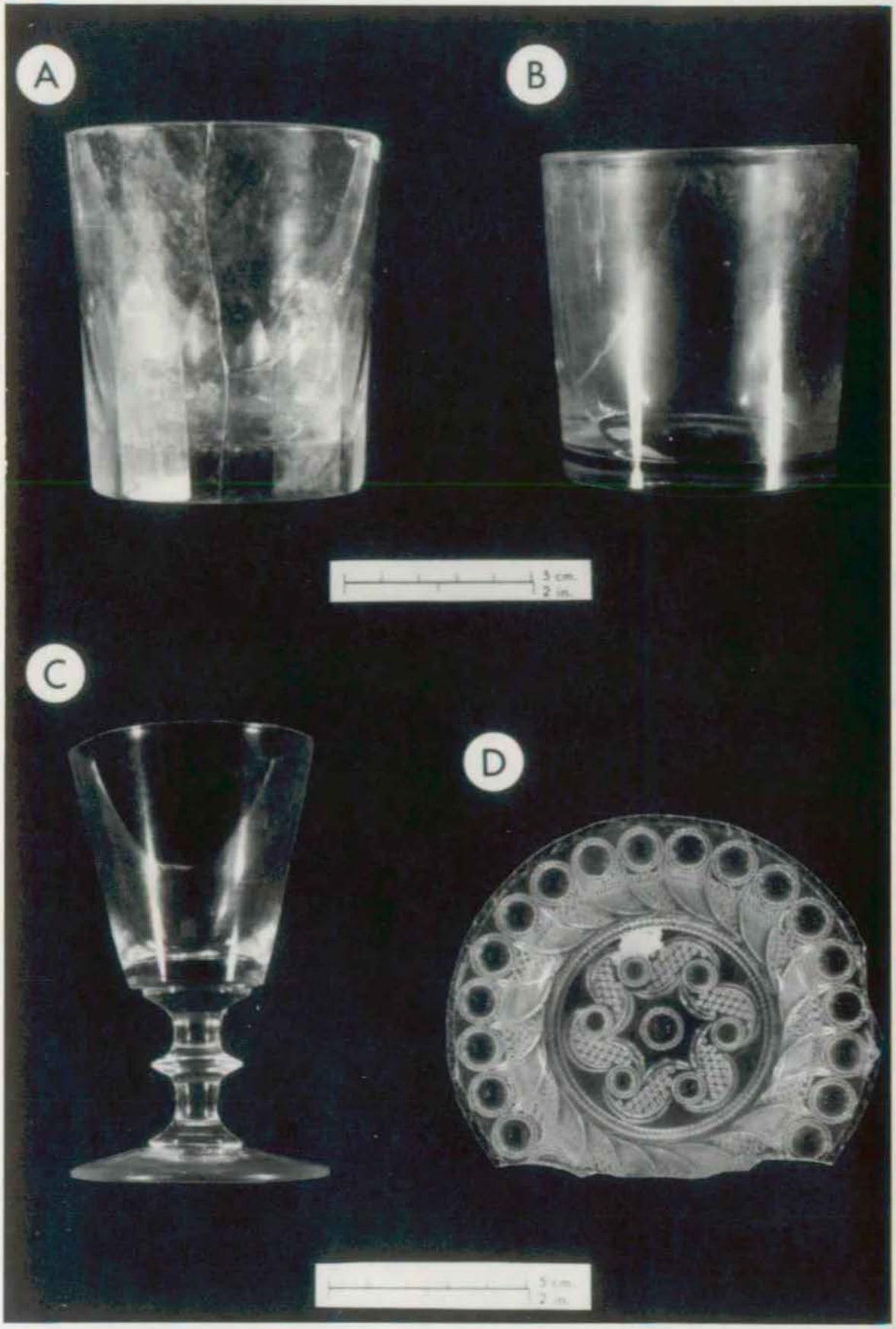
Fig. 20 - Tumblers, stemmed glassware and pressed glass dish.

a - Faceted tumbler, Variety #2002A (Caywood, #1741)

b - Plain tumbler, Variety #2004 (Caywood, #261)

c - Freeblown stemmed glassware, Variety #1006 (Caywood, #772)

d - Pressed glass dish (Caywood, Note: item in display case)


A
B
3 cm.
2 in.
C
D
3 cm.
2 in.

The second variety of cut glass tumblers, #2002, has 11 facets around its circumference, and comes in 2 sizes with basal diameters of 1 3/4 inches and 2 3/4 inches (Figs. 19b-c; 20a).

Pressed Tumblers

Three varieties of pressed tumblers were recovered. Variety #2007 has an indented concave base and 6 double-fluted sides (Fig. 19g). Basal diameter equals 2 1/4 inches.

Variety #2006 has a ground concave base and 7 sides which taper to a point curving outward (Fig. 19f). Basal diameter equals 2 inches.

Variety #2005 represents a cylindrical tumbler with a ground concave base and 9 sides (Fig. 19e). Basal diameter equals 2 1/4 inches.

Stemmed Glassware Fragments

Of the 137 fragments of stemmed glassware found, 8 varieties of glassware have been identified representing 2 types of manufacturing techniques -- freeblown and pressed.

Freeblown Stemmed Glassware

Seven varieties of freeblown stemmed glassware were found representing single, double, and triple piece construction. As with tumblers, both plain and cut glasses were present.

Cut Freeblown Stemmed Glassware. Variety #1001 (Fig. 21a) has a one-piece bowl-stem drawn directly from its base. The glass pontil was ground off forming a concave indentation in the base, and 8 facets were ground around the stem and bowl.

Variety #1002 (Fig. 21b) is a double-piece glass having a one-piece bowl-stem with an attached base. The entire base was ground to remove all traces of the pontil mark, and 8 facets were ground around the bowl and stem.

Variety #1003 (Fig. 21c) is also a double-piece glass having a one-piece bowl-stem with an attached base. The glass pontil was ground off forming a concave indentation in the base, and 6 facets were ground around the bowl.

Variety #1005 (Fig. 21g) is probably a triple-piece glass formed from separate bowl, stem, and base sections. Positive identification of basal fragments was not possible, but it is probably

Fig. 21 - Freeblown & pressed stemmed glassware.

a - Freeblown, Variety #1001 (Composite of Caywood, #1674; FOVA 10902, 11681, 11752)

b - Freeblown, Variety #1002 (Caywood, #434)

c - Freeblown, Variety #1003 (Caywood, #303)

d - Freeblown, Variety #1006 (Caywood, #772)

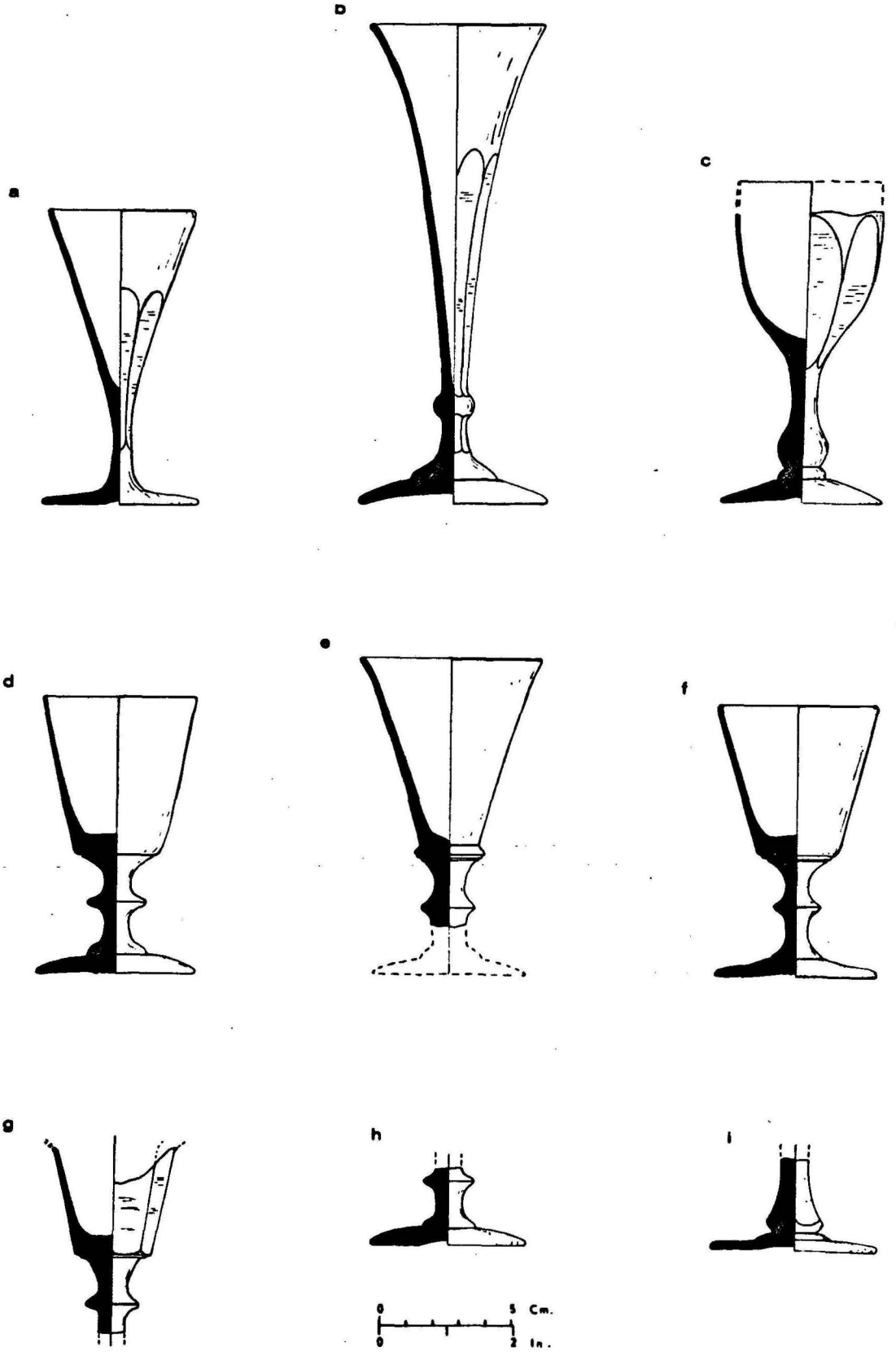
e - Freeblown, Variety #1008 (Caywood, #51)

f - Freeblown, Variety #1007 (Caywood, #1625)

g - Freeblown, Variety #1005 (FOVA 11703)

h - Freeblown, Variety #1006 and/or #1007 (FOVA 4354, 12461)

i - Pressed, Variety #1011 (Composite of FOVA 11561, 11591)


a
b
c
d
e
f
g
h
i
0 5 Cm.
0 2 In.

somewhat similar to that shown in Fig. 21h. Ten facets were ground around the bowl.

Plain Freeblown Stemmed Glassware. Varieties #1006 (Figs. 20c; 21d) and #1007 (Fig. 21f) are both triple-piece glasses formed from separate bowl, stem, and base sections. The only difference (disregarding size) is that Variety #1007 has a cushioned bowl-base whereas Variety #1006 has the stem attached directly to the bowl.

Variety #1008 (Fig. 21e) is also probably a triple-piece glass, but a positive identification of the base has not been made.

Pressed Stemmed Glassware

Only one variety of pressed stemmed glassware has been identified, and it is classified as Variety #1011 (Fig. 21i). The only portions of this variety recovered were a stem and base fragment, and the only significant descriptive feature is that the stem is 6-sided.

Decorative Glass Fragments

No complete or partially complete decorative glass wares could be reconstructed, but a few shapes could be identified including various styles of decanters (both cut and pressed) and a pressed glass dish identical to the one found by Caywood (Fig. 20d).

Window Glass Fragments

There were 6030 fragments of window glass recovered. For 5989 specimens, glass thickness varied from 0.8-5.8 mm. with a mean of 1.43 mm. and a standard deviation of 0.40 mm. (Fig. 22). From comparisons with window glass from the Bakery-Wash House and Harness Shop areas, at least 6 separate populations can be distinguished. These populations center about the following thicknesses: 1 mm.; 1.6-1.7 mm.; 1.9 mm.; 2.2 mm.; 2.4 mm.; and 3.0-3.1 mm. The 2.2 mm. and 3.0-3.1 mm. populations represent the thin and thick layers of laminated safety glass (5.2-5.8 mm. complete thickness). The 1.1 mm. population probably represents that glass used for the Chief Factor's House and first Kitchen, whereas the 1.6-1.7 mm. population probably originated with either the post-1852 Kitchen or one of the many structures which occupied the Harness Shop position.

One fragment (FOVA 4059) of brown stained glass with a thickness of 1.0 mm. was recovered.

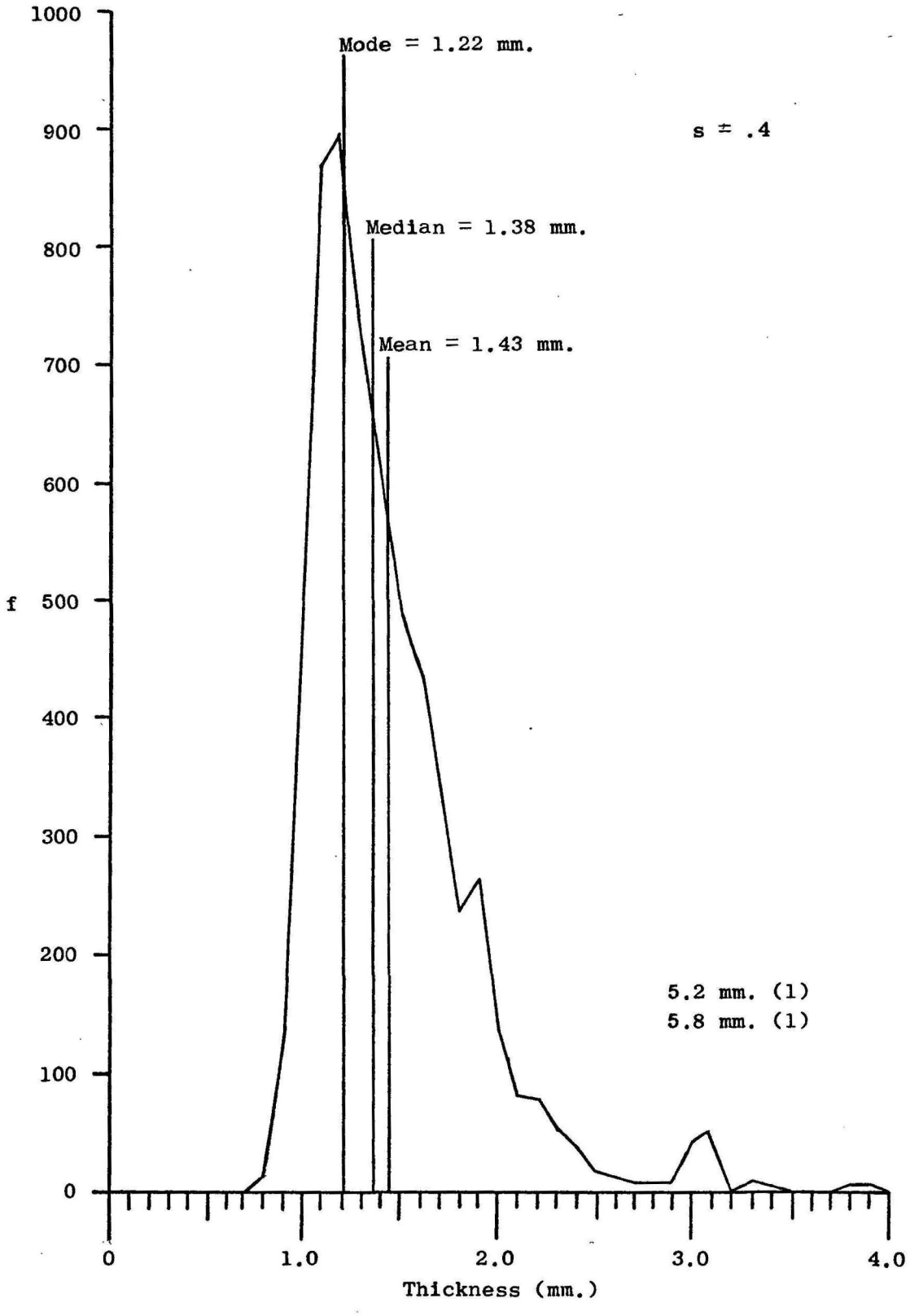


Fig. 22 --Frequency of Window Glass Thickness for the Area of the Chief Factor's Residence (N=5989)

Mirror Glass Fragments

One hundred five fragments of mirror glass were recovered, and they varied in thickness from 0.9-3.4 mm. (Fig. 23).

Glass Beads

Of the 612 glass beads recovered, 610 have been described on the basis of color, size of beads, size of hole, type of reflection, and number of facets. Two beads were lost between cataloging and description. A comparison between the beads described and the identification numbers used by Kenneth and Martha Kidd (1970) is presented as Table 17.

Types of beads recovered included cut, hot tumbled, and faceted tube beads; plain wire wound beads; faceted mandrel-molded beads; and one multi-colored faceted tube bead. See Appendix II for bead measurements.

The faceted mandrel-molded beads are identical to those described for the Harness Shop area (Hoffman and Ross 1973:35), although 2 new colors have been found -- opaque black and clear. Number of facets per bead now range between 24-53.

A unique multi-colored faceted tube bead (FOVA 7613) was recovered and is described in Table 17.

Glass Rods

Two glass rods were recovered including one purple (7.5 PB 3/10) translucent rod (FOVA 13333) and one clear rod (FOVA 11708). Both specimens were broken at both ends with diameters of 1.9 mm. (FOVA 13333) and 3.0 mm.

Glass Strip

One amber (10 YR 6/12) translucent glass strip (FOVA 10316) was found containing 10 ridges running parallel to its length. The specimen is broken at both ends, and has a width of 9.1 mm.

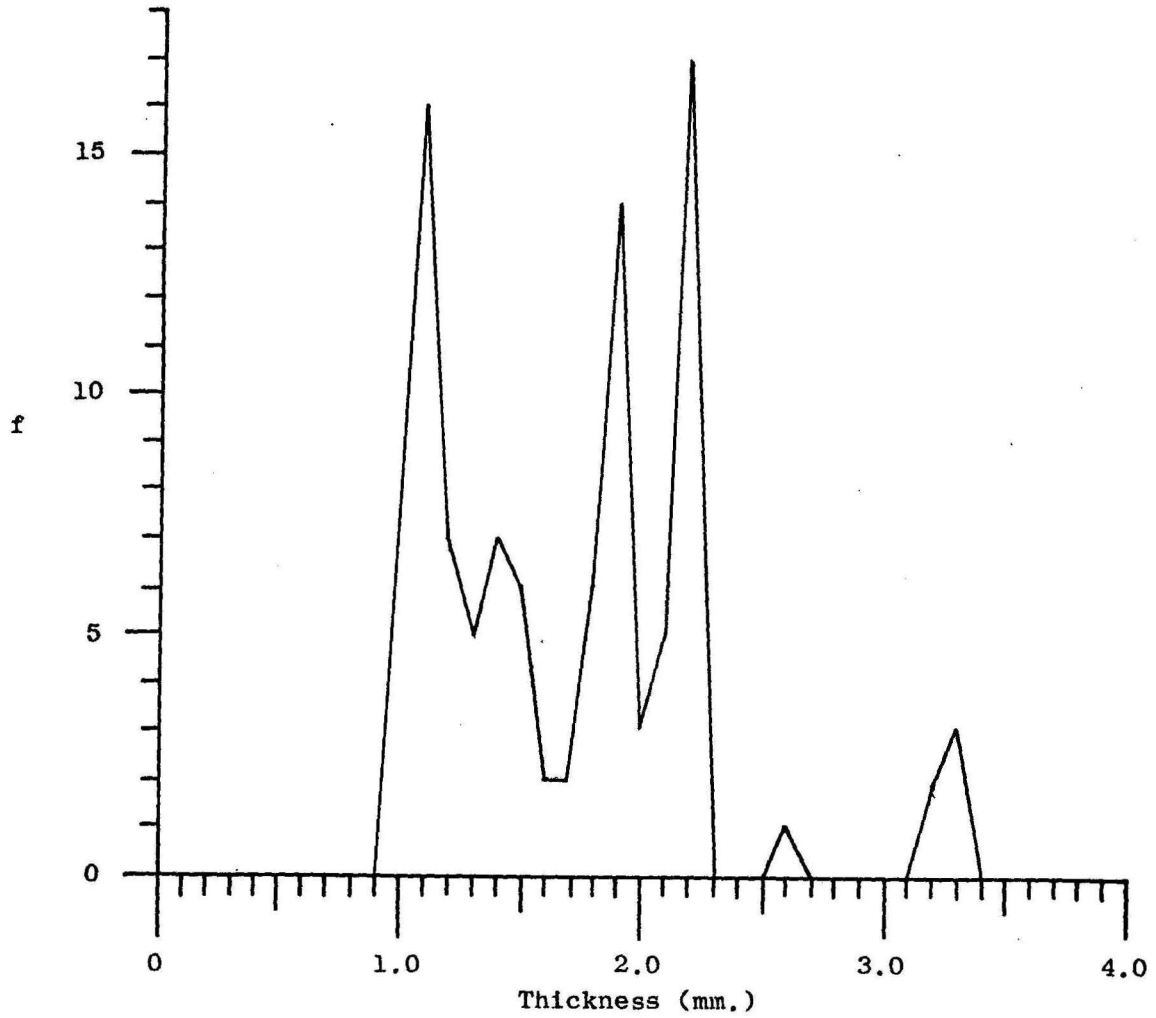


Fig. 23 --Frequency of Mirror Glass ("Looking Glass") Thickness for the Area of the Chief Factor's Residence (N=105)

Table 17 -- Comparison of beads with Kidds' identification numbers.

Kidds' Identification Number	Color		Reflection	Number of Facets	Total
	Primary	Secondary			
Ia	7.5 YR 8/2		Translucent		2
	5 Y 6/8		"		2
If	7.5 PB 2/10		Translucent	18-21	7
IIa	White		Opaque		477
	7.5 Y 8.5/10		"		1
	2.5 B 6/4		"		1
	2.5 B 4/6		"		1
	7.5 B 3/6		"		1
	10 B 8/4		"		4
	2.5 PB 4/6		"		1
	2.5 PB 4/8		"		2
	2.5 PB 3/6	?	"		1
	5 PB 4/6		"		2
	5 PB 3/4		"		1
	2.5 P 7/4		"		1
	7.5 P 7/6		"		1
	7.5 RP 6/10	?	"		1
	7.5 RP 5/10		"		1
	7.5 R 3/12		Translucent		2
	5 G 3/4		"		2
	7.5 BG 3/6		"		2
	2.5 B 5/8		"		2
	5 B 5/8	?	"		1
	5 B 4/8		"		4
	7.5 PB Max		"		4
	7.5 PB 2/8		"		1
IIb	N 8/	7.5 PB 4/6	Opaque	4*	2
	7.5 PB 2/6	N 9/	Translucent	26*	1
IIIf	7.5 B 7/4	7.5 B 8/4	Opaque	21	2
	5 PB 5/10	5 PB 6/8	"	21	2
	7.5 PB 4/10	7.5 PB 5/10	"	21	2
	7.5 PB 3/10	7.5 PB 5/10	"	21	2
	7.5 PB 3/10	7.5 PB 7/6	Translucent	18-35	14
	Clear	Whitish	"	21	3

* Number of stripes

Table 17 (cont'd.)

Kidds' Identification Number	Color		Reflection	Number of Facets	Total
	Primary	Secondary			
IVa	6.25 R 3/12	N 9/	Translucent & Opaque		3
	7.5 R 4/10	Clear	Opaque & Clear		1
Wlb	5 B 5/6	?	Opaque		3
	7.5 B 5/6		"		3
	7.5 G 3/8		Translucent		1
	10 BG 3/4	?	"		4
	2.5 B 3/4		"		1
	2.5 B 3/6		"		3
	5 B 3/6		"		9
	5 PB 2/8		"		1
	7.5 PB Max		"		3
	10 RP 4/6		"		2
Wlc	N 9.5/		Opaque		1
	7.5 YR 5/10		Translucent		1
Mandrel Molded	N 0.5/		Opaque	24	1
	2.5 B 8/4		"	35-42	9
	5 PB 6/8		"	36-42	3
	5 PB 5/6		"	43-52	2
	5 PB 4/8		"	42-44	4
	Clear		Clear	45	1
Multi-colored Tube	**	**	Translucent & Opaque	ca. 12	1
TOTAL					610

** A white (N 9/) opaque center tube bead covered by a red (7.5 R 3/10) opaque marvered "star" layer covered by a white (N 9/) opaque marvered "star" layer covered by a green (2.5 BG 3/8) translucent layer covered with alternating red (7.5 R 3/10) - yellow (10 YR 8/8) - red (7.5 R 3/10) and yellow (10 YR 8/8) - black (N 0.5/) - yellow (10 YR 8/8) stripes. Ends cut and faceted.

Metal Items

Hardware Items

Square Nails

Square nails include 3 manufacturing types (hand forged, machine cut and cast) and 5 descriptive types (tacks, sprigs, brads, nails and spikes). Tacks generally have a sharp or pointed tip and range in size from 1d-4d. Both sprigs and brads have a relatively blunt tip with sprigs ranging in size from 1d-5d while brads are 6d and larger. Spikes commonly refer to any straight fastener over 5 inches in length, and nails generally refer to any straight fastener not covered by the above terms. These terms are those which were in common use during the 19th Century, but their exact definitions vary from locality to locality.

Of the 11,214 square nail fragments recovered, 4015 hand forged, 3435 machine cut and 48 cast nails were identified.

Hand Forged Tacks, Brads, Nails and Spikes. Four hundred eighty-eight almost complete specimens were recovered representing 34 varieties of hand forged straight fasteners (Figs. 24-26; Table 18). The only nail varieties which could be functionally identified for architectural purposes were the "dog" nails (Varieties #1008 and #1028). This variety of nail was primarily used to attach door hinges.

Machine Cut Tacks, Sprigs, Brads and Nails. Three hundred thirty-five almost complete specimens were recovered representing 12 varieties of machine cut straight fasteners (Fig. 27 and Table 19). The most common varieties of machine cut nails were British "clasp" nails (Variety #2001) and the American "common" nail (Variety #2002). Eighty of the 162 "clasp" nails recovered were 4d in size, and probably represent "shingling" nails. Hussey (1972:114) notes that the shingling of the Chief Factor's House was begun on August 7, 1846, and this date can also be applied to the use of the above "shingling" nails.

As illustrated on Fig. 29, completely measurable hand forged nails were quantitatively larger than complete machine cut nails. Other than dog nails, we hypothesize that the forged nails were predominantly used for joining.

Cast Tacks and Nails. Twenty-one complete specimens were recovered representing 7 varieties of cast straight fasteners (Fig. 28a-g and Table 20).

Table 18 -- Varieties of hand forged tacks, brads, nails and spikes.

Variety #	Historical Term	Size Range	Figure	Total
1001	"Clasp" nails	5d - 16d	24a	53
1002	"Rose" nails & spikes	3d - 7"	24b	197
1003	"Sharp" nails	28d - 30d	24c	4
1004	"Clench" nails	8d - 36d	24d	33
1005	"Clout" (?) tacks	2d	24e	5
1006	-	20d - 24d	24f	1
1007	-	9d - 6"	24g	16
1008	"Dog" or "J Bent" (?) nail	5d - 6d	24h	1
1009	"Rose Flat Point" nails & spikes	12d - 8"	24i	76
1010	-	30d	24j	1
1011	-	12d	24k	1
1012	-	5d	25a	1
1013	-	40d-5 1/2"	25b	3
1014	-	6" - 11"	25c	7
1015	-	6" - 7 1/2"	25d	11
1016	-	40d - 6"	25e	5
1017	-	6" - 8"	25f	2
1018	-	8"	25g	1
1019	"Brad"	36d - 40d	25h	1
1020	-	8"	25i	1
1021	-	20d	25j	1
1022	-	4d - 40d	25k	9
1023	-	7d - 24d	25l	4
1024	-	9d	26a	3
1025	-	7d	26b	1
1026	"Clout" (?) nail	10d - 12d	26c	1
1027	-	7d	26d	1
1028	"Dog" or "J Bent" (?) nails	5d - 40d	26e	21
1029	-	8" - 11"	26f	2
1030	-	9"	26g	1
1031	-	9"	26h	2
1032	"Horseshoe" nail	6d	26i	1
1033	-	4d	-	1
1034	"Railroad" spikes	4½" - 5½"	-	20
	Grand Total			488

Fig. 24 - Hand forged tacks, brads, nails and spikes.

a - Variety #1001 (FOVA 5806) -- L = 7.1 cm.

b - Variety #1002 (FOVA 4411) -- L = 6.9 cm.

c - Variety #1003 (FOVA 10622) -- L = 11.6 cm.

d - Variety #1004 (FOVA 9844) -- L = 10.5 cm.

e - Variety #1005 (FOVA 11947) -- L = 2.7 cm.

f - Variety #1006 (FOVA 13446) -- L = 10.3 cm.

g - Variety #1007 (FOVA 4411) -- L = 6.8 cm.

h - Variety #1008 (FOVA 7301) -- L = 4.7 cm.

i - Variety #1009 (FOVA 4738) -- L = 11.6 cm.

j - Variety #1010 (FOVA 12510) -- L = 11.4 cm.

k - Variety #1011 (FOVA 12283) -- L = 8.4 cm.

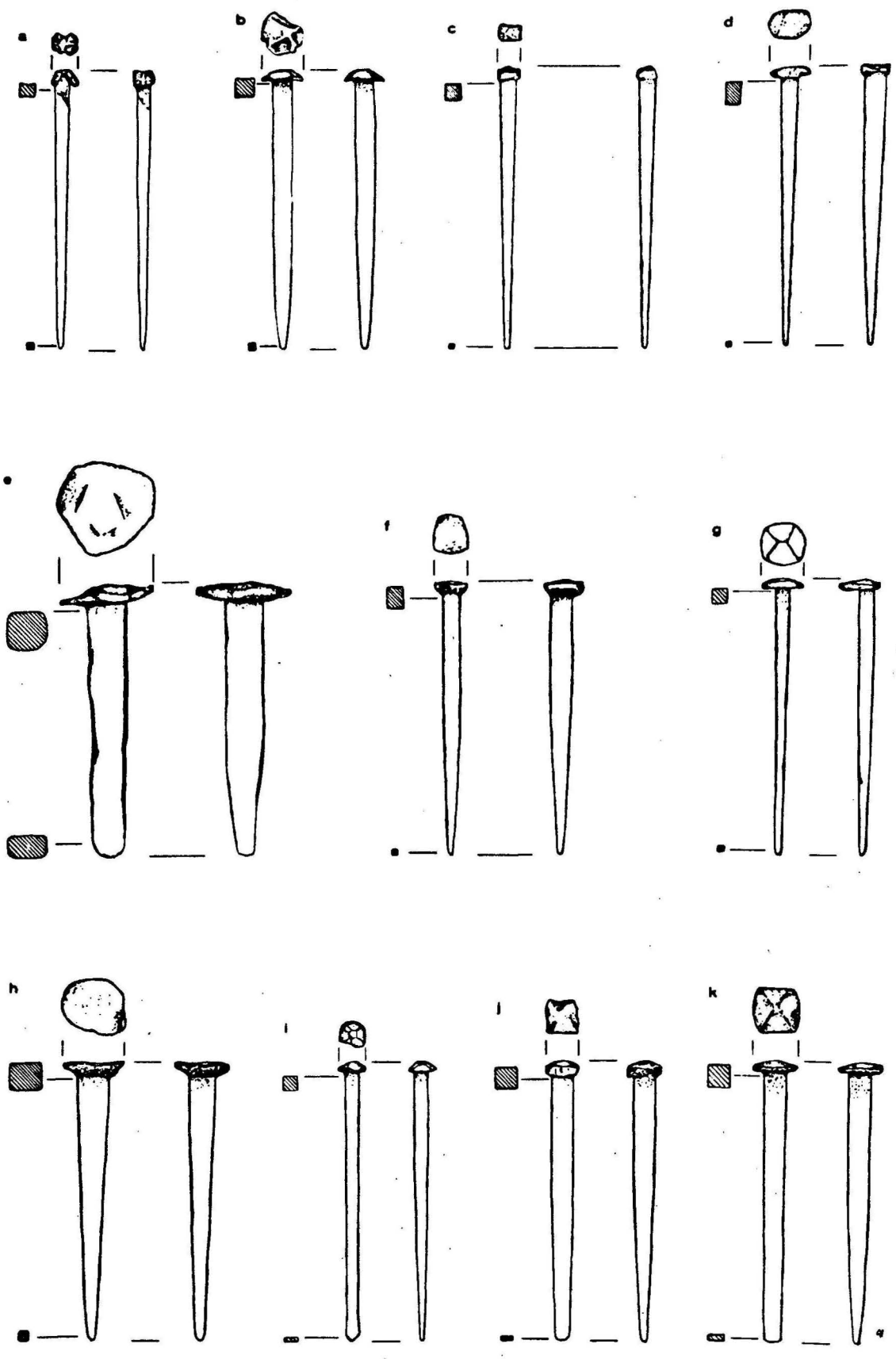

a
b
c
d
e
f
g
h
i
j
k

Fig. 25 - Hand forged tacks, brads, nails and spikes.

a - Variety #1012 (FOVA 13236) -- L = 4.6 cm.

b - Variety #1013 (FOVA 5906) -- L = 12.6 cm.

c - Variety #1014 (FOVA 10122) -- L = 18.2 cm.

d - Variety #1015 (FOVA 10458) -- L = 19.0 cm.

e - Variety #1016 (FOVA 2021) -- L = 13.4 cm.

f - Variety #1017 (FOVA 13565) -- L = 23.9 cm.

g - Variety #1018 (FOVA 13022) -- L = 20.1 cm.

h - Variety #1019 (FOVA 10066) -- L = 12.1 cm.

i - Variety #1020 (FOVA 10251) -- L = 23.5 cm.

j - Variety #1021 (FOVA 9464) -- L = 10.1 cm.

k - Variety #1022 (FOVA 4209) -- L = 9.8 cm.

l - Variety #1023 (FOVA 7985) -- L = 10.5 cm.

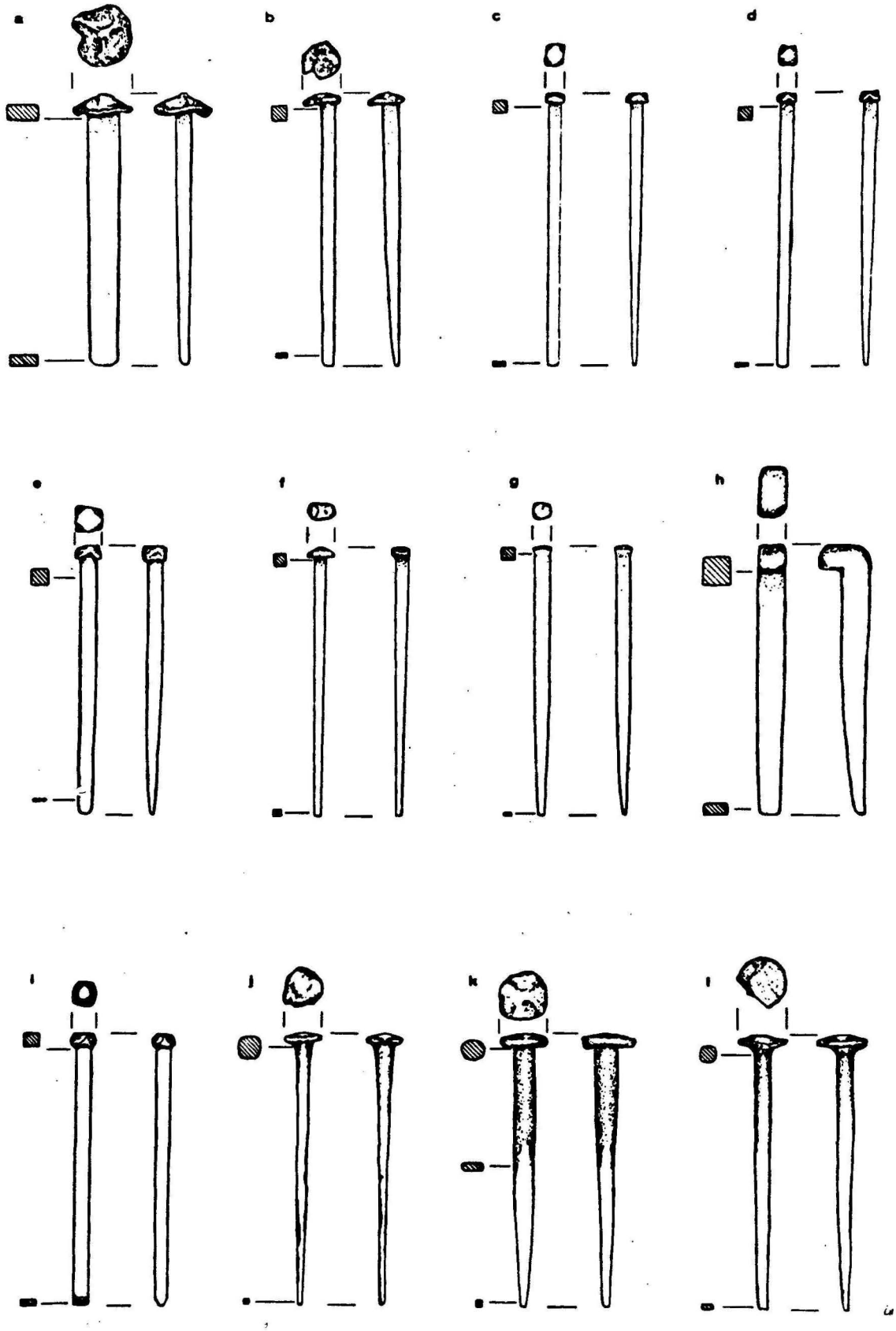

a
b
c
d
e
f
g
h
i
j
k
l

Fig. 26 - Hand forged tacks, brads, nails and spikes.

a - Variety #1024 (FOVA 2088) -- L = 10.4 cm.

b - Variety #1025 (FOVA 11514) -- L = 6.0 cm.

c - Variety #1026 (FOVA 9236) -- L = 8.0 cm.

d - Variety #1027 (FOVA 9385) -- L = 5.9 cm.

e - Variety #1028 (FOVA 4411) -- L = 6.7 cm.

f - Variety #1029 (FOVA 12599) -- L = 27.4 cm.

g - Variety #1030 (FOVA 6984) -- L = 23.4 cm.

h - Variety #1031 (FOVA 10440) -- L = 24.4 cm.

i - Variety #1032 (FOVA 12131) -- L = 5.0 cm.

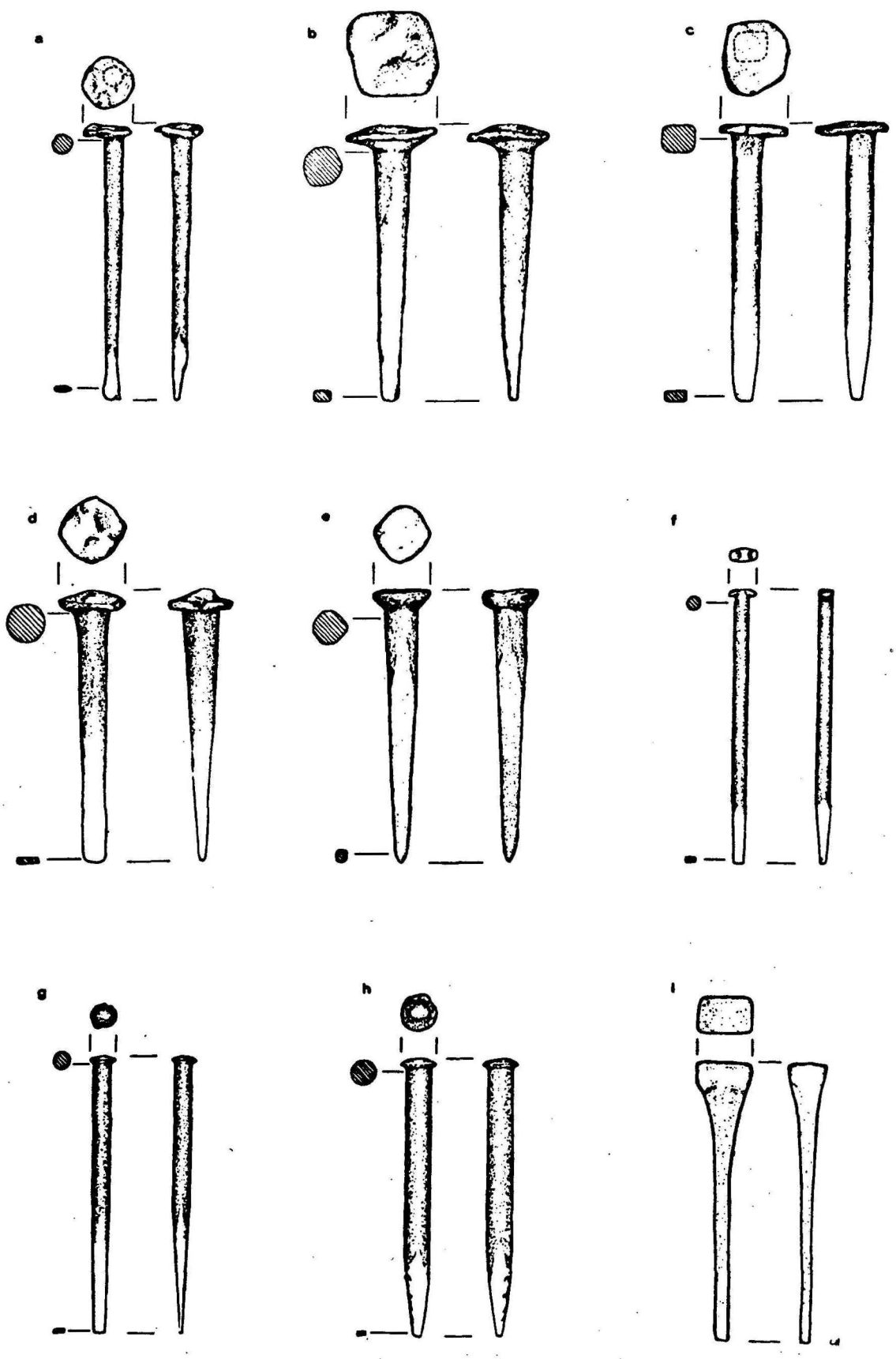

a
b
c
d
e
f
g
h
i

Table 19 -- Varieties of machine cut tacks, sprigs, brads and nails.

Variety #	Historical Term	Size Range	Figure	Total
2001	"Clasp" nails; "Shingling" nail (4d)	3d - 20d	27a	162
2002	"Common" nails	4d - 40d	27b	131
2003	-	10d	27c	2
2004	"Tack Nails"	2d - 3d	27d	9
2005	-	4d - 8d	27e	12
2006	"Sprigs"; "Brads" (6d)	2d - 12d	27f	6
2007	-	7d	27g	4
2008	-	5d - 6d	27h	2
2009	-	2d	27i	1
2010	"Pump" or "Clout Head" (?) tacks	1d - 2d	27j	4
2011	"Sheathing" nail	2d	27k	1
2012	-	3d	27l	1
	Grand Total			335

Table 20 -- Varieties of cast tacks and nails.

Variety #	Historical Term	Size Range	Figure	Total
4001	"Sheathing" (?) nail	2d	28a	1
4002	"Sheathing" (?) nails	2d - 3d	28b	7
4003	"Clout Head" (?) tacks	1d - 2d	28c	4
4004	-	6d - 10d	28d	3
4005	-	4d - 5d	28e	1
4006	"Sheathing" (?) nail	3d	28f	1
4007	"Sheathing" (?) nails	2d - 3d	28g	4
	Grand Total			21

Fig. 27 - Machine cut tacks, sprigs, brads and nails.

a - Variety #2001 (FOVA 6249) -- L = 7.9 cm.

b - Variety #2002 (FOVA 6795) -- L = 7.8 cm.

c - Variety #2003 (FOVA 6368) -- L = 6.6 cm.

d - Variety #2004 (FOVA 5001) - L = 3.0 cm.

e - Variety #2005 (FOVA 5695) -- L = 5.5 cm.

f - Variety #2006 (FOVA 3915) -- L = 8.5 cm.

g - Variety #2007 (FOVA 11054) -- L = 5.8 cm.

h - Variety #2008 (FOVA 4364) -- L = 5.3 cm.

i - Variety #2009 (FOVA 12067) -- L = 2.0 cm.

j - Variety #2010 (FOVA 5001) -- L = 3.1 cm.

k - Variety #2011 (FOVA 11839) -- L = 2.7 cm.

l - Variety #2012 (FOVA 12898) -- L = 3.0 cm.

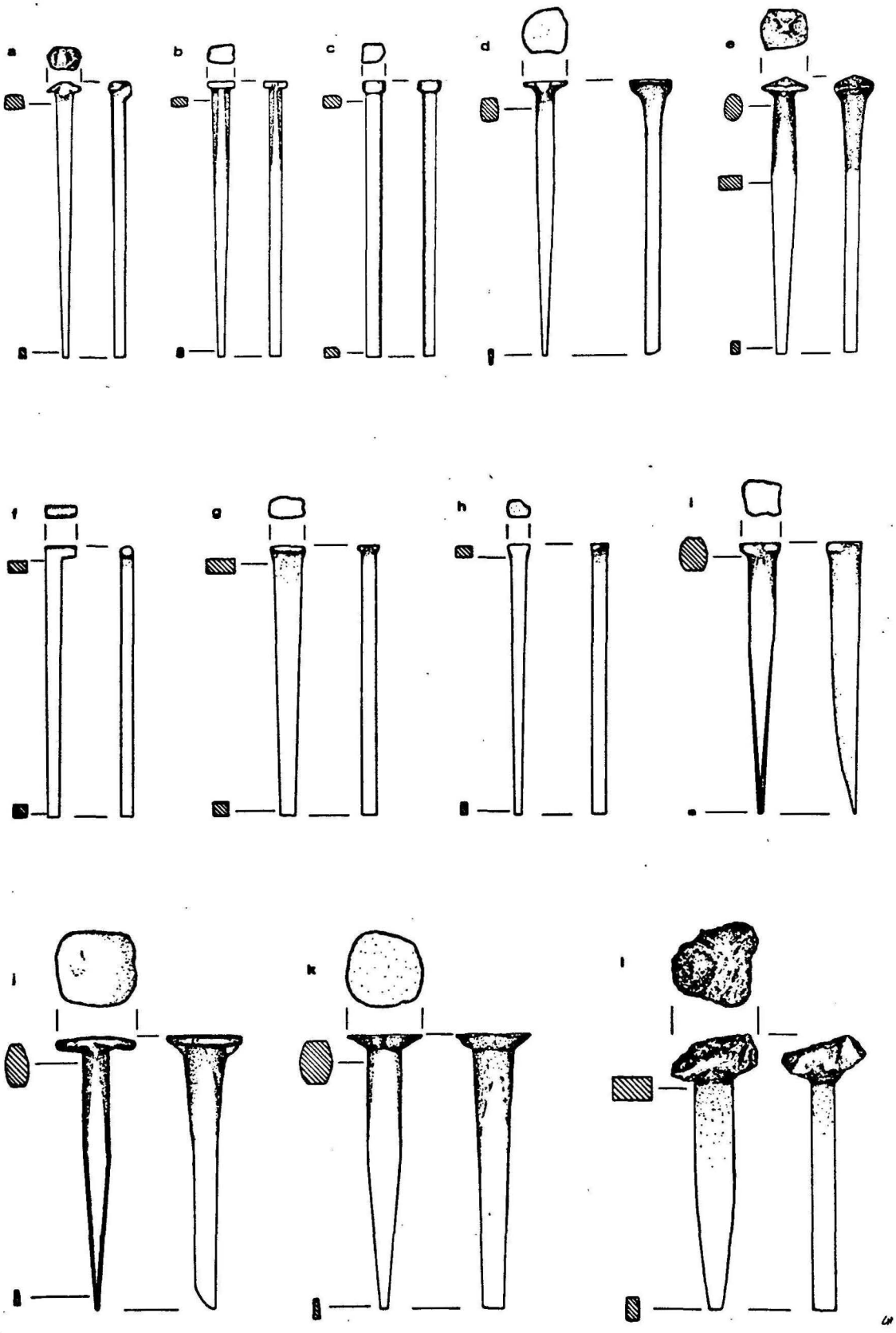

a
b
c
d
e
f
g
h
i
j
k
l

Fig. 28 - Cast tacks and nails, wedge fastener, brass-headed iron screw, and wire tack.

a - Variety #4001 (FOVA 10602) -- L = 2.7 cm.

b - Variety #4002 (FOVA 12027) -- L = 3.2 cm.

c - Variety #4003 (FOVA 11757) -- L = 2.0 cm.

d - Variety #4004 (FOVA 11514) -- L = 5.2 cm.

e - Variety #4005 (FOVA 7654) -- L = 4.1 cm.

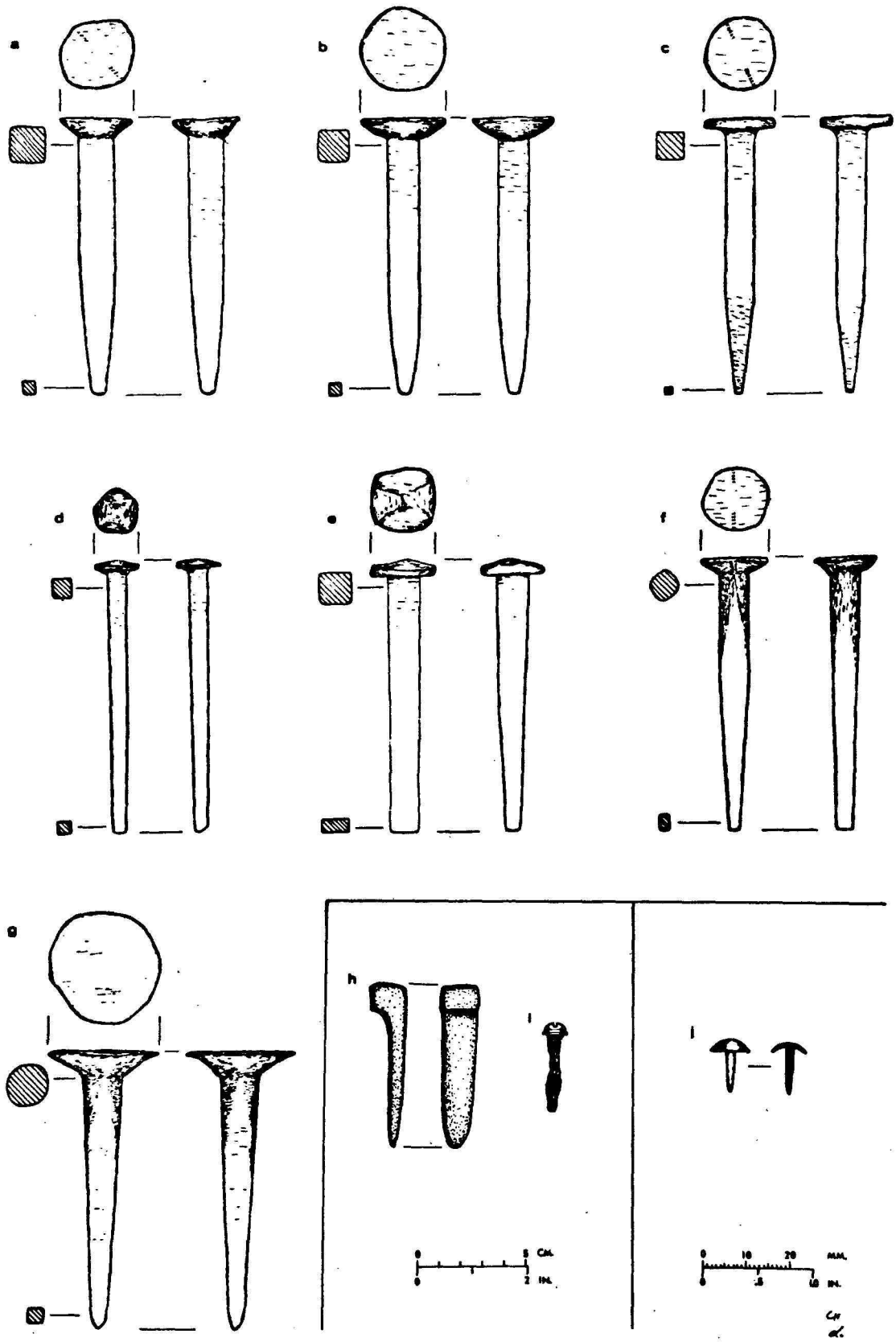
f - Variety #4006 (FOVA 9458) -- L = 3.4 cm.

g - Variety #4007 (FOVA 4920) -- L = 4.1 cm.

h - Wedge fastener (FOVA 9565)

i - Brass-headed iron screw (FOVA 11276)

j - Wire tack (FOVA 12766)


a
b
c
d
e
f
g
h
i
j
0 5 CM.
0 2 IN.
0 10 20 MM.
0 .5 1.0 IN.

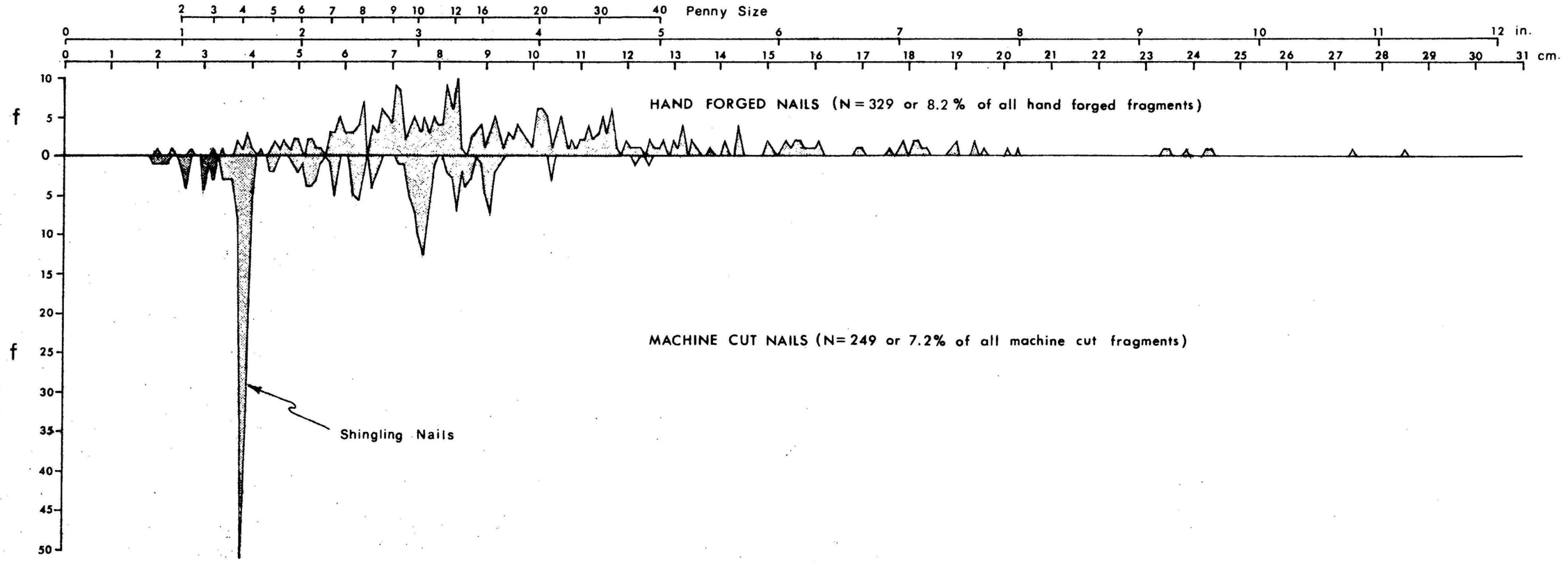


Fig. 29 – Frequency distribution of all complete Hand Forged and Machine Cut Nails.

Shutter Latches and Nail

Only 4 shutter latches and one shutter latch nail were recovered. The shutter latches represent 2 distinct types -- a lightweight and a heavy latch (Figs. 30b-d). The single shutter latch nail is hand forged, measuring ca. 4 1/4 inches in length, and is probably associated with the heavy type of latch. Lightweight shutter latches were presumably attached to window frame center posts with shutter latch nails similar to those found associated with the 1845 Bakery (Hoffman and Ross 1972:54).

Shutter latches are used to close indoor shutters. The typical "S" or "Z"-shaped latch swivels on its nail engaging a "stop" on the shutter (Fig. 30a) when closed. Such a latch cannot be opened from the outside without bending or breaking the shutter, center post, and/or latch. A knife slipped between the shutter and post cannot move the latch in one direction any further than the "stop," and attempting to turn the latch in the opposite direction results in engaging the inside curve of the latch against the knife. Such a latch is both simple in construction and effective in function.

Escutcheons

Three escutcheons were found, two of which are iron (FOVA 10291 and 12306) and one is brass (FOVA 10904). The brass escutcheon has 4 countersunk screw holes and on the reverse are 2 stamped numerals ("6"). This escutcheon probably dates from the USA period. The 2 iron escutcheons (Fig. 34h) have 4 small nail holes, and probably date from the HBC period.

Hinges, Hasps and Pintles

A variety of hinges and hasps were found including 3 strap hinges (Figs. 31a, d-e), 8 butt hinges (Figs. 31h-l), one simple sheet metal hinge, and 3 hinge hasps (Figs. 31f-g).

One variety of strap hinge (Fig. 31a) represents a pintle hinge, and would have been used with a pintle such as illustrated in Figs. 31b-c.

Padlock Parts

Of the 3 padlock parts found, there is one arm (FOVA 12005) and one front plate (FOVA 6989) from an HBC period "bag" type padlock, and a complete "square" type padlock with chain (FOVA 9551) from the USA period.

Fig. 30 - Shutter latches and shutter latch nails.

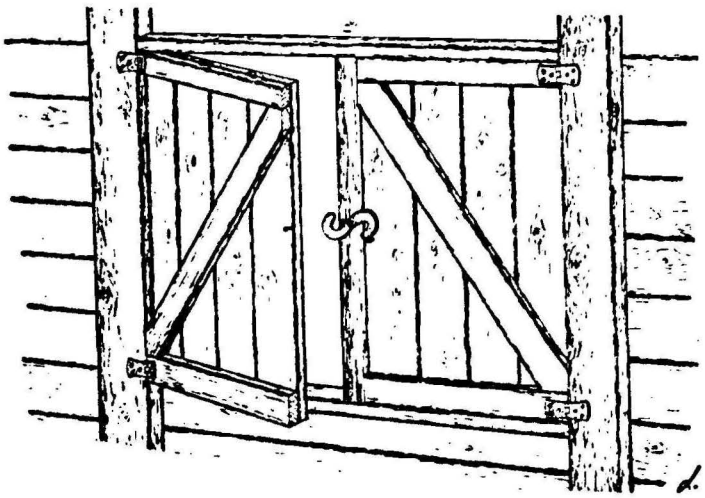
a - Graphic representation of shutter latch in closed position

b - Heavy shutter latch (FOVA 9349b) and associated shutter latch nail (FOVA 7883)

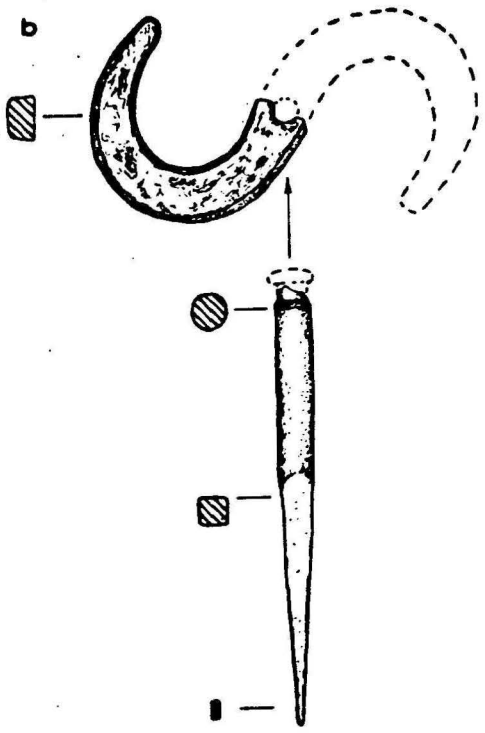
c - Heavy shutter latch (FOVA 10127)

d - Light shutter latch (FOVA 9816) and associated shutter latch nail (FOVA 7151)

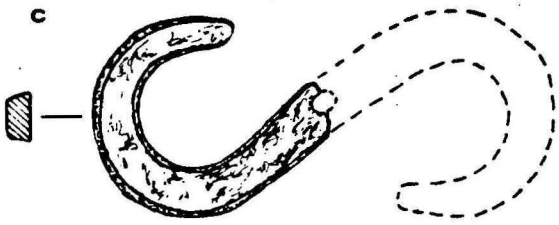
a



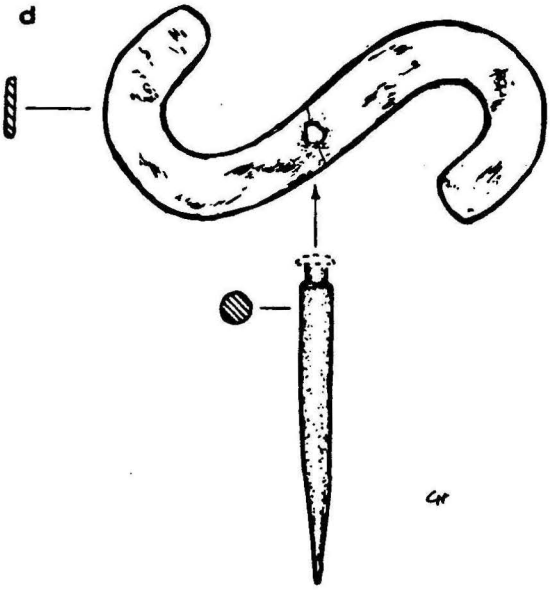
b



c



d



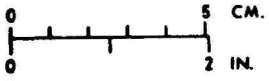


Fig. 31 - Hinges, pintles, and hasps.

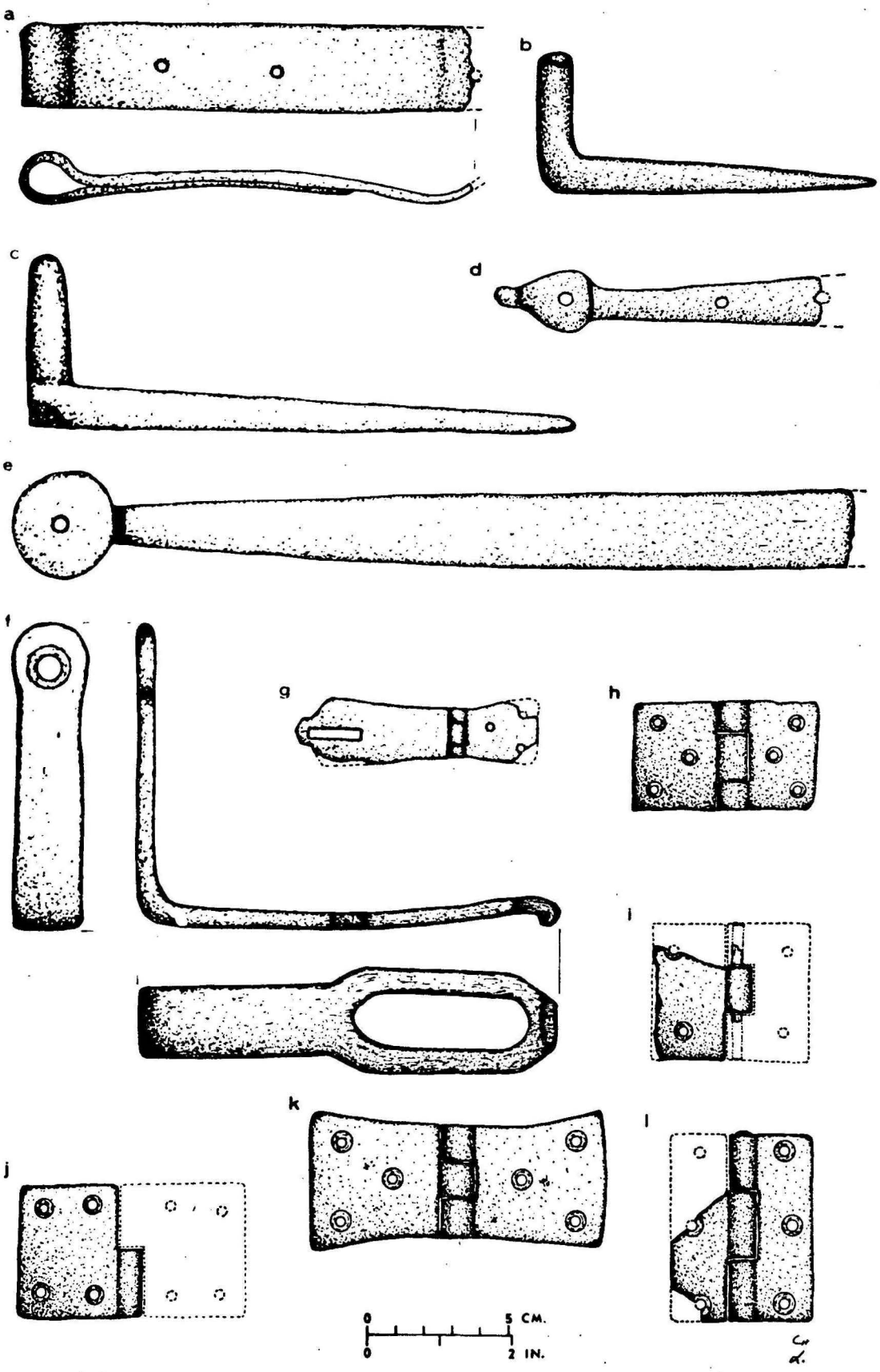
a - Pintle strap hinge (FOVA 10418)

b-c - Pintles (FOVA 1578 & 7287)

d-e - Strap hinges (FOVA 12423 & 7269)

f-g - Hasps (FOVA 9614 & 11058)

h-l - Butt hinges (FOVA 9567, 9685, 1051, 4049 & 12902)


a
b
c
d
e
f
g
h
i
j
k
l
0
5 CM.
0
2 IN.

Temperature Gauges

Four thermometers (FOVA 9053 and 9064) were found, three of which register temperatures from 60°-230° F and one registers temperatures 40°-170° F. These were associated with USA trash.

Miscellaneous Items

For comparative purposes the following items have been illustrated rather than described: gate latch (Fig. 32d); gate latch eye (Fig. 32c); hook (Fig. 32a); hand forged closed eye (Fig. 32b); forged staples (Figs. 32e-h); wire staples (Figs. 32i-l); wedge fastener (Fig. 28h); brass-headed iron screw (Fig. 28i); and brass tack (Fig. 28j).

Household Items

Buttons

Of the 60 buttons found, there were 28 single piece loop-shank buttons, 12 composite loop-shank buttons, 1 composite recessed-shank button, 15 single piece 4-hole buttons, and 4 unidentified buttons (Fig. 33 and Table 21). References to USA buttons follow Johnson (1943).

Single Piece Loop-Shank Buttons. Eleven types of single piece loop-shank buttons were identified (Figs. 33a-m and Table 21). Variety IA is a USA "General Staff" brass button equivalent to Johnson's Type 105. The stamped manufacturing marks on the obverse have been obliterated. Variety IB is a relatively thick tin or silver plated button marked "Extra Plated, Superior Quality." Variety IC is also a relatively thick button which has been either gold or brass plated and marked "Scovills ...".

Composite Loop-Shank Buttons. Nine types of composite loop-shank buttons were identified (Figs. 33n-w and Table 21). These include 3 varieties of USA "General Service" buttons with A1 equivalent to Johnson's Type 274 and marked "R. L. Mfg. Co. - New York"; Variety IA2 is equivalent to Johnson's Types 261-268 and marked "Mann & Allienan-mor"; Variety IA3 is also equivalent to Johnson's Types 261-268, but marked "Scoville Mg. Co.. .. ..".

Two additional varieties of USA buttons were found including Variety IIB, an "artillery" button equivalent to Johnson's Types 146-152 and marked "H. S. & Drucker, N. York", and Variety IIC, an "Army Rifles" button equivalent to Johnson's Types 237-238, but only the back was found with the following marks: "Scovill Mfg. Co, Waterbury".

Fig. 32 - Miscellaneous hardware items.

a - Hook (FOVA 10484)

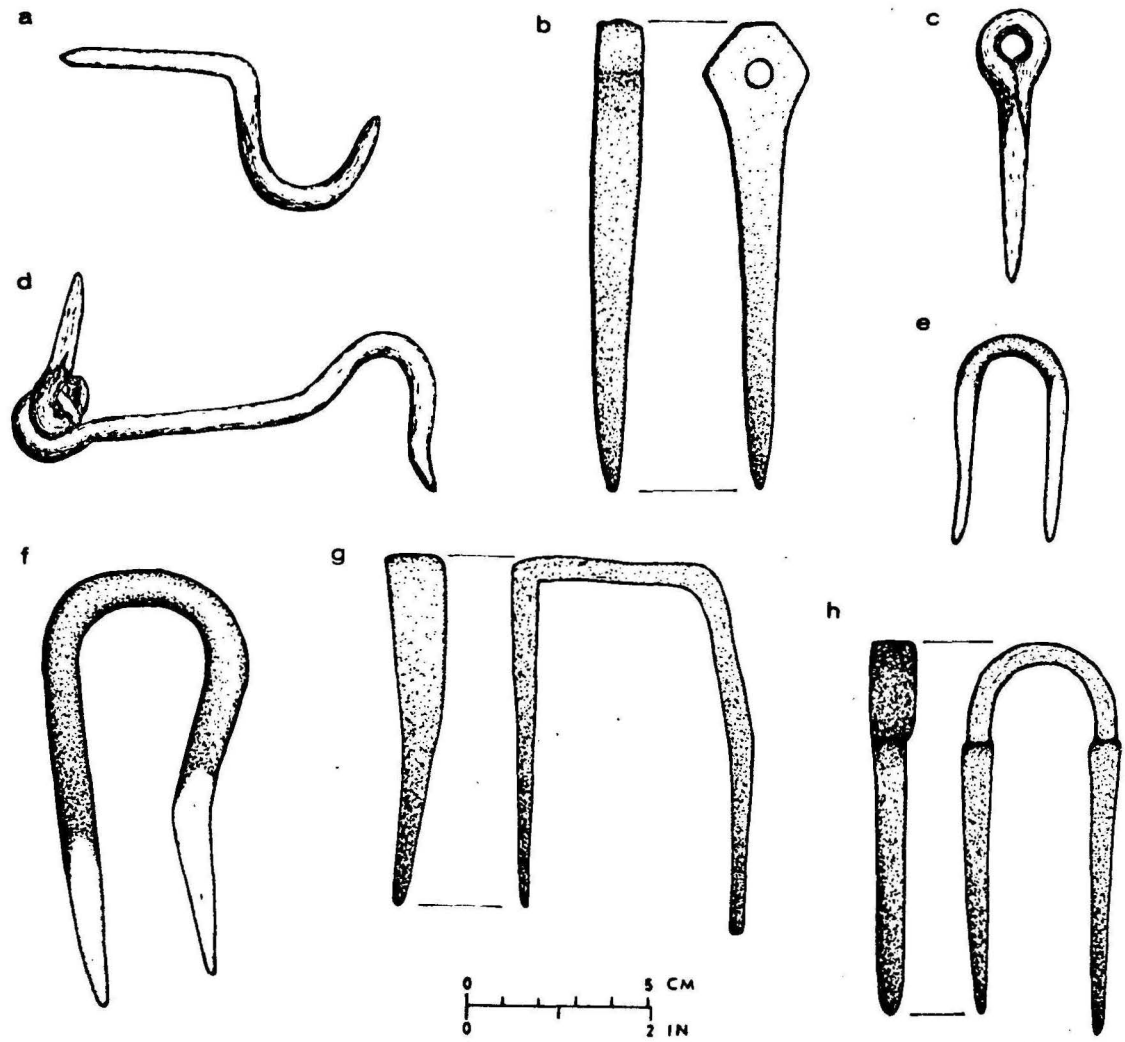
b - Hand forged closed eye (FOVA 3476)

c - Gate latch eye (FOVA 12432)

d - Gate latch hook (FOVA 9487)

e-h - Forged staples (FOVA 12900, 12448, 8016, 9508)

i-l - Wire staples (FOVA 3993, 9452, 7441, 12977)


a
b
c
d
e
f
g
h
0
5 CM
0
2 IN

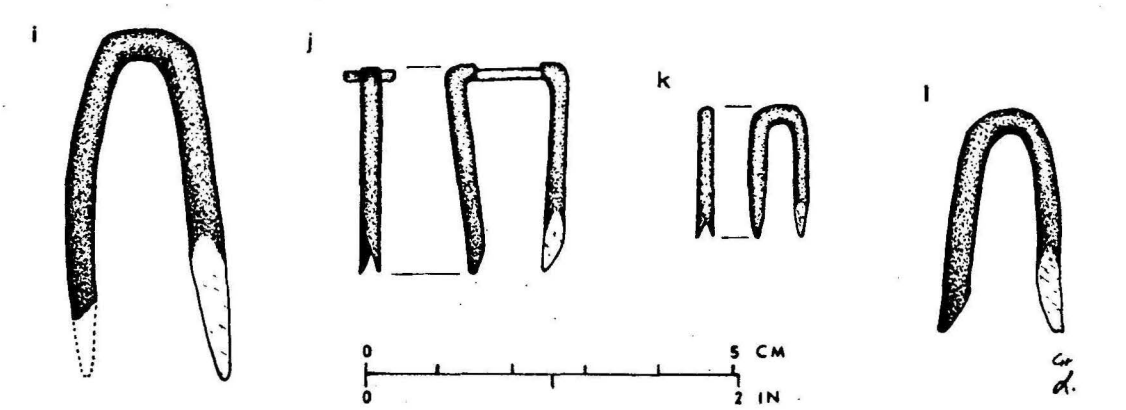
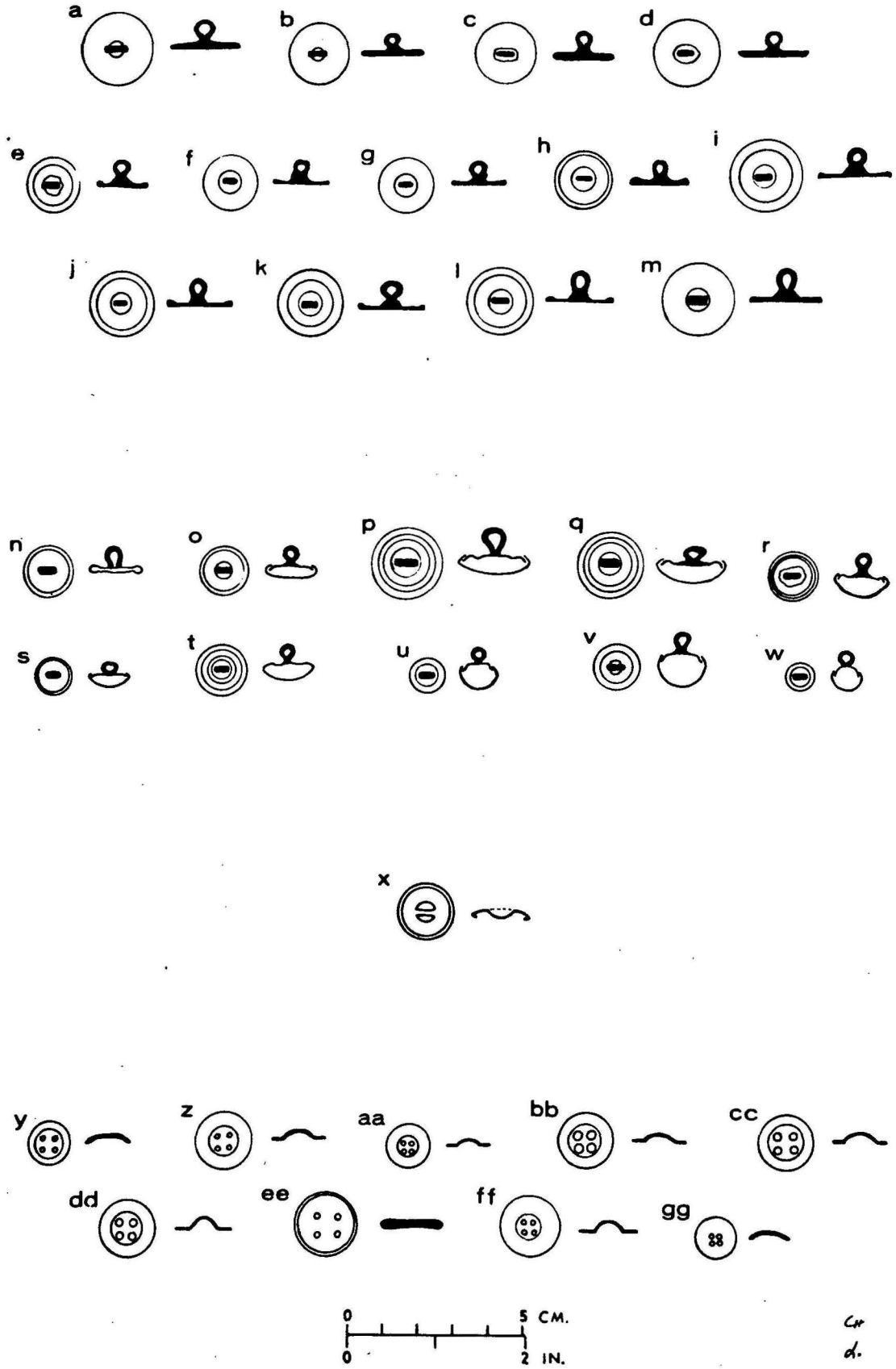

i
j
k
l
0
5 CM
0
2 IN

Table 21 -- Types of buttons.

Type	Diameter (mm.)	Frequency	Figure
I. Single Piece Loop-Shank			
A "General Staff"	20.8	1	33a
B "Extra Plated..."	15.5 - 15.6	2	33b
C "Scovills..."	15.6	1	33c
D Unidentified Mark	19.3	1	33d
E	15.1 - 15.3	4	33e
F (2 sizes)	15.8	1	33f-g
	16.2 - 16.3	3	
G	17.0 - 17.3	5	33h
H (2 sizes)	19.2	1	33i-j
	20.8 - 21.3	5	
I	19.4	1	33k
J	19.6	1	33l
K (fabric covered)	20.1	1	33m
L Unidentified	-	1	-
II. Composite Loop-Shank			
A1 "General Service"	15.4	1	33n
A2 "General Service"	14.9	1	33o-p
(2 sizes)	19.6	1	
A3 "General Service"	19.5	1	33q
B "Artillery"	15.4	1	33r
C "Army Rifles"	14.8	1	33s
D Unidentified Army	-	1	-
E Gold Decorated	11.6	1	33t
F Gold Mushroom	10.7	1	33u
G Silver Mushroom	13.1	1	33v
H Silver Ball	8.3	1	33w
I Unidentified	-	1	-
III. Composite Recessed	16.3	1	33x
IV. Single Piece 4-hole			
A	12.9	1	33y
B	16.9	1	33z
C	12.6	2	33aa
D	15.8	1	33bb
E "F. & B."	15.8	1	33cc
F "G. E. & R. A. & S."	17.4	2	33dd
G Whitemetal	13.4	1	33ee
(2 sizes)	18.5 - 18.7	2	
H Iron	11.5	1	33ff
(2 sizes)	17.3	2	
I Unidentified Metal	-	1	33gg
V. Unidentified Composite	-	4	-
TOTAL		60	

Fig. 33 - Metal button types.

a - Type IA (FOVA 11786)
b - Type IB (FOVA 12140)
c - Type IC (FOVA 12237)
d - Type ID (FOVA 12690)
e - Type IE (FOVA 12467)
f - Type IF1 (FOVA 12905)
g - Type IF2 (FOVA 7788a)
h - Type IG (FOVA 11328)
i - Type IH1 (FOVA 12073)
j - Type IH2 (FOVA 12140)
k - Type II (FOVA 12208)
l - Type IJ (FOVA 6988)
m - Type IK (FOVA 12216)
n - Type IIA1 (FOVA 7410)
o - Type IIA2 (FOVA 10095)
p - Type IIA2 (FOVA 11572)
q - Type IIA3 (FOVA 6862)
r - Type IIB (FOVA 11516)
s - Type IIC (FOVA 12934)
t - Type IIE (FOVA 12208)
u - Type IIF (FOVA 12304)
v - Type IIG (FOVA 12208)
w - Type IIH (FOVA 11842)
x - Type III (FOVA 10321)
y - Type IVA (FOVA 12237)
z - Type IVB (FOVA 12237)
aa - Type IVC (FOVA 12073)
bb - Type IVD (FOVA 9387)
cc - Type IVE (FOVA 11653)
dd - Type IVF (FOVA 11611)
ee - Type IVG1 (FOVA 12389)
ff - Type IVH (FOVA 11950)
gg - Type IVI (FOVA 12140)


a
b
c
d
e
f
g
h
i
j
k
l
m
n
o
p
q
r
s
t
u
v
w
x
y
z
aa
bb
cc
dd
ee
ff
gg
0
5 CM.
0
2 IN.

The remaining composite loop-shank buttons are all unmarked, but presumably attributable to the HBC.

Composite Recessed-Shank Button. Only one back (FOVA 10321) was found marked "Favell & Bousfields, London" (Fig. 33x). Textiles from this firm were shipped to Fort Vancouver for Outfits 1829-30 and 1830-31 by the William and Ann and Ganymede, as contained in invoices dated September 5, 1828 (HBC Archives A.24/37, pp. 127-179) and Outfit 1848-49 by the Cowlitz and Mary Dare, as contained in the book of merchandise exported (HBC Archives A.25/7, Fos. 42d-45d). The term textile in this instance refers to both bolts of cloth as well as finished garments.

Single Piece 4-Hole Buttons. Of the 9 types identified, the first 6 (IVA-F) are deep countersunk copper or brass buttons which are differentiated by the type of decoration present (Figs. 33y-gg). Variety IVE is marked "F. & B., London" (presumably for "Favell & Bousfields"), and Variety IVF is marked "G. E. & R. A. & S., Manufacturer". This last company has not been identified.

Unidentified Composite Buttons. Of the 4 specimens in this category, one (FOVA 11516) is marked "...B.. & Co., ...treal." This last word may be "Montreal."

Keys

Of the 7 keys found, there were 5 ward keys (Figs. 34a-d & f), one barrel or hollow post key (Fig. 34e), and one bow fragment (Fig. 34g).

Coins and Tokens

Of the 3 coins and tokens found, there was one 1848 British farthing (FOVA 11963), one "Vancouver Bk's Canteen" 25-cent token (FOVA 9289), and one unidentified token (FOVA 12822) with stamped initials "TB" (Fig. 37l). The British farthing is a copper Victoria first issue (young head type) coin with obverse inscription "Victoria Dei Gratia" and reverse seated Britannia with the inscription "Britanniar: Reg: Fid: Def:".

Utensils

Of the 33 utensil fragments found, there were 5 bone-handled table knife fragments, 3 carving knife fragments, one metal-handled table knife, 9 three-pronged bone-handled fork fragments, one 2-pronged fork fragment, 3 spoon fragments, and 11 unidentified fragments. There are 2 sizes of 3-pronged forks (Figs. 37c-d),

Fig. 34 - Keys and escutcheon.

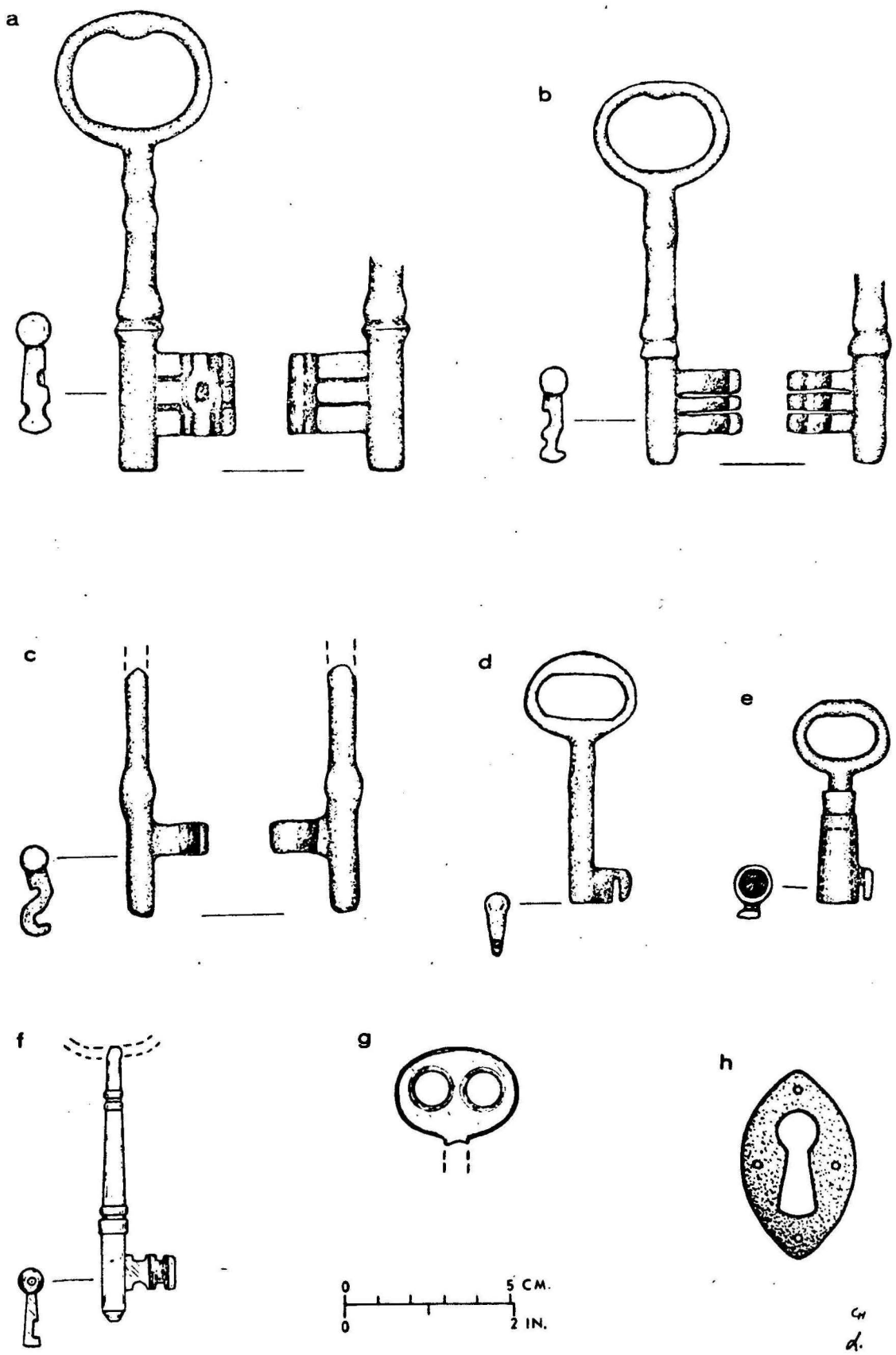
a-d - Ward keys (FOVA 11257, 12981, 12307, 11257)

e - Barrel key (FOVA 11714)

f - Ward key (FOVA 10096)

g - Key bow (FOVA 9314)

h - Escutcheon (FOVA 1084)


a
b
c
d
e
f
g
h
0
5 CM.
0
2 IN.

and the carved pattern on their handles represents the only pattern identified for table utensils. One undecorated flat bone handle (FOVA 12215) was found, but the type of utensil it came from cannot be identified.

Keg Cocks and Keys

Of the 13 keg cocks and keys found, there was one complete "strained & nighted butt cock" (FOVA 9635), one "small brass cock" (FOVA 10882), one "small patent brass cock" (FOVA 7084), 6 keys (FOVA 9864, 9924, 10017, 10372, 10460), and 4 key sockets (FOVA 7237, 7567, 10832, 10882).

In the 1844 inventory of Fort Vancouver (Hussey 1972:264), 6 types of cocks are listed:

1) "Large Patent Brass Cocks"
2) "Large Brass Cocks"
3) "Middling Brass Cocks"
4) "Small Brass Cocks"
5) "Strained & Nighted Butt Cocks, 5/8 in."
6) "Strained & Nighted Butt Cocks, 3/4 in."

Based upon the above archeological specimens together with previously reported specimens from FOVA (Caywood 1955:51; Hoffman and Ross 1973) there are archeological remains of the first 5 types and of one type not listed -- a small patent brass cock. The "Patent Brass Cocks" are 2-piece cocks with a T-shaped valve handle (Fig. 35b). Both large and small patent brass cocks were found by Caywood, but their proveniences were not reported. Our excavations turned up remains of one patent brass cock body (FOVA 7084) and 2 valves (FOVA 7084, 10017).

Cocks with detachable keys comprise the 3 sizes of "brass cocks" and 2 sizes of "butt cocks." Based upon the sizes and shape of keys, sockets and valve posts, at least 3 distinct sizes and 6 distinct key configurations are represented (Figs. 36 and 35d-e). One specimen of a "small brass cock" was found by Caywood, but again its provenience was not reported. Our excavations have recovered one "small brass cock" with an impressed "Sheppard" together with its valve and socket (Fig. 35c), and one "strained & nighted butt cock, 5/8 in." with an impressed "Sheppard, Patent, Granted" together with lock screw-and-washer, socket, set screw, and broken key (Fig. 35a). The "strained & nighted butt cock" is made of brass as all other cocks, but rather than having a single large opening for insertion into the keg, it has a "closed" end with 19 small holes.

Fig. 35 - Keg cocks and keys.

a - "Strained & Nighted Butt Cocks, 5/8 in." (FOVA 9635)

b - "Patent Brass Cock" (FOVA 7084)

c - "Small Brass Cock" (FOVA 10882)

d-e - Cock keys (FOVA 9924, 9864)

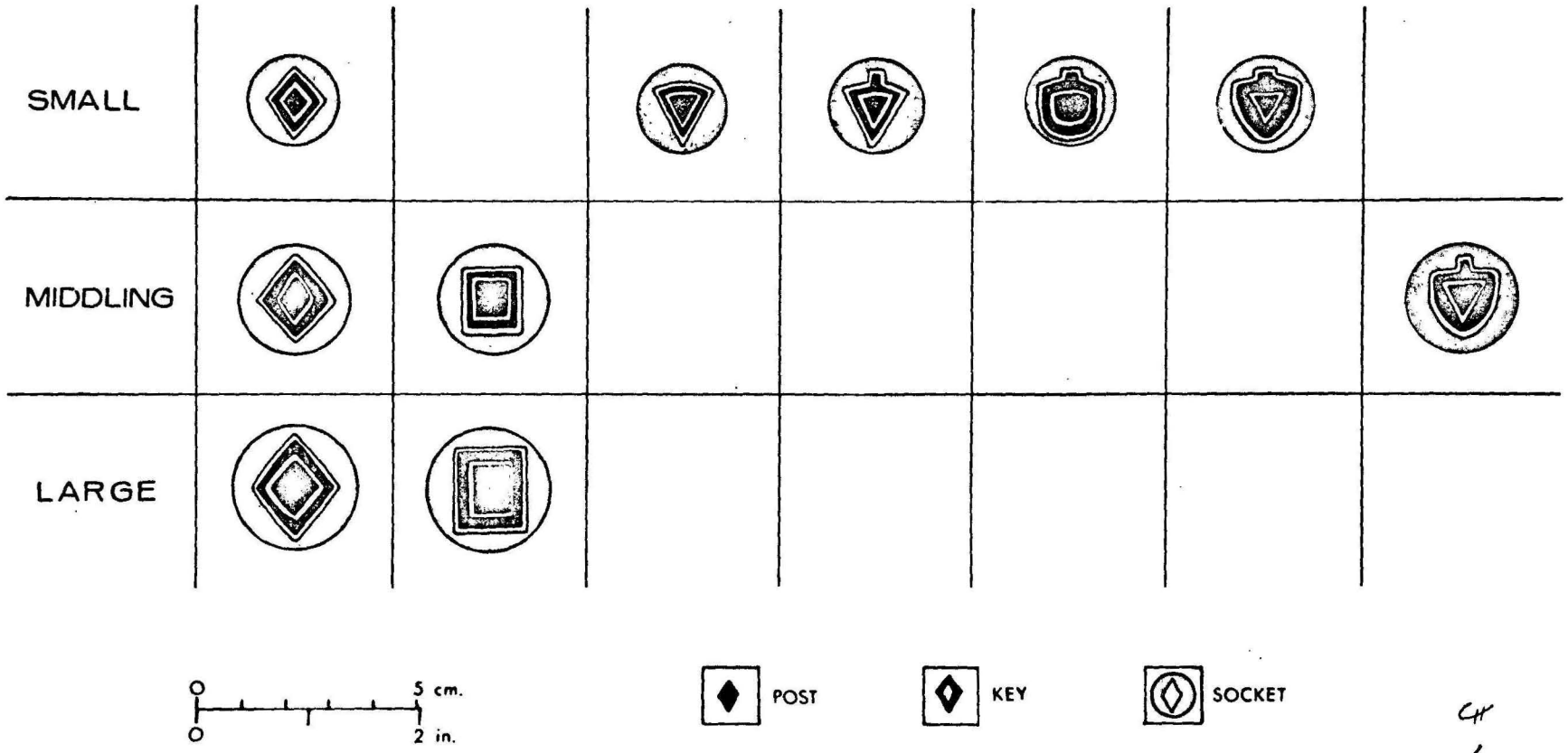


Fig. 36 - Post, key and socket shapes for brass cocks.

Fig. 37 - Miscellaneous household and weaponry items.

a - Iron handle (FOVA 9662)

b - Cast iron handle (FOVA 9055)

c-d - Bone-handled forks (FOVA 13224 & 11724)

e-f - Candle douters (FOVA 11289 & 13191)

g - Scissor or douter handle (FOVA 11219)

h - Lead tea or coffee pot lid handle (FOVA 12138)

i - Brass drawer pull (FOVA 10373)

j - HBC lead seal (FOVA 9486)

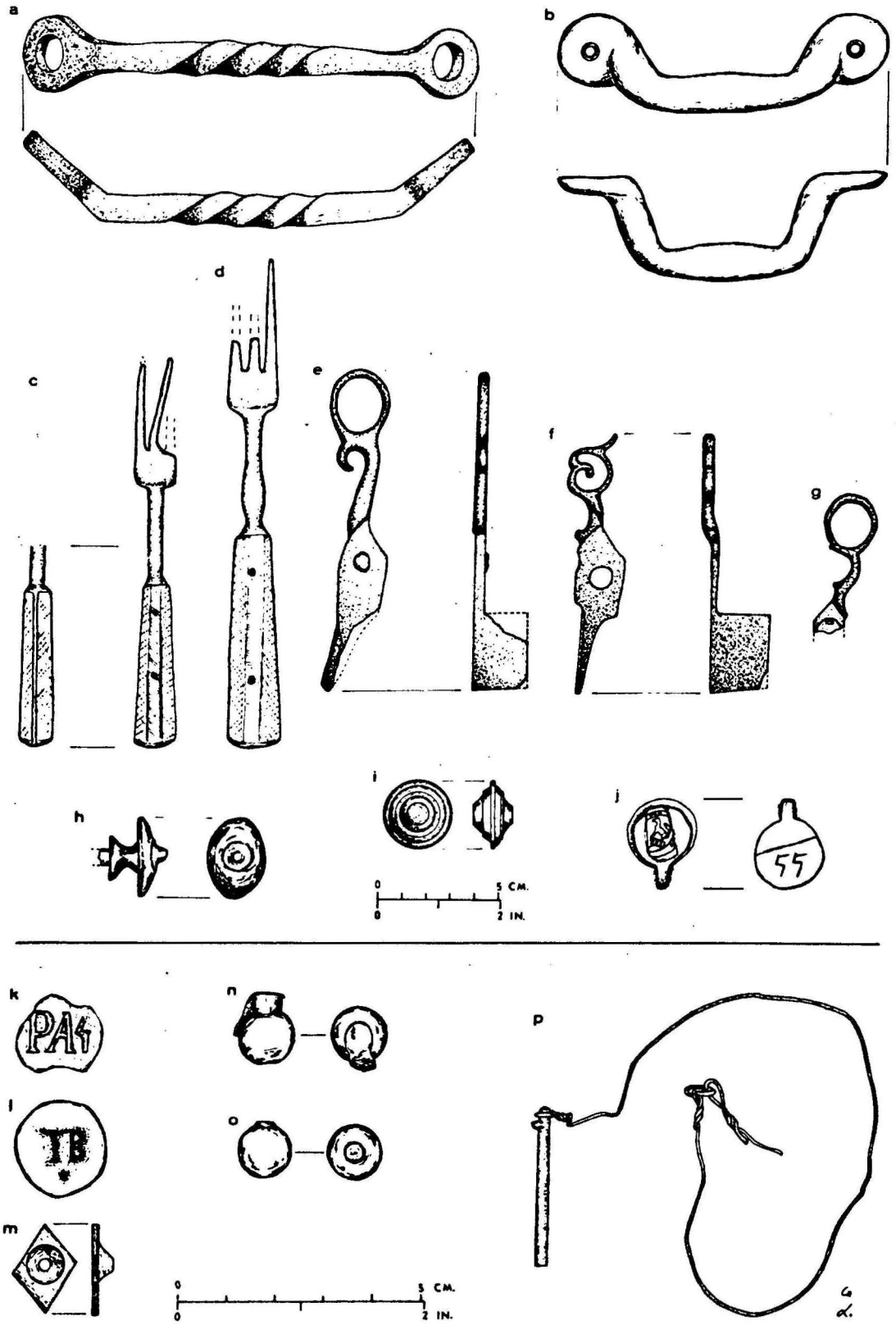
k - Lead seal (FOVA 10416)

l - Brass token (FOVA 12322)

m - Unidentified brass object (FOVA 8017)

n-o - Lead balls (FOVA 12796 & 9760)

p - USA cannon primer (FOVA 11824)


a
b
c
d
e
f
g
h
i
j
55
0 5 CM.
0 2 IN.
k
PA
l
TB
m
n
o
p
0 5 CM.
0 2 IN.

Container

One cylindrical metal container (FOVA 12793) was found with an inset soldered base and a hand soldered rolled side seam. The top shows no evidence of a lid, indicating that it was an open container. Such a container could have been utilized by both the HBC and USA.

Can Fragments

Of the 127 can fragments, 40 fragments are from 4 flat tobacco cans (FOVA 10068, 11059, 11691, 13507), and one beer can (FOVA 11844). The remaining 80 fragments were unidentifiable.

Lead Seals

Of the 16 lead seals found, there was one HBC seal (FOVA 9486) with scratch marks "/55" (Fig. 37j), one small seal (FOVA 10416) with an impressed "PAH" (Fig. 37k), and 14 unmarked seals. The HBC seal is complete, and pressed between both halves is a fragment of felt-like material such as might be found in blankets.

Miscellaneous Items

For comparative purposes the following items have been illustrated rather than described: iron handle (Fig. 37a); cast iron handle (Fig. 37b); candle douters (Figs. 37e-g); lead tea or coffee pot lid handle (Fig. 37h); brass drawer pull (Fig. 37i); and an unidentified decorative attachment (Fig. 37m).

Weaponry

Cartridges

Of the 24 cartridges found, 14 were 30-06 cartridges, 8 were 30-Krag rimmed cartridges, one was a 45-70 Government, and one an unidentified 30-caliber pistol or rifle shell. All cartridges found can be attributed to USA occupation.

Lead Bullets

Of the 2 lead bullets found, one was a .45-caliber steel jacketed pistol bullet (FOVA 2070) and the second may represent the remains of a .58-caliber "minie ball" (FOVA 11433). Both can be attributed to USA occupation.

Ball and Shot

Of the 190 specimens of ball and shot found, approximately 70% were lead shot, 9% lead buckshot, 20% lead ball, and 1% iron cannon shot or ball.

Measurable examples of lead shot totaled 104 specimens which clustered about 5 populations (Fig. 38 and Table 22). From the 1844 inventory of Fort Vancouver (Hussey 1972), there are 4 distinct shot sizes listed -- "Pigeon", "Duck #1", "Beaver A & B" and "Beaver AAA" shot. No correlation has yet been made between terms and archeological populations.

Thirteen specimens of lead buckshot were measurable and 3 populations were observed (Fig. 38 and Table 22). Historically, we know of 2 buckshot sizes used at Fort Vancouver, "Buck L. G. Shot" and "Buck S. G. Shot" but once again, no correlation has been made with the archeological populations.

Measurable examples of lead ball totaled 33 specimens which clustered about 7 populations (Fig. 38 and Table 22). During the middle 19th Century, most specimens of lead ball were probably intended for smoothbore muskets rather than rifles, and for this reason, reference to ball and weapon sizes will be given in gauge rather than caliber. Historically, we have secondary evidence for 6 types of firearms at Fort Vancouver during 1844: "Flintlock Pocket Pistols"; "Flintlock Duelling Pistols"; "Flintlock Fowling Pieces"; "Flintlock Muskets"; "Small Swivel Guns"; and "Brass Mounted Rifles". This last weapon may have been a percussion .42-.46-caliber muzzle loading rifle, and the "Small Swivel Gun" may refer to a 2-gauge mounted musket similar to the one from Ft. Nisqually (Russel 1967:79-80).

An examination of the lead ball populations found about the Chief Factor's House shows that 16, 24 and 28-gauge balls were present; and historically, the same 3 sizes of shot or shot molds were available in 1844. The common gauge of a 19th Century trade musket was 24-gauge, but 16 and 28-gauges were not infrequent (Hamilton 1960:142; Hanson 1955; Peterson 1956:170). The smaller gauge or caliber balls found have yet to be attributed to specific firearms, but presumably they could represent ammunition for rifles (.42-.46-caliber) and/or pistols (.38-.51-caliber). Casting sprues remained on a few specimens (Fig. 37n-o).

Five specimens of iron shot or ball were found in 3 sizes: 1/8 lb., 1/2 lb. (2), and 6 lb. (2). The 6-pound balls are probably specimens which were originally stacked in front of the Chief Factor's House, while the small balls represent grapeshot.

Table 22 -- Lead shot, buckshot, and ball populations.

Diameter		Gauge	Frequency	Designation
mm.	in. (caliber)			
2.4 - 2.5	.095 - .098	-	2	Shot* 7 1/2 & 7
2.9 - 3.4	.114 - .134	-	10	Shot* 6, 5, 4
3.8 - 4.0	.150 - .158	-	16	Shot* 2, 1
4.3 - 4.6	.169 - .181	-	5	Shot* 8, Air Rifle, BB
4.8 - 5.5	.189 - .217	-	71	Shot* BBB, T, TT, F
6.0 - 6.3	.236 - .248	-	5	Buckshot** 4, 3
7.5 - 7.7	.296 - .303	-	3	Buckshot** 1
8.0 - 8.6	.315 - .339	-	5	Buckshot** 0, 00
9.6 - 10.0	.378 - .394	76-80	5	?
10.6	.418	64	1	?
11.8 - 12.2	.465 - .481	42-46	4	?
13.0	.512	34	1	?
13.7 - 14.1	.540 - .556	27-29	6	28 Gauge Trade Gun
14.3 - 14.9	.563 - .587	23-25	15	24 Gauge Trade Gun
16.7	.658	16	1	16 Gauge Trade Gun

*Present day standard sizes (Logan 1959:171)
**American sizes (Dixie Gun Works, Inc. 1970:224)

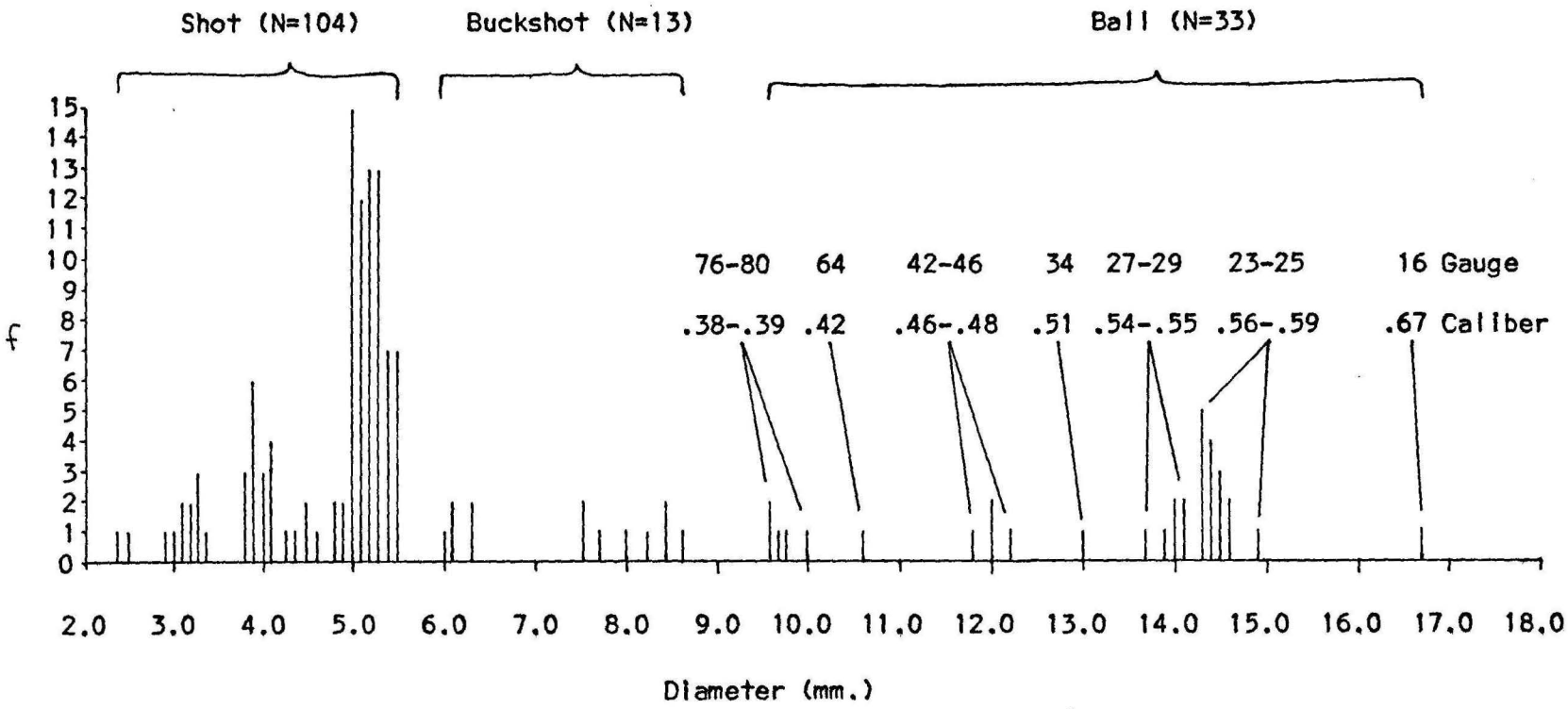


Fig. 38 - Lead shot, buckshot, and ball from the Chief Factor's Residence (N=150).

Percussion Caps

Three percussion caps (FOVA 11515) representing three distinct sizes were found. In the 1844 inventory of Fort Vancouver (Hussey 1972) there is no mention of different types or sizes of percussion caps, and presumably only one type was available at that time. What that type was cannot presently be determined.

Gun Parts

Five gun parts were found, four of which were from flintlock weapons; the fifth was a small trigger plate (FOVA 11896) possibly from a USA pistol. The flintlock parts included a hammer (FOVA 7810a), frizzen (FOVA 9688), main spring (FOVA 11456), and trigger guard (FOVA 12203).

Cannon Mount

One cannon mount, a trunnion plate (FOVA 9094), was found in front of the Chief Factor's House and probably came from one of the "spiked" cannons placed in this location by John McLoughlin.

Cannon Primer

One brass cannon primer (FOVA 11824) still attached to its brass wire was found (Fig. 37), and according to Caywood (1947:17), this would be a "...friction cannon primer of the period 1850-1860." We have assumed these primers to be USA period artifacts, but no positive references have been located.

Construction Material

Brick Fragments

Of the 7303 brick fragments recovered, 5083 were from imported bricks, 2198 from locally manufactured bricks, and 22 were not classifiable as to manufacturing locality.

All bricks recovered represent a molded type of brick (as opposed to an extruded type), and 8 distinct varieties have been defined on the basis of composition, method of manufacture and size. However, for purposes of description, each variety has been identified strictly on the basis of composition (Table 23).

Table 23 -- Identification of brick variety on the basis of comparative composition.

Attributes	Brick Varieties: Imported 1001	1002	Local 1003	1004	1005	1008	Unknown 1006	1007
Texture								
Clay			X			X		
Silt	X	X	X	X	X		X	
Sand	X	X		X	X			
Gravel								X
Inclusions								
Gravel	X		X		X	X	X	
Charcoal	X							
Macro-Silica Grains		X						
Clay Accretion				X				
Organic Matter			X					
Porosity								
Porous		X	X	X	X	X	X	
Non-Porous	X							X
Frequency	1233	3850	338	1852	6	2	5	17

Table 24 -- Paint color found on Variety #1002 imported brick fragments (color taken when moist).

Color (Munsell Designation)	Total
Lt. Yellowish Brown (10 YR 7/6)*	97
Lt. Greenish Yellow (2.5 GY 8/8)	55
Yellowish Green (7.5 GY 5/6)	6
Bluish Green (2.5 BG 5/6)	53
Lt. Green (7.5 G 6-7/4) over Lt. Yellow (5-10 Y 8.5/4-6)	162
Dk. Red (2.5 R 3/2) over Bluish Green (2.5 BG 5/6)	2
Grand Total	375

*Possibly a soil stained white paint

Imported Brick

In addition to the imported variety (#1001) of bricks discussed in our reports on the Bakery-Wash House area (Hoffman and Ross 1972:58-65) and the Harness Shop area (Hoffman and Ross 1973: 47-49), a second variety (#1002) has been identified for the Chief Factor's House. Variety #1001 (Figs. 39a-b) probably represents the firebrick ordered for the Fort's second bakery, while Variety #1002 (Fig. 39d) is a "common" construction brick which apparently was utilized as interior facing brick for fireplaces and chimneys. Three hundred seventy-five fragments of #1002 brick had one or two surfaces covered by at least six distinct colors of paint (Table 24). Those surfaces painted were primarily the thickness sides and secondarily the thickness ends.

Local Brick

The most frequent variety of local brick was Variety #1004 (Figs. 39h-k), which was probably used in the construction of the chimney. No paint was observed on these bricks, so they were probably used on either the interior of the fireplace or the exposed portion of the chimney above the roof line. This variety is smaller in width than the local brick found in the Bakery-Wash House area, and probably represents a second or post-1844 shipment from the Willamette Valley.

One fragment of Variety #1003 (Fig. 39g), which corresponds to the variety most frequently found in the Bakery-Wash House area, had the following impressed mark: "...lfont" or "...lpont".

Stone Items

Gun Flints

Sixteen gun flints of various sizes were found, and all but one have double bulbs of percussion on the back (Figs. 14c-e and g-h). One specimen (Fig. 14f), which is the smallest complete flint recovered, exhibits no bulbs of percussion on the back, and the heel and both sides are extensively retouched. Personal communications with Steve White (graduate student, Dept. of Archaeology, Univ. of Calgary) indicate that most, if not all, of our flints are of English origin.

Fig. 39 - Imported, local and unknown brick.

a-b - Imported, Variety #1001 (FOVA 7765)

c - Unknown, Variety #1006 (FOVA 7014)

d - Imported, Variety #1002 (FOVA 7080)

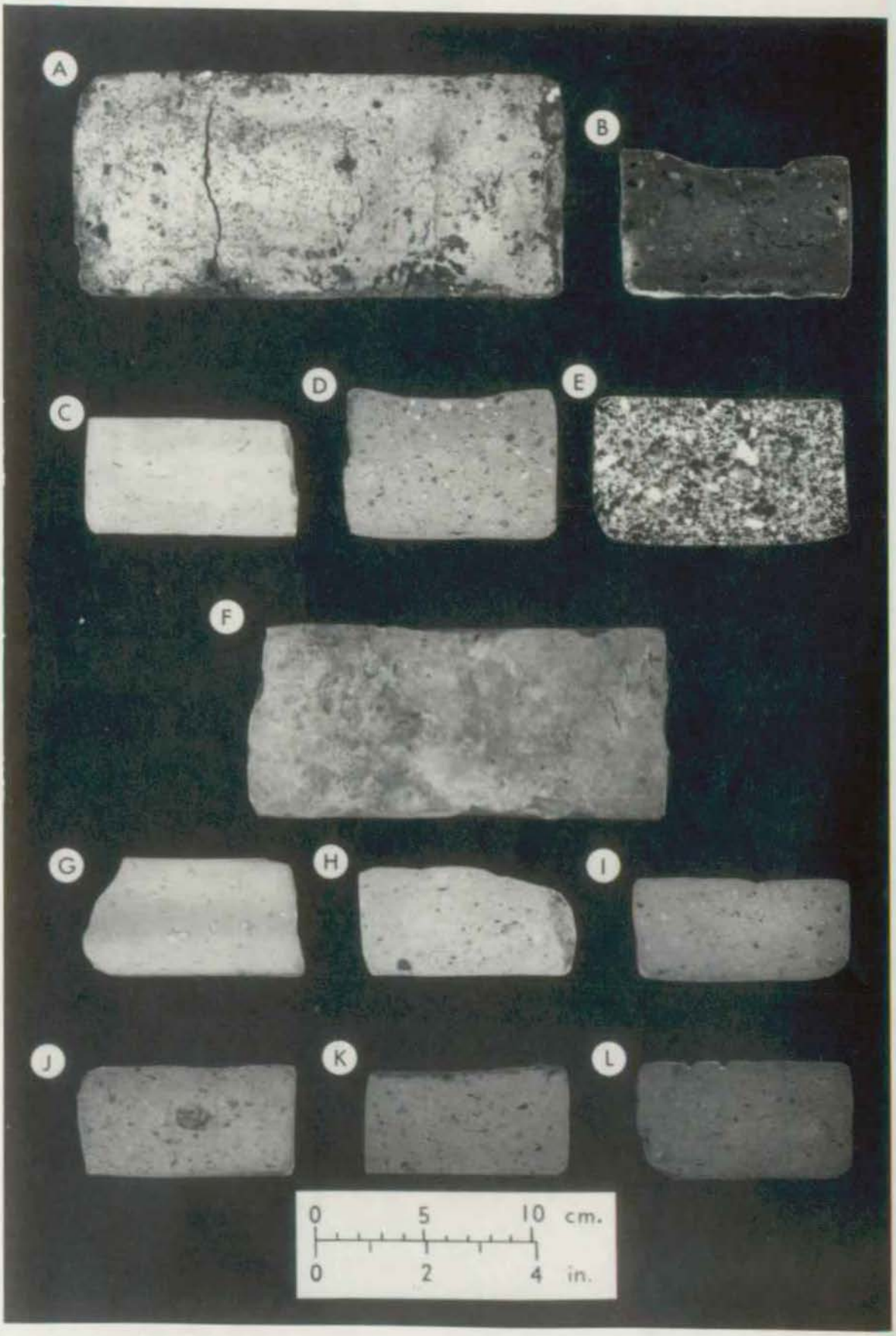
e - Unknown, Variety #1007 (FOVA 11845)

f - Local, Variety #1008 (FOVA 7109)

g - Local, Variety #1003B (FOVA 12286)

h-k - Local, Variety #1004 (FOVA 9946, 7109, 7109, 9616)

l - Local, Variety #1005 (FOVA 12748)


A
B
C
D
E
F
G
H
I
J
K
L
0 5 10 cm.
0 2 4 in.

Bone Items

Buttons

Of the 5 buttons recovered, there is only one style which comes in 2 sizes (Figs. 13j-k). This style is a flat, circular single-hole button.

Wooden Items

Unidentifiable Fragments with Paint

Three unidentified fragments of wood were found covered with a green (5 G 4/6 M) paint. This color is not the same as any of those identified for the brick found within the Chief Factor's House, but the color differences may be due to differential deterioration rather than differences in original paint color.

Shell Items

Buttons

Four shell button fragments were recovered representing 2 styles -- a small 4-hole button (Fig. 13l) and a large recessed 4-hole button (Fig. 13m).

Tortoise Shell Hairpin

One complete tortoise shell hairpin (Fig. 13n) was recovered.

IV - PRELIMINARY INTERPRETATIONS

Most of the structural remains detailed in this report have been interpreted piecemeal in the descriptive section (Chapter II). In this section, we add the evidence afforded by the portable artifacts to round out our interpretations of the structural remains.

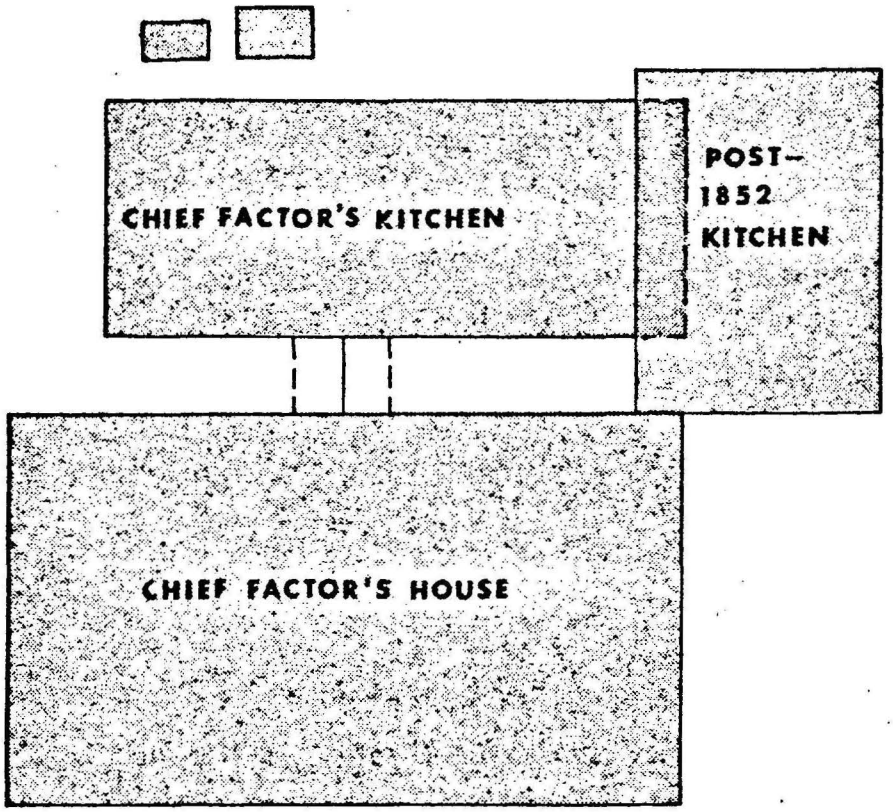
To briefly recapitulate the structural evidence, three closely spaced buildings were found, the Chief Factor's House, the Chief Factor's Kitchen, and the post-1852 Kitchen. For reasons not apparent to us, the Chief Factor's Kitchen was deliberately torn down sometime about 1852. A functionally similar structure that we term the post-1852 Kitchen was built abutting the northeastern corner of the House and slightly overlapping the former kitchen position (Fig. 40).

While we have no firm historic dating for the privies located north of the Chief Factor's Kitchen, we note that they are the only privies located close to the House and Kitchen. Thus, we infer the privies to be contemporary with the three major structures, and we include them in the plot of structural positioning (Fig. 40).

Structural evidence for the kitchens was sparse, while that of the House was relatively abundant. For purposes of discussion, we have prepared a schematic plan of the foundations and major surface features of the Chief Factor's House (Fig. 41). This plan shows remains symbolized as rectangular wooden footings, or circular wooden posts, based on their maximum plan dimensions. Where it could be done credibly, the symbols were aligned to the House axes and centered on the 40 by 70 ft. House plan. Porch and fence symbols were similarly aligned for clarity.

The schematic arrangement clearly shows most footing intervals in multiples of 2.5 ft. Footings at 10 ft. intervals mark positions of the primary, upright posts of the traditional post-in-sill style of construction. Intervening footings represent either additional uprights marking door positions, or repair footings. Those at 2.5 ft. intervals are strictly repair or replacement footings. As noted previously, porch supports are not as precisely spaced as House footings. However, there is excellent correspondence between the footings of the southern House wall and porch supports in their mutual north-south alignments.

From an archeological point of view, our schematic arrangement of the observation deck or southern porch extension is entirely conjectural. This arrangement is made to accomodate the historical



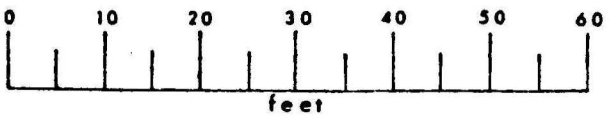
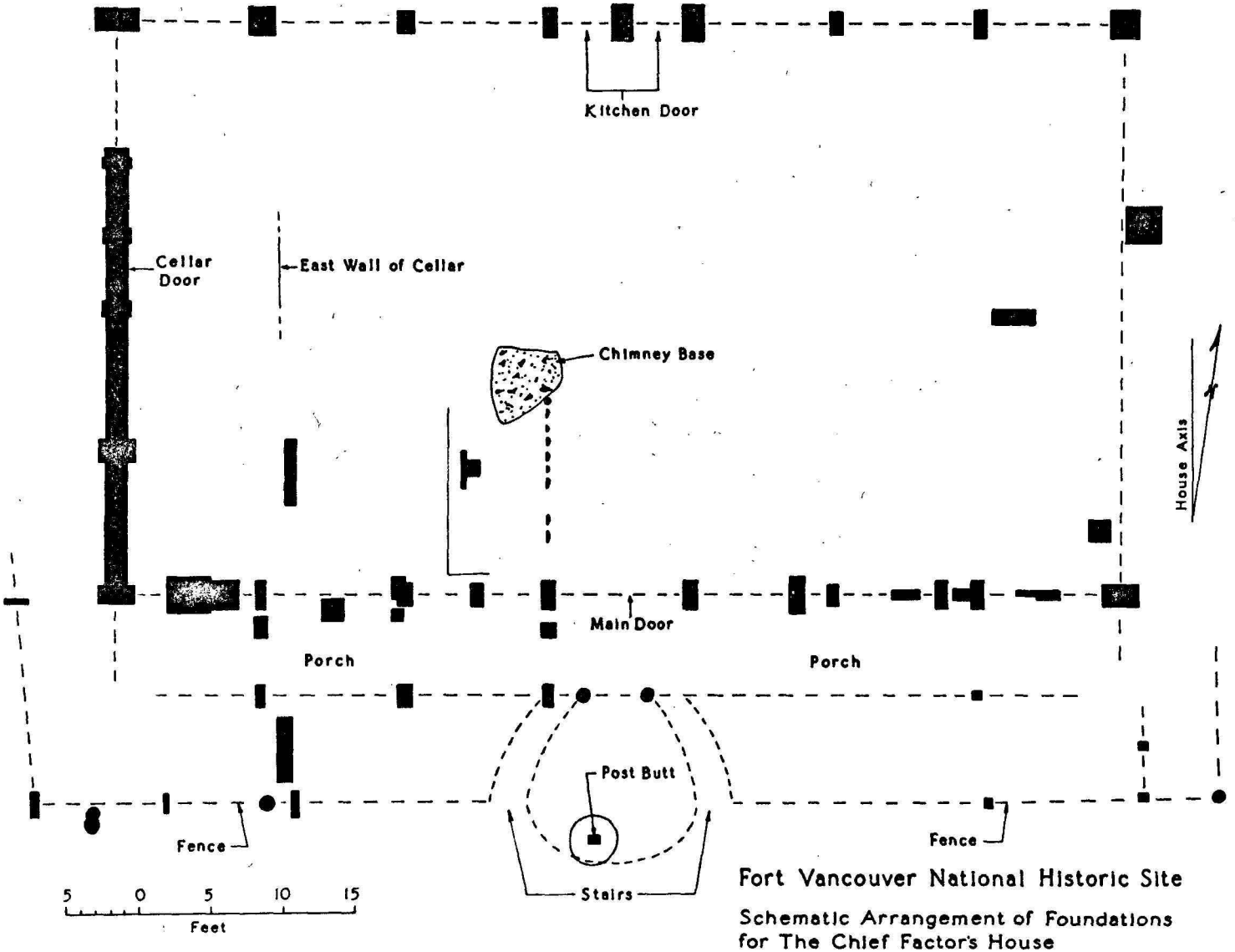


Fig. 40 - Structural positioning in area of the Chief Factor's House. Porch and fences not shown.



Fort Vancouver National Historic Site

Schematic Arrangement of Foundations for The Chief Factor's House

Fig. 41

evidence to the limited archeological remains. We have no ready explanation for the large post butt under the southern porch extension other than to note that it apparently aligns with an upright device historically known for the observation deck (c.f. Figs. 10 and 41). Speculatively, this device could be remains of a flagstaff, a bell mast, or even a small gun mount. Whatever its original function, it is impressively strong in its construction.

We note that the historic record clearly indicates replacement of the porch or gallery between May 1845 and September 1846 (Hussey 1972:102), although we are unable to sort out archeological evidence of this reconstruction. Evidently, new supports and footings, if such were used, were placed in the same positions as the old supports and footings. Reconstruction of the fence in front of the porch is evident from the various types and intervals of the fence supports, as well as the various fence lines (Fig. 41). Unfortunately, our schematic arrangement lends no aid in determining which fence line represents the 1845 period.

The symbols of Fig. 41 include the known eastern limits of the cellar as well as the offset chimney base. Also included are a probable collapsed floor joist and bases of probable joist props as found in both current and past excavations. The line of vertical puncheons or varmint barrier plotted from the records of past excavations is in exact alignment with footings of the northern and southern walls of the House. We note that the northern end of the barrier underlays the former southeastern corner of the chimney base. This apparent conflict has definite significance which we will bring out in our discussion of the chimney.

As stated, the basic construction of the Chief Factor's House was the Canadian or post-in-sill style. Sizable squared timbers were laid on the footings and joined at their corners to define the perimeter of the House. Since the footings were subsurface, the basal framing sills would appear as if they rested on the ground level at the time of use. Squared and grooved upright posts were mortised into the framing sills (occasionally through the sills), and the spaces between the uprights filled with horizontal squared pieces about 10 ft. long that were tenoned at their ends to fit the upright grooves (q.v. Hussey 1957:Pl. VIII). These filler pieces were coursed up about 5 or 6 ft. above the ground (Hussey 1972:105) at which point joists were added for the first floor. Evidently, the framing sills were prone to uneven settling in certain areas, as witness the presence of repair footings under the southern sill position and the varmint barrier under the first floor.

The overall construction of the House has been outlined elsewhere (Ibid.:104-120). There are no contradictions with the archeological data, and the general details need not be repeated here. We would add only that the support of the porch differed from that of the main House. A combination of archeological and historical data indicates that the south side of the porch was supported by upright timbers resting directly on individual footings, where footings were used. Framing sills were laid on top of the support posts at the approximate level of the first floor of the House. This stilt-like construction probably explains why the porch had to be replaced only 7 years after its initial construction.

Distributional Evidence

In the first report of this series, we introduced the concept of plotting frequency distributions of common artifacts as a technique of furthering our understanding of past human behavior within defined limits of time and space. In that application, we were primarily dealing with ex situ materials within a highly disturbed area (Hoffman and Ross 1972:68).

With the present report we are able to apply the techniques more rigidly since we are dealing with an area that is less disturbed, although far from intact. The temporal and spatial dimensions of the following frequency distributions are succinct. Time consists solely of the Hudson's Bay Company level and component features as stratigraphically recognized in the field during excavation. HBC materials recovered from the Vancouver Barracks level are included in the descriptions of Chapter III and Appendix I, but they are not used for plotting frequency distributions. The space defined for this analysis consists of the total excavated area shown on Figs. 1.1-1.2, minus USA intrusions. While our plots are slightly skewed by selected artifact removal during previous archeological explorations, the total volume of past excavations in the area is far less than that of current operations (c.f. Figs. 1.1-1.2; Caywood 1955:sheet 9 of map 2). We believe the distributions of this report to be more credible than any previously used in this series.

One additional qualification is necessary. Cultural materials found in and around the kitchens, as well as outside the House, are assumed to be direct or near-direct depositions as found in the HBC level. In other words, site disturbance is held to be minimal in the HBC level. Materials found inside the perimeter of the House are another matter. As we have seen, the first floor of the House was raised some 5 or 6 ft. above surface at time of use. Therefore, only materials functionally associated with

subfloor activities, as will be brought out, can be credibly assumed to be directly or nearly directly deposited within the House.

Figs. 42 through 55 illustrate frequency distributions of the more common cultural materials found. For the most part, these are also the materials most significant to an understanding of the construction, furnishing, and use of the three major buildings. Outlines of the House and kitchens are superimposed on the distributions for clarity of presentation.

Window Glass

Distribution of window glass indicates high frequencies around the walls of the Chief Factor's House and Kitchen (Fig. 42). From this, we infer the presence of glass windows in all 4 walls of the House. Positions of these windows in 2 walls is known from historic sources (Fig. 10), and additional positions are detailed in our discussion of the House plans. Densities of window glass also suggest the presence of windows in the north and south walls of the Chief Factor's Kitchen. Windows may have also been present in the western and eastern walls; the east wall situation is complicated by the overlap of the post-1852 Kitchen and the probable presence of windows in the west wall of the latter building.

A very high density exists immediately east of the passage connecting the Chief Factor's House and Kitchen. Since most of this area was taken up by a USA intrusion, the actual density of window glass in this spot is far higher than raw figures indicate. While the spot is a point of contact for the 3 buildings, the density is too high for normal distribution. Rather, this area represents a deliberate dumping spot. As will be seen in the distributions of other fragile items, the area adjacent to the passage was heavily used for trash disposal. Most likely, this disposal stems from the normal collection of broken objects in the House and Kitchen, and simply throwing the objects out of the doors.

Brick

Three types of brick are plotted for frequency distributions. Brick Variety #1001 is an imported firebrick of probable British manufacture that we also dealt with in the 1845 period Bakery and Harness Shop area. Its highest density centers on the cooking facility of the Chief Factor's Kitchen and immediately southwest (Fig. 43). It is evident that the facility was largely, if not wholly, built of this brick variety. Another density of this type is present slightly west of the north-south axis of the Chief Factor's Kitchen

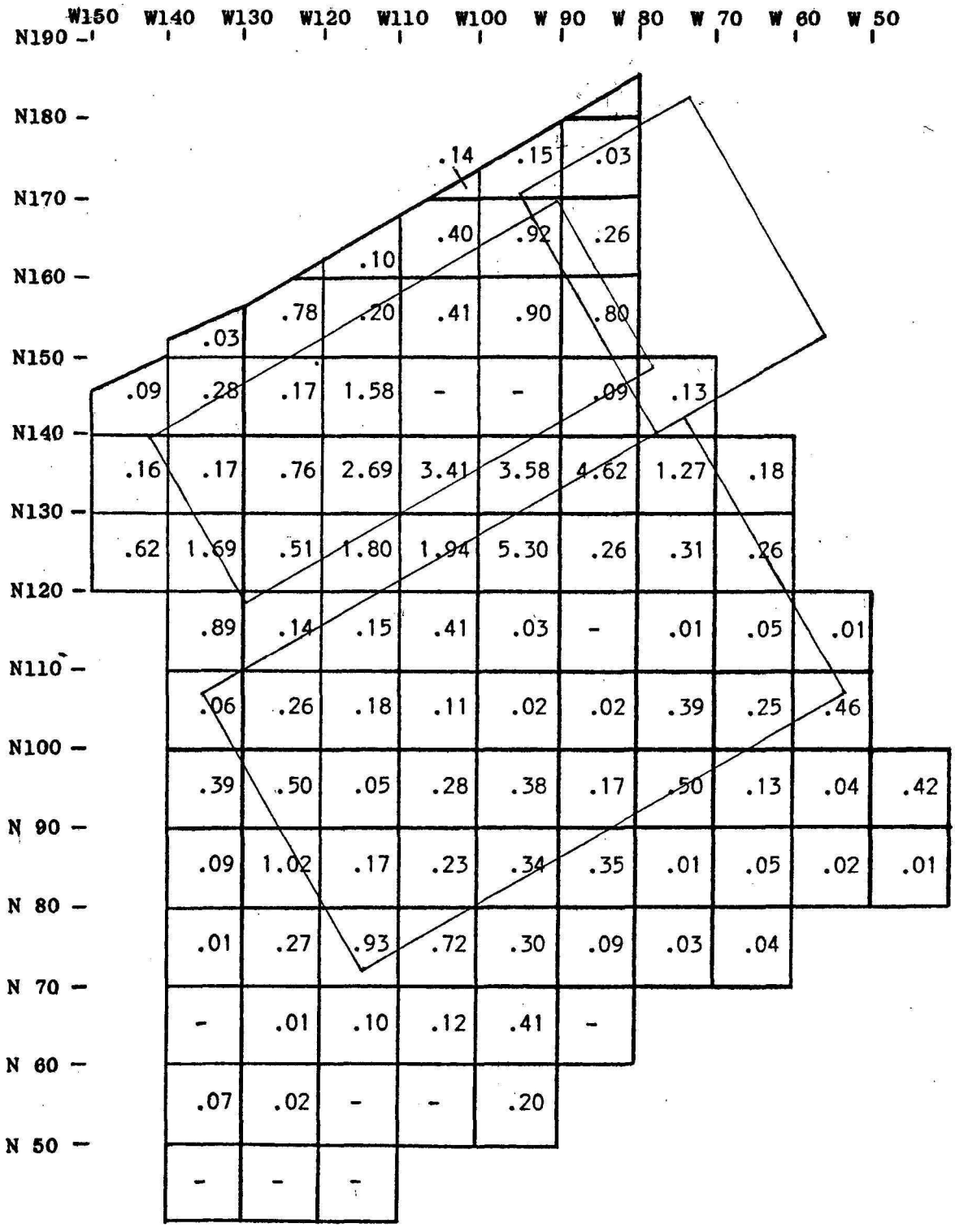


Fig. 42 - Relative frequencies of window glass fragments (f/ft^3).

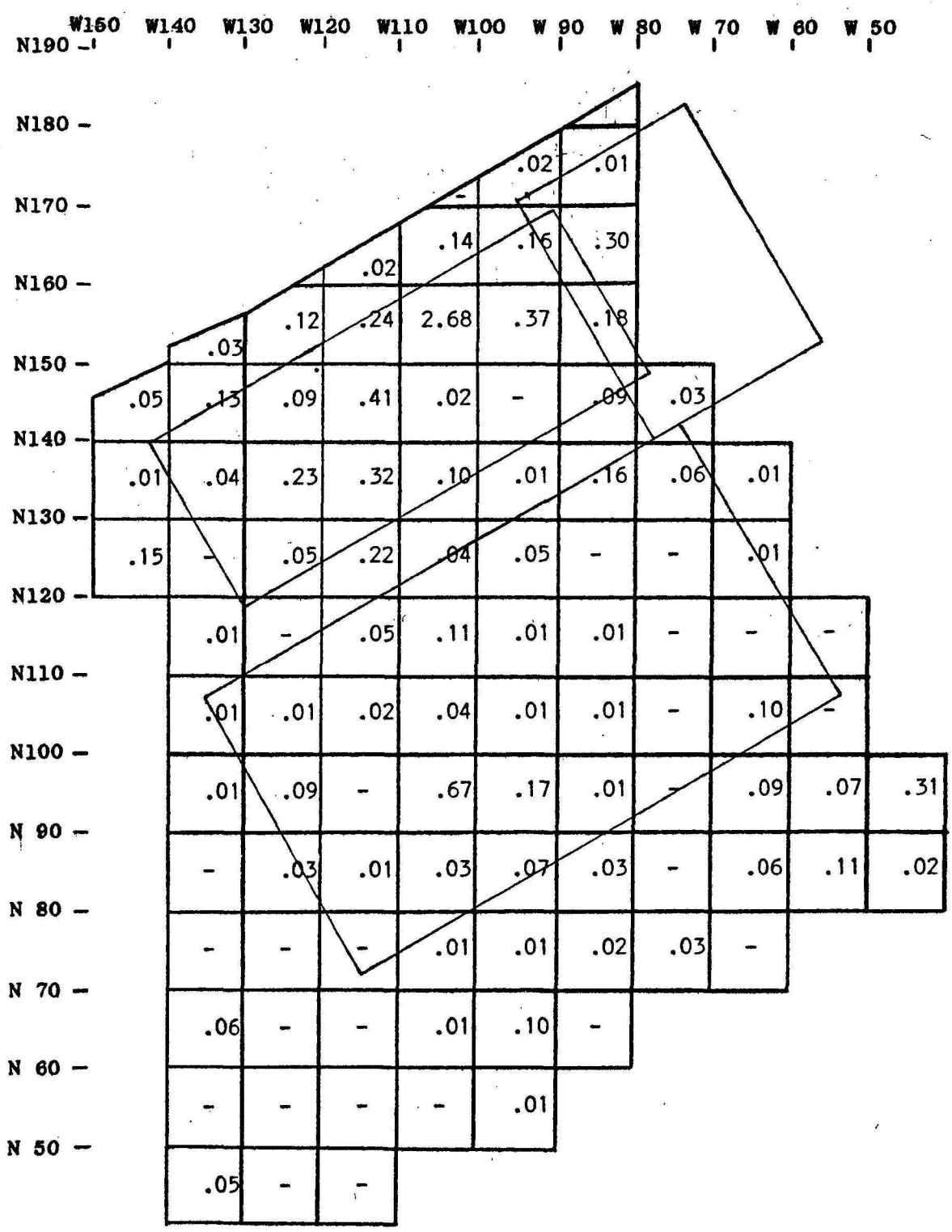


Fig. 43 - Relative frequencies of imported brick (#1001) fragments (f/ft^3).

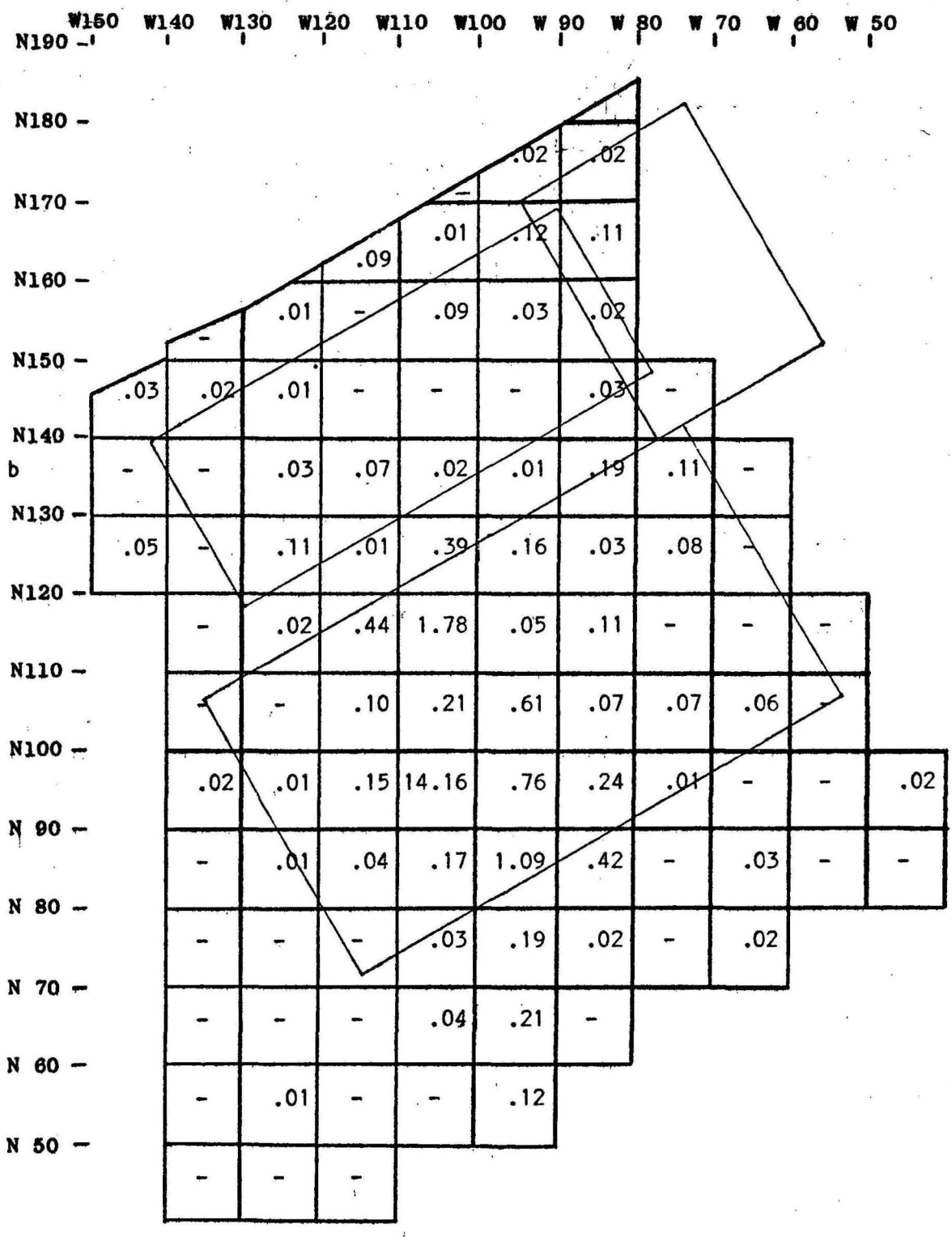


Fig. 44 - Relative frequencies of imported brick (#1002) fragments (f/ft^3).

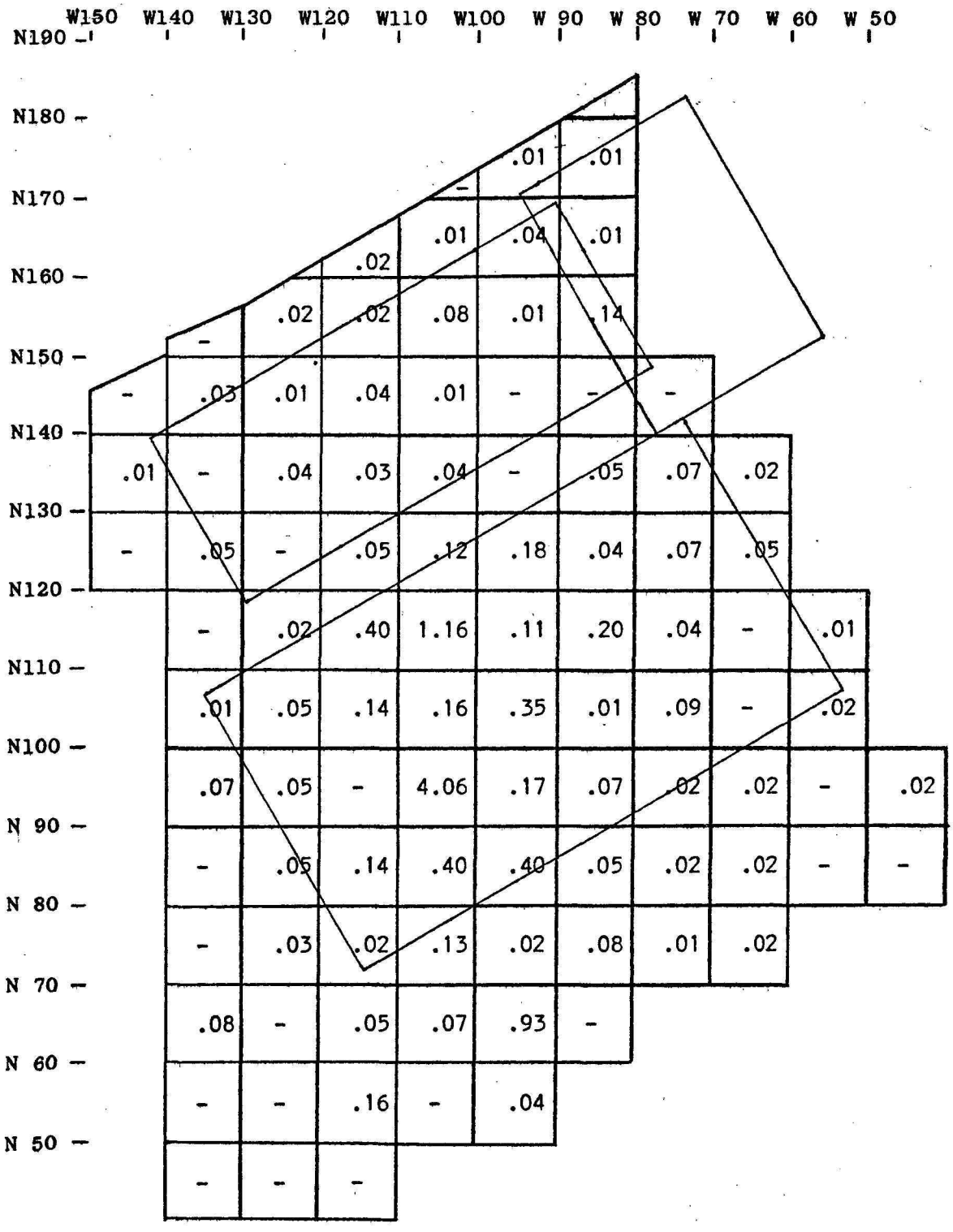


Fig. 45 - Relative frequencies of local brick (#1004) fragments (f/ft^3).

and probably represents destruction of the cooking facility. Brick Variety #1001 was also used to some extent in the chimney of the Chief Factor's House as indicated by a high density immediately west of the chimney base (Fig. 43).

Densities of imported Brick Variety #1002 and local Brick Variety #1004 center about the chimney base of the House (Figs. 44, 45.). It is evident that the chimney was primarily composed of these 2 varieties. As noted in Chapter II, Brick Variety #1002 is a facing brick while Variety #1004 appears to be a lining brick received from the Willamette Valley in 1844 or later.

Coral

Based on our past observations of masonry at Fort Vancouver, we know coral to represent degraded remains of lime compounds used for mortar and plastered surfaces. This is Hawaiian coral brought in as ships' ballast and incompletely reduced for lime somewhere in the vicinity of the Fort (Hussey 1957:163; Hoffman and Ross 1973:17).

Coral has its highest frequency centering about the cooking facility of the Chief Factor's Kitchen, while very little is present around the chimney base of the House (Fig. 46). Yet a great deal of mortar must have been used in the chimney. Apparently, Fort personnel were more selective or efficient at producing mortar for the chimney, or this material adhered to the chimney brick that was largely salvaged after 1860.

Another high frequency of collected coral associates with the floor of the post-1852 Kitchen which is composed of incompletely reduced coral. This has been discussed previously (Hoffman and Ross 1972: 57).

There is an anomalous high frequency of coral at the southeastern corner of the Chief Factor's House and fence. This appears to associate with a small, limed surface located about midway on the eastern length of the southern fence (Fig. 3.6). We have no ready explanation for this situation. Another inexplicable density of coral occurs south of the House chimney base, although the real frequency is quite low (Fig. 46).

Coal

The highest frequency of coal centers about the cooking facility of the Chief Factor's Kitchen (Fig. 47). Either the facility was fired with coal or its position was used as a coal dump after the destruction of the Kitchen. In a previous report (Hoffman and Ross 1973:62), we deduced the post-1852 Kitchen to have a large, coal-fired stove.

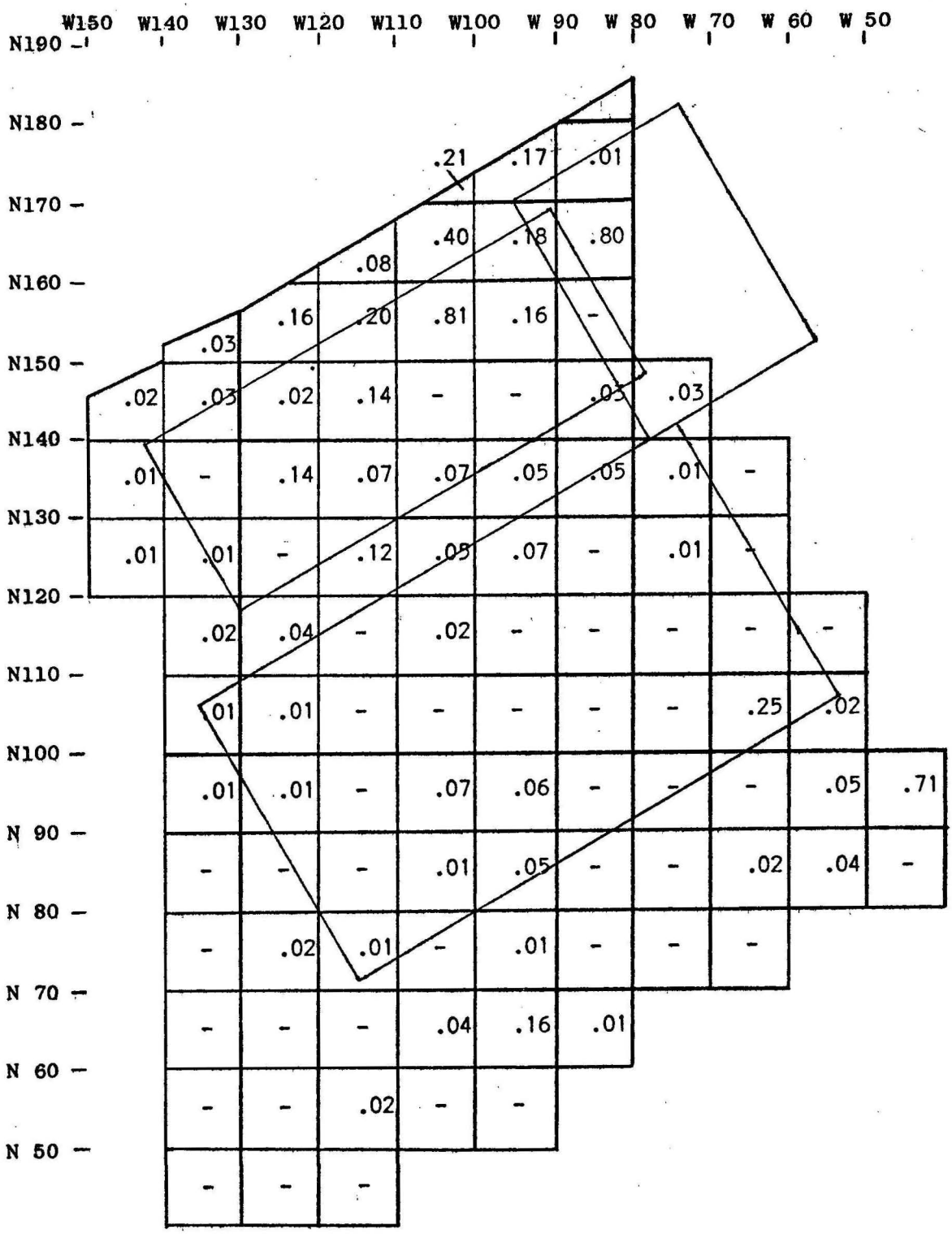


Fig. 46 - Relative frequencies of coral fragments (f/ft^3).

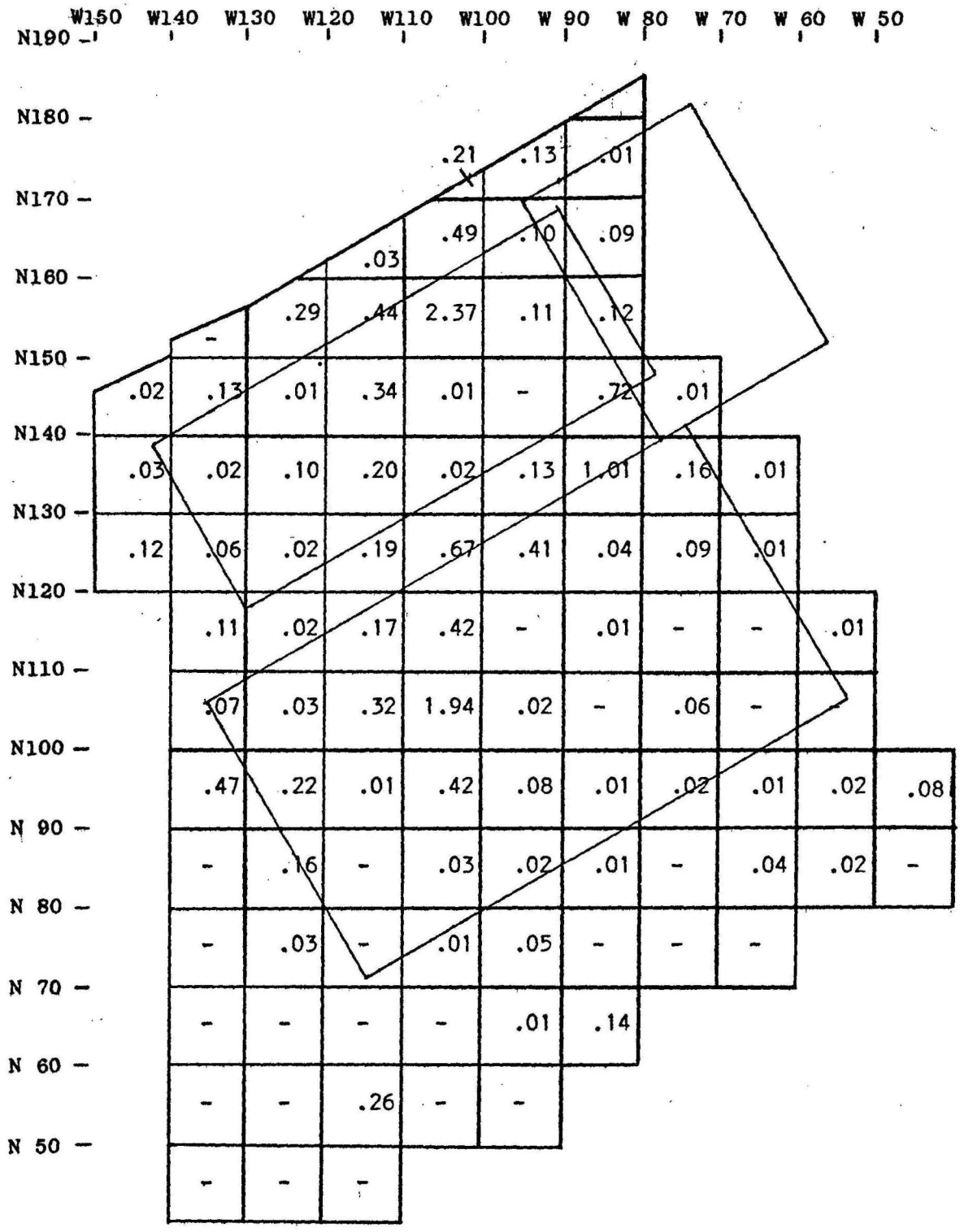


Fig. 47 - Relative frequencies of coal fragments (f/ft^3).

There is an S-shaped distribution beginning at the west wall of the post-1852 Kitchen, proceeding through the north-central wall of the House, and continuing south to the west side of the chimney base. This may be only a blending of 2 coal storage areas, one outside the post-1852 Kitchen and the other at the eastern extremity of the storage space under the House. Storage under the House is definitely indicated by a small density that straddles the western wall of the House at about the cellar door (Fig. 47).

Nails

Patterning of forged and cut nail densities are not readily explicable (Figs. 48, 49). There seems to be a loose association with areas of reconstruction such as the Chief Factor's porch and southern fence line. There is a definite patterning at the cellar door of the House. The highest frequencies are in the Chief Factor's Kitchen, although serious gaps in that distribution prevent ready observations of patterning. Nail densities in this area may again reflect trash disposal around the passage between the House and Kitchen, as well as the west wall of the post-1852 Kitchen.

Forged nails are more widely distributed and more frequent than cut nails (Figs. 48, 49). Definite size differences obtain between the 2 varieties (Fig. 29). As noted in Chapter II, the most frequent forged nails are Rose 3d - 7 inches, Clout 9d - 6 inches, and Rose flat-point 12d - 8 inches. Most of these are large nails that we believe were used for heavy framing and timber work. Their high frequencies in the Chief Factor's Kitchen reinforces the historical inference that this building was constructed in the usual Canadian, post-in-sill style (Hussey 1972:175-176).

The most frequent cut nails are Clasp 3d - 10d, Shingling 4d, and Common 4d - 40d. Both large Clasp and Common are multi-use, "common" nails. As previously discussed, smaller Clasp nails, specifically the 4d size, are for shingling and possibly sheathing purposes.

Ceramics

Unusually high densities of broken ceramics are present around the west and north sides of the passage between the House and Kitchen (Fig. 50). High frequencies are also noted along the west wall of the post-1852 Kitchen, as well as at the cooking facility and the southwestern sector of the Chief Factor's Kitchen. Some of these frequencies are understandable in terms of daily behavior; that is, the dropping of dishes during the transit of food from kitchens to house, or the breakage of tableware and containers while preparing meals at the cooking facility. This seems validated

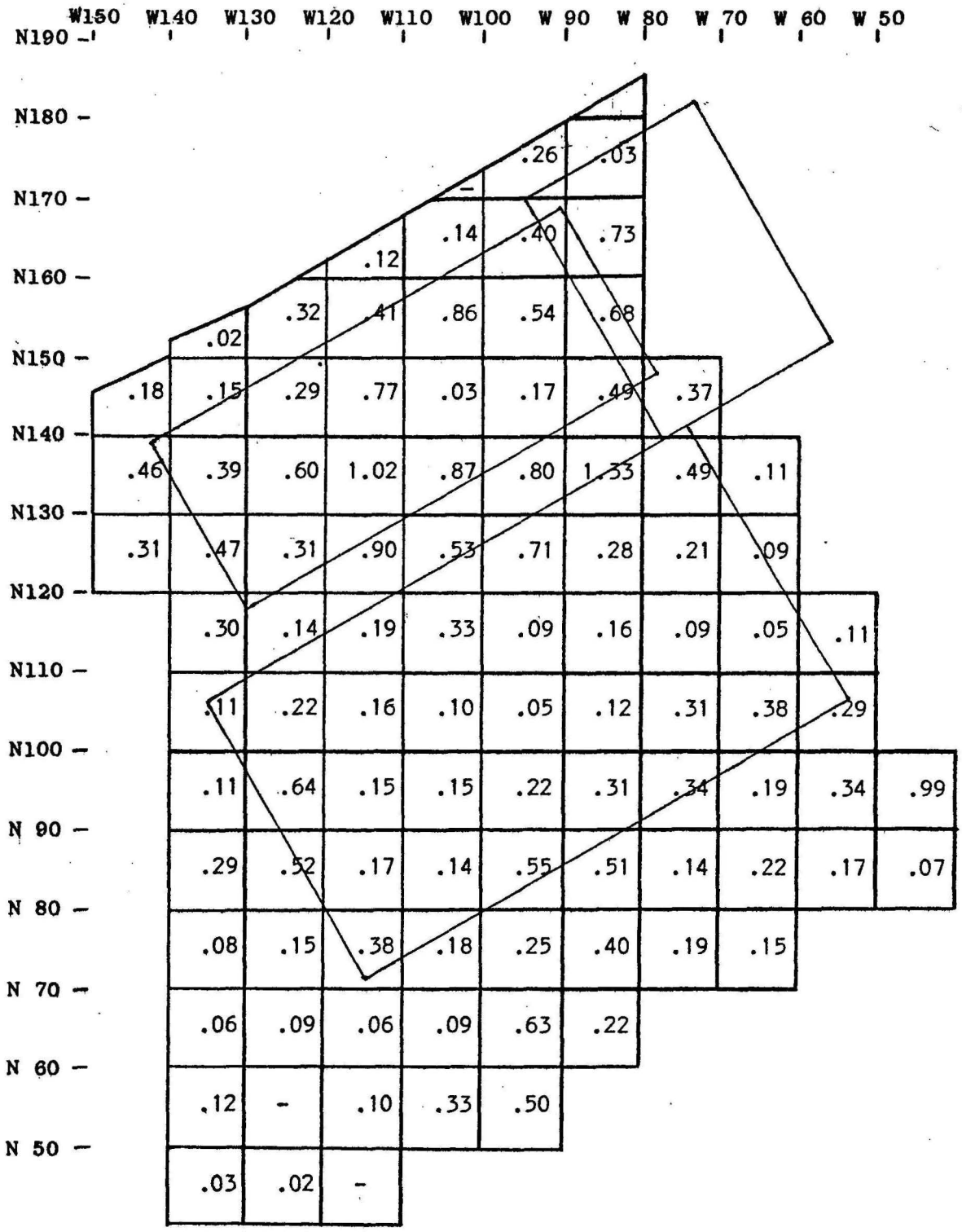


Fig. 48 - Relative frequencies of hand forged nail fragments (f/ft^3).

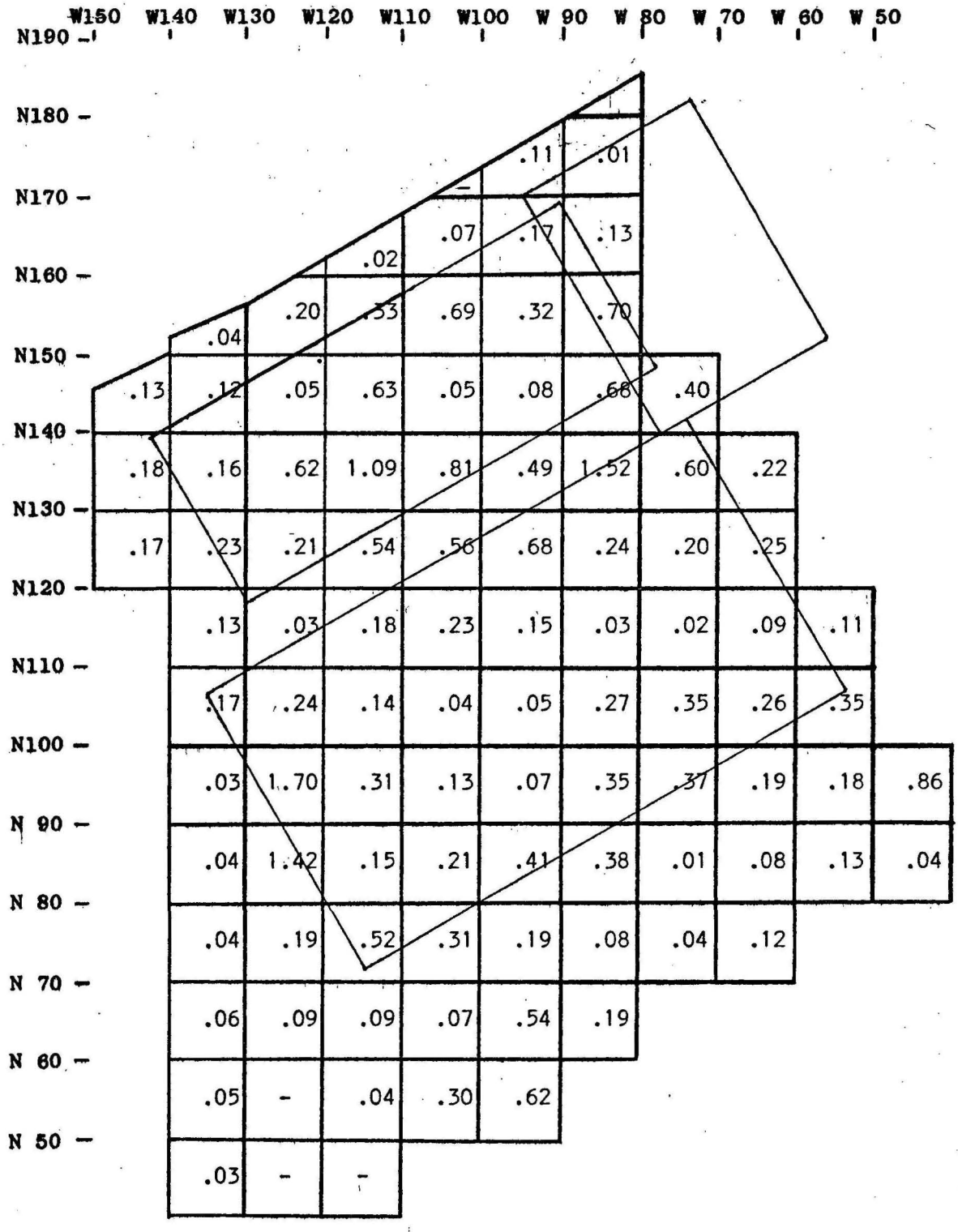


Fig. 49 - Relative frequencies of machine cut nail fragments (f/ft^3).

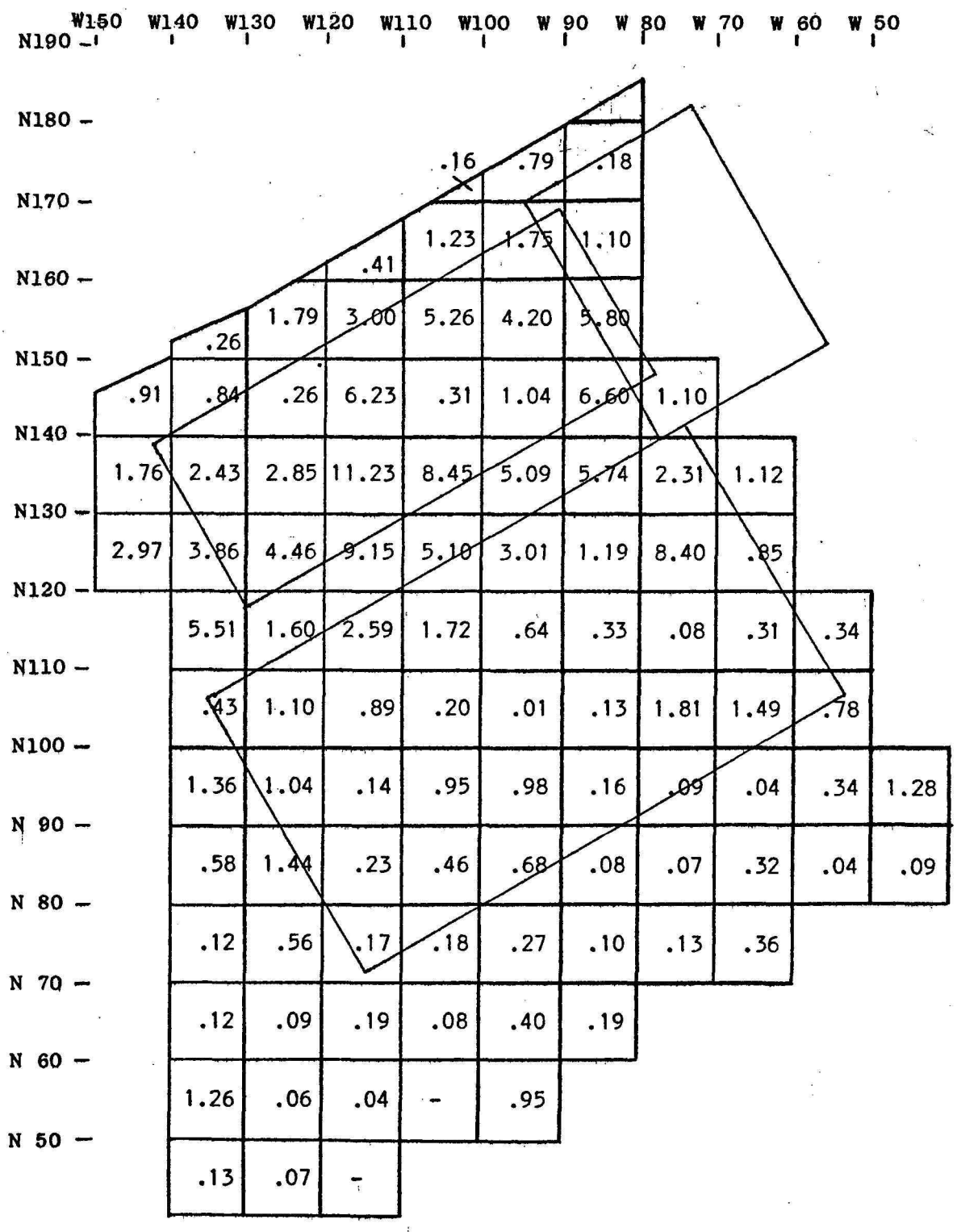


Fig. 50 - Relative frequencies of ceramic ware fragments (f/ft^3).

by the fact that most of the ceramics we reconstructed from this area were found either west of the passage or around the cooking facility.

However, frequencies at certain areas are so high as to indicate deliberate trash disposal. This seems particularly so around the passage and north of the cooking facility where high frequencies of window glass are also present. If the indications of trash disposal are valid, the passage between the Chief Factor's Kitchen and House was not walled (although probably roofed); otherwise trash could not be easily thrown from the passage or the doors of the 2 buildings. Also it is quite likely that there was a door in the north wall of the Chief Factor's Kitchen. Otherwise we must assume that kitchen personnel flung trash out of the north wall windows -- an unlikely prospect.

At this point, the location of the privy pits north of the Chief Factor's Kitchen is relevant (Fig. 39). Earlier in this chapter, we noted that these privies are the only ones ever found adjacent to the House and Kitchens, and as such, they must be contemporary with House and Kitchens. Historic sources indicate only a single door in the Chief Factor's Kitchen, that being the north end of the passage connecting House and Kitchen. This single access would seem rather clumsy for kitchen personnel using the privies. Moreover, it does not explain the trash disposal along the north wall of the Chief Factor's Kitchen. While we have no direct evidence from the latter structure, we believe the positions of the privies in combination with trash disposal patterns strongly suggest a surface level doorway in the north wall of the Chief Factor's Kitchen. The same combination of factors argue for a surface level doorway in the west wall of the post-1852 Kitchen. We note the abundant recovery of reconstructable ceramics from the privy pits during previous explorations (Caywood 1955:24). Whether these materials originally came from the House or the post-1852 Kitchen, their depositions clearly indicate continued use of the area along the Stockade for trash disposal.

Bottles, Tumblers, and Stemmed Glassware

Predictably, the highest density of this category occurs in the cellar of the House and lessens in an easterly direction that coincides with the storage space under the House (Fig. 51). Most of the material recovered from the cellar and storage space consisted of bottle fragments. By 1853 at the latest, the Chief Factor's House was described as "...with extensive cellars beneath for storage of wines and spirits." (Hussey 1972:96.) Considering the structural evidence, the storage space was most likely part of

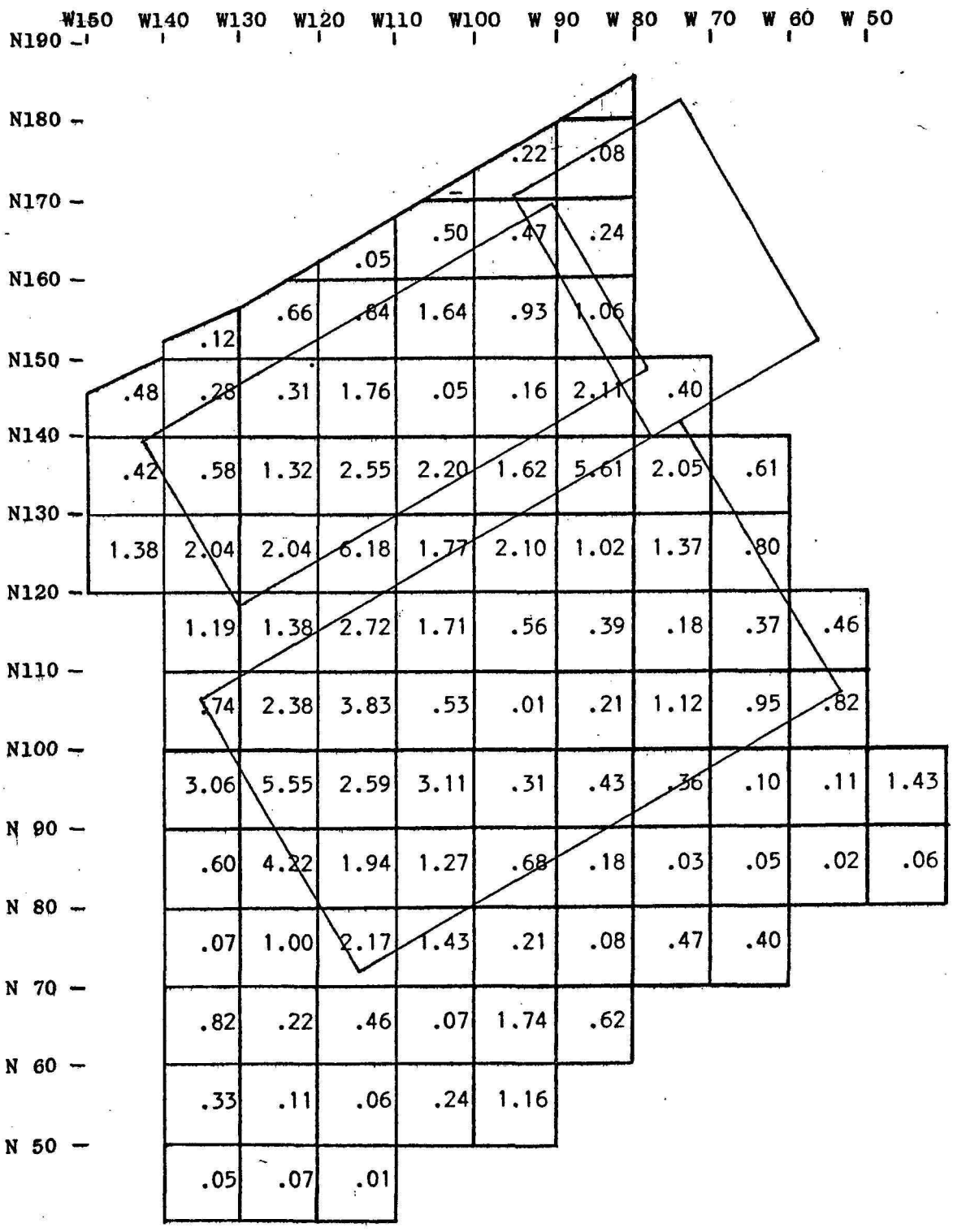


Fig. 51 - Relative frequencies of bottle, tumbler and stemmed glassware fragments (f/ft3).

the original house construction and thus pertinent to the 1845 period. The storage space and its contents will be discussed further.

Culinary glassware also occurs in high densities on either side of the passage between the Chief Factor's House and Kitchen (Fig. 51). This is additional evidence of trash disposal in the area. There is a smaller but well-defined density along the southern length of the west wall of the post-1852 Kitchen. This is the area where the west wall of the late Kitchen abutted the northern wall of the House, and trash disposal in this spot may indicate that the late Kitchen door was in the center of its west wall.

Beads

Glass beads were plotted for frequencies because of the large number recovered. The only real density corresponds to the trash disposal area between the Chief Factor's House and Kitchen (Fig. 52). The highest part of this density is at the interior of the Kitchen door and along the southern wall of the Kitchen. This may have some relationship to the location of the living quarters historically inferred for the upper floor of the Kitchen. Frequencies of beads recovered from other areas of the HBC level are too low for interpretation.

Bone

The large amount of faunal remains recovered from the HBC level has yet to be identified. However, field observations indicate this material to be primarily ungulates and aves which we assume to be culinary remains. As expected, the highest density of bone centers on the cooking facility which is the logical point of meal preparation (Fig. 53). However, sizable densities are also present along the entire east-west axis of the Chief Factor's Kitchen including the area outside the west wall. Smaller areas of high density occur around the passage and along the west wall of the post-1852 Kitchen. These densities further validate our identification of trash disposal areas.

Shell

As stated above, faunal remains have yet to be identified. Field observations indicate this material to be primarily oyster and therefore culinary remains. The highest density again centers at the point of meal preparation, the cooking facility (Fig. 54). This density trails off to the southwestern sector of the Chief Factor's Kitchen and, to a lesser extent, to the northeast.

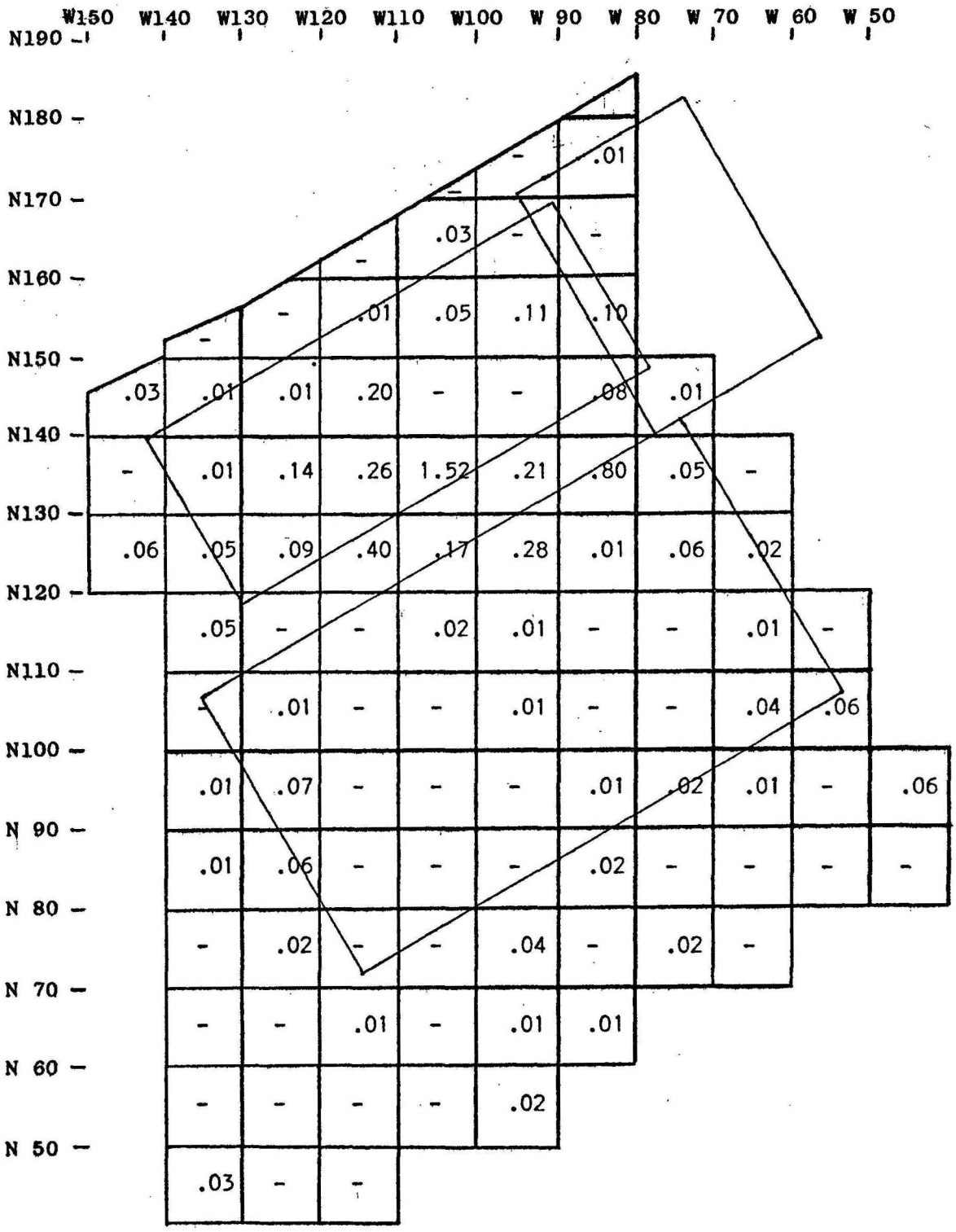


Fig. 52 - Relative frequencies of beads (f/ft^3).

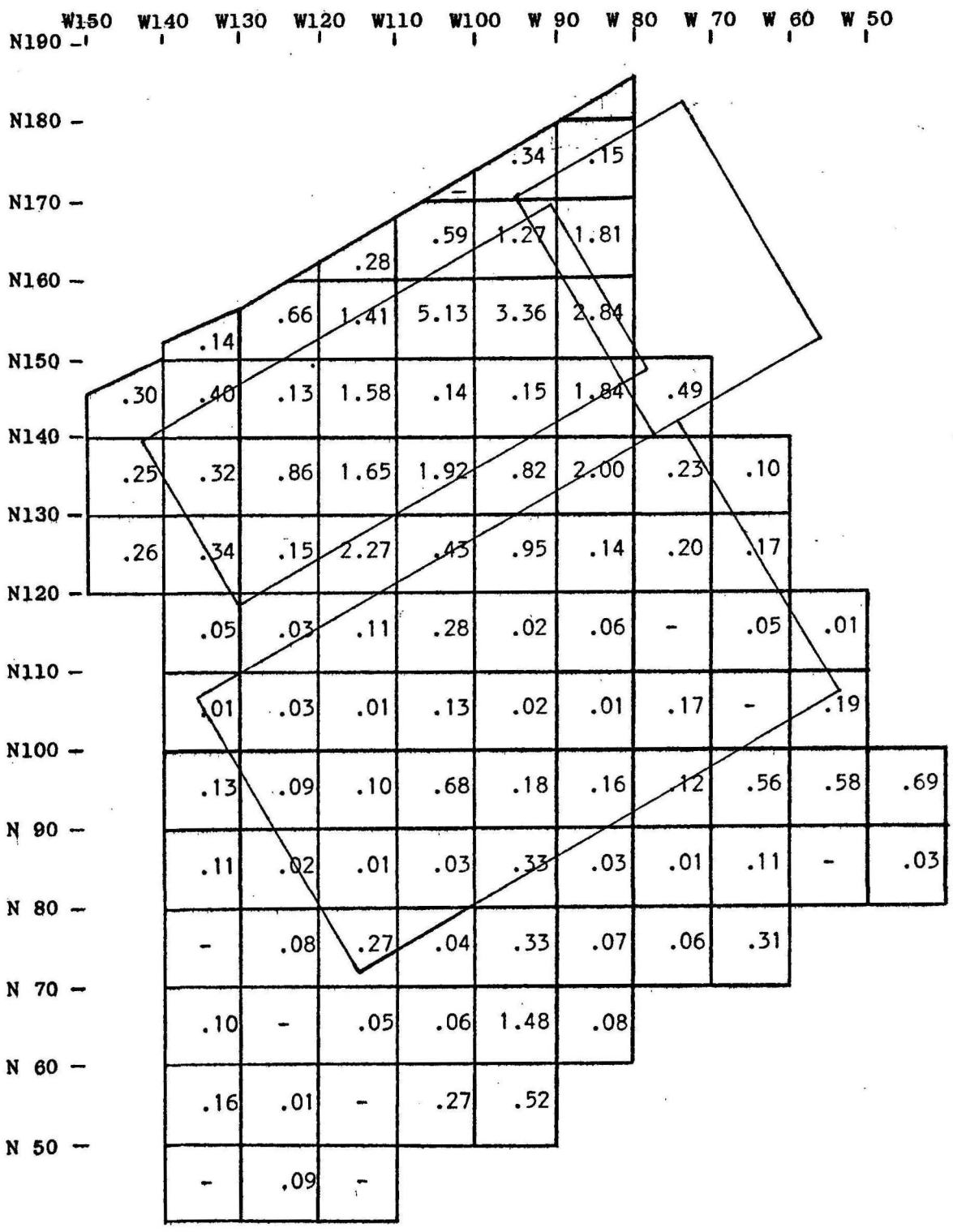


Fig. 53 - Relative frequencies of bone fragments (f/ft^3).

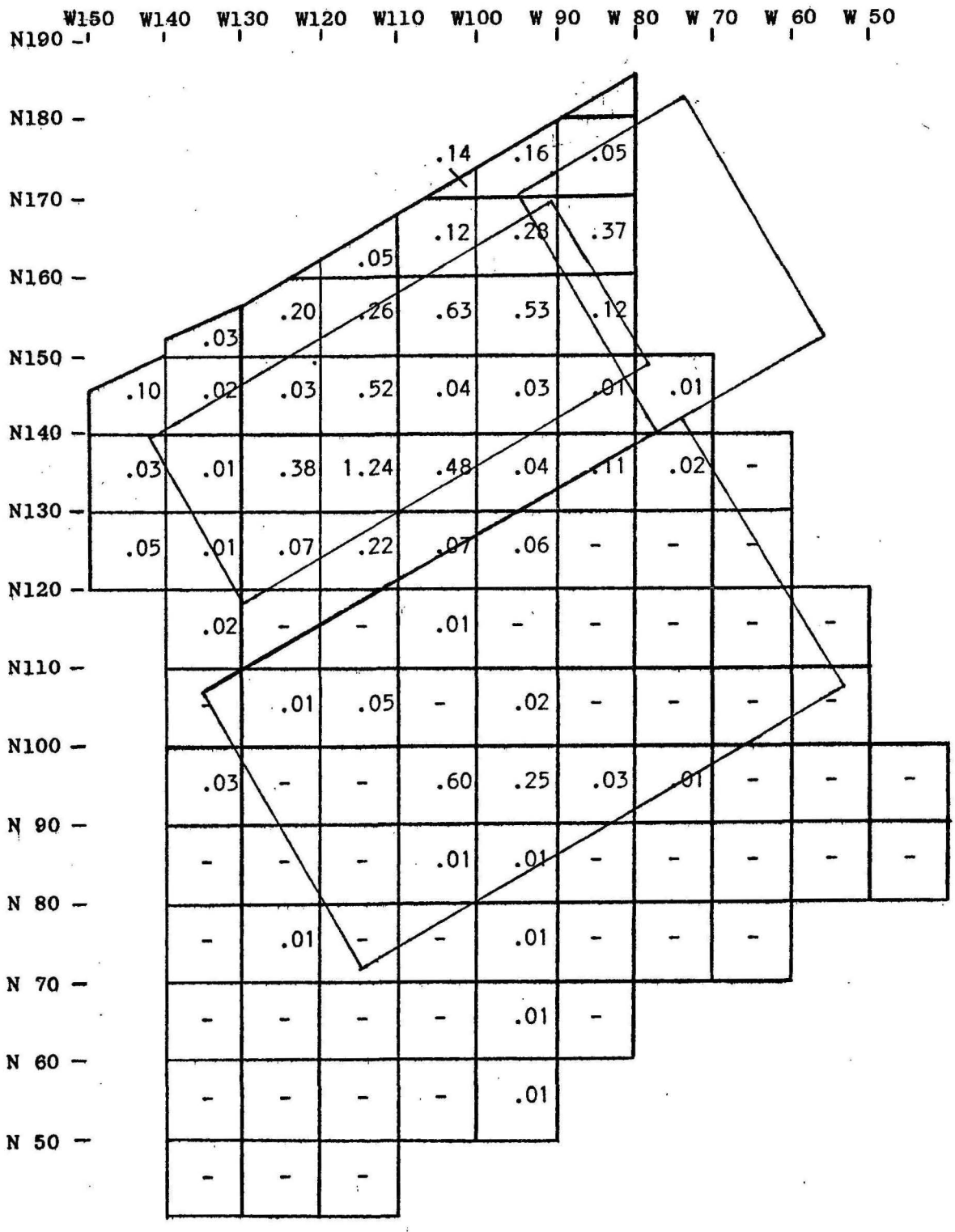


Fig. 54 - Relative frequencies of shell fragments (f/ft^3).

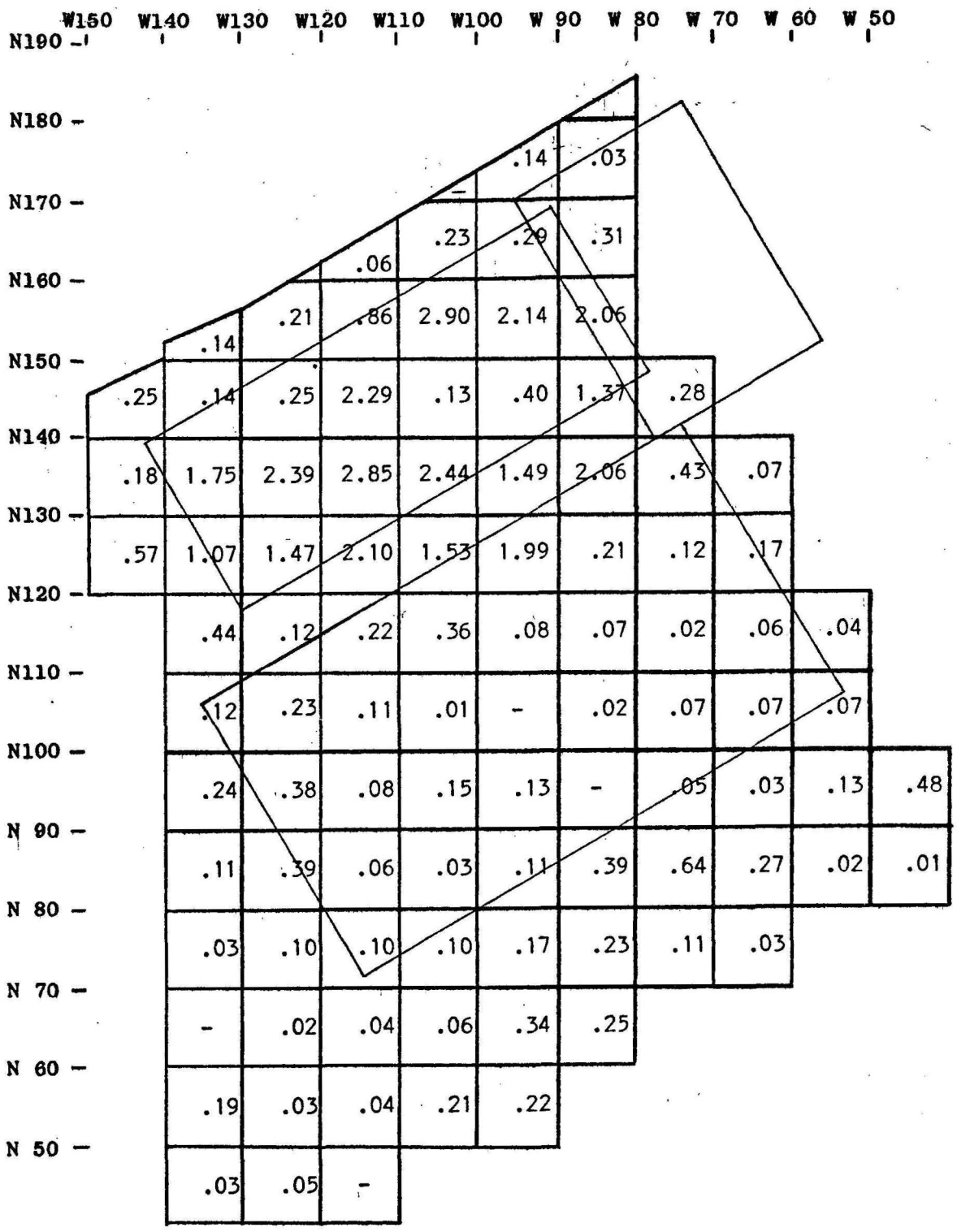


Fig. 55 - Relative frequencies of kaolin pipe fragments (f/ft^3).

However, the latter distribution may reflect activities of the post-1852 Kitchen. In any case, these densities correspond to identified trash disposal areas.

There is an isolated density of shell located south and southwest of the House chimney base (Fig. 54). This is difficult to interpret other than the storage of live oysters in the cool space under the House.

Clay Pipes

Frequency of clay pipes is extremely low in the House position (Fig. 55). From this, we infer that smoking was not generally practiced under the House and that pipes broken inside of the House were swept up and thrown into trash disposal areas. Certainly this seems reflected in the high densities around the passage between the House and Kitchen, the western sector of the Kitchen, and the west wall of the post-1852 Kitchen. The high density centering on the cooking facility is less easily understood, unless this feature was also used for trash disposal after its destruction.

Other densities outside the west wall of the Chief Factor's Kitchen, at the northwestern corner of the House, and outside the western wall of the House centering about the cellar door may reflect designated smoking areas. While less dense, an interesting distribution is present at about the front door of the Chief Factor's House, in the porch and garden area about the eastern stairway, and continuing west outside of the garden fence. This probably marks one of the paths used by Fort personnel entering and leaving the House. A more specific inference of social behavior is gained by noting the isolated area of high density at the southeastern corners of the fence in front of the House. This isolate of clay pipes neatly correlates with a dense isolate of bottle fragments (c.f. Figs. 51 and 55). This small area, which adjoins the yet unexcavated Bachelors' Quarters, appears to have been a convivial meeting place for gentlemen of the Fort.

Specifics

Proceeding from the structural, artifactual, and distributional evidence, certain specific details can be deduced for the Chief Factor's House and Kitchen.

Chimney

The chimney of the Chief Factor's House was a more complex structure than we anticipated. Clearly, its function was to collect exhaust

gases produced by heating devices within the House. Without getting ahead of ourselves, we note that historic research has documented only a single such device at present, although others may have been present (Hussey 1972:111-112). This was a large closed stove (presumably metal) located in the mess hall on the first or main floor of the House (Ibid.:123-124).

The chimney consisted of 3 styles of brick, imported Varieties #1001 and #1002, and local Variety #1004. The latter 2 were primary components. Imported Brick Variety #1002 functioned as a facing brick at the interior of the House. Its mean measurements are 9 inches long, 4 1/4 inches wide, and 2 3/4 inches thick. Thus, it slightly exceeds the British statute dimensions of the time as discussed in our first report (Hoffman and Ross 1972:63). In Chapter III, we noted that 375 specimens of this brick retained pigments of 8 identified colors. On 164 specimens, the pigments are double-layered, indicating repainting of the brick. As shown on Fig. 10, the brick was laid in the modern manner. Thus, the facing function of the brick is evident in the fact that pigmentation is restricted to the sides and ends of the individual brick. We deduce that the only purpose in painting this brick was to esthetically improve a chimney exposed at the interior of the House.

Local Brick Variety #1004 has mean measurements of 8 inches long, 4 inches wide, and 2 inches thick, which are significantly less than those required by British statute. No applied pigments were found on this variety but secondary burning was evidenced in the form of carbon deposits. From these facts, we deduce that this brick variety was primarily used for lining the chimney and possibly for the exposed parts of the chimney above the roof line. Interestingly, the proportion of recovered fragments of Varieties #1002 and #1004 is almost 2 to 1 (Table 23), which strikes us as a reasonable proportion in establishing a facing-lining dichotomy for the construction of a chimney.

Brick Variety #1004 is also important in establishing the date of chimney construction. In our first report of this series, we inferred that the manufacturing of local brick originated in the Willamette Valley during the early 1840's. This inference is supported by recent historical research which clearly shows that the first Willamette brick arrived at Fort Vancouver on 18 September 1844 (Hussey 1972:48-49). Variety #1004 is slightly smaller than the local brick we have dealt with previously, Variety #1003. Whether both of these varieties arrived at the Fort in 1844 cannot be determined; we do not know the characteristics of brick in that shipment. Contrarily, we do not assume a high degree of

quality control on the part of pioneer Willamette brickmakers. What is clearly referenced is the fact that local brick was not used at the Fort previous to 1844. Since the chimney lining of the Chief Factor's House is composed of local brick, the chimney could not have been built before 1844, or 6 years after the House was completed. As noted earlier, the wooden varmint barrier under the House had its northern end overlain by the former southeastern corner of the chimney base (Fig. 41). This superimposition of archeological features is further evidence for the addition of the chimney after construction of the House.

Archeological evidence sheds no light on the exhaustion of heating gases previous to construction of the chimney; neither are we aware of any historical data relevant to this matter. However, it is likely that the chimney was present in the Chief Factor's House by 1845.

Cellar

As brought out in Chapter II, storage under the Chief Factor's House consisted of 2 parts, an excavated cellar adjacent to the west wall, and surface level storage between the cellar and the chimney base (Fig. 41). Archeological evidence demonstrates that the cellar was dug 2.0 to 2.9 ft. below the top of the HBC surface. Historical evidence indicates the first floor of the House to have been raised 5 to 6 ft. above the surface (Hussey 1972:105). Thus, the effective clearance of the cellar was 7 to 9 ft. high, less the vertical dimensions of the first floor joists, and the effective clearance for the remaining storage space was 5 to 6 ft., less the same joist space.

It can be seen that the available storage area was indeed sizable and well in keeping with the "extensive cellars" historically recorded. Both archeological and historical evidence demonstrates that this space was primarily used for storage of wines and spirits. These liquids were contained in barrels and bottles as indicated by the brass cocks, cock keys, and immense volume of bottle fragments found in the storage space. These factors strongly suggest that the space under the House was the primary storage area for alcoholic beverages consumed at Fort Vancouver. It appears that consumption of these beverages occurred largely in and around the House, mainly the mess hall. Thus, access to, and serving of, the beverages were functions of the kitchen personnel. Quite likely, these functions were closely supervised by a single individual (a steward?) who controlled the cock keys as well as the key to the cellar.

There is no archeological evidence, nor are we aware of any historical evidence, as to how the barrels and bottles were racked in the storage area.

The cellar door is archeologically known to be about 4 ft. wide. Historical evidence indicates the door to be heavily framed, inset from the outer face of the House wall, and about 5 ft. high (Fig. 10). The door may have been a single leaf opening inward, but this is not clear. Hardware recovered from the cellar door position includes an ornate strap hinge and a large pintle (Figs. 31c, e).

While the primary purpose of the cellar and storage space was to hold wines and liquors, other items were also stored in this area. As shown by distributional evidence, a certain amount of coal was stored under the House. Oysters, presumably live in barrels, may also have been stored for short periods.

Windows, Doors, and Roofs

As indicated in Chapter III, most of the window glass used in the Chief Factor's House and Kitchen centers about 1.1 mm. in thickness, or slightly less than 3/64 inch. Window glass of the post-1852 Kitchen centers about 1.6-1.7 mm. in thickness, or about 1/16 inch.

The presence of small, paired shutters at the interiors of certain windows is inferred on the basis of lightweight shutter latches (Figs. 30a, d). The use of large, louvered shutters at window exteriors is known historically for the Chief Factor's House (Fig. 10). The number and positions of windows are dealt with in our discussion of hypothesized plan views of the House.

Doors of the House and Kitchens were hung with butt hinges such as illustrated in Figs. 31n-l. Presumably, both exterior and interior doors of the House were so hung. The hinges were mortised into doors and jambs, and set with countersunk nails. As discussed in Chapter III, the pertinent nails for this purpose are forged dog nails such as illustrated in Figs. 24h and 26e. A portion of a brown glazed earthenware doorknob was recovered (Table 10). Presumably, this style was used for exterior doors while something more elegant, such as the brass pulls in the McLoughlin House in Oregon City, was used for interior doors.

The historic record indicates that the roof of the Chief Factor's House was shingled beginning 27 August 1846 (Hussey 1972:102, 114). This has been interpreted as the initial shingling of the House as

part of a concerted shingling program at the Fort beginning in the early 1840's (Ibid.:114). However, recent excavations of the Powder Magazine (yet to be reported) have revealed sizable amounts of shingling nails, probably from a "safety roof." The Magazine is known to exist by 1832 at the latest (Hussey 1957:184).

Whatever the historic situation may be, we are confident that the Chief Factor's House was shingled with 4d clasp nails which we have previously identified as being primarily shingling nails.

There is also a generally high density of cut nails in the Chief Factor's Kitchen, despite some anomalous gaps in the distribution (Fig. 49). We believe the Kitchen was also shingled with 4d cut clasp nails, possibly at about the same time as the House. We are less certain of the roofing situation of the post-1852 Kitchen on archeological grounds. However, the late date of this structure provides strong speculations that it was shingled.

As discussed in Chapter II, non-ferrous, sheet metal flashing was used at points of contact on the chimney of the Chief Factor's House. This metal appears to be zinc. It was probably used most extensively at the contact points of the roof and chimney where it was secured with wooden flashing boards.

Cooking Facility

Remains of the cooking facility in the Chief Factor's Kitchen were so badly disrupted as to preclude a ready identification on structural evidence alone. In Chapter II, we inferred the facility to have had a laid stone foundation with a brick body and/or chimney, and metal internal parts. We also suggested that the facility was a large open hearth or grill. By applying historic evidence, we can turn the archeological suggestion into a firm deduction.

The HBC inventory of "Articles in Use" in the "Kitchen and Pantry" of Fort Vancouver as of Spring 1844 includes 1 grid iron, 1 pair of fire Tongs, 2 roasting Hooks, and 2 Iron Dogs /fire dogs/ (Hussey 1972:179-180). The same inventory for Spring of 1845 includes 4 roasting Hooks, 4 Chains w/it/h hooks & Kettles, 1 Gridiron, and 2 fire irons (Ibid:181-182). The above items are tools used only for open hearth cooking as opposed to stove or oven cooking. While other fire tools are listed in the inventories, including a cast iron stove, fire rakes, and pokers, the cited items make it virtually certain that the facility was indeed an open hearth. Most likely, it was a large fireplace made of British firebrick and fitted with internal metal pieces to receive roasting hooks, kettles and chains, and a gridiron. Since fire dogs were used, wood as well as coal was used for fuel.

Internal Arrangement of the Chief Factor's House

Following Hussey's excellent lead in Volume I of his "Historic Structures Report for Fort Vancouver" (1972), we have prepared a series of hypothesized plan views of the Chief Factor's House (Fig. 56). These plans are derived from the archeological data, Hussey's hypothetical plan for the main floor of the House, and our observations of the House exterior as shown in the 1860 photograph (Fig. 10). We believe these plans to be a valid means of fitting the archeological evidence to the historical evidence in order to better understand the internal arrangement of the House.

Cellar

Potential storage under the House consisted of the entire surface. However, the archeological evidence indicates that only the western 30 ft. was used. The utilized space consisted of the excavated area at the cellar door plus adjacent storage space to the east (Fig. 56). The excavated portion, which we believe to have been the primary work area, is known to have been 10 ft. wide from east to west. We do not know the north-south dimensions of the area; we have arbitrarily limited these dimensions at about 20 ft. on the assumption that such space would be sufficient for handling large casks and heavy barrels. As noted previously, the effective clearance of the excavated cellar was 7 to 9 ft., less the thickness of the main floor joists.

Balance of the storage space consisted of a 40 by 30 ft. rectangle, less the excavated cellar. The effective clearance was 5 to 6 ft., less the thickness of the main floor joists, which provided a sizable volume of available storage. The eastern limit of the storage space was marked by a varmint barrier. For purposes of illustration, we show the barrier as a continuous line, although only the southern portion is known archeologically (Fig. 56). A portion of the known barrier was overlain by the chimney or stove foundation which intruded into the available storage space. As demonstrated earlier, the chimney was built several years after completion of the House. Our arrangement of the cellar plan suggests also that the chimney was later in time than the storage space.

Main Floor

Our hypothesized version of the main floor plan is almost identical to that proposed by Hussey. For instance, the number and positions of the windows, doors, and half windows are the same. However, we believe the widths of the windows to be about 3 ft. Another

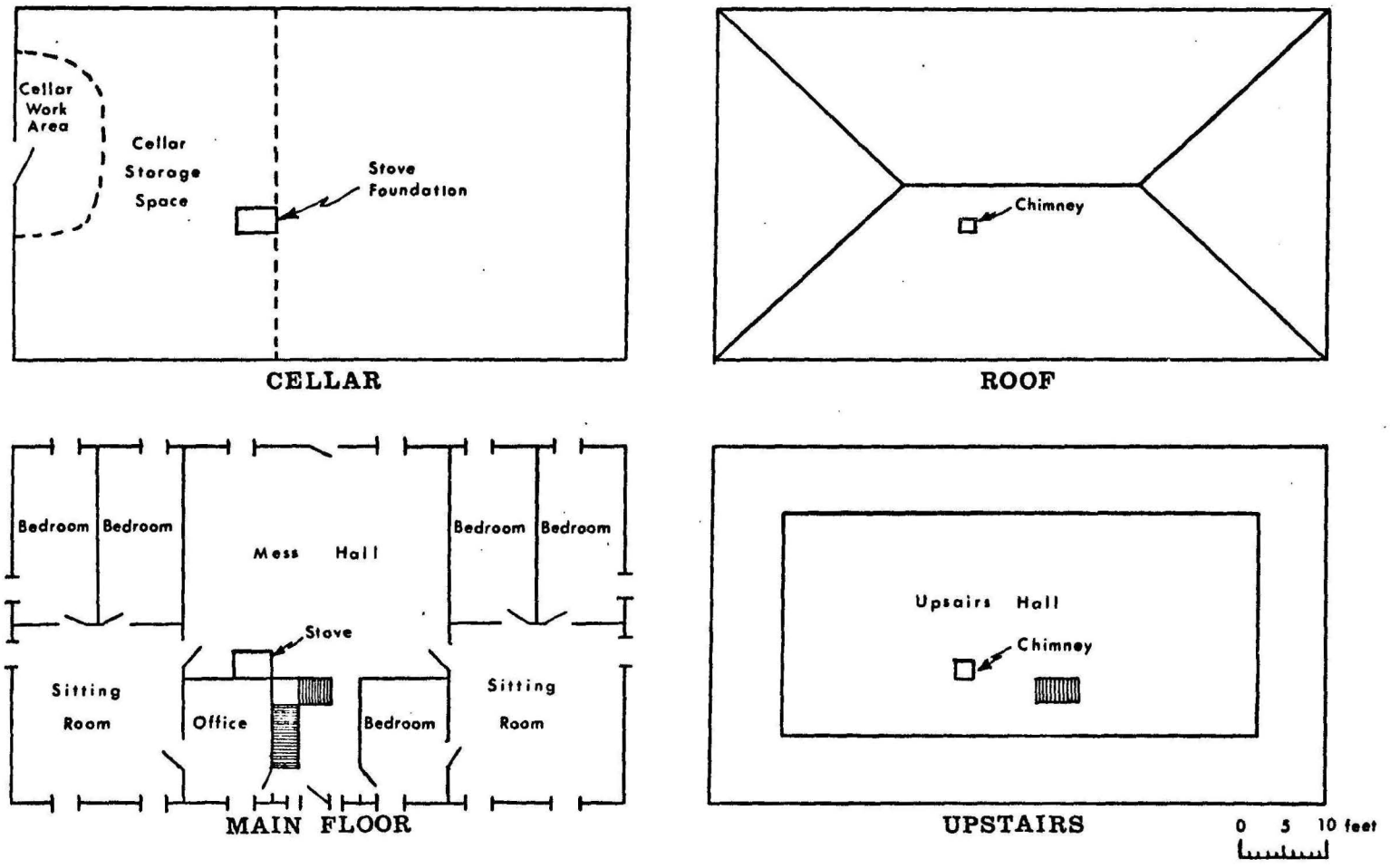


Fig. 56 - Hypothesized plan views of the Chief Factor's House.

minor difference in our version is the positioning of door hinges which we have largely changed to permit more effective clearance and use of available space, especially the bedrooms, or to prevent blocking of windows by open doors. We also propose greater lengths for the back bedrooms as a matter of architectural symmetry; the south walls of 20-ft. long bedrooms would intersect their eastern and western walls exactly midway between windows of the eastern and western House walls.

We assume the chimney/stove location at the main floor to rise directly from its foundation some 5 or 6 ft. below. Since it is known that the stove stood in the southwestern corner of the mess hall, we must hypothesize a greater north-south length for the mess hall at the expense of the office length. Whether a stove or fireplace was present in the office, we are certain that the chimney was exposed in the office as well as the mess hall.

As noted in Table 24, a considerable number of painted brick fragments was recovered. We assume that most of these were originally exposed at the main floor as a simple matter of esthetics. One particular brick has 2 colors of paint separated by an unpainted strip about 1 1/2 inches wide. We interpret this item as a facing brick for the chimney that was exposed in 2 different rooms, the mess hall and the office, and that the wall between the rooms was about 1 1/2 inches thick. This thickness most likely reflects the thickness of the deals historically inferred to have been used for room partitions (Hussey 1972:131). The 2 predominant colors found on facing brick were a soil-stained white, or in the yellow-green range. Since the yellow-green range is most common (Table 24) and we hypothesize the greater part of the chimney to have been exposed in the mess hall (Fig. 56), we propose that the chimney exposed in the mess hall was painted with the yellow-green colors and that the portion exposed in the office was painted white. It is conceivable that the same colors were used on the walls of the respective rooms.

In our view, the mess hall plan was 26 by 30 ft. The bedrooms of the west, or McLoughlin, apartment were each 10 by 20 ft., the sitting room was 20 ft. square and the office was 10 by 14 ft. The back bedrooms of the east, or Douglas, apartment were also 10 by 20 ft., the sitting room was 20 ft. square, and the front bedroom was 10 by 14 ft. (Fig. 56).

The only room of the main floor left to be accounted for is the entry hall at the front door. By reduction, we propose that this area was 10 by 14 ft., the same as the adjoining office and front bedroom. It is here that our hypothesized plan departs most drastically from Hussey's. Like Hussey, we believe that the

stairs to the second floor were confined to the hall. However, we do not believe that a single flight of stairs could be confined to the hall without being excessively steep. Rather, we believe the stairs to have consisted of 2 flights, each about 52° of incline, set at a right angle and connected with a landing.

From our observations of the 1860 photograph of the House (Fig. 10), we believe the front door was hung on its east side. This would provide direct access from the front door to the stairs located on the west side of the hall, as well as ready access to the mess hall by passage under the upper flight of stairs. It was only after hypothesizing this plan that we realized our arrangement of front door, hall, and stairway was a virtual duplicate of the same arrangement in the McLoughlin House at Oregon City. There is every reason to assume that both buildings were designed by Dr. John McLoughlin.

Upstairs and Roof

There are good arguments for hypothesizing an upper room or second floor in the Chief Factor's House. While apparently windowless, this upstairs area appears to have been a recreational room which has been speculatively termed the Second Hall (Hussey 1972:106, 122).

From our observations of the 1860 photo of the House, we estimate the pitch of the hipped roof to have been about 30 to 35° and the height of the roof peak to have been about 13 to 16 ft. above the roof eaves. The latter we assume to have been in the same plane as the ceiling of the main floor. We also assume the sides of the upstairs hall to have walls about 5 to 6 ft. high, an effective minimal clearance for dancing and other recreation. From these figures, we derive a floor plan 18 to 26 ft. wide and 46 to 56 ft. long, assuming no partitions. In our hypothesized plan, we show a mean approximation of 25 by 53 ft. (Fig. 56). Not all of this space was available; the stair head (with railing?) and the chimney also occupied the area. Space between walls and eaves was presumably available for storage.

We have reduced the size of the chimney as it appears in the upstairs and at the roof. In our preliminary observations of the chimney, we noted that the base seemed to be out of context with its upper portions. In other words, the archeological position of the base did not appear to align with the historic location of the chimney as it emerged from the roof (Hussey 1972:109). We now hypothesize the situation to be a simple reduction of chimney size above the main floor. In our plan views of the upstairs and roof, the southern and eastern sides of the chimney are unmoved from

their positions at the main floor and cellar (Fig. 56). Rather, there are reductions in chimney widths at the western and northern sides, both at the upstairs and the roof. The net effect is that the southeastern corner of the chimney remained plumb from roof to cellar. Thus, we can accomodate the large archeological size of the chimney base with the small historical size of the chimney top.

We have not prepared hypothesized plans for the porch, gardens, or fences of the Chief Factor's House since we believe the present archeological and historical descriptions to be adequate for architectural planning. We are unable to present hypothesized plans for the Chief Factor's Kitchen due to a dearth of data. Other than our archeological observations regarding the windows, floor, and cooking hearth, we can offer no solid additions to Hussey's (Ibid.:172-183) historical data.

Furnishings of the Chief Factor's House

Historically known and adduced furnishings of the 1845 period have been discussed at length by Hussey (1972:136-162). Through various lines of evidence, he has presented a plausible picture of items in daily or frequent use in the Chief Factor's House. We would only add one category of items on the basis of historical evidence. These items are children's beds in the eastern or Douglas apartment that "...could be shoved right into the wall during the day." (Thompson 1969:166, n 205). More likely, the beds were hinged platforms that were folded against the wall.

It is our purpose here to augment the historically referenced furnishings with a list of small items derived from a comparison of archeological remains with the 1844 inventories of Fort Vancouver, and arriving at categories of materials that we believe to be functionally consistent with human activities of the House (Table 25). Other items of the list are known only from archeological remains.

In addition to the general small items of furnishings, archeological analyses have permitted us to prepare a list of the 12 patterns of transfer printed pearlware that were most frequently found in the area of the House (Table 26). On the bases of quantity and dating, we infer that these were the most frequently used patterns of tableware in the Chief Factor's House. Numerous reconstructed and reconstructable specimens of these patterns are present in the Fort Vancouver collections. To our knowledge, at least 3 of the patterns are still in production and are available on the local retail market.

Table 25 - Items probably used in the Chief Factor's House.

- Tablewares
  - Ceramic Serving Wares
    - Place Settings
      - Plates (Creamware and Transfer Printed Pearlware)
        - Butter (6 in. dia.)
        - Cheese (5 and 6 in. dia.)
        - Dessert (7 and 8 in. dia.)
        - Dinner (7, 9, and 10 in. dia.)
        - Saucers (6 in. dia.)
        - Shallow (7 in. dia.)
        - Soup (9 and 10 in. dia.)
      - Bowls (Transfer Printed Pearlware - 6 in. dia.)
      - Cups (Transfer Printed Pearlware - 4 and 5 in. dia.)
        - Handled
        - Handleless
      - Teabowls (Creamware, Transfer Printed Pearlware, Hand Painted Porcelain - 2 1/2 and 3 1/2 in. dia.)
      - Mugs
        - Children (Transfer Printed Pearlware - 2 1/2 in. dia.)
        - Lustreware (3 and 4 in. dia.)
    - Table Settings
      - Milk and Water Jugs
        - Antique Style (Transfer Printed Pearlware - 1/2 qt.)
        - Hooped Barrel Style (Creamware - 1/2 and 3 qt.)
        - Dutch (Transfer Printed Pearlware - 2 and 3 qt.)
        - Low Dutch (Undecorated and Transfer Printed Pearlware - 1/2, 1 and 1 1/2 qt.)
        - Lustreware (Capacity Undetermined)
      - Platters (Transfer Printed Pearlware - 13, 15, 17, and 19 in. length)
      - Fish and/or Meat Strainers for Platters (Transfer Printed Pearlware - 13 in. length)
      - Soup Tureens with Lids (Creamware and Transfer Printed Pearlware - 11 in. dia.; 13 in. length)
      - Vegetable Dishes with Lids (Transfer Printed Pearlware - 11 in. dia.; 9 and 11 in. length)
      - Butter Boats (Transfer Printed Pearlware - 5 in. dia.)
      - Sugar Basins with Lids (Transfer Printed Pearlware - 6 in. dia.)
      - Salt Dishes (Transfer Printed Pearlware and Porcelain - 2 1/2 and 3 1/2 in. dia.)
      - Tea and/or Coffee Pots (Brown Glazed Earthenware - Size Undetermined)

Table 25 (cont'd.)

- Glasswares
  - Place Settings
    - Plain and Cut Glass Tumblers (1/8, 3/8, 1/2 pts.)
    - Stemmed Glassware
      - Plain
        - Wine (4 and 6 in. height)
        - Rummer (4 and 5 in. height)
      - Cut Glass
        - Wine (Height Undetermined)
        - Champagne (7 in. height)
        - Rummer (5 in. height)
  - Table Settings
    - Plain and Cut Flint Glass Decanters (1, 1 1/2 and 2 pts.)
    - Cut Glass Salt Cellars
- Utensils
  - Place Settings
    - Bone Handled Table and Dessert Knives and Forks
    - Fancy Forebuck Table and Dessert Knives and Forks
    - Plated Steel Tea and Table Spoons
    - Britannia Metal Tea and Table Spoons
  - Table Settings
    - Bone Handled Large and Small Carving Knives and Forks
    - Fancy Forebuck Large and Small Carving Knives and Forks
    - Bone and Mother-of-Pearl Handled Salt Spoons
    - Transfer Printed Pearlware Soup Ladles
    - Britannia Metal Soup Ladles
- Metal Serving Wares
  - Table Settings
    - Iron Tea Kettles (6 qt.)
    - Black Tin Tea Pots (1 1/2, 2 and 3 qt.)
    - Black Tin Coffee Pots
    - Black Tin Soup Tureens
    - Tin Dish Covers
- Miscellaneous Table Items
  - Pepper Mills
  - Tea Trays
  - Japanned Cruet Stands
  - Earthenware Spatula Plate
  - Call Bell

Table 25 (cont'd.)

- Housewares
  - Lighting Equipment
    - Wax Candles
    - Candlesticks (Plated, Brass and Tin)
    - Candle Douters (Brass)
    - Japanned Snuffers
  - Storage Boxes
    - Cast Iron Pipe Boxes Pr. Cart Wheels
    - Japanned Tin Tobacco Boxes with Burning Glass
    - Papered Snuff Boxes
    - Wood Shaving Boxes
  - Toilet Items
    - Earthenware (Creamware and Transfer Printed Pearlwares)
      - Chamber Pots with Lids
      - Washhand Basins (Shallow and Deep)
      - Water Ewers (2 qt.)
    - Tin Washhand Basins
  - Miscellaneous Items
    - Coffee Mills
    - Brown Glazed Earthenware Spitoons
    - Stoneware Flower Pots
    - Porcelain Bud Vases
    - Looking Glasses (Mirrors - Paper Cased, Metal and Mahogany Framed)
- Office Equipment
  - Red Sealing Wax and Seals
  - Slate Pencils and Tablets
  - Ink Stand w/Black Ink
- Items Stored in Cellar
  - Casks of Wine and Porter
  - Assorted Brass Keg Cocks and Keys
  - Assorted Wine, Rum and Gin Bottles
  - Stoneware Ale Bottles
  - Coal
  - Oysters (?)

Table 26 - Transfer printed pearlware patterns most frequently found in the area of the Chief Factor's House.

Pattern Name or FOVA Variety Number (Dates of Known Manufacture)	Total Fragments	% of Total
Chatsworth (1833-1867)	1598	21.7%
Queen Mary (1833-1867)	833	11.3%
*Camilla (1833-Present)	816	11.1%
Broseley (ca. 1817-1867)	734	10.0%
*British Flowers (Bouquet) (ca. 1823-Present)	477	6.5%
May or Fruit and Flowers (ca. 1826-1867)	295	4.0%
#7037 (1833-1847)	218	3.0%
Rose & Sprigs (1847-1867)	192	2.6%
Alba (1833-1847)	181	2.5%
*Blue Italian (ca. 1816-Present)	146	2.0%
#7034 (Seasons) (1847-1867)	146	2.0%
Continental Views (1844-1867)	140	1.9%
TOTAL	5776	78.3%

*Pattern still manufactured by W.T. Copeland & Sons, Ltd., and locally available

SUMMARY AND CONCLUSIONS

Archeological excavation and analyses have provided a sizable body of data relevant to the Chief Factor's House. Information on the Chief Factor's Kitchen and the post-1852 Kitchen is less plentiful due to limited remains. In addition to the archeological evidence, we have relied heavily on historical research in order to augment and evaluate our findings. We have even dabbled in historical architecture so as to better grasp our subject. The 3 approaches are necessary for a full understanding of the physical structures of Fort Vancouver.

Three major structures, the Chief Factor's House and two supportive Kitchens, were comprehensively excavated during the current project. Two associated Privies known from past explorations are included in our discussions.

The House was located shortly inside and east of the northern Stockade gate. Built during the winter of 1837-38, the House had a ground plan 40 by 70 ft. and an elevation of 1 1/2 stories. It is known to have existed as late as 1860 when Hudson's Bay Company personnel left the Fort. Across the front or southern face of the House was an elevated porch, 7 ft. wide, which had a central, southward projection at least 7 ft. in width. The southern projection or observation deck had a curved face that served as a backdrop for 2 large caliber guns and piled shot. The displayed guns were inoperable and served primarily as symbols of authority for the Company and the resident Chief Factor.

Fence lines were located south, west, and east of the House. The southern line demarcated small gardens that lay between the fence and porch. The western fence served to separate the House from road traffic entering the Fort through the north gate. The eastern fence functioned primarily to protect the garden.

Archeological evidence of the Chief Factor's Kitchen was limited to ground floor remains, pieces of collapsed superstructure, remains of a cooking hearth, and associated artifacts. From historical evidence, we know the Kitchen to have been positioned directly north of the House; an 8-ft. gap separated the south wall of the Kitchen from the north wall of the House. The gap was spanned by an unwalled passage that connected the back door of the House to the south door of the Kitchen. In plan, the Chief Factor's Kitchen was 24 by 60 ft., with its eastern wall in the same line as the eastern wall of the House. The building appears to have been 1 1/2 or 2 stories high, with the upper floor used as living quarters. Apparently built at the same time as the House, the Kitchen

was razed by the HBC probably by November 1852 for reasons not immediately evident. While a fence line was archeologically found west of the western wall of the Kitchen, we do not know if the Kitchen and fence were contemporary.

Functional successor of the Chief Factor's Kitchen was the post-1852 Kitchen. The latter abutted the northeastern corner of the House and its western wall overlapped the former eastern wall of the earlier Kitchen. The post-1852 Kitchen was 25 by 35 ft. in plan and 2 stories high. It existed as late as 1860. As opposed to the heavy timber, post-in-sill construction of the Chief Factor's House and Kitchen, the later Kitchen was a lightly framed structure, possibly similar to modern balloon framing.

The associated Privies were located along the Stockade immediately inside of the northern gate. They were positioned in such a way as to be readily accessible from the House and Kitchens. In 1860 and probably earlier, they were screened from the north gate road by a board fence. Structural information on the Privies is nil. On the basis of pit size, we believe the Privies to have been compartmented two-holers such as we have previously inferred for other areas of the Fort. While we have no historical data, we believe the Privies to have been contemporary with the House and Kitchens.

Foundations of the Chief Factor's House consisted of subsurface wooden footings set at intervals of 2.5, 5 and 10 ft. The 10-ft. intervals represented the primary supports for the framing sills, while the shorter intervals marked the locations of doorways and/or repair footings. From the framing sills, the House was built up by the post-in-sill techniques for a height of 5 or 6 ft. At this point, main floor joists were mortised into the walls at no more than 10-ft. intervals and oriented north-south. Basic construction of the upper walls and superstructure is known from historical research.

Three doors penetrated the House. One was a surface level opening in the west wall to the storage space under the House. Another was a door in the north wall that led to the Kitchens. The elevation of this opening was not determined archeologically. The third door was the main floor entry from the porch which was elevated 5 to 6 ft. above the ground. Access to this door was gained by 2 curved stairways that led from ground level to the porch.

Unlike the House, the porch was supported on its south side by vertical posts either set directly on wooden footings or placed

into the ground. The north side of the porch was secured by mortising floor joists into the House wall at no more than 10-ft. intervals. Sides of the porch were protected by railing that connected with fence lines that protected the gardens. Center of the porch was an extension or observation deck that projected south of the southern porch line. This deck also had railings that connected with the railings of the curved stairways. A heavily braced wooden post was located beneath the observation deck. This appeared to be the base of an anomalous object historically known to have penetrated the floor of the observation deck inside of the latter's railing. No function was attached to the strange object, although we speculated that it was flagstaff, a bell mast, or even a gun mount.

The fence lines around the Chief Factor's House were of 2 different periods. Unfortunately, we cannot say which fence is relevant to the 1845 period. It is possible that one period simply represents repair to the original fences.

Storage space under the House consisted of an excavated cellar at the western door, plus surface level storage whose eastern limit was marked by a wooden varmint barrier. Storage was primarily of alcoholic beverages in casks, barrels, and bottles. Coal and possibly oysters were also kept under the House.

The stone foundation of the chimney was located beneath the House, slightly depressed into the original surface. The chimney was installed after construction of the House, and it primarily consisted of British facing brick and American lining brick. The chimney was exposed at the main floor in 2 rooms and was painted (presumably) to match the wall colors of the rooms. The chimney was reduced in size as it rose through the House by shortening the widths of 2 sides. The other 2 sides and one corner remained plumb from foundation to opening above the roof.

The hypothesized arrangement of rooms on the main floor of the House consisted of 4 units: apartments at the eastern and western sectors; a mess hall at the north-central sector; and an entry hall with stairway at the south-central sector. The second floor appears to have been a single large room entered by the stairs from the entry hall. Present information indicates that the second floor had no windows or other means of ventillation. The single room was a recreational area, while eave space around the room was probably used for storage.

Glass windows were present in all 4 walls of the Chief Factor's House at the main floor. Some, if not all, windows had internal shutters that could not be opened from the outside. Large,

louvered shutters were used at the window exteriors. Some of the more important items of interior and exterior hardware are discussed in this report. We also present lists of recommended furnishings over and above the basic furniture of the House.

Foundations of the Chief Factor's Kitchen were not found in excavation. Historical research strongly suggests that the Kitchen was a heavy timber structure built in the post-in-sill style. This is supported by archeological recovery of large nails hypothetically associated with heavy timber joining. The main floor of the building was simply the ground surface as altered by addition of compacted clay and ash. Occasional lime inclusions were found in the floor, but these may have stemmed from the cooking hearth or the floor of the post-1852 Kitchen. Collapsed pieces of the wooden superstructure were found on the floor and the hearth. Sizes of these pieces were more suggestive of flooring or ceiling than of supportive members. The Kitchen roof was shingled, probably at the same time as the House roof.

Cooking facility of the Chief Factor's Kitchen was a large, open hearth. Its foundation was mortared stone, while the body and chimney consisted of British firebrick. The hearth was fitted with metal pieces to receive gridirons, roasting hooks, and kettle chains. Historical research indicates the presence of at least one other cooking and/or heating device within the Kitchen, but no archeological evidence of the device was found. The cooking hearth was fired with wood and coal.

Glass windows were present in the northern and southern walls of the Kitchen, and possibly in the eastern and western walls. The number, locations, and sizes of these windows are undetermined. Historical research indicates that the main door of the Kitchen was in its south wall, slightly west of the building's north-south axis. This door was connected to the back door of the House by a passageway that is archeologically inferred to have been unwalled and historically inferred to have been elevated.

Archeological remains suggest a door in the north wall of the Chief Factor's Kitchen. This entry was probably used for trash disposal as well as ready access to the nearby Privies. Another door may have been present in the west wall, but this is largely speculative. As presently understood, food preparation was confined to the ground floor of the Kitchen, while the upper floor was used as living quarters for Kitchen personnel.

After destruction of the Chief Factor's Kitchen, a new structure was built slightly overlapping the old Kitchen position. This new building, which we term the post-1852 Kitchen, continued the

cooking functions of serving the mess hall in the House. It was a lightly framed structure either 1 1/2 or 2 stories high. Little is known of the building's appearance or the functions of its upper story. Its primary cooking facility was a large iron stove connected to a brick chimney in the east wall of the building.

While not known, the Privies were presumably shed-roofed affairs built of slabs or puncheons such as we have previously described in this series. The presence of 2 compartmented, two-hole Privies set side by side against a stockade is a basic structural pattern for the northeast sector, at least, of the Fort.

Trash disposal around the buildings indicates several interesting facets of daily life. One is a rather cavalier attitude towards disposal of food remains and broken tableware in and around the Kitchens. Indeed, garbage from the House and post-1852 Kitchen appears to have been dumped on the location of the earlier Kitchen. The dumping of tableware in the Privies, as known from previous explorations, is another matter. We believe this to have been done during evacuation of the Fort in order to thwart potential salvers. Trash disposal also strongly suggests the use of designated smoking areas in and around certain buildings. Whether this practice resulted from fire policy, Victorian morals, or both is yet to be determined. One such area on the south side of the House appears to have also been a drinking area; the combination of drinking and smoking accouterments may reflect one particular usage of the porch.

Summarily, the archeological evidence validates and illumes the historical findings that the Chief Factor's House was the social focus of the Fort. Its location within a cluster of supportive buildings and other structures clearly points out its importance. The material remains and inferred social practices illustrate a small part of the "good life" enjoyed by Hudson's Bay Company officers, gentlemen, and their families during the peak years of activity at Fort Vancouver.

APPENDIX I

Summary of Miscellaneous Materials

Cultural material, other than artifacts, totaled 11,237 items and are listed below:

Descriptive Category	Subtotal	Total
Bone Fragments		5567
Coral Fragments		831
Minerals		3192
Coal	3020	
Slag	98	
Asphaltum	35	
Tar	15	
Ochre	7	
Talc	1	
Rock	15	
Petrified Bone	1	
Shell Fragments		921
Plant Fragments		704
Wood Fragments	446	
Charcoal	41	
Burnt Straw	3	
Burnt Seed (3 vials)	17	
Cinders	190	
Fruit Pits	7	
Unidentified Material Fragments		22
Grand Total		11,237

APPENDIX II

Glass Bead Measurements

Beads are listed by the type number corresponding with Kidds' classification number as shown in Table 17. All measurements are given in millimeters.

FOVA Catalog Number	Bead Colors		Dimensions		Hole		
	Primary	Secondary	Dia.	Lgth.	Dia.	Reflection	Facets
Type Ia							
10408	7.5 YR 8/2		2.4	15.1	.81-.89	Translucent	
11644	5 Y 6/8		7.0	24.5	2.1	"	
11972	"		7.3	-	2.9	"	
12230b	7.5 YR 8/2		1.8	23.4	.71-.81	"	
Type If							
9596	7.5 PB 2/10		6.4	6.2	2.4	"	18
11707	"		6.2	5.3	3.4	"	18
11972	"		5.0	5.0	2.5	"	18
12129	"		9.1	6.9	3.4	"	21
12199	"		6.6	5.6	1.5	"	19
12230a	"		5.6	4.7	2.0	"	18
12896	"		6.4	5.4	3.1	"	18
Type IIa							
6850	White		1.5	1.0	.38-.51	Opaque	
6860	"		1.4	0.9	"	"	
"	"		1.6	1.1	.51-.64	"	
"	"		1.9	1.6	.64-.71	"	
"	"		2.2	1.5	"	"	
6891	"		2.1	1.7	"	"	
6900	"		1.4	1.2	< .38	"	
6913	"		1.5	0.9	"	"	
"	"		1.5	1.2	.38-.51	"	
"	"		1.7	1.1	"	"	
"	"		2.1	1.5	.51-.64	"	
"	"		2.1	1.7	"	"	
6926	"		1.5	0.7	"	"	
"	"		1.4	1.1	.38-.51	"	
"	"		1.5	1.1	.51-.64	"	
"	"		1.8	1.3	.64-.71	"	
"	"		1.9	1.6	.51-.64	"	
"	"		2.0	1.5	.64-.71	"	
"	"		2.1	1.5	"	"	
"	"		2.1	1.7	"	"	
"	"		2.3	1.9	.76-.81	"	
"	"		2.3	2.2	.89-1.00	"	
6955	"		1.2	1.2	< .38	"	
"	"		1.4	0.9	.38-.51	"	
"	"		1.5	1.1	"	"	
"	"		1.7	1.0	"	"	
"	"		1.8	1.3	.51-.64	"	
"	"		1.9	0.8	.64-.71	"	

FOVA Catalog	Bead Colors		Dimensions		Hole		
Number	Primary	Secondary	Dia.	Lgth.	Dia.	Reflection	Facets
6955	White		2.1	1.5	.51-.64	Opaque	
"	"		1.7	1.6	"	"	
"	"		1.8	1.7	.38-.51	"	
"	"		1.8	1.8	.51-.64	"	
"	"		2.0	1.6	.64-.71	"	
"	"		1.9	1.3	"	"	
"	"		1.9	1.8	.71-.76	"	
"	"		2.1	1.5	.51-.64	"	
"	"		1.9	1.4	.71-.76	"	
"	"		2.0	1.1	.81-.89	"	
"	"		2.0	1.3	.76-.81	"	
"	"		2.1	1.4	.81-.89	"	
"	"		2.1	1.9	"	"	
"	"		3.1	2.3	"	"	
7102	"		-	1.8	-	"	
7132	"		2.5	1.6	.76-.81	"	
7230	"		2.1	1.4	.64-.71	"	
7256	"		1.9	1.3	"	"	
"	"		2.2	1.5	"	"	
7275	"		2.1	1.6	.38-.51	"	
7442	"		1.5	1.0	"	"	
7538	"		2.3	1.5	.64-.71	"	
7546	"		1.4	1.0	.38-.51	"	
"	"		1.3	1.0	"	"	
"	"		1.4	1.0	< .38	"	
"	"		1.3	1.1	.38-.51	"	
"	"		1.4	1.1	< .38	"	
"	"		1.4	1.0	.38-.51	"	
"	"		1.4	1.1	"	"	
"	"		1.5	1.0	"	"	
"	"		1.4	1.1	"	"	
"	"		1.5	1.1	"	"	
"	"		-	-	< .38	"	
"	"		1.8	1.4	.64-.71	"	
"	"		1.5	0.9	.51-.64	"	
"	"		1.8	1.5	"	"	
"	"		1.7	1.4	.64-.71	"	
"	"		1.9	1.4	"	"	
"	"		2.0	1.6	"	"	
"	"		1.9	1.0	.76-.81	"	
7572	"		1.5	1.3	.38-.51	"	
"	"		2.0	1.4	.64-.71	"	

FOVA Catalog Number	Bead Colors		Dimensions		Hole		
	Primary	Secondary	Dia.	Lgth.	Dia.	Reflection	Facets
7572	White		2.1	1.3	.76-.81	Opaque	
"	"		2.2	1.4	.64-.71	"	
7589	"		1.8	1.2	"	"	
7613	"		2.7	2.4	"	"	
7697	"		1.9	1.5	.51-.64	"	
"	"		2.3	1.4	.81-.89	"	
7822	"		1.8	1.4	.64-.71	"	
"	"		1.8	1.2	.71-.76	"	
7868	"		2.2	1.9	.81-.89	"	
7899	"		1.2	0.6	.38-.51	"	
7909	"		1.4	1.2	"	"	
"	"		1.9	1.2	.64-.71	"	
"	"		2.3	1.6	"	"	
"	"		2.6	1.9	.81-.89	"	
"	"		2.7	2.5	.89-1.00	"	
7931	"		2.7	2.0	.81-.89	"	
8043	"		1.8	1.2	.64-.71	"	
8096	"		2.2	1.2	.38-.51	"	
9109	"		2.2	1.3	.76-.81	"	
9120	"		1.7	1.1	.51-.64	"	
"	"		2.2	1.3	.38-.51	"	
9208	"		2.7	1.6	.89-1.00	"	
9221	"		3.0	2.2	1.1	"	
9339	"		2.8	2.1	.89-1.00	"	
9562	"		1.6	1.4	.51-.64	"	
"	"		1.9	1.1	"	"	
9580	"		1.7	1.1	.64-.71	"	
9596	"		2.0	1.5	.51-.64	"	
9682	"		2.0	1.7	.64-.71	"	
"	"		2.0	1.7	.71-.76	"	
9843	"		2.2	1.3	.81-.89	"	
9861	"		1.5	1.0	.51-.64	"	
"	"		1.5	1.1	.38-.51	"	
"	"		2.1	1.6	.71-.76	"	
"	"		2.2	1.8	.89-1.00	"	
"	"		1.6	1.2	.38-.51	"	
10092	"		1.8	1.1	.51-.64	"	
10148	"		3.0	2.2	.81-.89	"	
10178	"		2.4	1.8	.71-.76	"	
"	"		2.7	1.6	.89-1.00	"	
10231	"		2.5	1.4	.81-.89	"	
10408	"		1.3	0.9	< .38	"	

FOVA Catalog Number	Bead Colors		Dimensions		Hole		
	Primary	Secondary	Dia.	Lgth.	Dia.	Reflection	Facets
10408	White		2.0	1.4	.64-.71	Opaque	
"	"		2.0	1.3	.51-.64	"	
"	"		2.0	1.6	.64-.71	"	
"	"		2.2	1.5	.81-.89	"	
10456	"		2.4	1.5	.64-.71	"	
"	"		2.6	1.7	.76-.81	"	
10539	"		1.4	1.0	.38-.51	"	
"	"		2.0	1.4	-	"	
"	"		3.1	2.4	.76-.81	"	
"	"		3.3	2.3	1.0	"	
10578	"		2.0	1.9	-	"	
"	"		2.3	1.9	.71-.76	"	
10900	"		2.3	1.4	.81-.89	"	
10997	"		2.7	1.9	.64-.71	"	
11108	"		2.2	1.5	-	"	
"	"		2.1	1.5	.81-.89	"	
11178	"		2.3	1.6	.76-.81	"	
11323	"		2.1	1.4	.64-.71	"	
"	"		2.4	1.6	.81-.89	"	
11450	"		1.7	1.1	.51-.64	"	
"	"		2.1	1.6	"	"	
11476	"		1.3	0.8	.38-.51	"	
"	"		1.3	0.9	"	"	
"	"		1.3	1.0	"	"	
"	"		1.2	1.0	"	"	
"	"		1.5	1.1	"	"	
"	"		1.3	1.1	"	"	
"	"		1.6	1.2	"	"	
"	"		1.5	1.0	"	"	
"	"		1.4	1.2	"	"	
"	"		1.7	1.2	.51-.64	"	
"	"		1.4	0.8	"	"	
"	"		1.4	1.3	"	"	
"	"		2.0	1.5	"	"	
"	"		1.9	1.3	"	"	
"	"		1.9	1.4	"	"	
"	"		1.9	1.5	"	"	
"	"		2.0	1.3	.64-.71	"	
"	"		1.9	1.1	"	"	
"	"		2.1	2.0	"	"	
"	"		1.9	1.7	"	"	
"	"		2.0	1.3	"	"	

FOVA Catalog Number	Bead Colors		Dimensions		Hole		
	Primary	Secondary	Dia.	Lgth.	Dia.	Reflection	Facets
11476	White		2.2	1.7	.64-.71	Opaque	
"	"		2.0	1.5	"	"	
"	"		2.0	1.3	.76-.81	"	
"	"		2.3	1.7	.64-.71	"	
"	"		2.3	1.6	.76-.81	"	
"	"		2.1	1.7	.64-.81	"	
11563	"		1.3	0.9	.38-.51	"	
"	"		1.3	0.9	"	"	
"	"		1.7	1.2	.51-.64	"	
"	"		1.7	1.3	"	"	
"	"		1.7	1.2	"	"	
"	"		1.7	1.1	"	"	
"	"		2.0	1.9	"	"	
"	"		2.2	1.3	.81-.89	"	
"	"		2.0	1.6	.71-.76	"	
"	"		2.2	1.4	.81-.89	"	
"	"		2.4	1.7	"	"	
"	"		2.4	1.4	"	"	
"	"		2.4	1.7	.76-.81	"	
11593	"		2.3	1.5	.81-.89	"	
"	"		2.3	1.5	.89-1.00	"	
11608	"		1.4	0.9	.51-.64	"	
"	"		1.8	1.2	.64-.71	"	
"	"		1.7	1.4	.51-.64	"	
"	"		2.0	1.3	.71-.76	"	
"	"		1.8	1.5	.64-.71	"	
"	"		2.0	1.5	.71-.76	"	
"	"		1.9	1.0	.81-.89	"	
"	"		2.1	1.4	.71-.76	"	
"	"		2.2	1.7	.76-.81	"	
"	"		2.8	2.4	"	"	
11644	"		1.5	1.1	.38-.51	"	
"	"		1.5	1.1	"	"	
"	"		1.4	1.1	"	"	
"	"		1.7	1.5	"	"	
"	"		1.9	1.2	.51-.64	"	
"	"		1.8	1.0	"	"	
"	"		1.6	1.5	"	"	
"	"		1.7	1.7	"	"	
"	"		1.7	1.1	.38-.51	"	
"	"		1.7	1.7	.51-.64	"	
"	"		1.9	1.6	"	"	

FOVA Catalog	Bead Colors		Dimensions		Hole		
Number	Primary	Secondary	Dia.	Lgth.	Dia.	Reflection	Facets
11644	White		1.9	1.7	.51-.64	Opaque	
"	"		2.0	1.2	.64-.71	"	
"	"		2.1	1.8	"	"	
"	"		1.8	1.4	"	"	
"	"		1.9	1.3	"	"	
"	"		2.0	1.2	"	"	
"	"		2.2	1.6	"	"	
"	"		2.1	1.7	"	"	
"	"		2.0	1.5	"	"	
"	"		2.1	1.8	"	"	
"	"		2.0	1.6	.71-.76	"	
"	"		2.2	1.7	"	"	
"	"		2.3	1.5	"	"	
"	"		2.3	1.6	"	"	
"	"		2.1	1.6	"	"	
"	"		2.2	1.4	"	"	
"	"		2.1	1.3	.76-.81	"	
"	"		2.2	1.2	"	"	
"	"		2.3	1.4	"	"	
"	"		2.4	1.7	"	"	
"	"		2.7	2.2	"	"	
"	"		2.2	1.4	.81-.89	"	
"	"		2.3	1.5	"	"	
"	"		2.3	1.9	"	"	
"	"		2.8	1.8	.89-1.00	"	
"	"		2.5	1.8	"	"	
"	"		2.9	2.4	"	"	
"	"		2.9	1.9	"	"	
11707	"		1.8	1.5	.38-.51	"	
"	"		1.4	1.1	"	"	
"	"		1.8	1.6	.64-.71	"	
"	"		2.1	1.5	.81-.89	"	
11740	"		1.8	1.6	.64-.71	"	
11755	"		1.5	1.0	.51-.64	"	
"	"		2.4	1.5	.81-.89	"	
11838	"		1.4	1.0	.38-.51	"	
"	"		1.8	1.3	-	"	
"	"		1.8	1.3	.64-.71	"	
"	"		2.1	1.6	"	"	
"	"		2.1	1.6	.71-.76	"	
"	"		2.6	1.9	.81-.89	"	
11924	"		1.3	1.1	.38-.51	"	

FOVA Catalog Number	Bead Colors		Dimensions		Hole Dia.	Reflection	Facets
	Primary	Secondary	Dia.	Lgth.			
11924	White		1.7	1.5	.64-.71	Opaque	
"	"		2.8	2.5	.81-.89	"	
"	"		2.8	2.5	1.00	"	
11946	"		2.0	1.4	.51-.64	"	
"	"		2.0	1.5	.81-.89	"	
11972	"		1.2	0.8	.38-.51	"	
"	"		1.3	1.3	"	"	
"	"		1.4	1.0	"	"	
"	"		1.4	1.1	"	"	
"	"		1.4	1.0	"	"	
"	"		1.4	1.1	"	"	
"	"		1.4	1.2	"	"	
"	"		1.4	1.3	"	"	
"	"		1.5	1.1	.51-.64	"	
"	"		1.6	1.3	"	"	
"	"		1.8	1.3	"	"	
"	"		1.8	1.4	"	"	
"	"		1.9	1.3	"	"	
"	"		1.8	1.6	"	"	
"	"		1.8	1.6	"	"	
"	"		2.0	1.3	"	"	
"	"		1.8	1.4	"	"	
"	"		2.0	1.2	"	"	
"	"		1.8	1.3	.64-.71	"	
"	"		1.8	1.5	"	"	
"	"		2.1	1.6	"	"	
"	"		2.0	1.6	"	"	
"	"		2.2	1.6	"	"	
"	"		2.0	1.7	"	"	
"	"		2.1	1.7	"	"	
"	"		1.8	1.7	"	"	
"	"		2.0	1.3	.71-.76	"	
"	"		2.0	1.7	"	"	
"	"		1.9	1.5	"	"	
"	"		2.2	1.9	"	"	
"	"		2.7	2.0	"	"	
"	"		2.1	1.4	.76-.81	"	
"	"		2.2	1.5	"	"	
"	"		2.3	1.4	"	"	
"	"		2.2	1.9	.81-.89	"	
"	"		2.3	1.6	.89-1.00	"	
"	"		3.0	2.6	"	"	

FOVA Catalog Number	Bead Colors		Dimensions		Hole Dia.	Reflection	Facets
	Primary	Secondary	Dia.	Lgth.			
11972	White		2.9	2.3	.89-1.00	Opaque	
"	"		3.4	2.5	1.0	"	
12036	"		1.4	1.1	.38-.51	"	
"	"		1.4	1.2	.51-.64	"	
"	"		1.8	1.0	"	"	
"	"		1.8	1.4	"	"	
"	"		1.8	1.8	"	"	
"	"		2.0	1.8	"	"	
"	"		2.1	2.2	.76-.81	"	
"	"		2.9	2.6	.89-1.00	"	
12065	"		-	1.4	-	"	
"	"		1.8	1.9	-	"	
"	"		2.4	1.7	-	"	
"	"		1.9	1.6	-	"	
"	"		2.1	2.1	-	"	
"	"		2.0	1.2	-	"	
"	"		2.5	2.1	-	"	
"	"		1.1	1.1	< .38	"	
"	"		1.1	1.2	"	"	
"	"		1.1	1.1	"	"	
"	"		1.4	1.1	"	"	
"	"		1.2	1.1	.38-.51	"	
"	"		1.4	1.1	"	"	
"	"		1.4	0.9	"	"	
"	"		1.5	0.9	"	"	
"	"		1.5	1.1	"	"	
"	"		1.4	1.1	"	"	
"	"		1.5	1.0	"	"	
"	"		1.4	0.9	"	"	
"	"		1.3	0.8	"	"	
"	"		1.6	1.3	"	"	
"	"		1.4	1.3	"	"	
"	"		1.4	1.0	"	"	
"	"		1.3	1.1	"	"	
"	"		1.3	0.9	"	"	
"	"		1.2	1.1	"	"	
"	"		1.5	1.3	"	"	
"	"		1.4	1.0	"	"	
"	"		1.3	0.8	"	"	
"	"		1.4	1.1	"	"	
"	"		1.4	1.1	"	"	
"	"		1.4	1.0	"	"	

FOVA Catalog Number	Bead Colors		Dimensions		Hole Dia.	Reflection	Facets
	Primary	Secondary	Dia.	Lgth.			
12065	White		1.6	1.3	.38-.51	Opaque	
"	"		1.5	1.1	"	"	
"	"		1.4	1.0	"	"	
"	"		1.5	0.9	"	"	
"	"		1.3	1.2	"	"	
"	"		1.3	1.1	"	"	
"	"		1.3	0.8	"	"	
"	"		1.2	0.9	"	"	
"	"		1.4	0.8	"	"	
"	"		1.9	1.4	.51-.64	"	
"	"		2.2	1.6	"	"	
"	"		2.0	1.2	"	"	
"	"		2.0	1.5	"	"	
"	"		1.8	1.1	"	"	
"	"		1.6	1.1	"	"	
"	"		1.9	1.3	"	"	
"	"		1.7	1.2	"	"	
"	"		1.4	1.0	"	"	
"	"		1.5	0.9	"	"	
"	"		1.8	1.2	"	"	
"	"		1.6	1.0	"	"	
"	"		1.8	1.3	"	"	
"	"		2.1	1.4	"	"	
"	"		2.0	1.5	"	"	
"	"		1.4	0.8	"	"	
"	"		1.7	1.2	"	"	
"	"		1.6	1.3	"	"	
"	"		2.0	1.6	"	"	
"	"		1.6	1.1	"	"	
"	"		1.5	1.0	"	"	
"	"		1.7	1.1	"	"	
"	"		1.7	1.2	"	"	
"	"		1.4	1.0	"	"	
"	"		1.7	1.0	"	"	
"	"		1.6	1.0	"	"	
"	"		1.8	1.2	"	"	
"	"		2.0	1.2	.64-.71	"	
"	"		1.9	1.6	"	"	
"	"		2.1	1.8	"	"	
"	"		2.3	1.6	"	"	
"	"		2.3	2.1	"	"	
"	"		1.8	1.5	"	"	

FOVA Catalog Number	Bead Colors		Dimensions		Hole Dia.	Reflection	Facets
	Primary	Secondary	Dia.	Lgth.			
12065	White		2.0	1.7	.64-.71	Opaque	
"	"		1.8	1.0	"	"	
"	"		1.7	1.3	"	"	
"	"		2.5	1.6	"	"	
"	"		2.2	1.6	"	"	
"	"		2.0	1.2	"	"	
"	"		1.9	1.6	"	"	
"	"		1.8	1.2	"	"	
"	"		1.9	1.2	"	"	
"	"		2.1	1.3	"	"	
"	"		2.0	1.6	"	"	
"	"		2.0	1.2	"	"	
"	"		1.8	1.2	"	"	
"	"		2.1	1.4	"	"	
"	"		1.9	1.6	"	"	
"	"		1.9	1.5	"	"	
"	"		1.7	1.1	"	"	
"	"		1.8	1.4	"	"	
"	"		1.9	1.1	"	"	
"	"		1.8	1.4	"	"	
"	"		1.9	1.2	"	"	
"	"		2.1	1.6	.71-.76	"	
"	"		2.1	1.5	"	"	
"	"		2.2	1.2	"	"	
"	"		2.0	1.3	"	"	
"	"		1.9	1.5	"	"	
"	"		2.4	1.8	.76-.81	"	
"	"		2.1	1.2	"	"	
"	"		2.6	2.3	"	"	
"	"		2.2	1.6	"	"	
"	"		1.9	1.5	"	"	
"	"		2.0	1.5	"	"	
"	"		2.1	1.2	"	"	
"	"		2.1	1.9	"	"	
"	"		2.6	2.2	"	"	
"	"		2.1	1.4	"	"	
"	"		2.2	1.4	"	"	
"	"		1.9	1.3	"	"	
"	"		2.0	1.3	.81-.89	"	
"	"		2.1	2.0	"	"	
"	"		2.6	2.1	.89-1.00	"	
"	"		2.6	2.4	"	"	

FOVA Catalog Number	Bead Colors		Dimensions		Hole Dia.	Reflection	Facets
	Primary	Secondary	Dia.	Lgth.			
12094	White		1.2	1.4	.38-.51	Opaque	
"	"		1.3	1.0	"	"	
"	"		1.2	1.1	"	"	
"	"		1.8	1.5	.51-.64	"	
"	"		1.8	1.1	.76-.81	"	
"	"		2.5	2.2	"	"	
"	"		2.3	1.9	.89-1.00	"	
"	"		2.5	1.6	"	"	
12129	"		1.5	0.9	.51-.64	"	
"	"		2.1	1.7	.64-.71	"	
"	"		2.0	1.3	.51-.64	"	
"	"		2.3	1.7	.64-.71	"	
"	"		2.0	1.2	"	"	
"	"		2.1	1.6	"	"	
"	"		2.4	2.1	"	"	
"	"		1.9	1.5	.71-.76	"	
"	"		2.2	1.2	"	"	
"	"		2.3	1.9	.76-.81	"	
"	"		2.1	1.6	"	"	
"	"		2.6	1.9	"	"	
"	"		2.3	1.6	.81-.89	"	
"	"		2.5	2.0	"	"	
"	"		2.5	1.9	"	"	
"	"		2.6	2.1	"	"	
"	"		2.6	1.8	.89-1.00	"	
"	"		2.6	2.0	1.00	"	
12199	"		2.0	1.4	.71-.76	"	
"	"		2.0	1.6	.76-.81	"	
"	"		2.9	2.0	.89-1.00	"	
12230a	"		1.9	1.5	.38-.51	"	
"	"		2.2	1.4	.51-.64	"	
"	"		1.8	1.4	.64-.71	"	
"	"		2.2	2.1	.81-.89	"	
"	"		2.8	2.6	.89-1.00	"	
12385	"		1.3	0.8	< .38	"	
"	"		1.9	1.5	.51-.64	"	
"	"		2.0	1.2	"	"	
"	"		1.9	1.4	.64-.71	"	
"	"		2.2	1.8	.71-.76	"	
"	"		2.6	1.9	"	"	
12464	"		2.0	1.4	.64-.71	"	
"	"		2.1	1.2	.71-.76	"	

FOVA Catalog Number	Bead Colors		Dimensions		Hole		
	Primary	Secondary	Dia.	Lgth.	Dia.	Reflection	Facets
12533	White		2.1	1.6	-	Opaque	
"	"		1.3	1.2	.38-.51	"	
"	"		1.4	1.0	"	"	
"	"		1.2	1.0	"	"	
"	"		1.7	1.2	"	"	
"	"		1.4	1.0	"	"	
"	"		1.4	0.9	.51-.64	"	
"	"		1.7	1.2	"	"	
"	"		2.3	2.4	.64-.71	"	
"	"		2.1	1.4	.71-.76	"	
"	"		2.0	1.5	.76-.81	"	
"	"		2.2	1.9	"	"	
"	"		1.9	1.2	"	"	
"	"		2.2	1.7	"	"	
"	"		2.2	1.4	.81-.89	"	
"	"		2.6	1.8	"	"	
12563	"		1.5	1.0	.38-.51	"	
12761	"		2.0	1.7	.71-.76	"	
"	"		1.6	1.8	.51-.64	"	
12816	"		1.4	1.2	"	"	
"	"		2.0	1.5	"	"	
"	"		2.0	1.5	.64-.71	"	
"	"		1.9	1.4	"	"	
"	"		2.3	1.3	.76-.81	"	
"	"		2.2	1.3	.81-.89	"	
12850	"		1.4	1.0	.38-.51	"	
"	"		1.4	1.4	"	"	
"	"		1.5	1.0	.51-.64	"	
13334	"		2.2	1.6	.76-.81	"	
6913	2.5 P 7/4		1.6	1.1	.51-.64	Opaque	
6955	7.5 Y 8.5/10		1.6	1.1	.38-.51	"	
"	7.5 RP 5/10		1.3	1.1	< .38	"	
7222	5 PB 3/4		1.2	1.4	.38-.51	"	
7909	7.5 P 7/6		1.1	0.9	"	"	
9109	2.5 B 4/6		2.7	2.6	-	"	
9861	2.5 PB 4/6		2.5	2.5	.76-.81	"	
"	5 PB 8/4		1.6	1.0	.38-.51	"	
10578	5 PB 4/6		1.5	1.2	.51-.64	"	
11537	2.5 PB 4/8		3.0	2.2	.89-1.00	"	
11563	10 B 8/4		1.3	1.0	.38-.51	"	
11755	7.5 B 3/6		2.6	2.0	.81-.89	"	
11972	5 PB 4/6		1.5	1.1	-	"	

FOVA Catalog Number	Bead Colors		Dimensions		Hole		
	Primary	Secondary	Dia.	Lgth.	Dia.	Reflection	Facets
12036	2.5 PB 4/8		2.9	3.3	.89-1.00	Opaque	
12065	10 B 8/4		1.3	0.9	.38-.51	"	
"	"		1.3	0.7	"	"	
"	7.5 RP 6/10		1.5	1.3	< .38	"	
12129	2.5 PB 3/6		3.3	2.7	1.1	"	
12230a	2.5 B 6/4		4.4	2.9	1.2	"	
6891	5 B 4/8		2.5	2.0	.76-.81	Translucent	
6926	5 G 3/4		3.0	2.0	1.0	"	
6955	5 B 5/8		2.3	1.7	.76-.81	"	
"	7.5 PB Max		2.5	1.8	"	"	
7909	2.5 R 3/12		-	-	-	"	
9368	"		-	0.7	-	"	
10065	2.5 B 5/8		3.1	2.1	.89-1.00	"	
10408	5 B 4/8		2.4	1.6	.81-.89	"	
11707	7.5 PB Max		5.2	3.2	1.6	"	
11972	5 G 3/4		3.0	2.0	1.0	"	
"	5 B 4/8		4.1	3.7	1.0	"	
"	7.5 PB 2/8		2.6	1.8	.89-1.00	"	
12065	7.5 BG 3/6		3.1	2.6	.81-.89	"	
"	7.5 PB Max		2.4	1.7	.89-1.00	"	
12129	"		5.3	3.6	1.6	"	
12709	7.5 BG 3/6		3.3	2.7	.76-.81	"	
13115	5 B 4/8		2.9	2.5	.89-1.00	"	
13456	2.5 B 5/8		-	2.8	-	"	
Type IIb							
6955	N 8.0/	7.5 PB 4/6	2.8	2.2	.89-1.00	Opaque	4 Stripes
7572	N 8.0/	7.5 PB 4/6	2.8	2.0	"	"	4 "
10563	7.5 PB 2/6	N 9.0/	6.9	7.0	2.0	Translucent	26 "
Type IIIf							
9190	7.5 B 7/4	7.5 B 8/4	8.0	7.2	2.4	Opaque	21
11782	7.5 PB 4/10	7.5 PB 5/10	6.8	5.0	2.5	"	21
11946	7.5 PB 3/10	7.5 PB 5/10	8.5	7.3	3.2	"	21
12129	5 PB 5/10	5 PB 6/8	8.2	7.0	2.4	"	21
12230a	7.5 PB 4/10	7.5 PB 5/10	6.4	4.4	2.5	"	21
12299	5 PB 5/10	5 PB 6/8	-	7.6	-	"	-
12672	7.5 PB 3/10	7.5 PB 5/10	-	7.4	-	"	-
13007	7.5 B 7/4	7.5 B 8/4	-	7.9	-	"	-
6860	7.5 PB 3/10	7.5 PB 7/6	5.9	5.4	2.5	Translucent	21
8096	"	"	6.1	5.0	2.8	"	22
10010a	"	"	8.2	7.0	2.2	"	21
10601	"	"	8.1	7.1	2.9	"	21
11476	"	"	5.1	5.6	2.1	"	18

FOVA Catalog Number	Bead Colors		Dimensions		Hole Dia.	Reflection	Facets
	Primary	Secondary	Dia.	Lgth.			
11707	7.5 PB 3/10	7.5 PB 7/6	5.2	4.5	1.8	Translucent	21
11782	"	"	8.5	7.1	2.7	"	21
11946	"	"	7.5	7.5	2.9	"	19
12036	"	"	7.4	6.7	3.1	"	18
12965	"	"	7.9	7.5	3.6	"	-
12129	"	"	7.0	6.6	2.7	"	18
12761	"	"	-	-	-	"	-
12896	"	"	8.5	7.6	2.2	"	21
13068	"	"	7.4	6.6	2.2	"	35
11924	Clear	Whitish	9.1	7.5	3.3	Clear&Tran	21
12533	"	"	-	7.1	-	"	-
12930	"	"	8.4	8.3	2.5	"	21
Type IVa							
12065	6.25 R 3/10	N 9/	3.0	1.9	.81-.89	Tr&Opaque	
12199	"	"	2.3	1.6	< .38	"	
12973	"	"	4.6	3.4	1.1	"	
11972	7.5 R 4/10	Clear	3.4	2.9	1.1	Opaque&Cl.	
Type W1b							
4371	5 B 5/6		4.4	4.0	1.4	Opaque	
9321	"		4.4	3.6	1.3	"	
10539	"		4.4	2.9	1.5	"	
10640	7.5 B 5/6		9.0	8.4	-	"	
10653	"		8.7	8.0	2.0	"	
11972	"		8.6	7.8	2.0	"	
3494	5 B 3/6		6.1	7.0	1.8	Translucent	
7613	"		7.1	7.6	1.6	"	
"	7.5 PB Max		5.8	4.6	1.6	"	
7748	2.5 B 3/4		7.1	7.7	1.8	"	
9339	5 PB 2/8		-	-	-	"	
9861	2.5 B 3/6		6.4	5.4	1.4	"	
10026	10 BG 3/4		5.9	5.8	1.6	"	
10539	10 RP 4/6		9.7	8.5	-	"	
10975	"		8.4	6.5	2.5	"	
11323	10 BG 3/4		6.5	6.1	1.4	"	
"	"		5.9	6.4	1.4	"	
11707	5 B 3/6		6.6	6.4	1.9	"	
11755	"		6.9	6.3	1.9	"	
11782	2.5 B 3/6		6.2	5.4	1.4	"	
12036	5 B 3/6		6.1	6.7	1.6	"	
12065	7.5 PB Max		4.6	3.8	1.3	"	
12129	2.5 B 3/6		-	-	-	"	
12199	5 B 3/6		6.5	6.8	1.8	"	

FOVA Catalog Number	Bead Colors		Dimensions		Hole		
	Primary	Secondary	Dia.	Lgth.	Dia.	Reflection	Facets
12230a	5 B 3/6		6.1	5.9	2.0	Translucent	
"	"		6.8	6.0	1.7	"	
12594	10 BG 3/4		6.6	5.5	1.7	"	
12727	7.5 G 3/8		-	-	-	"	
"	7.5 PB Max		-	-	-	"	
12896	5 B 3/6		6.1	7.0	1.8	"	
Type Wlc							
9843	N 9.5/		5.1	8.6	1.5	Opaque	
11924	7.5 YR 5/10		9.3	10.9	3.1	Translucent	
Mandrel-Molded							
1577	2.5 B 8/4		8.4	6.9	2.2	Opaque	42
7170	5 PB 4/8		-	-	-	"	-
8043	2.5 B 8/4		8.8	7.3	2.6	"	40
8096	"		8.6	7.7	2.5	"	40
9413	5 PB 6/8		9.0	8.1	2.5	"	40
9580	"		8.9	7.7	2.6	"	42
10148	2.5 B 8/4		8.6	7.3	2.6	"	38
10408	N 0.5/		7.0	6.3	2.4	"	24
11160	5 PB 4/8		-	-	-	"	-
11425	2.5 B 8/4		8.7	7.7	2.3	"	38
11707	"		8.7	7.3	2.6	"	41
11733	"		8.5	7.6	2.1	"	37
11946	"		8.5	8.0	2.6	"	35
11972	5 PB 4/8		9.0	8.6	2.8	"	44
12065	5 PB 6/8		8.4	7.7	2.6	"	36
12129	2.5 B 8/4		8.4	7.3	2.1	"	36
"	5 PB 5/8		9.0	8.2	2.7	"	43
12533	"		9.3	8.2	2.9	"	52
13140	5 PB 4/8		9.3	7.8	2.8	"	42
10010a	Clear		10.7	10.1	3.0	Clear	45
Multi-Colored Tube							
7613	Multi-colored		12.4	20.1	1.6	Opaque&Tran	12
Missing							
8043							
11323							

APPENDIX III

List of Provenience Units with Their Corresponding Lot and FOVA Catalog Numbers

Provenience	Lot#	FOVA Catalog#
Surface, Chief Factors House	1167	13558-13562
Below Blacktop, Chief Factors House	1168	13563-13568
F149		
N140 W80	601	6848-6853
N140 W80, 1.9-2.4'	602	6854-6866
F167		
1.0-1.5'	604	6875-6882
N150 W80, HBC	603	6867-6874
N150 W80, 1.4-2.7'	605	6883-6885
F168		
N130 W70, 1.1-1.6' HBC	606	6886-6895
N130 W70, 1.6-2.1' HBC	607	6896-6904
F180		
1.5-2.0'	609	6908-6919
N130 W80, 1.5'	608	6905-6907
F181		
1.3-1.6'	610	6920-6937
N130 W100, 1.8' HBC	611	6938-6947
N140 W90, 1.0-1.5' HBC	612	6948-6969
N140 W100, 1.0-1.5' HBC	1071	12033-12039
F182		
1.5-2.0'	613	6970-6972
N130 W80, 2.0-2.3'	614	6973-6976
F183	615	6977-6998
1.1-1.4'	616	6999-7008
N90 W110, 0.9-1.4' HBC	617	7009-7015
N100 W110, 1.1-1.3' HBC	618	7016-7027
N100 W110, 1.1-1.4' HBC	619	7028-7046
N100 W110, 1.1-1.6' HBC	620	7047-7059
N100 W110, 1.2-1.6' HBC	621	7060-7073
N100 W110, 1.3-1.5' HBC	622	7074-7080
N110 W110, HBC	623	7081-7096
N110 W110, 1.1-1.3' HBC	624	7097-7126
N120 W110, 1.1-1.3' HBC	625	7127-7148
N120 W120, 0.6-1.0'	626	7149-7157
F184		
1.6-2.1'	632	7175-7181
N100 W100, 0.5-1.1'	627	7158-7160
N100 W100, 0.9-2.4'	628	7161-7166
N100 W110, HBC	629	7167
N110 W100, 0.5-1.1'	630	7168-7171
N110 W100, 0.9-2.4'	631	7172-7174
F187		
N90 W100, 1.1-1.6'	633	7182-7184

Provenience	Lot#	FOVA Catalog#
F191		
1.6-2.1'	634	7185-7193
N80 W110, 1.5-2.0' HBC	635	7194-7198
N80 W110, 1.7-3.0'	636	7199
N80 W120, 1.0-1.5' HBC	637	7200-7208
N80 W120, 1.1-1.6' HBC	638	7209-7214
N90 W100	639	7215
N90 W100, 1.1-1.6' HBC	640	7216-7221
N100 W90, 2.1-2.3' HBC	641	7222-7223
N110 W60, 1.6-2.1' HBC	642	7224-7227
N110 W70, 1.5-2.0' HBC	643	7228-7232
F192		
N100 W80, 1.7'	644	7233-7238
F195		
N110 W120, 1.4-4.4'	645	7239-7241
F197		
N110 W80, 0.9-1.1' HBC	646	7242-7247
F198		
N100 W120, 1.5'2.0'	647	7248-7249
F201		
N80 W130, 1.1-1.5'	648	7250
F202		
N90 W130, 1.5-1.9'	649	7251-7266
N90 W130, 1.6'	650	7267
N90 W130, 1.6-1.8'	651	7268-7269
N90 W130, 1.5-2.0' HBC	652	7270-7279a
N100 W130	653	7278b-7294
N100 W130, 1.6-2.1'	654	7295-7310
N110 W140	655	7311-7316
N110 W140, 1.4'	656	7317
F204		
N60 W110, 3.6-4.2'	657	7318-7322
N70 W110, 3.3-4.0'	658	7323-7324
N70 W120, 2.0-2.5' HBC	659	7325-7331
N80 W120	660	7332-7333
N90 W120, 3.3-4.2'	661	7334-7339
N100 W130, 2.6-3.1'	662	7340-7347
N110 W130 (N100 W130 ? BHT)	663	7348-7356
N120 W140, 2.3-4.4'	664	7357-7358
N130 W140, 2.3-3.3'	665	7359-7364
N140 W140, 2.0-3.4'	666	7365-7373
F205		
N120 W110	667	7374-7377
N130 W110, 0.9-2.6'	668	7378-7382

Provenience	Lot#	FOVA Catalog#
F207		
N150 W90, 0.5-1.0'	672	7422-7434
N150 W90, 0.5-1.9' VB	671	7403-7421
N150 W90, 1.9-2.4' VB	673	7435-7450
N150 W90, 2.4-2.9' VB	674	7451-7461
N150 W90, 2.9-3.4'	675	7462-7471
N150 W90, 3.4-3.9'	676	7472-7479
N150 W90, 3.9-4.4'	677	7480-7487
N150 W90, 4.4-6.7'	670	7391-7402
F209		
N70 W120, 2.0-2.5' HBC	678	7488-7492
N70 W130, 1.9'	679	7493-7497
N70 W130, 2.0-2.8'	680	7498
N70 W130, 2.5-3.3'	681	7499-7504
N80 W130, 2.0-2.8'	682	7505
N80 W130, 2.1-3.0' HBC	684	7508-7510
N80 W140, 2.1-2.8'	683	7506-7507
N90 W140, 2.5-3.0' HBC	685	7511-7513
N100 W140, 2.4' HBC	686	7514-7515
N100 W140, 2.5-3.0'	1169	13569-13570
F212		
N110 W140, 1.3-2.0'	687	7516-7520
F213		
N140 W90, 1.9-2.4' HBC	688	7521-7528
F214		
N110 W70, 2.1'	689	7529-7534
F217		
N130 W120, 1.1-2.1'	690	7535-7536
F219		
N140 W110	691	7537-7541
N140 W110, 0.7-2.0'	692	7542-7550
F220		
N100 W90	693	7551
N100 W90, 1.75'	694	7552
F222		
N120 W140, 1.9-2.5'	695	7553-7557
F223		
N110 W130, 1.5-1.8'	696	7558-7559
F226		
N120 W120, 1.75-2.4'	697	7560-7565
F229		
N90 W120, 1.2-1.5'	698	7566-7569
N90 W120, 1.7-2.2'	882	9952-9955

Provenience	Lot#	FOVA Catalog#
F230		
N140 W100, 1.9-2.35'	699	7570-7575
F231		
N150 W120, HBC	700	7576-7584
F232		
N150 W120, HBC	701	7585-7600
N150 W120, 0.8-1.2' HBC	702	7601-7602
N160 W120	703	7603-7606
F233		
N140 W130, 0.8-1.0' HBC	704	7607-7622
F235		
N150 W110, 1.4-1.7'	705	7623-7628
F236		
N90 W130, 1.2-2.3'	706	7629-7631
F237		
N150 W130, 0.0-3.6' HBC	707	7632-7645
N160 W130, 0.0-3.6'	708	7646-7674
N160 W130, 3.2-3.7'	709	7675-7685
F238		
N130 W130, 1.7-1.8'	710	7686-7690
F240		
N130 W150, 2.0-2.7'	711	7691-7717
N140 W150, 2.6-3.3'	712	7718-7731
N150 W150, 2.0-3.2'	713	7732-7735
F242		
N160 W110, 1.0-2.9'	714	7736-7743
N160 W110, 1.5-2.9'	715	7744-7757
F243		
N160 W110	716	7758-7769
N160 W110, 0.5-1.0'	717	7770-7801
N170 W110, 0.5-1.0'	718	7802-7813
F244		
N100 W60, 1.3-1.4'	719	7814
F247		
N130 W150, 1.7-2.8' HBC	720	7815-7816
F248		
N160 W100, 0.2-0.8' HBC	721	7817-7845
N160 W100, 0.5-1.0'	722	7846
F251		
N60 W120, 0.9-2.9' VB	723	7847
N60 W130, 0.6-2.75'	724	7848
N60 W140, 0.5-2.5'	725	7849-7857
N70 W100, 0.85-2.7'	726	7858-7865
N70 W110, 1.0-2.6'	727	7866-7872
N80 W70, 0.6-2.9'	728	7873-7877
N80 W80, 0.5-3.35'	729	7878-7879
N80 W90, VB	730	7880-7884
N90 W50, 0.8-3.0'	731	7885-7886

Provenience	Lot#	FOVA Catalog#
F252		
N130 W150, 2.2-2.7' HBC	732	7887
F253		
N160 W140, 1.5-2.0' HBC	1137	13167-13182
N160 W140, 2.0-2.5' HBC	1129	13062-13081
N160 W140, 2.5-3.0' HBC	1130	13082-13095
N160 W140, 3.0-3.5'	1131	13096-13108
N160 W140, 3.5-4.0'	1132	13109-13130
N160 W140, 4.0-4.5'	1133	13131-13136
F255		
N130 W150, 1.75-2.5'	733	7889
F256		
N60 W120, 1.5-2.0' HBC	734	7890-7891
F257		
N60 W120, 1.4-3.6' HBC	735	7892-7893
F258		
N160 W90, 0.6-0.8'	736	7894-7904
F259		
N160 W90, 1.0-2.5' Post Hole	737	7905-7915
F261		
N80 W110, 0.5-1.3' HBC	738	7916-7926
F262		
N100 W130	739	7927-7933
F263		
N170 W90, 0.8-1.1'	740	7934-7951
F264		
N160 W100, 0.5-2.75'	741	7952-7959
F265		
N50 W120, 1.7-2.2'	743	7962-7963
N60 W120, 1.3-2.15'	742	7960-7961
F267		
N160 W100, 0.3-2.6'	744	7964-7971
F268		
N160 W120, 1.5-3.2'	745	7972-7979
F269		
N50 W120, 0.0-3.2'	746	7980-7984
N50 W130, 0.0-3.5'	747	7985-7991
N50 W140, 0.0-3.2'	748	7992-7998
N60 W100, 0.0-3.1'	749	7999-8006
N70 W90, 0.0-3.3'	812	9305-9309
F270		
N70 W110, 1.3-2.1'	750	8007
F271		
N170 W100, 1.0-1.2'	751	8008-8027

Provenience	Lot#	FOVA Catalog#
F272		
N160 W130, 2.2'	752	8028-8036
F273		
N90 W100, 0.5-1.0'	753	8037-8044
F274		
N70 W110, 0.95-1.8'	754	8045-8054
F275		
N70 W110, 1.8-2.7'	755	8055-8059
F276		
N80 W100, 1.3-1.45'	756	8060-8067
F277		
N70 W100, 1.6'	757	8068-8077
N70 W110, 3.2-3.8'	758	8078-8082a
N80 W70, 2.6-3.6'	759	8083a-8089a
N80 W80, 0.0-1.0'	760	8080b
N80 W80, 1.5-2.0'	761	8081b-8083b
N90 W50, 1.5-3.5'	762	8084b-8087b
N90 W60, 2.8-3.5'	763	8088b-8091
F278		
N170 W110, 0.5-1.0'	764	8092-9007
F279		
N170 W100, 1.7-2.0'	765	9008
F280		
N70 W100, 1.1-1.5'	768	9016-9027
F281		
N90 W90, 0.6-1.3'	766	9009-9010
F282		
N90 W90, 0.0-1.0'	767	9011-9015
F283		
N170 W100, 0.95-2.85'	769	9028
F284		
N100 W70, 0.75-1.05'	770	9029-9031
F285		
N90 W90, 0.5-2.8'	771	9032
F286		
N60 W100, 0.0-0.4'	774	9068-9072
N60 W100, 0.4-0.9'	772	9033-9034
N60 W100, 0.9-1.4'	773	9035-9067
N60 W100, 1.4-1.9'	775	9073-9083
F288		
N90 W140, 1.5-2.8'	776	9084
F290		
N70 W100, 1.5-2.0'	777	9085-9089a
F291		
N70 W100, 1.55-1.75'	778	9089b-9092

Provenience	Lot#	FOVA Catalog#
F292		
N75.6 W79, 1.3-1.6'	779	9093
N76.15 W77.6, 1.15-1.4' HBC	780	9094
F293		
N60 W100, 1.35-1.45'	781	9095-9097
F294		
N90 W60, 0.85-1.4'	782	9098-9105
F295		
N80 W80, 2.45-4.75'	783	9106-9111
F296		
N90 W60, 0.9-2.5'	784	9112-9116
F297		
N100 W50, 1.25-2.9'	785	9117-9125
F298		
N50 W140, 1.5'	786	9126-9132
N60 W140, 2.0-3.05'	787	9133-9136
F299		
N50 W140, 1.2-2.35'	788	9137
F302		
N100 W50, 1.5-2.1'	789	9138
F304		
N100 W50, 1.65-2.9'	790	9139-9145
N50 W120		
0.0-1.2' VB	791	9146-9152
1.2-1.7' HBC	792	9153-9156
1.7-2.2' HBC	793	9157-9160
N50 W130		
0.0-1.2' VB	794	9161-9167
1.2-1.7' HBC	795	9168-9173
N50 W140		
0.0-0.5' VB	796	9174
0.0-1.3' VB	797	9175-9182
1.3-1.8' HBC	798	9183-9191
N60 W100		
0.0-0.9' VB	799	9192-9201
0.9-1.4' HBC	800	9202-9216
1.4-1.9' HBC	801	9217-9226
N60 W110		
0.0-1.0' VB	802	9227-9232
1.0-1.5'	803	9233-9242
N60 W120		
0.0-1.0' VB	804	9243-9245
1.0-1.5' HBC	805	9246-9255

Provenience	Lot#	FOVA Catalog#
N60 W130		
0.0-1.3'	806	9256-9261
1.3-1.8'	807	9262-9270
1.8-2.3'	808	9271
N60 W140		
0.0-1.0' VB	809	9272-9282
1.0-1.5' VB	810	9283-9295
1.5-2.0' HBC	811	9296-9304
N70 W90		
0.0-1.0' VB	813	9310-9316
1.0-1.5' HBC	814	9317-9329
1.5-2.0' HBC	815	9330-9334
N70 W100		
0.0-1.2' VB	816	9335-9346
1.2-1.7' HBC	817	9347-9363
1.7-2.2' HBC	818	9364-9370
N70 W110		
0.0-1.2' VB	819	9371-9379
1.2-1.7' HBC	820	9380-9392
1.7-2.2' HBC	821	9393-9396
2.2-2.7' HBC	822	9397-9399
N70 W120		
0.0-1.0' VB	823	9400-9407
1.0-1.5' HBC	824	9408-9423
1.5-2.0' HBC	825	9424-9427
N70 W130		
0.0-0.9' VB	826	9428-9436
0.9-1.4' HBC	827	9437-9445
1.4-1.9' HBC	828	9446
N70 W140		
0.0-0.5' VB	829	9447-9453
0.5-1.0'	830	9454-9461
1.0-1.5'	831	9462-9471
N80 W70		
0.0-1.0' VB	832	9472-9480
1.0-1.5' HBC	833	9481-9493
1.5-2.0' HBC	834	9494-9497
N80 W80		
0.0-1.0' VB	835	9498-9501
1.0-1.5' HBC	836	9502-9514
1.5-2.0' HBC	837	9515-9519
N80 W90		
0.0-0.8' VB	838	9520-9525
0.8-1.3' HBC	839	9526-9539a
1.3-1.8' HBC	840	9539b
1.3-1.9' HBC	841	9540-9545

Provenience	Lot#	FOVA Catalog#
N80 W100		
0.0-0.5' VB	842	9546-9557
0.5-1.0' HBC	843	9558-9574
1.0-1.5' HBC	844	9575-9592
1.5-2.0' HBC	845	9593-9598
N80 W110		
0.0-0.5' VB	846	9599-9607
0.5-1.0' HBC	847	9608-9617
1.0-1.5' HBC	848	9618-9628
1.5-2.0' HBC	849	9629-9638
N80 W120		
0.5-1.1' VB	851	9646-9653
1.1-1.6' HBC	852	9654-9667
1.5-2.0' HBC	850	9639-9645
N80 W130		
0.0-1.1' VB	853	9668-9676
1.1-1.6' HBC	854	9677-9695
1.6-2.1' HBC	855a	9696-9697
N80 W140		
0.0-1.0' VB	855b	9698-9703
1.0-1.5' HBC	856	9704-9715
1.5-2.0' HBC	857	9716-9721
2.0-2.5' HBC	858	9722-9724
N90 W50		
0.0-1.0' VB	859	9725-9733
1.0-1.5' HBC	860	9734-9741
1.5-2.0' HBC	861	9742-9745
N90 W60		
0.0-0.9' VB	862	9746-9751
0.9-1.4'	863	9752-9767
1.4-1.9' HBC	864	9768-9776
N90 W70		
0.0-0.8' VB	865	9777-9783
0.8-1.3' HBC	866	9784-9800
1.3-1.8' HBC	867	9801-9802
N90 W80		
Surface	871	9821
0.0-0.5' VB	868	9803-9807
0.5-1.0' HBC	869	9808-9819
1.0-1.5' HBC	870	9820
N90 W90		
0.5-1.0' VB	872	9822-9836
1.0-1.5'	873	9837-9854
1.5-2.0' HBC	874	9855

Provenience	Lot#	FOVA Catalog#
N90 W100		
0.5-0.9' VB	875	9856-9875
0.9-1.4' HBC	876	9876-9899a
1.4-1.9' HBC	877	9899b-9901
N90 W110		
0.5-1.1' VB	878	9902-9915
1.1-1.6' HBC	879	9916-9940
1.6-2.1'	880	9941-9949
2.1-2.6' HBC	881	9950-9951
N90 W120		
0.5-1.2' VB	883	9956-9967
1.2-1.7' HBC	884	9968-9980
1.7-2.2' HBC	885	9981-9991
2.2-2.7' HBC	886	9992-9994
N90 W130		
0.0-1.0' VB	887	9996-10002
1.0-1.5' HBC	888	10003-10022
1.5-2.0' HBC	889	10023-10031
N90 W140		
0.0-0.5' VB	900	10032-10040
0.5-1.0' VB	901	10041-10043
1.0-1.5' HBC	902	10044-10058
1.5-2.0' HBC	903	10059-10068
2.0-2.5' HBC	904	10069-10070
N100 W50		
0.0-1.4'	905	10071-10083
1.4-1.9' HBC	906	10084-10113
N100 W60		
0.0-1.0'	907	10114-10116
1.0-1.5' HBC	908	10117-10133
1.5-2.0' HBC	909	10134-10138
N100 W70		
0.0-0.5' VB	910	10139-10143
0.5-1.0' HBC	911	10144-10158
1.0-1.5' HBC	912	10159-10162
1.5-2.0' HBC	913	10163
N100 W80		
0.5-1.2' VB	914	10164-10173
1.2-1.7' HBC	915	10174-10187
1.7-2.4' HBC	916	10188-10192
N100 W90		
0.5-1.1' VB	917	10193-10208
1.1-1.6' HBC	918	10209-10228

Provenience	Lot#	FOVA Catalog#
N100 W100		
0.5-1.0' VB	919	10229-10241
1.0-1.5' HBC	920	10242-10267
1.5-2.0' HBC	921	10268-10284
2.0-2.5' HBC	922	10285-10292
N100 W110		
0.5-1.0' VB	923	10293-10311
1.0-1.5' HBC	924	10312-10331
1.1-1.5'	669	7383-7390
N100 W120		
0.5-1.0' Caywood Disturbance	925	10332-10347
1.0-1.5' HBC	926	10348-10364
1.5-2.0' HBC	927	10365-10380
2.0-2.5' HBC	928	10381-10386
N100 W130		
0.5-1.1' VB	929	10387-10400
1.1-1.6' HBC	930	10401-10428
1.6-2.1' HBC	931	10429-10435
2.1-2.6' HBC	932	10436-10441
N100 W140		
0.0-0.9' VB	933	10442-10449
0.9-1.4' HBC	934	10450-10473
1.4-1.9' HBC	935	10474-10489
1.9-2.4' HBC	936	10490-10494
N110 W60		
0.0-0.5'	141	1571-1586
0.5-1.0'	139	1560-1568
0.5-1.2' VB	940	10520-10532
1.0-1.5'	144	1605-1617
1.2-1.7' HBC	941	10533-10551
1.5-2.0'	140	1569-1570
1.7-2.3' HBC	942	10552-10557
N110 W70		
0.5-1.1' VB	943	10558-10573
1.1-1.6' HBC	964	10574-10597
N110 W80		
0.5-1.3' VB	965	10598-10612
1.3-1.8' HBC	966	10613-10635a
1.8-2.3' HBC	967	10634b-10635b
N110 W90		
0.5-1.3' VB	968	10636-10649
0.5-1.4' VB	969	10650-10662
1.1-1.6' HBC	970	10663-10671
1.5-2.0' HBC	971	10672-10680
1.5-2.0', 1918 Ballast Divider	972	10681-10684
1.6-1.9', 1918 Ballast Divider	973	10685-10686
1.6-2.3' HBC	974	10687-10696

Provenience	Lot#	FOVA Catalog#
N110 W100		
0.5-1.1' VB	975	10697-10718
1.1-1.6' HBC	976	10719-10735
1.6-2.1' HBC, Loading Dock	977	10736-10745
2.1-2.6' HBC	978	10746-10748
N110 W110		
0.5-1.0'	979	10749-10761
1.0-1.5'	980	10762-10783
1.3-1.5', Under F183, HBC	981	10784-10794a
1.5-2.0'	982	10794b-10806
N110 W120		
0.5-1.1' VB	983	10807-10820
1.1-1.6' HBC	984	10821-10845
1.6-2.1' HBC	985	10846-10857
N110 W130		
0.5-0.8' VB	986	10858-10869
0.8-1.3' HBC	987	10870-10893
1.3-1.8' HBC	988	10894-10913
1.8-2.3' HBC	989	10914-10919
2.3-2.8' HBC	990	10920-10921
N110 W140		
0.0-1.0' VB	992	10922-10932
1.0-1.5' HBC	993	10933-10948
1.5-2.0' HBC	994	10949-10958
2.0-2.5' HBC	995	10959-10960
N120 W60		
0.0-0.5'	158	1748-1767
1.0-1.5'	155	1707-1721
1.5-2.0'	156	1722-1733
2.0-2.5'	159	1768-1774
2.0-2.5' HBC	996	10961-10968
N120 W70		
0.5-1.0' VB	997	10969-10983
1.0-1.5' HBC	998	10984-10990
1.5-2.0' HBC	999	10991-11002
1.6-2.1', 1918 Ballast Divider	1000	11003-11005
2.0-2.5' HBC	1001	11006-11011
N120 W80		
0.5-1.2' VB	1002	11012-11025
1.0-1.5', 1918 Ballast Divider	1003	11026
1.2-1.7' HBC	1004	11027-11035
1.6-2.1', 1918 Ballast Divider	1005	11036-11041
1.7-2.2' HBC	1006	11042-11043
2.2-2.5' HBC	1007	11044-11047

Provenience	Lot#	FOVA Catalog#
N120 W90		
0.5-1.1' VB	1008	11048-11069
1.1-1.6' HBC	1009	11070-11082
1.6-2.0' HBC	1010	11083-11090
N120 W100		
0.5-1.0' VB	1011	11091-11102
1.0-1.5'	1012	11103-11114
1.5-2.4' HBC	1013	11115-11123
1.6' HBC	1014	11124
2.1-2.6' HBC	1015	11125-11126
N120 W110		
0.5-1.0' VB	1016	11127-11148
1.0-1.5' HBC	1017	11149-11173
1.5-2.0' HBC	1018	11174-11186
2.0-2.5' HBC	1019	11187-11194
N120 W120		
0.0-0.7' VB	1020	11195-11206
0.7-1.2' HBC	1021	11207-11227
1.2-1.7' HBC	1022	11228-11239
1.7-2.2' HBC	1023	11240-11248
N120 W130		
0.0-0.8' VB	1024	11249-11264
0.8-1.3' HBC	1025	11265-11279
1.3-1.8' HBC	1026	11280-11296
1.8-2.3' HBC	1027	11297-11302
N120 W140		
0.0-1.4' VB	1028	11303-11314
1.4-1.9' HBC	1029	11315-11338
1.9-2.4' HBC	1030	11339-11347
N130 W70		
Profile Cleaning	183	2003-2006
0.0-0.5'	185	2025-2037
0.5-1.0'	187	2053-2065
0.5-1.0'	387	3986-3988
1.0-1.5'	188	1066-1079
1.0-1.5'	388	3989-4005
1.5-2.0'	191	2102-2112
1.5-2.0'	389	4006-4012
2.0-2.5'	390	4013-4014
2.3-2.5', Caywood Trench	1031	11348-11352
N130 W80		
0.5-1.0'	1032	11353-11364
0.5-1.2' VB	1033	11365-11372
1.1-1.7' HBC	1034	11373-11385
1.2-1.7' HBC	1035	11386-11401
1.7-2.2' HBC	1036	11402-11403

Provenience	Lot#	FOVA Catalog#
N130 W90		
0.5-1.2'	1037	11404-11418
1.2-1.7' HBC	1038	11419-11437
1.7-2.2' HBC	1039	11438-11443
N130 W100		
0.5-1.0' VB	1040	11444-11465
1.0-1.5' HBC	1041	11466-11501
1.5-2.0' HBC	1042	11502-11531
N130 W110		
0.0-0.5' VB	1043	11532-11546
0.5-0.7' HBC	1044	11547-11553
0.5-1.0' HBC	1045	11554-11581
1.0-1.5' HBC	1046	11582-11603
1.5-2.0' HBC	1047	11604-11617
N130 W120		
0.0-0.5' VB	1048	11618-11633
0.5-1.0' HBC	1049	11634-11669
1.0-1.5' HBC	1050	11670-11675
N130 W130		
Found in Storage Box	1054	11733
0.0-0.8' VB	1051	11676-11696
0.8-1.3' HBC	1052	11697-11727
1.3-1.8' HBC	1053	11728-11732
N130 W140		
0.0-0.5' VB	1055	11734-11746
0.5-1.0' HBC	1056	11747-11773
1.0-1.5' HBC	1057	11774-11797
1.5-2.0' HBC	1058	11798-11814
N130 W150		
0.0-1.0' VB	1059	11815-11828
1.0-1.5' HBC	1060	11829-11855
1.5-2.0' HBC	1061	11856-11872
N140 W70		
0.0-0.5'	344	3467-3473
0.0-0.5'	395	4037-4038
0.5-1.0'	345	3474-3498
0.5-1.0'	396	4039-4043
1.0-1.5'	397	4044-4063
1.5-2.0'	398	4064-4074
N140 W80		
0.5-1.0'	1062	11873-11880
1.0-1.5'	1063	11881-11903
1.5-2.0'	1064	11904-11916

Provenience	Lot#	FOVA Catalog#
N140 W90		
0.5-1.3' VB	1065	11917-11935
1.3-1.8' HBC	1066	11936-11962
N140 W100		
0.0-0.5' VB	1068	11964-11989
0.5-1.0' HBC	1069	11990-12020
0.7', N136.6 W97.5	1067	11963
1.0-1.5' HBC	1070	12021-12032
N140 W110		
0.0-0.5' VB	1072	12040-12051
0.5-1.0' HBC	1073	12052-12089
1.0-1.5' HBC	1074	12090-12102
N140 W120		
0.0-0.5' VB	1075	12103-12116
0.5-1.0' HBC	1076	12117-12161
1.0-1.5' HBC	1077	12162-12175
N140 W130		
0.0-0.5' VB	1078	12176-12187
0.5-1.0' HBC	1079	12188-12222
1.0-1.5' HBC	1080	12223-12250
1.5-2.0' HBC	1081	12251-12255
N140 W140		
0.0-0.5' VB	1082	12256-12274
0.5-1.0' HBC	1083	12275-12290
1.0-1.5' HBC	1084	12291-12313
1.5-2.0' HBC	1085	12314-12317
N140 W150		
0.0-1.1' VB	1086	12318-12330
1.1-1.6' HBC	1087	12331-12343
1.6-2.1' HBC	1088	12344-12357
N150 W80		
0.5-1.0'	414	4326-4342
1.0-1.5'	415	4343-4363
1.5-2.0'	416	4364-4376
N150 W90		
0.0-0.5' VB	1089	12358-12375
0.5-1.0' HBC (?)	1090	12376-12377
1.0-1.5' HBC, Caywood Disturbance	1091	12378-12405
N150 W100		
0.0-0.5' VB	1092	12406-12413
0.5-1.0' HBC	1093	12414-12425
1.0-1.5' HBC	1094	12426-12438

Provenience	Lot#	FOVA Catalog#
N150 W110		
0.0-0.5' VB	1095	12439-12454
0.5-1.0' VB	1096	12455-12483
1.0-1.5'	1097	12484-12493
1.5-2.0'	1098	12494-12503
N150 W120		
0.0-0.5'	1099	12504-12522
0.5-1.0' HBC	1100	12523-12555
1.0-1.5' HBC	1101	12556-12573a
N150 W130		
0.0-0.5' VB	1102	12574b-12587
0.5-1.0' HBC	1103	12538-12607
1.0-1.5' HBC	1104	12608-12624
1.5-2.0' HBC	1105	12625-12634
N150 W140		
0.0-0.5' VB	1106	12635-12638
0.5-1.0' HBC	1107	12639-12648
1.0-1.5' HBC	1108	12649-12665
1.5-2.0' HBC	1109	12666-12683
N150 W150		
0.0-0.5' VB	1110	12684-12692
0.5-1.0' HBC	1111	12693-12703
1.0-1.5' HBC	1112	12704-12720
1.5-2.0' HBC	1113	12721-12736
N160 W90		
0.0-0.5' VB	1114	12737-12751
0.5-1.0' HBC	1115	12752-12779
N160 W100		
0.0-0.5' VB	1116	12780-12806
0.5-1.0' HBC	1117	12807-12841
1.0-1.5' HBC	1118	12842-12861
N160 W110		
0.0-0.5' VB	1119	12862-12887
0.5-1.0' HBC	1120	12888-12922
0.5-1.0' HBC	1138	13183-13193
1.0-1.5' HBC	1121	12923-12944
N160 W120		
0.0-0.9' VB	1122	12945-12964
0.9-1.5' HBC	1123	12965-12991
1.5-2.0' HBC	1124	12992-13001
N160 W130		
0.0-0.7' VB	1125	13002-13015
0.7-1.2' HBC	1126	13016-13028
1.2-1.7' HBC	1127	13029-13047
1.2-1.7' HBC	1128	13048-13061

Provenience	Lot#	FOVA Catalog#
N160 W140		
0.0-1.0' VB	1134	13137-13145
1.0-1.5' HBC	1135	13146-13156
1.5-2.0' HBC	1136	13157-13166
N170 W90		
0.0-0.5' VB	1139	13199-13210
0.5-1.0' HBC	1140	13211-13228
1.0-1.5' HBC	1141	13229-13246
N170 W100		
0.0-0.5' VB	1142	13247-13256
0.5-1.0' HBC	1143	13257-13270
1.0-1.5' HBC	1144	13271-13287
1.5-2.0' HBC	1145	13288-13303
N170 W110		
0.0-0.5'	1146	13304-13325
0.5-1.0'	1147	13326-13347
1.0-1.5' HBC	1148	13348-13358
1.5-2.0' HBC	1149	13359-13369
N170 W120		
0.0-0.5' VB	1150	13370-13377
0.5-1.0' HBC	1151	13378-13384
1.0-1.5' HBC	1152	13385-13398
1.5-2.0' HBC	1153	13399-13409
2.0-2.5' HBC	1154	13410-13421
N180 W90		
0.0-0.5'	1155	13422-13429
0.5-1.0' VB	1156	13430-13440
1.0-1.5' HBC	1157	13441-13450
1.5-2.0' HBC	1158	13451-13464
2.0-2.5' HBC	1159	13465-13469
N180 W100		
0.0-0.5' VB	1160	13470-13480
0.5-1.0' HBC	1161	13481-13498
1.0-1.5' HBC	1162	13499-13520
1.5-2.3' HBC	1163	13521-13534
N180 W110		
0.0-1.0' VB	1164	13535-13544
1.0-1.5' HBC	1165	13545-13550
1.5-2.0' HBC	1166	13551-13557

REFERENCES CITED

Caywood, Louis R.
1949 Excavations at Fort Vancouver /1948/. U.S. National Park Service, Vancouver. mimeographed.

1955 Final Report - Fort Vancouver Excavations. U.S. National Park Service, Vancouver. mimeographed.

Combes, John D.
1966 A Report of the Fort Vancouver Archaeological Excavation of the North Wall. Fort Vancouver National Historic Site, Vancouver.

Dixie Gun Works, Inc.
1970 Catalog No. 119A. Union City, Tennessee.

Godden, Geoffrey A.
1964 Encyclopaedia of British Pottery and Porcelain Marks. Bonanza Books, New York.

Hamilton, T. M.
1960 Some Gun Parts from 18th Century Osage Sites. The Missouri Archaeologist, Vol. 22, pp. 120-149. Columbia, Missouri.

Hanson, Charles E., Jr.
1955 The Northwest Gun. Nebraska State Historical Society, Publications in Anthropology, No. 2. Lincoln.

Hoffman, J. J. and Lester A. Ross
1972 Fort Vancouver Excavations - I (1845 Bakery and Wash House). Manuscript on file at Fort Vancouver National Historic Site, Vancouver.

1973 Fort Vancouver Excavations - III, 1845 Harness Shop. Manuscript on file at Fort Vancouver National Historic Site, Vancouver.

Hudson's Bay Company
1828 Invoices of the William and Ann and Ganymede for Outfits 1829-30 and 1830-31. HBC Archives A.24/37, pp. 127-179. Manuscript on file at the Hudson's Bay Company Archives, London.

1846 Book of merchandise exported of the Cowlitz and Mary Dare for Outfit 1848-49. HBC Archives A.25/7, Fos. 42d.-45d. Manuscript on file at the Hudson's Bay Company Archives, London.

Hussey, John A.
1957 The History of Fort Vancouver and its Physical Structure. Washington State Historical Society, Tacoma.

1972 Fort Vancouver, Historic Structures Report, Historical Data, Vol. 1. Manuscript prepared by the National Park Service, Denver.

Johnson, David F.
1943 Uniform Buttons, American Armed Forces 1784-1948. 2 Vols. Century House, Watkins Glen, New York.

Jones, Olive
1971 Glass Bottle Push-Ups and Pontil Marks. Historical Archaeology, 1971, pp. 62-73. The Society for Historical Archaeology, Lansing, Michigan.

Kidd, Kenneth E. and Martha Ann Kidd
1970 A Classification System for Glass Beads for the Use of Field Archaeologists. Canadian Historic Sites: Occasional Papers in Archaeology and History, 1:45-89. Department of Indian Affairs and Northern Development, Ottawa.

Logan, Herschel C.
1959 Cartridges: A Pictorial Digest of Small Ammunition. Bonanza Books, New York.

Peterson, Harold L.
1956 Arms and Armor in Colonial America, 1526-1783. Stackpole, Harrisburg, Pennsylvania.

Russell, Carl P.
1967 Firearms, Traps, & Tools of the Mountain Man. Alfred A. Knopf, New York.

Thompson, Erwin N.
1969 Shallow Grave at Waiilatpu: The Sagers' West. Oregon Historical Society, Portland.