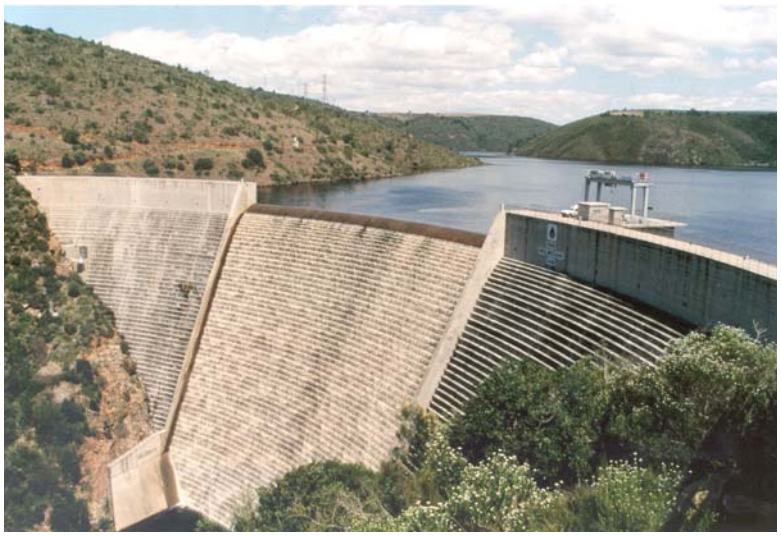
International Milestone RCC Project



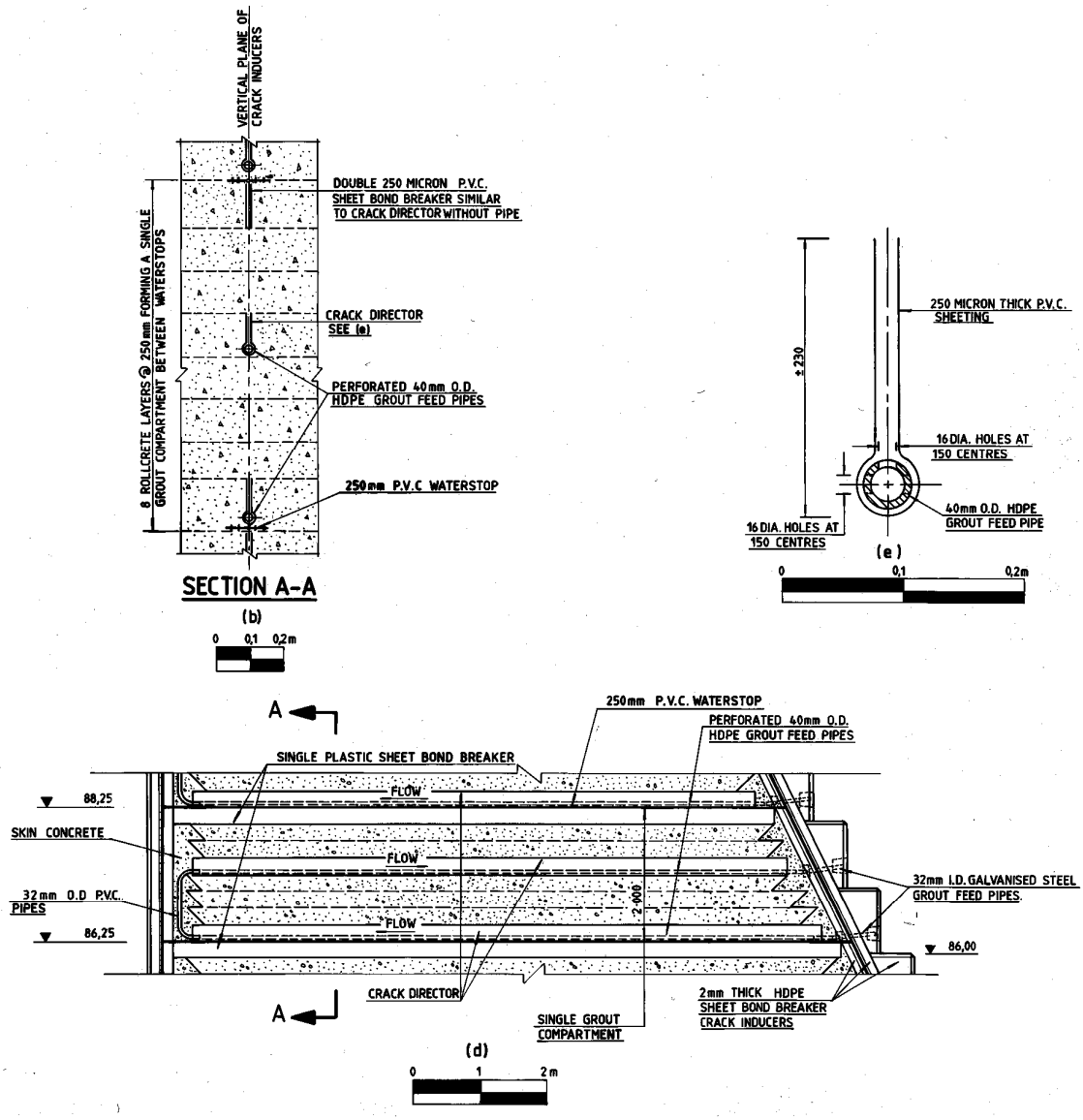
Wolwedans Dam

in South Africa

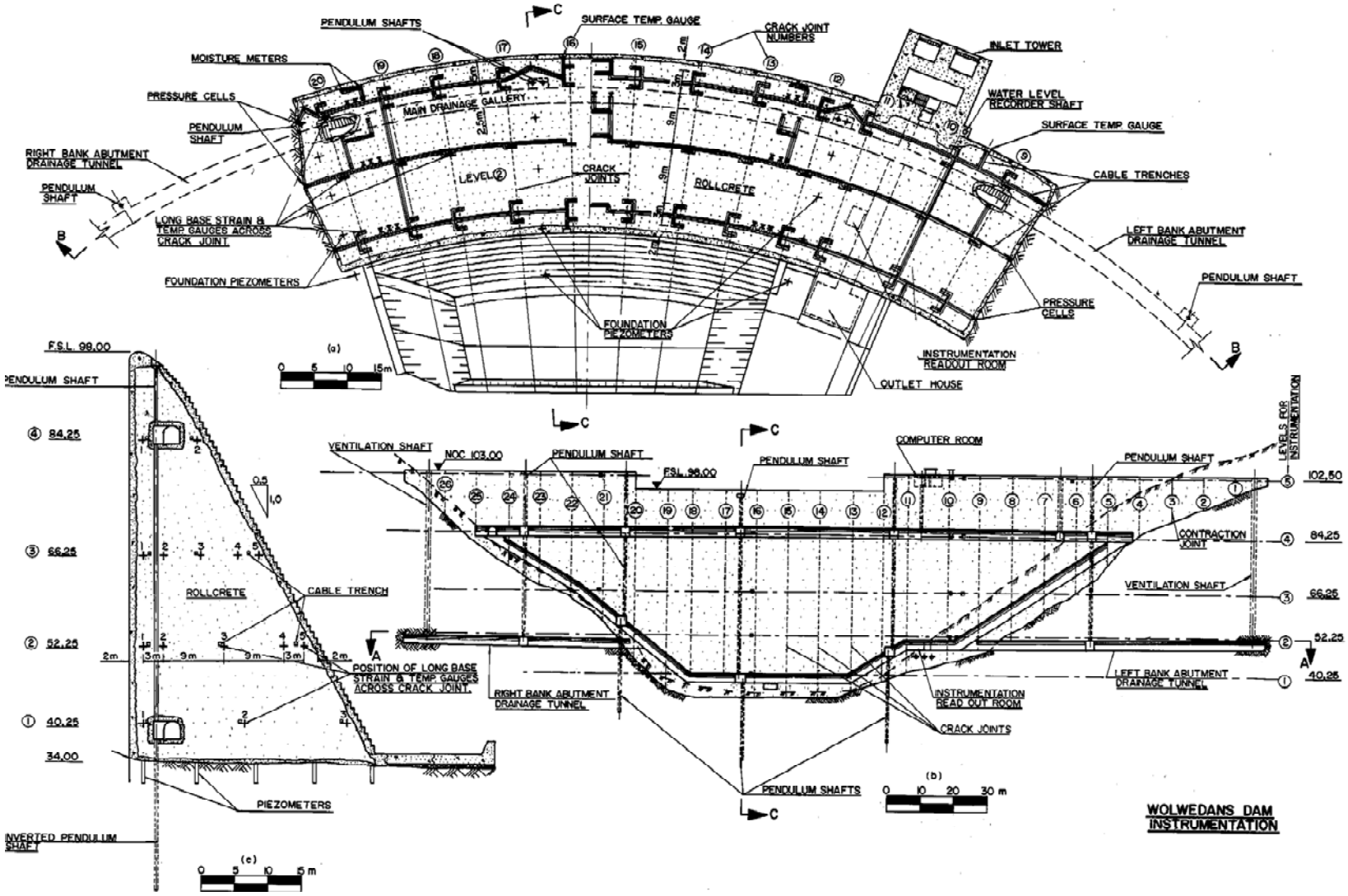
Wolwedans dam is a 70 m high roller compacted concrete (RCC) arch/gravity dam situated on the Great Brak River near Mossel Bay in the Southern Cape in South Africa It was one of the first two arch dams in the world to be constructed in RCC. The dam has to rely on arch-action for stability. Shrinkage of the RCC and the associated cracks would therefore pose serious problems especially with respect to arch-action if they are not grouted. In an attempt to overcome this problem a groutable system of induced crack joints was developed by the Department of Water Affairs and Forestry of South Africa. The groutable “joints” and the model studied stepped spillway with relative short apron are of the unique features of the dam.

Each grout compartment is fitted with a primary grouting system consisting of a perforated grout pipe inside a folded PVC sheet, making a complete loop through the 2m high compartment. The inlet of a grout pipe is typically on the stepped downstream slope of the dam at the bottom of a compartment while the outlet is located 1m higher and also 1m below the top of the compartment. At elevations where a gallery intersects the compartment, a separate upstream compartment is provided with pipe connections inside the gallery. During the second half of 1992 it was clear that the temperature of the dam body had stabilised sufficiently, with the result that grouting could commence during the winter of 1993.

The crack joint grouting system was, except for a test section, still unproven resulting in the grouting process being considered experimental. The grouting was undertaken as a joint experimental venture between the Department of Water Affairs and Forestry and Rodio (SA) (The best method of grouting had to be determined during the actual grouting of the joints).



Typical details of the groutable joint system



Condenced layout of the instrumentation system of Wowedans dam

Companies Involved in the Project

Owned and operated
Designed by ***Department of Water Affairs and Forestry (DWAF)***
Constructed

Perspective view of Wolwedans dam

Overflow on 3 Aug. 2006

Upstream face

Construction site

downstream face

Wolwedans Reservoir

可用图片：

Excavation

Mixing System