

SHOOFLY CHAPTER
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AN ANALYSIS OF THE MATERIALS
IN THE WALLS OF SHOOFLY VILLAGE

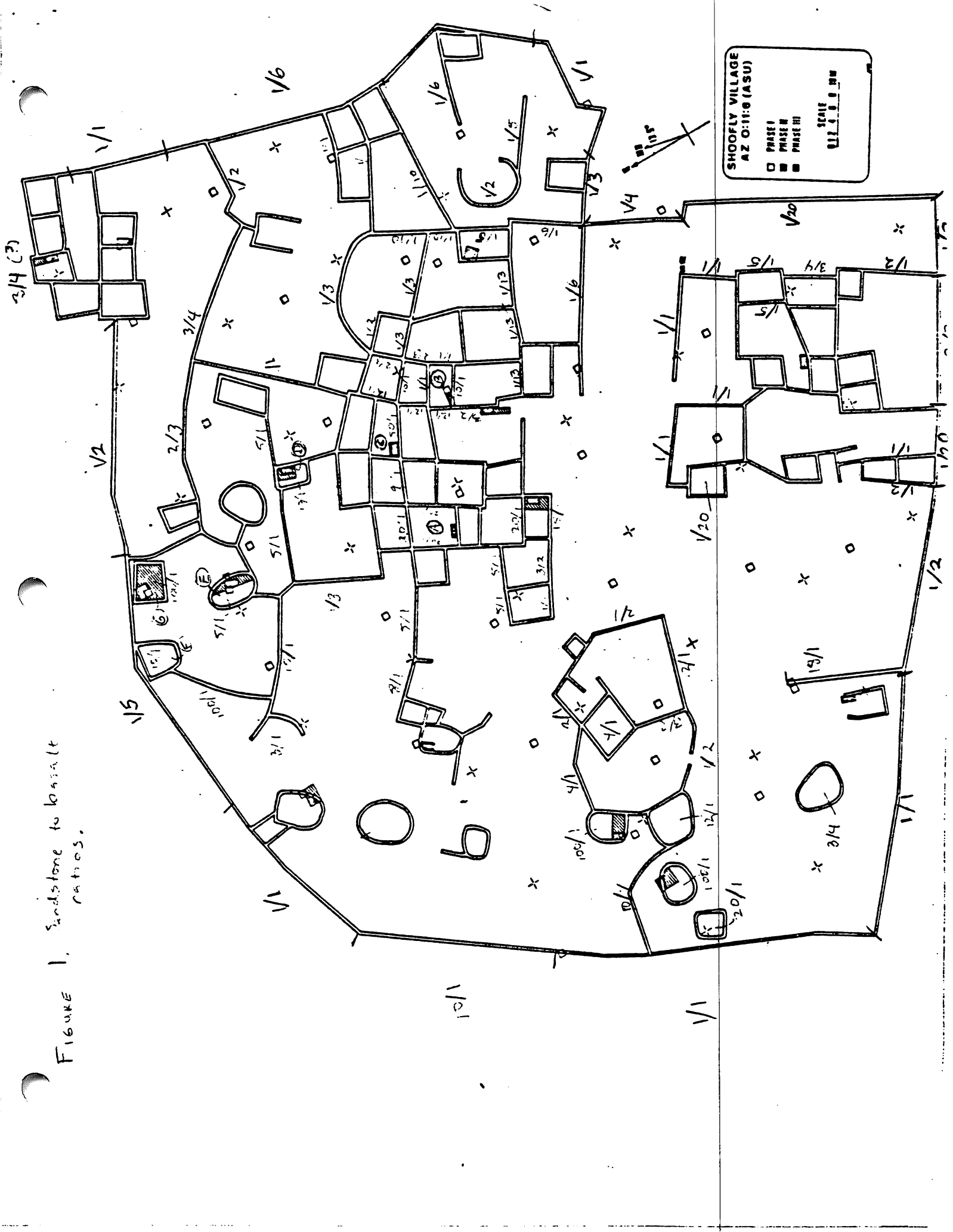
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Walls are a very important source of information for archaeological research. They define boundaries and create space. At sites such as Shoofly Village, the whole architectural layout may reveal much about the structure of that site. For instance, the map of the site delineates several distinct areas -- the core room block in the center of the site; several peripheral room blocks particularly in the south, southwest, and northeast; isolated rooms; and a number of open areas throughout the site. However, there is more to a wall than the space it defines. There are many characteristics of a wall which have analytic potential, making walls a valuable database which deserves further attention. These characteristics range from the size of the wall, to its method of construction, and to the amount of chinking material used in construction. The analysis of these varied facets should prove to be a valuable input for researchers faced with important questions such as site structure, the function of defined spaces, and the chronology of building events at the site. Such an analysis should be particularly effective at Shoofly Village where the different architectural forms and wall-defined areas indicate a very complex picture.

Another potentially valuable characteristic of walls is the material from which the walls are composed. Of course, this is a very complex issue and is related to many factors. Certainly one of the most important factors is availability. After all, why would anyone carry their wall rocks any further than was necessary? Naturally, other factors did exist

FIGURE 1. Sandstone to basalt ratios.



which could determine usage. For instance, perhaps some material is functionally superior to the more available material in some way. Or perhaps a higher status roomblock would contain wall material which distinguishes it from a lower status room or roomblock. Another question which material composition may begin to answer is the chronology of building events at a site. For instance, it seems fairly safe to assume that if two walls, existing in primarily the same area and appearing to have similar functions, are composed of different materials, then they were constructed at different periods. Such ^{inference} ~~deduction~~ must, however, be carefully made.

Research for this project was conducted during several free days and lunch hours during the 1985 Arizona State University field school excavations at Shoofly Village. Basically, this research consisted of analyzing wall fall across the site and excavated or partially excavated rooms. In both instances, the approximate ratio among the basic building materials was determined by selecting sections of walls which appeared basically representative and counting stones. One advantage to such a study is that the research is not limited to fully exposed walls. A major part of the observations focused on the collapsed ruins of walls or wall fall. Because of this, ratios could be determined throughout site allowing any larger patterns which might exist to emerge. Of course, the observation of excavated rooms provides a more accurate

picture of the composition of walls. Therefore, several wholly and partially excavated rooms from different areas of the site were analyzed in order to provide a more detailed analysis of whole walls in various areas of the site.

There are a number of potential problems and dangers with such a study. First, the observation of wall fall does not give a description of the entire wall. Perhaps some kind of material stratification exists in certain walls. This does appear to be the case in at least two rooms in the , room A and room B. In these rooms, the walls are composed of sandstone or a mixture of sandstone and basalt except for the vertical basal course which is of basalt. This difference is particularly distinct in room A where the walls are almost entirely of sandstone except for this basal course. This probably has a functional cause. Certainly basalt is less likely to erode and cause the collapse of the entire wall. Second, the analysis of material composition can not catch all differences. Walls may be composed of the same material and still enclose functionally different spaces or represent completely different building episodes. However, when a real difference does present itself, the real problem becomes determining what that difference means. Is it related to availability, building chronology, function, status, or some other factor? It may even be related to several of these factors. Therefore, this kind of research is most valuable when combined with other studies in a systemic research plan -- research which focuses on other wall characteristics and all the

other research problems which present themselves at any site.

There are basically three materials in the walls of Shoofly Village, sandstone and basalt which occur in large numbers and limestone which occurs only very rarely. As stated previously, the relationship among these materials is very complex. However, one of the most obvious inputs to this system must be the availability of the raw materials. Research so far indicates that the sandstones and basalts originate from the immediate area of Shoofly Village. Sandstone appears naturally to the west of the site, and basalt to the east where the base elevation is slightly higher. This has resulted in a definite east-west dichotomy regarding wall materials. This can be demonstrated by the compound wall. A majority of basalt characterizes the eastern wall where sandstone to basalt ratios of 1 to 20 and 1 to 6 are present. (From here on, all ratios shall be given as sandstone to basalt.) On the other hand, the western wall contains a majority of sandstone, 10 to 1 in some places. However, the composition of the compound wall does not follow a completely regular pattern. For instance, along one small portion of the southern wall, a ratio of 1 to 20 can be found between areas with ratios of 1 to 2 and 2 to 3. Such anomalies and the general layout of the site and its compound wall suggest that perhaps the builders of Shoofly did not construct the compound in a single episode. This general sandstone to basalt trend can also be observed across the site. Notice,

for instance, that sandstone dominates the walls in the peripheral roomblock to the southwest of the core area. On the other hand, the area east of the core area contains a larger amount of basalt.

However, availability is not the only factor involved in this issue. Other factors include function or some other specialized usage such as status designation. The analysis of excavated rooms contributed substantially to these questions. For instance, in two of the excavated core rooms, room A and room B, the vertical basal course was constructed primarily of large basalt stones. In several of these walls, the remaining wall material consists entirely of sandstone. Probably, the ability of basalt to resist erosion prompted this specialized usage. This pattern of construction does not emerge in any of the excavated rooms outside the core.

The use of limestone also indicates specialized material utilization of some form. Limestone building blocks are limited almost entirely to the core area. One limestone block appears in the north wall of room D and several are present in the wall fall of the southern room block. However, they appear in relative profusion in the three excavated core rooms and in wall fall throughout the core. In room B, three of the four limestone blocks are associated with special features -- two serve as door lintels and one is associated with a niche in the eastern wall. This pattern, however, does not emerge in the other excavated rooms. These limestone slabs are quite distinctive and in some way distinguish the rooms

in the core area from other rooms.

One question to which a study of wall composition may be particularly valuable concerns the chronology of building events at Shoofly Village. This site does not appear to have been built in a single episode. The existence of the different room blocks and architectural forms indicates a complex building history. The material in a wall should provide valuable information concerning building histories. However very little definitive can be said just by this kind of analysis. Certain walls can be said to represent different building events. However, other studies must be synthesized with this one in order to really answer some of the other questions. However, some general observations can be made. For instance, the isolated north-south running wall which contacts the compound on the southern portion contains nearly all sandstone but contacts the compound wall in an area composed of nearly equal amounts of sandstone and basalt. In this case, it appears fairly safe to assume that this wall was constructed after the compound wall. Of course, the analysis of building materials will not indicate why or how long after the construction of the compound wall this wall was constructed.

The layout and material composition of the southwest room block indicate that this area had a complex construction history as well. The small subrectangular room in the northwest of this room block has a sandstone to basalt ratio of 100 to 1. The rest of the room block is still dominated by sandstone but has a relatively greater number of basalt stones.

It is hrd to say if this room was added onto the room block at a later date or if the other were constructed later in order to enclose open spaces for the room. However, the proportionally great amount of sandstone in the two unconnected rooms further south and closer to the compound walls may suggest that these three rooms were built roughly at the same time. However, other studies, such as abutting studies, must be performed before anything definite can be said.

A similar situation presents itself in the southern room block. Generally, this room block appears to be slightly dominated by basalt construction. However, two of the rooms -- the small room in the northwest corner and the first room south of the northeast corner -- contain a much higher concentration of basalt, 1 to 20 and 1 to 5 respectively. speculating, it appears that the northwest room was built prior to the construction of the walls enclosing an open area adjacent to it. In general, this room block appears quite distinct from the rest of the site. Judging from the westward jump in the eastern compound wall at a point directly even with the northern edge of this room block, this area may have been separate from the rest of the village at one time. This possibility is also supported by the definite change in the material composition of the compound wall at this point. the ratio changes from 1 to 20 to 1 to 4.

In the northern section of the village -- including rooms F and G and the rooms and walls in that immediate area -- several rooms and walls of largely sandstone construction

lie just inside a compound wall of primarily basalt construction. Excavation of room F during the 1985 season has presented an interesting picture. The compound wall actually abuts against the eastern and western walls of that room, indicating that room F existed prior to the construction of the compound wall in that area. Perhaps the other primarily sandstone rooms and walls predate the compound wall as well. At the time of their construction, there may have been more sandstone immediately available, but when the construction of the compound wall began, this source was depleted and basalt was used instead.

Turning to the core room block, the dominant construction material is sandstone. However, the great diversity of ratios determined from various walls indicates that this room block was constructed over several episodes. Material ratios from the north-south running column of rooms including room B help demonstrate the complexity of this issue and suggest some general implications. This set of rooms separates the sandstone core area to the west from the more basalt complex of plazas and rooms to the east. While the western walls of these rooms contain a large amount of sandstone -- 12 to 1 in three of the rooms, the eastern walls with a ratio of 2 to 3 are characterized by a slightly basalt dominated construction. Closer analysis of room B proved enlightening regarding the sorting of this chronology problem. The western wall of this room abuts against the northern wall which in turn abuts the eastern wall. This would suggest that the eastern basalt wall of this column of rooms and possibly much of the area to

the east of the core was built prior to the northern wall of room B. This wall was built prior to the west wall of room B and perhaps prior to the west wall of the entire column of rooms. Further research in this area should help clarify this chronology even more.

In summary, some general conclusions can be made from the analysis of the building material used in the construction of walls at Shoofly Village. First, this analysis reaffirms the complexity of this site. Shoofly Village as a whole and the individual room blocks have a complex construction history. More specifically, it appears that from the analysis of rooms F and G and their immediate area that their construction preceded that of the compound wall in that area at least. This may have important implications regarding similar areas at Shoofly. Perhaps other small isolated rooms in the periphery predated the compound wall. Similarly, using both the materials analysis and abutting of walls, it can be suggested that at least some of the area to the east of the core preceded the construction of the core room block.

The complexity of this materials issue is obvious. The general East-West dichotomy demonstrates the importance of availability. However, other factors become apparent with the functional use of basalt in the vertical basal courses of the core and the specialized use of limestone in the core. Due to this complexity, such conclusions regarding chronology are speculative at best. The value of this kind of study

lies in its integration with other research, specifically with other masonry characteristics and generally with all the other information being collected at the site.