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MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

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115-116

Dated 7 - 10 - 1864.

Not to be folded or roughly handled

Proceedings of the Madras Government, Public Works Department, 7th October 1864.

No. 115. Read the following letter from Captain J. MULLINS, R. E., Consulting Engineer, Irrigation and Canal Company, to Colonel C. A. ORR, R. E., Secretary to Government, Public Works Department, dated Madras, 27th September 1864, No. 106 :—

SIR,

I have the honor to submit, for the information of Government, with reference to their Order No. 2,591 of the 7th September 1864, a copy of the Chief Engineer's letter No. 774 of the 17th idem, replying to the observations in my report* on the Pennair and Nellore Divisions, which the Government desired the Agent to bring under the consideration of the Chief Engineer.

* Letter No. 65, 5th August 1864.

From Colonel H. C. COTTON, Chief Engineer, Irrigation and Canal Company, to F. H HENSLOWE, Esq., Agent and Manager, Madras Irrigation and Canal Company, dated Kurnool, 17th September 1864, No. 774.

SIR,

1. I have the honor to acknowledge the receipt of your letter,† 12th instant, drawing my attention to certain paragraphs of Captain Mullins' report on the Pennair and Nellore Divisions. I will remark on them *seriatim*.

† No. 1,178.

2. Paragraph 22.—The work is not planned at the points referred to, and in planning those parts every arrangement will be made for future improvement, as well as present economy, where they will combine. I have referred this remark to the Executive Engineer.

3. Paragraph 30.—Captain Mullins is not correctly informed of my opinion in this case, and I will take this opportunity of repeating my request made on many other occasions, that a reference may be made to myself before my views, opinions, or intentions are quoted in official documents.

4. The arrangements for the canal at this point await the receipt of levels which have been called for.

5. Paragraph 32.—Puts the question from what source is the supply of water for navigation to be supplied? The Toombuddra with reservoirs on its tributaries and the Pennair and its tributaries with similar reservoirs are the sources of supply proposed. I expected to secure a large reservoir above the Gundicottah gorge, but it appears that the Railway has taken possession of the valley, and we must look further up and therefore other sites are under examination.

6. As Captain Mullins says there is no data for estimating the leakage under a 20 feet anicut, but there is no reason for believing that it will exceed that under a lower work if constructed as I have planned the Somaiswaram anicut. The head of water is greater, but it is further removed from the foot of the work where the leakage escapes. The silt referred to in another part of this paragraph increases with the height and is very effectual in diminishing leakage. I do not admit the necessity of 80 or 100 yards of sluices to make the cement at bottom powerful "enough to prevent the raising of the river bed." It is not in great floods that sluices even of that extent will have much effect, but in low freshes the silt will be removed by means of sluices of comparatively trifling vent.

7. Paragraph 36.—No doubt well constructed masonry walls will be required. The suggestion of the power of the wind in these localities is important and will not be lost sight of.

8. Paragraph 37.—Describes and approves of the system of construction proposed.

9. Paragraphs 44 to 50.—My views as to the best section for an anicut in a sandy river are, I know, not in accordance with those of all Engineers, but let reference be made to the various failures which have taken place, and the final success in very many cases actually arising from those failures, I cannot yield the views I hold till they are proved erroneous by sound theory or by practice. I am now reviewing the plan of the Somaiswaram anicut with reference to

the costs of sinking the blocks and in furnishing a revised estimate. I will further explain my views on the subject. I think Captain Mullins mistakes what I have said regarding the acceleration of the current over the anicut. With a fall of 1 in 8 there cannot be a question of the velocity being greater than the natural stream of the river falling 5 or 6 feet in a mile. But the question I suggest is whether the velocity down the slope is accelerated. In short whether the principle of a wheel rolling down the surface or that of a river down its course is here in operation. And the question is not with respect to a great depth of water passing over, because, in that case, though I believe if unimpeded by the accumulated water below the fall would be accelerative; the foot of the anicut when the accumulation has taken place is no longer exposed to it. What I believe is simply that the water passing down the slope does not attain a velocity towards the foot, greater than at the top of the slope, the friction counteracting the tendency to acceleration as is the case in a river in its natural bed. I will not go further into this question now. I must, however, remark with reference to paragraph 48, that it never was my intention, because I consider it impracticable to lay rubble stone at once 3 yards below water level in a sandy river.

10. Paragraph 51.—I see nothing here to remark on. The Engineer conducting the operation will undoubtedly see the necessity of maintaining his communications by rail or by water, but I will send him a copy of this paragraph.

11. Paragraph 52.—This alteration will be considered.

12. Paragraph 53.—The insufficient height of the bank will be considered.

13. Paragraph 54.—This arrangement will be considered.

No. 1,307.

Communicated to the Consulting Engineer.

(Signed) F. H. HENSLOWE,
Agent and Manager.

24th September 1864.

No. 116. ORDER THEREON, 7th October 1864, No. 2,900.

1. Ordered to be recorded.

2. The Consulting Engineer's attention will be directed to the request contained in paragraph 3 of the Chief Engineer's letter.

(True Extract.)

(Signed) CHARLES A. ORR, Colonel, R. E.,
Secretary to Government.

To the Consulting Engineer, Irrigation and Canal Company.
„ Manager for do. do.

Exd. S. T. Augustin.

2900
2900
Ordered to be recorded
2 The Consg: Engineer's attention will be directed to the request contained in para 3 of the Chief Engineer's letter
Chepauk 7th Octr 1864
Agent &c
Manager
Dest 10th Octr

Copy in a letter to Engrs
D/ 10th November No. 74 of 1864.

P. [illegible] 1864 Dated
[illegible] 1864 for Octr
From (15) No. 4210
The Consulting Engr. &c &c
To (13)
The Secretary to Government
P.W.D.

Dated 27
Received 28 September 64

No 2900 - 4th Octr/64 -

Sub: for information
copy of Ch. Engrs letter replying
to the observations in Consltg Engrs
Report on the Remainder Bellows
Dams &c

Nathan Onslow

No 115 - 116

Recd 30th Septr/64 - On 2nd Octr

" Manager for do. do.

Exd. S. T. Augustin.