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MADRAS RECORD OFFICE

GOVERNMENT OF MADRAS

Revenue DEPARTMENT

G.O. No.	1853	Press
B.P. No.		Mis. ☒
Dated	5. 8. 1876	196

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OK

Read the following papers:—

No. 266. From K. F. NORDMANN, Esq., Officiating District Engineer, Vizagapatam, to Major-General G. W. WALKER, R.E., Secretary to Government, Public Works Department, dated Vizianagram, 18th April 1876, No. 144.

- 1 Survey of Ghauts.
- 1 Plan of Bungalow and Office.
- 1 Specification Report.
- 1 Abstract Estimate of Bungalow and Office.
- 1 Grand Abstract Estimate.
- 1 Comparative Statement.

* In a tin case by Banghy.

I HAVE the honor herewith to submit the estimate (amounting to Rs. 2,47,290) for the New Pottinghy Ghaut, leading from the plains of Vizagapatam, near Salur, to the Jeypore Plateau, near Pottinghy, together with a survey.*

2. The ghaut is 19 miles 325 yards in length, and will cost on an average Rs. 13,015 per mile. This is for a road 20 feet in width, without bridges or covered drains, which have not been provided for in the present estimate.

3. Arrangements have been made on the works for the drainage to discharge itself over solid stone dams across the road. These road dams will answer for some years to come, as they have done in the case of the Periah, Burghoor and other ghauts, the estimates for which did not provide for bridges and under drains.

4. Eventually it will be found necessary to have these adjuncts constructed, which will then have to be separately estimated for; their probable cost will be about Rupees 60,000. The plans and estimates for these works can be prepared with greater accuracy, when the road has been opened to full width, than at present. Hence it seems preferable to have a separate estimate for them prepared when the work, now provided for, approaches completion.

5. Likewise, no provision has been made in the estimate now submitted, for the road of approach to the foot of the ghaut, from Salur (4 miles). A separate survey and estimate for this line are under preparation, and will be shortly submitted. No work has been done to this part, besides the line having been marked out. The probable cost of this work will be about Rupees 16,000. I do not know whether it will be chargeable to "Provincial" Funds, like the ghaut itself, or to "Local" Funds like the other roads in the plains.

6. I annex a statement, showing the quantities of work done and expenditure incurred up to the 31st March 1876, and the work remaining to be done according to the estimate.

7. The Item "Earthwork," in the estimate, allows for "Widening" only, exclusive of the bridle-path which has been separately provided for, according to its actual cost.

8. As regards the items "Blasting and Removing Rocks," and "Stone Revetments," the comparative statement shows that, out of an estimated total quantity of 12,886 cubic yards of rock to be removed without blasting, 3,255 cubic yards have been removed; while out of 37,950 cubic yards of rock to be blasted, only 1,627 cubic yards had been done up to the 31st of March. This small fraction of the whole quantity to be blasted is accounted for by the fact that blasting could not be undertaken with advantage (except on the smallest scale and in isolated spots) until the bridle-path had been completed and the widening to 13 feet well progressed. Blasting on a larger scale was not begun until March 1874; so that the quantity of rock blasted up to date, though it appears small, is in fact, I submit, quite as much as could, in the beginning of a work of this kind, and considering the entire absence of skilled labor, have been expected to be carried out. Of 25,991 cubic yards of stone revetment, provided in the estimate, 11,428 cubic yards have been built.

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Proceedings of the Madras Government, Public Works Department,
18th July 1876. No. 1,803.

Statement showing the Expenditure incurred on the New Pottinghy Ghaut, and Work remaining to be done according to the Estimate, on the 31st March 1876.

No. of Item.	Sub-heads of Estimate.	ESTIMATE.		WORK DONE.		TO BE DONE.	
		Quantity in Yards.	Cost.	Quantity in Yards.	Cost.	Quantity in Yards.	Cost.
		RS. A. P.		RS. A. P.		RS. A. P.	
1	Earthwork, widening from Bridle-path, with	158,995 1/2	35,606 0 8	78,408	11,067 7 9	80,587	24,538 8 6
2	Removing small Rocks and loose Stones without blasting.	12,886 1/2	8,054 0 5	3,255	2,000 0 0	9,631	6,054 0 5
3	Blasting and removing Rocks	37,950 1/2	1,09,108 7 9	1,627	4,421 13 10	36,323	1,04,686 9 11
4	Building Stone Revetment	25,991 1/2	18,827 4 0	11,428	8,918 7 9	14,563	9,908 12 3
5	Cutting Catch-drains	33,765	4,220 10 0	1,200	350 0 0	32,565	3,870 10 0
6	Clearing jungle for Camps and Roads	614 56 sq.	614 8 11	406 sq.	406 0 7	208	208 8 4
7	Building Parapets	1,320	660 0 0	...	...	1,320	660 0 0
8	Levelling Road	19 1/2 miles.	5,754 8 9	...	...	19 1/2 miles.	5,754 8 9
9	Metalling Road	33,765	25,323 12 0	...	...	33,765	25,323 12 0
10	Graveling...	11,255	2,813 12 0	...	...	11,255	2,813 12 0
11	Exploring, clearing, and tracing 50 miles	...	375 0 0	...	...	...	...
12	Bridle-path 20 miles	...	5,000 0 0	...	...	...	...
13	Repairing Monsoon damages	...	1,000 0 0	...	...	...	...
14	Road across Swamp at Pottinghy	...	450 0 0	...	...	...	...
15	Engineer's Bungalow	...	3,814 0 0	...	...	...	...
16	Road to do.	...	300 0 0	...	...	...	...
17	Office and Store-room	...	1,200 0 0	...	...	...	...
18	Well and Nursery	...	3,000 0 0	...	...	...	...
19	Building and maintaining Huts and Sheds	...	1,000 0 0	...	...	...	...
20	Medical Stores	...	1,500 0 0	...	...	...	...
21	Purchase of Tools and Stores	...	1,390 13 0	...	...	...	...
22	Carriage and Repairs of do.	...	150 0 0	...	...	...	...
23	Powder from Arsenal	...	250 0 0	...	...	...	...
24	Watchmen for Powder Magazine at Vizagapatam	...	150 0 0	...	...	...	...
25	Police Guards	...	57 0 0	...	...	...	...
26	Tappal Runners	...	25 0 0	...	...	...	...
27	Milestones	...	25 0 0	...	...	...	...
28	Surveying	...	17,255 2 11	...	...	...	...
29	Temporary Establishment and Sundries at 7 1/2 per cent.	...	9,47,290 0 0	...	...	...	...
	Total	...	...	...	47,407 3 4	...	1,99,882 12 8

(Signed) K. F. NORDMANN,
Executive Engineer.

VIZIANAGRAM,
31st March 1876.

Proceedings of the Madras Government, Public Works Department,
18th July 1876. No. 1,803.

No. 266-A.

MEMORANDUM.

New Pottinghy Ghaut.

THE expenditure upon this work in 1875-76 appears to have been concentrated on the items shown below; the other items enumerated in Memorandum of 20th January, recorded with G.O., No. 182, of 24th January, remaining the same. This is in conformity with the instructions of paragraph 4 of G.O., No. 2,675, of 17th September 1875.

	RS.	A.	P.
Maintaining Huts and Sheds...	...	243	2 9
Well and Nursery	...	5	0 0
Tools and Stores (carriage and repair)	...	45	13 11
Medical Stores...	...	14	1 0
Police Guards	...	106	11 11
Building Stone Revetments	...	3,457	14 5
Blasting and removing Rocks	...	927	7 11
Temporary Establishment and Sundries	...	298	7 11
		5,098	11 10
Former outlay...	42,308	7	6
Total up to 31st March 1876...	47,407	3	4

2. This is a poor show for a season's work on a ghaut road now estimated to cost upwards of 2 1/2 lakhs without bridges or drains. At which rate fifty years would be required to carry out the work.

3. The actual length and gradients of the line compare as follows with the forecast recorded in G.O., No. 1,944, of 5th August 1873.

Estimated.		Altitudes. Feet.	Actual.	
Miles.	Yards.		Miles.	Yards.
4	0	level.	4	0
5	0	1 in 18.	4	60
2	880	level.	3	1,690
1	880	1 in 17.	1	1,295
13	0		13	1,285
5	0	1 in 40.	4	935
2	0	1 in 18.	3	605
2	0	1 in 18.	1	1,020
9	0		9	800
22	0		23	325

4. The line must be considered to have worked out very well indeed as regards gradients and length; but the total cost of Rupees 3,23,290 now brought forward contrasts unfavorably with the former statement of Rupees 1,84,500. It is not clear indeed what width the latter sum provided, but it included under drains and minor bridges, not included in the Rupees 2,47,290 which has been worked out, the remainder being a guess. The Chief Engineer must express great disappointment that Mr. Nord-

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mann, after three years' employment on this special duty, has not supplied even sections of the few streams encountered on the line, or a detailed estimate from which the cost of different sections of the work can be ascertained.

5. For the suggestion of paragraph 2 of G.O., No. 1,944, of 5th August, must be acted on, and the line opened to 13 feet in width in sections. The first section to be undertaken being that from Salur to High Sunky Penta where the old Panchipenta ghaut road is crossed; nearly 14 miles in length, in which 2,000 feet out of the total 3,000 feet of ascent are surmounted. As this section is opened from Salur onward, labor will be more and more attracted from the low country; and it is inconceivable why portion of the funds not utilized, as well as of the working season, was not turned to account in opening from Salur to the foot of the ghaut. Between High Sunky Penta and Pottinghy the old and new lines cross each other nine times; and separate sections of the latter should be taken in hand, and opened to 13 feet in width, according to the comparative badness of the old sections which they will supersede.

6. It would no doubt be an immense advantage if a Company of Sappers could be set at this work; but in spite of Mr. Nordmann's eulogism of Rodavalsa as a Sapper Camp recorded with G.O., No. 3,006, of 22nd October 1874, the Chief Engineer remembering how they have suffered formerly on the Jeypore Hills is not prepared to recommend their being again exposed to the trial.

7. The Chief Engineer calculates that to form a roadway 13 feet in width out of a hillside about half the cutting out of the solid has to be made compared with a 20 feet road; and this accords pretty well with the statement of earthwork done, viz., 78,408 cubic yards as against that remaining to be done, 80,587 cubic yards. He would therefore estimate the total cost of widening to 13 feet at Rupees 83,000 as per detailed estimate appended.

No. of Item.	Sub-Heads of Estimates.	Quantity.	Cost.		
			RS.	A.	P.
1	Removing small Rocks and loose Stones without blasting	3,188 at 10 As....	1,992	8	0
2	Blasting and removing Rocks	17,348 at 2½ Rs....	43,370	0	0
3	Building Stone Revetment	14,563	9,903	12	3
4	Cutting Catch-drains	32,565	3,870	10	0
5	Building Parapets		660	0	0
6	Levelling Road		2,877	4	4
7	Metalling Road		12,661	14	0
8	Gravelling		1,406	14	0
9	Road across Swamp at Pottinghy		76	0	0
10	Engineer's Bungalow		1,906	15	5
11	Road to do		150	0	0
			78,880	14	0
	Sundries		4,119	2	0
	Total		83,000	0	0

The road dams alluded to by Mr. Nordmann have not been separately estimated for, and it is not known in what item of his estimate they are included. They are awkward

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expedients, and should be superseded by rough stone covered drains, such as have been so cheaply constructed on the Nilgiris.

OOTACAMUND, (Signed) G. W. WALKER, Major-General, R.E.,
8th June 1876. Chief Engineer, P.W.D.

No. 267.

ORDER THEREON, 18th July 1876, No. 1,803.

CIVIL WORKS, No. 21.

(a) Head of Service.—Provincial.
Fund.—Ordinary.
Class.—Original Works.
Main-head.—(2) Communications.
Sub-head.—Main Roads.
Name of Work.—New Pottinghy Ghaut.
Amount.—Rupees 1,30,400.
To be carried out by the Public Works Department.

His Excellency the Governor in Council is pleased to find that the length and gradients of the new Pottinghy ghaut have been worked out so fairly in comparison with the forecast made in 1873. But His Excellency regrets that the estimate now submitted by Mr. Nordmann is so deficient in detail. His Grace in Council considers

that the officer specially selected for such a work as this should not have failed to prepare and submit complete plans and estimates for bridges and drains, and for the road below the ghaut within the long period over which his employment on it has extended. With a roadway insisted by Mr. Nordmann to average 13 feet in width, ample opportunity of ascertaining the conditions of the nullahs intersecting it must have offered.

2. The Chief Engineer's estimate of Rupees 83,000 for completing the ghaut to a width of 13 feet throughout, without bridges, is accepted; making, with previous expenditure, a total of Rupees 1,30,400 in round numbers. The Jeypore Range Officer will be expected to make better use of this year's allotment of Rupees 20,000, especially in the execution of blasting, than has been done in the past year. Portion of it may be devoted to opening the road between Salur and the foot of the ghaut as soon as an estimate of its cost shall have been submitted and sanctioned. The ghaut work will be strictly limited to the portion below High Sunky Penta; and the Chief Engineer will be furnished with the detailed estimates of the whole line, from which the estimate submitted to Government was abstracted.

3. This sanction has been registered as Provincial No. 101-W. of 1876-77.
(True Extract.)

Colonel,
Jy. Under Secy. to Govt., P.W.D.

To the District Engineer, Vizagapatam.
" Examiner of Public Works Accounts.
" Revenue Department.
" Judicial Department.

Exd. W. H. French.

20 Spare Copies

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A 3369
Revenue Dept. Department
Govt. of 1876 Madras
PUBLIC WORKS.

To

THE DISTRICT ENGINEER,
VIZAGAPATAM,
&c., &c., &c.

✓
Dated July 1876

Issued

Recd. *17 Aug 4/90* Encl.

G. O., 18th July 1876, No. 1,803.

JULY.

Nos. 266-267.

New Pottinghy Chart, Vizagapatam District.—Passing orders on letter from the Officiating District Engineer submitting survey and estimate of Rupees 2,47,290, for the

A 1853
communicated to the Board
and signed D.H.
5 Aug 4/90.

New No. Sectt. I (3)-1—Old No. M.R.O. 1—10,000—10-6-68.

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