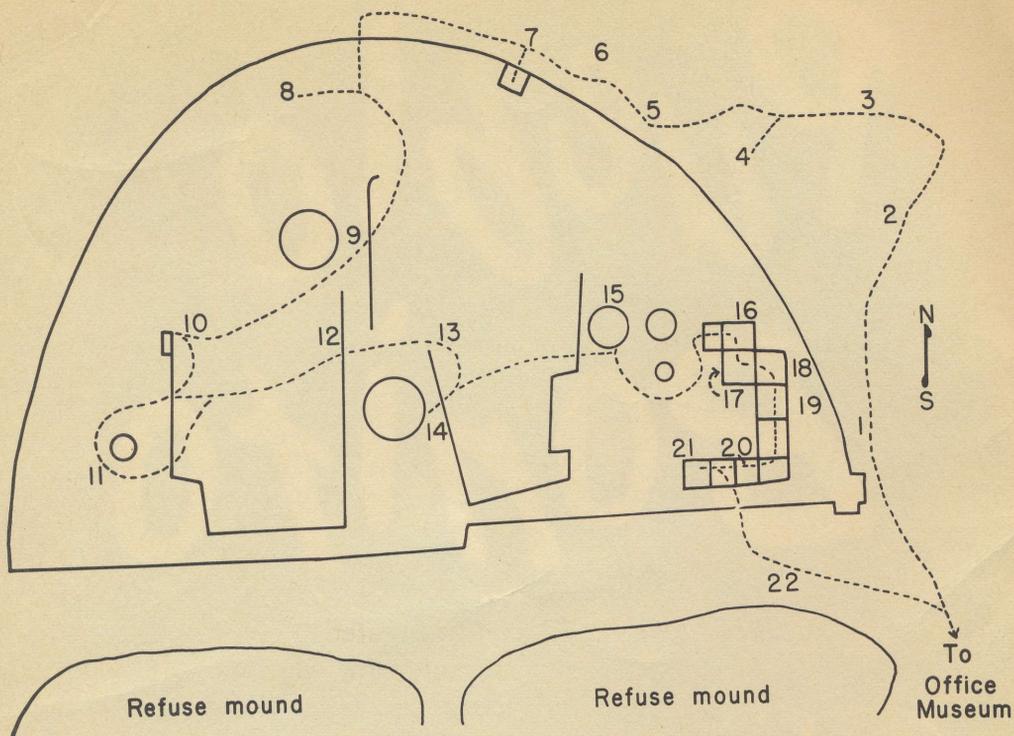


# Pueblo Bonito



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CHACO CANYON NATIONAL MONUMENT  
NEW MEXICO



PUEBLO BONITO TRAIL ROUTE

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The National Park Service was created to preserve the Parks and Monuments for your enjoyment and that of future generations. So we must prohibit activities which would destroy any of the works of nature or of man preserved here. This includes hunting, woodcutting, grazing, even taking of small pieces of broken pottery. Please help us preserve Chaco Canyon National Monument, and remember, a thoughtless act on your part could destroy in a few moments something that has been here for centuries.

# PUEBLO BONITO

The building you are about to visit was once the farm village of about a thousand Pueblo Indians. Today it stands ruined and silent. As you make your way along the trail, try to visualize Pueblo Bonito as it looked 800 or 900 years ago.

Numbered markers along the trail refer to numbered paragraphs in this booklet which describe features at each of these points. *Please Stay On the Trail and Keep Off the Ruin Walls.*

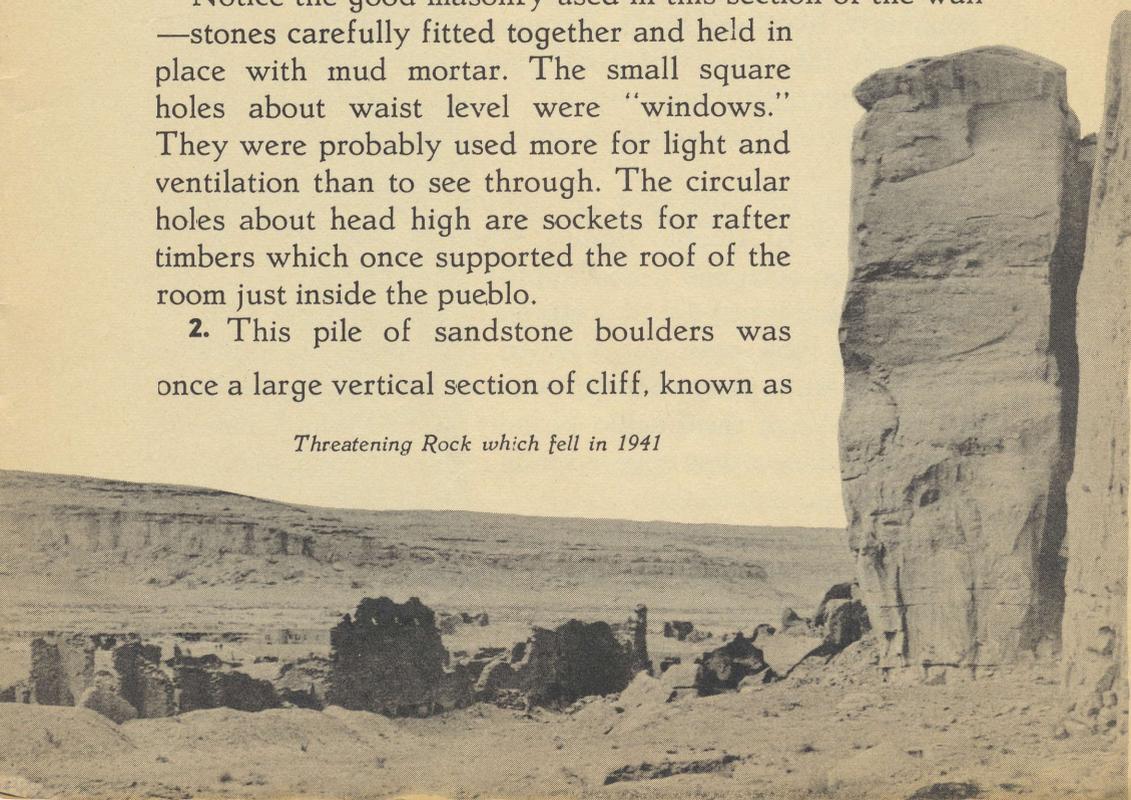
*Don't forget your camera!*

1. Pueblo Bonito, the largest excavated prehistoric Indian ruin in the Southwest, represents the highest development of Pueblo Indian architecture. Today the building stands very much as it was, after excavation. The only repair has been patching of holes and capping of the walls with stone set in concrete mortar to stabilize them.

Notice the good masonry used in this section of the wall—stones carefully fitted together and held in place with mud mortar. The small square holes about waist level were “windows.” They were probably used more for light and ventilation than to see through. The circular holes about head high are sockets for rafter timbers which once supported the roof of the room just inside the pueblo.

2. This pile of sandstone boulders was once a large vertical section of cliff, known as

*Threatening Rock which fell in 1941*



Threatening Rock. It broke loose from the canyon wall probably long before Pueblo Bonito was started, and stood out away from the cliff very much as does the small "threatening rock" to your right near the water tank.

Imagine the consternation with which the villagers discovered, presumably during a wet year, that the 25,000 ton colossus was unstable on its down-sloping shale base and was starting to settle toward their beloved home! They tried to prevent Threatening Rock from falling, by constructing a masonry wall at its base. Part of that prehistoric wall is visible at the bottom of the large rock just ahead of you. This wall acted more to prevent erosion eating away at the base than as a brace to actually hold up the rock itself.

Anyway, the people here were able to live out their destiny. Threatening Rock didn't fall until January 22, 1941, in a very wet winter.

3. The rock material around you is known as the Cliff-house Sandstone, part of the Mesa Verde Formation. It was formed at the bottom of a sea, during Cretaceous time, approximately 70 million years ago. If you will look closely at the flat rock above stake 3, you will notice the weathered remains of fossil sea shells. Between the thick beds of sandstone are thin layers of coal, shale, clay and crystalized gypsum, materials used by the Chaco Canyon people in making pottery, jewelry and other ornaments.

4. This is the best spot (excepting the cliff top) for an overall view of Pueblo Bonito, which is about 3 acres in area. When occupied it had approximately 800 rooms, and reached a height of 4 and 5 stories in some places.

As you look over the canyon floor and surrounding country it looks pretty barren, but such has not always been the case. When the Pueblo Indians started living here we think this district was covered with a sparse stand of pinyon and ponderosa pine.

Because of the dry climate and intensive use by Indians, the changes gradually occurred. There was no longer sufficient plant cover to hold back runoff from summer rains,



and corn fields were flooded and covered with mud and trash.\* In other places arroyos were cut down through the fields, destroying the farmland which was so important.

These and other factors eventually caused the Pueblo people to become discouraged and move away from Chaco Canyon. They no doubt felt it would be easier to start over elsewhere than to continue living here.

We believe the Chaco Canyon folk left the area in small groups and families, with some going southward toward the present day Zuni Country, and others moving eastward to the Rio Grande, where many Pueblo Indians still live.

The Indians living today in Chaco Canyon are the Navajos, who arrived in this region long after Pueblo Bonito was an abandoned ruin.

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← *Wall construction, Pueblo Bonito*

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5. Notice the extreme thickness of the wall, which was done mainly to give strength for multi-storied construction. As it grew higher and had less weight to carry, it was made thinner.

At this point you can also see that only the rows of stones on the outside and on the inside of the walls have been squared. The

filled interiors are made up of rough, irregularly-shaped stones.

6. This section of wall represents some of the finest stone work in all of Chaco Canyon. Along this section Pueblo Bonito was at least four and possibly five stories high. Imagine how many hundreds of tons of stone and timber were used in the building! Remember also that all of this material had to be transported and placed by hand, since the Pueblo Indians had no pack animals, and knew nothing of the wheel. In fact, the only domesticated animals they had were dogs, turkeys, and macaws, or smaller parrots kept for their bright feathers.

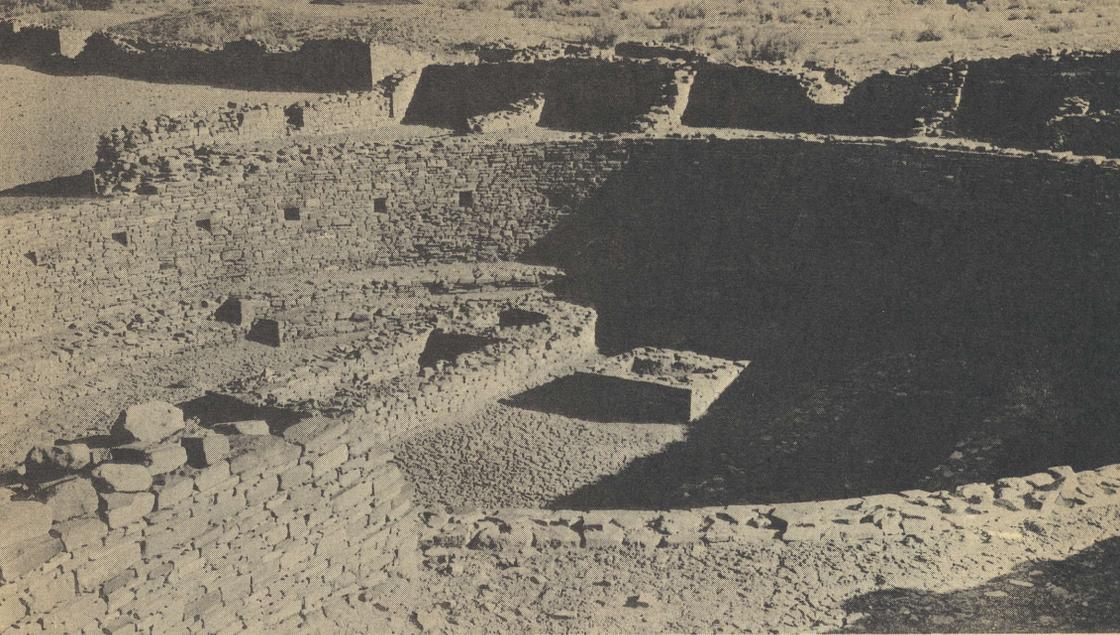
You are now standing at the roof level of the first story. At the top of the wall to your right you can see some timbers the Indians put in for reinforcement, a common practice in Chaco Canyon buildings.

7. Here is a room with the original roof still in place. Step inside if you like. The larger timbers are ponderosa pine, and the smaller twigs are peeled willow. On top of that is a layer of split juniper and juniper bark, covered with 4 to 6 inches of hard-packed soil and clay, which forms the floor of the room above.

You may have noticed the masonry here is of a different style to that at the last stop. This type of construction is somewhat older than that at stake 6.

By looking at the roof timbers you can see that a great deal of care was taken with them. Timbers were cut with stone axes and then carried to the building site, in some cases a distance of several miles. The bark was then carefully peeled from the logs and the knots "sandpapered off" with a piece of sandstone. The rafters were then set in the masonry wall and the rest of the roof laid on top of them.

8. You are now in what we believe is the oldest section of Pueblo Bonito. One indication of its age is the very crude type of masonry. To the right, notice the two modern roofs. They protect prehistoric roofs, which you are welcome to



*One of the two Great Kivas in Pueblo Bonito*

inspect. Also to your right you can see some small vertical poles stuck in the masonry wall, which were a type of prehistoric reinforcement.

9. The large circular room is known as a Great Kiva. It probably served as a ceremonial center for some of the residents of the pueblo. A better example of a Great Kiva will be found at stake 14, where more time will be spent on a description of the Kiva and its use.

10. In this room were found the bones of 16 women, 6 children and 1 man, the largest group of burials found in Pueblo Bonito. Most of the bones had been disturbed, scattered around the room — possibly the work of prehistoric grave robbers.

With the burials were found many pots, baskets, tools and jewelry. These items were probably placed with the dead to help them make the trip from this life into the hereafter.

Although more than 100 burials were found in Pueblo Bonito, they do not represent even a small fraction of the number that should have been found in a town of this size.

Where the rest of the Bonitians are buried is still unknown, but the graves probably have been covered by several feet of fill in the canyon.

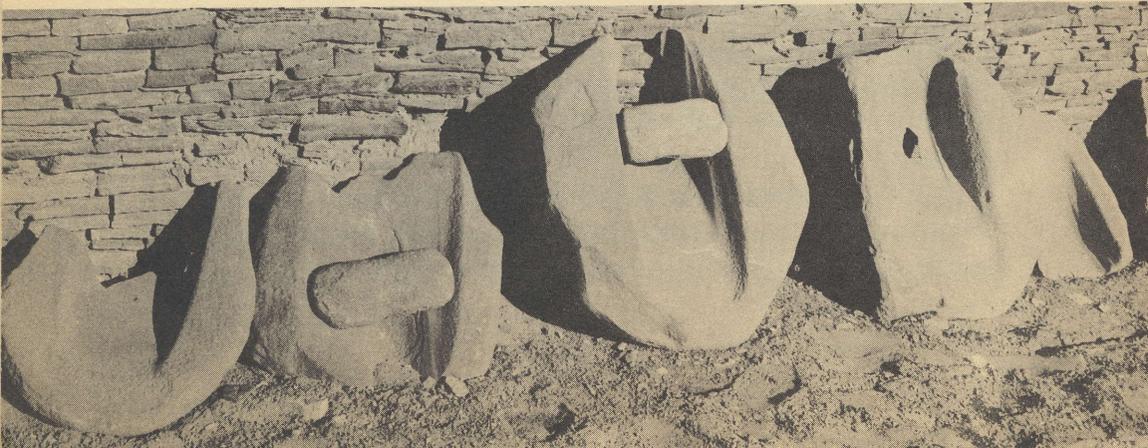
No doubt many of you are interested in the excavation of a ruin. It is a very difficult undertaking, as most ruins are buried under many feet of wind-blown soil and fallen building stones. Here at Pueblo Bonito in some cases there was as much as 16 feet of such material covering the floors of the rooms. From 1896 to 1899 the Hyde Exploring Expedition excavated about one half of Pueblo Bonito. It took from 1921 to 1926 for the National Geographic Society to finish the job.

Because excavation takes so much scientific skill and knowledge, and cannot be done properly by a person without training, there are both federal and state laws which prohibit digging in any ruin on federal or state property without written permission from the secretary of the bureau concerned, or the appropriate state authority.

11. The small circular room is known as a kiva, and is a very typical one. It was constructed and used by a particular society. A group of men would use the kiva for a ceremonial center, council room, club house, and many other functions, but never as living quarters. Women apparently used the kivas only when invited, judging by present pueblo practices.

Since kivas were almost exclusively for men, it is possible women had no part in building them. We do not know what the division of labor between the sexes was on Pueblo

*Metates with manos, used for grinding corn and seeds*



Bonito wall construction. But because a few of the kivas have stonework not quite so fine in finish and detail as other parts of the village, there are those who say the male stonemasons were sloppy in their work when women weren't permitted to help!

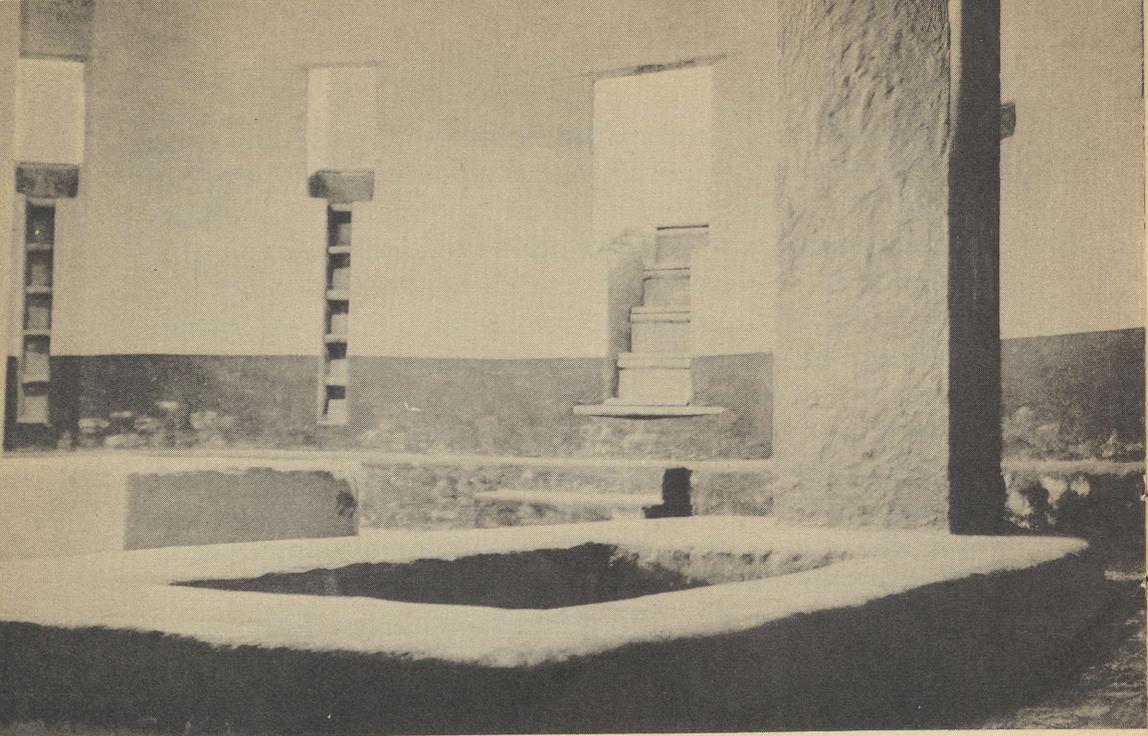
If you will look at the cliff just to the right of the arched doorway, you will see three large planks at the base. This is the starting point of a prehistoric Indian trail which leads to the top of the cliff. You are welcome to make the trip. However, the trail is quite steep and you *must use extreme caution*. Once on top you will get a fine view of the canyon. It is also a good place for pictures of Pueblo Bonito. The trip will take at least 45 minutes.

12. The grooved stones along this wall are called metates (meh-TAH-tays). They were used by Pueblo Indians to grind their corn and other seeds into flour. The seed was actually crushed between two stones, the metate and a hand stone called a mano. (Some manos can be seen with the metates). In grinding the meal a great deal of rock inevitably was mixed with it. Through the years a diet of cornmeal and crushed rock eventually wore away the Indian's teeth, until in old age they had little left but the stubs.

Since these people were dependent on cornmeal as their principal food, metates were one of the most common items found in the ruins.

13. This large, flat area was the courtyard or compound where the people did most of their work and day to day living when weather permitted. Ceremonies and dances were also held out here, as well as in the kivas. The courtyard is at about the same level now as when in use by the Bonitians. With a little imagination you perhaps can visualize it on a warm summer day 800 or 900 years ago — adults standing around in small groups discussing their problems, frolicking children causing concern to worried mothers, and yapping dogs raising small clouds of dust.

14. Here is another example of a kiva. This one is very much like the first you saw at stake 9, only a little more



*Interior view of the reconstructed Great Kiva at Aztec National Monument*

complex. The small niches in the wall around the room probably served as storage spaces or depositories for ceremonial objects. In the Great Kiva at Chetro Kettle Ruin just up the canyon, more than 130 feet (when strung) of beads were found in similar niches. This kiva was entered by means of the stairway at the north end of the room (please do not attempt to use it).

The square box in the center was a firebox, while the circular formations were post holes in which large posts were placed to support the roof of the kiva. The longer rectangular boxes were, according to some archeologists, foot drums or resonators. They were covered by logs on which ceremonial participants would stand and tap out a rhythm. Other archeologists are uncertain of their use, so we can't state positively what purpose they served.

The largest Great Kiva ever completely excavated is located across the canyon, and is known as Casa Rinconada. We encourage you to visit it if you can. A Great Kiva at Aztec Ruins National Monument, 59 miles north of here,

has been reconstructed, and is well worth the short time required to stop there and see it.

15. Here are several typical Chaco Canyon style small kivas. Their function was the same as the small kiva we saw at stake 11. You will note, however, that this one has no pilasters or columns for supporting the roof. The roof of this type was built right on top of the surrounding wall itself. The small holes cut in the top of the wooden timbers you see around the top of the "bench" were apparently used as offerings niches. In many cases the holes contained small shells, beads and pieces of turquoise.

In the floor you can see the wall of an even older kiva, which was leveled by the Indians, probably to make room for this bigger and better one.

The open corner spaces between the kivas and surrounding walls in this area resulted from constructing circular kivas in rectangular rooms (perhaps old abandoned living rooms or storage space that had been leveled). These spaces always were filled with dirt, thus technically each kiva was still underground.

16. This sizable room was probably used at one time as living quarters. Notice that the roof has been destroyed by fire, as had many of the others here. The floors of most rooms in the pueblo were of hard-packed clay. They were swept and sprinkled with water from time to time to keep them hard. There are a couple of instances in Pueblo Bonito where hand-hewn planks and flagstones were used in flooring.

17. Normally a single family occupied one room, using it as kitchen, living room, and bedroom. It also had several additional chambers for storage space. Not all of the rooms in the pueblo were in use, even at the peak of occupation. As the town grew in size and height, rooms in the back part would be abandoned, because of difficult access, and because they were dark, and with almost no ventilation. The

people usually occupied the rooms which opened directly onto the courtyard and those facing the courtyard on the upper stories.

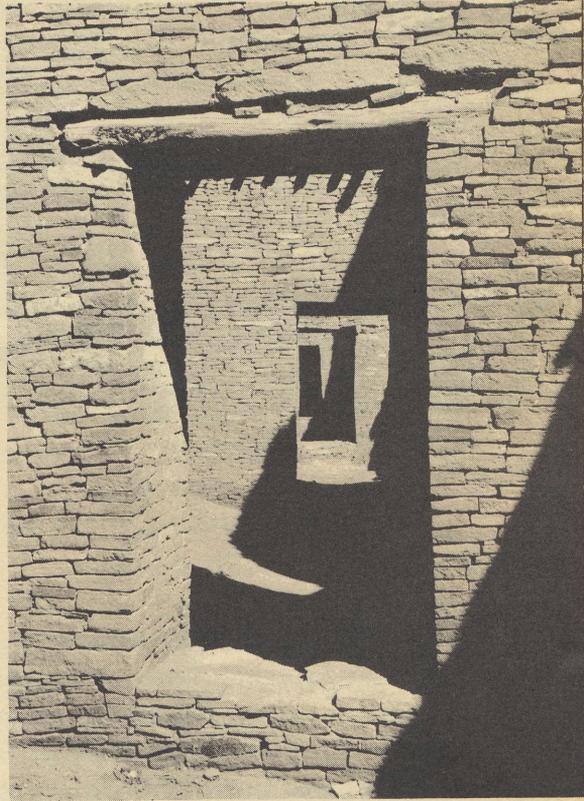
Look up to the level of the second story and you will notice a corner doorway. This type doorway is quite common in Chaco Canyon, and could only be constructed in thick walls such as the Bonitians used.

These rooms may not seem to offer much space for one family, but they had no radio, TV or, for that matter, furniture of any sort, and conducted most activities outside. Room interiors were mostly for protection against weather and for sleeping in, with beds consisting of pallets or mats on the floor.

**18.** As you travel from room to room one thing is quite obvious: The doors were not built for very stout people. The Pueblo Indians however, were not much shorter than we are, men

averaging about 5 feet 4 inches tall. There were several reasons for making doorways small: the smaller the opening the less it weakened the wall, also a small opening is easier to cover in bad weather than a large one. Doors were usually a mat or blind made of willow stems, reeds, or a sandstone slab.

Had you lived in one of the rooms adjoining the courtyard, you would have enjoyed just about as much privacy as a goldfish. There were no halls in the building, and to



*This series of doorways demonstrates lack of privacy in the pueblo*

get from the back rooms to the outside one had to either travel through all the adjoining rooms in a line or to go over the roofs. It paid to be on good terms with your neighbors!

**19.** Notice the sealed door and window (east wall). This was done by the inhabitants, for any of several probable reasons. Perhaps when the people left the area some thought they would return and move into the old homes again. To keep unwelcome visitors out they locked their doors by filling them with stone. Also, after rooms were abandoned as living quarters and for storage space they would be sealed off and used for burial chambers or garbage dumps, refuse being thrown in through roof holes.

**20.** This is one of the few "T" or key-shaped doorways in Pueblo Bonito. This type of opening is found throughout the Southwest and is very common at Mesa Verde, but is rather rare at Chaco Canyon.

**21.** Here is another roofed room. Notice this roof is not as uniformly constructed as the first you saw. This one has much heavier timbers and no peeled willow stems to hide the rough juniper limbs and juniper bark. The small, round holes in the timbers are places where cores have been taken out for tree ring dating.

Some of the patches of dirt or dried mud sticking to the walls were put there by the Pueblo Indians as plaster. When the building was occupied most of it (inside and out) was covered with coats of plaster. In some places it was a natural dirt color. In others, various minerals were added to give color. In many of the rooms pictures were cut or painted on the plastered surface.

**22.** The long, low ridge in front of you is the Pueblo Bonito city dump. Since these people had no way to haul refuse away from the village, they carried it in baskets or pots to the nearest convenient spot, which was in many cases here in front of the building. This ridge or midden mound is the accumulation of 20 feet of floor sweepings, ashes, bones, broken pottery, tools, and other trash the people could no longer use.

You have undoubtedly noticed the broken fragments of pottery (called potsherds) lying on top of the trash mound. You are welcome to look at them, but please do not carry them away. Like the ruins themselves even these fragments are important archeological remains and are protected by Federal law.

We hope you have enjoyed your trip through Pueblo Bonito. The Park Rangers are here to assist you in any way they can, and will be glad to answer, to the best of their ability, any questions you may have.

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Mission 66 is a 10 year development program, now in progress, to enable the National Park Service to help you to enjoy and to understand the parks and monuments, and at the same time, to preserve their scenic and scientific values for your children and for future generations.

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If you are interested in the work of the National Park Service and in the cause of conservation in general, you can give active expression of this interest, and lend support by alining yourself with one of the numerous conservation organizations which act as spokesmen for those who wish our scenic heritage to be kept unimpaired for the enjoyment of future generations.

Names and addresses of conservation organizations may be obtained from the ranger.

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Canyon de Chelly National Monument — near Chinle, Arizona

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**Trademarks of the  
ancient dwellers of Pueblo Bonito were  
the distinct patterns and unusual designs  
of their black-on-white  
pottery.**

