- (1) Forecast of water deficit in the proposed service area
- (2) Setting up control points
- (3) Estimate of 5-day runoffs at control points
- (4) Estimate of a rate of conservation flow for downstream reach from each control point
- * Setting up initial condition of storage requirement volume at time t=0, S (t=0) = 0
- (5) Calculation of water shortage at control point 3 at t = 1

$$q3 (t=1) = R3 (t=1) - M3$$

if $q3 (t=1) > 0$, set $q3 (t=1) = 0$; no water shortage

q3 (t=1): Water shortage at control point 3 at t = 1
R3 (t=1): Available runoff at control point 3 at t=1
M3: Conservation flow at control point 3

(6) Calculation of quantity of water to be diverted from Malewa River to Turasha River

Qd (
$$t = 1$$
) = Min (q2 and q3); q2 < 0, q3 < 0 q2 ($t = 1$) = R2($t = 1$) - M2 - X if q2 ($t = 1$) > 0, set q2 ($t = 1$) = 0; no water shortage

Qd (t=1): Quantity of water to be diverted; Qd<0
q2 (t=1): Water shortage at control point 2 at t=1
R2 (t=1): Available runoff at control point 2 at t=1
M2: Conservation flow at control point 2
X: Raw water demand supplied by Malewa Project

(7) Calculation of storage requirement in Malewa reservoir at t=1

$$S(t=1) = S(t=0) + R1(t=1) + Qd - M1$$

if $S(t=1) > 0$, Surplus runoff will be spilt out

R1 (t=1): Natural runoff at control point 1 at t=1 M1: Conservation flow at control point 1

(8) Iteration of calculation until end of period

t = t + 1

(9) Determination of active storage capacity in Malewa reservoir sufficient for 24 years out of 25 years

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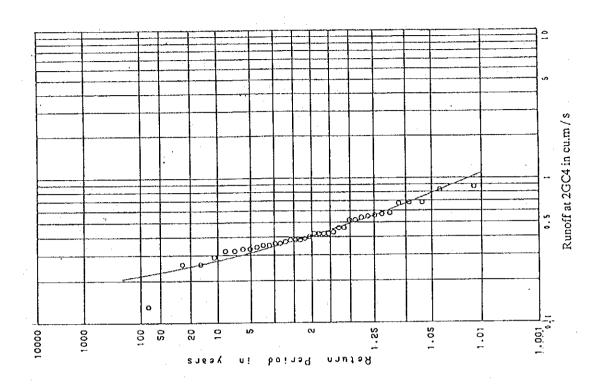
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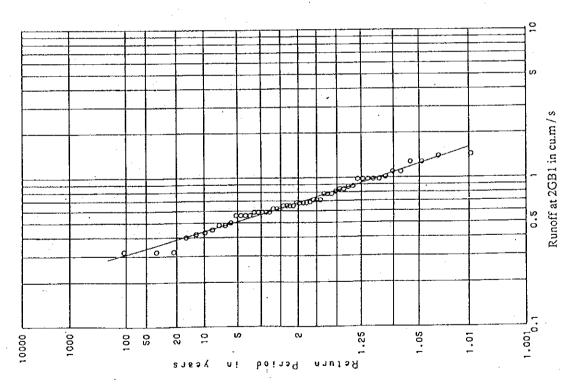
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Flow of Water Balance Study

Fig. F.3.5





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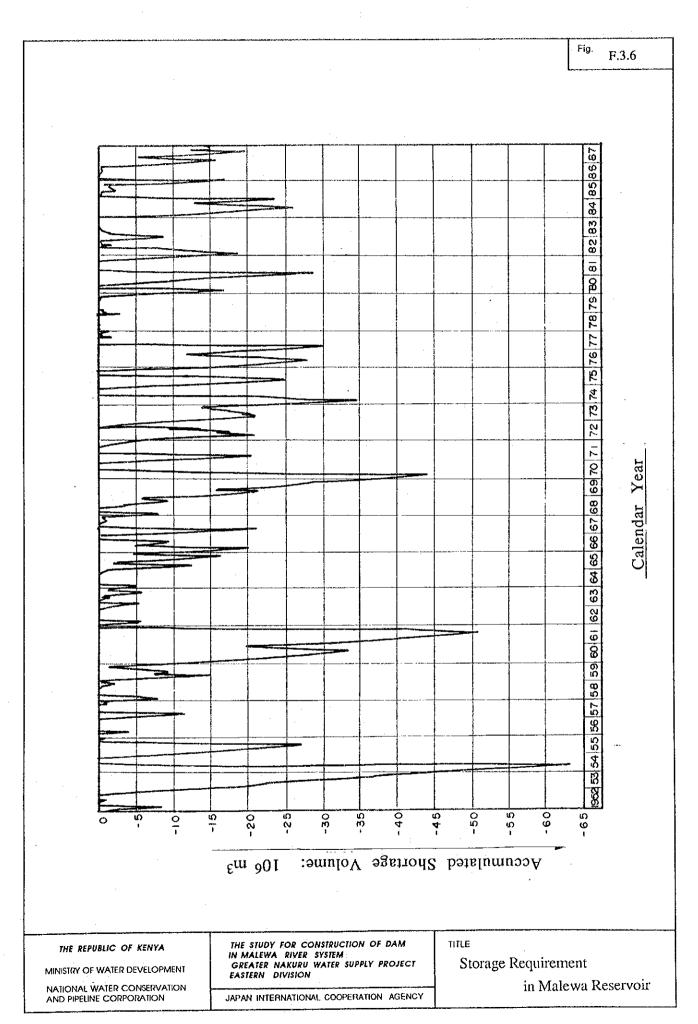
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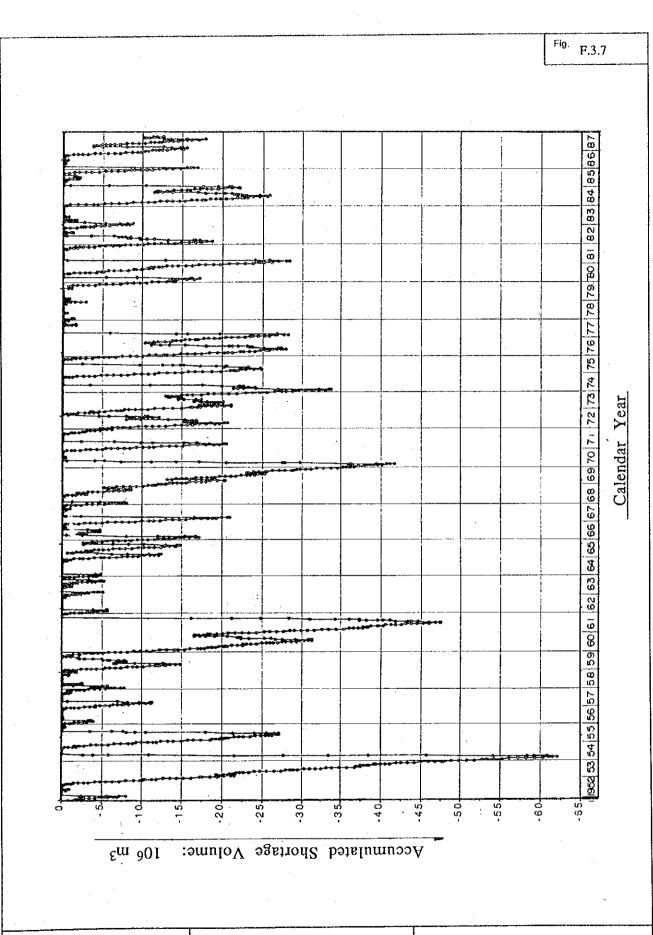
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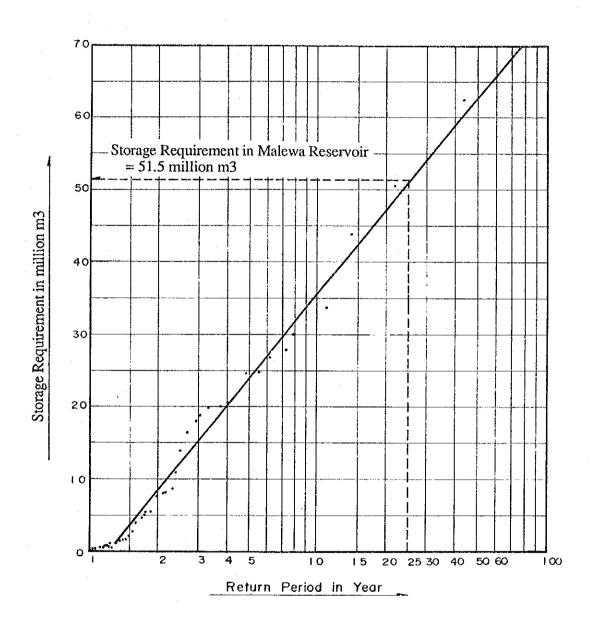
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Storage Requirement
in Turdsha Reservoir

Fig. F.3.8



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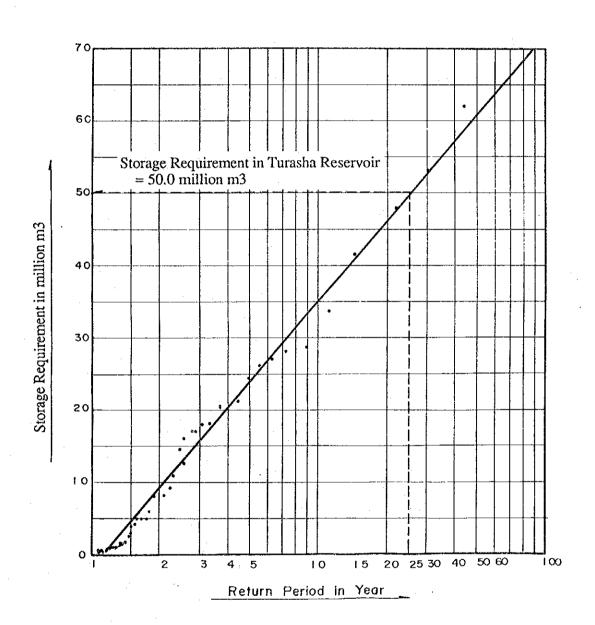
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THE STUDY FOR CONSTRUCTION OF DAM
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GREATER NAKURU WATER SUPPLY PROJECT
OF Storage Requirement
in Malewa Reservoir

Fig. F.3.9



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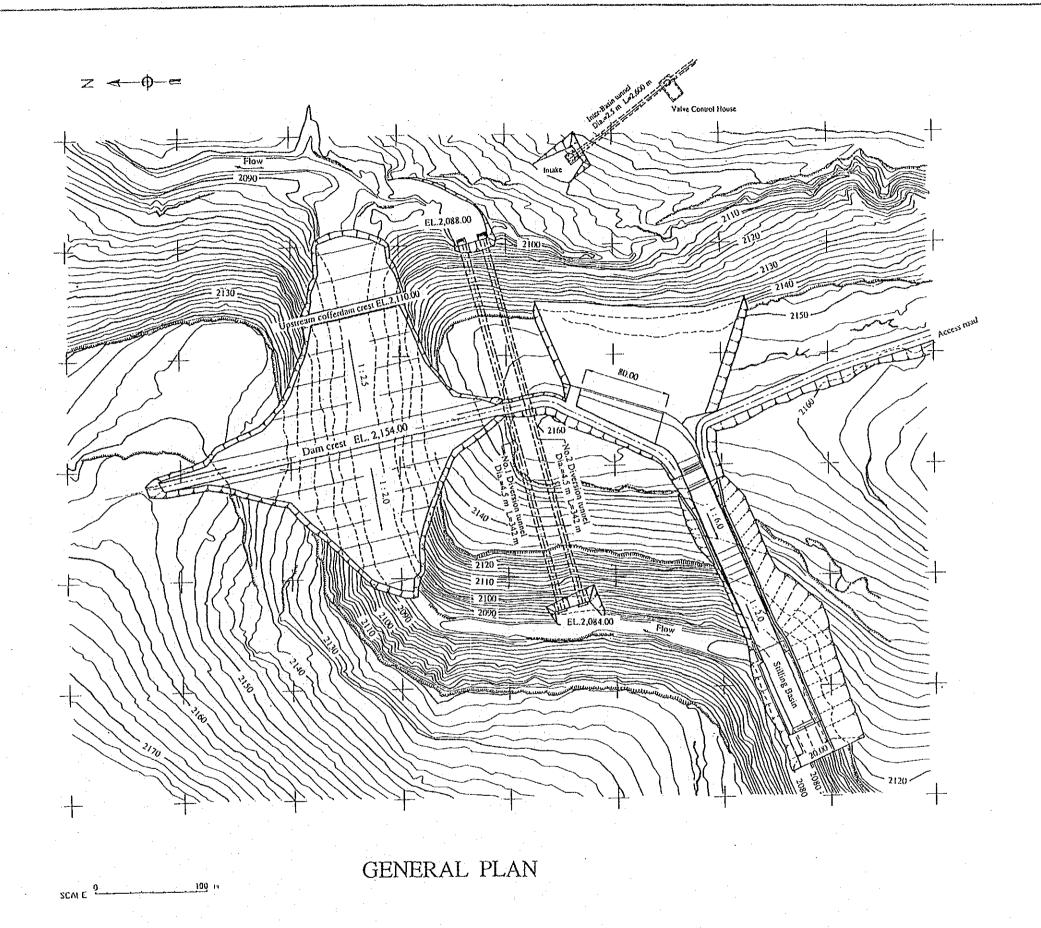
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in Turasha Reservoir





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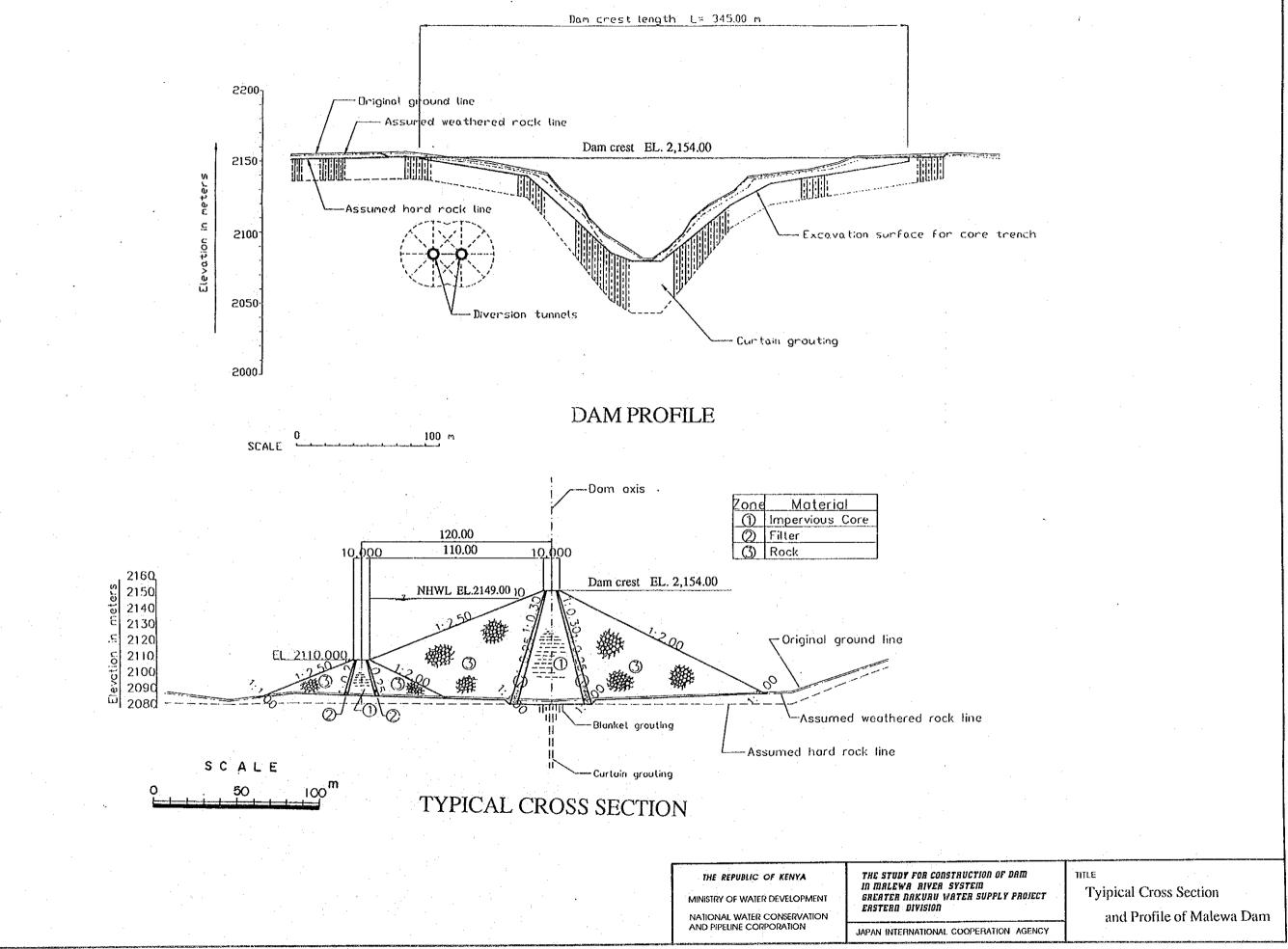
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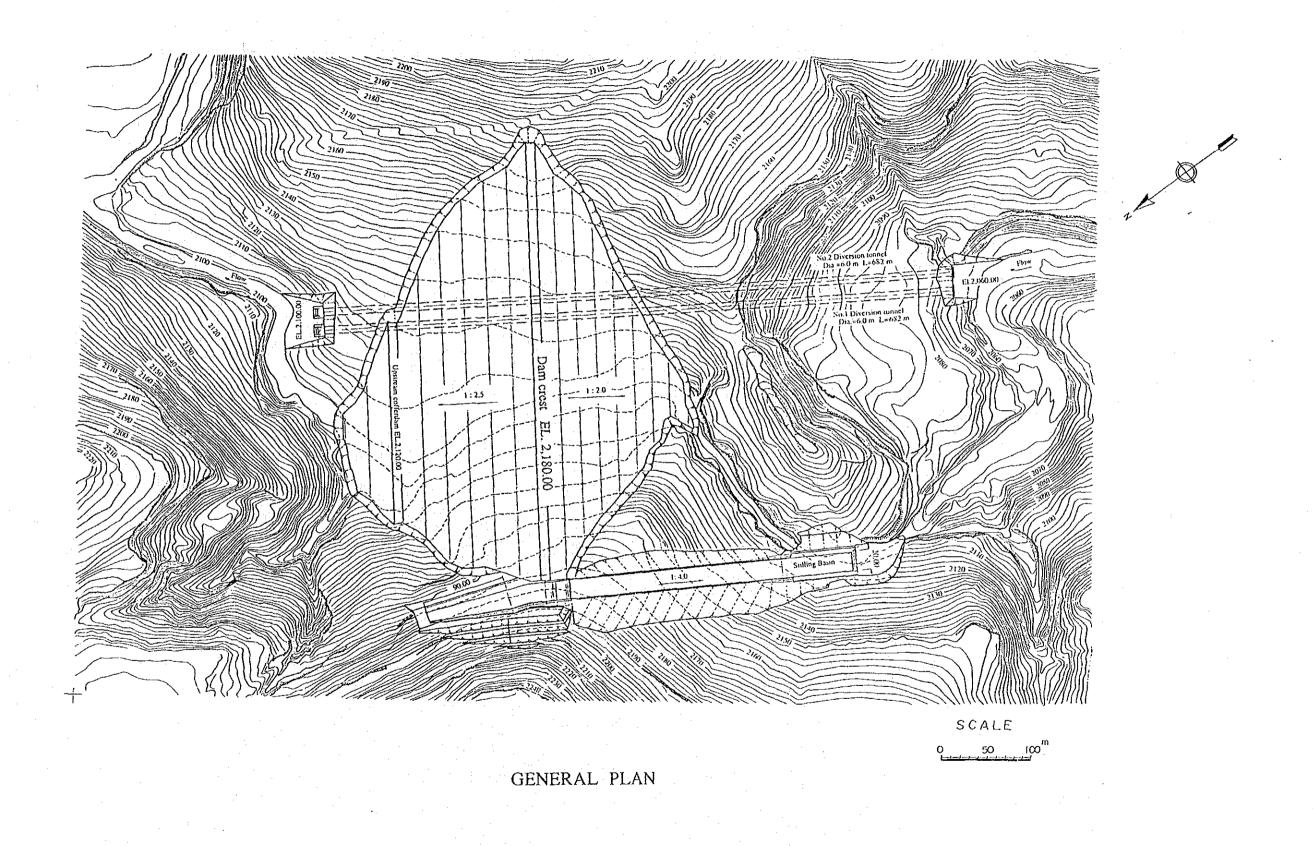
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General Layout of Malewa Dam





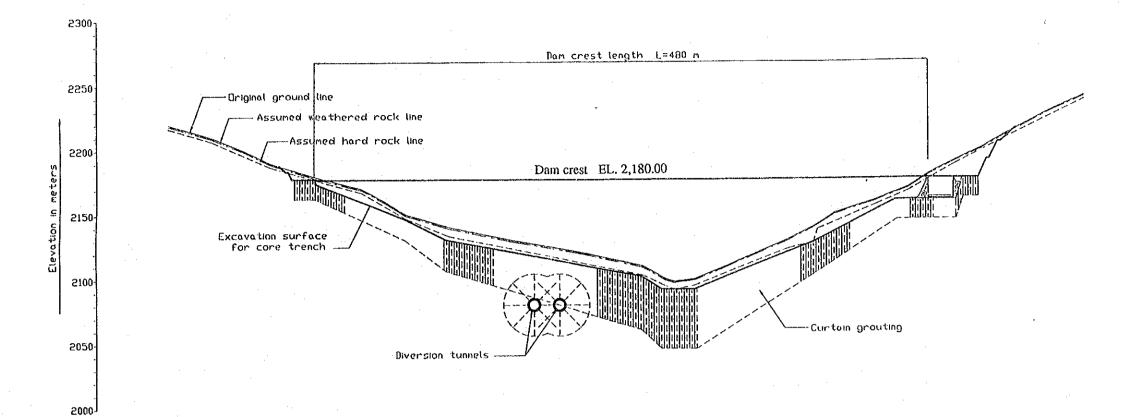
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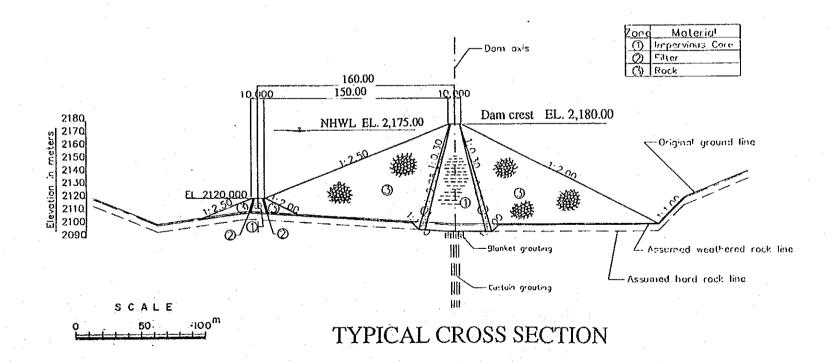
General Layout of Turasha Dam







DAM PROFILE



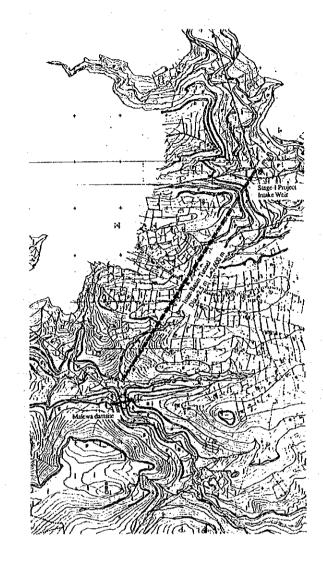
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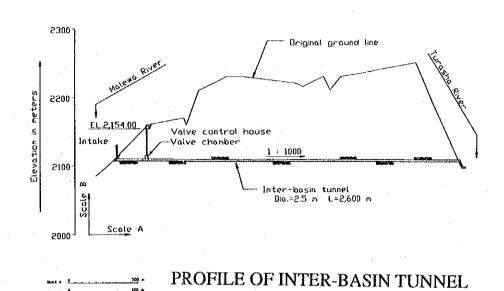
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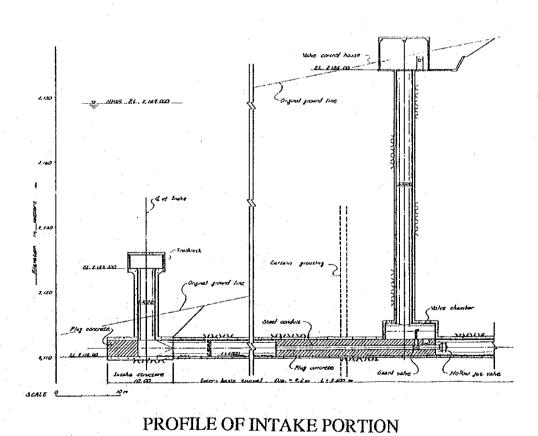
Tyipical Cross Section
and Profile of Turasha Dam



0 500 1000^m

KEY PLAN





SSEC O A-line
B-line

3.100

TUNNEL TYPICAL CROSS SECTION

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Preliminary Design of Waterway,
Malewa Dam Scheme

