

663 214.9.87
5-27-11 16.2.88
236-11 9.10.86.
237-11 29.1.85
2518-11 25.10.86.
3211-11 6.12.87

No. 3141 Wd/6 October
1888

Communicated to
Communicated to
the Supt. Engineer &
the Supt. Mag. &
Circle and the Examiner
Arch and the Examiner
Public Works Accounts
Public Works Accounts.

For
4/10/88

S. E. F. Circle ✓
S. G. V. Circle ✓ Desd
Exam. P. W. Accounts -
in P. W. 8/10

S. B.
0/2/10 R. 6.10.88.
0/27/10 4/10 P. 15/10 S. 11/10

PWC No 9844

Govt. of [188] Madras.
Local & Municipal Dept.

To

Mr P. W. Dept.

No. 3141 Wd/6 October
1888

R. 2.10.88

Proceedings, dated 9th September 1888.
No. 1745 P.W.D.

Subject.

Stating that the
charge for the scrutiny of plans
and estimates in connection
with the Godalun bridge,
in the South Arcot, should
be withdrawn.

With order
with order

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following paper :—

G.O., dated 4th October 1886, Mis. No. 1006 M., Financial.

Read—the following letter from the Chairman, Municipal Council, Cuddalore, dated 31st August 1886, No. 383 :—

I have the honor to forward, herewith, copy of a resolution passed by the Municipal Council at their meeting held on the 24th instant bearing on the subject of constructing a bridge across the Gadilam, and request that the Government will be pleased to consider favorably the application of the Council for undertaking the work from the Provincial funds.

Endorsement on the above.

No. 334.

Submitted to Government with the remark that the reconstruction of the bridge over the Gadilam is a work of the first importance. The bridge is that which connected the railway with the civil station of Cuddalore. In consequence of its destruction in the floods of November and December 1884, cart-traffic is frequently suspended, although a temporary causeway has been constructed. Both sides of the river are within the municipal limits. The District Board is at present unable to render any assistance, being itself dependent upon Provincial grants for the restoration of flood damages.

(Signed) H. P. GORDON,
Collector.

6th September 1886.

ENCLOSURE.

Proceedings of the Municipal Council of Cuddalore passed at a meeting held on the 24th August 1886.

Read again G.O., 5th June 1886, No. 616 L.F., reviewing the Local Fund budget of the South Arcot district for 1886-87.

10. Recorded—the Council observe that the Provincial finances have now improved and avail themselves of this opportunity of appealing to Government to take into consideration the construction of a new bridge across the Gadilam, which is roughly estimated to cost 2 lakhs of rupees—*vide* G.O., 29th January 1885, No. 237 W., Public Works.

The Council regret that their resources are such as will never enable them to contribute towards a structure of this kind.

(Signed) S. DEVANAYAGA MUDELLIAR,
Chairman.

Order—dated 4th October 1886, Mis. No. 1006 M., Financial.

Transferred to the Public Works Department for consideration in connection with the Provincial Public Works budget for 1887-88.

(True Extract.)

(Signed) E. S. LAFFAN,
Under Secretary.

ORDER—dated 9th October 1886, No. 2636 W., Public Works.

Communicated, with advertence to G.O., No. 237 W., dated 29th January 1885, to the Superintending Engineer, V Circle, who will, in communication with the Municipality and the District Board, submit plans and estimates for reconstructing the Gadilam bridge.

2. On receipt of the estimate, the question of providing funds for the work will be considered.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, V Circle.

- „ Financial Department.
- „ Revenue Department.
- „ Chief Engineer for Irrigation.

Exd. A. Aubert.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Gobt. of (1886) Madras.
PUBLIC WORKS.

Dated October, '9th.

Recd.

Encl.

G.O., 9th Oct. 1886, No. 2636 W.

OCTOBER.

Gadilam Bridge

Plans and estimates for reconstructing the
— at Cuddalore, called for.

16TH FEBRUARY 1888, No. 527 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.
PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following papers :—

From Colonel H. M. VIBART, R.E., Superintending Engineer, V Circle, to the Chief Engineer, Public Works Department, dated Shatiatope, 26th January 1888, No. 4496.

With reference to paragraph 1 of G.O., No. 2636 W., dated 9th October 1886, I have the honor to submit for sanction, under paragraph 8 of G.O., No. 3211 W., dated 6th December 1882, plans and estimate of Rs. 1,66,000 for constructing an iron girder bridge of 13 bays of 62 feet span each and roadway of 18 feet clear across the Gadilam river at New Town of Cuddalore in lieu of the masonry bridge destroyed by floods of 1884, together with the covering letter of the President of District Board, South Arcot, No. 1, dated 6th January 1888.

2. The plans and estimate have been prepared in accordance with your memorandum, No. 3074 C., dated 13th September 1887, with the exception that the corrugated iron floor sheets available in the Public Works Stores are not to be used because each sheet is only 2' 2" broad and therefore they cannot be used without having the cross joists 2' 2" apart which would throw great extra weight on the bridge as regards fixed load and increase the expenditure as regards the cost of cross joists.

3. The President suggests that a Special Engineer should be appointed to supervise the construction of the Gadilam and Ponniar bridges, an estimate of Rs. 1,66,100 for the latter bridge having been sanctioned in G.O., No. 3148 W., dated 21st November 1887. I support the suggestion of the President and recommend that a Special Engineer may be sanctioned, as it will be impossible for either the Executive Engineer of South Arcot division or Local Fund Engineer to give sufficiently close attention to the works.

Note by the Chief Engineer, Public Works Department.

The waterway allowed approximates to that of the railway bridge above, and is considered sufficient.

2. Wells are allowed under the foundations 32 feet deep, because at a boring made in the river bed clay was reached at this depth. It is understood that only one boring was made (the position is not stated), and it seems probable that clay will be found at a considerably less depth in other parts of the section. If, as the report states, it is expected that clay will be found at no great depth below ground surface at the sections of the wings, it is not probable it will be 32 feet below the wings. The depth of the wells must therefore be decided when the work is commenced, and it will probably be considerably less than the estimate provides for.

3. The estimate is recommended for sanction.

CHEPÂK,
10th February 1888.

(Signed) J. O. HASTED, Colonel, R.E.,
Chief Engineer, P.W.D.

ORDER—dated 16th February 1888, No. 527 W., Public Works.

The estimate, amounting to Rs. 1,66,000, for constructing an iron girder bridge across the Gadilam river at Cuddalore, is sanctioned.

2. Attention is drawn to paragraph 3 of G.O., dated 23rd January 1888, No. 199 L., Local and Municipal Department, with reference to the suggestion that a special officer be deputed to supervise the construction of the Gadilam and Ponniár bridges.

3. This sanction has been registered as Local, No. 44 W. of 1887-88.

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Local and Municipal Department, with twenty enclosures.
„ Superintending Engineer, V Circle.

BUILDINGS AND ROADS.
CIVIL WORKS.

Gobt. of (1888) Madras.
PUBLIC WORKS.

Dated February, 16th.

Recd.

Encl.

G.O., 16th Feb. 1888, No. 527 W.

FEBRUARY.

Bridge across the Gadilam
River at Cuddalore

Estimate for constructing an iron girder
—, sanctioned with remarks.

29TH JANUARY 1885, No. 257 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following letter from G. T. WALCH, Esq., Executive Engineer, South Arcot Division, to the Superintending Engineer, V Circle, dated Cuddalore, 31st December 1884, No. 663 :—

With reference to your No. 3544, of 13th instant, on proceedings of the Madras Government No. 3027,* of 9th December 1884, I have the honor to report as follows.

* Herewith returned as requested.

2. The Gadilam bridge had twenty segmental *arches* of 30-feet span; height of *piers and abutments* to springing of arches, 6 feet 6 inches; rise of *arches*, 7 feet 6 inches; *floor* in form of an invert with 2 feet versed sine and extending 6 feet beyond cutwaters up and down stream; *piers* 5 feet thick; *foundations* of piers and abutments 8 feet in depth below springing of invert floor; *retaining walls* of floor to same depth as foundation.

3. The bed of the river at the site is tidal loam below the surface, which is of pure sand of varying depth.

4. The bridge was built 1843 to 1847. In October 1864, when there was a very high flood, ten arches fell or were so shaken that they had to be removed; these were rebuilt in 1865-66.

5. On the 7th of this November six arches fell or were shattered.

6. The immediate cause of this destruction was, as with most of similar mishaps to bridges of the kind, insufficiently broad protection on the upstream side, where, in high floods, dangerous eddies are of course set up near the piers.

7. One of these eddies evidently undermined the upstream ends of the third and fourth piers† which, sinking, carried with them the arches which sprang from them, and another pier and arch followed, whilst two more were shattered.

8. Mr. Norfor, the Local Fund Engineer, who saw the bridge just before it fell, tells me that water did not rise to the crown of the arches; and I believe that, with efficient protection on the upstream side, the bridge would not have then gone.

9. Judging from *that* flood, with regard to which this report has been called for, I would have recommended the restoration of the bridge between its then existing abutments, substituting iron girders of 60-feet span for the ruined arches, and the provisions of a sufficiently broad upstream floor or “apron” along the whole length of the bridge, and also certain training works to bring the river more directly to the bridge and lessen the now considerable “set,” and therefore disturbance, on the western side.

10. But on 18th instant (December) there came a much higher flood, which turned the bridge on its western flank, destroyed the abutment there, and completely wrecked the remainder of the bridge except the seven most eastern arches.

11. For that flood the waterway between the former abutments would not be enough even if girders were substituted for arches; the railway bridge, about two miles higher up the river, has one thousand running feet of clear waterway through which the river flowed upwards of 14 feet deep, whilst besides this an enormous volume of water left the river just above that bridge and flowed down to Tirupapuliur and so back to the Gadilam below the ruined road bridge.

12. If the discharge down the Gadilam could be confined to the drainage of its own basin, then the ruined bridge might be reconstructed of its old total length; but if the Gadilam is to receive, as it certainly did in former days and has now again received, a great access of water from the Ponniár, then, judging from the railway bridge, which in the recent flood was certainly not too large, any new bridge at Cuddalore should have at least one thousand *running* feet and fourteen thousand *square* feet of waterway as against six hundred running feet and seven thousand six hundred square feet of the old structure. Girders of at least 60-feet span on deep and well protected foundations are alone suitable for the site.

No. 3802.

Endorsement on the above.

Forwarded to the Chief Engineer, Public Works Department, with reference to paragraph 1 of G.O., No. 3027 W., dated 9th December 1884.

(Signed) H. L. PRENDERGAST, Colonel, R.E.,
Superintending Engineer, V Circle.
10th January 1885.

ORDER—dated 29th January 1885, No. 237 W., Public Works.

Communicated to the Revenue Department, with advertence to G.O., in that department, No. 1297, dated 24th November 1884.

2. The cost of a new bridge of the dimensions recommended by the Executive Engineer is roughly estimated at two lakhs of rupees, and the Government, in the Public Works Department, are unable to accept that large expenditure as a charge against the State.

3. The Government will probably be prepared to assist in the matter, but it is considered that the first action must be taken by the Municipality and the Local Fund Board.

(True Extract.)

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Revenue Department.

„ Financial „
„ Superintending Engineer, V Circle.
„ Chief Engineer for Irrigation.

Exd. A F. Aaron.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1885) Madras

PUBLIC WORKS.

Dated January, 29th.

Recd.

Encl.

G.O., 29th Jan. 1885, No. 237 W.

JANUARY.

Gadilam Bridge

Orders on report of the Executive Engineer on the subject of the restoration of the —.

6TH DECEMBER 1882, No. 3211 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Establishment.

Nos. 43 & 44.

ORDER—dated 6th December 1882, No. 3211 W., Public Works.

In Proceedings of Government in the Financial Department, No. 609, dated 22nd March 1880, it was decided that the examination of plans and estimates of such Local Fund Works as might be of too important a character to be left altogether for disposal by the Local Fund Boards should devolve upon the Chief Engineer, who would be aided by an Executive Engineer of the Public Works Department to be attached to his office.

2. All *New Works* estimated to cost Rs. 2,500 and upwards and all *Repairs* estimated to cost upwards of Rs. 10,000, as well as such other works as might require special professional scrutiny, were required to be submitted for examination by the Chief Engineer.

3. To meet the cost of the establishment requisite for undertaking the work thus devolving on the Public Works Department, a contribution from Local Funds of Rs. 21,250 yearly was sanctioned.

4. Temporary arrangements were accordingly made by the Chief Engineer for undertaking the work, and these were sanctioned in Proceedings, No. 918 W., dated 10th April 1880.

5. The arrangements thus approved were, however, objected to by the Government of India, who considered (*vide* paragraph 5 of their letter recorded with G.O., No. 2387 W., dated 16th October 1880) "that the Madras Provincial Establishment should be so organized as to permit the Chief Engineer's Office, or the offices of Superintending Engineers of Circles, to examine all important Local Fund Projects; that for conducting these duties no special allowance should be made to any officer, but a fixed contribution sufficient to cover the services performed should be credited to the source from which such establishment is paid; and that the full contribution of Rs. 21,250 should be accepted, and the duties distributed as the Madras Government may consider desirable."

6. After some correspondence with the Government of India the principle of the proposed arrangements was agreed to, and the decision recorded in G.O., No. 1729 W., dated 14th July 1881, paragraph 10.

7. Since then the details of the scheme have been under consideration, and it has now been finally determined that the work shall be distributed between Superintending Engineers and the Chief Engineer in accordance with the principle of the Public Works Code Rules.

8. All Local Fund Projects therefore requiring in future to be scrutinized by the Public Works Department will in the first instance be sent to the Superintending Engineer of the Circle, who will be authorised to deal finally with the professional details of *New Works* estimated to cost above Rs. 2,500 and up to Rs. 5,000. Those costing above this amount will be sent forward by Superintending Engineers to the

Chief Engineer after undergoing the same examination as ordinary Public Works. All *Repair* estimates above Rs. 10,000 will be dealt with by Superintending Engineers as in the case of Public Works Repairs. Any estimate may however be sent on to the Chief Engineer should either the Superintending Engineer or the Local Fund Board concerned desire the opinion of that officer.

9. To admit of these arrangements being carried into effect, it will be necessary to slightly augment the offices of Superintending Engineers and the Chief Engineer, while improving the position of the senior Clerks in the offices of the former. Extra Draftsmen on a rate of pay superior to that hitherto provided for in the Public Works Department are also allowed. It is very desirable that men of superior attainments should be encouraged to qualify for the position of Draftsmen, and it is hoped that the enhanced rate of pay now sanctioned will act as some inducement.

Should the general standard of efficiency hereafter increase, the Government will be prepared to consider the propriety of still further augmenting the scale of pay in the higher appointments open to men of this class.

10. The following increases are now sanctioned to the offices of Superintending Engineers and the Chief Engineer, Public Works Department, the cost being covered by the contribution of Rs. 21,250 from Local Funds which the Accountant-General will, under orders in the Financial Department, arrange for bringing to account with effect from the current official year:—

Superintending Engineer's Office.

	RS.	RS.
(1) Difference between present salary of Head Clerk and that now sanctioned, viz., between 2nd Class, 1st Grade, and 2nd Class, 3rd Grade = $180 - 110 = \dots$	70	
(2) Difference between present salary of Second Clerk and that now sanctioned, viz., between 2nd Class, 3rd Grade, and 3rd Class, 2nd Grade = $110 - 70 = \dots$	40	
(3) Extra Clerk, 3rd Class, 3rd Grade, Rs. 50 to 60—mean	55	
(4) Extra Draftsman from Rs. 80 to 100—mean	90	
Total per mensem	255	
Total per annum (Rs. 255 $\times$ 12) =	3,060	
For six Superintending Engineers (Rs. 3,060 $\times$ 6) =	18,360	

Chief Engineer's Office.

(1) Extra Clerk, 3rd Class, 3rd Grade, Rs. 50 to 60—mean	55	
(2) Extra Draftsman (to supervise Technical Section) from Rs. 200 to 250—mean	225	
Total per mensem	280	
Total per annum (Rs. 280 $\times$ 12) =	3,360	
Total of Chief Engineer's and Superintending Engineers' Offices	21,720	

(True Extract.)

(Signed) R. H. SANKEY, Col., R.E.,
Secretary to Govt., P.W.D.

To Superintending Engineers.
To the Examiner, Public Works Accounts.
„ Financial Department.

Exd. E. Fernandez.
Spare Copies

GENERAL.
ESTABLISHMENT.

Gobt. of {1882} Madras.
PUBLIC WORKS.

Dated December, 6th.

Recd.

Encl.

G.O., 6th Dec. 1882, No. 3211 W.

DECEMBER.

Local Fund Works

Plans and estimates for — to be scrutinized by the Chief and Superintending Engineers, and increases to their office establishments sanctioned.

5TH OCTOBER 1886, No. 1263 L.F., FINANCIAL.

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

READ—the following papers :—

Proceedings of the Board of Revenue, dated 31st March 1885, No. 1124.

Read—again Proceedings of the Board of Revenue, dated 29th April 1884, No. 1442.

Read—also the following papers :—

From the President, Local Fund Board, Anantapur,	dated 6th June 1884, No.	14.
" " " " Arcot, North,	" 23rd " " "	17.
" " " " Arcot, South,	" 14th Aug. " "	326.
" " " " Bellary,	" 29th May " "	38.
" " " " Canara, South,	" 25th Sept. " "	1254.
" " " " Chingleput,	" 6th " " "	31.
" " " " Cuddapah,	" 27th May " "	45.
" " " " Coimbatore,	" 1st June " "	317 L.F.
" " " " Ganjam,	" 10th May " "	980.
" " " " Godavari,	" 16th Aug. " "	86.
" " " " Kistna,	" 23rd Sept. " "	968.
" " " " Kurnool,	" 23rd " " "	19.
" " " " Madura,	" 16th May " "	61.
" " " " Malabar,	" 23rd June " "	1045.
" " " " Nellore,	" 1st Sept. " "	29.
" " " " Nilgiris,	" 11th July " "	34.
" " " " Salem,	" 28th May " "	1225.
" " " " Tanjore,	" 21st " " "	1291.
" " " " Tinnevely,	" 16th Aug. " "	145.
" " " " Trichinopoly,	" 13th Dec. " "	542.
" " " " Vizagapatam,	" 2nd June " "	470.
" " " " Accountant-General,	" 29th July " "	62-L.F.D.
" " " " " "	" 21st June " "	186-L.F.D.
" " " " " "	" 21st Feb. 1885, " "	

Resolution—dated 31st March 1885, No. 1124.

In G.O., dated 6th December 1882, No. 3211 W., Public Works Department, the contribution to be paid from Local Funds for the scrutiny of plans and estimates for Local Fund works by the Public Works Department was fixed at Rs. 21,250 per annum. The Board, however, observed in their Proceedings, dated 12th January 1883, No. 88, that as the number of estimates examined by the Chief Engineer in each year since the issue of G.O., dated 22nd March 1880, No. 609, was very small, the cost of the scrutiny for each estimate was proportionately heavy, and requested the Presidents of Local Fund

1880-81	35
1881-82	85
1882-83 (nine months)	51
Total	171

Boards to report, at the end of 1883, the number of cases in which it was found expedient to consult the Public Works Department, as it was thought that, as time went on, Presidents would avail themselves more freely of the services of Superintending Engineers. Again, in their Proceedings, dated 5th March 1884, No. 743, reviewing the operations of Local Funds for the year 1882-83, the Board remarked that the amount of contribution paid to the Public Works Department for the scrutiny of the estimates and plans for Local Fund works was excessive, being 23 per cent. of the outlay on works, the estimates for which were scrutinized by the Public Works Department, and promised to submit the matter for the orders of Government on receipt of the information called for from the Presidents in paragraph 3 of Board's Proceedings, dated 12th January 1883, No. 88, above referred to. The Government, in paragraph 11 of their order thereon, dated 10th July 1884, No. 1533, agreed with the Board in their opinion, and awaited the further communication promised on the subject.

2. As the district reports failed to supply adequate information on which to base an opinion in regard to the question whether Local Funds obtained a fair return for the contribution paid by them, the Presidents were requested, in Board's Proceedings, dated 29th April 1884, No. 1442, to furnish a statement in the form therein prescribed, and to this reference the above read letters are submitted in reply. Owing, however, to the numerous inaccuracies detected in these statements, the Board found it necessary to call upon the Accountant-General to furnish them with a statement of the expenditure incurred in 1883-84 on works whose estimates and plans were scrutinized by the Public Works Department, and from the figures given by him, the following statement has been compiled:—

Circles.	1	2	3	4	5	6	7	8	9	10
1. Anantapur ..	..	..	..	..	..	..	..	..	..	..
2. Arcot, North ..	..	..	..	..	..	..	..	..	..	..
3. Arcot, South ..	..	..	..	..	..	..	..	..	..	..
4. Bellary ..	..	..	..	..	..	..	..	..	..	..
5. Canara, South ..	..	..	..	..	..	..	..	..	..	..
6. Chingleput ..	..	..	..	..	..	..	..	..	..	..
7. Coimbatore ..	..	..	..	..	..	..	..	..	..	..
8. Cuddapah ..	..	..	..	..	..	..	..	..	..	..
9. Ganjam ..	..	..	..	..	..	..	..	..	..	..
10. Godavari ..	..	..	..	..	..	..	..	..	..	..
11. Kistna ..	..	..	..	..	..	..	..	..	..	..
12. Kurnool ..	..	..	..	..	..	..	..	..	..	..
13. Madras ..	..	..	..	..	..	..	..	..	..	..
14. Malabar ..	..	..	..	..	..	..	..	..	..	..
15. Nellore ..	..	..	..	..	..	..	..	..	..	..
16. Nilgiris ..	..	..	..	..	..	..	..	..	..	..
17. Salem ..	..	..	..	..	..	..	..	..	..	..
18. Tanjore ..	..	..	..	..	..	..	..	..	..	..
19. Tinnevely ..	..	..	..	..	..	..	..	..	..	..
20. Trichinopoly ..	..	..	..	..	..	..	..	..	..	..
21. Vizagapatnam ..	..	..	..	..	..	..	..	..	..	..
Total ..	..	..	..	..	..	..	..	..	..	..

Circles.	1882-83.					1883-84.				
	Number of estimates scrutinized and approved by Public Works Department.	Total value of the estimates.	Expenditure incurred on such estimates.	Amount contributed from Local Funds.	Percentage of column 5 to 3.	Percentage of column 5 to 4.	Number of estimates scrutinized and approved by Public Works Department.	Total value of the estimates.	Expenditure incurred on estimates approved in 1883-84.	Rs. A. P.
1. Anantapur ..	1	4,650	2,544 0 0	597 6 4	12.8	23.5	3	21,938	11,732 2 0	..
2. Arcot, North ..	1	14,708	800 0 0	187 14 0	1.3	23.5	3	30,550	8,404 6 1	..
3. Arcot, South ..	4	42,268	1,741 5 3	408 13 11	1.0	23.5	3	56,500	13,593 2 0	..
4. Bellary ..	2	11,992	3,806 4 1	893 13 3	7.5	23.5	3	..	..	..
5. Canara, South ..	3	47,507	14,384 14 5	3,378 4 1	7.1	23.5	3	..	..	..
6. Chingleput ..	..	..	..	..	..	..	..	..	..	..
7. Coimbatore ..	..	..	..	..	..	..	..	..	..	..
8. Cuddapah ..	..	..	..	..	..	..	..	..	..	..
9. Ganjam ..	..	..	..	..	..	..	..	..	..	..
10. Godavari ..	..	..	..	..	..	..	..	..	..	..
11. Kistna ..	..	..	..	..	..	..	..	..	..	..
12. Kurnool ..	..	..	..	..	..	..	..	..	..	..
13. Madras ..	..	..	..	..	..	..	..	..	..	..
14. Malabar ..	..	..	..	..	..	..	..	..	..	..
15. Nellore ..	..	..	..	..	..	..	..	..	..	..
16. Nilgiris ..	..	..	..	..	..	..	..	..	..	..
17. Salem ..	..	..	..	..	..	..	..	..	..	..
18. Tanjore ..	..	..	..	..	..	..	..	..	..	..
19. Tinnevely ..	..	..	..	..	..	..	..	..	..	..
20. Trichinopoly ..	..	..	..	..	..	..	..	..	..	..
21. Vizagapatnam ..	..	..	..	..	..	..	..	..	..	..
Total ..	30	4,55,234	90,485 10 8	21,250 0 0	4.7	23.5	61	6,96,162	1,49,596 12 1	..

Circles.	1883-84—contd.				Total.				Percentage of column 13 to 12.	Percentage of column 13 to 9.	Percentage of column 13 to 12.	Number of estimates.	Value of estimates.	Expenditure.	Amount contributed.	Percentage of column 19 to 17.	Percentage of column 19 to 18.
	Expenditure incurred on estimates approved in 1882-83.	Total of columns 10 and 11.	Amount contributed from Local Funds.														
	11	12	13	14	15	16	17	18	19	20	21						
1. Anantapur	Rs. 2,309 8 5	Rs. 2,309 8 5	Rs. 233 8 2	..	10-1	1	4,650	Rs. 4,853 8 5	Rs. 830 14 6	17-9	17-1						
2. Arcot, North.	2,434 4 2	14,166 6 2	1,432 0 0	6-5	10-1	4	36,646	14,966 6 2	1,619 14 0	4-4	10-8						
3. Arcot, South.	16,572 3 2	24,976 9 3	2,624 13 10	8-3	10-1	7	72,818	26,717 14 6	2,933 11 9	4-0	11-0						
4. Bellary	7,371 14 2	7,971 14 2	805 13 11	5-2	10-1	2	11,992	11,778 2 3	1,899 11 2	14-2	14-4						
5. Canara, South	12,220 12 1	25,813 14 1	2,609 7 8	..	10-1	6	98,007	40,198 12 6	5,987 11 9	6-1	14-9						
6. Chingleput	..	1,396 5 6	141 1 11	1-8	10-1	2	8,030	1,396 5 6	141 1 11	..	10-1						
7. Coimbatore	1,991 12 4	1,991 12 4	201 5 11	3-1	10-1	1	6,400	1,991 12 4	201 5 11	3-1	10-1						
8. Cuddapah	..	10,763 4 4	1,088 0 1	5-3	10-1	2	20,560	10,763 4 4	1,088 0 1	5-3	10-1						
9. Ganjam	..	712 3 6	71 15 7	2-7	10-1	9	67,275	14,699 2 8	3,356 12 3	5-0	22-9						
10. Godavari	863 0 0	24,969 0 0	2,624 0 10	2-8	10-1	6	2,74,511	48,904 1 10	8,145 1 6	3-0	16-7						
11. Kistna	7,414 0 0	10,814 0 0	1,093 2 6	9-3	10-1	2	34,060	10,814 0 0	1,093 2 6	3-2	10-1						
12. Kurnool	..	4,503 10 10	465 4 10	9-0	10-1	1	5,035	4,503 10 10	465 4 10	9-0	10-1						
13. Madura	..	26,062 11 4	2,634 10 2	1-7	10-1	4	1,58,215	26,062 11 4	2,634 10 2	1-7	10-1						
14. Malabar	..	4,723 7 9	477 7 0	11-	10-1	1	22,126	12,924 7 7	2,403 6 7	10-9	18-6						
15. Nellore	..	21,517 0 0	2,175 1 5	2-1	10-1	28	1,08,570	21,742 0 0	2,227 14 10	2-0	10-2						
16. Nilgiris	1,079 0 0	6,874 13 3	694 15 7	3-0	10-1	5	33,050	15,426 11 6	2,703 6 1	8-2	17-5						
17. Salem	..	2,651 7 5	267 15 9	0-6	10-1	4	52,075	4,894 7 5	794 12 0	1-5	16-2						
18. Tanjore	7,760 8 0	17,995 10 1	1,819 2 10	12-2	10-1	6	37,376	28,061 13 11	4,183 2 2	11-2	14-9						
19. Tinnevely	..	..	..	..	..	..	..	..	..	..	..						
20. Trichinopoly	..	..	..	..	..	..	..	..	..	..	..						
21. Vizagapatnam	..	..	..	..	..	..	..	..	..	..	..						
Total	60,616 14 4	2,10,213 10 5	21,250 0 0	3-6	10-1	91	10,51,396	3,00,699 5 1	42,500 0 0	4-0	14-1						

3. It will be observed from the above statement that the percentage of the contribution paid from Local Funds has fallen from 23 in 1882-83 to 10 in 1883-84, the large decrease being due to the fact that the expenditure incurred on such works in 1883-84 was more than double that incurred in the preceding year. The foregoing remarks contrast the contribution with expenditure, but a fairer method is to compare the contribution with the value of the estimates; the substitution of this process gives 4.7 and 3.6 as the percentages of 1882-83 and 1883-84, respectively. Even this rate is high when compared with that fixed in G.O., dated 28th April 1880, No. 871, for the preparation of designs and estimates for Government works by the Local Fund Engineering Establishment, viz., 5 per cent. on the amount of the estimate. From another point of view, it will be seen that in 1882-83 and 1883-84, Rs. 21,250 were each year contributed for the scrutiny of thirty and sixty-one estimates, which was at the rate of Rs. 708 in the former, and Rs. 348 in the latter, year, for the scrutiny of each estimate, which seems an unnecessarily high contribution, because the labor of preparation very much exceeds that of simple scrutiny. Under these circumstances, as materials for the formation of a definite opinion are at length before them, the Board resolve to recommend to Government that the contribution payable by Local Fund Boards to the Public Works Department for scrutiny of estimates shall be fixed at the uniform rate of $2\frac{1}{2}$ per cent. of the value thereof.

(A true Extract.)

(Signed) C. F. MACCARTIE,
Acting Sub-Secretary.

To the Chief Secretary to Government, Financial Department,
with twenty-four papers, in original, to be returned.
„ all Presidents of Local Fund Boards.
„ the Accountant-General.

No. 32.

Referred to the Public Works Department for remarks.

(By Order.)

MADRAS,
2nd May 1885.

(Signed) M. HAMMICK,
Acting Under Secretary.

No. 155-E.

MEMORANDUM.

Adverting to endorsement from the Financial Department, No. 32, dated 2nd May 1885, referring to the Public Works Department, for remarks, Proceedings of the Board of Revenue, No. 1124, dated 31st March 1885, embodying a suggestion that the contribution payable by Local Fund Boards to the Public Works Department for scrutiny of estimates should be fixed at the uniform rate of $2\frac{1}{2}$ per cent. of the value thereof, the undersigned has the honor to observe that the charge of Rs. 21,250 per annum now made to Local Funds, when distributed among the various circles, appears to be by no means excessive. There are twenty-one Local Fund circles, and the average annual contribution from each circle is Rs. 1,000, or about Rs. 84 monthly. The average monthly charge to each Local Fund circle is thus little more than the pay of a second-grade overseer, and for this amount the Local Fund Boards obtain the professional advice of officers of long and varied experience.

2. It is greatly to the advantage of public interests that Local Fund Boards should be encouraged to avail themselves to the utmost of the professional experience which is placed at their disposal, and in this aspect it appears better that the contribution should be in the shape of a fixed annual sum, than in that of a percentage charge on the amount of the estimates forwarded for departmental scrutiny.

3. If the Financial Department considers the contribution now made by the Local Fund Boards to be excessive, this department is of opinion that the proper course is to reduce its amount, but not to substitute for it a percentage charge.

OOTACAMUND, (Signed) J. SHAW-STEWART, Col., R.E.,
28th May 1885. *Secretary to Govt., P.W.D.*

To the Financial Department, with its C. No. 103 L.F., returned.

From the Secretary to Government, Public Works Department, dated 28th January 1886, No. 369-C.

ABSTRACT.—Forwarding statements showing the number and value of estimates for Local Fund works finally approved by Superintending Engineers during 1882-83, 1883-84, and 1884-85.

ORDER—dated 5th October 1886, No. 1263 L.F., Financial.

On a careful consideration of the foregoing papers, the Government are of opinion that the present arrangement should be discontinued. The sum of Rs. 21,250 now paid to the Public Works Department for the scrutiny of plans and estimates for Local Fund works covers the whole cost of an establishment engaged not only on local work but also on that of the Public Works Department, which is clearly unfair to the local boards. The Government accordingly accept the recommendation of the Board of Revenue that the contribution should in future be fixed at the rate of $2\frac{1}{2}$ per cent. on the value of the estimates scrutinized by the Public Works Department. This arrangement will accordingly come into force from 1st April 1886.

2. The attention of all Presidents of District Boards will be called to No. 36 of the new Local Fund rules sanctioned in G.O., dated 26th June 1886, No. 721 L.F., under which only estimates for new works connected with buildings, drainage and masonry, and generally all works of a special or unusual character, amounting to upwards of Rs. 2,500, and for all other new works amounting to upwards of Rs. 5,000, need be sent to the Public Works Department for scrutiny.

(True Extract.)

E. F. WEBSTER,
Chief Secretary.

To the Public Works Department.
„ the Accountant-General.
„ all Presidents of District Boards.

Exd. T. O'Connor.

Order the con No: 281814 of 24/10/86

Communicated with
advice to G.O. No. 321114
of 6/12/82. to the Exr
P.W. ats in view to the
necessary adjustments
being effected, also
to Superintending
Engineer for infor-
mation.

14/11/86 Jm. L.

Govt. of (1886) Madras.

FINANCIAL.

Issued

Recd.

Encl.

G.O., 5th Oct. 1886, No. 1263 L.F.

No: 281814 of 25th Oct. 1886

OCTOBER.

Scrutiny of Plans and Estimates.

Accepting the recommendation of the Board of Revenue that the contribution for the — for Local Fund works should, in future, be fixed at the rate of 2½ per cent. on the value of the estimates scrutinized by the Public Works Department; ordering that this arrangement be brought into force from 1st April 1886, and stating what estimates should be so scrutinized.

To.

Exr P.W. ats
By Engrs

6TH OCTOBER 1888, Nos. 3131, 3132, 3133 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General
Account.

READ—the following papers:—

From Colonel H. M. VIBART, R.E., Superintending Engineer, V Circle, to the Chief Engineer, Public Works Department, dated Chépák, 17th August 1888, No. 2208.

I have the honor to forward the plan s, &c., for the iron girders for the Gadilam bridge, South Arcot—

- 1 Tracing sheet, No. 2.
- 1 do. No. 3.
- 1 do. General elevation of two spans and section.
- 1 Sheet of calculation (19 pages).

2. I understand that you considered it would be desirable to have the piers 7 feet thick without batter, instead of 8' 6" at bottom and 6 feet at top. The span will then be 61 feet in the clear instead of 62.

3. Although these plans, &c., are to be forwarded to England, so that the iron work may be obtained from Home, Mr. Peters informs me that you considered girders of the same pattern as the "type designs" would be far preferable, as all the members being connected by pins there would be no riveting to be done in this country.

4. The width of roadway allowed in the type designs is only 14 feet, whereas it will be necessary to arrange for obtaining girders which will carry a roadway of 18 feet width.

5. It is more than probable that the design herewith forwarded will be revised in England, so it was not considered necessary to alter the original drawings which are intended for a clear span of 62 feet.

6. In ordering the girders, &c., the following points should be noted—

- (1) There are to be 13 spans of 61 feet clear.
- (2) The width of roadway is to be 18 feet.
- (3) All the members of the girders to be connected by pins to avoid riveting in this country.
- (4) Floor to be carried on buckle plates instead of planking.

7. Mr. Martin took the live-load on the bridge at 100 lb. per square foot. In the type design it is taken at 120 lb.

8. In the design sent up by Mr. Martin, buckle plates are allowed for an average thickness of gravel 63 foot. In the type designs planking is allowed with several inches thickness of gravel. It is thought that the buckle plates will be more lasting than the planking.

9. Mr. Martin's calculations of the girders accompany the plans which have not been altered except the small scale elevation and section of two bays which show the slight alteration proposed in the design.

10. It would be as well if the iron work was to reach this country in January. The cost of it could then readily be adjusted before the close of this official year.

ENCLOSURE.

From C. J. PETERS, Esq., Executive Engineer, in charge of Ponniár and Gadilam bridges, to the Superintending Engineer, V Circle, dated Cuddalore, 12th August 1888.

In accordance with the Chief Engineer's instructions, I have the honor to forward herewith the plans for the iron girders for the Gadilam bridge.

2. The Chief Engineer considered that the following alterations should be made in the design :—

The piers to be vertical and 7 feet thick from bottom to top instead of 8' 6" at bottom and 6 feet at top.

The span to be 61 feet clear instead of 62.

3. Although these plans are to be forwarded to England with the indent for the girders, it was considered that girders of the same pattern as the "type designs" would be far preferable, as all the members being connected by pins there would be no riveting to be done in this country.

4. As, however, none of the type designs have a greater width of roadway than 14 feet, it will be necessary to work out girders for a clear width of roadway of 18 feet.

5. As in any case it is probable that the design herewith forwarded will be revised in England, it was not considered necessary to alter the original drawings which are intended for a clear span of 62 feet.

6. Briefly the following are the main points to be noted in ordering the girders :—

(1) There are to be 13 spans of 61 feet clear.

(2) Width of roadway 18 feet clear.

(3) All the members of the girders to be connected by pins to avoid riveting at the site.

(4) Floor to be carried on buckle plates instead of planking.

7. I observe that Mr. Martin takes the live-load on the bridge to be 100 lb. per square foot. I think in the type designs it is taken as 120 lb.

8. As regards the dead-load, the buckle plates may make a slight difference and Mr. Martin allows for 63 thickness of gravel which amounts to about 80 lb. per square foot. I do not recollect what the weight allowed for gravel, &c., is in the type designs.

9. Mr. Martin's calculations of the girders accompany the plans which have not been altered except the small scale elevation and section of two bays which show the alterations in the design.

Office note from the Examiner, Public Works Accounts, dated Madras, 27th September 1888, No. 2325.

With reference to the accompanying letter No. 2433 A, dated 6th September 1888, from the Superintending Engineer, V Circle, forwarded to the Chief Engineer, Public Works Department, through me with an indent in triplicate for a wrought iron lattice girder bridge for the Gadilam river, I have to observe that the value of the bridge is not stated and I am unable to furnish the certificate prescribed by Code appendix G, para. 16.

2. In the note from the Chief Engineer, Public Works Department, No. 292 D, dated 8th June 1888, printed with Proceedings communicated with G.O., No. 2157 W., dated 16th July 1888, it is stated that exclusive of any payment to be made in England for iron works, a sum of Rs. 30,000 for each bridge will probably suffice, that is, Rs. 60,000 for the two bridges over the Gadilam and Ponniár rivers.

3. Arrangements are now being made to place a grant of Rs. 1,15,000 from Local Funds at the disposal of this department for the two bridges.

4. Please therefore inform me how much of the grant may be considered as set apart to meet the expenditure in England on account of this indent.

ENCLOSURE.

From Colonel H. M. VIBART, R.E., Superintending Engineer, V Circle, to the Chief Engineer, Public Works Department (through the Examiner of Public Works Accounts), dated Bangalore, 6th September 1888, No. 2433 A.

With reference to your memorandum No. 580 D., dated 27th August 1888, I have the honor to forward an indent (in triplicate) for a wrought iron lattice girder bridge for the Gadilam river in Cuddalore.

ORDER—dated 6th October 1888, No. 3131 W., Public Works.

Ordered that the indent be transmitted to the India office for compliance with request that the cost of the bridge work be intimated to this Government in view to the requisite funds being set apart for payment.

(Here enter No. 3132 W., dated 6th October 1888.)

(True Extract.)

(Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

To the Superintending Engineer, V Circle.
" Examiner, Public Works Accounts.
" Local and Municipal Department.

LETTER—to the Director-General of Stores, India Office, London, dated Ootacamund, 6th October 1888, No. 3132 W.

I am directed to forward herewith an indent, in duplicate, for the iron work required for the Gadilam bridge in the South Arcot district.

2. The indent is accompanied by three tracings and a sheet of calculations. Tracing No. I shows the general elevation of two spans of the bridge, with cross section, and it is proposed to build the bridge in accordance with the modifications of the design here given. The other plans * are forwarded unaltered, as it is probable that they will be revised in the India

office; but I am to request that the iron work may be prepared so as to allow for thirteen spans of 61 feet clear, the piers being 7 feet thick as shown in plan No. I.

3. The girders should be of the same pattern as those shown in the "type designs," all the members being connected by pins, so that there would be no riveting to be done in this country.

4. The width of roadway allowed in the type design is 14 feet, but the girders now indented for are intended to carry a roadway of 18 feet width. The floor is to be carried on buckle plates instead of planking, and the live-load is to be taken at 120 lb. per square foot as in the type design.

5. It is desired that the iron work should, if possible, reach this country by January, and that meanwhile the probable cost of the bridge work be intimated to this Government in view to the requisite budget provision being made to meet it.

(Here enter No. 3133 W., dated 6th October 1888.)

(Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

ENDORSEMENT—dated 6th October 1888, No. 3133 W., Public Works.

Copy of the above, with copy of indent, forwarded to the Government of India for information.

(Signed) J. O. HASTED, Colonel, R.E.,
Secretary to Govt., P.W.D.

Exd. J. Henricus.
Spare Copies

GENERAL.
ACCOUNT.

Govt. of (1888) Madras.
PUBLIC WORKS.

Dated October, 6th.

Recd.

Encl.

G.O., 6th Oct. 1888, Nos. 3131,
3132, 3133 W.

*origl mtd c. no. 1536 sent by
on 15/2/9*

OCTOBER.

Gadilam Bridge, South Arcot
District

Forwarding copy of indent for iron work
required for the —.

*Nos 5274 d/16.2.88
2374. 29. 1.85
26364. 9. 10.86
2818 tr. 25. 10.86
3211 tr. 6. 12.85*

1888.

P. W. DEPARTMENT.

Current No. 9064

From The Local and Municipal
Department.

ENCLOS.—

No. 770

Dated 8th September 1888.

Received

SUBJECT.

Gadilam Bridge & Cuddalore.

Requesting to direct the
Examiner S. W. Accounts to withdraw
the charge of Rs 4.150 on account
of the scrutiny of the estimate of
the — for remarks etc. from
President S. Board South Arcot.

DISPOSAL.

No. 663 D Dated 14th Sept 1888.

Returned with remark that as
the plans and estimates were
prepared by the P. W. Department,
no charge should have been
made to Local Funds for their
scrutiny.

(Signed) J. Harted (P. W. D.)

To Local and Municipal Dept
Secy to Govt P. W. Dept

Oct 12. 9. 14. 88

[25]

Local and Municipal Department.



PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following paper:—

Letter from the President District Board,
South Arcot, dated 9th August 1888 no 582,
requesting to direct the Examiner of Public
Works accounts to withdraw the charge
of Rs 4.150 on account of the scrutiny of
the estimate &c of the Gadilam Bridge.

Endorsement of the Secretary to Govern-
ment Public Works Department, dated
14th September 1888 no 663 D, returning
the above letter with remark that as
the plans and estimates in connection
with the Gadilam Bridge were prepared
by the Public Works Department no charge
should have been made to Local Funds,
for their scrutiny.

Order

Order thereon dated 24th September 1888 No 17452, mis

The charge in question should
be withdrawn.

(True Extract)

W. B. B. B.

Under Secy: to Govt. W. B. B.
for H. Chief Secy:

To

The Public Works Department

" Accountant General

" President District Board, South Arcot.

96

100/122