



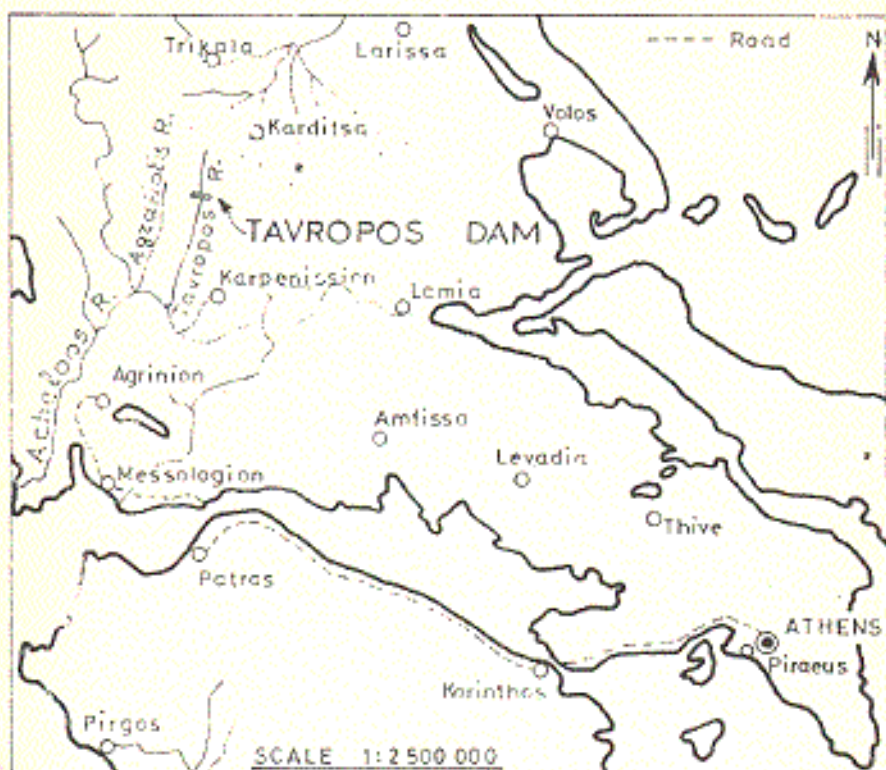
PUBLIC POWER CORPORATION  
ADMINISTRATION FOR ENGINEERING  
AND CONSTRUCTION OF HYDROELECTRIC PROJECTS

TAVROPOS RIVER  
**N. PLASTIRAS  
H-E PROJECT**



ATHENS - GREECE

# PROJECT LOCATION



The Tavropos dam, on Tavropos River, is located near the village Kastania, approximately 350 Km from Athens.

## CHARACTERISTIC DATES

Final Design started	1955
Construction started	1956
Power Plant commissioned	October 1960 (1st unit) January 1961 (2nd unit) August 1962 (3rd unit)



# DESIGN AND CONSTRUCTION

## HYDROLOGY

Catchment area	167	km <sup>2</sup>
Mean annual flow	EI. 6,40	m <sup>3</sup> /sec

## RESERVOIR

Top of flood control storage	EI. 794,3	m
Top of maximum usable storage	EI. 792,0	m
Area at maximum water level	25,2	km <sup>2</sup>
Gross storage	400.000.000	m <sup>3</sup>
Flood control storage	70.000.000	m <sup>3</sup>
Usable storage	300.000.000	m <sup>3</sup>

## POWER AND ENERGY

Installed capacity	130 MW (3 × 43,3)	MW
Primary annual energy	250	GWH
Total mean annual energy	250	GWH

## DAM

Type	Concrete arch dam
Maximum height	63,0 m
Crest of dam	EI. 795,20 m
Length at crest	220 m
Volume of dam	100.000 m <sup>3</sup>

## DIVERSION TUNNEL

Tunnel diameter	5,24m
Tunnel length	145 m
Accommodated flow	160 m <sup>3</sup> /sec

## SPILLWAY

Type	2 Ungated orifice near the crest of the dam.
Dimensions	7,0 m × 2,50 m
Crest elevation	EI. 792,0 m
Maximum design capacity	460 m <sup>3</sup> /sec (2 × 230)m <sup>3</sup> /sec

## POWER INTAKE

Type	Intake tower and downstream valve shaft.
Tower	
Intake approach canal	200 m
Intake floor	EI. 769,40 m
Accommodated flow	26,4 m <sup>3</sup> /sec
Intake gates	2
Trash racks	2
Reinforced concrete conduit	Diam. 3,5 m, length 41,55m

## VALVE SHAFT

Shaft depth	26,35 m
Gates	2 sliding gates 2,8 × 3,5 m

## POWER TUNNEL

Diameter	3,50 m
Length	2625 m
Lining	Concrete
Capacity	35,2 m <sup>3</sup> /sec.

# TION PROJECT DATA

## SURGE TANK

Type	Vertical shaft with supply end expansion chamber.	
Shaft diameter	3,50	m
Shaft depth	39,60	m
Expansion chamber diameter	17,40	m
Supply chamber diameter	9,50	m
Supply chamber length	60,0	m

## PENSTOCK

Diameter	3,00/2,60/2,40	m
Length	2985	m
Weight	4900	t
Butterfly valve	300	m
Maximum design flow	33,5	m <sup>3</sup> /sec

## POWER STATION

Type	Out door	
Number of units	3	
Tailrace water level (for 29,3 m <sup>3</sup> /sec)	208,50	m
Turbines	2 vertical shaft, Pelton type for each unit,	
Max. net head	577,0	m
Min. net head	534,0	m
Capacity flow for max. net head	3 x 9,6	m <sup>3</sup> /sec
Installed capacity	3 x 43,30	MW
Speed	500	r.p.m.
Generators	3 horizontal three phase generators.	
Installed capacity	3 x 47	MW
Max. operating capacity	3 x 46	MW
Power factor	0,85	
Power plant crane		
Type and number	2 travelling cranes.	
Span	14,90	m
Capacity	2 x 65	Tons

## SUBSTATION 150/15 KV

3 Power transformers	40/50	MVA
3 Out going line	150	KV
Lamia line length	75	Km
trikala line	28	Km

## FINAL DESIGN

Omnium Lyonnais Coteci, France.

## CONSTRUCTION OF CIVIL WORKS

Omnium Lyonnais Coteci, France

## MANUFACTURING

Stac & Bouchayer Viallet

Neyptic

Alsthom Schneider-Westinghouse.

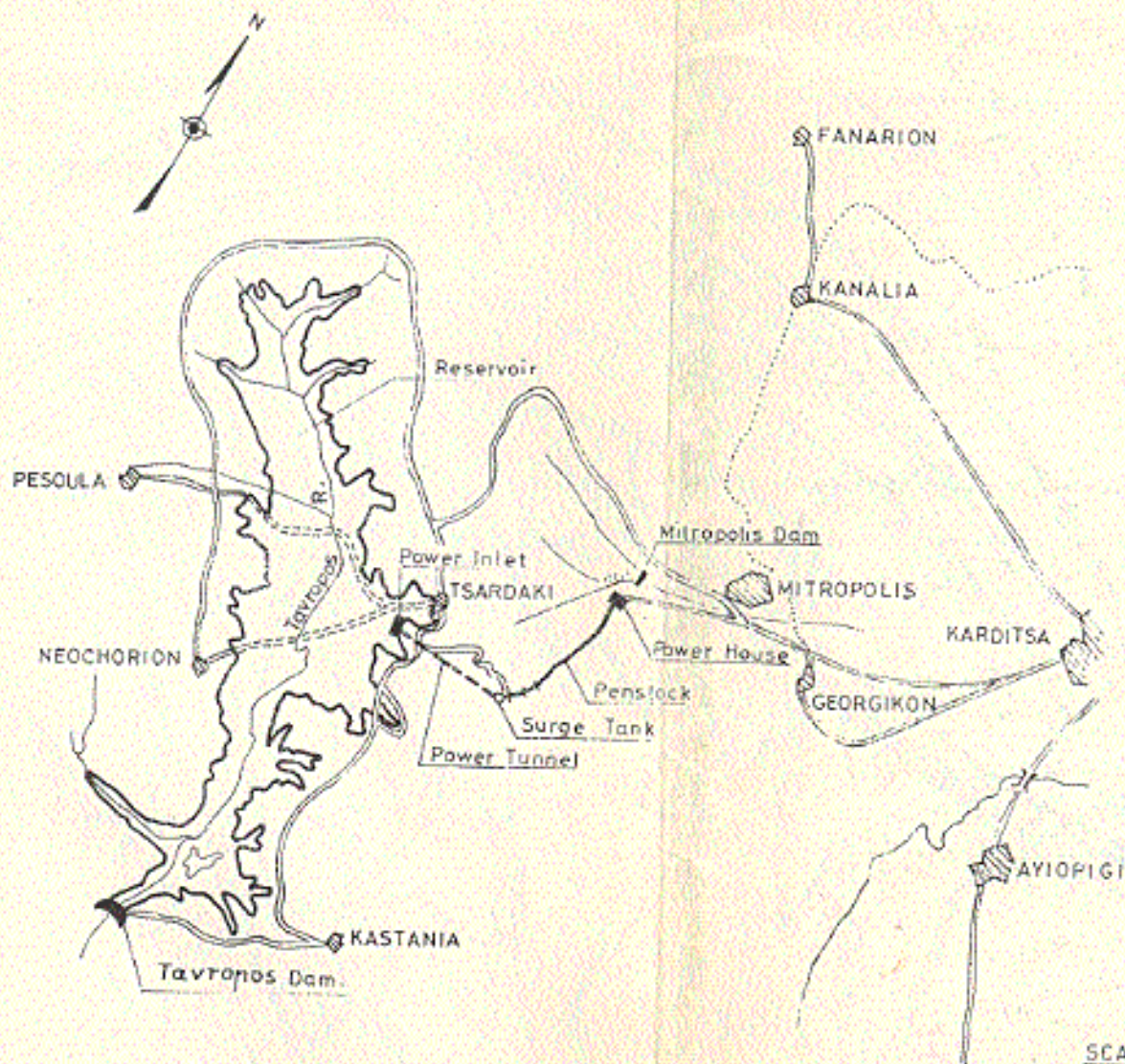
Savoisienne

Herlicq et Fils - Compagnie Generale d'Enterprises Electriques

Brighi - Carnovali

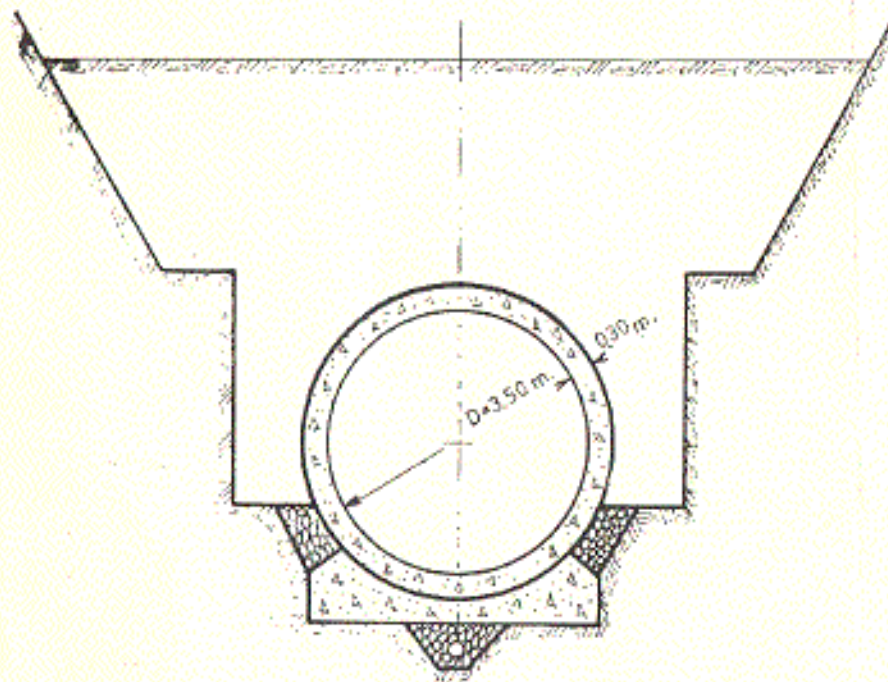
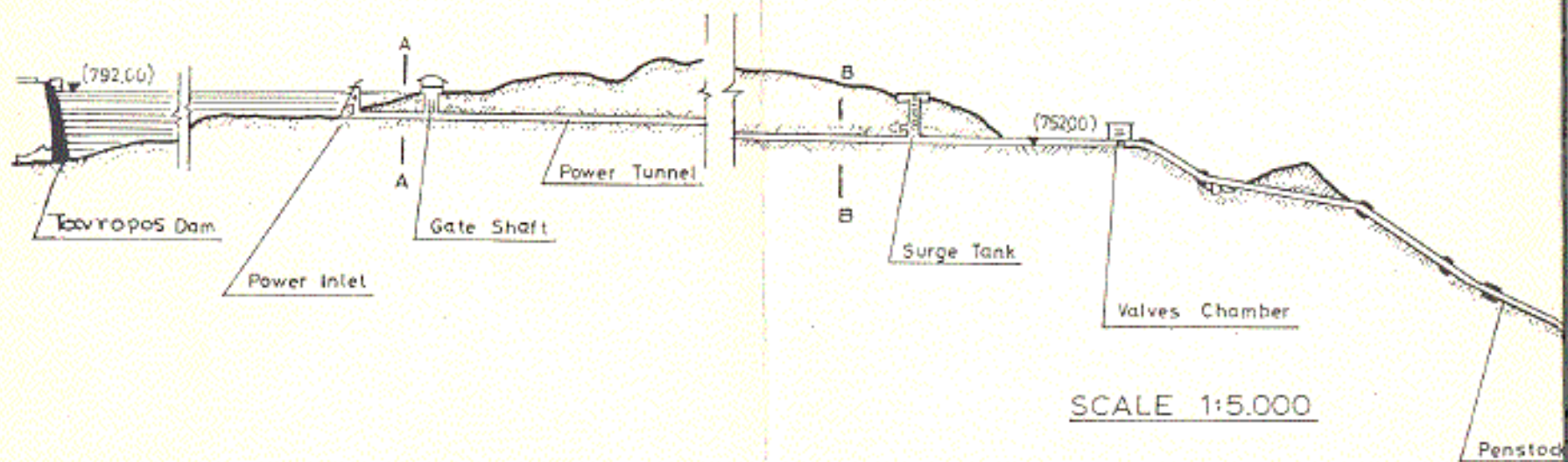


# GENERAL LAYOUT



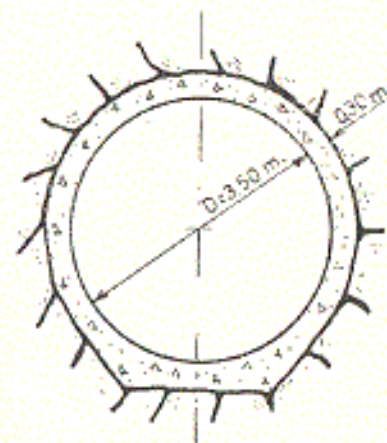


# LONGITUDINAL PROFILE OF THE POWER W



SECTION A-A

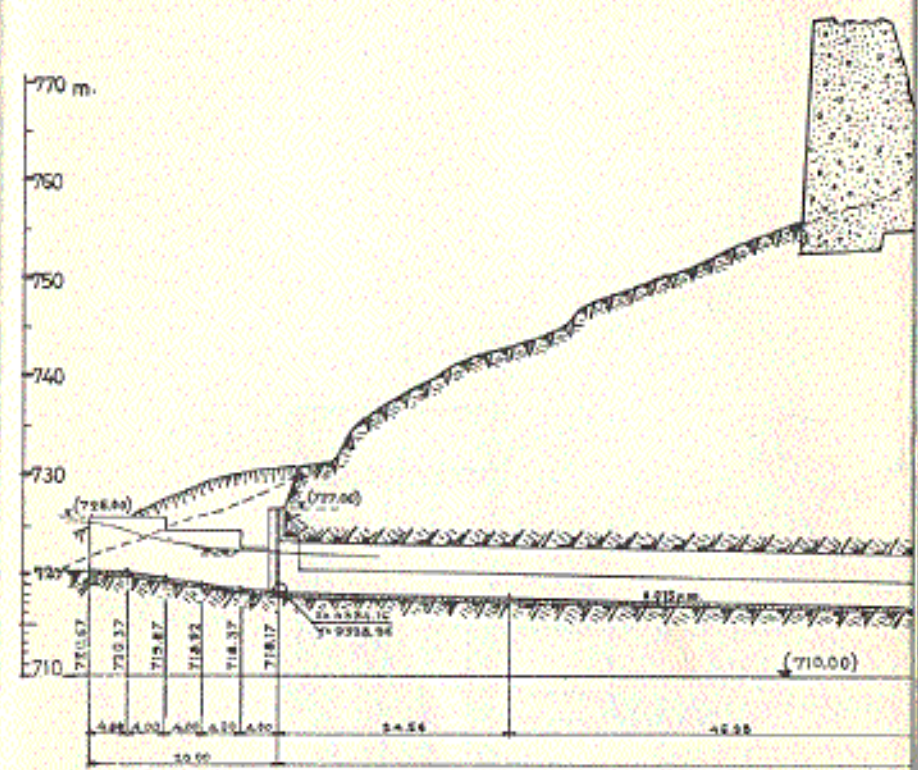
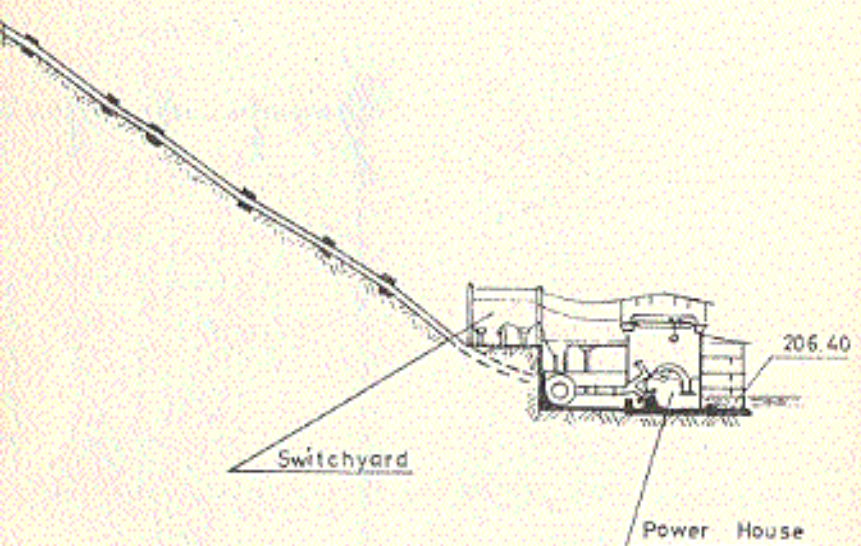
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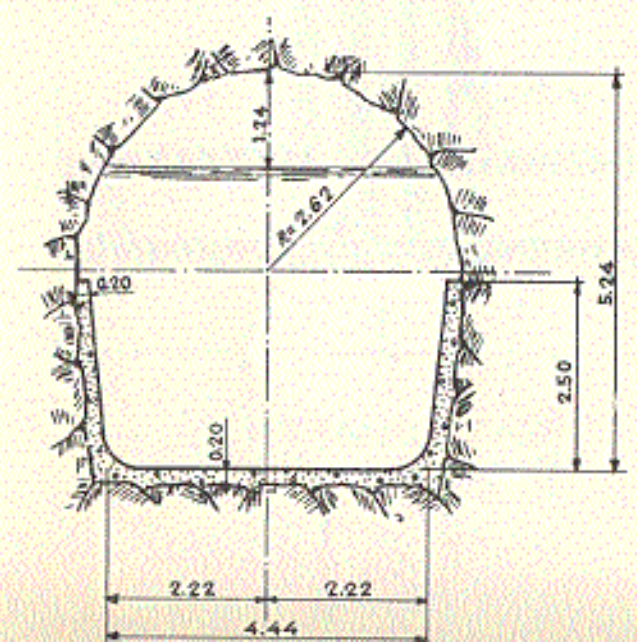
SECTION B-B

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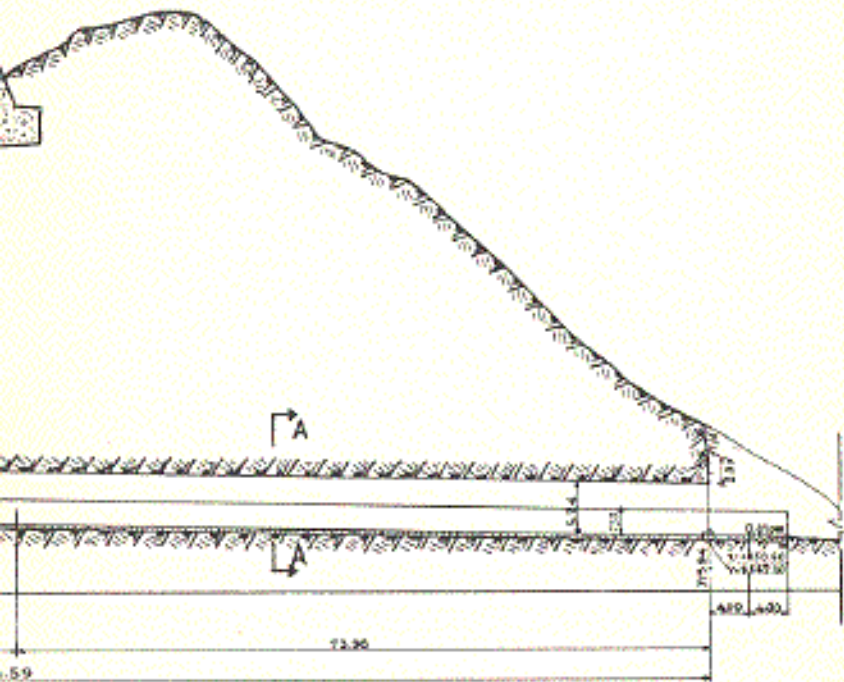


PROFILE A

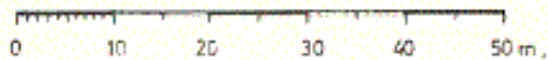




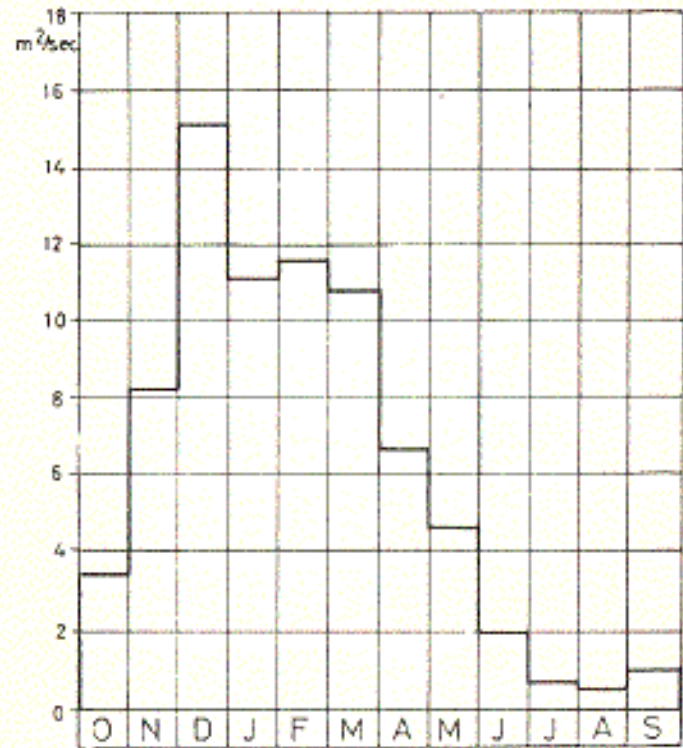
# TUNNEL



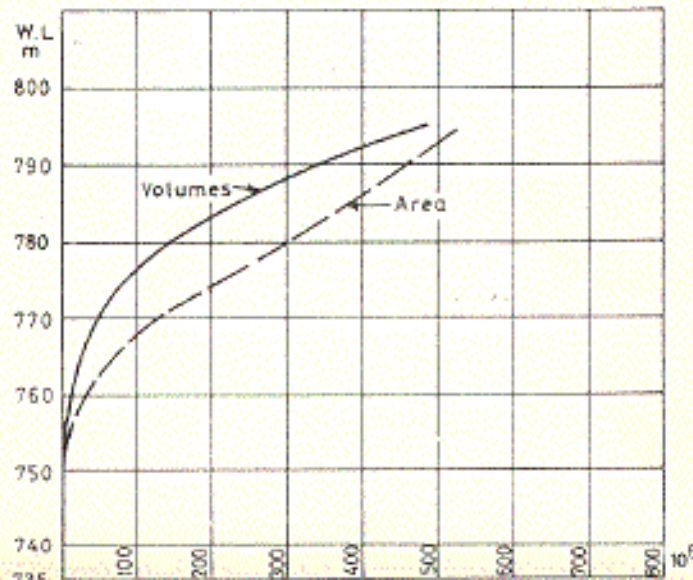
LONG  $\phi$



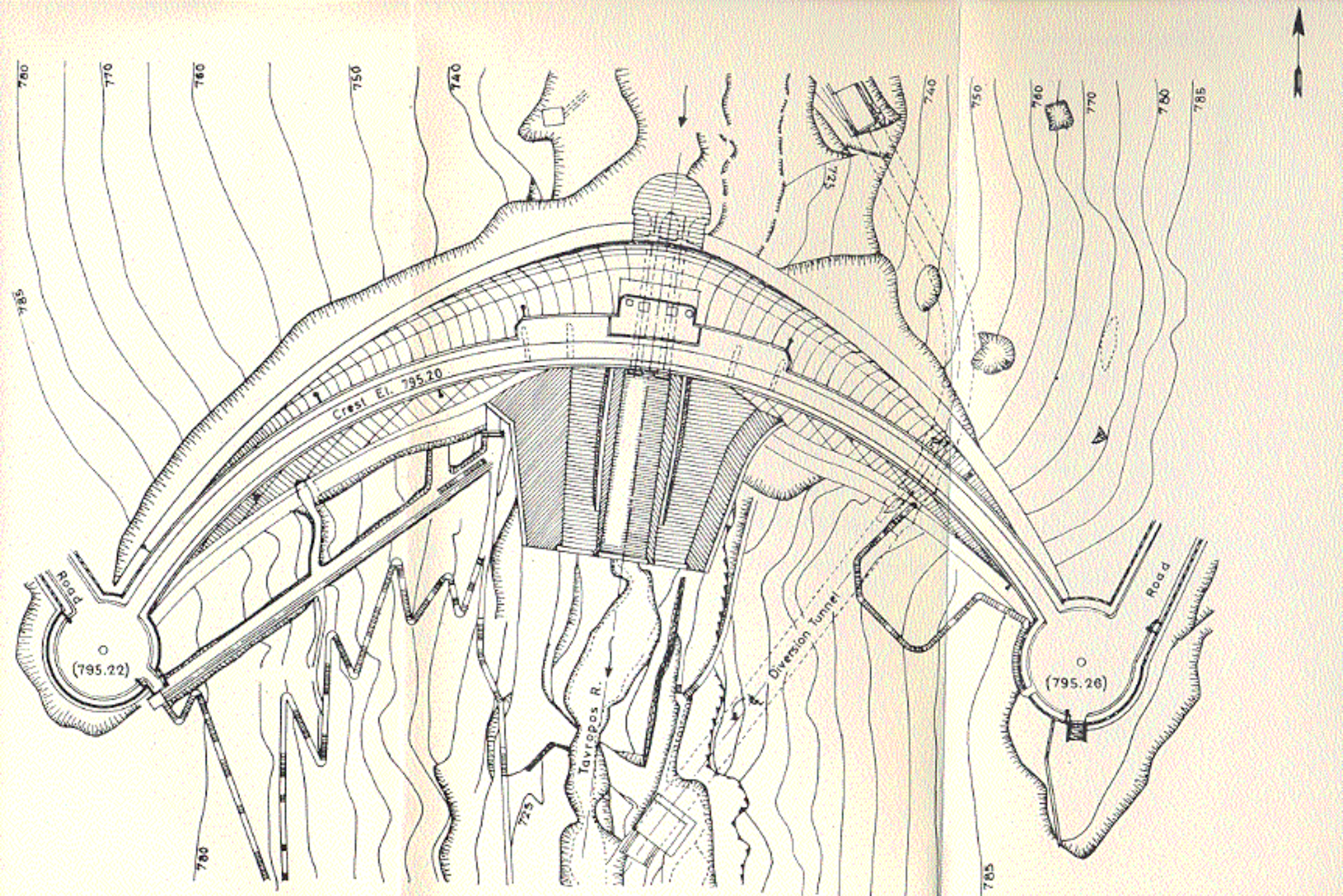
# HYDROLOGICAL DATA



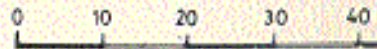
MEAN MONTHLY FLOWS







PLAN



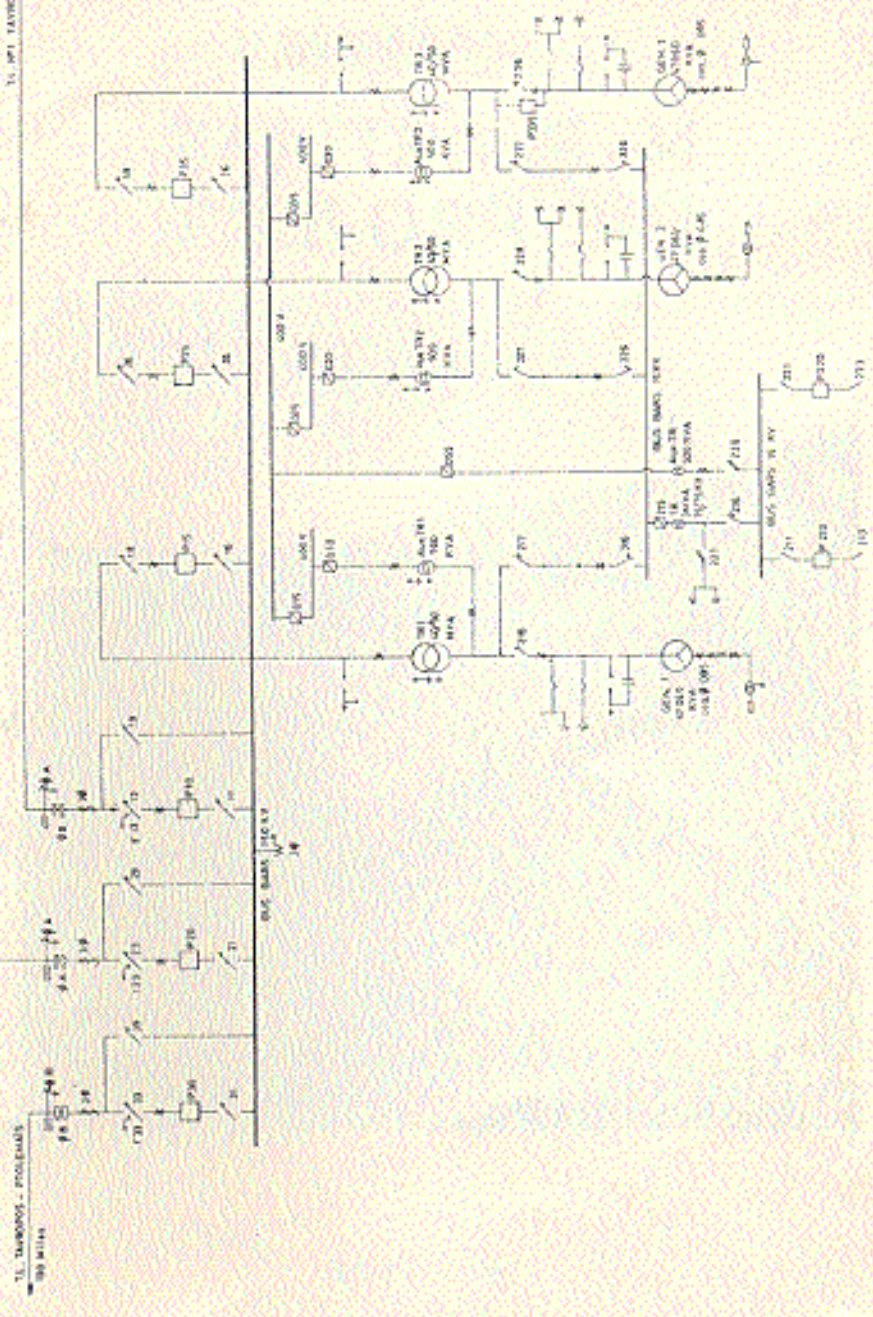






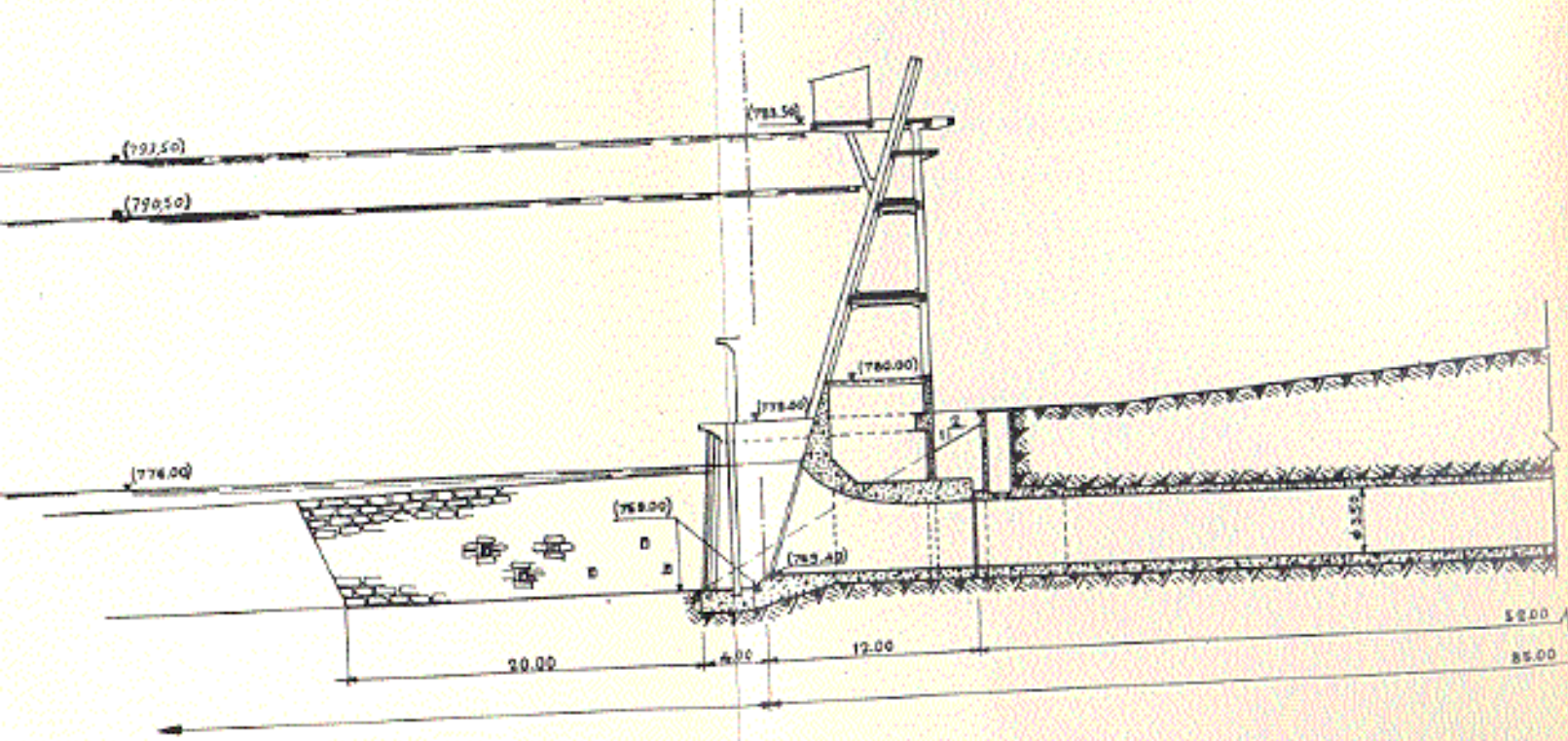
# ONE LINE DIAGRAM

11. TAYLORSONS - PROBLEMS - LEMMA 11.11.11





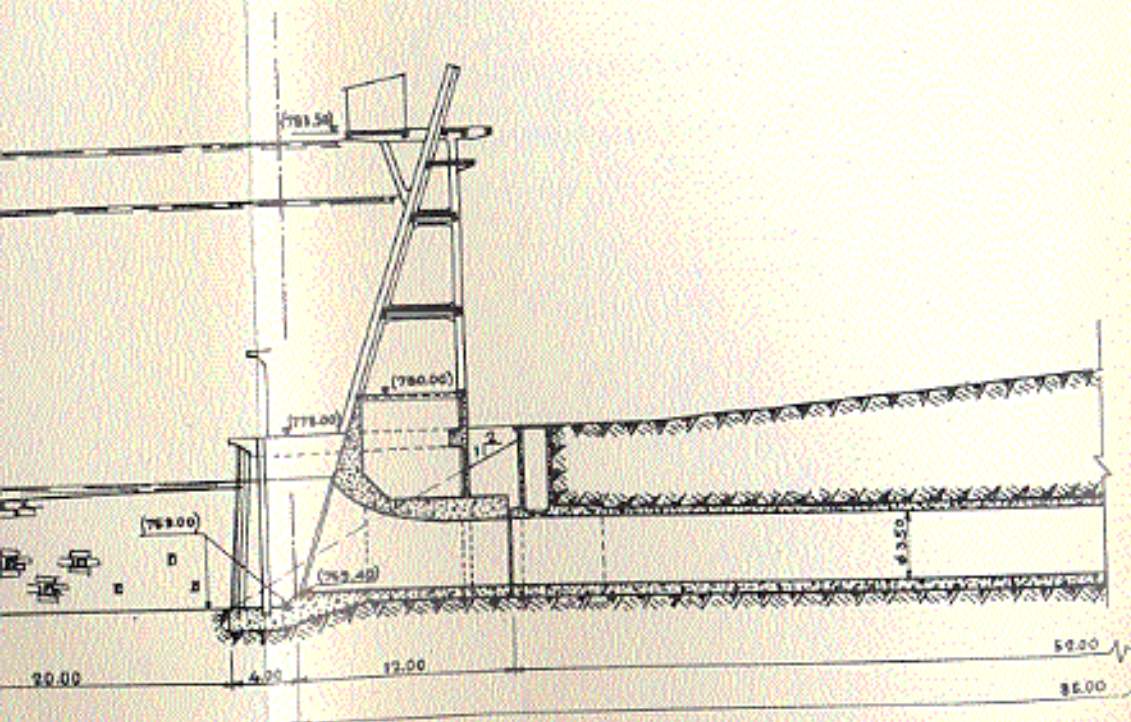
# POWER INTAKE



WATER INLET

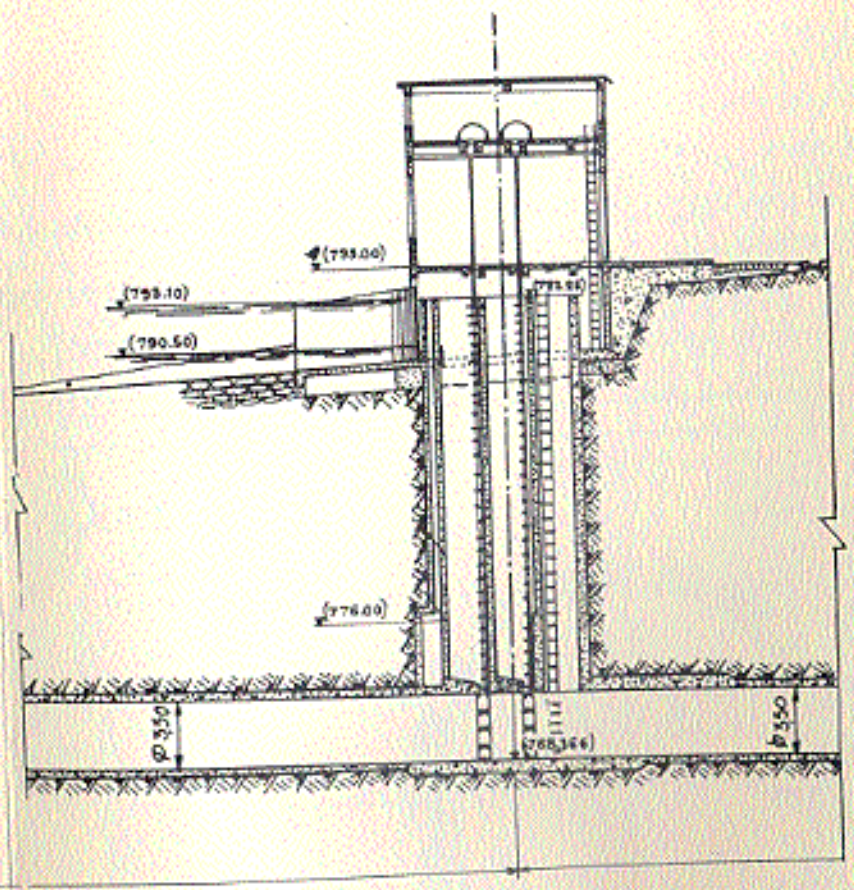
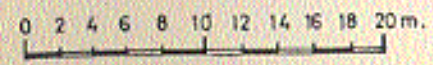
PROFILE





WATER INLET

PROFILE

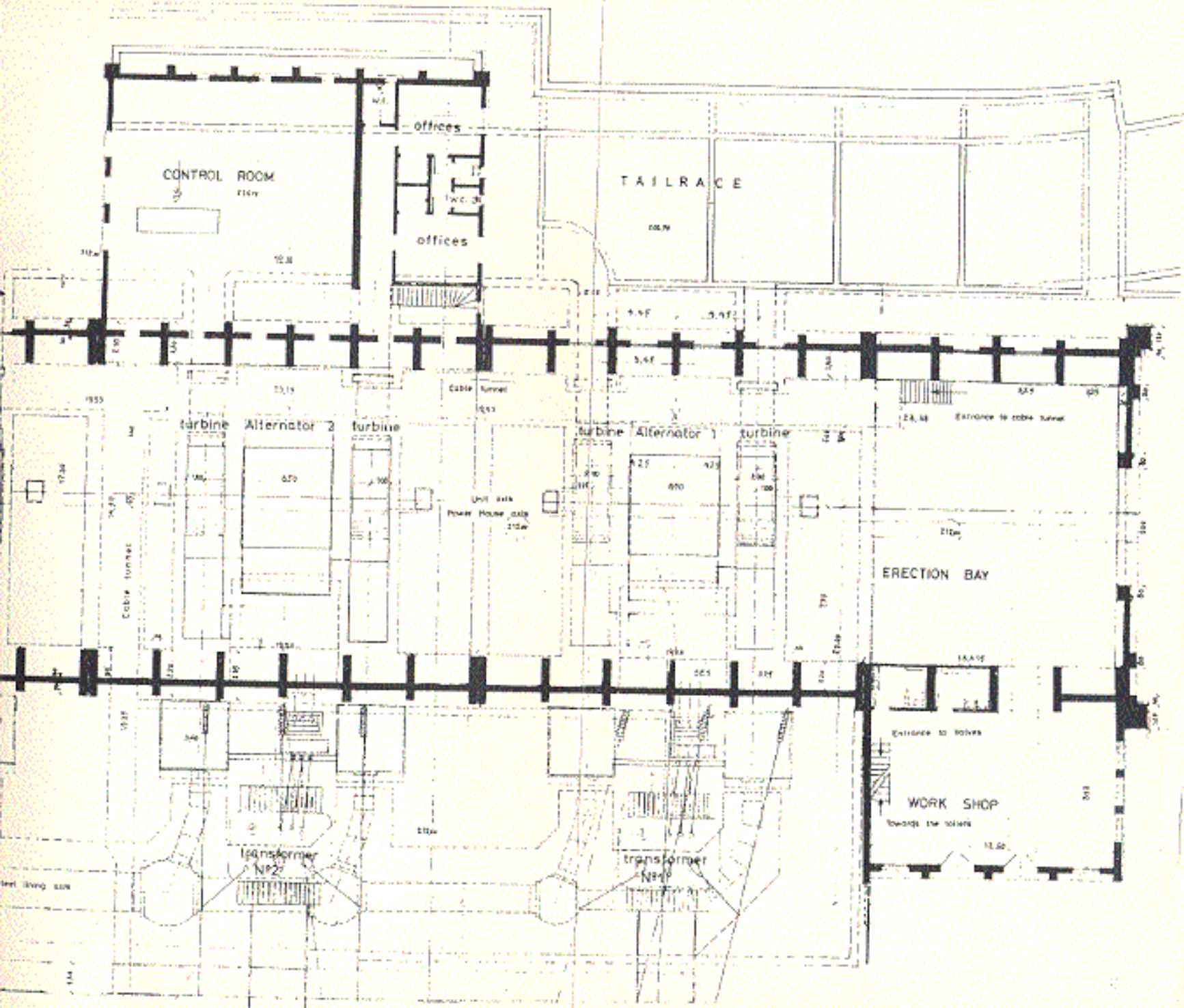


GATE SHAFT









PLAN

