M.R.O. 14—5,450—22-10-25.

MADRAS RECORD OFFICE.

Government of Madras.

Revenue **DEPARTMENT.**

G.O. No. 632 Press ~~Min.~~

262. 263

Dated 15 - 3 — 1867.

Not to be folded or roughly handled

Proceedings of the Madras Government, Revenue Department,
15th March 1867.

No. 262. Read the following Proceedings of the Madras Government in the Public Works Department:—

Passing orders on papers relating to the improvement of the Agumby Ghaut. } (Here enter 8th March 1867, No. 691.)

No. 263. ORDER THEREON, 15th March 1867, No. 632.

Miscellaneous.

Ordered to be recorded.

(True Extract.)

(Signed) J. GROSE,
Under Secretary to Government.

Exd. S. T. Augustin

No. 135. Read the following Memorandum from the Officiating Commissioner of Mysore, to the Secretary to Government, Public Works Department, dated Bangalore, 23rd February 1867, No. 6,554-47 :—

Your No. 375-2,951, dated 14th September 1866.

With reference to the above forwards, for the information of His Excellency the Governor in Council, the accompanying copy of a Memorandum No. 690-627 of the 5th instant, addressed to the Executive Engineer, Shimoga Division, by the Chief Engineer in Mysore, relative to the improvement of the Agumby ghaut.

Memorandum from the Chief Engineer of Mysore, to the Executive Engineer, Shimoga Division, dated Bangalore, 5th February 1867, No. 690-629.

1. I inspected the Augumby ghaut to-day* in company with the Executive Engineer, Captain Palmer, whose charge, as will be observed from the annexed eye-sketch, extends from the top to the eighth turn, or about two and a half miles from the top.

* 26th January 1867.

2. The remaining four miles to the foot at Soméshweram, where the ghaut-proper ceases, is under the Madras Department Public Works.

3. From the extremely precipitous nature of the upper or Mysore portion of the mountain face, it has only been with the utmost difficulty, and by blasting through a considerable portion of the line, that the ghaut road has been carried down.

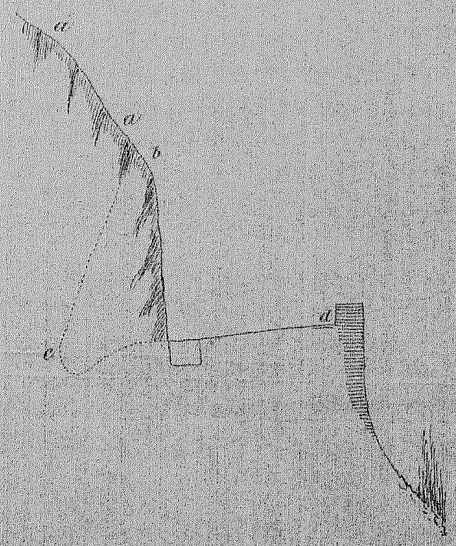
4. The turns at the end of the short zigzags are everywhere brought up against sheer cliffs, and although, as I shall show further on, some slight extension of length, and consequent flattening of gradient, may yet be gained, the work must be extremely limited. The maximum gradient now being about 1 in 11, I think it might yet be possible to reduce this to 1 in 15 or 16, but more it does not seem to me could well be promised without a vastly disproportionable expenditure of means. The gradient over all, judged by difference of level between the top of the ghaut and Soméshweram, would be 1 in 21, but much length is unavoidably lost by flat portions above and below.

5. The case is entirely the reverse with the lower or the Madras end of the ghaut, excepting in their uppermost zigzag (the fifth), where the work is much the same as ours; and I may here be permitted to observe that this character prevails as a rule, with all the ghauts, the steep upper portion in Mysore presenting difficulties wholly unknown to the lower or Madras portions, which ascend mostly in earth-hill-side-cutting, and along the wide bases of the spurs at foot, necessarily involving little labor and less skill, and hence, probably, the readiness with which, ignorant no doubt of this important physical difference, the authorities on that side have preferred their complaints. It will be seen, as I proceed, that wherever the same difficulties occur on the Madras side, they have made less effort than Mysore to overcome them.

6. My object, however, being to show what is actually now being done on the Mysore side, under the small estimate sanctioned for special work to the ghaut, amounting to Rupees 7,865, I beg now to note briefly, in detail, the most prominent features as well as the points calling for immediate attention.

7. Before coming to the first milestone (considered the head of the ghaut, and 56 miles from Shimoga), a nicely executed laterite drain bridge has been nearly finished, and another further on. A third of two vents is about to be commenced a little in advance. The road along this portion, past the Police Tannah, and as far as the head of the first zigzag, calls for little remark. It is from 20 to 27 feet wide, well formed, and only requires to be metalled.

8. Immediately on turning the corner of the first zigzag, the breadth of the road is found for 30 or 40 feet to be only 10 and 11 feet wide, and for the 100 yards in advance of this, varies from 15 to 18 feet. Blasting is here vigorously going on, as this is probably the worst portion of the line. The cliff is composed of a ferruginous clay-slate which, though soft on being first cut into, rapidly weathers out hard, and as the strike is downwards, and inwards as *b c* in the annexed sketch, there would be no objection to simply blasting out the footing on the line, instead of taking down the whole cliff some 30 feet and more in height. The labor, blasting away *a a* as at present, is practically useless, and may thus be avoided. There is no possible danger of the rock falling, although overhanging, and at comparatively little outlay the breadth *c d* = 20 feet could be easily obtained.



9. Another matter is that steel stone-picks, now used in cutting out the footings for the Sreeramadavy anicut, would readily clear away the rock along its line of strike; twenty or thirty of these will now be supplied to the Executive Engineer for use, instead of resorting everywhere to blasting.

10. The turn at the end of the first zigzag can be improved, as pointed out personally to Captain Palmer, simply by carrying on the nose 12 feet, and clearing a little way back into the side. The second portion of the first zigzag is of good width, full 18 feet everywhere, the gradient fair, and all it requires is a similar improvement to the turn at its end.

11. The first portion of the second zigzag is also good and of full width, excepting at the turn where some debris, brought down by upper drainage, requires to be cleared away, and the nose lengthened. A small portion of the outer revetment also needs to be carried out perpendicularly, to gain width. The second portion of this zigzag is all in good order and of full width, the turn at the end, however, requires improvement by blasting some of the rock at end, and otherwise lengthening it, 20 feet in length could thus be easily gained.

12. The first part of the third zigzag is more than the proper width, but the gradient, 1 in 15, is objectionable, and from the existence of sheer cliff at its upper and lower extremities, it is to be feared that very little, if any, improvement is practicable. The second portion is at commencement good in gradient, but lower down it is so steep as 1 in 12, and, moreover, for 30 yards is only 15 feet wide. The widening of the ghaut to 18 feet here is of course practicable, and further, I consider that nearly 100 feet in length could be gained by blasting out the cliff at the end, thus flattening the objectionable gradient above. This, with other similar work, must however form portion of a separate estimate.

13. The drinking fountain at the end of this zigzag should be at once put in working order, and others of a similar description placed at one or two more points on the ghaut, water being much needed here for consolidating metaling as well as for man and beast.

14. The fourth and last Mysore zigzag is very narrow, only 15 feet wide at the turn, and the gradient 1 in 11 in one portion. Length and corresponding flattening of the gradient can undoubtedly be gained by blasting at the end, and carrying up the outer revetment perpendicularly, as explained personally to Captain Palmer. The width can also be brought up to 18 feet, but much of this must necessarily form part of the separate estimate before adverted to. The second part of the zigzag, at the end of which is the boundary, is 1 in 14, and as it runs right into the cliff at the end, little improvement can be effected.

15. The stone quarried along the ghaut rapidly disintegrates under traffic, and the road surface is now both dusty and heavy for carts. I consider that the ghaut should be metalled with the above stone, properly broken in its full width, as a substratum, and over this good laterite gravel, procurable from above, laid at least three inches in consolidated thickness. The maintenance allowance should also be raised from Rupees 180, as at present, to Rupees 350 per mile, the amount given to the Munzerabad and Boond ghauts.

16. In the lower portion of the fifth zigzag (Madras) the gradient is about 1 in 10, and in many other places objectionable. Wherever rock occurs in side-cutting the road is also narrow, and no attempt is apparently now being made to widen it. The road surface is, moreover, heavy and dusty, and the only party I saw engaged in its repair were throwing on ochreous clay over it, with what object I cannot say.

17. Captain Palmer will ere long submit an estimate for the alterations I here pointed out as desirable, and will, meanwhile, effect considerable improvement with that now being worked out. I do not consider it requisite for me here to enter into any general discussion regarding the utility of the present ghaut, or the advantage which might be gained by adopting an entirely new line.

18. I am given to understand that the principal portion of the traffic which passes through Shimoga in this direction is from Dharwar, and notwithstanding the defects of the ghaut already pointed out, a fully laden cart is easily taken from bottom to top by a single pair of bullocks in a day. The great use now made of the ghaut sufficiently proves that its condition forms no bar to traffic.

19. Moreover, objectionable as are some of its engineering features, it may be noted that the rock of which it is composed is of such firm character, that although the side scarps are in many places of great height, no slips have apparently occurred in the thirty years which have elapsed since Captain Bower traced the line.

This immunity from slips is doubtless, in some degree, also attributable to the extremely dense character of the vegetation which covers the whole of the mountain side, and which should undoubtedly be preserved with the greatest solicitude, as tending to hold up the soil and prevent its being washed away during the monsoon. The opposite characteristics of rock and vegetation on the Boond ghaut have produced, and will continue to produce slips of the side scarps every monsoon, thereby causing endless vexation and trouble.

No. 136. ORDER THEREON, 8th March 1867, No. 691.

CIVIL WORKS, No. 18.

1. Communicated to the Board of Revenue and the Superintending Engineer of the 7th Division, with reference to the Orders of Government No. 2,950 of the 14th September 1866.

2. Colonel Walker's attention is requested to the remarks of the Chief Engineer of Mysore in paragraphs 5 and 16 regarding the condition of the Agumby ghaut within the Madras limits.

(True Extract.)

Colonel, R. E.,
Secretary to Government.

To the Board of Revenue.
" Superintending Engineer, 7th Division, with Sketch.
" Revenue Department.

Ed. S. T. Augustin.

Lieut Col Hall 634-635

Pur. 1867 - Nos 1 to 4
Proc. of Gen. Ford March
Nº. 669.

Proceedings in the
Q. M. Depart.

Dated 8th. February
Received 13th. " 1867.
Nº. 691.

Papers & orders on
papers relating to the im-
provement of the Agency
Fleuve. — Nº. 632.

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15th March 67 L