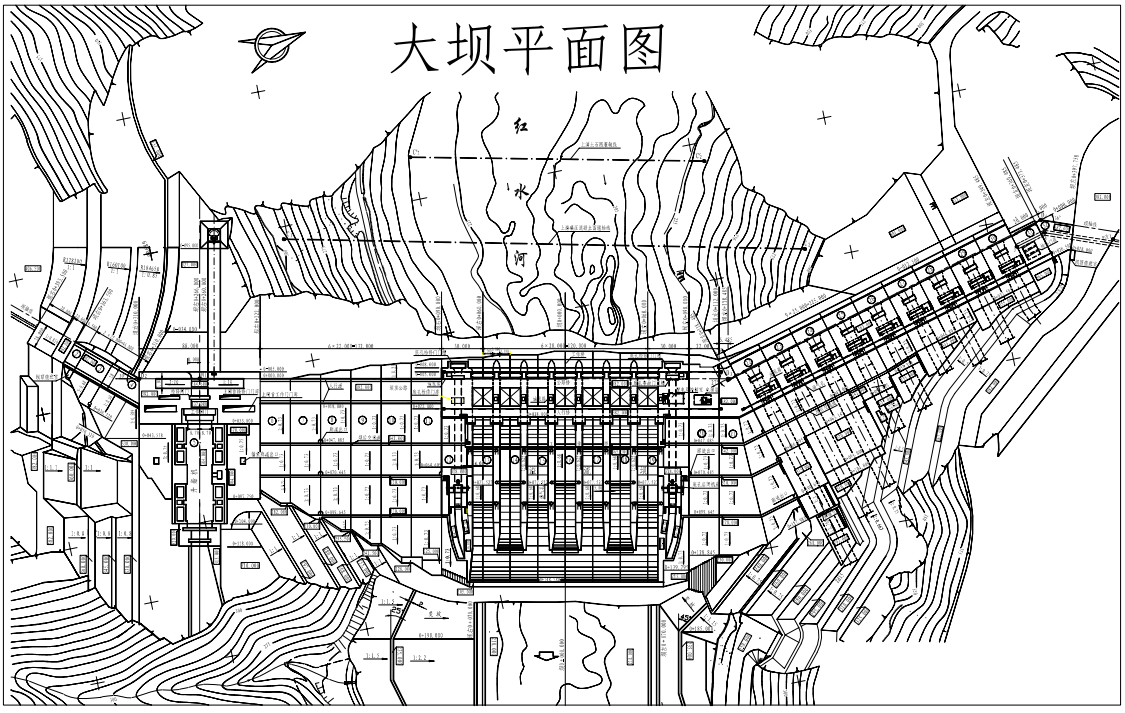
Longtan Hydropower Project

Being the key backbone controlling project, the Longtan Hydropower Project is one of the top-ten key projects of the Great Western Development Plan and the strategic projects of “power transmission from west to east”. The dam site is 15 km away from Tian’e county on the Hongshui River in Guangxi Zhuang Autonomous Region. The main function is power generation, incorporated with flood control, navigation, etc. It is designed as grade-I structure, ranked as large-I project. The project layout includes: RCC gravity dam; flood discharge structure arranged in the river-bed dam section, consisting of 7 surface spillways and 2 bottom outlets; left-bank underground diversion power-generation system, with 9 units, 700MW each and 6300MW of total installed capacity; and right-bank navigation structure, equipped with 2-steps vertical ship-lifts.

The project’s controlling phase durations: formal construction start on July 1, 2001; the river closure completed by November 2003; gates to be closed for impoundment by October 2006; first unit to be put into generation by May 2007 and the whole project to be completed by December 2009, 9 years of the total construction period.

The Longtan RCC gravity dam has a maximum dam height of 216.5 m, crest length of 849.44 m, with a dam-body concrete volume of 7.67 million m^3, of which, RCC volume accounts for 64% of that of the total, up to 4.91 million m^3, which is a construction record, much higher than the existing domestic or international dam construction levels.



General layout of Longtan Hydropower Project

Project Briefing

River: Hongshui River, China
Project functions: power generation, flood control, navigation, etc.
Status: under construction
Construction period: year 2000~2009
Owner: Longtan Hydropower Development Co., Ltd.
Designer: Mid-South China Survey and Design Institute

Engineering Technical Parameters

Dam type:	RCC gravity dam
Height:	216.5 m
Crest length:	849.44 m
Drainage area above the dam site:	98,500 km^2
Mean annual discharge:	1,610.00 m^3/s
Normal pool level:	400.00 m
Reservoir storage:	27.27 billion m^3
Regulating reservoir storage:	20.53 billion m^3
Spillway type:	surface spillway
Type of gates and numbers of openings:	7 surface spillways, size of openings: 15 m × 20 m (w × h)
Maximum flood releasing capacity:	27,134 m^3/s

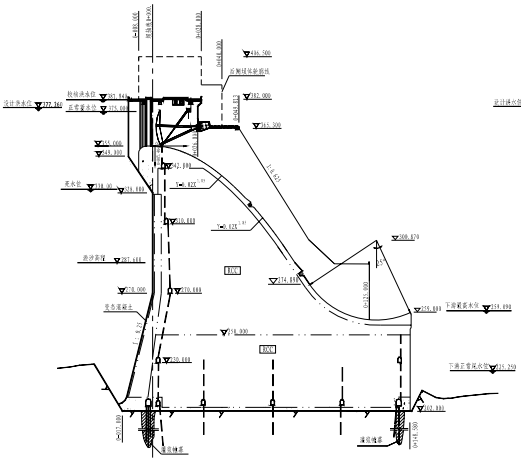
Hydropower Generation Parameters

Type of power house:	underground powerhouse
Maximum head:	179.00 m
Minimum head:	107.00 m
Water level variation:	72.00 m
Single unit capacity:	700 MW
Numbers of units:	9
Diameter of penstock:	10.80 m

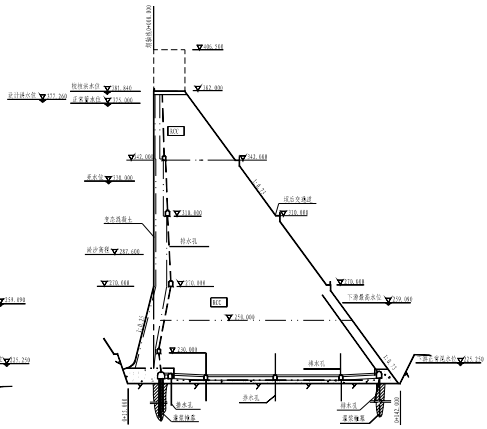
Main construction volume

Total dam body concrete volume:	7.67 million m^3 , of which, RCC accounts for 4.91 million m^3
Earth and rock excavation:	20 million m^3

Cross Section of Spillway



Cross Section of Retaining Dam



Cross Section of Intake