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GRAND CANYON NATIONAL PARK ROADS
APACHE STREET HEADWALL No. 1
Grand Canyon National Park
Grand Canyon Village
Coconino County
Arizona

HAER No. AZ-35-E

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Western Region
Department of the Interior
San Francisco, California 94107

HISTORIC AMERICAN ENGINEERING RECORD

GRAND CANYON NATIONAL PARK ROADS, APACHE STREET HEADWALL NO. 1 HAER No. AZ-35-E

Location: Apache Street is the east-west residential road which begins at Center Road, one block south of Village Loop Drive, and runs west. Apache Street Headwall No. 1 is located at the northwest corner of the intersection of Center and Apache, and serves a single culvert which diverts water south to north beneath Apache Street.

UTM: 12/397580/3990375
USGS Quad: Grand Canyon, AZ 1988 1:24,000

Date of Construction: [1933-35]

Type of Structure: Culvert headwall

Use: Culvert headwall

Designer/Engineer: National Park Service

Builder: [Civilian Conservation Corps]

Owner: National Park Service

Significance: This headwall is representative of rustic style road structures constructed by the Civilian Conservation Corps and other depression-era public works agencies within the western national parks during the period 1933-1942. It is purposely constructed of undressed native sandstone and limestone and rough-mortared to blend with surrounding natural ground features.

Project Information: Documentation of Apache Street Headwall No. 1 is the result of a mitigation study in anticipation of imminent Grand Canyon road work which may bury the structure or require that it be rebuilt. This report was prepared as an NPS Denver Service Center contract assignment in September and December 1993, by Michael F. Anderson, 985 N. Granite Reef #150, Scottsdale, AZ 85257 (602) 423-1602.

INTRODUCTION

Many of the minor roads and associated structures within Grand Canyon National Park's residential and commercial areas were designed in the 1920s/1930s by NPS and Bureau of Public Roads engineers. These men designed roads to federal highway standards of the time, which considered far fewer and smaller vehicles than travel these routes today. Changing traffic patterns have required new alignments, grades, and roadway widening since the 1930s. Such modifications are now being considered which may result in the burial or dismantling and reconstruction of Apache Street Headwall No.1 and several other masonry walls along Center Road, Apache Street, Boulder Street, and Village Loop Drive within Grand Canyon Village. This report describes the headwall and documents its construction, modifications, and significance.

HISTORY OF THE STRUCTURE

One of the first series of projects assigned to crews of the Civilian Conservation Corps involved survey, clearing, grading, and constructing Avenues A, B, and C which all ran west from Center Road immediately south of today's Ranger Ops building and served the Fred Harvey residential area. These roads had been surveyed, cleared and rough-graded as early as the late 1920s, but the increase in housing thus traffic along these roads in the early 1930s required that they be rebuilt. Research for this study included these projects which began in June 1933 and continued to April 1936, during which time most if not all structures related to these minor roads were completed.

A review of final construction reports, superintendent's monthly reports, E.C.W. camp reports, landscape architects' reports, and photograph files failed to reveal a specific construction date or project for Apache Street Headwall No. 1. Further, it is not certain that this headwall was constructed by the C.C.C. since crews of the Public Works Administration and Civil Works Administration also worked on minor roads in this area during the middle 1930s. Visual inspection of construction techniques is not likely to reveal a particular agency, since all apparently followed the same pattern once the standard for wall construction was established.

The headwall may have been built as early as June 1933, when crews of the newly-arrived C.C.C. Company 819 began work on "roadside improvement" of the South Entrance Road. Under the supervision of camp superintendent J.V. Fish and landscape architect A.C. Kuehl, these crews immediately began work on the road south of today's Ranger Ops building, including the road at

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the intersections of Avenues A, B, and C and Center Road. Part of the project entailed "rebuilding culvert headwalls where necessary," and photographs of the project reveal work in the area of Avenue A, but they do not reveal the presence or absence of headwalls at the intersection. Considering the priority of this project, the number of men employed, the existence of Avenue A at the time (though it would soon be rebuilt), and the mention of headwall work, it is quite likely that Apache Street Headwall No. 1 was built or rebuilt to its modern form during 1933.¹

In November 1934, at least some responsibility for minor road construction was transferred from the E.C.W. to Public Works Administration crews. Specific reference was found to these men working on Avenue B and Dump Road projects, however, another report indicates that C.C.C. crews were also working on the Dump Road, the nearby rock quarry, and Avenue B at this same time--between 12 November 1934 and June 1935. A further unsettling element is the presence of county relief workers of the C.W.A. working on roads in the area (primarily the loop road along today's Tonto Street) during this period. No specific mention was found of a road project involving Avenue A during this period of November 1934 through mid-1935; rather, reports suggest that crews of all agencies were working on Avenues B and C, the Dump Road, and the Tonto Street area loop road.² Attention turned to Avenue A in late 1935.

A photograph taken 17 July 1935 confirms that Apache Street Headwall Nos. 1 and 2 were in place by that date.³ This photograph was taken in relation to a project involving Avenue A subgrading and grading, thus, it does not suggest that the walls were built at that time. It is taken from the location of Apache Street Headwall No. 3 at the southeast corner of the Apache and Center Road intersection, facing west up Apache Street, thus is not very revealing of the structures themselves. Two subsequent Avenue A projects in late 1935 and early 1936 may have resulted in improvements to the walls in those years.

The only project noted in this study since the middle 1930s which approached Apache Street Headwall No. 1 involved the construction of water lines and concrete curbs on Apache at its intersection with Center Road. This project was in progress in June 1988 and had the effect of narrowing the roadway somewhat, but apparently did not effect the headwall nor Apache Street Headwall No. 2.

DESCRIPTION

The headwall is located along Apache Street at the northwest corner of the intersection of that street with Center Road. It

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is approximately 12'6" long and 3'6" high at the center of the 30" C.M.P. culvert opening. The wall is six to eight feet back from the roadway curb with intervening gravel and grass cover, but the wall top is at the approximate level of the roadway. It is of roughly-cut, rectangular sandstone and limestone, crudely-mortared. The wall serves the 30" pipe culvert which carries storm water in a south to north direction beneath Apache Street. It is in fair condition with some cracking and flaking of the mortar noted.

The natural landscape surrounding the headwall is much the same as it was in the mid-1930s. Old photographs indicate the same grass cover with minimal chaparral and a preponderance of ponderosa pines, juniper, and pinyon pines away from the roadway. The nearby built landscape is also similar, that is, free of major structures other than those associated with the road and still free of buildings. New road features include the concrete curb noted above, the metal street sign, stop sign, and one-way sign. The roadway itself is considerable narrower than it was in the 1930s when its graded gravel surface extended to the tops of Apache Street Headwall Nos. 1 and 2. Speculatively, traffic may be about the same today as it was in the 1930s: the far greater local traffic perhaps matching tourist numbers from the days when Center was the park entrance road.

CONCLUSIONS/SIGNIFICANCE

Apache Street Headwall No. 1 is significant for its association with the work of the Civilian Conservation Corps within the western national parks. Built during the peak years of CCC activities, it represents a conscious attempt to conform to the tenets of rustic architecture popular at the parks from the 1920s through the 1940s. Built of native sandstone and limestone from local quarries and purposely rough-mortared, the headwall attracts no attention to itself; rather, it complements the landscape while concealing the corrugated metal pipe culvert within.

ENDNOTES

1. Alfred C. Kuehl, Landscape Architect, "Summary Report--E.C.W. Work Projects, C.C. Camp Number 819--June 1-Oct 15 1933, Grand Canyon National Park," report with photographs, [1933], Accession #157, Box #4, Folder #4, GCNP Study Collection, GCNP.

2. Harry Langley et al, "Report to the Chief Architect Through Superintendent, Grand Canyon National Park, Month of November 1934," report, 30 November 1934; Idem, "Report to the Chief Architect Through Superintendent, Grand Canyon National Park, Month of January 1935," report, 31 January 1935; Idem, "Report to the Chief Architect Through the Superintendent of Grand Canyon National Park, Month of February 1935," report, 28 February 1935, all in E.C.W. (C.C.C.) Documents, Box #5, Folder #1, GCNP Study Collection, GCNP.

H.A. Montgomery, Associate ECW Engineer, to Chief Engineer of the National Park Service, report, 2 December 1935, Box #5, Folder #1 and Alfred C. Kuehl, "Report to Resident Landscape Architect at Grand Canyon National Park," report, December 1935, Box #5, Folder #2, both reports in E.C.W. (C.C.C.) Documents, GCNP Study Collection, GCNP.

C.M. Carrel, Park Engineer, "Final Construction Report on Project No. 506, Service Roads, Footpaths, Parking areas at Headquarters," report with photographs, 2 December 1936, Grand Canyon National Parks Construction Reports, 1926-1954, Accession #3594, GCNP Study Collection, GCNP.

Mention (but scant detail) of the flurry of minor road construction projects and C.W.A. participation during these years can be found in the (Flagstaff) Coconino Sun, 3 November 1933, 5 January 1934, 20 April 1934, 29 June 1934, 31 August 1934, 2 November 1934, 11 January 1935, 12 July 1935, 16 August 1935, 13 September 1935, 29 November 1935, 24 January 1936, 12 June 1936.

3. Photograph of Apache Street with Apache Street Headwalls #1 and #2 in view, dated 17 July 1935, Negative #2912, GCNP Study Collection, GCNP. No print existed for this negative until the author asked Mike Quinn at the study collection to make one from a negative found. I believe Mike placed a copy of it in the files following this study.

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John Kirkaldie, Photographer, August 1993

AZ-35-E-1 DISTANT VIEW OF HEADWALL AS SEEN LOOKING TO THE
SOUTH

AZ-35-E-2 VIEW OF THE TOP OF THE HEADWALL LOOKING WEST

AZ-35-E-3 VIEW OF THE TOP OF THE HEADWALL LOOKING EAST

AZ-35-E-4 DETAILED VIEW OF MASONRY WORK OF THE HEADWALL
LOOKING TO THE SOUTH

APACHE ST

ONE
WAY
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HER. M. 43-35-E-1





HAER M. A2-35-B-2



HAER No. AZ-33-E-3



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