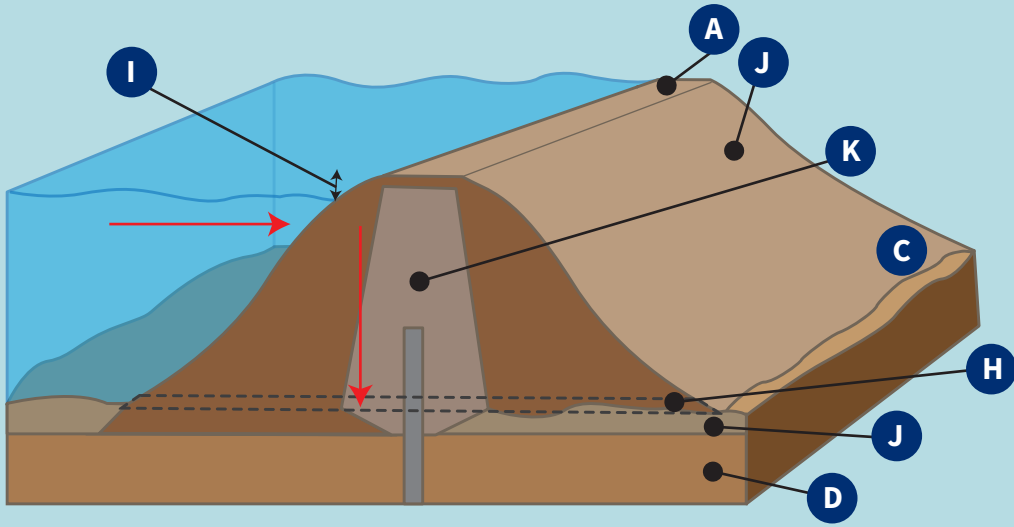
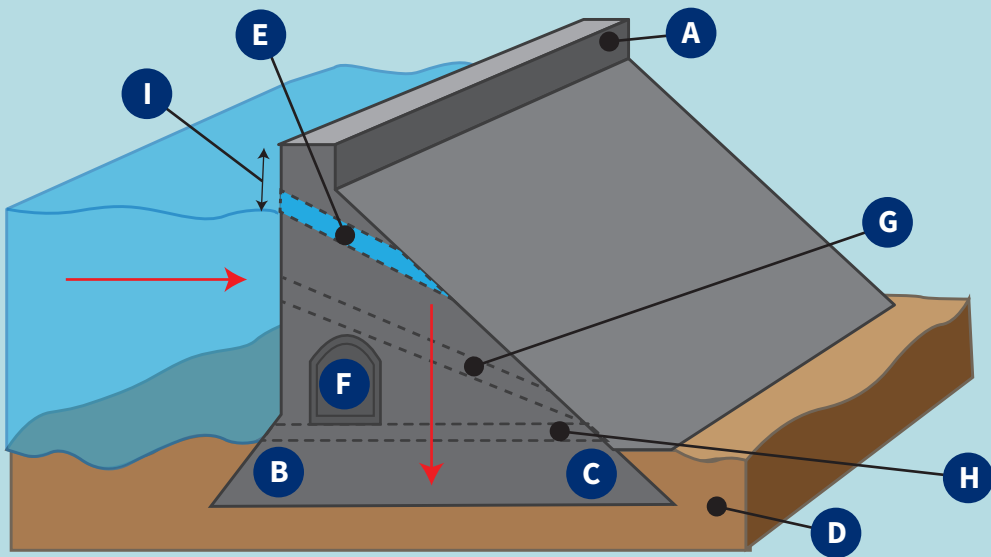


# TYPES OF DAMS



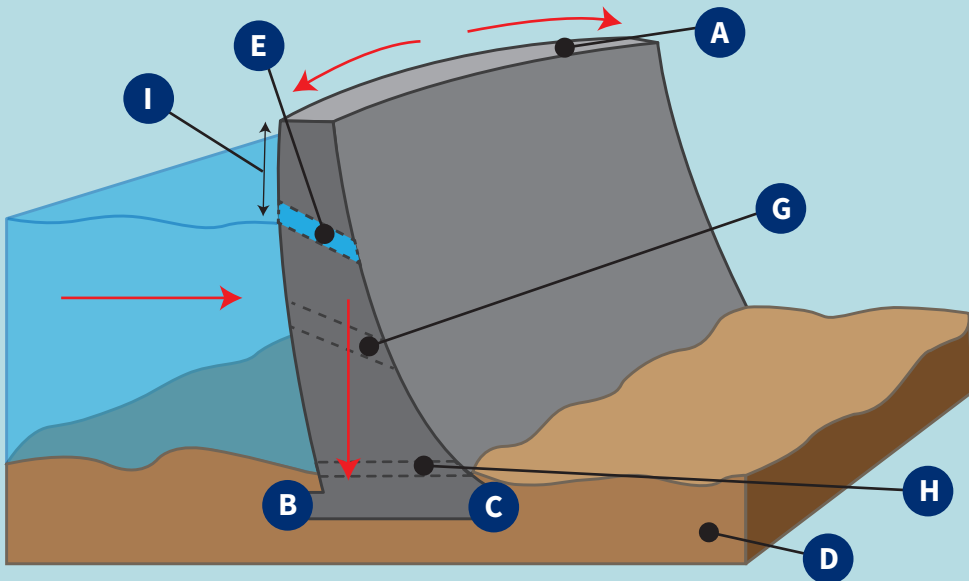
## EMBANKMENT

- Constructed from compacted soil ("earthfill") or rock ("rockfill") with an impervious core
- Designed to transfer the entire water load downward
- 80% of all large dams in the U.S. are embankment dams
- Used to retain water across wide river valleys or for flood control
- Typically shorter and wider than other types of dams



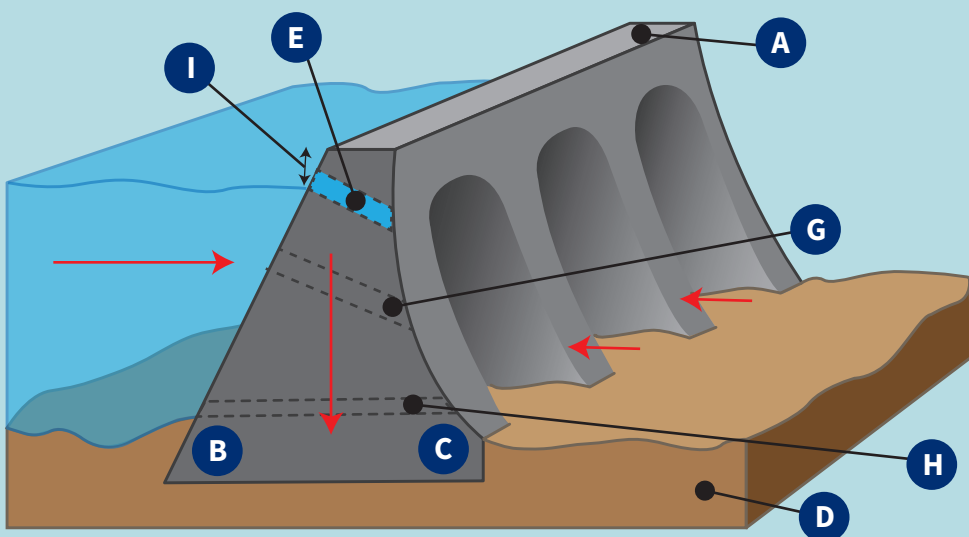
## GRAVITY

- Constructed of concrete or stone masonry
- Designed to transfer the entire water load downward
- Typically span narrow river valleys with bedrock abutments and foundations
- Retain water by utilizing the weight of the dam to resist the horizontal water load pushing against it
- Each section of the dam is independently stable



## ARCH

- Constructed of concrete
- Designed to transfer water loads to the adjacent rock formations
- Constructed only in canyons with solid rock walls that are able to resist the pressure of the dam
- Because the canyon walls bear the bulk of the load, arch dams are thinly constructed, requiring less material than other types of dams



## BUTTRESS

- Constructed of reinforced concrete
- Designed to transfer the water load both downward and to the buttresses
- Hollow gravity dams with a solid upstream face and a buttressed downstream side
- Buttresses are supports that transmit the water force to a bedrock foundation

- A Crest:** The top of the dam, in some cases used to provide a roadway or walkway over the dam
- B Heel:** The part of the dam in contact with ground on the upstream side
- C Toe:** The part of the dam in contact with the ground on the downstream side
- D Foundation:** Excavated surface or undisturbed material

- E Spillway:** Structure that provides for controlled conveyance of water flows downstream of the dam
- F Gallery:** Small room within large dams used to monitor the performance of the dam, with a drain on the floor for water seepage
- G Outlet:** Also called sluiceway, used to release water from the reservoir for water supply, irrigation, and hydro power

- H Blowoff:** Opening within the dam near the base to drain the reservoir
- I Freeboard:** Vertical distance between the spillway level and the crest of the dam
- J Pervious Material:** Substances that allow water to pass through
- K Impervious Material:** Substances that do not allow water to pass through

