

(1) Number of pages _____
(2) Date of repair _____
(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public Works DEPARTMENT.

G.O. No. 1221	Press
668-669	Mis.
Dated 28-6-1864.	

Not to be folded or roughly handled

13a

*Proceedings of the Madras Government, Public Works Department,
28th April 1864.*

No. 608. Read the following letter from Lieutenant-Colonel J. C. ANDERSON, R. E.,
Superintending Engineer, 2nd Division, to Colonel C. A. ORR, R. E., Secretary to
Government, Department Public Works, dated Masulipatam, 6th April 1864, No. 82 :—

SIR,

1. I have the honor to submit an Estimate amounting to Rupees 19,000 for completing the
88th mile of Trunk Road No. 6. together with the Plans, &c.,
specified in the margin. *

1 Plan of road Dams. By banghy.
1 Section of Levels of Gudur Valley. Do.
1 Abstract Estimate.
1 Specification Report.
1 Original Report from Lieutenant
Smith, No. 15, dated 9th January
1863; †

2. To explain the necessity of the proposed works, I
shall have to give a brief history of the southern section of the
road for several years past.

3. An unusually heavy fall of rain occurred in November
1859 and damaged the road to a very serious extent. Colonel
Lawford, Deputy Chief Engineer, Northern Circle, inspected†
it for a distance of 80 miles, Súlurpett to Allúr, and reported
that 75,000 Rupees would be required for repair between Súlurpett and Nellore, including
restoration of the bridge across the Kalinga Nuddi at Súlurpett, and 20,000 Rupees more, north
of Nellore. Shortly afterwards Captain Mullins, then District
Engineer, submitted‡ detailed Estimates for the thorough repair
of the road from the southern boundary of the District at the
36th mile to 115th mile, amounting to Rupees 69,700; but not including the re-construction of
the bridge at Súlurpett. In this Estimate 14,000 Rupees were allowed for the various works
required at the 88th mile.

† G. O. No. 383, dated 21st February 1860

‡ No. 464, 10th March 1860, No. 708,
dated 12th April.

4. The Estimate, however, came to nothing. Captain Mullins left the District and was
replaced by Major Greenaway, who in reporting on the state of
the road gave§ it as his opinion that the only practicable mode
of disposing of the extensive drainages which cross it, was by
the liberal use of road dams instead of bridges.

§ No. 1,035, 23rd May 1860.

5. After some correspondence Major Greenaway was allowed to submit an Estimate on the
above principle, in lieu of that prepared by Captain Mullins. It
amounted to Rupees 31,700 || and allowed for the repair of the
road between the 49th and 95th miles, including a submerged
cause-way across the Kalinga Nuddi at Súlurpett, which, with the works connected with it, was to
cost 11,244 Rupees, so that for the repair of 46 miles of road including the portion where the
most serious damage had occurred, Major Greenaway allowed only 25,500 Rupees, while Colonel
Lawford and Captain Mullins had proposed an expenditure on the same distance of more than
double that amount; and at the 88th mile where Captain Mullins proposed to expend 14,000
Rupees, a road dam of 150 yards at 2,539 Rupees was all that was allowed by Major Greenaway

|| With letter No. 154, dated 30th Janu-
ary 1861.

6. Major Greenaway's Estimate was sanctioned in G. O. No. 1,182, dated 26th June 1861,
but, as might have been expected from the above considerations, various revisions have been
found necessary, and it is to be regretted that it was not cancelled, as soon as it became known
that the works were altogether on too slight a scale.

7. The following are the revisions that have been found necessary :—

	Rs.	A.	P.
Lengthening road dam from 100 to 150 yards at 94th mile, G. O. No. 698, dated 7th April 1862.	1,750	0	0
Additions and alterations of road dams and additional earth- work at 85th, 86th and 87th miles, G. O. No. 1,244, dated 3rd June 1862.	7,264	0	0
A further revision of Estimate for road dam at 94th mile, not due to any defect of original Estimate, G. O. No. 3,538, dated 2nd December 1863.	1,139	15	4
Revision of Plan and Estimate for cause-way across Kalinga Nuddi not yet prepared.	0	0	0
Revisions of Estimate for completing 88th mile for which a road dam of 150 yards, Rupees 2,539, was allowed. Estimate now submitted Rupees 19,000 excess.	16,461	0	0

*Proceedings of the Madras Government, Public Works Department,
28th April 1864.*

8. It will thus appear that the expenditure required to effect the repair of the road will approximate to the scale proposed by Colonel Lawford and Captain Mullins, while it is to be urged, in extenuation of the defects in Major Greenaway's Estimate, that the various works when completed on the principle he proposed, will afford a much larger amount of water-way, and render the road in every respect more secure against damage from floods than could have been accomplished by means of bridges, except at a much greater cost than had been contemplated by the other Officers.

9. I would now beg to offer a description of the work now estimated for on the 88th mile.

10. The 88th mile of the Trunk Road forms portion of what is called the Gúdúr Valley, which extends from the village of that name to Munabole a distance of four miles, and which is almost entirely submerged in heavy floods. It is intersected by two considerable rivers which drain an area of about 1,000 square miles, the line of Gháts for a distance of 35 miles forming the western boundry of the basin. The fall of rain in this portion of the District is at times extremely heavy, the soil generally stony, and experience has shown that a larger water-way must be allowed for the passage of the floods than would be thought necessary under ordinary circumstances.

11. It is possible that at some former period the two rivers referred to joined the tidal creek leading to Kistnapatam in well-defined channels, but they have been bunded for irrigation purposes and the beds raised, and the result is that the flood-water is distributed over a number of insignificant channels or after rising to a certain height, spreads over the country to a width of several miles.

12. The passage of the Gúdúr Valley is doubtless the most difficult portion of the Trunk Road, at least as far as the Nellore District is concerned. I am not aware when operations were first commenced upon it, but an embankment and numerous bridges supposed at the time to be sufficient to dispose of the drainage were constructed by the late Road Department. Nearly all the bridges were however built on too low a level, both as regards the floor and road-way, and numerous additions and repairs have since been found necessary.

13. The road across the southern portion of the valley in 85th, 86th, and 87th miles has lately been much improved. The bridges have been supplemented by several large road dams which must together have an enormous discharging power. But the 88th mile as yet remains untouched, and is the most serious obstacle to traffic between the southern boundary of the District and the Musúnúr Valley at the 137th mile. This mile of road is in very low ground, the bridges, as already mentioned, were constructed on too low a level, and with insufficient water-way and both they and the embankment have been destroyed by the floods of 1857 and 1859. There is no river at this point, but the over-flow of the Kundeleru from several miles higher up, and the surplus water from several tanks form together a very formidable stream as its effect on the road fully shows.

14. It would of course be useless to simply restore the embankment and bridges to the original condition, and it is recommended in preference to abandon the present line, and to form an entirely new piece of road, in a straighter course and where the ground is in every respect more favorable.

15. The flood-water will be concentrated in one stream, which will be disposed of by a under-slued road dam, which will only be submerged during extraordinary high floods. At other times the water will be discharged by the under-tunnel and would then of course offer no impediment to traffic.

16. The estimated cost of the proposed works amounts to Rupees 19,000, of which Rupees 15,600 are for the under-tunnelled road dam, and the remainder Rupees 3,400 for the portion of the new road in its flanks.

17. As regards funds 10,000 Rupees were allowed in the Income Tax Budget Statement submitted from this Office for the repair of the Trunk Road between 49th and 115th mile (Rupees 43,714), and if admitted by Government the greater portion may be appropriated for the proposed work.

*Proceedings of the Madras Government, Public Works Department,
28th April 1864.*

18. The project has been drawn up by Lieutenant Smith after long experience in the locality, and after a laborious investigation of all the circumstances connected with the floods in the Gúdúr Valley, and I beg to recommend it for sanction. The question as to whether road dams or bridges are the preferable mode of crossing well-defined streams can hardly be regarded as decided in favor of the former, but in cases like that under consideration when the spill of a river only is to be disposed of, road dams would seem to be on the whole superior to bridges. The only objection I have had to make to Lieutenant Smith's design is, that the want of parapets might expose carriages and bandies to accident, but it is stated in reply, that no inconvenience has arisen from the similar arrangement at the Pennair Anicut under-slues. At all events a light iron rail might be added hereafter if found necessary.

No. 669. ORDER THEREON, 28th April 1864, No. 1,221.

The Governor in Council sanctions the Estimate of Rupees 19,000 submitted with the foregoing letter for completing the 88th mile of Trunk Road No. 6, and, if practicable, will provide funds for the work in the Income Tax Budget of 1864-65.

(True Extract.)

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

To the Superintending Engineer, 2nd Division.
„ Controller and Auditor of Public Works Accounts.
„ Accountant General.

Exd. S. T. Augustin.

Abstract Estimate for 1863-64.
 Willone District.
 Work Constructing an Embankment, and an under-
 sluiced Road Dam, in the 88 Miles of French
 Road No 6.

Quantity	Description of work	Rate	Amount	Total
	Raising Embankment			
21919	Cubic yards of Earth work	" 12	1598	" "
962	Do of Gravel	" 12	722	" "
481	Do of Metalling	1	481	" "
17316	Square yds of Surfing	" 4	361	" "
	Extra Establishment and Contingencies		238	" " 3400
	Constructing an under sluiced Road Dam			
68967	Cubic feet of Brick in Churnam	" 2	8620	14 "
2352	Do of Arch work	" 2	636	8 "
5390	Do of Lateral	" 3	1010	10 "
8261 1/4	Do of Concrete	" 1	516	53
16133	Square feet of Plastering & Coats	2 8	403	52
1112	Cubic yds of Rough stone Aprons	2 8	2780	" "
9856	Do of Earth work	" 1	616	" "
156	Do of Gravel	" 12	117	" "
	Concrete under 2 Retaining walls	" "	150	" "
	Balancing	" "	100	" "
	Surveys and Extra Establishment	918	57	15600
	Total Estimate Proper			19000

Superintending Engineer
 2^d Division Madras
 2^d April 1864
 Comd. G. H.
 Signed J. W. B. Dyke
 Collector
 J. Anderson M. A. M. S.
 Superintending Engineer
 2^d Division Madras

Abstract Estimate for 1863-64.
 Willone District.
 Work Constructing an Embankment, and an under-
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17316	Square yds of Surfing	" 4	361	" "
	Extra Establishment and Contingencies		238	" " 3400
	Constructing an under sluiced Road Dam			
68967	Cubic feet of Brick in Churns	" 2	8620	14 "
2352	Do of Arch work	" 2	6367	8 "
5390	Do of Lateral	" 3	1010	10 "
8261 1/4	Do of Concrete	" 1	516	53
16133	Square feet of Plastering & Coats	2 8	403	52
1112	Cubic yds of Rough stone Aprons	2 8	2780	" "
9856	Do of Earth work	" 1	616	" "
156	Do of Gravel	" 12	117	" "
	Concrete under 2 Retaining walls	" "	150	" "
	Balancing	" "	100	" "
	Surveys and Extra Establishment	918	57	15600
	Total Estimate Proper		19000	" "

Superintending Engineer
 2^d Division Madras
 2^d April 1864
 Comd. G. H.

Signature of J. W. B. Dyke
 J. W. B. Dyke
 Superintending Engineer
 2^d Division Madras

P. W. D.

1217
No 1214

Proceedings of the Madras Government
Under date the 28th April 1864

Read the following letter

From the Superintending Engineer
10th 8th 8th

Submits a few remarks for
the consideration of Govt. which
may induce them to withdraw the
Censure passed in Govt. Order No. (Here Enter 7 April 1864 No 2202)
888 of the 31st Ultimo and states that
he receives no accounts from the
Collector either of Local funds or
of the Salt works paid for from
Imperial funds -

No. — No. — 8th 8th

Reports that he has
since received the Local fund
accounts sent, as they should
be through the Range officers -

Here Enter 12 April 1864 No 2202

Enclosure

The explanations
furnished by Captain
Moberly though failing
to satisfy the Government
that sufficient care has
been taken by him to
maintain the harmony
that has hitherto existed
between the Departments

Enclosed in a letter from
the Superintending Engineer
No 82 dated 11th April 1864

10th 13th 23rd 1864

Estimate No 13 of 1863-64

Mr. C. Conduffery on
Bank Account and an
under drawn No 2000
in the 88th of Govt.
No 2000 amounting
to Rs 19,000

of P.W. and Revenue,
yet lead them to hope

that the cordial co-
operation of the two

Departments was not
more than temporarily

weakened and has
been thoroughly restored.

AB.

To The Subgrants & 24.
Dated 29th April.

No 82

Suprs Engrs Office 2nd
Maidulpatam
6th April 1864.

From

Sub Col J. C. Anderson R.E.
Super Engineer 2nd Div.

To
Colonel C. A. Ore R.E.
Secretary to Government
D. P. W.

Sir
I have the honor to submit
an Estimate amounting to Rupees 19,000
for completing the 88th mile of From & Road
No 6 together with the plans &c specified
in the margin.

x By Banghy

2 To Explain the necessity of the pro-
posed works, I shall have to give
a brief history of the Southern Section
of the Road for several years past.
3 An unusually heavy fall of rain
occurred in November 1857 and damaged
the Road to a very serious extent. Colonel
Lawford Dy Chief Engineer Northern
Circle inspected it for a distance of
80 miles Sulurpett to Alliss and

J. C. No 333
of 21st Febry 1860.

reported that 75,000 Rs. would be required for repair between Sulerpet and Bellare, including restoration of the Bridge across the Kalinga Nuddi at Sulerpet, and 20,000 Rs. more, north of Bellare. Shortly afterwards Captain Mullins then District Engineer submitted detailed Estimates for the thorough repair of the Road from the Southern boundary of the District at the 36th mile to 115th mile, amounting to Rs. 69,700; but not including the reconstruction of the Bridge at Sulerpet. In this Estimate 14,000 Rs. were allowed for the various works required at the 88th mile.

4 The Estimate however came to nothing. Capt. Mullins left the District and was replaced by Major Greenaway, who in reporting on the state of the Road gave it as his opinion that the only practicable mode of disposing of the extensive drainages which cross it, was by the liberal use of road dams instead of Bridges.

5 After some correspondence Major Greenaway was allowed to submit an Estimate

Print Letter

No 154 dated

30th January 1861

No 464

10th March 1860

708 8/13 April

May 1860

No 1035

23rd May 1860

on the above principle, in lieu of that prepared by Captain Mullins. It amounted to Rs. 34,700, and allowed for the repair of the road between the 49th and 95th mile, including a submerged Causeway across the Kalinga Nuddi at Sulerpet, which, with the works connected with it, was to cost 1,124,400, that for the repair of 46 miles of road, including the portion where the most serious damage had occurred. Major Greenaway allowed only 25,500 Rs. while Colonel Lawford and Captain Mullins had proposed an expenditure on the same distance, of more than double that amount; and at the 88th mile, where Captain Mullins proposed to expend 14,000 Rs., a road dam of 150 yards at 2539 Rs. was all that was allowed by Major Greenaway.

6 Major Greenaway's Estimate was sanctioned in G. O. No 1182 dated 26 June 1861, but, as might have been expected from the above considerations, various revisions have been found necessary.

reception and it is to be regretted that it was not cancelled, as soon as it became known that the works were altogether on too slight a scale.

The following are the revisions that have been found necessary.

Lengthening Road dam from 1006 to 1507 ft. at 9 1/4 mile. G. O. No 698 dated 7th April 1862. 1750

Additions and alterations of Road dams. & additional Earthwork at 85th, 86th and 87th miles G. O. No 1244 of 30 June 1862. 7264

A further revision of Estimate for Road dam at 9 1/4 mile, not due to any defect of Original Estimate. G. O. No 3538 of 2nd Dec 1860. 1139-15-4

Revision of plan and Estimate for Causeway across Kalinga Buddi not yet prepared.

Revision of Estimate for completing 88th mile for back a road dam of 1507 ft. No 2539 was allowed. Estimate now submitted Rs 19,000. Exp. 16461

Pro: January/June 91-92 77/1864-2400
 " 15 Marches — 563 364
 " 31 — 566 567

77/1864-2400
 Pro. of Gov. G. O. No 1112

From
 The Superintendent
 To The Secretary to Gov.
 P. H.

Dated 7th April 1861
 Recd. 14th

No 1217-28th April

Submits a few remarks for the consideration of which may induce them to withdraw the Censure from the Govt Order No 1112 of 3rd Dec 1860. and that he receives no Accounts of the Collector either of the funds or of the Salt works for from Imperial funds.

5660

8 It will ^{thus} appear that the expenditure to
be required to effect the repair of the road, &
will approximate to the scale proposed by
Col. Lawford and Capt. Mulline,
while it is to be used in extension
of the defects in Major Greenaway's
Estimate, that the various works when
completed on the principle he proposed,
will afford a much larger amount
of waterway, and render the road, in
every respect more secure against
damage from floods. It could have
been accomplished by means of
Dikes, except at much greater cost
than had been contemplated by the other
Officers.

9 I would now beg to offer a
description of the work now estimated
for on the 88 miles.

10 The 88 miles of the Sumner Road forms
portion of what is called the Guider
valley, which extends from the village
of that name to Munabole, a distance
of 4 miles, and which is almost
entirely submerged in heavy floods. It is
intersected by two considerable rivers

which drain an area of about 100.0 square miles. The line of ghats for a distance of 35 miles forming the western boundary of the basin. The fall of rain in this portion of the District is at times extremely heavy, the soil generally stony, and experience has shown that a larger waterway must be allowed for the passage of the floods than would be thought necessary under ordinary circumstances.

11. It is possible that at some former period the two rivers referred to joined the Tidal Creek leading to the Tistia Patam in well defined channels, but they have been bunded for irrigation purposes and the beds raised, and the result is that the flood's water is distributed over a number of insignificant channels or after rising to a certain height, spreads over the country to a width of several miles.

12. The passage of the Gujrat valley is doubtless the most difficult portion of the Tank Road at least as far as the Bellare Dill is concerned. I am not aware when operations were first

commenced upon it, but an embankment and numerous bridges supposed at the time to be sufficient to dispose of the drain age, were constructed by the late Road Department. Nearly all the bridges were however built on too low a level, both as regards the floor and road way, and numerous additions & repairs have since been found necessary.

13. The road across the Southern portion of the valley is 85, 86, and 87 miles. It has lately been much improved. The bridges have been supplemented by several large road dams, which must together have an enormous discharging power. But the 88 mile as yet remains untouched, and is the most serious obstacle to traffic between the Southern boundary of the Dill and the Indus valley at the 137 mile. This mile of road is in very low ground, the bridges as already mentioned were constructed on too low a level, and with insufficient waterway and both they and the embankment have been destroyed by the floods of 1897/1898. There is no river at this point, but the overflow of the Rindlerin, from

Several miles higher up; and the surplus water from several tanks, form together a very formidable stream, as its effect on the road fully shows.

14. It would of course be useless to simply restore the Embankment and Bridges to the original condition, and it is recommended in preference to abandon the present line, and to form an entirely new piece of road, in a straighter course, and where the ground is in every respect more favorable.

15 The flood water will be concentrated in one stream, which will be disposed of by a under sluiced road dam, which will only be submerged during extraordinary high floods, all other times the water will be discharged by the under tunnel; and would then of course offer no impediment to traffic.

16 The Estimated cost of the proposed work amounts to Rs 19000— of which Rs 15500— are for the under tunnelled road dam, and the remainder Rs 3400 for the portion of the new road in its plan &c—

17 As regards funds 10,000 Rupees were allowed in the Income tax Budget statement submitted from this Office for the repair of the Trunk Road between 49th and 115th mile (No 43714) and if admitted by Government the greater portion may be appropriated for the proposed work.

18 The project has been drawn up by Lt. Smith, who has long experience in the locality, and after a laborious investigation of all the circumstances connected with the floods in the Gishur valley, and I beg to recommend it for sanction. The question as to whether road dams or Bridges are the preferable mode of coping well defined streams can hardly be regarded as decided in favour of the former, but in cases like that under consideration when the spill of a river only is to be disposed of, road dams would seem to be on the whole superior to Bridges. The only objection I have had to make to Lt. Smith's design is, that

that the want of parapets might
expose carriages and bangies to
accident, but it is stated in reply,
that no inconvenience has arisen
from the similar arrangement at the
Punnair Ancient underpass. At
all events a light iron rail might be
added hereafter, if found necessary.

I have the honor to be
Sir
Yours most Obedt Servt

J. Anderson Esq
Super Engineer and Dy

1881-1882

Received of the
Honble Secy to Govt
of India
the sum of Rs 1000
on account of
the 1st instalment
of the 1st year's
rent of the land
situated at
Punnair
under the
management
of the
Punnair
underpass
for the year
1881-82

21 Feb 1864 or 8-9-

1864 2 Data
P. 4804 2 Data
C. 1864 2 Data

in 1864 2 Data
in 1864 2 Data

in 1864 2 Data
in 1864 2 Data

in 1864 2 Data
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1864 2 Data

1864 2 Data

1864 2 Data

The Governor in Council has
the estimate of \$19000 submitted with the
foregoing letter for completing the 88th
mile of South road No 6 and if practically
will provide funds for the same with
the same Tax Budget of 1864/65.

1864 2 Data

1864 2 Data

To the Clerk of the Court and the
Clerk of the Court of Sessions
Accountant General
1864 2 Data