

GOVERNMENT OF MAHARASHTRA,  
IRRIGATION DEPARTMENT,  
CIRCULAR NO.PPF 2001/73/559/2001-MP(I)  
DATED THE : 15<sup>th</sup> Oct.2001.

अ. अ. (पा.प.) नं. स. स. नशिफ	
अ. स.	11/01/2001
प्रथम	23/10/2001
संबंधित	
क. क्र. / दिनांक	पृष्ठ 2

1.0 PREAMBLE :

Codal provisions at present specify that the Engineer-in-charge of the work is the authority for passing of foundations. Though the procedure for keeping the record plan for foundation has been highlighted in " The Maharashtra P.W.Manual Appendix-20 ", a need was felt by the Government to specify the procedure to be adopted for passing of foundation of structures and the record to be kept. Accordingly, Government is pleased to issue the following instructions regarding passing of foundations which shall be applicable to minor, medium and major irrigation projects.

2.0 EARTHEN DAMS :

2.1 Elaborate instructions have been issued in respect of C.O.T. of Minor Irrigation Projects vide Government Circular No.MANS 1088/490/88-MIN-2, dated 17.4.89. In case of minor irrigation projects whenever a positive cut-off trench having a maximum hydraulic head of 10 m. or less, as defined in the circular is provided, the C.O.T. shall be passed by the Executive Engineer in charge of the work. Whenever a positive cut-off trench having a maximum hydraulic head more than 10 m. is provided, the C.O.T. shall be passed by the Superintending Engineer. In case of partial C.O.T., the Superintending Engineer, shall invariably pass the foundation. (However, the decision in regard to partial C.O.T. shall be taken with the approval of Chief Engineer concerned.)

In case of Medium Projects, a positive cut-off shall invariably be provided. The cut-off trench shall necessarily be passed by the Superintending Engineer, if positive C.O.T. is provided with a maximum hydraulic head of 30 m. or less. Whenever a positive C.O.T. is provided with a maximum hydraulic head more than 30 m, the C.O.T. shall be passed by the Chief Engineer. In case, it is not possible to provide positive cut-off and a partial cut-off is found to be necessary, decision in this regard shall be taken by the Chief Engineer only. Opinion of Geologist and of C.D.O. shall be taken and recorded in the register. In this case, the Chief Engineer, shall pass the foundation.

In case of Major Projects, a positive C.O.T. shall invariably be provided. The foundation shall necessarily be passed by the Chief Engineer (after undertaking detailed geological mapping to be done by the Geologist.)

2.2(a) C.O.T. in Soil :

Whenever the C.O.T. is proposed to be rested on soil, it shall have the permeability less than 10 m per year measured by pit method. After taking the C.O.T. to a depth equal to FSL-GL, auger holes of 3 to 4 m deep shall be taken at 30 m. Interval below this level and if it is confirmed that there are no sand lenses in these holes and if the permeability is less than 10 m/year, the foundation may be rested at FSL-GL. If sand lenses are observed within this depth the C.O.T. shall be taken below the sand lenses.

(b) C.O.T. In Rock :

The C.O.T. in rock, shall be rested at a level below which the permeability is less than 3 lugeons with sufficient key in the rock. While excavating the C.O.T., the overburden shall be removed & then 6 to 10 m deep bores shall be taken at a distance of 30 to 60 m and the permeability shall be checked with packer test.

4/4 38/51E  
4/10/2001

4503  
24/12

15/1

सर्वे ऑफिसर प्रमुख

सर्वे गुरु

24/12/09

01MP-1

मध्यमती संरक्षण विभाग (ता. घ. २)  
दस्तावेज नं. :- 9922  
दिनांक 24.12.2009

2.3 Necessity of grouting shall be decided based on water intake tests. The stratum having a water loss of more than 3 lugeons shall be grouted so as to, limit the water loss upto a value less than 3 lugeons.

2.4 In case there are serious problems regarding C.O.T. resting, the matter shall invariably be referred to the concerned regional Chief Engineer and C.D.O., Nashik, irrespective of the category of the dam for obtaining further guidance.

2.5 A plot of stratification along the C.O.T. on upstream and downstream face shall be prepared preferably in consultation with Geologist and signed by the Executive Engineer. This stratification shall be verified by the authority passing the C.O.T.

### 3.0 GRAVITY DAMS AND SPILLWAYS :

The foundations of gravity dams and spillways having a maximum hydraulic head of 10 m. or less shall be passed by the Executive Engineer. The foundations of gravity dams and spillways having maximum hydraulic head more than 10 m. but less than 15 m. shall be passed by the Superintending Engineer. In case of dams and spillways having a maximum hydraulic head more than 15 m. (large dams), the foundation shall be passed by the Chief Engineer. All the data such as geological mapping, results of water-in-take tests and other in-situ tests, treatment carried out etc. shall be properly recorded.

In case of doubtful foundations, the opinion of Geologist & C.D.O., Nashik shall be taken and recorded in the register.

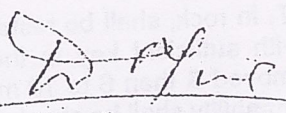
### 4.0 OUTLETS :

The procedure prescribed for gravity dams shall be followed for passing the foundations of outlet structures, penstock and tunnel outlets etc. as well.

5.0 The maximum hydraulic head shall be the depth of water column from lowest natural ground level to the full supply level for the respective components i.e. earthen dam, gravity dam and spillway, outlet etc. The ground level shall be taken along the centre line of the dam.

6.0 In addition to the instructions contained in the Maharashtra Public Works Manual (Appendix - 20), a separate register shall be maintained wherein all the details such as geological details of the foundation, permeability, any specific treatment to be given to the open joints, weak features etc. if proposed, are mentioned. While passing the foundation, the final foundation levels shall be duly recorded and signed by the Competent authority. The extra copy of the register shall be sent to the higher officers. The proforma of register is enclosed in Annexure - 1.

D.A. : Annexure - 1.

  
( D. M. MORE )  
Chief Engineer (V&P) & Joint Secretary  
to the Government of Maharashtra,  
Irrigation Department.

Copy to :

The Secretary (Irrign.), Irrigation Department, Mantralaya, Mumbai-32.  
The Secretary (CAD), Irrigation Department, Mantralaya, Mumbai-32,  
Executive Director, Maharashtra Krishna Valley Development Corporation, Pune,  
Executive Director, Godavari-Marathwada Irrigation Development Corporation, Aurangabad,  
Executive Director, Vidarbha Irrigation Development Corporation, Nagpur