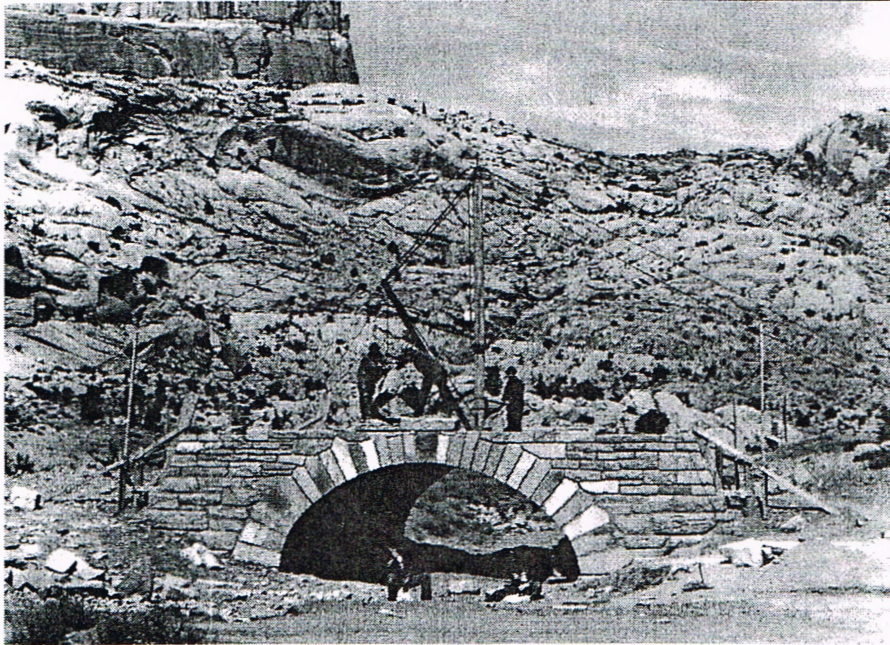


Photographic History of the Moab Culvert



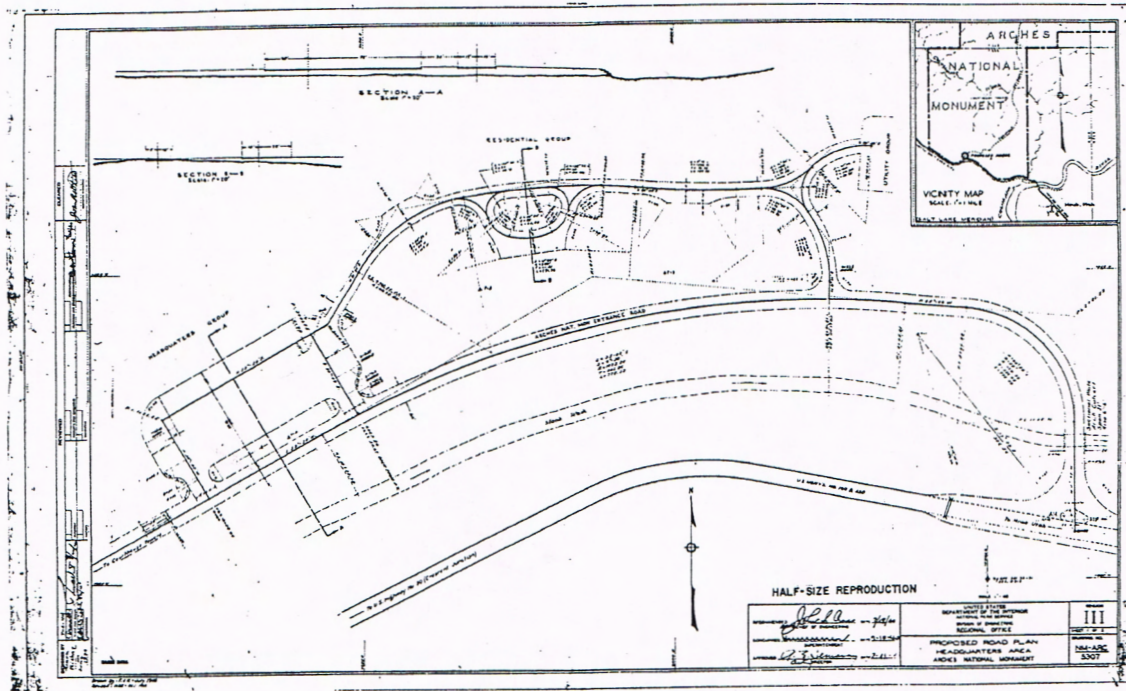
Referred to as the "Bridge over Moab Canyon Wash," This photo, taken by Harry Reed (Hoffman 1985: 71) in "July 1941."

From the Times Independent, 24 October 1940:

Construction of a modern automobile highway into Arches National monument got underway in earnest the past week with the erection of a metal arch bridge across Moab canyon wash and the grading of three-tenths of a mile of road..." This 3 mile section of arches road from HQ to Courthouse Towers is known as "Section 1-A." "The metal arch bridge across Moab canyon wash provides for a 27-foot roadway over it. The bridge is 20 feet wide and six feet six inches high." "The channel of Moab wash is being changed and a stone revetment [rip rap] along the banks of the creek will be erected. [Misleading: the metal arch bridge IS the culvert.]

In the 12 December 1940 edition of the Times Independent, as part of a CCC article, the paper includes a "personnel sketch" or biography about Mr. Gordon Andersen, the "camp foreman in charge of rock construction." "Gordon Andersen is a native of Utah and received his education in the schools of Utah. For several years he attended the school of civil engineering

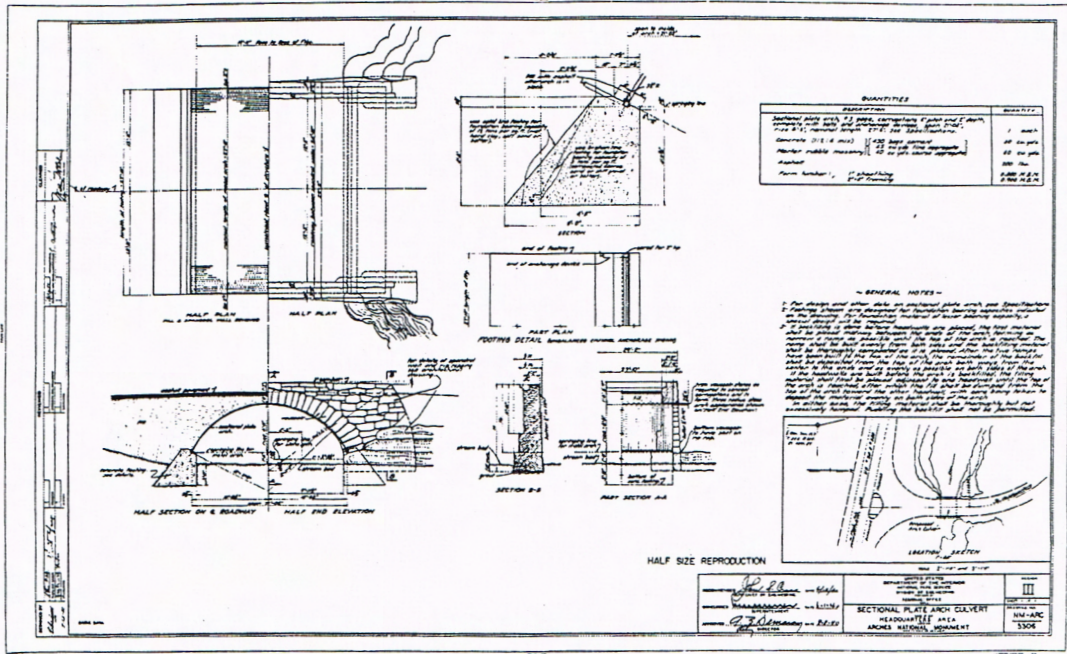
of the University of Utah. He has had four years' experience in the CCC's and specializes in rock construction. Mr. Anderson is a skilled mason and at the present time he has charge of a crew getting out rock for the headquarters building. He is married and his family reside in Salt Lake City."



1940 Arches National Monument Road Plan

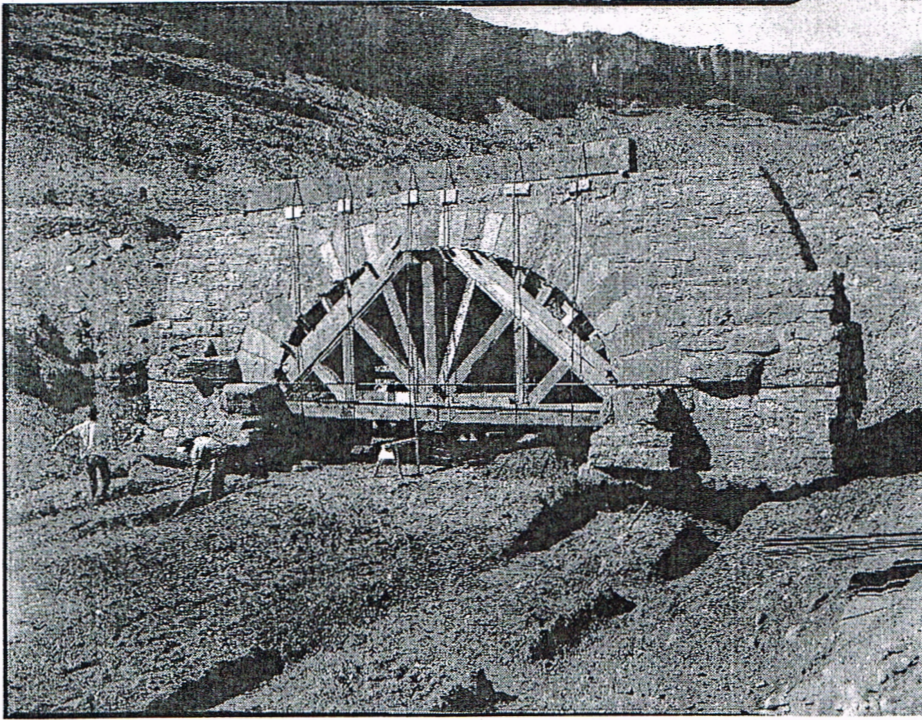
William (Bill) Slade was senior foreman for the CCC, NP-7 camp, working together with Foreman Gordon Andersen. The 5 December 1940 Times Independent states that Mr. Slade was a native of Heber City, Utah, was a foreman at the Farmington Bay CCC camp for a time and also served as Farmington's CCC superintendent. While at NP-7, Mr. Slade "was in charge of the carpentry and bridge construction...."

Charles Richey was the keeper of the "masterplan for developing the monument,..." which according to the Times Independent (30 May 1940) called for erection of a headquarters area and construction of a road into Arches. According to the Times Independent, and NPS design maps, Charles A. Richey was the Associate landscape architect for the encompassing entrance road project. H. Miller was the associate NPS engineer. Richey approved the road design in June 1940. The "Arch Culvert" design was approved by NPS architect "Richardson" on May 23, 1940.

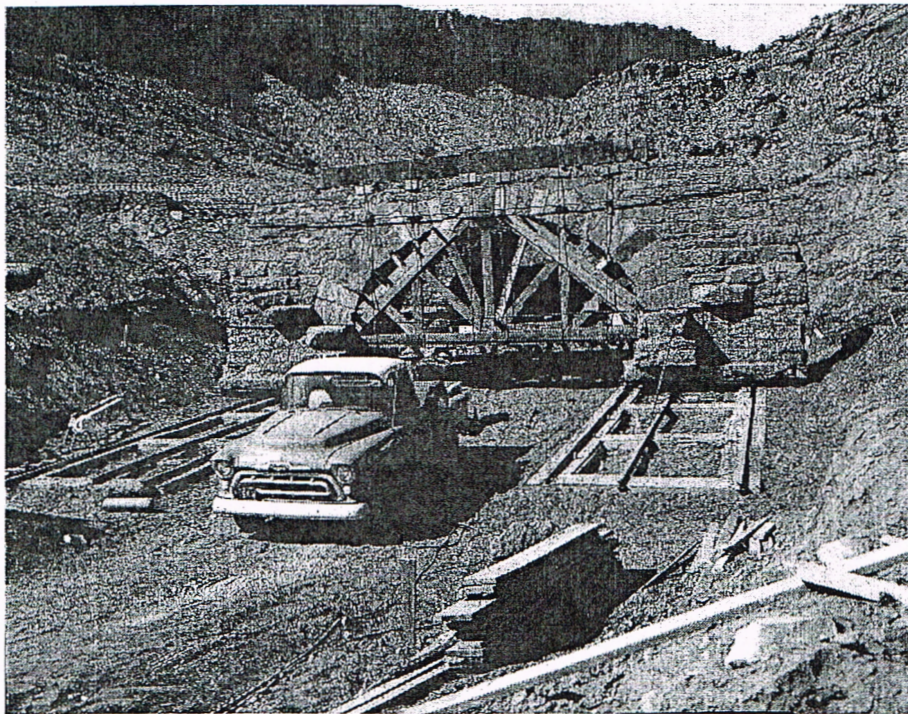


1940 Sectional Plate Arch Culvert

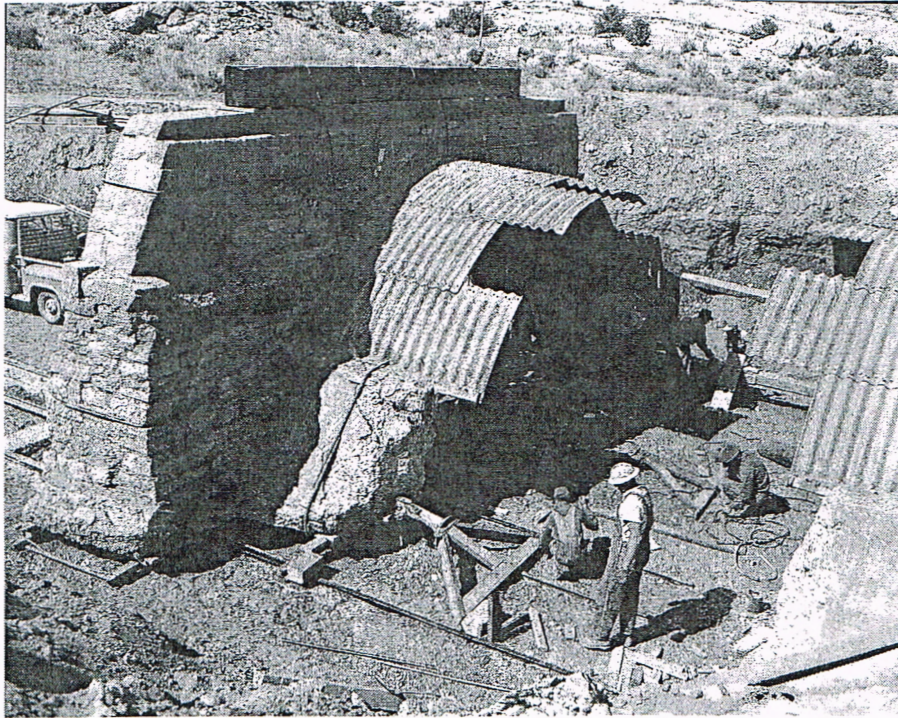
Culvert Alteration in 1957



Excavation and bracing of the east-side headwall, November 1957.



Headwall on rails and pulled apart with a truck.

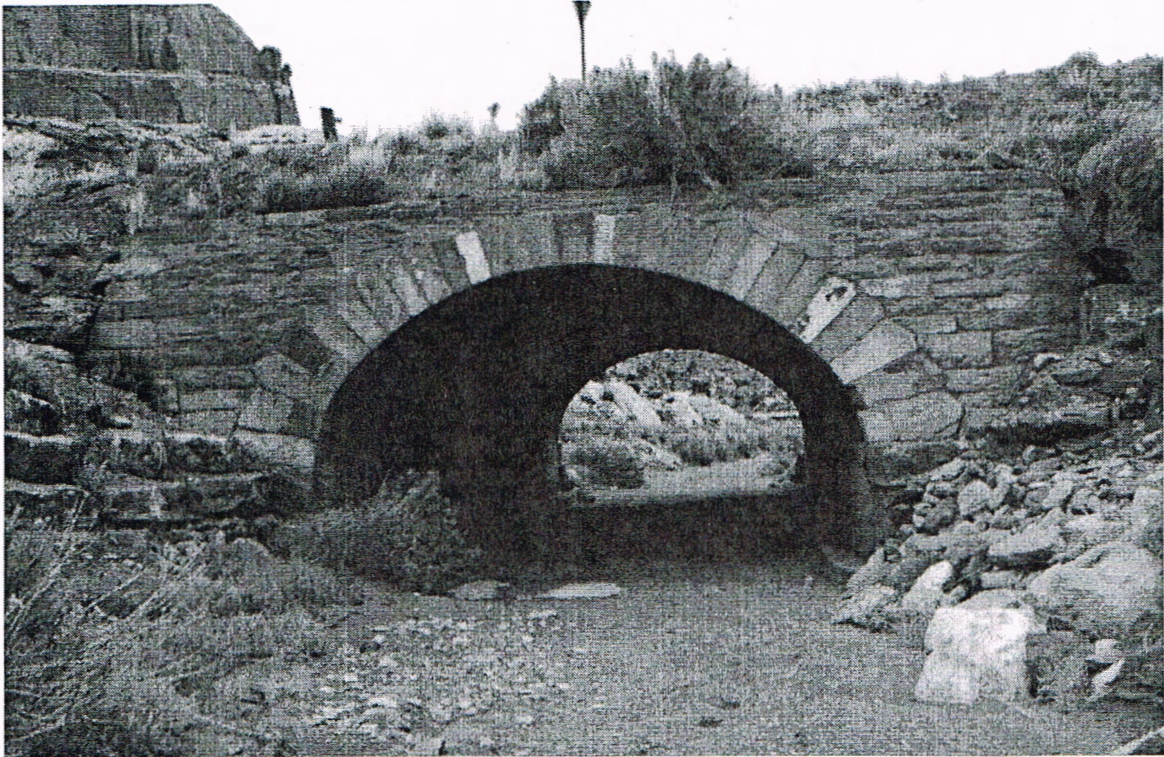


Inside view: Culvert pulled apart; widened from 27' 10" (the length of the concrete footing) to 37 feet; allowing for two lanes of traffic.

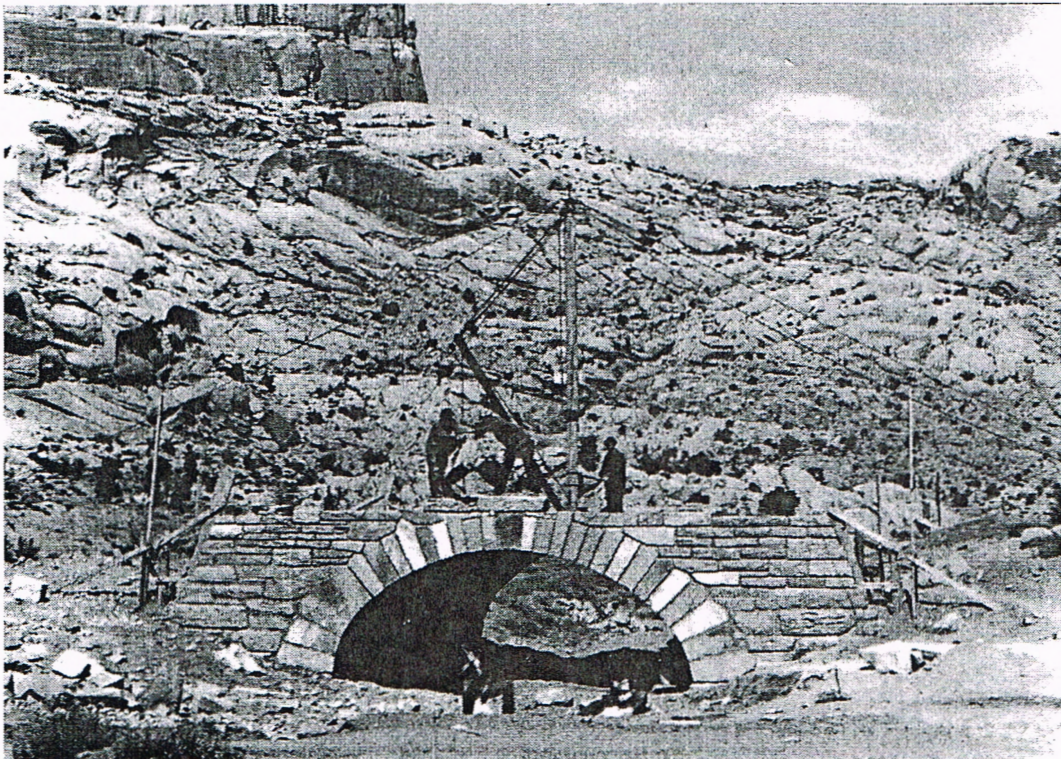
Over the next 30 years, drainage through Moab Canyon was causing bank erosion. The sandy bottom of the culvert, and the arroyo banks adjacent the culvert, were washing away from the concrete footing. To reinforce the culvert bottom and concrete footing, in March of 1988, footers along the stem walls (the concrete footings) were dug and concrete poured; concrete cutoff walls were poured; and a concrete slab the length of the culvert was poured. The slab was tied into the stem walls with reinforcing bars (rebar) drilled and cemented into the stem walls. Rip rap was replaced, (NPS Completion Report 1988). NPS plans call for repointing "the joint between [the] rock arch and metal culvert [on] both ends," but there is no discussion of any alterations to the masonry (NPS Culvert Repair, 1987).

Both the Times Independent (24 October 1994) and NPS drawings (1940, 1987) demonstrate that between 1941 and 1988, the floor of the culvert had eroded away. After the 1988 stabilization, the height of the culvert increased from 6'6" to about 10 feet.

MASONRY COMPARISON



NPS Photograph Taken 1999.



Photograph Taken 1941

Alterations

1. The length of the culvert (concrete footings) has been expanded from 27 feet, ten inches, to 37 feet.
2. The "rise" or height of the culvert has been increased from approximately 6 feet, 6 inches, to about ten feet.
3. The asphalt pavement was once about 1 foot, 6 inches above the sectional plate. With the development of US Highway 191, the asphalt is approximately 3 feet above the sectional plate.