

Local & Munl. (189) Department.

MISCELLANEOUS.

G.O., No. 872: *M*

DATED 6-5-98

INDEXED. *P.A.*

DESPATCHED

[Despatch Abstract.]

Potacamund Lake

Communicating to the Municipal Council, Potacamund
G. O. P. W. Departh. accepting, with remarks, the proposals of
the Chief Engineer, A. W. Departh., in regard to increasing the
depth of the lake - supply channel and lowering the level
of water in the ———.

BACK PAPERS.

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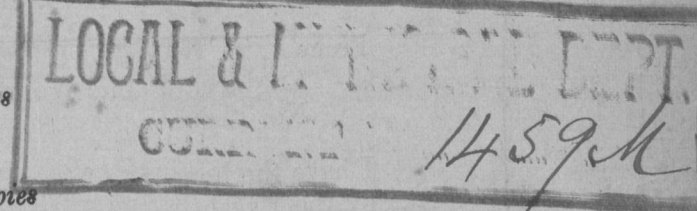
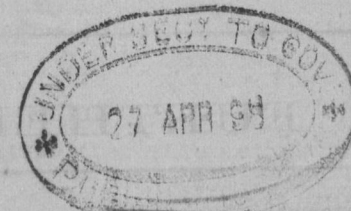
FURTHER PAPERS.

G.O.	No.	Department.	Date.	G.O.	No.	Department.	Date.

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BUILDINGS AND ROADS.
CIVIL WORKS.

Government {1898} of Madras. PUBLIC WORKS.



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G.O., No. 840 W., 29th March 1898.

Inis Order No. 872 M. Mis. 4/5/98.
Communicated to the Municipal
Council, Ootacamund.

MARCH.

V.R.
4/5/98

S.R.
4-5-98

*Cpy to the Chairman, Municipal Council,
Ootacamund. msc*

supp 6/5/98

Ootacamund Lake

The proposals of the Chief Engineer, Public Works Department, in regard to increasing the depth of the lake-supply channel and lowering the level of water in the —, accepted with remarks.

2/5 4/5/98

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads,
Civil Works.

READ—the following papers:—

From A. H. GARRETT, Esq., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 11th January 1898, No. 11/W.

I have the honour to forward a note on the stream supplying the Ootacamund lake by the Executive Engineer on special duty.

2. I do not think any advantage would be gained by the arrangement proposed in paragraph 5.

3. Orders are requested regarding the level at which water in the lake should be maintained. The reasons assigned for lowering it to the extent proposed seem conclusive.

ENCLOSURE.

NOTE ON THE OOTACAMUND STREAM, being the source of supply of the Ootacamund Lake.

The catchment basin of this is 3.7 square miles, of which about 3 square miles drains into the stream direct.

In Mr. Ashpitel's report printed in G.O., No. 107 M., dated 27th January 1897, he proposes to widen the existing channel (with present bed width of 7' 0" to 12' 0", with 2' 0" depth of water and fall of $\frac{1}{16}$, which gives a discharge of 98 cubic feet per second. This, he states, "is sufficient for an effective rainfall of about 3½ inches in 24 hours, which is the maximum likely to be dealt with, seeing that the gross maximum rainfall registered only amounts to 6.62 inches." Apparently a clerical error has crept in here, as 98 cubic feet per second only provides for a run off of 1.3 inches.

$$1 \text{ C} - 98 \text{ cubic feet per second} = 8,467,200 \text{ cubic feet in 24 hours.} \quad (a)$$

$$3 \text{ square miles} = 83,635,200 \text{ square feet.} \quad (b)$$

$$\frac{a}{b} = \frac{8,467,200}{83,635,200} = 0.11 \text{ feet} = 1.3 \text{ inches.}$$

2. During my stay here my observations have led me to conclude that considerably more than 98 cubic feet per second passed down the channel in heavy rains.

3. I consider that the channel should be made large enough to carry off in 24 hours a run off of 2", giving a discharge of $Q = 3 \text{ square miles} \times 27,878,400 \text{ square feet in 1 mile} \times \frac{2}{12} \text{ run off} = 13,939,200 \text{ cubic feet.}$

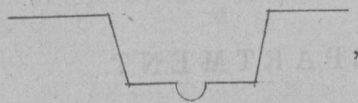
Note.—This gives $C = 75$, in formulæ $D = CM^{\frac{2}{3}}$.

This requires a channel large enough to carry $\frac{13,939,200}{24 \times 60 \times 60} = 161 \text{ cubic feet per second.}$

4. It will be observed from the accompanying longitudinal section that a fall of $\frac{1}{16}$ is easily obtainable from the point where the channel crosses the road between the A, B, C ground and the Agraharam. Increasing the depth from 2' 0" to 2' 6", the channel requires the same originally proposed bottom breadth of 12' 0" slopes 1:1.

5. With such a broad width as 12' 0", I fear that in the dry months the stream will not

flow strong enough to flush it well and I have tried sections thus

and thus , but they are both open to objections, and I propose to

cut the bottom of the channel with one side 6" lower than the other, so as to confine the stream to one side as much as possible.

6. Below the Willow bund it is not feasible to use a steeper gradient than 1.5 feet per mile. It is to be remembered that, as at present arranged, the stream is to be carried round the margin of the lake in cutting where possible and where it crosses deep water by silting up and then cutting a channel. This will take some years to effect, but will prevent the silting up of the lake, which would eventually do great harm. With a fall of 1.5 feet per mile and a 16' 0" bottom breadth, the channel would take 55 cubic feet per second, and I propose to surplus the balance $(160 - 55) = 105$ cubic feet into the lake below the island by means of a flush outlet, with a shutter in the centre with sill at bed level by which the admission of water to the lake could be regulated when the channel had reached the end of the lake.

7. It is now necessary to discuss and settle finally at what level the lower lake is to be fixed. Using the datum of the drainage scheme I found that the customary level of the lake was about + 23.0. I obtained permission, for purposes of work construction, to lower the lake 2' 0", and during the last season it was kept at + 21.25. The crest of the flush outlet weir in the lock end bund is + 22.11. That at the Willow bund is + 21.33. The level of the lake + 23 was obtained by restricting the waterway of the weir, chiefly, I believe, to provide a source of supply to the dhobies who wash below the bund.

8. It will be seen from the longitudinal section that the F.S.L. of the channel at the new Willow bund culvert is + 23, the same as the customary level of the lake. Unless, therefore, the level of the lake is reduced, the water in the channel will back up, and now the upper lake is filled up and does not afford an outlet as hitherto, a part of the A, B, C ground and probably the Agraharam will be flooded.

9. Further it is to be noted on the longitudinal section at the point B, that the ground level of the A, B, C ground is only 6" higher than the F.S.L. of the channel. Now that the upper lake is filled in and this natural drainage to the upper part of the Hobart Park is lost, I believe it will be found absolutely necessary to drain the A, B, C ground if it is to be in the least bit of a healthy recreation ground. In any case it is desirable to keep the water in the channel as low as possible so as to keep the subsoil water as low as possible in the A, B, C ground.

In fact the question resolves itself into, whether the A, B, C ground should be made fairly healthy, or the lake kept up at the usual level. My recommendation is for the former, on the grounds that the A, B, C is close to the bazaar and is used by far more people for recreation purposes than is the lake.

10. I would therefore propose that the lake level be permanently reduced to + 21.5. Possibly it might be increased to + 22 in the summer months, but this I deprecate.

11. The objections that have been advanced against such lowering are—

(a) Reduced area, but this is really infinitesimal and when the brown area round the margin is covered with vegetation will not be noticeable.

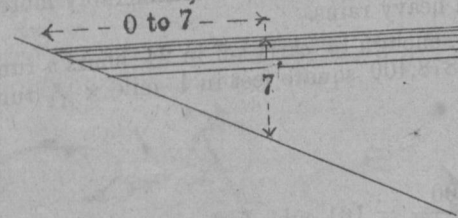
(b) Spoiling the appearance of the lake. This is a matter of opinion I cannot say I could notice it to any appreciable extent.

(c) In crease of weed area. This sounded a plausible objection, but if the slope is continuous, as I believe it to be, it is not the case as if, as they do, weeds grow between nothing and seven feet of depth, that area is simply transferred low down.

(d) Injury to boating. The only real nuisance is the getting into the boats from the stagings. If the level of the lake is fixed these can easily be altered.

(e) Vegetation on water surface. This was rectified by temporarily lowering the weir and creating a surface flow when it disappeared.

12. As the water in the upper lake is doing harm, and it is necessary to divert it into the new channel, work will be proceeded with on the above lines. The earth from the channel is required for the lake filling, so that estimate will bear the cost of the excavation.



13. Orders are requested as to the lake level.

(Signed) J. F. SOMERS-EVE,
Executive Engineer on special duty.

From the Superintending Engineer, IV Circle, dated 16th February 1898, No. 96/W.

Note by the Chief Engineer, Public Works Department.

In his No. 11/W., dated 11th January 1898, the Superintending Engineer, IV Circle, forwards for orders a note by the Executive Engineer on special duty at Ootacamund on the stream supplying the lake and the level at which the water in the lake is, in future, to be maintained.

2. The proposals are as follow :—

(1) To increase the depth of the lake-supply channel from 2' to 2½' to enable it to carry 161 cubic feet per second. This is necessary and may be sanctioned.

(2) To cut the channel with one half of the bed 6" lower than the other half to concentrate the scanty summer flow. This would soon silt up and be of no permanent benefit.

(3) To run the channel round the margin of the lake beyond the Willow bund until, by a process of silting through a long series of years, it forms its own bed, and be practically independent of the lake; the object being to avoid silting in the lake, also to have a flush outlet just below the island, to pass surplus water into the lake when the channel has reached the end of the lake. The former has already been sanctioned. The outlet will not be required for many years to come and its construction may be postponed till then.

(4) To permanently lower the level of water in the lake from + 23 to + 21.50, i.e., by 18 inches. The reasons given for this are—

(a) The full supply water level in the supply channel at Willow bund is + 23, and unless the lake is lowered, the water will back up the channel and probably flood the Hobart Park.

(b) The full supply water level in the channel is generally only 6 inches lower than the ground level of Hobart Park, and it is necessary, in the interests of the latter, to keep the water level as low as possible.

With these views I agree, though very unwillingly, because I fear it is certain that unless the lake level is permanently lowered Hobart Park will be more or less of a swamp for several months in the year. I therefore recommend their adoption and solicit early orders on the subject as the height of the sewage manholes depends upon the water level in the lake.

(Signed) W. B. DEWINTON,
Ag. Chief Engineer.

5th March 1898.

ORDER—No. 840 W., dated 29th March 1898.

His Excellency the Governor in Council sanctions the proposals in clauses (1) and (4), paragraph 2 of the Chief Engineer's note, and accepts the conclusions arrived at in clauses (2) and (3).

2. The cost of the work now sanctioned will be met from the Public Works Provincial grant, and the Superintending Engineer will, in due course, apply for such funds as may be necessary.

(True Extract.)

W. B. Dewinton
Under Secretary to Government.

To the Superintending Engineer, IV Circle, with plan.

„ Examiner, Public Works Accounts.
„ Local and Municipal Department. ✓

Exd. W. D'Moss.

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READ AGAIN G.O., No. _____, DATED
189 ,

CURRENT No.

ENCLOSURES TO C. No.

ORDER OF GOVERNMENT

A A A A A A A

LETTER OF GOVERNMENT.

STATEMENT WITH DITTO.

PAPERS NOT FILED UP, BRING MEANT FOR DESPATCH
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