

Assessment of Existing Stone Signs

Wupatki National Monument

April 2006



Prepared for Palma Wilson
Superintendent, Wupatki-Sunset Crater Volcano National Monuments

Prepared by Debra Frye
Intermountain Region Sign Coordinator

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WUPATKI NATIONAL MONUMENT

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Introduction

Wupatki and Sunset Crater National Monument became a part of the National Park Service system in 1930. The geography of Wupatki is one of broken rock outcrops and gently sloping open terrain that contain the remains of ancient pueblos and villages to a landscape that changes to ponderosa pine, volcanic cinder cones and old lava flows in Sunset Crater. The two Monuments are connected by Route 10, a two lane - 36 mile loop road that is a spur off of US 89 north of Flagstaff, Arizona.

On March 3, 2006, Debra Frye, Landscape Architect/Regional Sign Coordinator traveled to Monument Headquarters in Flagstaff, Arizona to meet with Superintendent Palma Wilson and other park staff to discuss and assess the existing stone signs as a result of a Federal Highways road improvement project on the loop road. The road improvement project raised questions about the safety and whether or not the existing stone signs met MUTCD sign standards. In addition, questions of whether or not the signs should be replaced or should remain were also discussed, as well as their historic and cultural value. The purpose of this report will address these two issues and give some options with regard to these signs.

The group met at Monument headquarters and then traveled by vehicle to the north entrance of the loop road. The group traveled in the vehicle along the loop road and stopped periodically to photograph, discuss and evaluate the historic signs along the Wupatki section of the road. The following is the assessment and recommendation for the stone signs, based on information and discussion from that trip.

Sign Research

A document search through the Denver Service Center's Technical Information Center came up with several drawings referencing signs at Wupatki and Sunset Crater. The first documentation of signs in Wupatki-Sunset Crater is in 1940. This drawing entitled Signs, (Dwg #WUP/NA/2031) showed entrance signs and a few other visitor information signs for Wupatki, Sunset Crater and Montezuma Castle. During the visit, I did not see any of the sign types shown on this drawing, so therefore can not determine whether these sign were ever installed in the park.

In 1953, there is another drawing entitled Entrance Sign/Jtc. Highway 89 & Monument Road, (Dwg NM-WUP/2041-B), that shows another design for an entrance sign for Wuptaki, as a well as scenic loop road map sign. Again, there is no documentation that these two signs were installed in the park.

In 1965 and a revised 1968 plan outlines a park sign plan called the Wupatki-Sunset Crater National Monuments Sign and Wayside Exhibit Plan (Dwg NM-WUP-SUN/2302A, B). This sign plan shows the location and design of many of the signs that are existing in the park. This sign plan also includes the same entrance sign and map sign shown in the 1953 drawing. Because these two signs are shown in the 1965 sign plan, I would assume they were not built in 1953, but were installed with the rest of the signs shown in the 1965 plan. Many of the existing signs in the Park, shown in the 1965 sign plan have been installed, but during the visit it was apparent that these signs have been modified or field adjustments have been made when originally installed or during periods of road repair. For example, all the signs shown in the 1965/68 drawings are detailed to be installed directly into the ground. However, many of these signs actually have concrete and stone bases with the stone sign face installed onto this base. When these sign were installed these concrete and stone bases may be a field modification that has never been documented. These signs are shown in the Appendix.

In 1983, a drawing entitled Orientation Signs and Miscellaneous Details, (Dwg #322/41,003) showing the design for the current entrance signs and map orientation sign for both Wupatki and Sunset Crater. There is no clear evidence that these signs were constructed at that time. These drawing are shown in the Appendix under the 1992 - Resurfacing, Reconstruction and Parking Areas Loop Road, (Dwg #322/41,905A).

In 1992, there was a Federal Highways Administration drawing entitled, Resurfacing, Reconstruction and Parking Areas Loop Road, (Dwg #322/41,905A). This drawing makes reference to removing and reconstructing the existing stone sign at the Citadel parking area. Throughout this road project, other signs may have been removed for road work and reconstructed in the field. During the field trip, there were several stone signs along the road that appear to have been relocated and reconstructed. There is no clear evidence that this happened during this road reconstruction time period, but it would be a logical assumption some signs may have been rebuild based on the notes in this drawing.

This sign research has lead to some determinations. The existing stone signs were constructed and installed in either 1965 or 1968. There have been several road projects since the installation that may have relocated and rebuilt some of the existing stone signs, but for the most part, the signs are basically in the same location and the same style as when they were built. The existing entrance sign and the map orientation sign were designed in 1983 and we can assume they were constructed at that time.

Loop Road and Stone Signs as a Cultural Landscape

The loop road was constructed and designed to protect the important natural and cultural resources as well as designed to blend with the natural area. And at the same time provide a leisurely and safe visitor experience. The Park loop road has currently been identified as a part of the National Park Service's Developed Era Cultural Landscape and the stone signs are a contributing feature. The road is currently being researched in preparation for determination of eligibility to the National Register of Historic Places. Because the signs are considered a contributing feature to the cultural landscape, it is important the signs

remain as close to the original design as possible. If the signs were to be removed and replaced with standard brown and white metal park signs, the character of the road and the cultural landscape would be adversely affected.

Recommendations

Because the road has been identified as a Cultural Landscape and the signs are considered a feature as a part of the designation, it is recommended the existing stone signs remain. Presently, the existing stone signs do not meet MUTCD or NPS sign standards. However, the existing stone signs may be modified to some degree without compromising their historic or cultural integrity to increase safety, readability and visibility and if possible, meet the some of the MUTCD and the NPS sign standards. In 2007, Federal Highways has a project to resurface the loop road and this could be an opportunity to rehabilitate the existing stone signs in conjunction with this road project.

In comparing the signs in the 1965/68 Sign and Wayside Exhibit Plan to the signs that are currently present in the park it appears there are very few signs that maybe the original signs. Throughout the years, many of the signs look like they have been repaired and the stone sign faces replaced. Wording on some of the sign faces has been modified and the font type changed. In addition, there have been signs added or removed. It is recommended each sign be evaluated individually and a recommendation made to determine the best way to rehab that individual sign. In many cases the lettering and font size is too small on the sign face and not legible. In addition, many of the signs are not visible because the sign is positioned below the sight line from a vehicle on the roadway or is covered by vegetation growing along the road side. Another factor is several of the signs are located too close to the edge of the road and could be in the roadway clear zone and a hazard should a vehicle accidentally wander off the pavement. In addition, because the stone signs are made of native materials that are not reflective and blend in with the native landscape, it is recommended that the use of reflected brown and white approached signs be placed ¼ mile before the stone signs to aid the traveler of upcoming attraction or intersection identified by the stone signs.

As a part of the sign evaluation process, a Park Sign Plan should be developed to outline sign design standards and document correct sign locations. In addition, it will be important to work with Federal Highways to integrate the Park Sign Plan with the 2007 road rehabilitation project. The ultimate goal is to improve the signage in the Park by increase visibility, readability and safety, while maintaining the historic and cultural features of the road and the signs.

Respectfully,

Debra Frye
Intermountain Region Sign Coordinator

A handwritten signature in black ink that reads "Debra Frye". The signature is written in a cursive style with a long, sweeping underline that extends to the right.

APPENDIX

1. Photos of existing signs in the Park
2. 1940 - Signs
Drawing #WUPA/NA/2031
3. 1953 - Entrance Sign/Jtc. Highway 89 & Monument Road
Drawings #NM-WUP/2041-B
4. 1965/68 – Wupatki – Sunset Crater National Monument Sign and Wayside Exhibit Plan
Drawing #NM-WUP-SUN/2302A
5. 1992 – Resurfacing, Reconstruction and Parking Areas Loop Road
Drawing #322/41,905A

INVENTORY AND ASSESSMENT OF EXISTING STONE SIGNS

Wupatki National Monument



1. **Entrance Sign:** The existing entrance sign was possibly built in 1991.



2.- 3. **Informational /Orientation Sign:** The existing sign was possibly built in 1991.



Additional Sign: Mileage: Brown and white metal informational sign stating mileage to Park facilities.

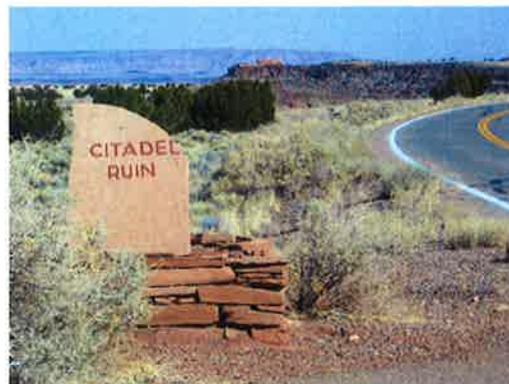


4. **Lomaki Ruin:** This sign is in the 1965/68 Sign Plan. Could be the original sandstone sign face, the font is original type, but the wording is different. The sandstone sign face is placed on a concrete and sandstone base, not shown in the 1965/68 Sign Plan.

5. Did not see this sign stated in the 1965/68 Sign Plan

6. No #6 sign in 1965/68 Sign Plan

7. Did not see this sign stated in the 1965/68 Sign Plan.



8. **Citadel Ruin:** This sign is in the 1965/68 Sign Plan. Not the original sandstone sign face as the font, wording and word spacing is different. The sandstone sign face is placed on a concrete and sandstone base, not shown in the 1965/68 Sign Plan.



9. Wupatki Ruin and Visitor Center – 9 Miles: This sign is in the 1965/68 Sign Plan. Not the original sandstone sign face as the font, wording and word spacing is different. Wording on both sides of the face. The sandstone sign face is placed on a concrete and sandstone base, not shown in the 1965/68 Sign Plan.

- 10. Did not see this sign.
- 11. Did not see these signs.



12. View Point and Lunch Area: This sign is in the 1965/68 Sign Plan. Not the original sign as the wording and font is different. The sign face is ground mounted as shown in the 1965/68 Sign Plan.

- 13. Did not see this sign.
- 14. Did not see this sign.
- 15. Did not see this sign.



Additional Sign: Wupatki Ruin and Visitor Center: This sign does not appear in the 1965/68 Sign Plan. The sandstone sign face has a different font and the sandstone face is placed on a concrete and sandstone base not shown in the 1965/68 Sign Plan.



Additional Sign: Wupatki Ruin and Visitor Center 200 yards 185 M: This sign does not appear in the 1965/68 Sign Plan. The sandstone sign face has a different font and is ground mounted.



16. Visitor Center and Wuptaki Ruins: this sign is in the 1965/68 Sign Plan. It looks like an original sign as the font and the ground mounting is consistent with the 1965/68 Sign Plan.



17. 14 mi – To US 89, 18 mi- To Sunset Crater: This sign is in the 1965/68 Sign Plan. This sign is in the 1965/68 Sign Plan. Not the original sign, but has the original wording. The sandstone sign face is ground mounted, but the font and the shape of the sign are different from the 1965/68 sign plan.



Additional Sign: One Way w/ arrow: This sign is not in the 1965/68 Sign Plan, but has the original font on the sand stone sign face. Could have been installed at the same time as the other signs with the concrete and sandstone bases.



18. Trailers Park On Left: This sign is in the 1965/68 Sign Plan. It looks like an original sign as the font and wording are the same as in the 1965 Sign Plan, but the sandstone sign face is on a concrete and sandstone base.



Additional Sign: Wupatki Pueblo- Open Till Sunset: This sign is not in the 1965/68 Sign Plan, the font is different and appears to have been installed at a later date.

- 19. Did not see this sign.
- 20. Did not see this sign.
- 21. Did not see this sign.
- 22. Did not see these signs.
- 23. Did not see this sign.



Additional Sign: Exit: This sign is not in the 1965/68 Sign Plan, but could have been installed at the same time as the original signs with the concrete and sandstone bases.



Additional Sign: Wukoki Ruin Jtc. ??? Yards: This sign is not in the 1965/68 Sign Plan, but could have been installed at the same time as the original signs. Is on a concrete base only.



Additional Sign: Wukoki Ruin Jtc. 300 Yards: This sign is not in the 1965/68 Sign Plan, but could have been installed at the same time as the original signs with the concrete and sandstone bases.



24. Wukoki Ruin 2 ½ Miles: This sign is in the 1965/68 Sign Plan. Could be the original sandstone sign face, the font is the original type, but the wording is different from the 1965/68 Sign Plan. The sandstone sign face is placed on a concrete and sandstone base, not shown in the 1965/68 Sign Plan.

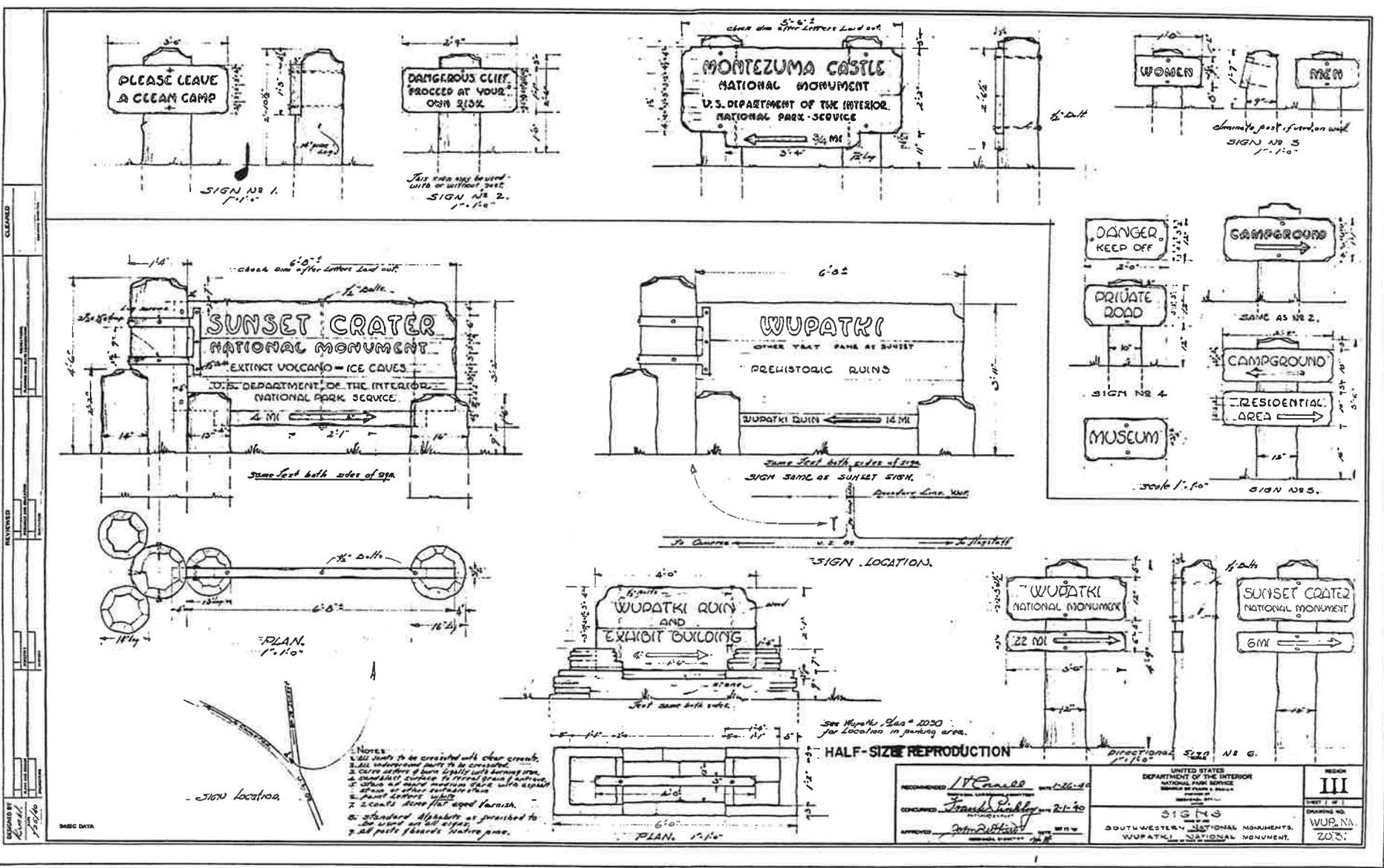
25. Did not see this sign.

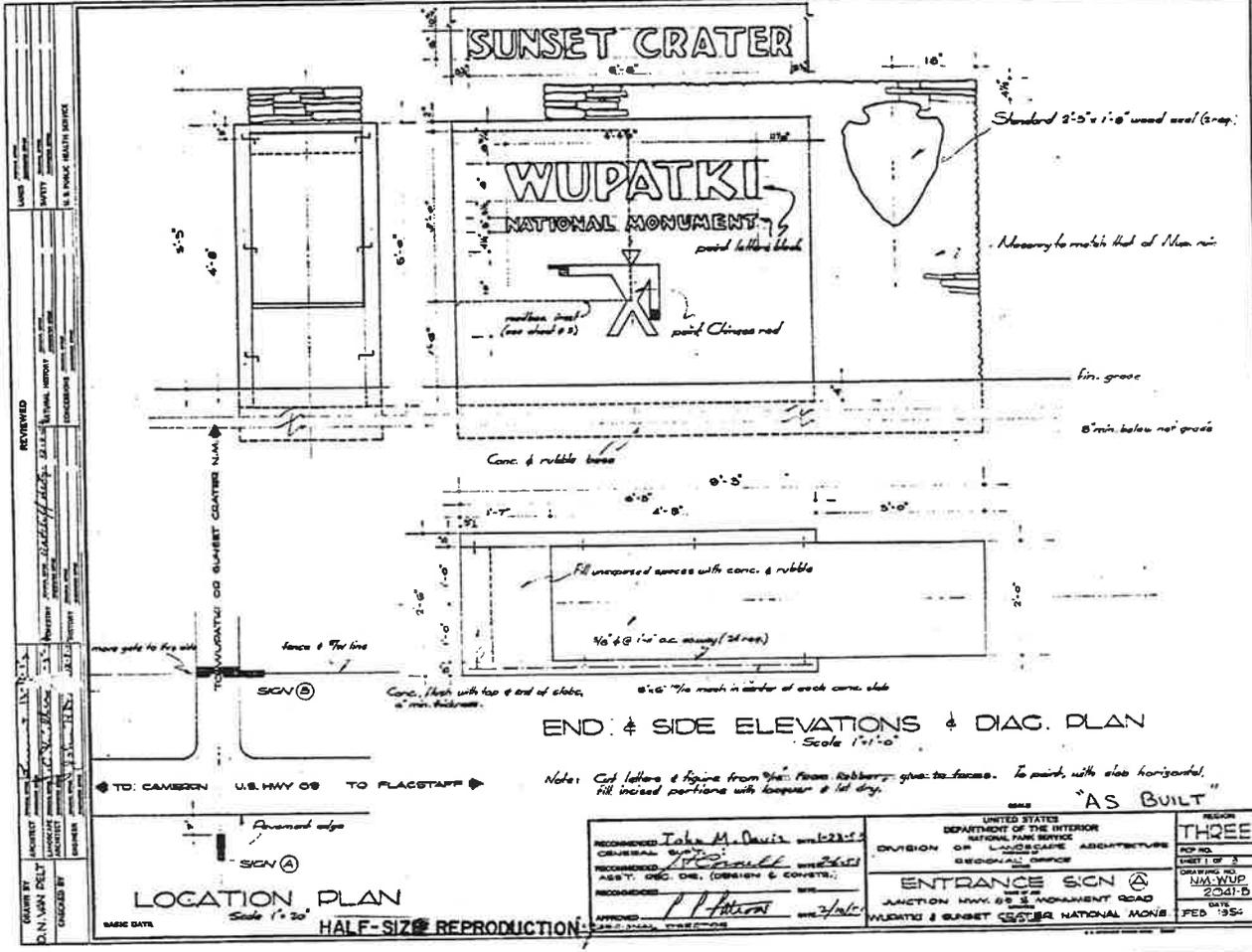
26. Did not see this sign.

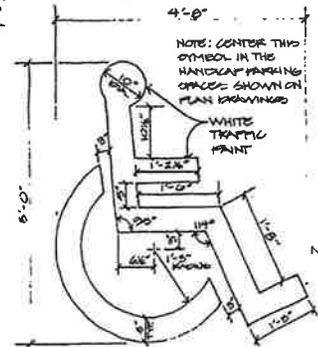
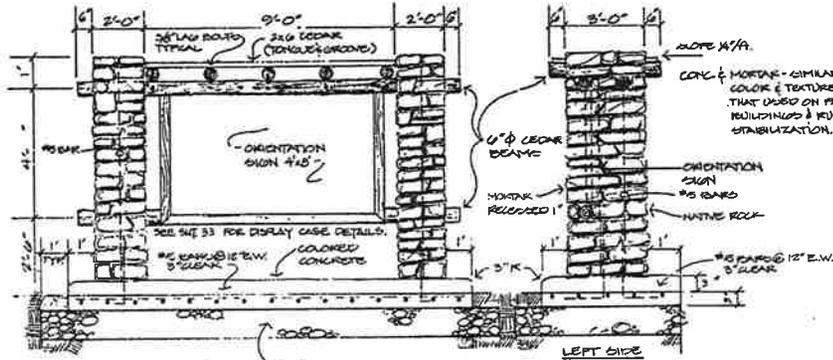
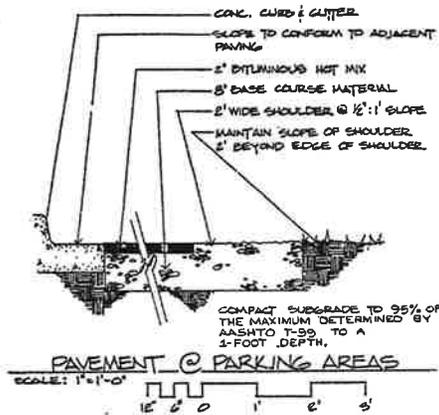
27. Did not see this sign.

28. Did not see this sign.

29. - 30. No signs listed in 1965 Sign Plan

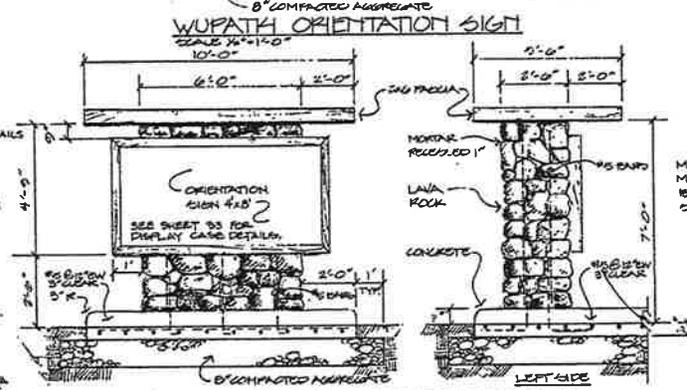




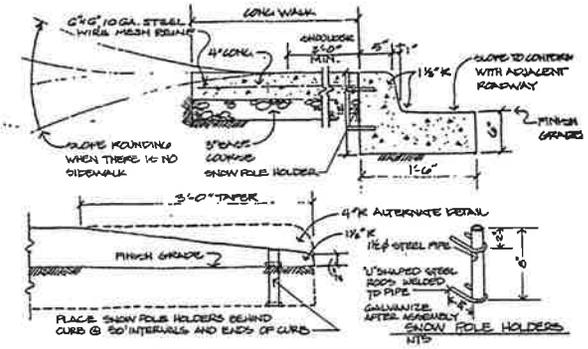
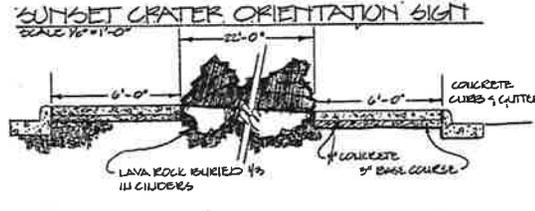
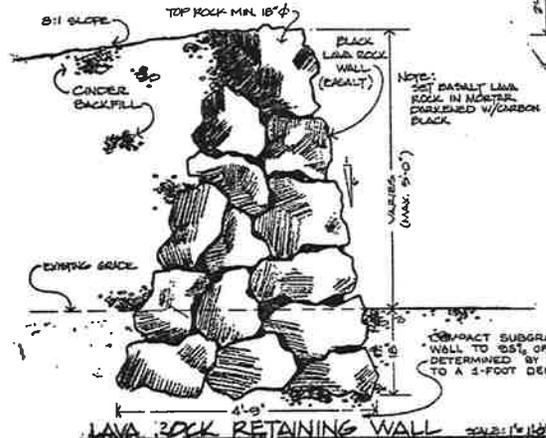


NOTE: HANDICAP RAMP DETAILS SHOWN ON SHEET 24.

- NOTES**
1. REINFORCING STEEL - ASTM A615 GRADE 60
HANDICAP - ASTM A 507 GRADE A / GALV NAILS
REIN. FABRIC - ASTM A 155
 2. WOOD - SELECT STRUCTURAL GRADE
DOUGLASS FIR, RED CEDAR, OR SOUTHERN
YELLOW PINE.
 3. STAIN - CURRINOL SEMI-TRANSPARENT STAIN
INTER-MIX: SEACHELL #90 & NEW CEDAR
#100, 2 COMP.



MORTAR - 60% PORTLAND CEMENT
MORTAR COLOR NO. 95 H MAG.
BLACK (SOLONON GRIND - CHEM SERVICE).



DESIGNED: C. W. B. / R. W. L.	SUB SHEET NO.	TITLE OF SHEET ORIENTATION SIGNS & MISCELLANEOUS DETAILS	DRAWING NO. 322
DRAWN: AV/CH			41,905
TECH. REVIEW:			PAGE NO. SHEET
DATE: 3/83			SP DR - 7

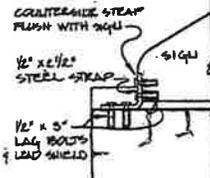
WUPATKI-SUNSET CRATER 1-A,B,C,D; & E (1) DWG. NO. 322/41,905

4x4 SELECT STRUCTURAL GRADE DOUGLAS FIR, KID CEDAR OR SOUTHERN YELLOW PINE; LAMINATED WITH EPOXY GUE, FINISHED WITH GUPONOL SEMI-TRANSPARENT STAIN INTERLUX; 4 EACH 1/2" URBAN GRADE #106, 2 COATS.

STANDARD 4" x 2" FULL COLOR LIPS ENBLEM UOQUATED AS INDICATED. (FURNISHED BY THE GOVERNMENT)

NOTE: LETTER TEMPLATE TO BE FURNISHED.

LETTERS TO BE ROUTED 1/8" WITH ALL EDGES ROUNDED BURR LETTERS WITH TIGHT.

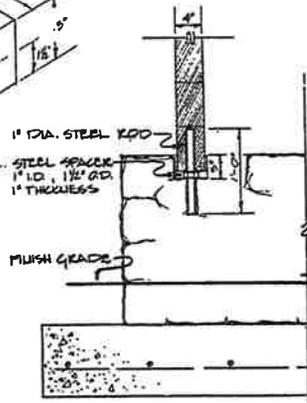


SECTION SCALE 1 1/2" = 1'-0"

DRILL HOLES FOR 1/2" BOLTS

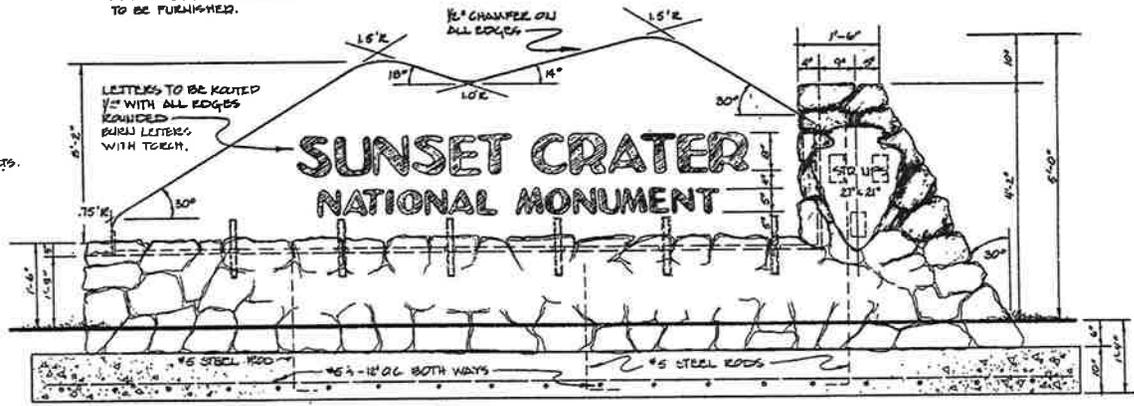
1/4" THICK BENT STAINLESS STEEL PLATE - 9/31G11.

ENBLEM BRACKET NO SCALE



SECTION A-A' SCALE 1 1/2" = 1'-0"

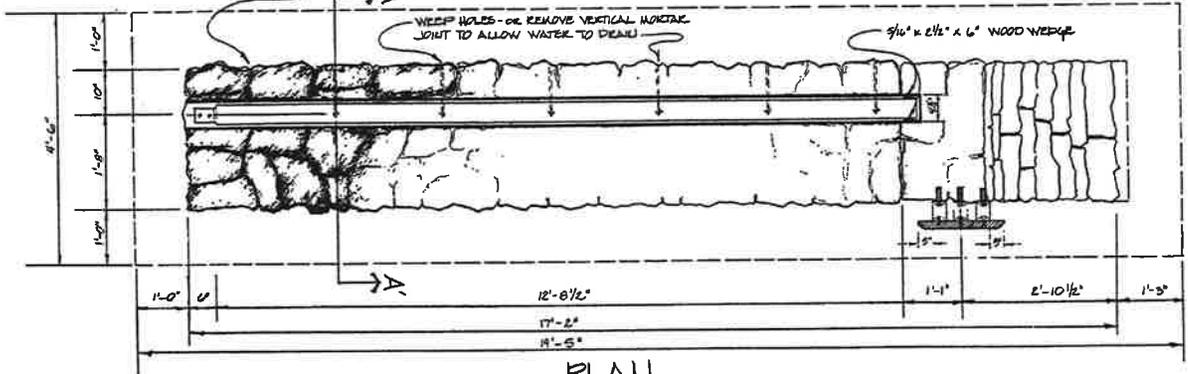
END ELEVATION SCALE 1" = 1'-0"



FRONT ELEVATION SCALE 1" = 1'-0"

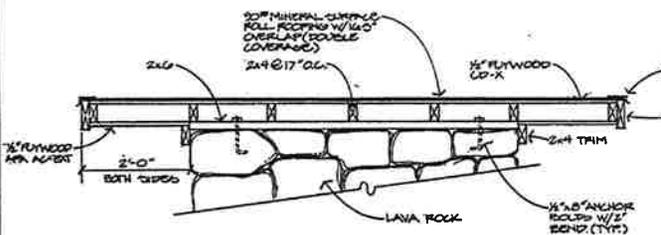
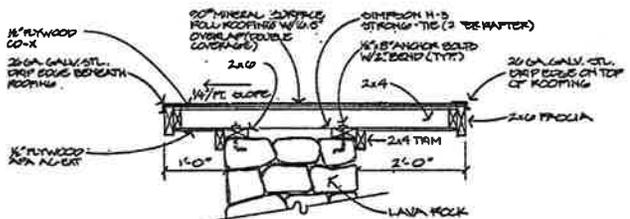
MORTAR SOLON GREN - CHEM SERVICE PO BOX 1766 SPRINGFIELD, IL 62706

SEA CONCENTRATED MORTAR COLOR UO 95H MAG. BLACK MORTAR RECESSED 1"

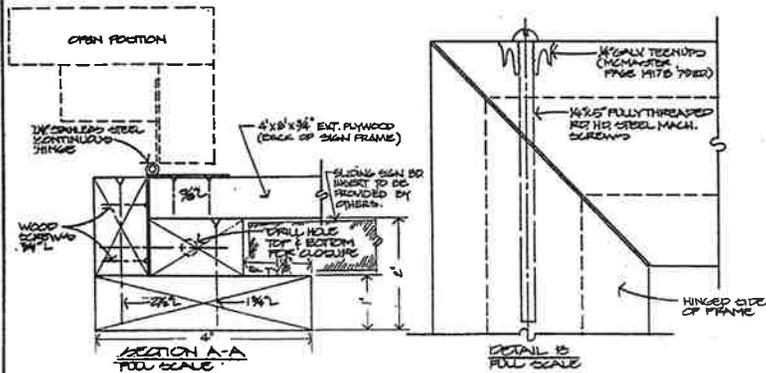
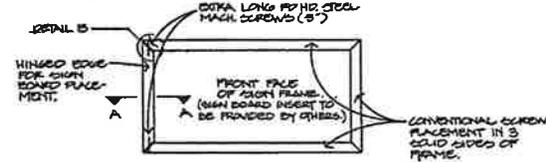


PLAN SCALE 1" = 1'-0"

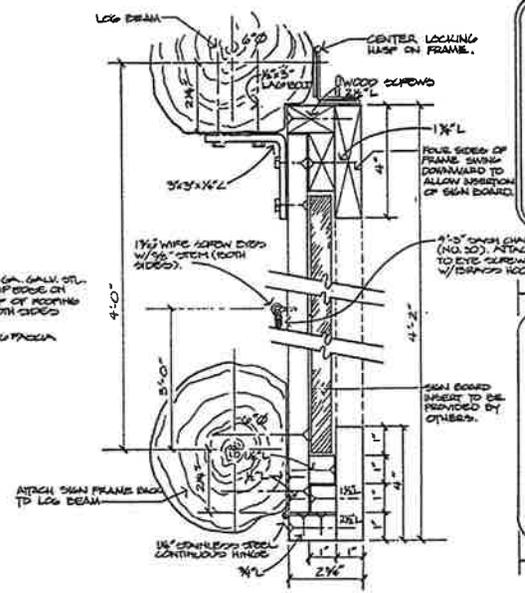
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DRAWN: HARTMAN			41,008
TECH. REVIEW:			PAGE NO. SHEET
DATE: 3/85			9"
			SP. DR. - 8



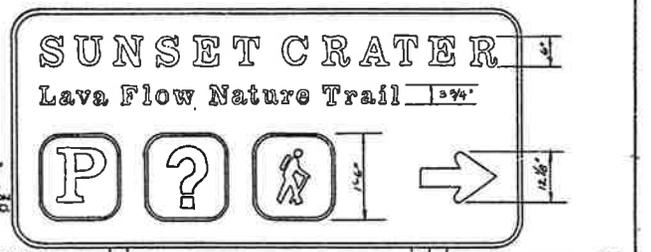
ORIENTATION SIGN/ ROOF DETAILS
SCALE 1"=1'-0"



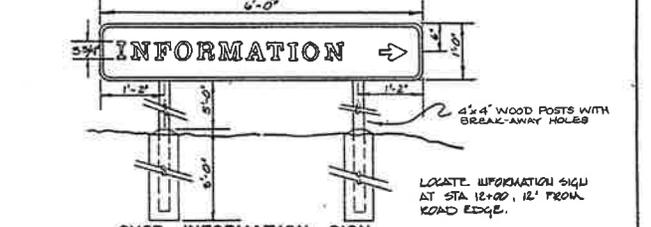
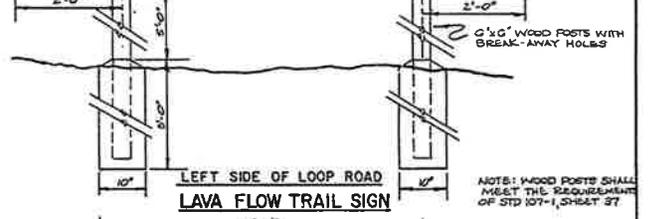
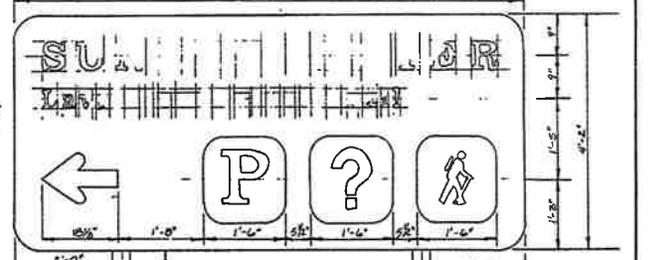
SECTION A-A FULL SCALE
DETAIL B FULL SCALE
SUCR ORIENTATION SIGN FRAME



WUPA ORIENTATION SIGN FRAME
HALF SCALE



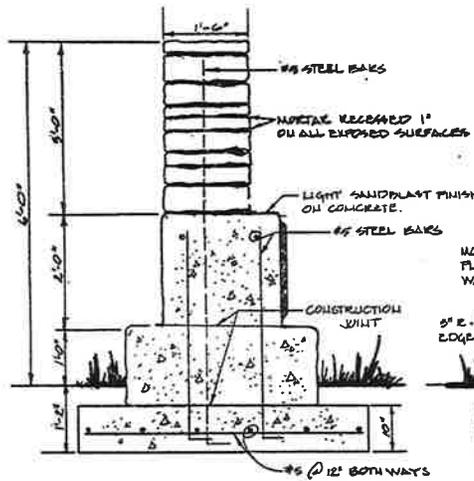
LOCATE SIGNS ON LOOP ROAD 300' FROM ENTRY TO SITE



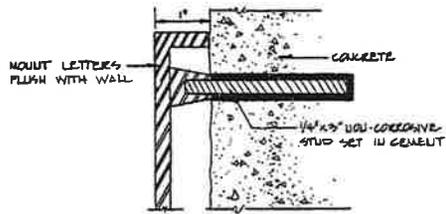
SUCR INFORMATION SIGN

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DATE: 3/85			SHEET
		SP DR. 10	OF

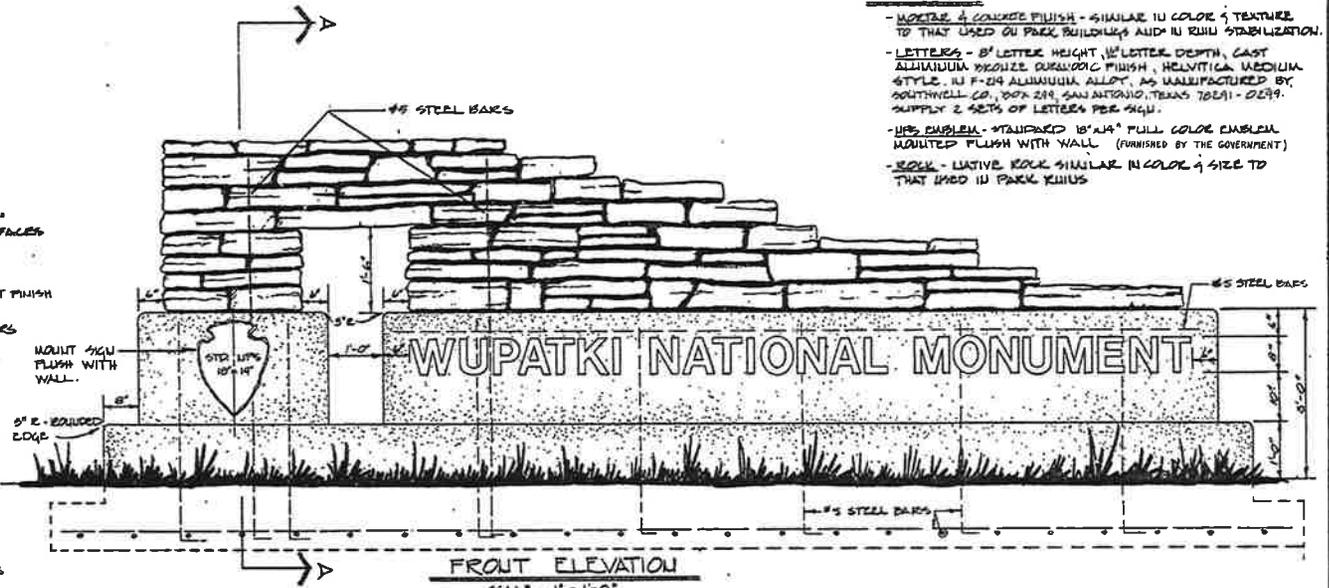
NOTE: CONCRETE COLORED AS SPECIFIED



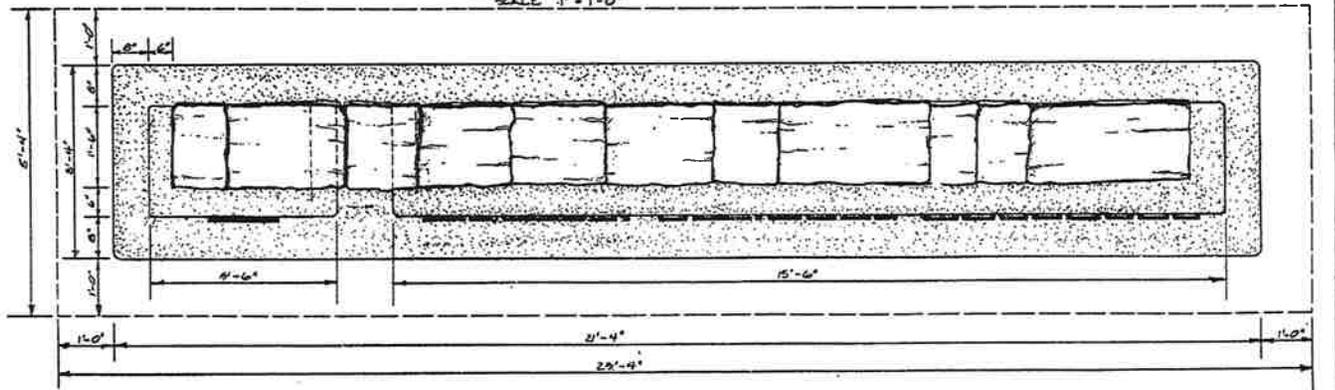
SECTION A-A
SCALE 1" = 1'-0"



LETTER MOUNTING DETAIL
SCALE: FULL SIZE



FRONT ELEVATION
SCALE 1" = 1'-0"



PLAN
SCALE 1" = 1'-0"

NOTES:

- MORTAR & CONCRETE FINISH - SIMILAR IN COLOR & TEXTURE TO THAT USED ON PARK BUILDINGS AND IN RILLI STABILIZATION.
- LETTERS - 8" LETTER HEIGHT, 1/2" LETTER DEPTH, CAST ALUMINUM BRONZE OURELLOIC FINISH, HELVETICA MEDIUM STYLE, IN F-24 ALUMINUM ALLOY, AS MANUFACTURED BY SOUTHWELL CO., BOX 219, SAN ANTONIO, TEXAS 78211 - 0299. SUPPLY 2 SETS OF LETTERS PER SIGN.
- WBS EMBLEM - STAMPED 18" x 14" FULL COLOR EMBLEM MOUNTED FLUSH WITH WALL (FURNISHED BY THE GOVERNMENT)
- ROCK - NATIVE ROCK SIMILAR IN COLOR & SIZE TO THAT USED IN PARK RILLIS

DESIGNED: H.A.ETIALLI	SUB SHEET NO.	TITLE OF SHEET WUPATKI N.M. ENTRANCE SIGN	DRAWING NO. 322 41,008
DRAWN: H.A.ETIALLI			PROJ. NO.
TECH. REVIEW:			SHEET
DATE: 5/88			OF
			SP. DR.-9