

Prehistoric Sites – Risser Ranch Ruin

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PUBLIC VISITATION:

Risser Ranch Ruin is located in a residential area within the town limits of Payson. Visitation must be arranged by contacting the Sharesse Von Strauss, Director of the Rim Country Museum or archaeologist Penny Minturn, Project Director.

SITE DESCRIPTION AND BACKGROUND:

Risser Ranch Ruin was built on a ridge in Payson, Arizona sometime between A.D. 1200 and A.D. 1250. Based on a 1987 site survey map, there had been approximately 50 structures built on land that has been subdivided into 5 parcels. Homes have been built on four of these parcels. Only one parcel containing remains of Risser Ranch Ruin has escaped the “bulldozer of progress”. This one parcel containing approximately fourteen structures was purchased in 2001 by the Northern Gila County Historical Society. It has one room (Room 8) completely excavated and backfilled, two rooms (Rooms 4 & 12) approximately 75 per cent excavated, and seven rooms with test units of various dimensions.

Penny Minturn was named Project Director and Jim Britton was asked to direct site stabilization. The parcel bordering the north side of this property contains nine visible rooms. Six of these rooms have been excavated.

The first recorded excavation at Risser Ranch Ruin took place in 1976. Scottsdale Community College held a field school at this site during that year. In the late 1980's and early 1990's, this site was partially excavated by the Shoofly Chapter of the Arizona Archaeology Society (now known as the Rim Country Chapter). This excavation was done with permission of the land owner. The plan, at that time, was to learn and document as much as possible about the site before it was destroyed by the construction of the owners house. Since it was assumed the site would be bulldozed to construct the new house, no stabilization was done.

Now that the site is owned by the Northern Gila County Historical Society, stabilization will play an important part in the future site plan.

PRESERVATION ISSUES:

Since Risser Ranch Ruin will be available for interpretation and limited public visitation, a comprehensive stabilization plan will be implemented. It is important to decide which room walls are to be left exposed for viewing. Exposed walls are impacted by various “agents of deterioration” and may require stabilization and on-going maintenance. Precipitation in the form of direct rainfall, water runoff, snow, and ground water capillarity, along with wind, insects, and roots, are some of the agents that negatively impact exposed walls. Risser Ranch Ruin has and will continue to encounter most, if not all, of these destructive sources of deterioration.

Structural damage can also occur from differential fill and the resulting wall stress created by dead load force. Differential fill results from excavating only one side of a wall. The higher dirt fill on the unexcavated side, pushes against the wall creating the dead load force that can cause the wall to

slump and possibly collapse. Since Risser Ranch is at an elevation that experiences freezing temperatures, freeze-thaw and wet-dry cycles will also be sources of wall deterioration.

The roots from a very large juniper tree growing in the NW corner have caused wall damage in that area. Even though excavation was done under the tree base and the roots inside the room cut, it is still a healthy tree.

STABLIZATION HISTORY:

As mentioned earlier, the plan for this parcel of land was for it to be a home site. The land owner most likely would have had to level the lot to build a home. Therefore, no stabilization had been done except for the partial backfilling in Room 8.

Room 8 had been completely excavated in 1989 and early 1990. Since it is the first room visible as you approach the site, it was decided to stabilize it and make it the “show piece” of the site. Some other rooms had been partially excavated and not backfilled. These partially exposed walls will have to be stabilized or backfilled in the future.

ROOM 8:

After completing the excavation of this room in 1990, the dirt and stones that had been removed were used as backfill. This helped preserve the excavated wall faces and kept the leaning west wall from collapsing. However, now that the Historical Society owns the land the plans for the site have changed.

The stabilization of Room 8 began August 18, 2001 and was completed October 4, 2003. Step one was to remove the backfill dirt and stones from the room. Removal would stop just above the black plastic which had been laid on the floor just prior to backfilling. Later this plastic would be removed and replaced by a geotextile product. The east wall was already partially exposed, so several AAS volunteers began backfill removal along that wall. Stones piled on wall tops during excavation were removed. It was important to know which stones to remove, since we did not want to disturb any of the original ‘insitu’ stones.



Room 8 looking south east. Vent holes as seen from Rm 7.

Step two was to stabilize the walls. As the AAS crew removed the backfill, from each wall, the stabilization crew was close behind. The stabilization approach taken depended on the condition of each wall. If a wall was in good condition, only the mortar joints would be repointed. To do this, any loose mortar was removed and replaced with new mud. The new mud consisted of soil previously excavated from the room and a water solution containing a copolymer called SoilShield-LS. Soil-Loc, Inc. located in Scottsdale, donated 10 gallons of SoilShield-LS for use in this project. This product is normally used for compacting surfaces of trails, driveways, parking lots, etc. After various experiments Jim Britton had determined that this product can be adapted for use as an amendment to stabilize and reconstruct prehistoric walls. It will withstand the impact caused by the various agents of deterioration better than unamended soil. This should reduce future maintenance requirements.

EAST WALL:

This wall is 5.68 meters in length measured between inside corners. It is a semi-coursed, two stones wide with small filler stones in the center between the two face stones. A few large stones partially tie exterior and interior wall faces. These large stones don't extend across the entire wall width, but only up to 3/4 of the width. The wall width ranged from 53cm to 58cm wide. The north wall of this room abuts to this east wall. The south wall forms a bonded corner with this wall. The wall height ranged from 5 courses (50 cm) at the NE corner to 8 courses (1.0 m) at the SE corner.

This wall had serious roots problems next to the NE corner. It was necessary to dismantle a wall section 1.3 meters in length to remove the roots. A photo was made before the stones were removed. Britton used this photo to relay the stones in their original positions.

All exposed mortar joints were repointed with amended mud. Except where the stones were relayed next to the NE corner, the internal wall mortar remained original mud. Other than the top one to two courses, all stone in this wall are original "insitu" stones. Britton added these top courses, using amended mud to seal the lower wall from moisture soaking in from the wall top.

SOUTH WALL:

This wall separates Room 8 and Room 12. It is 6.2 meters in length measured between inside corners. It is a semi-coursed, two stones wide wall with small stones filling any center voids between the two face stones. It was noted that most of these filler stones had rounded edges. The wall width ranged from 56cm to 64cm wide.



Room 8 looking south. Stones in foreground are north wall fall.

This wall has a vertical mortar joint located 2.02 m west of the SE corner. Viewed from the Room 12 side some people have suggested it is a door way. However, viewed from the Room 8 side there is definitely only one vertical mortar joint. If it had been a door, the east side of the door must have collapsed. Another possibility is that the builders may have constructed a wall and then extended it further to the east.

A 4 m section of the Room 8 wall face required from two to four courses to be realigned. Keep in mind that these walls are two stones wide. The opposite side of this wall (Room 12 wall face) was missing two to four courses of stones and needed to be reconstructed in order to match the height of the Room 8 face. Both wall faces were repointed, i.e. all mortar joints were cleared of loose mortar and filled with new amended mud.

WEST WALL:

Due to the large Juniper tree in the NW corner it is not possible to determine exact wall length but one could assume it is approximately 5.7 m to agree with the east wall length. It is a semi-coursed, two stones wide with small filler stones in the center between the two face stones. This wall width ranges from 62cm to 67cm wide. There are three square shaped holes running through this wall which I will refer to as vent holes. Since these holes are located only 7 courses or approximately 94cm above the floor, they could not have been roof viga holes.



Completed Room 8 west wall. Note 3 vent holes

A section of this wall, 2.5 m in length, is leaning into the room. After completion of the excavation in 1990, backfill had been thrown into this room and most likely saved this wall from collapse. J. Britton decided to push this leaning section back vertical before stabilizing it. On April 26, 2002, he documented the wall by taking photos and measurements. The next day Britton along with B. Wright and C. Knutson constructed a push board using a 4 ft by 8 ft sheet of heavy plywood and various pieces of lumber. Two jacks were used to apply force to the push board. When the wall reached a vertical position, 2 x 4s were to be placed as braces and then the jacks would be removed. As the first 2 x 4 was being put into position something caused a jack to fail. This caused the interior face of the wall to burst in toward the room. The result was a pile of rubble leaning against the push board.

J. Britton decided, after thinking about the options, to challenge himself to relay the wall, putting each stone back into its original position. He used computer scanned photos to make several 8.5 by 11 inch “wall maps”. The exterior wall face remained standing, but all mortar joints were loosened by the traumatic force of the “exploding” wall. A small number was written on the face of 36 stones as well as on the “map”. This side of the wall was then dismantled and relayed using the photo “map” as a guide.

Using the enlarged photos, Britton identified and numbered each stone of the interior wall face as they were removed from the rubble pile. There were 73 stones on the interior wall face that were relayed using amended mortar. Only one relatively small face stone was never found. A reconstructed cap of one to two stones high was laid on the wall top to make all three vent holes complete and to seal the wall top against the harsh winter weather conditions. When completed this wall was nine to ten courses high.

It took a total of 121 person hours to identify and relay the stones from this collapsed wall section. Records indicate the following hours worked: J. Britton 85 hours, M. Britton (mud mixing) 29 hours, and J. Purcell (mud mixing) 7 hours.

NORTH WALL:

Due to the large tree in the NW corner it is not possible to determine exact wall length. However, we can assume it is approximately the same length as the south wall which is 6.2 m long. It is a

semi-coursed, two stones wide with small filler stones in the center between the two face stones. In order to enter the room, three steps have been placed against this wall. The steps are made of stone and mud mortar. We repointed all exposed stone along this wall.

ROOM 8 SUMMARY:

The stabilization of Room 8 began August 18, 2001 and was completed October 4, 2003. During this period, there were 29 days of mud mixing using 1280 ounces (10 gallon) of SoilShield-LS. There were at least 20 members of the Rim Country Chapter of AAS involved in the following activities: backfill removal, mixing mud, repointing mortar joints, relaying stones, wall reconstruction, laying geotextile, and contouring new fill dirt.

ROOM 12:

Room 12 is south of and shares a dividing wall with Room 8. It is approximately 75 per cent excavated down to the floor. An area along the south wall remains unexcavated. A stone slab hearth is located in the floor.

EAST WALL:

At the NE corner of the room the wall is 7 courses high. The top of the upper course is approximately 90 cm above the floor. It, like the walls in Room 8, is two stones wide with small stones filling voids in the center. A root ranging from 4.5 cm to 8 cm in diameter was removed from this wall where it abuts to the north wall. It had grown along the middle of the wall between the external and internal face stones. It exited the wall and entered the room at 55 cm above floor and 90 cm south of the north wall.

After removing the root the top stones along both faces were relayed for a distance of approximately 1.5 m. The remainder of this wall will be stabilized in the near future.

WEST WALL:

The exposed section of this wall was repointed using amended mud. This 2.5 m section runs from the north wall to the unexcavated portion of the room.

SOUTH WALL:

Only a small section of this wall at the SE corner has been excavated as of November 12, 2003. Future stabilization will be done as required.

NORTH WALL:

This wall is the separating wall between this room and Room 8. Stabilization, consisting of realignment and reconstruction was discussed above under Room 8, South Wall. This entire wall was repointed with amended mud.