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MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue DEPARTMENT

G.O. No.	2653.	Press
B.P. No.		Mis.
Dated	20-12-1875	196 .

Not to be folded or roughly handled

Read the following :—

No. 1,400.

No. 83. *Note by the Chief Engineer for Irrigation.*

In August 1874 the District Engineer, Nellore, brought to notice the necessity for discharging the greater part of the surplus from the catchment basin drainage of the Nellore tank directly into the river, if possible to the west of the junction of the river embankment with the tank bund. Mr. R. Smith pointed out that the discharge of the drainage of 17 square miles across the Delta Irrigation Works could not but be injurious, and that whereas he had in designing the Survapully Project provided by surplus works at Kanupartypad for the discharge of 6 inches of drainage, the then Superintending Engineer, considering this allowance to be unnecessarily large, reduced the capacity of the surplus sluices to the discharge of about 1,474 cubic feet a second, the estimated maximum being 3,718 cubic feet. Mr. R. Smith's proposals were approved, and some general instructions given.

No. 44, 22nd August.

No. 665, 3rd September 1874.

3. Not long after the floods of October occurred, and so vast a quantity of water was discharged at the east end of the tank into the station, the town, and delta, that it was in contemplation to breach the tank at a point where the surplus might escape without causing so much inconvenience and damage, but this proceeding having been delayed for the reasons mentioned in paragraph 13 of the memorandum as per margin, the water overtopped the bund and a breach occurred. Much of the water which was then received by the tank came from the river by the submergence of the head sluice and flood bank, and this will, it is hoped, be effectually prevented for the future, but the drainage of the catchment basin remains to be dealt with as before.

No. 397-A., Proceedings, Madras Government, 9th June 1875.

4. The District Engineer has transmitted estimates amounting to Rs. 24,900, and providing for the following works :—

	Rs.
Weir in tank bund	10,190
Channel between upper and lower weirs	3,371
Flush causeway for road	739
Lower weir	9,970
Channel to river	630
Total ...	24,900

5. The difference between full tank level and the deep bed of the Pennair is 27 feet, and the District Engineer has provided for dropping the surplus to the lower level. The deep bed of the river is, however, at a distance of $1\frac{5}{8}$* miles, and the nearest part of the river to the tank is 1,200 feet distant. It is believed, moreover, that the deep bed of the river here has never been on this (the south) side. The deepest part of the south side of the bed is at 52·36 or 13·78 feet below full tank level, and this point is 2,600 feet from the tank. It is believed, therefore, that

* 8,720 feet.

it will suffice if the lowest apron of the surplus weir be placed at 50·48 instead of at 39. It may be added, that should, at any future time, the river change its deep bed it will not be difficult to add steps to the weir and so prevent all risk of undermining.

6. The reason why the District Engineer has proposed a double weir is that the road from Nellore to Baba Row's Chuttrum has to be taken across the surplus channel at a moderately low level. By a slight diversion, which has been noted in pencil on the sketch sheet, it is thought that the necessary accommodation can be given on the lowest apron of the design for the upper weir, the level of which is 55·48, and if a drop of 5 feet be given below this apron by building a retaining wall at its outer edge and constructing another masonry apron with retaining wall below, with an outer rough stone apron beyond, the necessity for a second weir will be obviated.

7. The length of the tank surplus weir has been designed to be 195½ feet, or deducting the space occupied by the cast iron posts 180 feet, and it is calculated that 3,030 cubic feet of water would be discharged with a depth of 3 feet going over. Looking to the size of this reservoir and to the importance of its perfect safety being secured, it is not proposed to suggest that a less length should suffice, but it may be noticed that the capacity of the tank basin between full tank and maximum water level is so large, *viz.*, between 9 and 10 millions of cubic yards, that it cannot but modify materially the conditions of discharge of a maximum flood drainage, which is estimated at under 12 millions of cubic yards in the 24 hours. Probably, under these circumstances, a weir 120 feet long would prove to be ample.

8. Mr. R. Smith reports that he has arranged to shut out river flood water, which in 1874 rose to 1·41 feet above F.T.L. by means of cast iron posts and planks, rather than by self-acting swing shutters, because it is desired towards the close of the season to retain water in the tank above F.T.L. for the use of the town. He has not mentioned to what increased level it is proposed so to retain water, and it is thought that there are risks attending such a proceeding which it may be well fully to consider before deciding to incur them. Moreover, if such retention of water be deemed advisable, swing shutters might nevertheless be adopted, as these could for the comparatively short period during which water would be kept above ordinary F.T.L. be secured by bolts, which could be withdrawn before the usual time for floods and freshes. On the other hand, of course, it might be arranged that no planking should be left standing in the post grooves at times at which a sudden accession of tank water from land drainage might reasonably be anticipated.

9. The modifications proposed will render a revision of the estimate by the District Engineer necessary, but it is believed that the approximate cost of the single weir with the necessary alterations will not exceed Rupees 15,000, and it is recommended that this amount be entered in the Budget of 1876-77 with an allotment of Rupees 10,000, and that as there is a provision of Rupees 5,000 in the current year's Budget for this work, Mr. R. Smith be authorized to take immediate steps for the construction of the weir.

CAMP, GOONDLOOR,
26*th November* 1875.

(Signed) JOHN MULLINS, Lieut.-Colonel, R.E.,
Chief Engineer for Irrigation.

Proceedings of the Madras Government, Public Works Department,
7th December 1875.

No. 84. ORDER THEREON, 7th December 1875, No. 3,455.

IRRIGATION, No. 3.

THE approximate estimate of Rs. 15,000 for constructing a weir in the bund of the Nellore Tank, for the discharge of surplus direct into the Pennair, is approved for entry in the Budget with an allotment for 1876-77 of Rupees 10,000.

2. The Officiating Superintending Engineer will lose no time in examining into the details of the arrangement suggested in the foregoing note for rendering a single weir sufficient, and he will submit a revised estimate at an early date. In the meantime the work, the upper part of which is, with the exception of slight modifications of levels proposed for the aprons, the same as that designed for the upper weir in Mr. R. Smith's arrangement for a double weir, can be gone on with on the provision of Rupees 5,000 made in the current year's Budget.

3. The expenditure will be chargeable to Capital, Pennair Anicut, as it is understood that the Nellore Tank is a work belonging to the delta.

(True Extract.)

Major-General, R.E.,
Secretary to Government.

To the Officiating Superintending Engineer, Nellore.
„ Controller of Public Works Accounts.
„ Chief Engineer for Irrigation.
„ Revenue Department.
„ Collector of Nellore.

Exd. S. T. Austin.

14 Spare Copies

Revenue Department

No. 4825

Govt. of {1875} Madras.

PUBLIC WORKS.

To

THE OFFG. SUPERINTENDING
ENGINEER, NELLORE,
&c., &c., &c.

Dated December 7th.

Issued

Recd. 20-12-75 Encl.

G. O., 7th December 1875, No. 3,455.

Re Offrs

DECEMBER.

Nos. 83-84

9 Estl. Os. 2 & Ors, &c, &2000 —

Nellore Tank.—The approximate estimate of Rupees 15,000 for constructing a weir in the bund of the — for discharge of surplus direct into the Pennair approved for entry in the Budget, with an allotment of Rupees 10,000 for 1876-7.

No. 2653

Comm.r to the

Board of Revenue

20: Dec 75