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PRELIMINARY REPORT OF THE 1981 EXCAVATIONS  
OF THE FORT ROSS FUR WAREHOUSE

by

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September 1981

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## INTRODUCTION

As part of the reconstruction of the Russian settlement at Fort Ross, Sonoma County, California, the Department of Parks and Recreation, in conjunction with the Office of the State Architect, is pursuing plans to rebuild the Russian Fur Warehouse (also known as the "Old Warehouse" or "Fur Barn"). As a first stage in this process, an archeological excavation and historical research was undertaken by the Cultural Resources Management Unit of DPR under the direction of State Archeologist I Glenn Farris. Results of this research will help to define the location, dimensions, and construction features. In addition, some suggestions of prototype structures from Alaska which may provide models for the building superstructure will be discussed.

The current project was conceived of as a final archeological examination prior to the rebuilding of the Fur Warehouse. Therefore, in the interests of preserving as much data as possible, as well as obtaining the fullest view of the ground structure of the building, the complete building area (19 m long and 12 m wide) was excavated. It must be borne in mind that despite the number of references to the building cited, most are vague and could only be validated by the archeological record combined with historical analogy from other Russian-American Company sites. When actual construction is finally undertaken, an archeologist should be on hand to monitor the inevitable disturbance of surrounding ground.

I would like to thank the following people who aided in the excavation work on this project: David Abrams, James Barter, Bodil Hoem, Diane Kelly, Lee Motz, Eric Motz, Robbie Motz, Bonnie Porter, and Peter D. Schulz. A number of

people provided other invaluable support: Earl Carlson, Jr., Lloyd Geissinger, John Hughes, Bill Lintow, Virgil ("Bud") Luckey, William Pritchard, Eletha Rea, Francis A. Riddell, Robert Robles, Michael Smith, Christina Swiden, Michael Tucker, and Dan Winkelmann. Finally, I would like to reserve special appreciation for the thoughts, comments, and enthusiasm of Eloise Barter, Robert Edwards, David L. Felton, Julia Hunter-Blair, Quinton Jones, John C. McKenzie, Michael Sampson, Dr. Arnold Bauer, and the thousands of tourists to Fort Ross whose endless questions kept me constantly re-evaluating my views on the project.

## HISTORICAL BACKGROUND

Possibly the earliest mention of the Fur Warehouse appears in a description by a Spanish officer (Lieutenant Gabriel Moraga) who visited Fort Ross sometime in July 1814, two years after construction had begun. He describes the buildings within the fort square as follows:

Dentro del cuadro hay un galeron hermoso con divisiones -- lo usan de cuarteles, y su alto de almacen. En otro, crea, trabajan los artesanos -- una gran casa en q<sup>e</sup> (que) viven el comand<sup>te</sup> y el piloto -- muy decente -- llena de vidrieras -- abajo es el almacen de caldos, y aun arriba puede tener algo (Arguello 1814).

Within the square is an attractive roofed shed with rooms; the lower part is used as a barracks; the upper as a storehouse....

Since he appears to be speaking of the two major (two-story) structures in the fort, these should coincide with the Fur Warehouse and the Kuskov House. The latter building described above is clearly the Kuskov House, and so I believe it probable that the first building is the Fur Warehouse. The main value of this description is the information that in 1814 the lower floor was being used as quarters and the upper story as a storehouse. The use of the unusual term galeron is interesting here (Mexican usage). It may have been a term applied to strictly wooden buildings by a man accustomed to adobe construction.

The first plan map of the fort showing a building in the northwest section of the square is the 1816 Chucano Map (Estudillo 1816) of Fort Ross. This map, prepared by a Spanish Officer from information provided by a Russian deserter, mentions a "clothing warehouse" in that area but gives no further details.

The map is of little or no aid in precisely locating the Fur Warehouse or even determining its shape.

The most valuable of the early descriptions dates from 1817 when a map of Fort Ross was prepared as part of a report to calm the fears of the Spanish government as to Russian intentions. A detail of the buildings in the stockade enclosure (Figure 1) shows a plan view of the "two story storehouse, built of logs containing two storerooms on lower floor and three above" (Fedorova 1973:359).

A drawing dating to 1828 done by August Bernard Duhaut-Cilly (1929:326) shows the fort as seen from a hill to the east. The roof of the "Fur Warehouse" is shown here, but the stockade wall obstructs a view of the walls of the building. The roof is apparently of a hip roof design with a pair of dormer windows on the east side, facing the center of the fort (Figure 2).

In 1833, the fort was visited by Baron Ferdinand Von Wrangell who commented on the dilapidated condition of the stockade wall and buildings. He stated that they would soon "need repairs, or they will have to be replaced by new structures" (Gibson 1969:207).

It is believed that Alexander Rotchev, the last commandant of Fort Ross, completed a series of improvements to the existing structures in the years following his arrival in 1836. This contention is borne out by descriptions of various buildings as being "new" in the 1841 inventories of sale (Sutter 1841; Vallejo 1841).



When the Russians decided to sell out their holdings in Fort Ross, they prepared two "inventories of sale" documents for the two major potential buyers, M. G. Vallejo and J. A. Sutter. The first was in Spanish and contained the following description:

Almacen (viejo) dos altos de madera grueso (sic, grueso) larga 8 brazas, ancho 4 braz., tiene una galeria abierta sostenida (Vallejo 1841).

Warehouse (old) two stories of thick logs, length 8 brazas (56 feet--GJF), width 4 brazas (28 feet--GJF), has a supported open gallery.

When Vallejo demurred, Rotchev made an offer to John Sutter. The accompanying inventory is in French:

Le vieux magasin à deux étages fait de poutres long (eur) 8 t. (toises), (56 feet--GJF) larg (eur) 4 t. (28 feet--GJF) entouré de peristyle (Sutter 1841).

The old storehouse two stories made of beams (logs) length 8 fathoms, width 4 fathoms surrounded by a peristyle (gallery with columns--GJF).

A second French document, prepared by French diplomat Eugene Duflot de Mofras in 1841, states:

Un magasin ancien à deux étages avec une galerie extérieure construite en madriers, sur 16 mètres de front et 8 mètres de profondeur (Duflot de Mofras 1842:15).

An old storehouse of two stories with an exterior gallery constructed of thick planks, 16 meters in front (long) and 8 meters in depth (width).

The composite picture drawn from these three descriptions confirms several points mentioned in the 1817 description: two stories, log construction. However, it adds the dimensions of the structure as well as the description of the building as having the open, exterior gallery supported by columns. Such buildings have been pictured in both Sitka and Kodiak, Alaska (Khlebnikoff 1976:8-9, 74-75; Blomkvist 1972:117) in the former Russian settlements there (see Figures 3 and 4). Since the builders who constructed Fort Ross were brought down from Sitka, it seems probable that the one shown there may have been a prototype for the Fort Ross building. If the Old Warehouse at Fort Ross did have an open side, it would have been on the east side (actually facing ESE) which would have protected it from the prevalent winter (rainy season) winds. About the same time these inventories were prepared, there were at least two drawings made of the fort by I. G. Voznesenskii (Blomkvist 1972). One was a watercolor painted from the perspective of the hills directly north of the fort (O'Brien 1980:21-22). In looking at the Warehouse building, we see the north end. It is interesting that there seem to be three rooftops shown in a row (Figure 5). We may presume that the hindmost is that of the Rotchev House (New Commandant's Quarters) and that the middle one is the Old Warehouse. However, the northernmost (nearest) roof is puzzling. It may possibly be an addition to the north end of the Old Warehouse. This will be discussed further when we get to the 1878 sketch. A note of confusion derives from an unfinished drawing of Voznesenskii, which shows a view from the south (Figure 6). This drawing fails to show the Rotchev House, although it may be simply masked by the Officials' Quarters in the foreground. It does show a building which is meant to be the Fur Warehouse. But immediately to the north, rather than having a contiguous building lined up with it, we see a detached, east-west running structure in line with the Kuskov House.



Figure 1. Detail of Russian Map of Fort Ross  
Showing Outline of Fur Warehouse--1817.

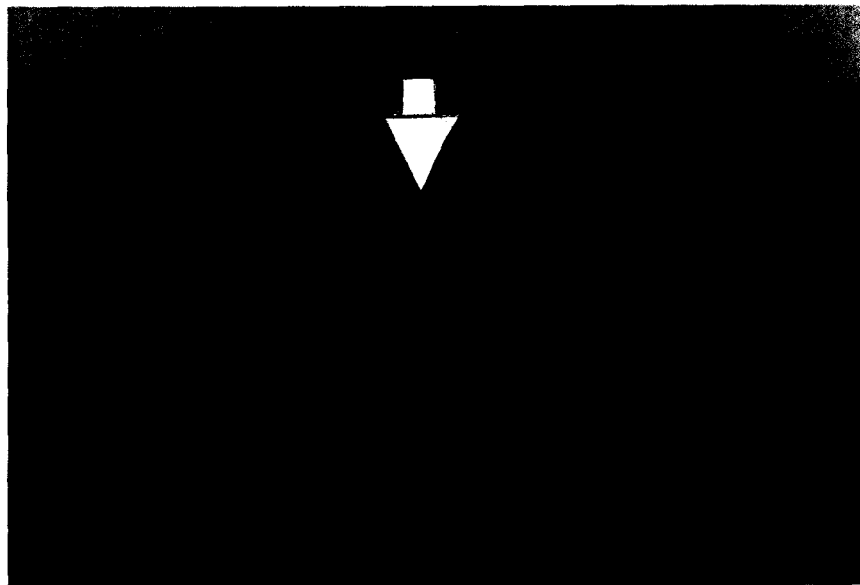
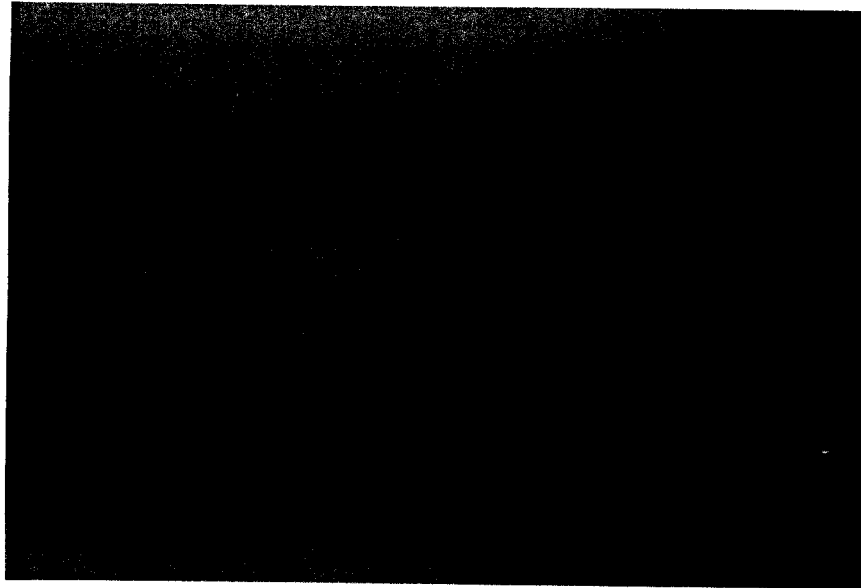
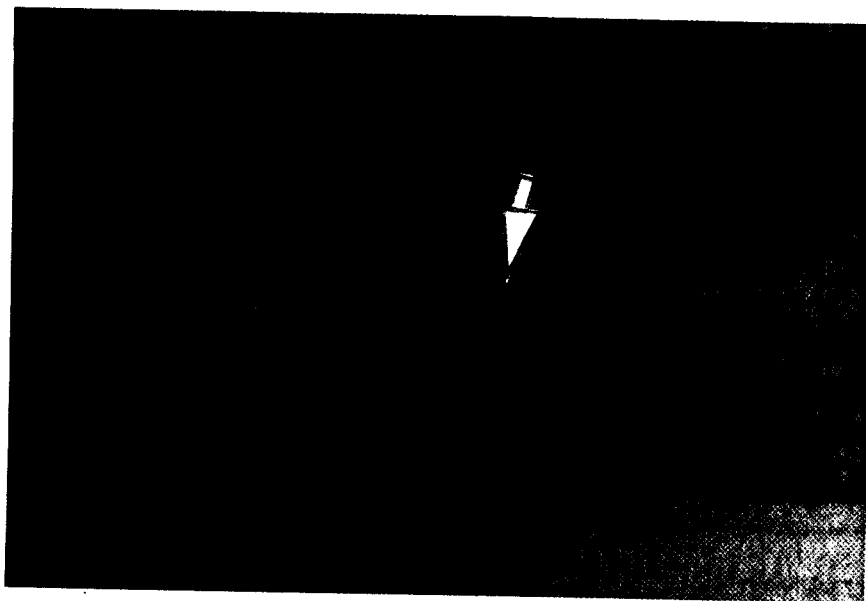


Figure 2. Detail of 1828 DuHaut-Cilly Drawing of  
Fort Ross Showing Fur Warehouse Roof.



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Figure 3. Warehouse in Sitka, Alaska, circa 1830s.



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Figure 4. Warehouse in Kodiak, Alaska, circa 1840.

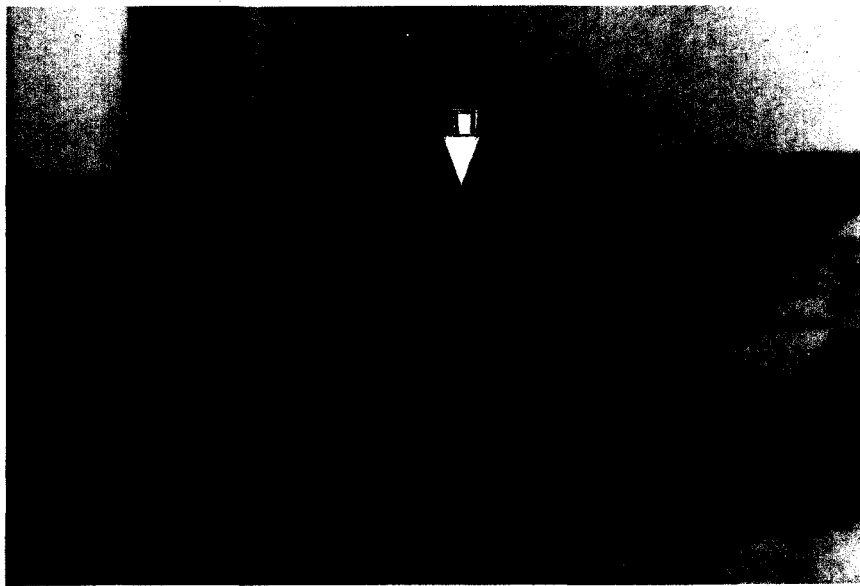


Figure 5. Detail of Voznesenskii Watercolor of Fort Ross, circa 1841.

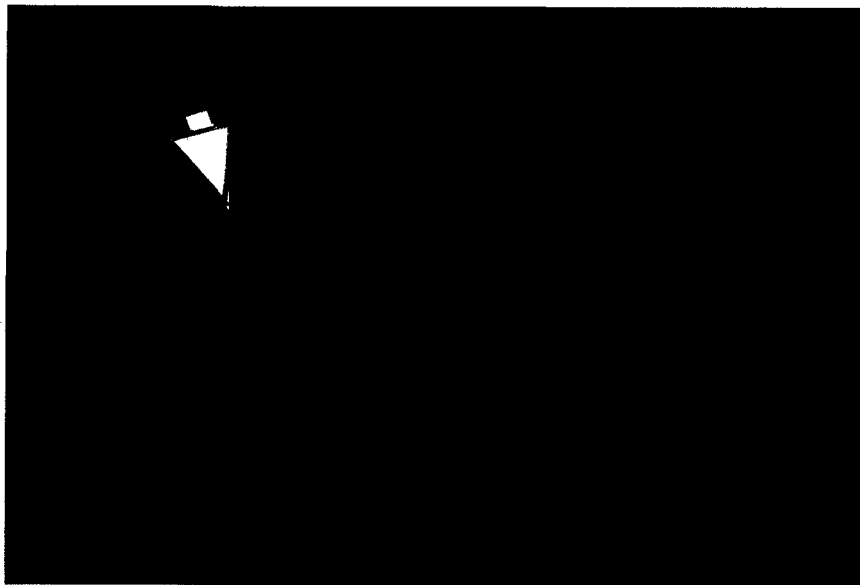


Figure 6. Detail of Voznesenskii Unfinished Drawing of Fort Ross, circa 1841.

Following the Russian departure in 1842, there were at least four men sent by Sutter to oversee the transfer of the moveable items to Sacramento (Dillon 1967:118, 133, 142, 201). Among their other activities, these men dismantled many of the buildings including the Kuskov House. However, it appears that the Fur Warehouse was left intact. Ernest Rufus examined the buildings in 1845 and is reputed to have provided the following description quoted in an 1880 history of Sonoma County:

On the west side of the northern angle there was a two-story building, twenty-eight by eighty feet in dimensions. This was a roughly constructed building, and was doubtless used for barracks (sic) for the men of the garrison. The framework of all the buildings was made of very large, heavy timbers, many of them being twelve inches square. The rafters were all great, heavy, round pine logs, many of them being six inches in diameter (Munro-Fraser 1880:365-66).

It is difficult to be sure if the past tense employed in the description is meant to imply a situation which existed in 1845 or whether the building in question was gone at that time. In fact, there was a building in this location with these same dimensions as of 1892 (see comments on the Veasey map of 1892, below).

This notion is supported by a drawing dated September 1878 which shows two different buildings joined into one structure (O'Brien 1980:end cover illustration). We also have a photo which shows the same structure, but the date on this is uncertain (Figure 7). What is very interesting is that circa 1890 there is yet another photo of the building which seems to show the northern addition to be missing (Figure 8), and yet a survey made of the buildings on the Call Ranch by Frank B. Veasey in 1892 shows the building in that location to be 80 ft in length and 28 ft in width.



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Figure 7. Photo of the Old Warehouse, circa 1878.



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Figure 8. Photo of the Old Warehouse, circa 1890.

## METHODOLOGY

The first step in the archeological work on the Fur Warehouse was to re-establish the metric grid first worked out for the fort as a whole in 1975 by archeologists from DPR. This grid is oriented using a grid north which is actually 26.5 degrees east of true north (and currently 8 degrees east of magnetic north). The center of this grid is a brass-capped USGS bench mark located near the southern gate to the fort (see Map 1).

The grid location for the Fur Warehouse was pinpointed using a transit and a 60 m tape. The next step was to relocate the excavation units dug by Cabrillo College in 1975-77. These were marked off, but generally not excavated as it was felt that the earlier excavation notes were sufficient. However, where re-excavation appeared likely to yield valid information, this was done. The correlation of the new grid with the old was surprisingly good, with no more than a 3 cm variation in the north lines and a 1-3 cm variation in the west lines. All of the excavation work fell in the northwest quarter of the fort grid area; therefore, all unit designations will appear with an N (north) and a W (west) followed by a metric unit showing the distance from the bench mark central datum point (example, N62 W44). Since Cabrillo College had done so much work in the north end of the overall area, it was decided to begin the current excavation work immediately south of their Units 12 and 15 (Map 1) so as to follow the apparent remnants of the east and west wall lines.

Tools employed in the excavation work included the standard picks, shovels, trowels, ice picks, whisk brooms, screens, and dust pans. In addition, we



N 90

N 70

N 50

N 30

N 10

W 50

W 30

13

W 10

E 10



FORT ROSS FUR WAREHOUSE 1981 EXCAVATION PROJECT

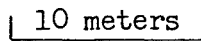
KEY:

Numbered squares are Cabrillo College excavation units—1975, 1976, 1977

Solid line encompassing the Fur Warehouse shows 1981 excavation area

BM=USGS Bench Mark

SCALE: 1 inch=10 meters



G. Farris  
8/29/81

BM

used a Sears 16 gallon home-and-shop vacuum cleaner. This was perhaps our most valuable tool, especially in working around rocks. All of the earth excavated was sifted through a 1/8 in mesh screen.

Photographs were taken of all the units excavated in both color slides and black and white prints. Many of these were taken using a high stepladder to allow for an overhead view. On the last day of excavation, Larry Felton was hoisted up on a 50 ft crane to take some overall site photos. As appropriate, 50 mm, 28 mm (wide-angle), and 135 mm (telephoto) lenses were used. The excavated unit levels and features were recorded on departmental forms. A daily log was maintained by the project director.

The excavation was usually done in 2 x 2 m units, with some exceptions. Artifacts were collected by unit and by level or feature when appropriate. Lot numbers were assigned to each unit of excavation and were listed in a lot register. A feature register was also utilized. Following excavation, the artifacts were taken back to the Cultural Resources Management Unit's Archeology Laboratory in Sacramento for cleaning, cataloguing, analysis, and storage.

## PREVIOUS ARCHEOLOGICAL WORK

The first archeological work undertaken on this site was done by State Park Ranger and Curator of the Fort Ross Museum John McKenzie. He mentions finding "a rather great timber" (see McKenzie Log, Map 1) "buried 58'7" (N46.01) from the east (north) corner of the Commandant's House and at right angles to the stockade". This was apparently our Feature 18 (Map 2) (McKenzie, Personal Communication). He also mentions finding a heavy stone footing or wall 60 ft north (N46.5) of the Commandant's House and at right angles to the stockade wall (see McKenzie Wall, Map 1). This wall was "about three feet thick and lay between 15 (W47.43) and 39 (W40.11) feet from the (west) stockade line. Northward extensions at each end of the stone wall suggest that it supported a rather heavy building" (McKenzie-Kishbaugh July 29, 1963). This "wall" seems to have been part of the rocky fill on the lower parts of the warehouse area.

During the summers of 1975, 1976, and 1977, field classes sponsored by Cabrillo College of Aptos, California, under the overall direction of Professor Robert Edwards, did some test excavations which were of incalculable assistance in the present project (see Map 1). In particular, a field map was produced by Gary Breschini and R. E. Carter which detailed not only the excavation units and their major finds but also provided a contour map of the surface of the area using 10 cm (4 in) intervals. Numerous points were re-checked during the current project using a transit and found to be accurate.

During Cabrillo College's excavations, a number of postholes were identified as well as remnants of redwood sills. These latter included what was

interpreted to be remnants of the north, east, and west wall sills of the building. However, the current project has dictated a re-evaluation of their findings. What they appear to have found is the north end of the later, American period (post-1846) 80 ft long structure which seems to have been superimposed on the earlier 58 ft long Russian structure. The north wall which Cabrillo discovered was, in fact, located 22 ft north (N70.3 W48.7) of the northwest corner (Feature 4) found during the 1981 excavation (see Figure 9). A review of the 1817 map helped pinpoint the Russian structure (see historical background discussion and Figure 1). Study of the photos and descriptions of the American period building further helped establish its location, particularly with the help of the 1892 Veasey map.

## ARCHEOLOGICAL FINDINGS

In this interim report, I will deal principally with the foundation features discovered in the excavation project and will attempt to relate them to the historical information available to arrive at some conclusions concerning the placement, dimensions, and construction of the Fur Warehouse.

The piece of land on which the Fur Warehouse sits slopes approximately 1 m from the north end of the foundation to the south end, a distance of 18 m (59 ft). Toward the north-central portion of the area, there is an extensive bedrock outcrop which runs pretty much east-west across the site. In the area to the south (downslope), there is a noticeable accumulation of 15-30 cm (6-12 in) diameter rocks which appear to be part of an artificial fill. This would have the effect of raising somewhat the southern end to bring it closer to the level of the bedrock. It would further seem to be useful in providing a more substantial base for the building than would the clayey subsoil common to the area. An additional quality of the rocky fill would be drainage which then as now must have been a point of concern. Early in the excavation project when we were still experiencing rain, it was quite noticeable how the pits we had dug down to the clayey subsoil retained water. In Von Wrangell's description (ca. 1833) of the fort area, he comments that it was built on "flat, clayey ground" (Gibson 1969:207). Today, most of the area is covered with at least several inches of loam.

North of the bedrock outcropping (upslope), there is a noticeable lack of rock fill except for the distinctive northwest corner feature of rocks (Feature 4) placed into an L-shaped excavated trench (see below for further discussion).

This would appear to argue more for a support/leveling function for the southerly rock fill than for its use as a drainage device. It is further conceivable that such a rocky fill base would allow the timber structure better purchase on the slope than if it were placed directly on the clayey (and when wet, slippery) subsoil. Such "purchase" would be less needed in the area upslope from the bedrock outcrop since this outcrop would have provided its own support for the northern portion of the building.

At the time of excavation, the bedrock and the rocky fill were often exposed already or were covered with a very thin veneer of earth (1-5 cm).

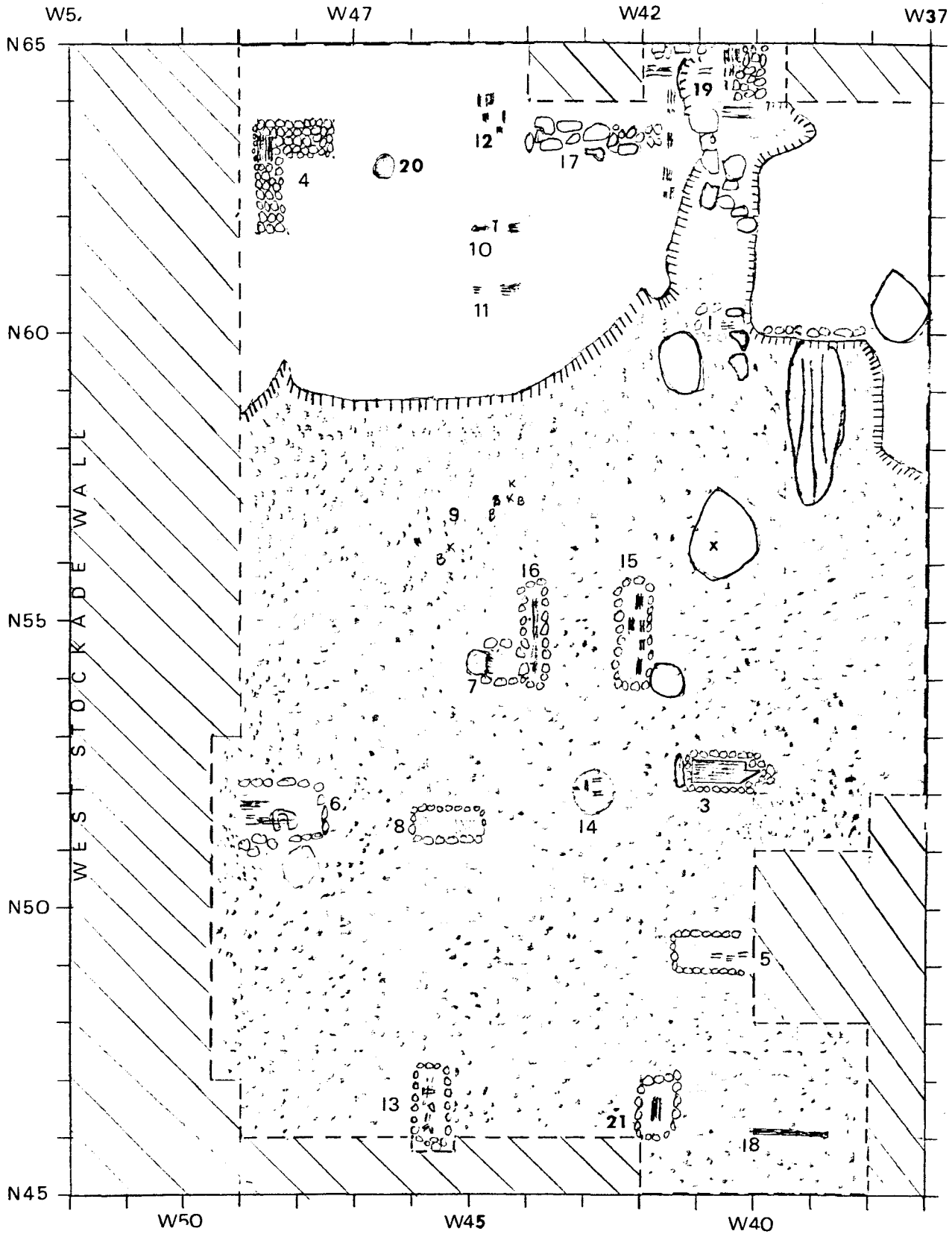
I will now discuss the features in various segments of the building area -- first the perimeters, then the interior of the building.

#### Northwest Corner

Perhaps the most important feature discovered was an L-shaped placement of stones (Feature 4, see Figure 9) which had filled a pit of the same shape dug into the earth. Its grid location is N61.68-63.72, W47.3-48.7) (see Map 2). I believe this to be a foundation for the northwest corner of the original Russian structure. Immediately overlying part of the western portion of the feature is a 3 in thick, 10.6 in wide redwood board which is lying on the line of the west (or rear) wall. Whether this board truly dates back to the Russian period is uncertain, but I think unlikely. It most probably is

# FORT ROSS FUR WAREHOUSE

MAP 2



**KEY**

- rocks ○
- rocky fill
- feature number 6

- wood
- unexcavated area
- limit of rocky fill and bedrock



SCALE

1 M

G. FARRIS

8-28-01

derived from the later American structure which overlay the original Russian building. It appears to be the remnant of a sill supporting the timber structure of the building. A strong argument in support of this feature having underlain the northwest corner of the original Russian building is based on the fact that when the 1817 map detail is overlain on a base map of the fort, the northwest corner of the Old Warehouse therein pictured lies directly over Feature 4 (Map 3).

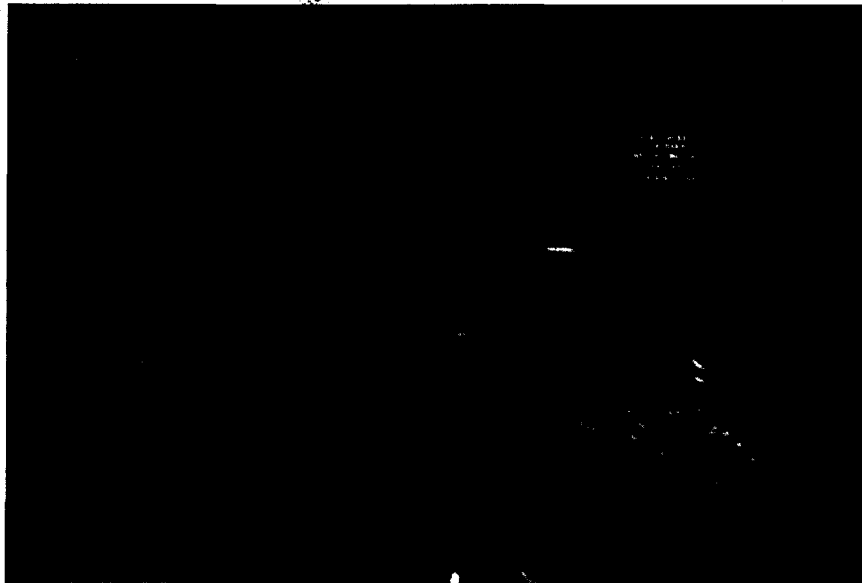
#### North Wall Line

East of the northwest corner feature and running in line with it is a crude assemblage of large (ca. 30-40 cm diameter) stones (Feature 17) found in the area N63.15-63.70, W42.0-44.13) (Map 2). The stones are sitting relatively high, being pedestaled on the loamy soil rather than sitting on the clay subsoil. The surface of this line of rocks is a good foot (31.5 cm) above the rock level of the northwest corner rock feature. I, therefore, question whether it is associated with the original Russian structure. More likely, it is tied to a later, extended building constructed over the earlier one. The higher level implicit in this line of stones would be more in keeping with a higher floor level dictated by the upslope end of the 80 ft building.

#### Northeast Corner

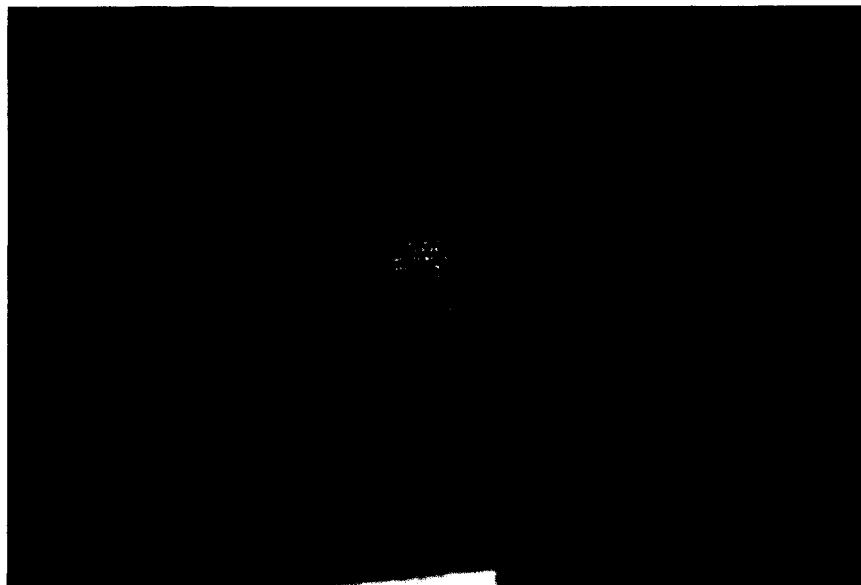
The northeast corner of the building (Figure 10) would be expected to be found in Unit N62-64, W40-42. This unit was excavated by Cabrillo College (Unit 15 on Map 1) in 1977. They found large rocks including three tooled ones on





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Figure 9. Feature 4--Northwest Corner of Fur Warehouse.



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Figure 10. Northeast Corner of the Fur Warehouse (Cabrillo College Unit 15).

which lay remnants of wood. A somewhat puzzling factor was the discovery of other redwood fragments oriented north-south which lie 80 cm to the west of the apparent wall line of the east side of the building. These fragments are on line with what look to be pine wood fragments to the north of the Russian building line.

#### East Wall of Building

Typically, an outer wall of a building functions as a trash gathering barrier. It is, therefore, reasonable to assume that the former placement of a now-missing wall will be defined by a differential accumulation of debris. The accumulation in this case falls along a line approximately W40.30 and runs from at least N46 to N64. The preponderance of this debris appears to be from the latter part of the 19th century. No item is safely datable to the Russian period; however, the artifacts have not yet been fully analyzed to support this view.

The soil immediately along the wall line was generally not hard-packed. However, in one area, from N62-64, the earth to the east of the wall line was extremely compact and had to be excavated with a pick. This area extended to the east approximately 1.5-2.0 m. When excavated, it was found to include a large quantity of artifacts datable to the late 19th century. I suspect that this area formed the entrance to the large double door of the later 19th century structure and was not associated with the Russian structure.

## Wooden "Sleepers" Along the East Wall

Lengths of wood laid in the ground to support structural members have been termed "sleepers". Feature 1 (Figure 11) is a remnant of redwood set in an east-west direction overlying bedrock with large stones placed on its north and south sides. These latter are presumably for the purpose of bracing a wooden block or "sleeper". It would appear that the wooden piece may have extended about 50 cm (18 in) although only 24 cm (9.5 in) remained at the time of excavation. The wood remnant is currently 15 cm (6 in) wide although it may have been 19 cm (7.5 in) wide if it filled the space between the supporting rocks. The east edge of the bedrock underlying the wood lies at W40.14, and the width of the supporting stones is 25 cm (10 in). The distance from the northeast corner of the building to the middle of Feature 1 is 3.44 m (11.3 ft). The supporting stone on the south side of the wood has a flat surface. It is interesting to note that the level of the stones at the northeast corner varies by only 1 in (3 cm) from this surface while on line to the south 3.85 m (12.6 ft) is a bedrock outcropping with a height only 1/2 in (1.5 cm) lower, for an overall variation of only 4.5 cm (under 2 in).

This bedrock outcropping extends from N55.8 to N57.2. If one measures the distance between Features 1 and 3, the figure comes to 7.7 m, half of which would be 3.85 m (12.63 ft). The intermediate point is thus at N56.25 which falls nicely on this bedrock outcropping. The bedrock would have replaced the need for a sleeper. Incidentally, this point on the outcropping is almost directly in line with an X marked into the rock as a reference point by archeologist William Pritchard (see Map 2).

Feature 3 (Figure 12) is a redwood board 1.2 m (47 in) long by .36 m (14 in) wide and ~~0.075 m~~ <sup>0.075 m</sup> (3 in) thick. This is oriented east-west and lies in what appears to be a purposely-constructed trough in the rocky fill. The board lies within the parameters N52.21-52.63, W39.96-41.20. The shape is somewhat curious. Although it has a fairly straight cut across the west end, its east end has a long diagonal cut combined with a notch. This piece was discovered to be in remarkably good condition which made it quite different from most of the rest of the wood found in the site. This is apparently due to a pitch material which coats the two cut ends to a thickness of about 1 cm. I thought at first that pitch might have been applied but was corrected by Mr. Emmet Crisp, a veteran log worker, who suggested that the wood had been cut and laid in "green" and the coating was an exudation from the wood itself. When the elevation was measured for the east and west ends of this sleeper, it was found that the east end was 7 cm (3 in) lower than the west end. This had caused me concern until I developed the hypothesis that the board was used to support a vertical column of the gallery which is said to have occupied the east side of the structure. Presumably, the extra weight on the east end resulted in that end being lower. The center of what I believe to be the load-bearing portion of the log is at N52.4.

Feature 5 is an apparent trough in the rock fill which is similar to the trough in Feature 3 except that there are only a few fragments of redwood remaining in place. This trough also runs east-west, parallel to Feature 3. Its northern midpoint is at N49.1. It is, therefore, 3.3 m (10.83 ft) south of Feature 3. It is 3.1 m (10.17 ft) north of the south end of the building.



Figure 11. Rock and Wood Alignment of Possible Column Support Along East Wall Line (Feature 1).

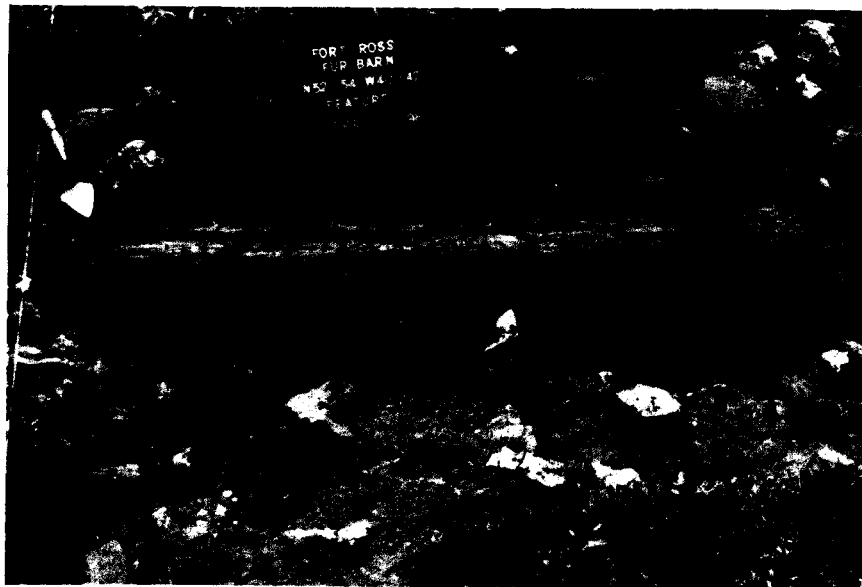


Figure 12. Wooden "Sleeper" (Feature 3) Along East Wall Line.

At the south end of the building, there is another wood feature which may well be related to the later 19th century structure. This is designated Feature 18 and lies at N46.0-46.18, W38.68-40.17. I believe it was the footing support for a short set of stairs leading to a door on the southeast side of the building (Figure 8). The piece was originally about 5 in (13 cm) square in cross section and about 5 ft (1.49 m) long.

### West Wall

Immediately south of Feature 4, there were only scattered rocks in the soil for over 2 m. At that point, one encounters the ragged edge of the disintegrating bedrock base. Somewhat further south is found the rocky fill. From approximately N58 down to N50.5 there seems to be a higher ledge of rock in what would be the inside of the building, which then drops off to the west to form a lower layer of stone rubble which follows the actual sill line.

The wall line is best identified again by differential deposits of refuse. This line seems to fall at W48.70. The debris is typified by quantities of nails (mostly cut), window glass, bottle glass, and the remains of telegraph or telephone insulators.

Feature 6 (Figure 13) is composed of fragments of redwood oriented east-west extending from W47.9-48.9 and N51.35-51.8. One section of the redwood is overlain by clay in a 3/4 circle. The clay 3/4 circle is specifically located at W48.05-48.40. This would place it within the line of the west wall which appears to be between W48.2-48.7. The center of this feature is 5.23 m (17.14 ft) north of the south end of the building. The feature is lain into a

trough in the rock fill similar to those seen in Features 3, 5, 13, 14, 15, and 21. However, it does not directly line up with any features on the east wall. It may simply represent an independent support for the rear wall (west) sill due to the drop in the ground level of approximately 40 cm (16 in) from the foundation stones at the northwest corner (Feature 4).

### Central Building Area

Feature 7 (Figure 14) is a sandstone boulder, the east side of which has been chipped off vertically. It appears to form the space for a center post. The feature is located with its center at N54.3, W44.5. The chiseled face is 26 cm (10.2 in) high. This should indicate the full depth of the presumed post since the lower part of the boulder below this point was not chipped away and currently forms a lip. The area of the posthole is 35-40 cm (14-16 in) in diameter. The midpoint of this posthole is also the midpoint of the east-west dimension of the building. However, in terms of north-south dimensions, the posthole is somewhat south of center. The distance from the north end of the building is 9.3 m (30.5 ft) while the distance to the south end is 8.3 m (27.23 ft). I cannot say whether or not this apparent offset from the north-south center of the structure is truly important.

Features 15 and 16 (Figure 15) are the remnants of redwood timbers set in apparent troughs in the rock fill. The channel in Feature 15 is 120 cm (3.94 ft) long by 28 cm (11 in) wide. The remaining wood is 109 cm (42.9 in) long by 13 cm (5.1 in) wide but is in a fairly poor state of preservation. The channel in Feature 16 is 101 cm (39.8 in) long by 25 cm (10 in) wide. The remaining wood is about 80 cm (31.5 in) long by 15 cm (6 in) wide, though in

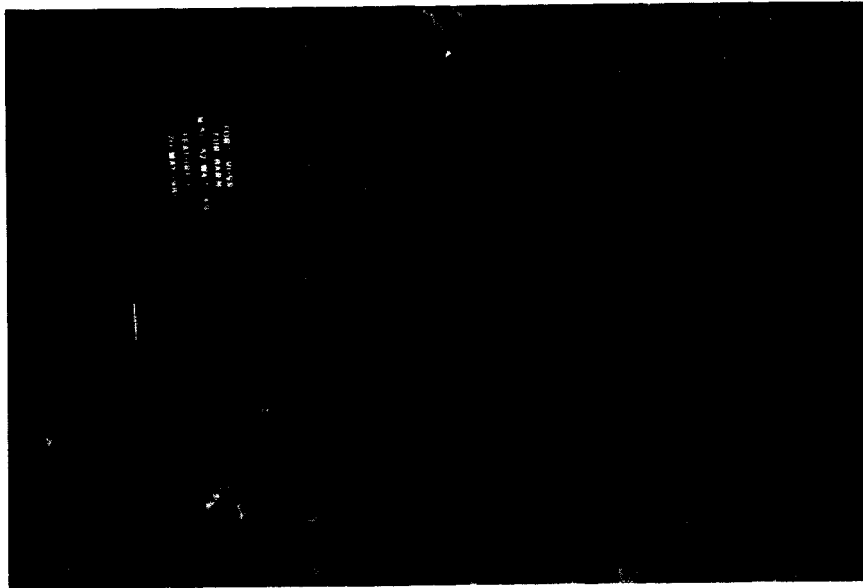


Figure 13. Wood and Clay Feature (Feature 6) Along West Wall Line.

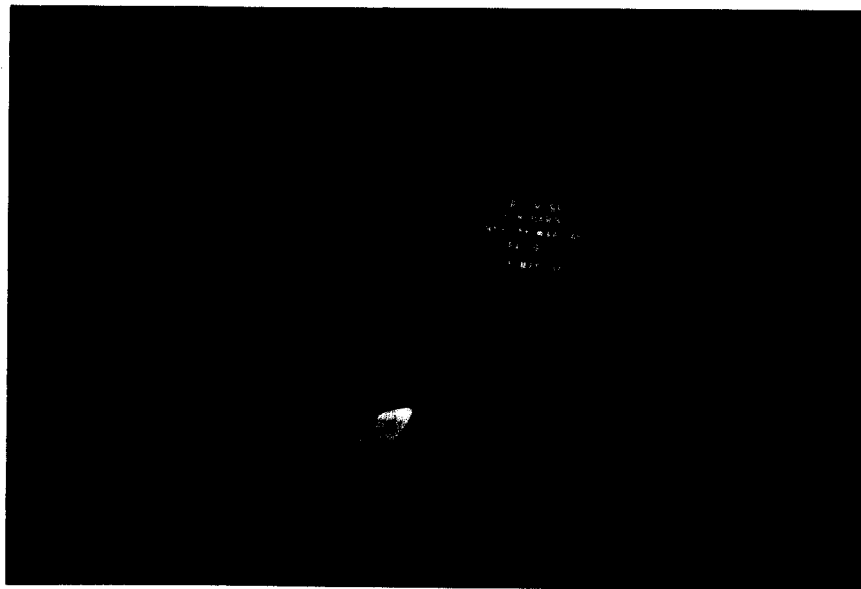


Figure 14. Chipped Sandstone Rock (Feature 7) for Center Posthole.



fragments. These parallel redwood "sleepers" are about 1.9 m (74.8 in) apart. It is difficult to discern their purpose. One possibility is that they were supporting some form of central east-west running sill, perhaps to support a central load-bearing wall. Such a wall would have made sense in terms of structural support as well as fitting the description of the lower floor having two rooms. Three points make me question this notion. First, there are no parallel elements along this line either on the east or west wall line. Second, there are no parallel features west of the center line of the building. Third, if a load-bearing wall had been constructed through the center of the building, would it have been necessary to have a center post as well?

Another peculiar feature (14) is a roughly circular clearing in the rocky fill in which fragments of wood are found running primarily east-west but some running north-south. The diameter of this feature is approximately 73 cm (2.4 ft). It is shallow, being no more than 21 cm (8.4 in) below the ground surface. Although it may also have held some supporting wood for a purpose similar to the sleepers, it is not constructed in the same elongate pattern of the sleepers. In the middle of this feature was found the remains of an olive oil bottle which probably does not date earlier than the 1890s.

#### South Wall Line

Two features (13 and 21) were found along the line of the south wall. These are north-south running troughs in the rock fill containing redwood logs or fragments. In both cases, the southern end of the redwood lies at or close to

N46, the southern end of the building. Feature 13 is made up of a trench some 103 cm (40.5 in) in length by 33 cm (13 in) in width. Its placement is N45.92-46.95, W45.46-45.79. The cavity contains at least a half dozen redwood knots suggesting the former presence of a timber. Feature 21 involves a shorter trough and section of redwood. The trough is 80 cm (31.5 in) north-south and 50 cm (18 in) east-west. The actual wood is 48 cm (18.9 in) north-south and 15 cm (6 in) east-west. The grid placement of the feature is N46.1-46.9, W41.5-42.0. Unfortunately, there seems to be no regular spacing of these two features in terms of the southwest and southeast corners. Even so, they could have functioned to support the southern sill of the building.

#### Other Features

Several other "features" were so designated during excavation but are less definite in meaning in terms of defining the structural pattern of the Fur Warehouse. Among these are: Feature 8 - an apparent sleeper channel running east-west located at N51-52, W44-46. Although the channel lines up with Feature 6 to the west, it lacks any discernible wood remnants. Feature 9 - an unusual quantity of bone fragments and wood knots in the area N56.73-58.4, W44-46. These formed no good pattern, however. Features 10, 11, and 12 were simply fragments of redwood which seemed to be lined up either east-west or north-south and may have been the remnants of former boards or sills supporting the floor structure.

## Bead Distribution

Unfortunately, few of the artifacts recovered from the Fur Warehouse can be confidently dated to the Russian occupation. One likely candidate is worthy of mention because of its interesting spatial distribution. A remarkably large number of colored glass trade beads (Figure 16) were found in the north-central area. Although a persistent scatter had been found at some points along the periphery of the building, as well as in the southern portion, the overwhelming majority were found concentrated in an area 10 m long (N-S) by 4 m wide (E-W). The general parameters were N54-64, W42-46. The highest concentrations within the area were toward the center. Over 220 beads were recovered from this area of 40 m<sup>2</sup>. What is particularly interesting is the likelihood that the distribution of the beads may help define the room in which they were being stored within the Fur Warehouse. Assuming there were two rooms, a north and a south room divided about the line N54.5, then the beads were apparently stored in the north room. They were small enough to have sifted through the floorboards of even a fairly tight floor. The beads are also useful in confirming the north end of the Russian period structure as only one bead was found north of the apparent north wall line during the Cabrillo College excavations which carefully dug three 2 x 2 m square units immediately to the north of the building.

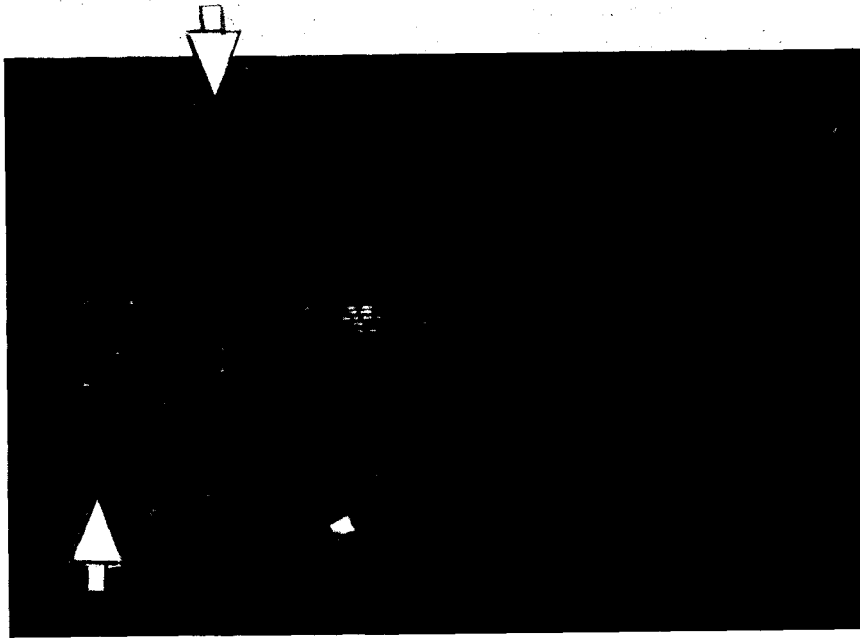


Figure 15. Wooden "Sleepers" in Stone-Lined Troughs (Features 15 and 16).



Figure 16. Sample of Trade Beads Recovered From the Fur Warehouse Site.

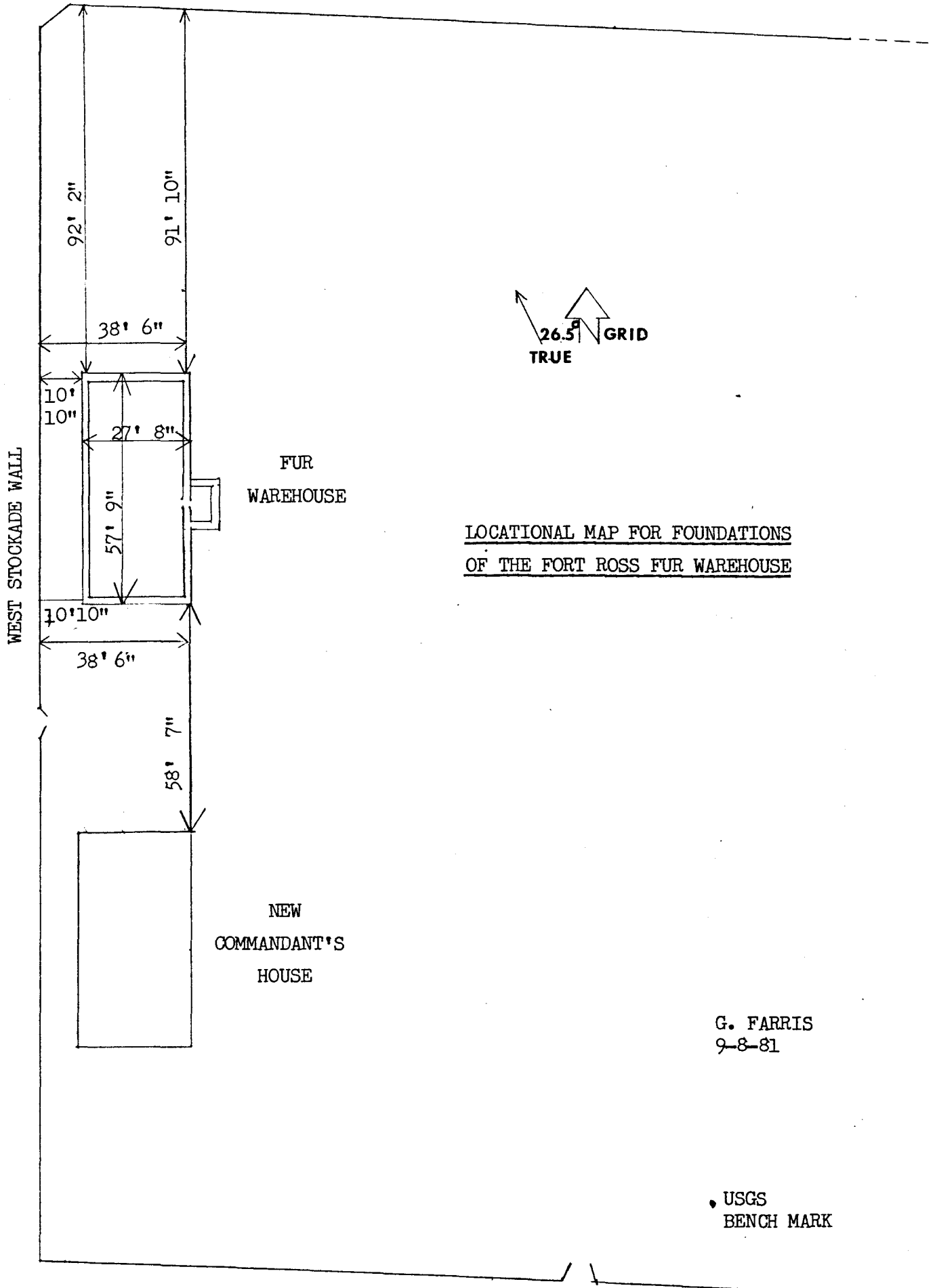
## SUMMARY OF ARCHEOLOGICAL/HISTORICAL FINDINGS

Various details of the Fur Warehouse derived from the combination of historical references and archeological excavation provide the following composite of the size, shape, and placement of the building:

- A. Building placement (see Map 3).
- B. Length of building (north-south): 17.6 meters (57'9").
- C. Width of building (east-west): 8.43 meters (27'8").
- D. Construction material: Redwood timbers--12 inches square;  
Pine rafters--6 inches in diameter.
- E. Two stories in height.
- F. Hip roof with two dormer windows on east side of roof (see Figure 2).
- G. Exterior gallery on east side with four columns standing on bedrock or redwood sleepers.
- H. Two rooms on lower floor, three rooms on upper floor.
- I. One central support post, with a possible load-bearing wall through the middle (east-west) of the structure.
- J. Probably two entrances on the east side to each of the two rooms on the lower floor.

NW BLOCKHOUSE

NORTH STOCKADE WALL



FUR  
WAREHOUSE

LOCATIONAL MAP FOR FOUNDATIONS  
OF THE FORT ROSS FUR WAREHOUSE

NEW  
COMMANDANT'S  
HOUSE

G. FARRIS  
9-8-81

• USGS  
BENCH MARK

SOUTH STOCKADE WALL

## REFERENCES

Arguello, Luis

1814 Sobre el presidio ruso de Ross. San Francisco 1814. Archives of California. Provincial State Papers, Vol. 19:365-68. Ms. on file Bancroft Library. Berkeley, CA.

Blomkvist, E. E.

1972 A Russian Scientific Expedition to California and Alaska, 1839-1849: The Drawings of I. G. Voznesenskii. Translated by Basil Dmytryshyn and E. A. P. Crownhart-Vaughan. Oregon Historical Quarterly 73(2): 101-170. Portland. Oregon Historical Society.

Dillon, Richard

1967 Fool's Gold: The Decline and Fall of Captain John Sutter of California. Coward-McCann, Inc. New York.

Duflot de Mofras, Eugene

1842 Melanges par M. de Mofras--Manuscrits, Vol. 2, No. 3. Ms. at Bancroft Library, Berkeley.

Duhaut-Cilly, Auguste Bernard

1929 Duhaut-Cilly's Account of California in the Years 1827-1828. Translated by Charles Franklin Carter. California Historical Society Quarterly 8(4):306-336.

Estudillo, Jose Maria

1816 Establecimiento puesto por los rusos al sur de cabo Mendocino.... San Francisco, 27 October, 1816. Photostat in the Bancroft Library, Berkeley, CA (original in the National Archives, Washington, D.C.).

Farris, Glenn J.

1981 Measure for Measure, or Fathoming Fort Ross. Ms. on file. Department of Parks and Recreation, Cultural Resources Management Unit. Sacramento.

Fedorova, Svetlana G.

1973 The Russian Population in Alaska and California: late 18th Century-1867. Translated and edited by Richard A. Pierce and Alton S. Donnelly. Kingston, Ontario. The Limestone Press.

Gibson, James R.

1969 Russia in California 1833: Report of Governor Wrangell. Pacific Northwest Quarterly 60(4):205-215.

Khlebnikoff, Kyrill T.

1976 Colonial Russian America: Kyrill T. Khlebnikoff's Reports, 1817-1832. Translated with Introduction and Notes by Basil Dmytryshyn and E. A. P. Crownhart-Vaughan. Portland. Oregon Historical Society.

McKenzie, John C.

1963 The Old "Warehouse" and "Tool Shed" at Fort Ross. Memo from McKenzie to Gordon T. Kishbaugh, July 29, 1963. Revised April 23, 1975. Copy on file, California Department of Parks and Recreation, Cultural Resources Management Unit. Sacramento.

Munro-Fraser, J. P.

1880 (1973) History of Sonoma County, Including its Geology, Topography, Mountains, Valleys, and Streams... San Francisco. Alley, Bowen & Co. Facsimile reprint ed., Petaluma, CA.

O'Brien, Bickford

1980 Fort Ross: Indians-Russians-Americans. Fort Ross Interpretive Association. Sacramento.

Sutter, John A.

1841 Inventaire des Biens meubles et immeubles qui se trouvent au port de Bodego, a l'etablissement de Ross et aux Ranchos de la Compagnie Russe-Americaine. Ms. in French, with typescript translation and notes. Sutter Papers. Bancroft Library. Berkeley.

Vallejo, Mariano G.

1841 Documentos para la Historia de California, Tomo 10, pte. 3, No. 229. California Mss. Bancroft Library, Berkeley. 30 pages.

Veasey, Frank B.

1892 Map of Call Ranch. Copy on file. Fort Ross State Historical Park.

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