Flash Flood photos 20 Aug

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[illegible] until 27th Aug

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North HWY 191
Moab, UT

water came w.i. 6 inches of Arches' road

- cross section @ U-10
  - slope ≈ ½° Tan = 0.01455
  - depth ≈ 8'
  - width 43'
  - wetted perimeter (rectangular) = 59'
- dx from plunge pool 83 paces (5½'/pace)
  - bedform sand & bedrock

$n =$

- area ≈ 344 sq ft.

FLASH FLOOD

19 August '87 Moab area

- pixs: flash flood damage nr Arches Nat'l Park entrance
  - damage = erosion of highway * fill gouged by floodwaters, which were constricted by bedrock (Rigo Js).

*(30 ft) UDOT says bid was $60K to put grouted rip-rap on erosion

- Floodwaters descended a series of bedrock falls, produced by bedding which dips @ low ∡ and strikes @ high oblique to flow direction. Falls are progressively higher, from 1 ft to ≈ 15 ft, to the bend in the channel occasioned by highway fill. The channel is constricted by bedrock along the lower falls and the bend is ... where the west side of the channel is formed by highway fill which was easily eroded. The plunge pool & change in channel direction probably helped erosion. A gravel bar was deposited directly downstream where channel widens dramatically.

Flash Flood (cont.)

- A retaining wall will have to be installed (gabions?) 15-20 ft. high, back-filled to support highway base.

- Floodwaters must have spread tremendously to have deposited sediment (mud) in Arches parking lot, the natural channel bypasses the lot.

- The highway occupies the central part of a wide channel. The culvert, routing water from the west side channel was blocked/destroyed (?). The highway could have been saved by erosion on both sides. Most of the water flowed in the eastern channel.

- Flattened vegetation on a bar at the plunge pool indicates water must have been at least 20 ft. deep.