(1) Number of pages 230

(2) Date of repair 9.12.87

(3) Initials of the Referencer

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W. DEPARTMENT

G.O. No. B.P. No.	1525 W.	Press. Mis.
Dated	16. 6. 1886	~~198~~ .

ot to be folded or roughly handled.

16TH JUNE 1886, No. 1525 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following despatch from the Right Hon'ble the EARL OF KIMBERLEY, Her Majesty's Secretary of State for India, to His Excellency the Right Hon'ble the Governor in Council, Fort St. George, dated India Office, London, 20th May 1886, No. 2 (Public Works):—

With reference to your Excellency's Public Works letter, No. 2, of the 1st February 1886, recommending that type designs be prepared for bridge superstructures in order that the time of the engineers may be saved, I have to inform you that, in accordance with the recommendation of my professional advisers, I have authorised the preparation of designs and estimates for bridges rising from 5 feet to 25 feet by increments of 5 feet, from 33 feet to 66 feet by increments of 11 feet, and from 66 feet upwards by increments of 22 feet. This will give 13 types, instead of 21 proposed by Mr. Anderson, the District Board's Engineer in Malabar.

2. When these types have been prepared and approved, they will be lithographed and copies will be sent to the different Governments in India.

ORDER—dated 16th June 1886, No. 1525 W., Public Works.

Communicated to the Financial Department, and to Superintending Engineers, with advertence to G.O., No. 269 W., dated 1st February 1886.

(True Extract.)

Major, R.E.,
Under Secy. to Govt., P.W.D.

To the Financial Department.
To Superintending Engineers.
To the Superintendent of Works, Tank Maintenance Scheme.
To the Chief Engineer for Irrigation, with copy of G.O. No. 269 W.
„ Examiner, Public Works Accounts.

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1886} Madras.

PUBLIC WORKS,

Dated June, 16th.

Recd. *Encl.*

G.O., 16th June 1886, No. 1525 W.

JUNE.

Type Designs for Bridge Superstructures

Despatch from the Secretary of State intimating his having authorised preparation in England of —, communicated to the Financial Department and to Superintending Engineers.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

21st April 1879, No. 1,190 W.

Buildings and Roads.
Civil Works.

Read the following paper:—

No. 170. Proceedings of the Board of Revenue, dated 16th December 1878, No. 3,567.

From W. LOGAN, Esq., President of the Local Fund Boards, Malabar, to the Acting Secretary to the Board of Revenue, dated Calicut, 12th November 1878, No. 64.

I HAVE the honor to forward, herewith, for sanction of the Board and Government, an estimate with plan,* &c., for Rupees 63,330 for dismantling and rebuilding the abutments and wing walls of the Irrity bridge on the Coorg road in the Kotayam Taluk, Tellicherry Circle, and erecting a warren girder superstructure of iron four spans of seventy-one feet and two of thirty feet. Copy of the Resolution (paragraph 2) of the Tellicherry Circle Board passed at their meeting held on the 24th and 25th September last, sanctioning the above estimate, &c., is enclosed herewith.

* Under a separate cover.

2. For funds for this work the Tellicherry Local Fund Board has resolved to apply to Government for a loan to the amount of the estimate, to be repaid out of the toll collections at the bridge in the manner suggested by me in my letter to Revenue Board, No. 798-C, dated 6th March 1876, embodied in G.O., No. 1,703, dated 13th June 1877. The work is a very important one as it lies on the high road from the coast to Coorg and Mysore, and the want of the bridge was much felt during the height of the famine last year owing to the difficulty and expense of getting grain up the ghat. I request that Government may be moved to obtain sanction to the grant of the loan applied for.

ENCLOSURE No. 1.—Estimate.

ENCLOSURE No. 2.—Specification.

ENCLOSURE No. 3.—Map.

ENCLOSURE No. 4.—Extract from Proceedings of the Local Fund Board.

THE plan and estimate, amounting to Rupees 63,330, for dismantling and rebuilding the abutments and wing walls of the Irrity bridge on the Coorg road and erecting a warren girder superstructure of iron are submitted to Government with reference to their Order, Financial Department, dated 13th June 1877, No. 1,703.

2. The President states that "the work is a very important one as it lies on the high road from the coast to Coorg and Mysore, and that the want of the bridge was much felt during the height of the famine last year," and requests that Government may be moved to obtain sanction for the grant of a loan to enable the Local Fund Board to proceed with the work, there being no money available out of the Local Funds of the Tellicherry Circle in which the work is situated. There is no prospect of a loan being obtained at present under the terms of G.O., dated 29th November 1878, No. 2,128, and the execution of the work must be postponed till funds can be found.

(A true Copy and Extract.)

(Signed) J. STURROCK,
for Acting Secretary.

No. 171. ORDER THEREON, 21st April 1879, No. 1,190 W.

THE plan and estimate, amounting to Rupees 63,330, submitted by the Board of Revenue, for the reconstruction of the Irrity bridge on the Coorg road, in the Tellicherry Local Fund Circle, are sanctioned.

2. This sanction has been registered as Local No. 3 B of 1879-80.

(True Extract.)

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

To the Superintending Engineer, Fourth Circle.
" Examiner of Public Works Accounts.
" Board of Revenue.
" Financial Department.

Exd. C. Howarth.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1879) Madras.

PUBLIC WORKS

To

THE SUPERINTENDING ENGINEER,
FOURTH CIRCLE,
&c., &c., &c.

Dated April 21st.

Issued

Recd. *Recd.*

G. O., 21st April 1879, No. 1,190 W.

APRIL.

Nos. 170-171.

Irrity Bridge on the Coorg Road, Malabar District.—Sanctions plan and estimate for the reconstruction of the —.

2nd June 1884, No. 1373 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following papers :—

From C. A. GALTON, Esq., President of the Local Fund Board, Malabar, to the Chief Engineer, Public Works Department, dated Calicut, 18th April 1884, No. 105—Through the Superintending Engineer, IV Circle :—

I have the honor to submit, herewith, the plans and estimates (according to the list annexed) for the iron girder bridges which it is proposed to erect over the Iritty and Merumpoya rivers at the 27th and 13th miles, respectively, on the trunk road from Tellicherry to Coorg. This road is one of the most important lines of communication in the district, and carries a very heavy traffic during the coffee season. It is estimated that from four to five hundred carts pass along the road daily at this time of the year, and the absence of bridges over these rivers causes very great hindrance to the traffic. It is desirable, therefore, that sanction be obtained at the earliest possible date to admit of the materials being landed as soon as the next monsoon is over, in which case the bridges might be erected before the rainy season of 1885. Copy of the Local Fund Board's resolution passed at their meeting held on the 16th instant is submitted herewith.

2. As the Local Fund Engineer, Mr. Anderson, has dealt very fully with the circumstances of each case in his general reports accompanying the estimates, it is unnecessary for me to go over the same ground, and a few words of explanation will suffice.

3. The Iritty river probably presents greater difficulties than any other river in the district owing to its great breadth, depth, the rapidity of its current and the unhealthy nature of the locality. The amount of the present estimate is Rs. 78,000, and provides for an iron superstructure on the Whipple-Murphy single trellis system. The reasons for adopting this system in preference to others are fully explained in the report. It is proposed to have seven spans of 72 feet each, and the roadway will be 14 feet broad. The previous history of this bridge is given in Mr. Anderson's report, but the dates of construction of the original bridge, of its destruction and of its restoration cannot be ascertained. The records are possibly in the Public Works Department. No papers bearing on the subject have been discovered in the records of the Local Fund department. In 1878 the second superstructure was dismantled as it was in an advanced stage of decay; in the following year an estimate, amounting to Rs. 63,330, for a Warren girder bridge was sanctioned (*vide* G.O., dated 21st April 1879, No. 1190 W.) but further inquiry showed that alteration was required and a revised estimate, amounting to Rs. 47,700, was submitted for sanction (*vide* Board's proceedings, dated 5th August 1882, Mis. No. 5900). It does not appear that sanction was ever accorded.

4. Owing to the occurrence of very heavy floods in 1882, a re-investigation of the waterway was deemed desirable, and the searching inquiries which have been instituted by the Local Fund Engineer show that provision must be made for a much heavier flood-discharge than was considered necessary when the former estimates were prepared. This accounts for the increase in the estimate. The investigation has been very thorough, and Mr. Anderson has visited the locality time after time to ensure the accuracy of his calculations, which are clearly set forth in the papers. I am sure they may be accepted with confidence. As to the designs it will be patent that very great care and labor have been bestowed upon them, and Mr. Anderson's

thorough knowledge of this branch of his profession is a guarantee that his designs are the best suited for such a work as that under consideration.

The specifications contain very full instructions explanatory of the designs and there will, I imagine, be no difficulty in supplying materials with such detailed information as to what is required.

5. The old Merumpoya bridge was destroyed by a high flood in 1882. This is a comparatively small river, but it runs between lofty banks and provision has to be made for a much greater flood-discharge than was allowed for by the former structure. It is proposed to have three spans of 72 feet and the width of the roadway will be 14 feet. Owing to the nature of the bottom it will be necessary to construct wells, which involves extra expenditure on account of plant, &c., and the piers cannot be utilised as in the case of the Iritty bridge, where five piers are standing and in good condition; consequently the cost of this bridge is higher than that of the Iritty bridge in proportion to its length. The fullest information regarding the proposed structure is afforded in the report and accompanying papers, and it is unnecessary to enter into greater detail.

6. As regards the method of obtaining the materials, I think it will lead to economy and expedition if the Local Fund Board are permitted to procure them by private contract instead of through the store department of the India Office. When the original estimate for Rs. 63,330 was sanctioned there was some idea of procuring the materials through Mr. Maylor, of Messrs. Peirce, Leslie and Company, and perhaps some firm here or in Bombay may be willing to tender for the supply of the iron work. An alternative plan would be to employ a qualified Consulting Engineer, like Mr. G. B. Bruce of Westminster, who, I understand, has had large experience in the supply of iron girder bridges for Indian railways, to procure the materials in the cheapest market and pass them before despatch. His charges would probably add some £100 to the estimate, but as Mr. Anderson's rates are based on the highest quotations of recent date, it is probable that there will be savings on the iron work and, in any case, it will be worthwhile to pay a little more to ensure prompt delivery of the materials to admit of the erection of the bridges with the least possible delay. Even if the contract be given to a local firm, it will be necessary to employ an experienced engineer at Home to inspect and pass the materials to ensure their being in accordance with the specification, and properly tested. Owing to the very unhealthy and inaccessible nature of the locality it is not likely that any firm will undertake to *erect* the bridges by contract, and the Local Fund Board must make their own arrangements The estimates provide for a special staff for the purpose and a standing camp, as labor will have to be brought from a distance. It will be necessary also to provide medical aid. Mr. Anderson will himself direct operations, but his other duties will not admit of his devoting his whole time to the work, and a qualified Assistant Engineer must be entertained during the erection of the two bridges.

7. The excess over the budget provision can be met from the allotments for other new works. The total grant is Rs. 1,67,000, but it is impossible to undertake all the works which have been entered in the budget and several must be deferred for some time to come.

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Coimbatore, 1st May 1884, No. 210 E.W.

I have the honor to forward, herewith, a letter from the President, Local Fund Board, Malabar district, accompanied by plans, estimates, &c., prepared by the Local Fund Engineer, Mr. Anderson, for two bridges which it is proposed to erect on the Iritty and Merumpoya rivers at the 27th and 13th miles of the trunk road from Tellicherry to Coorg.

1 Original letter, No. 105, of 18th April 1884, from the President, Local Fund Board, Malabar.
2 Lists showing 80 enclosures of plans, estimates, &c., sent by banghy parcel.

2. The Iritty bridge, which is estimated to cost Rs. 78,000, is to take the place of one which consisted of four spans of 70 feet and two end spans of 15 feet, with masonry piers and abutments founded on rock and a superstructure of teak, which was so decayed in 1878 that it had to be pulled down.

3. The old masonry is to be utilised as far as possible, one new pier and two new abutments being required, and the proposed bridge is to consist of seven openings of 72 feet each, spanned by iron pony trusses on the Whipple-Murphy single trellis system, each 72 feet in clear and 76 feet effective, bearing a 14-feet roadway of wrought-iron plate cross-girders, stringer beams and timber platform. The special feature of the main girders is the connections by means of steel pins of 3¾ inch diameter, to which the designer, no doubt, justly attaches importance as greatly preferable to the ordinary system of rivetted connections.

4. The piers are 12 feet thick at bottom, 7 feet at top, and 22 feet long, exclusive of semi-circular cutwaters. M.F.L. is assumed to be 54·72 feet above the deep bed of the river, and there is to be a clear headway of 3 feet between that line and the underside of the cross-girders, so that the roadway will be about 59 feet above the deep bed.

5. The water-way provides for "a discharge of 250,000 cubic feet per second; due to 90 per cent. of an 18-inch down-pour" flowing off the catchment basin "in addition to the ordinary monsoon discharge of 80,000 cubic feet."

6. The Merumpoya bridge is to take the place of one of masonry, three spans of 36 feet, which was totally destroyed by a high flood on the 13th July 1882, and an entirely new structure is required.

7. The new Merumpoya bridge, which is estimated to cost Rs. 49,000, is to have three openings of 72 feet each, spanned by iron trusses and roadway exactly similar to those of the Iritty bridge.

8. The piers and abutments are to be carried up to a height of 30 feet above the deep bed so as to give a clear headway of 3 feet above M.F.L. The two piers, which are 6 feet thick, are to rest on wells sunk to 18 feet below the deep bed of the river at site; and the foundations of abutments are to be carried down through and rest on a bed of detrital laterite at 11 feet below the proposed new slope of river-bed and bank.

9. The proposed waterway provides for "a discharge of 47,000 cubic feet per second; due to 90 per cent. of an 18-inch down-pour, in addition to the ordinary monsoon flood-discharge of 10,500 cubic feet due to downpours of 3 to 5 inches lasting for three or four days."

10. The estimates have evidently been prepared with the greatest care by Mr. Anderson, and the papers sent give full information regarding the designs and method of construction, as well as reasons for the amount of waterway proposed, details of the rates, &c., and I see no reason to question the correctness of his figures or the suitability of his designs.

11. The estimates have apparently been submitted under one covering letter because it is proposed to carry them out at the same time by means of a special temporary establishment, which has been provided for, and because it is proposed to order from England at one time the iron work of the ten spans of 72 feet.

12. It will be observed that the Local Fund Board desire the earliest possible sanction in order that materials may be prepared and the works carried out without delay; funds being available in the budget of the present year.

13. In the examination of the estimates in this office no mistakes of any importance have been discovered.

Note by the Chief Engineer, Public Works Department.

These projects provide for bridges over two large streams, the Iritty and the Merumpoya, on the main line of road leading from Tellicherry to Coorg. The designs and estimates have evidently been prepared with unusual care, and are worked out in elaborate detail.

2. The Iritty bridge is designed with seven openings of 72 feet each in the clear, to be spanned by iron girders of the Whipple-Murphy type. The old bridge had four openings of 70 feet and two of 15 feet.

3. The Merumpoya bridge is designed with three openings of 72 feet each, spanned by girders similar in all respects to those proposed for the Iritty bridge. The old bridge had three openings of 36 feet.

4. The reasons for this large increase of waterway are stated by Mr. Anderson in his reports, and have been more fully explained to me in person. I am satisfied as to the accuracy of his calculations.

5. Since the estimates reached me, Mr. Anderson has slightly altered one of the formulæ for calculating the dimensions of the iron work, with the result that the weight of each complete 72-feet girder is reduced from 21·17 tons to 19·93 tons. He has thus been able to reduce the cost of the Iritty bridge from Rs. 78,000 to Rs. 76,600, and the cost of the Merumpoya bridge from Rs. 49,000 to Rs. 48,000.

6. These alterations have my full concurrence, and the estimates are recommended for sanction.

OOTACAMUND,
27th May 1884.

(Signed) J. SHAW-STEWART, Col., R.E.,
Chief Engineer, P.W.D.

ORDER—dated 2nd June 1884, No. 1373 W., Public Works.

The estimates as shown below are sanctioned for execution by the Malabar Local Fund Board :—

	RS.
Bridge over the Iritty river	76,600
Do. do. Merumpoya river	48,000

2. This sanction has been registered as Local No. 10 W. of 1884-85, and classified as Communications, Original Works.

(True Extract.)

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

To the Superintending Engineer, IV Circle.
" Board of Revenue, with eighty-two enclosures.
" Financial Department.

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1884) Madras.

PUBLIC WORKS.

Dated June, 2nd.

Read. *Encl.*

G.O., 2nd June 1884, No. 1373 W.

JUNE.

Bridges

Estimates, amounting to Rs. 1,24,600, *for constructing* — over the Iritty and the Merumpoya rivers, Malabar district, sanctioned for execution by the Local Fund Board.

16th July 1885, No. 477 L.F., Financial.

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

Read—again the following paper :—

G.O., dated 19th June 1885, Mis. No. 337 L.F., Financial.

Read—the following papers :—

From W. LOGAN, Esq., President of the District Board, Malabar, to the Chief Secretary to Government, dated Calicut, 4th June 1885, No. 33.

Referring to G.O., Financial department, 183 L.F., 19th May 1885, I have the honor to enclose, for your information, copy of a memorandum by the District Board District Engineer regarding the indent for iron work for the Irrity and Merumpoya bridges.

2. And I have the honor to draw your special attention to Mr. Anderson's remarks regarding the impossibility of getting a RIVETTED bridge put together in such out-of-the-way and deadly-feverish localities as those in which these two bridges are to be erected.

3. The question of having a RIVETTED bridge was deliberately discussed by the board, and was deliberately rejected in favor of pin-connected structures, for the ample reasons set forth by Mr. Anderson.

4. If the rivetted structures proposed to be supplied by the Secretary of State are sent out, Mr. Anderson, you will see, declines responsibility as to time and cost of erection.

5. Under these circumstances it seems to me to be absolutely necessary that a telegram should go to the Secretary of State requesting that pin-connected structures—and not rivetted ones—should be sent out. And it is of the very greatest importance that all corresponding parts of each superstructure should be interchangeable; the pins should therefore be uniform in size throughout each structure, and the dimensions of them should be governed by the largest tension eye-bars through which they pass. This also should be communicated by wire to the Secretary of State.

6. It should be specially noted that a maximum load of 80 lb. per square foot of roadway is all that is required for our bridges. This is what was already allowed for in Mr. Anderson's design and not 100 lb. as suggested by Mr. Batho.

7. Soliciting your very early attention to this very important matter.

8. The roadway must be placed in the bottom boom, as the headway is of the greatest importance in both bridges.

ENCLOSURE.

REPLY to General Hyde's report condemning my design for iron superstructures of Iritty and Merumpoya bridges, and recommending that a steel rivetted structure be supplied to the design and specification of Mr. Batho.

Paragraph 2 of General Hyde's letter.—The design is in accordance with the best American practice during the past fifteen years, and it will be hard for General Hyde to point to a single failure amongst any of the bridges of this type that have been constructed and erected on any of the best railway or roadway systems during the time referred to. Further, several of the most eminent English Engineers have since 1870 adopted this principle extensively, and with great success.

2. The Warren trusses for Kristna viaduct (Great Indian Peninsular Railway) which were constructed at the Skerne Iron Works, to the design of Mr. George Berkly, are on this system—pin-connected.

3. On the South Indian Railway the Whipple Murphy single trellis trusses for the following metre-gauge railway bridges were construcred in England to the designs of Mr. C. Douglas Fox, and are built on the principle now so sweepingly condemned by General Hyde :—

Palar	18	spans of	120	feet.
Panar	16	do.	100	„
Guddalum	10	do.	100	„
Thundiar	2	do.	100	„
Paravanar	2	do.	150	„
Vettaur	4	do.	150	„
Coleroon	14	do.	150	„
Gingee	7	do.	150	„

4. *Paragraph 3 of General Hyde's letter.*—In England at the present time and during the past fifteen years the making of link bars similar to those adopted in the bridges referred to has been a *specialité* with several well-known manufacturers. Some of these firms form the links out of the soild bars by stamping out the eye by hydraulic pressure. Others again cut up the old scrap bars into a pile sufficiently thick to make a link of the full dimensions. After the pile is thoroughly hot and the ends of the link formed under the hammer, the pile is then taken to the mill and rolled out; the ends are then cut and there is the link finished in a substantial manner.

5. As to the cost of these trusses being higher than the cost of rivetted work, it may be worth mentioning that Mr. C. Douglas Fox stated—*vide* C.E., Vol. 54—that he had obtained links at a less price per ton than the rivetted works in the same contract.

6. Some idea of the price of such pinned work as that proposed by me for the Iritty and Merumpoya bridges may be gained from the following :—

(1) In 1870-1 with bridge plates at £10 per ton the Warren trusses for the Kristna viaduct referred to, cost, as per details shown below, about £16 per ton :—

	£	s.	d.
All cast-iron per ton	11	6	0
Main trusses, cross girders, bracing and struts, per ton	13	18	0
Rolled eye-bars "horizontal and diagonal links," per ton ..	16	0	0
Steel pins, per ton	35	0	0
Do. rollers	25	0	0

(2) In April 1879 with bridge plates at £8-10-0 a contract for 7 spans of 150 feet Whipple Murply truss—for carrying a metre-guage Guaranteed (Indian) Railway; to the design of an eminent English Engineer was let as the following details at an all round rate of £13-14-0 :—

		£	s.	d.
34	tons cast iron in bed plate and caps, at £6-17-6 ..	233	16	0
242	tons Dt. iron in main girders exclusive of links, at £13-12-6	3,297	5	0
99	tons Dt. iron in links, at £15-12-6	1,546	17	6
111	tons Dt. iron in cross girders and rail bearers at £12-7-6.	1,373	12	6
8	tons iron in bolts and nuts, at £14-17-6	119	0	0
3½	tons Dt. iron in rollers and frames, at £28	98	0	0
15	tons steel in pins, at £23-17-6	358	2	6
512½		£7,026	13	6
	∴ for 1 ton =	£13	14	0

(3) In March 1883 with bridge plates at £9 another contract was let for 1—150 feet, 1—120 feet and 1—100 feet span Whipple Murppy trusses for carrying a metre-gauge Guaranteed (Indian) Railway; to the same design and specification as above as the following detail rates of £15-11-0 per ton :—

		£	s.	d.
20	tons cast iron in bed plate and washers, at £10	200	0	0
130	tons Dt. iron in main girder booms, struts and wind bracings, at £15-10-0	2,015	0	0
46	tons Dt. iron in horizontal and diagonal links, at £15-10-0	713	0	0
39	tons Dt. iron in cross girders and also rail bearers of 150 feet span £15-10-0	604	0	0
40	tons rolled beams and connectives, at £15-10-0	620	0	0
4	tons bolts and nuts, at £15-10-0	62	0	0
1¾	tons rollers and frames, at £15-10-0	27	2	6
8½	tons steel in pins, at £30-4-0	256	14	0
1	ton lead in struts, at £15-10-0	15	0	0
290¼		£4,513	6	6
	∴ for 1 ton ..	15	11	0

(4.) I have also received an offer from a well-known Engineer in this country to supply from the same eminent firm who supplied most of the materials for the works referred to in (2) and (3) the whole of the iron works required for the Iritty and Merumpoya bridges, to my design and specification, at an all-round rate of Rs. 290 per ton delivered at Calicut or Tellicherry. This offer was based upon the following rates :—

	£	s.	d.	
(*a*).—Rate per ton F.O.B.	19	0	0	This quotation was made after the manufacturers had inspected and accepted my design and specification.
(*b*)	2	4	0	Freight.
(*c*)	0	3	6	Insurance.
(*d*)	0	10	0	Shipping charge at 2½ per cent.
Total cost per ton ..	21	17	6	

The £19 per ton rate F.O.B. must of course have included all profits; this would probably not be less than 15 to 20 per cent., or, say, about £3 to £3-10-0 per ton. The offer was considered too high, being about £3 over my estimate, copy of which is given in detail in the appendices A and B.

(5) In March last another contract was let for seven spans of 150 feet of same trusses as per item (2) at an all-round rate of £13-18-0 per ton F.O.B. Detailed rates are given below :—

		£	s.	d.
34	tons cast iron in bed plates at £8-15-0	297	10	0
242	tons Dt. iron in main girder exclusive of links (at £13-12-6)	3,297	5	0
111	tons Dt. iron in main girders, cross girders, rail bearers (at £13)	1,443	0	0
99	tons horizontal and diagonal links, at £14-10-0	1,435	10	0
8	tons bolts and nuts, at £24	192	0	0
3½	tons rollers and frames, at £34	119	0	0
15	tons steel in pins, at £21	315	0	0
	Total ..	7,099	5	0
512½	∴ for 1 ton ..	13	18	0

7. With these facts before me I am at a loss to understand how Mr. Batho arrives at an all-round rate of £20 per ton for these trusses, &c. I observe Mr. Batho suggests that the pins near the centre should be increased : this remark perhaps throws some light on the high cost £20 assumed.

8. The whole essence of the simplicity and accuracy of construction lies in having pins and eyes of an uniform diameter throughout the whole truss. So that all this work is simple repetition, and this of course admits of the work being performed rapidly and cheaply. If, on the other hand, the dimensions of pins and eyes varied throughout the truss to suit each member, it can easily be seen that the work would be tedious and troublesome, and the cost would no doubt be greatly enhanced and perhaps reach near the figure named by Mr. Batho.

9. The dimensions of the pins for the whole truss are governed by the largest tension eye-bars throughout which they pass.

10. *Paragraph 4 of General Hyde's letter.*—I should feel greatly indebted to General Hyde if he will inform in what respects or features "this design does not appear altogether satisfactory." Mr. Batho points out that "the bottom members are rather bare in area and might be increased with advantage," but this statement was based on an assumed load of 100 lb. per square foot.

11. The assumed load for such second class—as regards heavy and constant traffic, where crowding will only occur at long intervals—roads as we have lying outside our city and town limits is taken at 80 lb. per square foot; there is ample metal area to meet the strusses developed by this maximum loading in the bottom members, and the surface pressure on the pins is everywhere well within the safe working strain.

12. The reason for adopting the pin and link system was as follows.

13. The bridges are situated away out in the jungles at the foot of the western ghauts in perhaps the most unhealthy locality in Southern India.

14. It is with the greatest difficulty that we can keep even our regular road coolies on the section throughout the dry weather—December to May—which is our working season for the bridge works. As an instance of how great the difficulty has been in keeping and getting labor at these places since the bridge works were started, I may mention that the contractors should have employed on an average about 200 or 250 coolies daily, and departmentally we should have employed about 100, but instead of this, we have never been able to keep more than half the number. Fresh squads are brought in, and perhaps one or two coolies go down with fever, then there is a stampede of both old and new laborers. Again, we have had great difficulty in getting skilled subordinate supervision, and the little we have got has been almost useless, for the men have all succumbed to the climate, and out of the two bridge inspectors and two sub-inspectors only one man now remains on the job, but he is quite "a wreck" and of very little use.

15. The skilled laborers—masons and brick-layers, stone-cutters and brick-makers—who have been brought in (some from the adjoining villages, while others again were brought in from the east coast at a great expense), knowing as they do that both places have such a bad reputation and we cannot help ourselves or readily get fresh labor if we dismiss them—are all causing much trouble and loss of valuable time, by short outturn of work. If a man in a squad from any village is fined, the whole of his mates at once resign and the work is allowed to slide, and thus the best part of the working season is lost.

16. With skilled laborers, such as mechanics and fitters brought in from the east coast, it can be easily seen—supposing we are able to get the men to come in—that it will be almost impossible to retain such men and handle them so as to get a fair day's work turned out.

17. As regards the actual difficulty to be overcome in the matter of erecting the iron work of these bridges, I pointed out in my report as follows:—

18. "In the erection of bridge trusses, having rivetted connections, the iron work is cheaper at first cost than trusses having pin-connections, but the erecting and fitting of such girders require a certain amount of skilled labor—mechanics and rivetters. In this country, with the skilled labor usually available for temporary field works in ordinary localities, it is exceedingly difficult to get the rivetting done so as to make a perfect joint, and one or two slack rivets in a joint will be sufficient to allow the whole girders to sag and get out of shape; such defects however cannot always be discovered at the time of erection, and generally speaking the weakness will not show till some months after, when atmospheric influences and vibration caused by traffic have affected the clutching and frictional power of the bad rivets. Certain iron bridges on this type erected in the Wynaad some years ago are generally sagged and now nearly all out of shape; and rivets are constantly being found loose."

19. To get the necessary skilled labor required to put such rivetted connection together in such places as Iritty and Merumpoya will be almost impossible, except at exorbitant and prohibitive rates, and even supposing we succeeded in getting this labor to these localities it would be impossible to keep them all constantly at work during the season. There is also the great difficulty in getting and keeping good and qualified subordinate supervision to look after the rivetting, and without this, work although apparently finished satisfactorily would certainly be fudged and have all to be done over again and not once only, but perhaps many times.

20. "With the pin system, the case is different, all the joints and the various details are carefully and accurately fitted at the factory or shops, which involves a high rate for the iron work in England, but as a setoff against this, we gain a most important advantage in having everything connected with the girders in a condition that makes it easy to put the various parts rapidly together, and thus admits of a quick, economical, and perfect fitting up and erecting of the trusses and platform into their permanent position, without the aid of skilled labor, and leaves no chance of bad workmanship at site, as the bridge must be put together properly or not at all."

21. The question of erecting and fitting the connections of truss at bridge-site is such a serious one that all other matters as to weight and original cost of trusses must give way to it. We know what we have to pay for good work at home, even for such expensive trusses as those designed by me for Iritty and Merumpoya, and further we know that we can get such trusses in the home market, but as regards the erecting and fitting of these rivetted girders, although we may know that we can get such structures and the actual cost of them at home or delivered at Calicut, we neither know what we may have to pay for skilled labor, nor are we sure that we

can get this labor, and, even supposing we can get it, it is highly probable that we will not be able to keep it, and in fact it is very doubtful if we could—within any reasonable time—succeed in putting the girders together in a satisfactory manner so as to get the full amount of efficiency out of them.

21. (*a*). If girders or trusses, having rivetted connection to be put together in this country, are supplied for Iritty and Merumpoya, I must refuse to accept any responsibility as to time and cost of erection of the same.

22. The ordinary coast cooly laborers—Moplah coolies—will very soon be trained to fit up the joints of pin-connected trusses. These men will receive 6 to 8 annas per day and will turn out a full day's work and the erecting charges will not exceed Rs. 40 or 45 per ton. If east coast mechanics and fitters are brought in to do rivetting they will probably cost one-and-a-half rupees per day, and will most likely never do more than half or three-quarters of a day's work. This combined with losses in advance made to these men—when they decamp before clearing or working off advances, as many of them certainly will do, if ever we succeed in bringing them in—will soon run up our erecting charges to perhaps not less than Rs. 80 or 90 or near 100 per ton. To these charges I would add the very low estimate of, say, two months' additional time for staff required to superintend the fitting up of these rivetted structures at, say, Rs. 1,200 per month, a total of 2,400.

23. The roadway must be carried on the bottom boom as the headway is of every importance in both bridges.

24. The appendices A to D give full details as to total cost of erection of the pin-connected superstructure according to estimates by Mr. Maylor and myself and appendices E and F give details for steel rivetted superstructure according to rates quoted (£15-10-0 supposed to be F.O.B.) by General Hyde and Mr. Batho.

25. It will be seen from appendix G that even with Mr. Maylor's high rate of £19 F.O.B. we can place the pin-connected superstructure (if old rails are allowed) in permanent position at not more than Rs. 1,500 in excess of the lighter (and cheaper to purchase) steel rivetted structure proposed by Mr. Batho and General Hyde.

26. I may mention that the rails for this work have already been purchased.

(Signed) GEO. ANDERSON, M.I.C.E.,
District Board District Engineer, Malabar.

4th June 1885.

APPENDIX A.

Details of cost of main girders for the seven bays in England as well as the charges on freight, &c., from England to the site of work and also the cost of putting up in position on the bridge.

Quantity.	Item of charges.	Rate. £ s. d.	Per	Amount. RS. A. P.	Total amount. RS. A. P.
TON. 1	Cost of materials in England as per over-leaf .. £ 16 s. 6	16 6 0	Ton.	..	
1	Cost of shipping from England to Tellicherry include freight and prisage, insurance and shipping charges	2 17 6	"	..	
	Total ..	19 3 6	..	249 0 0	
1	Cost of landing	..	"	10 0 0	
1	Cost of carriage from Tellicherry to Iritty bridge-site (27 miles), at 4 annas per cart conveying 1,200 lb. ..	..	"	15 0 0	
1	Cost of erecting and fitting up	..	"	40 0 0	
I	Cost of tarring after fitting up without scraping ..	..	"	3 0 0	
	Total cost per ton of main girder fitted up on the bridge complete	..	..	..	317 0 0

Note.—£1 = 12 rupees.

Abstract estimate of the cost.

Quantity.	Particulars.	Rate	Per	Amount. RS. A. P.	Total amount. RS. A. P.
7 × 14	Tons of main girders fitted up on bridge	317 0 0	Ton.	31,060 0 0	..
	Total of main girder thoughout the bridge ..	..	..	..	31,060 0 0

MALABAR CIRCLE.

Local Fund Department.

Data for the determination of the rate per ton of main girders for the iron superstructure of the proposed Irrity bridge.

Class.	Description of work.	Weight of each item as per detailed estimate for iron work.	Total weight under each class.
		TONS.	TONS.
1st ..	Angles and flats	5·880	
	Bracing plates, 128 lb. in each	·114	
	Hand rails	·240	
	Total of the first class ..	..	6·234
2nd..	Patent weldless die forged link bars	1·380	
	Do. do. do.	·860	
	Total of the second class ..	..	2·240
3rd ..	Plates and fees (1·680—·114)	1·566	
	Lateral and wind bracing	1·920	
	Total of the third class ..	..	3·486
4th ..	Rivets in top boom	·290	
	Do. in web compression	·120	
	Total of the fourth class ..	..	·410
5th ..	Steel pins	·630	
	Total in the fifth class ..	..	·630
6th ..	Cast iron	1·690	..
	Total in the sixth class ..	..	1·690
	Total in two main girders ..	..	14·690

Calculation of percentage of each description of work to the total weight.

Class.	Description of work.	Weight of each divided by the total weight.	Percentage or ratio which each work bears to a ton.
1st ..	Angles and flats	$\frac{6{\cdot}234}{14{\cdot}}$	0·4242
2nd..	Patent weldless die forged link bars	$\frac{2{\cdot}24}{14{\cdot}}$	0·1525
3rd ..	Plates and fees and lateral and wind bracing	$\frac{3{\cdot}486}{14{\cdot}}$	0·2374
4th ..	Rivets	$\frac{0{\cdot}410}{14{\cdot}}$	0·0279
5th ..	Steel pins	$\frac{0{\cdot}639}{14{\cdot}}$	0·0429
6th ..	Cast iron	$\frac{1{\cdot}690}{14{\cdot}}$	0·1151
	Total of all the percentages ..	..	1·0000

Cost price of the following different description of iron work in the proportion they occur in a ton of main girder.

Ratio in a ton.	Description of materials.	Rate.	Per	Amount in decimal of £.	Amount in £.	Total amount.
		£ s. d.			£ s. d.	£ s. d.
	Cost of Materials.					
0·3891	Angles and flats	7 0 0	ton.	2·7237		
0·1665	Patent weldless die forged link bars ..	16 0 0	,,	2·6640		
0·2384	Plates and tees	8 10 0	,,	2·0264		
0·0476	Rivets	12 0 0	,,	·3672		
0·0476	Steel pins	33 0 0	,,	1·5708		
0·1278	Cast iron	10 0 0	,,	1·2780		
1·000	Total cost price of the above per ton ..	..	..	10·6301	10 12 1	10 12 1
	Charges in Workshop.					
	Waste	5 0 0	cent.	..	0 10 5	
	Plating	1 16 0	ton.	..	1 16 0	
	Rivetting	0 11 0	,,	..	0 11 0	
	Painting	0 6 0	,,	..	0 6 0	
	Tools, stores and general charges	..	..	..	2 10 0	
	Total charges in Workshop per ton ..	..	..	..	..	5 13 5
	Total cost of main girder per ton in England ..	..	..	..	..	16 5 6

APPENDIX B.

Details of cross girders for the seven bays in England as well as the charges on freight, &c., from England to Tellicherry and then to site of work, and also cost of putting up position on the bridge.

Note :— £1 = Rs. 12.

Quantity.	Item of charges.	Rate.	Per	Amount.	Total amount.
		£ s. d.		RS. A. P.	RS. A. P.
1	Cost of materials in England as per over-leaf ..	13 0 0	ton.		
1	Freight and primage	2 4 0	,,		
1	Insurance	0 3 6	,,		
1	Shipping	0 10 0	,,		
	Total ..	15 17 6	..	206 0 0	
1	Cost of landing	..	..	10 0 0	
1	Cost of carriage from Tellicherry to Irrity bridge site (27 miles), at 4 annas per cart	..	..	15 0 0	
1	Cost of erecting and painting	..	..	32 0 0	
	Total cost per ton of cross girders and fitted on the bridge complete	..	..	..	263 0 0

Abstract Estimate.

Quantity.	Particulars.	Rate.	Per	Amount.	Total amount.
		£ s. d.		RS. A. P.	RS. A. P.
7 × 3	Tons of cross girders fitted up on bridge	263 0 0	ton.	5,523 0 0	
	Total cost of cross girder throughout the bridge ..	..	..	..	5,523 0 0

MALABAR CIRCLE.

Local Fund Department.

Data for the determination of the rate per ton of cross girders for the iron superstructure of the proposed Irrity bridge.

Class.	Description of work.	Weight of each item as per detailed estimate for iron work in one cross girder.	Weight of each item of iron work in seven cross girders.	Total weight under each class in seven cross girders.
		TONS.	TONS.	TONS.
1st	Angles and flats	0·350	2·450	
2nd	Plates	0·111	0·777	
3rd	Rivets and bolts	0·025	0·196	
	Total weight of 7 cross girders in on truss .	..	..	3·42

Calculation of percentage of each description of work in seven cross girders in each day to the total weight in those seven cross girders.

Class.	Description of work.	Weight of each class divided by the total weight.	Percentage or ratio which each class bears to a ton.
1st ..	Angles and flats	$\frac{2·45}{3·42}$	0·716
2nd ..	Plates	$\frac{·775}{3·42}$	0·227
3rd ..	Revets and bolts	$\frac{·195}{3·42}$	0·057
	Total of all percentage ..	..	1·000

Cost price of each description of work hereunder mentioned in the proportion they occur in a ton of cross girder.

Ratio in a ton.	Description of materials.	Rate.	Per	Amount in decimal of a £.	Amount in £.	Total amount.
		£ s. d.		£	£ s. d.	£ s. d.
	Cost of Materials.					
0·716	Angles and flats	7 10 0	ton	5·370		
0·227	Plates	9 0 0	"	2·043		
0·057	Rivets and bolts	12 10 0	"	0·712		
1·000	Total cost price of the above per ton ..	..	..	8·125	8 2 6	8 2 6
	Charges in Workshop.					
	Waste	5 0 0	cent.	..	0 8 6	
	Plating	1 15 0	ton.	..	1 13 0	
	Rivetting	0 6 0	"	..	0 6 0	
	Painting	0 5 0	"	..	2 5 0	
	Tools, stores, and general charges ..	..	..	..	2 5 0	
	Total charges in workshop per ton ..	..	..	..	..	4 17 6
	Total cost of cross girder per ton in England.	..	..	..	..	13 0 0

MALABAR CIRCLE C.

Local Fund Department.

Data for the determination of the rate per ton and also per running foot of old rail (Madras Railway pattern) delivered wrought and put up on the Irrity bridge as Stringer beams.

Quantity.	Items of charges.	Rate.	Per	Amount.	Total amount.
		RS. A. P.		RS. A. P.	RS. A. P.
$103\frac{5}{13}$	Running feet of old rails at 65 lb. per running yard weighing 1 ton delivered at the Local Fund Engineer's office at Calicut as per office returns.	0 8 0	rg. ft.	51 11 1	
2	Carts for conveying 1 ton from Calicut to Irrity bridge site (70 miles) at 3½ annas per mile per cart.	15 5 0	each.	30 10 0	
1	Ton of old rails ($103\frac{5}{13}$ running feet) fitted up as Stringer beams on the bridge inclusive of workmanship for drilling holes and repairing damaged portions.	20 0 0	ton.	20 0 0	
1	Ton tarring per ton after fitted up without scraping ..	1 0 0	..	1 0 0	
	Sundries	..	..	0 1 1	
	Total cost of old rails erected and fixed complete per ton on the bridge.	..	..	..	103 6 2
	∴ Cost per running foot of old rail as measured on the bridge.	..	..	..	1 0 0

APPENDIX D.

Mr. Maylor's Estimate.

Item No.	Particulars.	Amount.	Total.
		£ s. d.	RS. A. P.
1.	Cost of F.O.B.	19 10 0	
2.	Freight and primage	2 4 0	
3.	Insurance	0 3 6	
4.	Shipping	0 10 0	
	Total ..	22 7 6	
	(£22-7-6 × 13 Rs.)	..	290 0 0
5.	Landing	..	10 0 0
6.	Cartage	..	15 0 0
7.	Erecting and painting	..	43 0 0
		Total ..	358 0 0

APPENDIX E.

General Hyde's Estimate.

Item No.	Particulars.	Amount.	Total.
		£ s. d.	RS. A. P.
1.	Cost of F.O.B.	15 10 0	
2.	Freight and primage	2 4 0	
3.	Insurance	0 3 6	
4.	Shipping	0 10 0	
	Total ..	18 7 6	
	(£18-7-6 × 13 Rs.)	..	238 0 0
5.	Landing	..	10 0 0
6.	Cartage	..	15 0 0
7.	Erecting, fitting up and painting	..	90 0 0
		Total ..	353 0 0

APPENDIX F.

General Hyde's Estimate for steel rolled Stringer beams.

Item No.	Particulars.	Amount. £	s.	d.	Total. RS.	A.	P.
1.	Cost of F.O.B.	12	10	0			
2.	Freight and primage	2	4	0			
3.	Insurance	0	3	6			
4.	Shipping	0	10	0			
	Total ..	15	7	6			
	(£15-7-6 × 13 Rs.)				199	0	0
5.	Landing				10	0	0
6.	Cartage				15	0	0
7.	Erecting and painting				21	0	0
	Total ..				245	0	0
	Total for 30 tons Rs. 245 × 30 ..				7,400	0	0

APPENDIX G.

ABSTRACT statement showing comparative costs of bridge superstructure erected complete.

Particulars.	Amount. RS.	A.	P.	Total. RS.	A.	P.
1. Mr. Anderson's estimate for the whole, of the iron work in trusses, cross girders, and bracings with an all-round rate of £16-6-0 per ton for F.O.B. as per appendices A and B, Rs. 307 × 170 tons	52,190	0	0			
Old rails as per appendix C, 33 tons at Rs. 103	3,400	0	0	55,590	0	0
2. Mr. Maylor's estimate for the whole of the do. do. do. as per appendix D Rs. 358 × 170	60,860	0	0			
Old rails as per appendix C, tons 33 at Rs. 103	3,400	0	0	64,260	0	0
3. General Hyde's estimate for whole of steel superstructure at an all-round rate of £15-10-0 as per appendix E, Rs. 353 × 150	52,950	0	0			
General Hyde's estimate for Stringer beams rolled steel 30 tons at £12-10-0 as per appendix F, Rs. 30 × 245	7,400	0	0			
Cost of establishment for two months (additional time required to complete the erecting of rivetted superstructure) at Rs. 1,263 per mensem	2,526	0	0	62,876	0	0

No. 120.

Referred to the Public Works department for *early* remarks.

2. It is observed that the plans and estimates for these bridges were approved and sanctioned in G.O., dated 2nd June 1884, No. 1373 W.

(By Order.)

MADRAS,
9th June 1885.

(Signed) M. HAMMICK,
Ag. Under Secy. to Govt.

To the Public Works department.

From Colonel J. SHAW-STEWART, R.E., Secretary to Government, Public Works department, to the Chief Secretary to Government, dated Ootacamund, 15th June 1885, No. 231 E.

Your endorsement, No. 120, dated 9th June 1885,* referring to the Public Works department, for early remarks, the reply of the District Board, Malabar, to Proceedings, No. 183, L.F., dated 19th May 1885, relative to iron work for bridges over the Irrity and Merumpoya rivers.

2. The President, District Board, urges that a telegram be sent to the Secretary of State requesting that iron work of the design originally indented for be supplied.

3. The papers must be examined by the technical branch of my office at Madras, but meanwhile I would advise that a telegram to the following effect be despatched to the Secretary of State:—

> "Your despatch, No. 6, Financial, Stores, of 9th April 1885.
> "Please suspend supply of iron work for bridges pending receipt of further communication."

4. If Mr. Anderson's arguments in favor of adhering to the original design be concurred in, the detailed reasons can be sent home by letter.

5. The matter will be regarded as *urgent* in the Public Works department.

* Received 15th June 1885.

Order—dated 19th June 1885, Mis. No. 337 L.F., Financial.

Ordered that the following telegram be sent to the Secretary of State for India:—

"Chelys (your Financial despatch No.) 6 dirutu (9th April 1885). Vexavi (Please suspend supply of) iron work for bridges mulgeo (pending receipt of further communication")."

(True Extract.)

(Signed) E. F. WEBSTER,
Chief Secretary.

Copy to the President, District Board, Malabar.

READ—also the following paper:—

Memorandum by the Secretary to Government, Public Works department, dated Ootacamund, 22nd June 1885, No. 255 E.

In returning the papers referred under Financial department endorsement, No. 120, dated 9th June 1885, and in continuation of this office No. 231 E., dated 15th June 1885, the undersigned has the honor to submit the following remarks.

2. The point at issue between Mr. Anderson, the District Board's Engineer, and General Hyde, is whether the design worked out by the former, a Whipple-Murphy girder bridge, or a rivetted bridge in steel, as recommended by the latter, shall be adopted for the Irrity and Merumpoya bridges in the Malabar district.

3. The undersigned agrees with Mr. Anderson as to the difficulties likely to be experienced in erecting *rivetted* girders at sites such as those of the bridges in question; and he is not aware of any peculiar difficulties in procuring in England the link and pin-connections of Mr. Anderson's design.

4. It appears to the undersigned that Mr. Anderson has entirely refuted the objections raised to his design, although this office is not in a position to offer an opinion as to the prices quoted.

5. It is observed that a *steel* girder is proposed by General Hyde and Mr. Batho; and with respect to this (a point not touched upon by Mr. Anderson) it may be remarked that the revitting up of steel would involve still more risk than that of iron girders. Further, steel is liable to a more rapid process of oxidation than iron; and that liability is a serious evil, which will be intensified if steel be used in such places as the localities of the proposed bridges, where supervision and over-hauling will be infrequent and perfunctory.

6. It is considered that Mr. Anderson's design may well be adhered to, with the modification of bracing suggested in paragraph 3 of Mr. Batho's report. The substitution of new bars of proper section for the old rails which it is proposed to use would also be advisable. The old rails, which appear to have been purchased already, may possibly be utilised elsewhere.

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

To the Financial department, with papers returned.

ORDER—dated 16th July 1885, No. 477 L.F., Financial.

Ordered that the Secretary of State be addressed.

(True Extract.)

E. F. WEBSTER,
Chief Secretary.

To the President, District Board, Malabar.
„ Public Works department.

Exd. T. O'Connor.

No 1870 Wd/18 August/85

P.W.D.

Govt. of (1885) Madras.

FINANCIAL.

Comd. to the Supdg. Engr: IV C for information

(Signed) J.H.

Issued

Recd.

Encl.

G.O., 16th July 1885, No. 477 L.F.

No 1870 Wd/18th August/85

JULY.

S E IV C

Local Fund Bridges.

Ordering that the Secretary of State be addressed on the subject of the supply of iron works for the Irrity and Merumpoya bridges in Malabar.

With [illegible]

GOVERNMENT OF MADRAS.

FINANCIAL DEPARTMENT.

Order—dated 18th September 1885, No. 741 L F., Financial.

In accordance with the provisions of section 145 of the Local Boards Act V of 1884, the Right Honorable the Governor in Council resolves to publish in the Fort St. George and District Gazettes the following draft rules framed under section 144 of the said Act, and hereby gives notice that any objection or suggestion which may be made in respect of these rules by any person interested therein will be considered on or after the 1st of November next.

(True Extract.)

W. WILSON,
for *Chief Secretary*.

To all Presidents of District Boards.
" the Revenue department.
" the Public Works department.
" the Military department.
" the Accountant-General.
" the Director of Public Instruction.
" the Surgeon-General with the Government of Madras.
" the Sanitary Commissioner for Madras.

RULES UNDER MADRAS LOCAL BOARDS ACT V OF 1884.

CHAPTER I.

Preliminary.

Of grants. 1. The following are the purposes to which Local Funds may be allotted:—

Grant I—Public Works.
Do. II—Education.
Do. III—Medical Services, Vaccination, Sanitation, and Public and Charitable Institutions.
Do. IV—Miscellaneous (Establishments, &c.).

Rates, &c., how collected. 2. All rates, taxes, tolls and fees imposed or realized under the Local Boards Act are credited to an account in the Government treasury in the name of the President of either the Taluk or District Board who is directly responsible for the appropriation of such moneys under the restrictions provided in the Act or ordered by Government under its sanction. He is required to work in strict accordance with the sanctioned budget subject to the modifications indicated below and is responsible for the proper financial administration of the funds.

Audit of expenditure. 3. All expenditure is audited by the Treasury Officer under instructions from the Accountant-General, except when expenditure under Grant I is incurred by officers of the Public Works Department, in which case the audit is conducted by the Examiner of Public Works Accounts, the results being communicated to the Local Boards through the Accountant-General.

CHAPTER II.

Budget Rules.

General budget.

4. In accordance with the provisions of section 150 of the Act, it is the duty of the District and Taluk Boards and Panchayats to prepare annually budget estimates of receipts and expenditure under all heads. In the case of District and Taluk Boards the duty may be delegated, with such instructions as the Local Board may think fit, to a Committee of the Board, the President of the Board being *ex-officio* member of such Committee. There will further be prepared in the office of the District Board a consolidated district budget containing information regarding the estimates of receipts and expenditure for (1) the District Board, (2) the Taluk Boards, (3) the Panchayats, within the district.

Collector to prepare estimate of receipts.

5. As provided in section 148 of the Act, the Collector of the district will, in the first week of September, lay before the District Board an estimate of the gross receipts and charges of collection. The appropriation of the funds available for expenditure will rest with the Local Boards, subject to the control hereinafter provided.

Transfers to Taluk Boards.

6. The President of the District Board shall, before the end of September, communicate to each Taluk Board within the district the sum proposed to be transferred to such Taluk Board under section 55 of the Act, and a statement of the services to be maintained and the works to be executed within the limits of each Taluk Board from District Funds.

Transfers to Panchayats.

7. The President of every Taluk Board shall, in the first week in October, communicate to the Chairman of each Panchayat within the taluk the sum proposed to be transferred to such Panchayat under section 140, clause 2, of the Act.

Papers to be used.

8. The budget statements should be drawn up by each Local Board and Panchayat in the forms given in the appendix, on the best English foolscap available, which should be 13 inches in length and 8 inches in width.

Union estimate.

9. The Chairman of the Panchayat will, after the completion of the budget estimates of the Union, forward the same to the Taluk Board so as to reach that Board punctually in the first week of November.

General taluk budget.

10. The Taluk Board will, after the receipt of the budget estimates of all the Unions comprised within the taluk, compile a general budget estimate in the forms given in the appendix, according to the general rules with regard to budget statements given hereunder, and submit the same to the President of the District Board before the 15th November.

District Board budget and consolidated district budget.

11. The District Board will compile (1) a budget estimate of the receipts and expenditure to be met from the District Board Funds, and (2) a consolidated budget estimate, in the form given in the appendix, according to the general rules with regard to budget statements given hereunder. Both these estimates must be completed and duly passed by the 1st December. The former should be retained in the District Board's office, and the latter forwarded with a covering letter and the statements so as to reach Government by the 15th December.

Covering letter and map.

12. Each district consolidated budget should be accompanied by a separate covering letter from the President, explaining the several variations in the figures as compared with those of previous years, and by a map of the district, showing the roads and other Local Fund works, such as dispensaries, travellers' bungalows, &c., completed, in progress, or proposed for execution, as well as the position of the toll-gates and the ferry landing places.

Revised estimate.

13. *The Revised Estimate.*—With each taluk and the district consolidated budget should also be submitted a revised estimate for the current year and a list of the sanctioned establishment, the taluk budget including the establishment entertained by Panchayats, and the district consolidated budget the establishments entertained by both the Taluk Boards and Panchayats. The District Board's consolidated budget should also be accompanied by a statement showing the additions to, and deductions from, the budget grants. The list of sanctioned establishment should be corrected up to date and should not include any proposed new establishment.

Revised estimate forms

14. The revised estimate should be prepared in the form given in the appendix, the several sub-heads given in budget forms I-A and I-B being adopted in the first column. The opening balances of the revised estimates will be, in the case of taluk budgets, those advised after audit by the President of the District Board, and in the case of the district consolidated budget, the balances will be advised by the Accountant-General after audit of the past year's expenditure. The actuals of the first six months of the year should be entered in column 2 of the statement and should tally with the monthly treasury accounts for September. The probable receipts and charges of the remaining six months (to be entered in column 4) should be ascertained with reference to the actual transactions of the corresponding six months of the previous year, and to the special circumstances of the year as far as is known. Only the unallotted portion of the budget reserve should be entered in the revised estimate. Variations between the figures in columns 5 and 7 should be explained in the remark column of the revised estimate.

The statement should show, by means of a foot-note, the receipts and expenditure, 1st, on account of endowments, 2nd, on account of house-tax, and the balances under these two heads.

At the foot of the receipt statement of the revised estimate of each District Board should be entered a demand, collection and balance statement of land-cess in the form given in the appendix.

In the list of subsequent allotments in the revised estimates the resolution of the Taluk Board, or of the District Board, or of Government, giving the necessary sanction should be quoted. No amount which has not been sanctioned should be included in the statement.

The preparation of the revised estimates of the Taluk Boards should, where possible, be undertaken in the President of the District Board's office, the balances arrived at being communicated to the Taluk Board in sufficient time for entry in the Taluk budgets.

GENERAL BUDGET STATEMENTS.

District and Taluk Budgets.

Receipts.

General rules.

15. The following general rules apply to the preparation of (1) the consolidated district budget, and also, as nearly as may be, to the preparation of the (1) District Board budget, and (2) Taluk Board budget.

Receipts.

16. In drawing up the Budget Statement I-A—Receipts, the closing balance of the revised estimate should be adopted as the opening balance of the budget. In the case of Taluk budgets the balance will include the separate balances under the *house-tax* and *fees upon markets* and *pandals* and *tolls*, besides any balance remaining from the sum allotted for general expenditure by the District Board, unless, with the previous sanction of Government, the District Board decide to withdraw from the Taluk Boards in the district all such balances accruing. Under Contributions from *Provincial Funds*, special assignments made by Government for roads, &c., as also the salary and other grants to schools given by the Director of Public Instruction and the money payments made by Government on account of endowments, should be included. As regards the first item, the order of Government sanctioning such allotments should invariably be quoted in the covering letter. Against *Special Funds* the contribution from *Canal and Ferry Fund* and the *Pound Fund* should be entered, and should tally with the corresponding entries in the *Special Fund* budget. Against *Ferry Rents* should be entered all receipts from ferries to which

Act I of 1870 has not been applied. When the receipts from a toll-gate are divided between two Local Boards or between a Local Board and a Municipality, the net receipts only of the Local Board which collects the tolls should be entered in the budget, the gross receipts and the share handed over to the other Local Board or Municipality being shown in a foot-note to the statement.

School-fees entered in this statement should agree with the total of column 6 in Statement IV.

Contributions made by one District Board to another, or to or by Municipalities on account of charitable institutions or for other purposes, must be paid to the Board of the District or to the Councillors of the Municipality in which the institution is situated or the expenditure incurred. The contribution will be settled by mutual agreement between the respective Boards and Municipalities and submitted for the sanction of Government.

Fines levied under section 48, Act XXIV of 1859, are credited to Local Funds. The particulars of sundry receipts should be explained in the covering letter.

A demand, collection and balance statement of land-cess should be appended to this statement.

In preparing the taluk budget all receipts collected by the Panchayats in the taluk should be incorporated in the receipts entered in the taluk budget under the several heads.

Expenditure.

Expenditure.

17. *Statement I-B—Expenditure.*—The following charges shall be met from the District Fund and shall be entered in the District Board budget as expenditure from their fund :—

(1) The construction and repair of the principal lines of communication within the district.
(2) Contributions made under Grant I by the District Board.
(3) The District Engineering Establishment or such portion of it as the District Board may decide to retain under its own charge.
(4) Such proportion of the expenditure upon the hospital maintained at the district head-quarter station as the District Board may direct, subject to the sanction of Government.
(5) The establishment maintained for the general inspection and supervision of schools and the maintenance of Normal schools.
(6) Contributions to the Medical College and to the Sanitary Inspecting Agency, and contributions to other circles, contributions for lunatics.
(7) The following charges under Grant IV, viz., (*a*), (*b*), the whole; (*c*), as far as the District Board and general district establishment is concerned; (*d*), as far as such charges are incurred on account of the District Board; (*e*) the whole, (*f*) the whole, (*g*) the whole.

Charges from District Funds.

18. All charges to be met from District Funds will be shown in the appropriate columns against the proper heads; similarly all charges against the Taluk Funds will be shown in the appropriate columns against the proper heads.

Details of expenditure.

19. All works provided for under *Grant I* will be enumerated in Statement III-A, if *New Works*, and in Statement III-B, if *Repairs*. Charges connected with tolls and ferries and store and tool sheds should be included in Communications; and avenues and works appertaining to markets, &c., should be shown under *Miscellaneous Public Improvements*. When it is proposed to entrust the execution of any work to the *Public Works Department*, the necessity for doing so should be explained in the covering letter and provision made in the budget at 23 per cent. on outlay for supervision and one per cent. for *tools and plant*, except where the Public Works Department undertakes to carry out the works without such payment. The charge for tools and plant to be used by the Local Fund Engineering Establishment should not exceed one per cent. of the outlay on works by that agency, except for special reasons, which should be explained.

The details of the provision for *Educational Inspection* should be given in the covering letter; and under Grant-in-Aid Schools, only such as are aided from Local

---

16

Funds should be shown. Local Fund schools receiving grants from Provincia and Municipal Funds should not appear under this head.

When a *regular* additional duty is imposed on a medical subordinate in charge of a Local Fund dispensary, such as the medical charge of the jail, or the police of the station or locality, or the Government servants stationed at a taluk head-quarters, the Government contribute a fourth of the medical officer's salary in consideration of Provincial Funds being relieved of a charge for a medical establishment.

In such cases the remaining three-fourths only of the salaries need be provided in the budget, but the previous sanction of Government to this assistance must be obtained.

A contribution of a ½ per cent. on the year's receipts according to the revised estimate, excluding Provincial grants for special purposes, should be provided for the Madras Medical College in each district consolidated budget, except in those of Madura, Tanjore, and Nellore, and such other districts as may from time to time be exempted by Government. A similar contribution should be provided for Sanitary Inspection and a contribution of ·04 per cent. of the receipts for the Medical Subordinate Reserve Staff, except in those districts where reserve medical subordinates are maintained by the District Boards themselves.

The details of expenditure on *Vaccination* should be fully stated in the budget covering letter. Works for the improvement of the water-supply costing more than Rs. 300 should be included in the provision for *Miscellaneous Public Improvements* under Grant I, and those costing less, in *Sanitation* under Grant iii.

In estimating for the share chargeable to the district of the cost of the establishment in the Controlling, Account and other Offices at the Presidency, the District Board will adopt the same figure as that advised by the Accountant-General for the previous year.

The several items of the *Miscellaneous Debt Account* should not appear either in the budget or the regular estimate.

Public works.

20. *Statements III A and B.*—All works estimated to cost more than Rs. 300, whether new works or repairs, should be separately entered in these statements. Petty works costing Rs. 300 and less need not be enumerated, the provision for them being entered in a lump, classified according to the nature of the works.

Unsanctioned projects for new works costing more than Rs. 5,000, the estimates for which are not likely to be submitted to Government for sanction within the first four months of the year, must not be entered.

Each project or work must be distinctly designated when first brought to notice, whether in the budget or otherwise, and such designation must not be altered when it is afterwards referred to, without permission of Government.

In the remark column the number and date of orders sanctioning estimates, as well as references to entries in the previous budget, should be given.

Works to be executed by Public Works Department should be noted in the remark column, and round numbers should be used as far as possible. Information should also as far as is possible, be given in the remark column of the number of works to be executed by miscellaneous agency.

Schools.

21. *Statement IV.*—All schools managed by the Local Boards should appear in this statement in the following order :—

(*a*) Training.
(*b*) Secondary—
  (i) Remuneration *fixed* ;
  (ii) Remuneration partly *fixed*, partly by *results*.
(*c*) Elementary—
  (i) Remuneration *fixed* ;
  (ii) Remuneration partly *fixed*, partly by *results*.

The total under each description of schools should tally with the corresponding entry in Statement B.

22. *Statement IV-B.*—Private schools receiving salary grants from Local Funds should be enumerated in this statement. In the case of schools aided on the combined system the salary portion of the grant should appear in this statement, the results grant being shown under results expenditure.

Charitable institutions.

23. *Statement V.*—Details of expenditure on medical services, chattrams, bungalows, and markets, should be given in this statement and should agree with Statement I-B.

Sanitation.

24. *Statement VI.*—All expenditure on sanitation should be detailed in this statement.

Endowments.

25. *Statement VII.*—All transactions relating to endowed institutions and to markets should appear in this statement. The budget should be so framed that the expenditure does not exceed the receipts of each endowment. When this is not possible, and when it is proposed to make good the excess expenditure from receipts of future years, the required sum will be entered in column 8 of the statement as a loan, to be subsequently repaid. When this cannot be done a contribution should be made from the general revenues to make good the deficit, and shown as an item of receipt in column 9.

Union.

26. *Statement VIII.*—All receipts from house-tax and other sources and all charges connected with the expenditure within Unions will be shown in this statement, with the names of the different Unions. The statement will accompany the district consolidated budget.

Reserve and balance.

27. The budget will be framed so as to leave, besides a reserve of 10 per cent. of the estimated receipts, a further balance of 5 per cent. to meet any deficiency in the year's receipts.

Taluk budget form.

28. The taluk budget of expenditure should, as far as possible, be drawn up in the same form as the district consolidated budget, with the above additional statements prepared for each taluk area.

District Consolidated Budget.

Parts of the budget to be sent to certain officers.

29. Immediately after the passing of the consolidated budgets by the District Boards, Presidents will send copies of Statements I A and B, IV and IV B, with the portions of the covering letter relating to these statements, to the Director of Public Instruction, through the Inspector of Schools, and of Statements I A and B and V and VI, and similarly the portions of the covering letter relating to these statements, to the Surgeon-General with the Government of Madras and the Sanitary Commissioner. These officers will, at the earliest date, communicate any remarks they may wish to offer upon the provisions made for the educational, medical, or sanitary needs of the district to Government.

Union Budget.

Items in union budget.

30. The budget of the Union will be drawn up by the Chairman of the Panchayat in the form II given in the appendix. The budget should show—

(1) Upon the receipt side—
  (*a*) Balance estimated to be carried forward.
  (*b*) Proceeds of the house-tax to be levied under section 57, clause ii, of the Act.
  (*c*) Proceeds of fees to be levied under section 57, clause iv, of the Act.
  (*d*) Contributions from the District or Taluk Boards under section 142 of the Act.

(2) On the expenditure side the amount to be spent on—
  (1) Sanitation.
  (2) Public Works.
  (3) Schools.

The sum to be entered in the statement of receipts as the allotment from the Taluk Board will be communicated to the Chairman of the Panchayat by the President of the Taluk Board or, in case there is no Taluk Board, by the President of the District Board at least one month previous to the date on which the budget should be submitted to the Taluk or District Board as the case may be.

The Panchayat shall draw up the budget under the general control of the Taluk or District Board, and shall prepare such additional statements as may be called for by the Taluk Board, or District Board as the case may be.

The budget, after being passed by the Panchayat of the Union, shall at once be forwarded with a brief covering letter to the President of the Taluk or District Board as the case may be.

General Provision.

General provision.

31. Until the Government shall have communicated their sanction for the budget for any year, the Local Boards and Panchayats shall conduct their expenditure for that year according to the budget of the previous year.

Supplemental Budgets.

Supplemental budgets.

32. If the outlay proposed in the original budget estimate of any Local Board or Panchayat is afterwards found to be likely to leave a large surplus unemployed, supplemental proposals for the allotment of the surplus, accompanied by explanation as to the way in which it has accrued, will be submitted for sanction in the same manner and with the same procedure as in the case of the original budget estimates. Every effort should, however, be made so to draw up the original budgets as to avoid the necessity for the preparation of supplemental budgets.

CHAPTER III.

Incomplete Works.

Incomplete works.

33. Works which at the time the original budgets were drawn up were incomplete, but which it was thought would be completed before the end of the year, may, if not completed at the close of the year, be proceeded with up to a limit of one-fifth of the estimated reserve for the year then current as if sanctioned. A list of such works should be submitted to Government early in the year by the President of the District Board, with an indication as to source from which funds are to be provided to meet the necessary expenditure.

CHAPTER IV.

Allotments and Transfers.

Power to sanction transfers and allotments.

34. The allotments entered in the budget as passed by the Government will be the original sanctioned allotments for the year. Subject to the restrictions mentioned below, the District Board may afterwards sanction transfers of funds from any of the major or minor heads in the budget to any other major or minor head, and may sanction additional allotments from the reserve provided in the budget for any work under their control or for the purpose of supplementing any grant to any Taluk Board or Panchayat.

Such transfers and allotments should not, except in the case of minor heads under the same major head, be made without the previous sanction of Government if the sum to be transferred exceeds Rs. 1,000.

Subject to the restrictions mentioned below Taluk Boards may sanction transfers of funds from any of the major or minor heads in their budgets to any other major or minor head, reporting their action to the President of the District Board. They may also supplement the grant made to any Panchayat or for any work from the reserve under their control. Any transfers or grants should be at once reported to the District Board.

Such transfers and allotments should not, except in the case of minor heads under the same major head, be made without the previous sanction of the District Board if the sum to be transferred exceeds Rs. 500.

All transfers and allotments should be communicated by the District Board to the Accountant-General or to the auditor appointed by him.

No formal allotment of funds is necessary for meeting a new item of expenditure from savings in the same minor head.

Note.—The various grants in the budget (*vide* form I-B) are subdivided into major and minor heads: thus Grant I, Public Works. Major Head—New Works. Minor Head—(1) Communications.

CHAPTER V.

Public Works.

Selection of Public Works.

35. The selection of works rests with the Local Boards. All estimates must be countersigned by the President of the Local Board and laid before the Local Board for sanction. A copy of the resolution of the Local Board passed thereon should accompany all estimates needing the sanction of the Government.

Sanction of estimates.

No new work must be commenced until the plan and estimates have been passed by the proper authority, and the amount of the allotment granted must in no case be exceeded without proper sanction. Unavoidable expense in investigating any project and in preparing survey plans and estimates may be incurred when the estimate expense has been sanctioned.

District Board may sanction certain works.

36. *District Boards.*—Estimate for new works to be carried out by any Local Board, amounting to Rs. 5,000 or less, may be sanctioned by the District Board, provided that all estimates of over Rs. 2,500 and up to Rs. 5,000 are first approved of by the Superintending Engineer of the Public Works Department. All estimates for the repair of works not provided for by maintenance grants may be sanctioned by the District Board, provided that, in the case of those exceeding Rs. 10,000, such sanction shall be notified to the Government immediately and no action shall be taken until after the lapse of fifteen days after such notification.

Estimate sanctioned by Taluk Board.

Estimates for new works to be carried out by any Taluk Board or Panchayat, amounting to Rs. 2,000 or less, may be sanctioned by the Taluk Board. All estimates for the repair of works not provided for by maintenance grants may be sanctioned by the Taluk Board provided that, in the case of those exceeding Rs. 2,000, such sanction shall be immediately communicated to the District Board and no action shall be taken until the lapse of seven days.

Plans to be sent to D. P. W. in certain cases.

Presidents of District Boards will send to the Public Works Department plans and estimates of such works as may be of too important a character to be left altogether to the disposal of the Local Boards. Of this class will be all *new works* estimated to cost Rs. 2,500 and upwards. In the case of other works, whenever the Presidents of Local Boards, after communication with the Boards, so determine, they may submit the estimates for the advice of the Chief Engineer, Public Works Department. Estimates for new works costing above Rs. 2,500 should be forwarded to the Superintending Engineer of the circle, who, after approval, will return to the District Board, for sanction, those costing Rs. 5,000 or less; the others will be transmitted to the Chief Engineer, Public Works Department, for the sanction of Government.

Any change of plan or project must receive the same sanction as the original plan or project. It rests with those carrying out a work to obtain such sanction as may be needed.

Local Boards may sanction excesses within 5 per cent. of estimates and not greater in amount than Rs. 1,000.

Any excess in an estimate may be sanctioned by a Local Board, provided the total estimate as thus modified does not exceed the amount which the Board is competent to sanction in the case of an original estimate by 5 per cent.

A District Board may also sanction excesses in any estimate sanctioned by Government, provided the sanctioned estimate *plus* the excess does not exceed Rs. 5,250 in the case of new works, and Rs. 10,500 in the case of repairs.

The Presidents of District Boards will, after any estimate has been sanctioned, notify to the Government from time to time the description of work approved, and point out the source from which the cost of such works can be met.

No repair work should be commenced until the funds for it have been allotted by a competent authority. But the estimates for petty repairs and the repairs for which maintenance grants are provided need not be submitted to Government.

The total for estimates must always be in round numbers.

Rules for the execution of works by the Engineering Establishment of Local Boards are contained in a separate volume.

The above rules will not be considered applicable to such repairs as road metalling.

Duties of D.P.W. Officers.

How charges are to be met.

37. When Executive Engineers undertake Local Fund works, they will meet all charges from their General Funds, and will account for the sums spent on them as prescribed in the rules for the Department of Public Works.

To prepare progress reports.

Range officers will include Local Fund works in their monthly progress reports, and the Superintending Engineer will have the same duties and responsibilities with regard to them as he has with regard to Imperial and Provincial works. Executive Engineers will send, in covers superscribed "Progress Report," an extract from their general progress report, containing all that relates to Local Fund works, to the office of the President not later than the 10th of each month.

Completion certificates.

Completion certificates for works will be laid before the Local Board and filed amongst the records of the office.

CHAPTER VI.

Education.

Application of funds to education.

38. Local Funds may be applied to any or all of the purposes enumerated in the Grant-in-Aid Code, but more especially wholly or by grants-in-aid to the maintenance of the following classes of schools:—

1. Elementary.
2. Secondary.
3. Training.

Local Funds may also be applied to the inspection of schools and supply of books. The provision of improved elementary education for boys is, however, the chief duty of the District Board, and to its promotion a very large proportion of the funds allotted to education must be devoted.

Money to be given in accordance with Grant-in-Aid Code.

39. All moneys expended on grants-in-aid must be given according to the rules of that Code, which shall have the force of rules under sections 95 and 144 of the Act; excepting only general contributions ordered for any educational service benefiting the presidency generally or a certain portion thereof.

Establishment of schools.

40. No new school other than an elementary school shall be established by a Board without the sanction of Government, but Boards may aid or seek aid for any school without such sanction, subject to the provisions of the Grant-in-Aid Code and the general rules as to allotments and transfers.

Closing of schools.

41. Boards may close or transfer any school without the sanction of Government, provided at least three months' notice of their intention is given to the Inspector of the division to allow, if necessary, a representation being made to Government by the Director of Public Instruction.

Transfer of schools to Taluk Boards.

42. The District Board may hand over the control of any school under its charge to the Taluk Board of the taluk in which such school may be situated, and similarly the Taluk Board may, under section 142 of the Act, with the consent of the Panchayat, transfer the management of any school to a Union.

Government educational officers to be consulted.

43. All applications for sanction for the establishment of new schools other than elementary schools or for any educational outlay in addition to that sanctioned in the budgets for the year should be submitted to Government through the Director of Public Instruction.

Care should be taken that no proposal is submitted to the Director until the local educational officers have had an opportunity of expressing an opinion thereon.

Levy of fees.

44. In regard to the levy of fees, Local Boards will be guided by the notification of Government, dated 5th February 1884, published in *Fort St. George Gazette*, dated 5th February 1884, Part I, pages 70 to 72, or such other notification as may hereafter be made.

Control of schools.

45. Boards must, as far as practicable, employ specially qualified teachers in their schools and generally administer them according to the principles of management adopted for State schools. When a Board does not employ a superintendent or appoint an educational sub-committee, it may, with the approval of the Director of Public Instruction, place its schools under the immediate control of the Educational Department.

Normal schools.

46. Normal and other special schools will be administered under rules laid down by the Board in communication with the Educational Department.

Grants-in-aid.

47. Local Boards are entitled to receive aid under the Grant-in-Aid Code for all objects enumerated in the Code.

Inspecting agency.

48. The inspecting schoolmasters are under the control of the superior officers of the Educational Department, who will determine their duties in communication with the Local Boards.

School-books, &c.

49. *Provision of School-books.*—It is the duty of a Board to see that, either by its own agency or otherwise, proper provision is made for the supply of school-books, slates, &c., to its own schools, and for sale of books to village schools; when other agency is employed it may afford special assistance by way of commission on sales or advances to vendors or otherwise.

Correspondence.

50. *Correspondence.*—Deputy Inspectors of Schools will correspond direct with the District Board and under the general control of the District Board with the Taluk Board or Union Panchayat upon the following subjects: Salary bills, Book accounts, Contingent bills, Applications for leave on behalf of schoolmasters, Indents for postage labels, Statements of certifying memoranda, Monthly returns of schools, and similar subjects of a statistical character. In other cases, the communication between the Taluk and District Boards and the Deputy Inspectors should be through the Inspector of Schools. In cases of emergency, however, the Presidents of the Local Boards should not hesitate to correspond direct with the Deputy Inspectors of Schools. Presidents should receive from the Inspector of the division copies of all inspection reports on schools maintained or aided by them.

CHAPTER VII.

MEDICAL.

Control of Local Boards over dispensaries.

51. *Management of Dispensaries.*—The sanction of Government must be obtained to the establishment by Local Boards of hospitals or dispensaries. Local Boards will supervise the financial and economic concerns of dispensaries entrusted to their care or established by them, but will in no way interfere with purely professional matters, such as the management or treatment of the sick, except by reporting to the Surgeon-General cases which may require special notice.

Dispensaries to be inspected.

Dispensaries will come under the inspection of the Surgeon-General and Sanitary Commissioner and District Sanitary and Medical Officers during their respective periodical official tours. A copy of the Inspection Report will be furnished by the Inspecting Officer to the President of the Local Board concerned. Members of Local Boards should frequently visit and inspect these institutions.

Cholera, &c., cases to be treated in temporary sheds.

Cholera or small-pox cases should, when there is no detached building available, be treated in temporary sheds or leaf pavilions erected for the purpose.

Private practice how regulated.

52. Medical Officers in civil employ may engage in private practice; but care must be taken that their doing so does not in any way interfere with the punctual performance of their official duties, and that the use made of hospital medicines or instruments is strictly in accordance with the regulations. Executive and Administrative Officers will notice in their annual reports whether subordinates are making themselves acceptable and useful as private practitioners.

Application for services of Medical Subordinates how to be made.

53. When a Medical Subordinate is required for a new dispensary, the proposal for his employment should ordinarily be made by the President of the District Board concerned to the Surgeon-General with the Government of Madras. The President may consult with the Surgeon-General as to the person to be nominated. Medical Pupils educated at the Civil Dispensary at Nellore, the Mission Hospital at Dindigul, and the Prince of Wales' Medical School at Tanjore, and other approved Medical Schools, and who have passed the requisite examination are available for employment in Local Board Dispensaries as Hospital Assistants.

Register to be kept.

54. Medical Officers in charge of Civil Dispensaries will keep a nominal register of in and out patients treated, showing the daily average attendance of the latter class, and will transmit monthly and annual returns of sick treated, prepared according to the prescribed form, and with the latter will forward a special medical report. Printed blank forms may be obtained from the Medical Storekeeper on indent.

Date for submission of annual report.

55. The annual reports of the Medical Officer in charge must reach the Surgeon-General's office not later than the 30th April in each year.

Copy to be furnished to Local Board.

A copy of the annual report and of the prescribed returns is to be sent to the President of the Local Board, who will notice in his report to Government the views of the Local Board on the general state of the dispensary and its usefulness and acceptability to the native community.

Private prescriptions may be prepared.

56. Local Boards may permit professional prescriptions for private individuals to be compounded at a dispensary, and may fix the rates at which such prescriptions shall be issued to subscribers and non-subscribers to the Dispensary funds.

Local Board may require Zillah Surgeon to inspect dispensaries.

57. Zillah Surgeons may be required by Local Boards to inspect the outlying dispensaries as frequently as their other duties permit. While so employed, they will receive the usual travelling allowance. The *locum tenens* where no Assistant Surgeon is appointed as Assistant to the District Surgeon will be entitled to an allowance of Rs. 100 per mensem for the period he acts.

Preparation of indents.

58. *Indents and Stores.*—Medicines, apparatus, and supplies of all kinds formerly furnished to dispensaries from the Medical Stores will be furnished to Local Fund dispensaries and hospitals on indents scrutinized and countersigned by the Civil Surgeon and subsequently passed by the Local Boards.

Checking of medical indents by Surgeon-General.

59. Indents should be prepared in duplicate and sent by the Local Boards to the Surgeon-General, who will, after check and approval, forward them to the Medical Storekeeper for compliance. When complied with the Storekeeper will send the original to the Local Boards to be receipted and returned without delay to the Medical Storekeeper for transmission to the Examiner of Medical Accounts. After audit and valuation the priced indents will be forwarded by the Examiner to the Surgeon-General, who will issue the necessary instructions for the recovery of the value from the Boards concerned. In case the Surgeon-General does not approve of any portion of the indents submitted to him by any Local Board, he will pass so much of the indent as he thinks fit and communicate his objections to the rest of the indent to the President of the Local Board concerned, in order that the same may be laid before the Local Board for such action as they may think necessary.

Indents from hospitals to be supplied during January, February, and March must be forwarded so as to reach the Surgeon-General not later than 1st November preceding. Indents from hospitals to be supplied during April, May, and June must be sent so as to reach the Surgeon-General not later than the 1st February preceding. Indents from hospitals to be supplied during July, August, and September must be forwarded so as to reach the Surgeon-General not later than the 1st May preceding.

Country medicines may be purchased.

The Local Boards may purchase country medicines in the local markets or from the Medical Stores as per lists furnished by the Surgeon-General.

Unservicable instruments to be returned.

Presidents of Local Boards will send direct to the Medical Stores any surgical instruments which may require repair. Unservicable instruments should be disposed of as the Board may see fit.

Local Board to contribute to Lunatic Asylums.

60. *Lunatics.*—District Boards will contribute towards the upkeep of the existing Lunatic Asylums by supporting such pauper patients as may have a *settlement* in the district and as may be sent from the districts to any asylum.

Charges for wandering lunatics how to be met.

Charges on account of lunatics found in Municipalities, when their place of residence cannot be ascertained, will be debited to Municipalities and the District Boards of the districts in which they may be situated, in proportion to the respective incomes of the Municipal Councils and the District Boards.

Local Boards to pay for conveyance to asylums.

District Boards will defray all charges connected with the conveyance of lunatics, other than criminal lunatics, to the asylums, as well as those incurred for patients discharged after recovery and sent back to their houses.

Cost of Vaccine Establishment to be paid by Local Boards.

61. *Vaccination.*—Local Boards will be charged with the cost of the district establishment of the Vaccine department. Further rules in detail regarding vaccination are contained in a separate volume.

What sanitary works to be undertaken.

62. *Sanitation.*—The chief works of a sanitary character that should be carried out by Local Boards and Panchayats are—(1), works undertaken for the improvement of water-supply; (2), the enlargement or improvement of village sites; (3), the scavenging of small towns and large villages; (4), sanitary arrangements at fairs and festivals.

Rule in preparing estimates for improvement of village sites.

63. In estimating for the improvement of village sites situated outside Unions, the villages proposed to be improved should be specified with the population of each.

Rule for preparation of estimates for scavenging.

The estimates of proposed expenditure for scavenging small towns or large villages should exhibit the name and population of each place.

Arrangements at fairs and festivals.

Rules regarding arrangements to be made at fairs and festivals and the sanitary measures to be adopted on the appearance of cholera are printed in a separate volume.

Local subscriptions may be supplemented.

64. When subscriptions are raised for local improvements, a grant of equal amount may be made from Local Funds.

CHAPTER VIII.

MISCELLANEOUS PUBLIC INSTITUTIONS.

Estimates to be prepared.

65. *Markets, &c.*—When it is proposed to levy fees for the use of markets and cart-stands, &c., estimates of the receipts and charges thereof should be framed and submitted to the Government through the District Board.

The fees and other receipts realized from markets should be devoted primarily to the development and improvement of the markets in the taluk in which they are raised.

CHAPTER IX.

ESTABLISHMENT.

Establishment in Presidency offices.

66. The controlling establishments at the Presidency town consist of those in the offices of the Government, and the Accountant-General, and are paid from Local Funds by a rateable distribution over the several districts. At the close of each year the total actual outlay incurred on account of these establishments should be distributed by the Accountant-General among the different District Boards in the proportion of their assets, and the amount debitable to each District Board intimated to the President of the District Board and to Government.

Controlling establishments, &c., how to be entertained.

Such additional clerks and accountants as are necessary for the supervision of Local Fund expenditure will, with the sanction of Government, be entertained in the offices of the Government, the Accountant-General, and of Collectors of districts.

Sanctioning power of establishment.

67. The District Boards are empowered to sanction, subject to the rules as regards allotments and transfers, the employment of servants of all classes whose monthly salary does not exceed Rs. 50, and similarly Taluk Boards are authorized to sanction, subject to the rules as regards allotments and transfers, the employment of all servants whose monthly salary is not more than Rs. 15. Any increase of establishment made under this rule should be immediately reported to the Treasury Officer and to Government. The total cost of the Engineering Establishment should not exceed 20 per cent. of the outlay on works.

Tabular statements to accompany applications for establishments.

68. Applications for addition to Local Fund establishments must be accompanied by a statement showing the strength and emoluments of the existing establishment and proposed changes prepared in the form given in Appendix III.

Salaries and allowances of Medical, &c., Staff, how determined.

69. Subject to restrictions prescribed by the conditions of endowments, the District Board, with the approval of Government, determines the strength and salaries of the staff employed in all schools, dispensaries, choultries, and markets under their control. Provided that the salaries and allowances of medical subordinates borne on the Government establishments will be determined by the Government rules applicable to such officers.

Nomination of Medical and Educational subordinates to be made in communication with the department concerned.

70. It is the duty of the President in the nomination of educational officers and medical subordinates to consult the Inspector of Schools for the division and the Surgeon-General with the Government of Madras, respectively.

Pay bills how to be prepared.

71. Bills will be signed by the chief officer in charge of the institution concerned and countersigned by the President or Vice-President of the Local Board under whose control the establishment may be. If Subordinate Committees are appointed for any institution, funds will be drawn on bills signed by the President or two members of such Committee.

Bills to be signed by President or Vice-President.

72. Funds for all educational, sanitary, medical, and miscellaneous charges not otherwise provided for in these rules should be drawn on bills signed by the officer to whom the expenditure is confided and countersigned by the President or Vice-President of the Local Board concerned.

Leave and acting allowances.

73. Leave and acting allowances may be granted to Local Fund employés within the limits prescribed in the Codes of the Financial Department.

Transfer of Medical subordinates.

74. The power of transferring Medical Subordinates from one hospital to another within any district rests with the President of the District Board, who should in all cases keep the Surgeon-General informed of his action. Presidents have also the power of fining Medical Subordinates in the service of the District Board, reporting in all cases their action to the Surgeon-General.

Payment of Medical subordinates when on leave.

75. When a Medical Subordinate in Local Fund employ is deputed by the Surgeon-General to attend any departmental or other examinations away from the District in which they may be serving, the District Board concerned shall pay the salary of the absentee and his *locum tenens*.

Travelling allowances.

76. Travelling allowance is regulated by the rules in the Civil Travelling Allowance Code. Proposals to vary the rates of travelling allowance in force or to grant travelling allowances in cases not provided for by rule must be submitted for the sanction of the Government.

What Local Fund servants entitled to pension.

77. *Pensions and Allowances.*—The following servants on the Local Fund establishment entertained prior to 20th May 1881 will be entitled to pension under the rules of the Pension Code:—Overseers, Sub-Overseers, 1st, 2nd, and 3rd grades; Lascars forming petty establishment under the former Road Fund; Inspecting Schoolmasters; Masters of Local Fund Schools of the middle and higher classes; Vaccinators and Deputy Inspectors of Vaccination; Clerks and Peons, Moochees and Attenders in offices of control at the Presidency and in the offices of Collectors and Local Boards.

Medical officers lent to Local Fund Boards.

78. The rule in clause (*b*) of section 10, Civil Pension Code, by which the service of Medical Officers of Government lent to charitable dispensaries or hospitals in British India counts as if it were Government service, applies to service in all dispensaries or hospitals maintained by Local Funds.

Local Fund service not pensionary.

79. Servants of Local Boards entertained subsequently to 20th May 1881 will not be entitled to pension. Government will, however, be prepared to consider on their merits applications from such Boards for sanction to gratuities on retirement in individual cases of long and good service; and in special and exceptional cases will also sanction the grant of pension. Provided that no pension, gratuity, leave allowance or annuity shall exceed the sum to which under the Government Civil Pension and Leave Codes for the time being in force the servant would be entitled if the service had been service under Government.

Servants in controlling offices.

80. The above rule does not apply to servants paid from Local Funds employed in the controlling and central offices at the Presidency.

Pensionary contribution.

81. All servants of Government transferred from qualifying service to service under Local Boards are entitled to claim payment by Local Boards of additional salary equal to the usual contribution to Government in order to maintain their claim to pension eventually from State funds.

In like manner all servants of Local Boards entertained prior to 20th May 1881 and entitled to claim pension must, upon transfer to foreign service, make to Local Boards the usual contribution towards leave and pension charges. The rules of Chapter III of the Civil Pension Code are applicable to all such servants transferred to foreign service.

Government pensioners in Local Fund Service.

82. Persons who may have retired from the service of Government upon pension or gratuity are permitted to take employment under Local Boards subject to the rules of the Civil Pension Code on the subject.

Applications for pensions—Mode of submitting.

83. Mode of submitting pension applications—

(1) *Presidents of District Boards shall submit applications for pension or gratuity through the Accountant-General, for that officer's views, to Government in the Pension Department.*

(2) Local Fund pensioners will draw their pensions under the rules which regulate the payment of pensions to the *Civil State* pensioners and subject to the final audit of the Accountant-General.

(3) Pensioners who may reside in the Presidency town will draw their pensions through the Accountant-General's office, and those resident in the Mofussil through the Treasury Deputy Collectors of their respective districts.

Pensions how to be charged.

84. When a Local Fund servant is pensioned, the Local Fund pension will be provided as follows:—(1) In the case of servants employed in particular districts, the pension will be provided by the District Board of the district in which he was employed. (2) In the case of servants employed in the Controlling offices at the Presidency, the pension will be provided by the several District Boards of the Presidency in proportion to their assets.

CHAPTER X.

REPORTS AND ACCOUNTS.

Union annual report when due.

85. A brief report upon the operations of each Panchayat in the preceding official year must be sent to the President of the Taluk Board, or where there is no Taluk Board, to the President of the District Board not later than the 1st of May in each year. It must be accompanied by the statements I and II given in the appendix.

Taluk report.

86. A similar report will be submitted to the District Board by each Taluk Board before 1st June in each year, which must be accompanied by the statements specified below, forms of which are given in the appendix for the District Boards consolidated report and which may be used by Taluk Boards with the omission, when necessary, of the column showing the details of the working of the District Board.

District report.

87. The District Board will forward a similar report on the working of all the Boards in the district for the year to the Government not later than 15th of July in each year. Such report will be accompanied by the statements specified below.

May be prepared by a Committee.

88. The preparation of these statements and reports may be entrusted to a Committee of the Local Board, but in every case the Taluk or District Board, as the case may be, must be given the opportunity of modifying the same. All statements of Receipts and Expenditure should be signed by the Treasury Officers as Auditor.

Report to be published.

89. The report of each Local Board will be published in the District Gazettes, and such portion of the consolidated report as refers to the progress of education in the district will be forwarded, with the accompanying statements relating to the same, to the Director of Public Instruction for his information.

90. The instructions given for the preparation of the budget will, *mutatis mutandis*, apply to the statements noted below.

Receipts and expenditure.

91. *Statements I A and B.*—These statements exhibit the receipts and disbursements of the year compared with the estimate including subsequent allotments, &c., and with the actuals of the preceding year. The detail heads, as given in the budget, should be adopted in column i, and in filling up the column of actuals of the previous year, the audited results, as advised by the Accountant-General, should be adopted. The several variations should be explained in the column of remarks, and such explanations need not be repeated in the report. Details of all items of miscellaneous receipt and expenditure should be given in the covering letter and explained. Orders sanctioning contributions to and from Municipalities and other Local Boards should be quoted by number and date, and in case of private contributions the purpose for which they were given should be stated.

92. The progress report should exhibit separately all work costing more than Rs. 300 executed during the year, those costing Rs. 300 and less being shown in lump as "minor works."

Roads.

93. *Statement IV—Road Statement.*—This statement is intended to show the actual outlay on village and other roads, so that Government may see the proportion of expenditure on the former, and that each taluk gets its proper share of the land-cess derived from it. Any variation in

the mileage, as compared with the previous year's return, should be explained. The general state of the communications in the district should be noticed in the report, as also any special repairs executed to them during the year.

Tolls.

94. *Statement V—Tolls and Ferries.*—Each toll-gate and ferry place should be mentioned in this statement. New tolls opened and old ones abolished should be specified in the letter.

Land-cess.

95. *Statements VII and VIII.*—These are the demand, collection and balance statements of land-cess and other items of revenue.

Schools.

96. *Statement IX.*—In this statement all schools maintained from Local Funds should be entered, and the information should be made as complete as possible. For grant-in-aid and other schools *Statement X* is prescribed.

The progress of education during the year, the working of the different classes of schools, and the results obtained, as compared with the previous year, should be noticed in the report.

Dispensaries and sanitation.

97. Of the other statements which must accompany the report, No. XI refers to choultries and public bungalows, No. XII to hospitals and dispensaries, No. XIII to vaccination, and No. XIV to sanitation. The working of the dispensaries under the control of Local Boards, the extent to which they have been useful to the people, the number of dispensaries sanctioned but not opened, with the reason of their not being opened, the measures adopted for extending vaccination, &c., should be noticed in the report. Under *Sanitation* a short account of the nature of the improvements effected in water-supply and village-sites, and the arrangements made at important fairs and festivals should be noted. It should also be stated whether any voluntary contributions were made by the people for improving the sanitary condition of their villages, whether any epidemic prevailed during the year, and what the state of general health was. The working of the market-fee system should be specially noticed.

98. The covering letter from the District Board should report briefly upon the general working of the Panchayats and Taluk Boards of the district.

Accounts.

99. *Accounts.*—The accounts of Local Boards will be kept by Treasury Officers under the orders of the President of the District Board, in the form prescribed by Government subject to the rules contained in the *Account and Audit Code* and *Local Fund Public Works Code*, which have been sanctioned by Government and will be found in a separate volume.

Payments.

100. *Mode of making payments.*—All payments will be made on bills passed either by the Presidents of the Local Boards or by the Chairmen of Panchayats, as the case may be, or in their absence by any officer duly authorized on their behalf.

Form No. I.

101. An account in Form No. I of the receipts and charges of each Local Board will be prepared in the Treasury and will be forwarded in duplicate after audit to the President of the District Board in whose office it is due on the 8th of the month following that to which it relates. The President will forward one copy of the account to the Taluk Board concerned.

Form No. II.

102. A consolidated account of the receipts and charges of all Local Boards of the District will also be prepared in form No. II and submitted in duplicate by the 8th of the month to the President of the District Board, who will after scrutiny transmit one copy countersigned by himself to the Accountant-General not later than the 10th, the other copy being retained in his office for reference.

Endowment Fund.

103. *Endowment Fund.*—It will be observed that the Minor Funds are no longer distinguished in this form of account; a separate account, however, of each endowment will, as usual, be maintained and forwarded as a supplement to the account of the Local Board concerned.

Vouchers.

104. To enable the Local Board to satisfy itself as to the nature of the expenditure shown in Account No. I and the correctness of the accounts as a whole, a list of payments in form No. I-A will be prepared by the Treasury Officer monthly and forwarded with the account to the President of the District Board for transmission to the Board concerned. With the aid of this list it will be competent to the Local Board to check any charge in their account, as no bill can be paid in the Treasury without the authority of the President of the Board concerned.

Check of accounts.

105. *Check of accounts in Local Board's Offices.*—The account, when received from the Treasury Officer through the President of the District Board, will be checked in the Taluk Board's office with reference to list of payments above prescribed.

106. *Record of vouchers.*—The vouchers will ordinarily be recorded in the Treasury but the Local Boards' offices will be at liberty to call for any voucher which they may desire to have for reference or other purpose.

Union funds.

107. The funds under the control of Panchayats may, if the President of the Taluk or District Board having control over such Panchayat so desires, be kept in the nearest taluk treasury.

Cash-book to be kept.

108. In the taluk treasury where the funds of any Panchayat may be kept, there shall be maintained a simple cash-book, showing in detail all the receipts and all the sums paid out of the said fund.

Payments by orders of Chairman.

109. All sums payable from the Panchayat fund shall be paid by the tahsildar upon orders signed in every case by the Chairman of the Panchayat concerned. Such orders shall bear the date of the order, the name of the person to whom the sum is payable, and the reason for which the sum is to be paid.

Progress report.

110. Progress reports of all works under the control of Local Boards should be prepared monthly and laid before the Local Boards at their meetings.

111. Accounts, reports, and statements, prepared by the Treasury Deputy Collector, will be signed by the Collector, unless he be absent from head-quarters, and he will be responsible for their correctness.

CHAPTER XI.

MISCELLANEOUS.

Members to be supplied with Gazette.

112. A copy of the Supplement to the District Gazette containing the Proceedings of Local Board meetings, or any other information regarding Local Funds, will be supplied to every member of a Local Board.

Travelling allowance.

113. Local Boards are allowed discretionary power to pay travelling expenses to such of the non-official members attending meetings as may wish to avail themselves of the concession at rates laid down by Government from time to time.

114. Copies of all resolutions of any Local Board or Panchayat submitted to Government should state the names and official designations, if any, of the members of the Board or Panchayat present when such resolutions were passed.

Committees.

115. Any Local Board may appoint a Subordinate Committee, consisting in part of persons who are not members of the Local Board, to superintend or manage any institution in charge of the Local Board. The Board may require such Committees to furnish them with any returns regarding the institution as they may think necessary.

Channel of correspondence.

116. All communications from Panchayats and Taluk Boards to Government should be submitted through the President of the District Board, who will forward the same, with any remarks he may wish to offer, to Government. Correspondence between Local Boards and Government officers will, subject to the provisions of these rules, be conducted as arranged by the President of the District Board.

117. Postal charges incurred by servants paid from Local Funds, such as schoolmasters, vaccinators, inspecting schoolmasters, &c., will be debited to Local Funds. Further rules as regards postage are given below :— Postal charges.

Notification of the Government of India, dated 22nd November 1879, regarding Local Fund Correspondence.

"Correspondence sent by a Local Fund officer, or by any Government officer, acting in a capacity connected with a Local Fund, such as President or Secretary of a Local Fund Committee, is not official correspondence within the meaning of these rules and may not be superscribed as on Her Majesty's Service.

"Service stamps may not be sold to Local Fund officers or to Government officers in capacities connected with Local Funds; and the frank of such officers will not be recognized in support of service stamps.

"But nothing in this rule shall be held to prevent the transmission on Her Majesty's Service of correspondence sent by a Government officer acting as such, even though the correspondence may relate to the affairs of a Local Fund. For instance, the Commissioner of a division writing *in that capacity* to a Local Fund officer concerning Local Fund affairs may superscribe the letter on Her Majesty's Service.

"The term Local Fund, as used in this rule, is intended to include municipalities and other similar bodies or institutions."

118. Stationery articles required for Local Fund purposes may be purchased in the market or supplied from the Stationery Depôt on indent. In the latter case memoranda showing the amounts due by Local Boards will be furnished from time to time by the Superintendent of Stationery to the Accountant-General, who will arrange, after communication with Presidents of the District Boards, for the adjustment of the amount from Local Funds. Stationery.

APPENDIX I.

I.—BUDGET ESTIMATE of the (District or Taluk) Board of the District for the Official Year 1885-86.

A.—*Revenue and Receipts.*

—	Estimate, 1885-86.		Estimate, 1884-85.	Actuals, 1883-84.
	Detail (Minor Heads).	Total (Major Heads).		
Balance on 1st April 1885 ..				
1. Rates and taxes—				
(a) Cess on land				
(b) Tolls .. Under Act V of 1884				
Contributions from municipalities.				
(c) House-tax				
2. Education—				
(a) School-fees				
(b) Contributions				
(1) From municipalities				
(2) From other district funds				
(3) From private individuals				
(c) Sale-proceeds of books				
(d) Income from endowments				
(e) Miscellaneous				
3. Medical—				
(a) Hospital receipts				
(b) Sale of medicines				
(c) Contributions				
(1) From municipalities				
(2) From other district funds				
(3) From private individuals				
(d) Income from endowments				
(e) Miscellaneous				
4. Interest—				
(a) On Government securities				
(b) On arrears of revenue				
5. Miscellaneous—				
(a) Contributions for purposes other than Education, Medical or Works				
(1) From municipalities				
(2) From other district funds				
(3) From private individuals				
(b) Choultry rents				
(c) Market rents				
(d) Bungalow fees				
(e) Fees and fines				
(f) Ferry rents				
(g) Grass rents				
(h) Fishery rents				
(i) Rents and produce of land				
(j) Avenues				
(k) Sale of stores				
(l) Sundry receipts				
6. Public works—				
(a) Sale of buildings				
(b) Sale of tools and plant				
(c) Sale of old materials				
(d) Contributions				
(1) From municipalities				
(2) From other district funds				
(3) From private individuals				
(e) Refund of expenditure				
(f) Miscellaneous				
7. Contributions from Provincial Funds—				
(a) Education				
(b) General purposes				
(c) Public works				
(d) Choultries				
8. Contributions from Special Funds				
(a) Pound fund				
(b) Canal and Ferry fund				
9. Allotments from the District fund				
Total ..				

I.—CONSOLIDATED Budget Estimate of the District Board of the District for the Official Year 1885-86.

A.—*Revenue and Receipts.*

	Estimate, 1885-86.						Estimate, 1884-85.			Actuals, 1883-84.		
	Detail (Minor Heads).			Total (Major Heads).								
	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.
Balance on 1st April 1885 ..												
1. Rates and taxes												
(a) Cess on land												
(b) Tolls .. { Under Act V of 1884 ..												
Contribution from municipalities.												
(c) House-tax												
2. Education												
(a) School-fees												
(b) Contributions												
(1) From municipalities												
(2) From other district funds												
(3) From private individuals												
(c) Sale-proceeds of books												
(d) Income from endowments												
(e) Miscellaneous												
3. Medical												
(a) Hospital receipts												
(b) Sale of medicines												
(c) Contributions												
(1) From municipalities												
(2) From other district funds												
(3) From private individuals												
(d) Income from endowments												
(e) Miscellaneous												
4. Interest												
(a) On Government securities												
(b) On arrears of revenue												
5. Miscellaneous												
(a) Contributions for purposes other than Education, Medical or Works.												
(1) From municipalities												
(2) From other district funds												
(3) From private individuals												
(b) Choultry rents												
(c) Market rents												
(d) Bungalow fees												
(e) Fees and fines												
(f) Ferry rents												
(g) Grass rents												
(h) Fishery rents												
(i) Rents and produce of land												
(j) Avenues												
(k) Sale of stores												
(l) Sundry receipts												
6. Public Works												
(a) Sale of buildings												
(b) Sale of tools and plant												
(c) Sale of old materials												
(d) Contributions												
(1) From municipalities												
(2) From other district funds												
(3) From private individuals												
(e) Refund of expenditure												
(f) Miscellaneous												
7. Contributions from Provincial—												
(a) Education												
(b) General purposes												
(c) Public works												
(d) Choultries												
8. Contributions from Special Funds												
(a) Pound fund												
(b) Canal and Ferry fund												
9. Allotments from the District fund												
Total ..												

DEMAND, Collection and Balance of Land-cess.

Taluks.	Demand for 1885-86.			Collections in 1885-86.			Balance at the end of March 1886.		
	Arrears.	Current.	Total.	Arrears.	Current.	Total.	Arrears.	Current.	Total.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.

I.—BUDGET ESTIMATE of the (District or Taluk) Board of the District for the Official Year 1885-86.

B.—*Expenditure.*

	Estimate, 1885-86.		Estimate, 1884-85.	Actuals, 1883-84.
	Detail (Minor Heads).	Total (Major Heads).		
Grant I, Public works—				
(a) New works—				
(1) Communications				
(2) Civil buildings				
(3) Miscellaneous public improvements				
(b) Repairs—				
(1) Communications				
(2) Civil buildings				
(3) Miscellaneous public improvements				
(c) Establishment—				
(1) Public Works department supervision				
(2) Local Fund Engineering establishment				
(3) Tolls and Ferries				
(d) Tools and Plant				
(e) Contingencies				
(f) Contributions to—				
(1) Provincial Funds				
(2) Other District Boards				
(3) Municipalities				
(4) Private individuals				
(g) Miscellaneous .. .. Total, Grant I ..				
Grant II, Education—				
(a) Inspection				
(b) Normal schools—				
(1) Salaries of masters				
(2) Stipends of students				
(3) Clerks and servants				
(4) Miscellaneous				
(c) Secondary schools .. { Salary system				
Combined system				
(1) Salaries of masters				
(2) Clerks and servants				
(3) Miscellaneous				
(d) Elementary schools .. { Salary system				
Combined system				
(1) Salaries of masters .. { Fixed				
School-fees				
Results				
(2) Servants				
(3) Miscellaneous				
(e) Grants-in-aid—				
(1) Salary grants				
(2) Results do.				
(3) Building				
(4) Miscellaneous				
(f) Contributions to—				
(1) Provincial services				
(2) Other District Boards				
(3) Municipalities				
(4) Private individuals				

I.—Budget Estimate of the (District or Taluk) Board of the District, &c.—*continued.*

B.—*Expenditure*—continued.

—	Estimate, 1885-86.		Estimate, 1884-85.	Actuals, 1883-84.
	Detail (Minor Heads).	Total (Major Heads).		
(*g*) Miscellaneous—				
(1) Purchase of books				
(2) Commission on sale of books				
(3) Miscellaneous, *e.g.*, stipends to agricultural students, &c.				
Total, Grant II				
Grant III, Medical Services, Vaccination, Sanitation and Public and Charitable Institutions—				
(*a*) Hospitals and Dispensaries—				
(1) Superintendents				
(2) Medical subordinates				
(3) Clerks and servants				
(4) Diet of patients				
(5) Medicines and Surgical instruments				
(6) Supplies				
(7) Midwives and midwifery pupils				
(8) Medical pupils				
(9) Medical practitioners				
(10) Zillah Surgeon's establishment including travelling allowance, &c.				
(11) Cholera charges				
(12) Contingencies				
(13) Miscellaneous				
(*b*) Vaccination—				
(1) Fixed charges				
(2) Contingencies				
(*c*) Sanitation—				
(1) Improvement of water-supply				
(2) Improvement of village-sites				
(3) Scavengering establishment				
(4) Arrangements at fairs and festivals				
(5) Other sanitary outlay				
(*d*) Markets				
(*e*) Choultries—				
(1) Establishment				
(2) Feeding travellers				
(3) Contingencies				
(*f*) Public bungalows				
(*g*) Contributions to—				
(1) Provincial services—				
(1) Medical college				
(2) Sanitary inspection				
(3) Medical reserve staff				
(4) Cutler's establishment				
(5) Lunatics				
(2) Other District Boards				
(3) Municipalities				
(4) Private individuals				
(*h*) Miscellaneous—				
(1) Miscellaneous endowed institutions				
(2) Rewards for killing dogs				
(3) Miscellaneous				
Total, Grant III				
Grant IV, Miscellaneous—				
(*a*) Controlling establishments at the presidency				
(*b*) Establishment in the Collector's office				
(*c*) Local Board's office establishment				
(*d*) Contingencies—				
(1) Stationery				
(2) Postal charges				
(3) Printing charges				
(4) Travelling allowance to non-official members				
(5) Travelling allowance to office establishment				
(6) Miscellaneous—				
(*e*) Pensions				
(*f*) Refunds				
(*g*) Loans—				
(1) Principal				
(2) Interest				
(*h*) Miscellaneous				
Total, Grant IV				
Reserve				
Grand Total, Expenditure				
Balance—				
Deduct—				
(1) Balance under House-tax, if any				
(2) Balance under Endowments, if any				
Net balance available for general purposes—				

I.—CONSOLIDATED Budget Estimate of the District Board of the District for the Official Year 1885-86.

B.—*Expenditure.*

—	Estimate, 1885-86.						Estimate, 1884-85.			Actuals, 1883-84.		
	Detail (Minor Heads).			Total (Major Heads).								
	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Grant I, Public Works—												
(*a*) New Works—												
(1) Communications												
(2) Civil buildings												
(3) Miscellaneous public improvements												
(*b*) Repairs—												
(1) Communications												
(2) Civil buildings												
(3) Miscellaneous public improvements												
(*c*) Establishment—												
(1) Public Works department supervision												
(2) Local Fund Engineering establishment												
(3) Tolls and ferries												
(*d*) Tools and Plant												
(*e*) Contingencies												
(*f*) Contributions to—												
(1) Provincial Funds												
(2) Other District Boards												
(3) Municipalities												
(4) Private individuals												
(*g*) Miscellaneous												
Total, Grant I												
Grant II, Education—												
(*a*) Inspection												
(*b*) Normal schools—												
(1) Salaries of masters												
(2) Stipends of students												
(3) Clerks and servants												
(4) Miscellaneous												
(*c*) Secondary schools. Salary system												
(*c*) Secondary schools. Combined system												
(1) Salaries of masters												
(2) Clerks and servants												
(3) Miscellaneous												
(*d*) Elementary schools Salary system												
(*d*) Elementary schools Combined system												
(1) Salaries of master Fixed												
(1) Salaries of master School-fees												
(1) Salaries of master Results												
(2) Servants												
(3) Miscellaneous												
(*e*) Grants-in-aid—												
(1) Salary grants												
(2) Results grants												
(3) Building												
(4) Miscellaneous												
(*f*) Contributions to—												
(1) Provincial services												
(2) Other District Boards												
(3) Municipalities												
(4) Private individuals												
(*g*) Miscellaneous—												
(1) Purchase of books												
(2) Commission on sale of books												
(3) Miscellaneous, *e.g.*, stipends to agricultural students, &c.												
Total, Grant II												
Grant III, Medical Services, Vaccination, Sanitation, and Public and Charitable Institutions—												
(*a*) Hospitals and Dispensaries—												
(1) Superintendents												
(2) Medical subordinates												
(3) Clerks and servants												
(4) Diet of patients												
(5) Medicines and Surgical instruments												
(6) Supplies												
(7) Midwives and Midwifery pupils												
(8) Medical pupils												
(9) Medical practitioners												
(10) Zillah Surgeon's establishment including, travelling allowance, &c.												
(11) Cholera charges												
(12) Contingencies												
(13) Miscellaneous												

I.—Consolidated Budget Estimate of the District Board of the District for the—*cont.*

B.—*Expenditure*—continued.

	Estimate, 1885-86.						Estimate, 1884-85.			Actuals, 1883-84.		
—	Detail (Minor Heads).			Total (Major Heads).								
	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
(*b*) Vaccination—												
(1) Fixed charges												
(2) Contingencies												
(*c*) Sanitation—												
(1) Improvement of water-supply												
(2) Improvement of village-site												
(3) Scavengering establishment												
(4) Arrangements at fairs and festivals ..												
(5) Other sanitary outlay												
(*d*) Markets												
(*e*) Choultries—												
(1) Establishment												
(2) Feeding travellers												
(3) Contingencies												
(*f*) Public bungalows												
(*g*) Contributions to—												
(1) Provincial services—												
(1) Medical college												
(2) Sanitary inspection												
(3) Medical reserve staff												
(4) Cutler's establishment												
(5) Lunatics												
(2) Other District Boards												
(3) Municipalities												
(4) Private individuals												
(*h*) Miscellaneous—												
(1) Miscellaneous endowed institutions												
(2) Rewards for killing dogs												
(3) Miscellaneous												
Total, Grant III ..												
Grant IV, Miscellaneous—												
(*a*) Controlling establishments at the presidency ..												
(*b*) Establishment in the Collector's office												
(*c*) Local Board's office establishment												
(*d*) Contingencies—												
(1) Stationery												
(2) Postal charges												
(3) Printing charges												
(4) Travelling allowance to non-official members.												
(5) Travelling allowance to office establishment ..												
(6) Miscellaneous												
(*e*) Pensions												
(*f*) Refunds												
(*g*) Loans—												
(1) Principal												
(2) Interest												
(*h*) Miscellaneous												
Total, Grant IV ..												
Reserve ..												
Grand Total, Expenditure ..												
Balance—												
Deduct—												
(1) Balance under House-tax, if any												
(2) Balance under Endowments, if any												
Net balance available for general purposes—												

II.—Budget Estimate of the Union of in the Taluk (or District) of of the District for the Official Year 1885-86.

Receipts.				Expenditure.			
Items of receipts.	Estimate, 1885-86.	Estimate, 1884-85.	Actuals, 1883-84.	Items of expenditure.	Estimate, 1885-86.	Estimate, 1884-85.	Actuals, 1883-84.
1. Balance on 1st April 1885.				I. Sanitation—			
2. House-tax—				(*a*) Scavengering establishment			
(*a*) Current				(*b*) Improvement of village-sites			
(*b*) Arrears				(*c*) Improvement of water-supply			
3. Fees				(*d*) Sanitary arrangements at fairs and festivals ..			
4. Contributions from Taluk Board				(*e*) Miscellaneous			
				II. Public works— ..			
				(*a*) New works			
				(*b*) Repairs			
				(*c*) Miscellaneous			
				III. Schools—			
				Total ..			
				Balance ..			
				Total ..			
Total ..							

III.—Detail of Allotments for Public Works in the (Local Fund Taluk of or) District for the Official Year 1885-86.

A.—*New Works.*

No.	Taluk.	Description of work.	Amount of estimate.	Computed expenditure up to 31st March 1885.	Estimated expenditure for 1885-86.	Remarks and references.
		I.—Communications—				
		(1) Roads				
		(2) Tolls				
		(3) Ferries				
		Total ..				
		II.—Civil buildings—				
		(1) Hospitals and dispensaries .				
		(2) School buildings				
		(3) Chattrams and bungalows.				
		Total ..				
		III.—Miscellaneous Public Improvements—				
		(1) Avenues				
		(2) Tanks and wells				
		(3) Markets				
		Total ..				
		Grand Total ..				

B.—*Repairs.*

No.	Taluk.	Description of work.	Number of miles.	Rate per mile.	Estimated expenditure.	Remarks and references.
		I.—Communications—				
		(1) Roads				
		(2) Tolls				
		(3) Ferries				
		Total ..				
		II.—Civil buildings—				
		(1) Hospitals and dispensaries.				
		(2) School buildings				
		(3) Chattrams and bungalows .				
		Total ..				
		III.—Miscellaneous Public Improvements—				
		(1) Avenues				
		(2) Tanks and wells				
		(3) Markets				
		Total ..				
		Grand Total ..				

III-C.—TALUKWAR Statement showing Allotment of Expenditure on Roads in each Taluk in the District for the Official Year 1885-86.

No.	Taluks.	Portion of land-cess raised in the taluk.	Amount allotted for roads in the taluk.	Ratio of column 4 to column 3 per cent.	Remarks.
1	2	3	4	5	6

IV.—STATEMENT showing the Receipts and Charges of Local Fund Schools in the (Local Fund Taluk of or) District for the Official Year 1885-86.

No.	Names of schools.	Average attendance for the first 6 months of the year.	Receipts.									
			Grants from Government.		School-fees.		Contributions from other Local Boards, Municipalities and private individuals.		Miscellaneous.		Total.	
			1884-85.	1885-86.	1884-85.	1885-86.	1884-85.	1885-86.	1884-85.	1885-86.	1884-85.	1885-86.
	1	2	3	4	5	6	7	8	9	10	11	12
	1. Training schools ..											
	Total ..											
	2. Secondary schools { Salary system ..											
	{ Combined system.											
	Total ..											
	3. Elementary schools—											
	Boys—											
	(*a*) Salary system ..											
	(*b*) Combined system ..											
	Girls—											
	(*a*) Salary system ..											
	(*b*) Combined system ..											
	Total ..											
	Grand Total ...											

Names of schools.	Charges.													
	Salaries of masters.										Stipends of students.			
	1884-85.					1885-86.					1884-85.		1885-86.	
	Number.	Fixed.	School-fees.	Results grant.	Total.	Number.	Fixed.	School-fees.	Results grant.	Total.	Number.	Amount.	Number.	Amount.
1	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1. Training schools ..														
Total ..														
2. Secondary schools { Salary system ..														
{ Combined system.														
Total ..														
3. Elementary schools—														
Boys—														
(*a*) Salary system ..														
(*b*) Combined system ..														
Girls—														
(*a*) Salary system ..														
(*b*) Combined system ..														
Total ..														
Grand Total ...														

Names of schools.	Charges.																		
	Clerks.				Servants.				Rent.		Furniture.		Maps, books, &c.		Miscellaneous.		Total.		Remarks.
	1884-85.		1885-86.		1884-85.		1885-86.												
	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	1884-85.	1885-86.	1884-85.	1885-86.	1884-85.	1885-86.	1884-85.	1885-86.	1884-85.	1885-86.	
1	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
1. Training schools ..																			
Total ..																			
2. Secondary schools { Salary system ..																			
{ Combined system.																			
Total ..																			
3. Elementary schools—																			
Boys—																			
(*a*) Salary system ..																			
(*b*) Combined system ..																			
Girls—																			
(*a*) Salary system ..																			
(*b*) Combined system ..																			
Total ..																			
Grand Total ...																			

IV-B.—List of Salary Grants provided in the Budget of the (Local Fund Taluk of or) District Board of the District for the Official Year 1885-86.

No.	Name of school.	By whom managed.	Masters on whose account sanctioned.	Their qualifications.	Gross salary.	Grants-in-aid sanctioned.	Remarks.

V.—Detail of Charges in Local Fund Hospitals, Dispensaries and Public and Charitable Institutions in the (Local Fund taluk of or) District, for the Official Year 1885-86.

Institutions.	Fixed charges.																								Contingent charges.														
	Superintendence.				Medical subordinates.				Clerks.				Servants.				Midwives and Midwifery pupils.				Medical pupils.				Medicines and surgical instruments.		Supplies.		Diet of patients and feeding charges of travellers.		Rents.		Furniture.		Sundries.		Total.		Remarks.
	1884-85.		1885-86.		1884-85.		1885-86.		1884-85.		1885-86.		1884-85.		1885-86.		1884-85.		1885-86.		1884-85.		1885-86.																
	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	Number.	Amount.	1884-85.	1885-86.	1884-85.	1885-86.	1884-85.	1885-86.	1884-85.	1885-86.	1884-85.	1885-86.	1884-85.	1885-86.	1884-85.	1885-86.	
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
(a) Hospitals and dispensaries.																																							
Total ..																																							
(b) Itinerating medical establishment ..																																							
Total ..																																							
(c) Choultries ..																																							
Total ..																																							
(d) Public bungalows ..																																							
Total ..																																							
(e) Markets ..																																							
Total ..																																							
(f) Other institutions ..																																							
Total ..																																							
Grand Total ..																																							

VI.—Statement showing the Details of Sanitary Expenditure in the (Local Fund Taluk of or) District for the Official Year 1885-86.

Taluk.	Area.	Population.	Village.	Population.	Water-supply.	Village-site.	Scavenging establishment.	Fairs and festivals.	Other sanitary outlay.	Total.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12

VII.—Statement of Receipts and Expenditure on account of Endowments in the (Local Fund Taluk of or) District for the Official Year 1885-86.

Designation of endowment.	Receipts.									Expenditure.									Balance.	Remarks.
							Contribution from General Local revenues.													
	Balance.	Government contributions.	Other contributions.	Interest.	Rents and produce of land and market fees.	Miscellaneous.	As loan.	As contribution.	Total.	Allotted for public works.	Cost of supervision and tools and plant.	Fixed charges.	Contingent charges.	Allotted for education.	Allotted for dispensaries.	Allotted for other purposes.	Repayment of loan.	Total.		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Schools ..																				
Total ..																				
2. Hospitals and dispensaries.																				
Total ..																				
3. Choultries ..																				
Total ..																				
4. Markets ..																				
Total ..																				
5. Miscellaneous ..																				
Total ..																				
Grand Total ..																				

VIII.—UNION Budget Estimate of the Unions in the Taluk [or District] of or District for 1885-86.

Name of Union.	Balance.	Receipts,			Total.	Expenditure.				Balance.
		From House-tax.	Fees.	Contributions.		Sanitation.	Public works.	Schools.	Total.	
Total ..										

IX.—REVISED Estimate of the Receipts and Charges of the (District or Taluk) Board of the District for the Official Year 1884-85.

Items.	Actuals of the first six months of 1884-85.	Actuals of the last six months of 1883-84.	Probable receipts or expenditure of the remaining six months of 1884-85.	Totals of columns 2 and 4.	Budget grant for 1884-85.	Total grant for 1884-85 including subsequent allotments and transfers.	Explanation of variations between columns 5 and 7.
1	2	3	4	5	6	7	8
Receipts.							
Form I-A of the budget statement.							
Charges.							
Form I-B of the budget statement.							

IX-A.—DEMAND, Collection, and Balance Statement of Land-cess for the Official Year 1884-85.

(To be appended to the revised estimate.)

Taluk.	Demand.		Actual collections of the first six months of 1884-85.		Probable collections during the next six months of 1884-85.		Total collections.		Balance.		Remarks.
	Arrears.	Current.	Arrears.	Current.	Arrears.	Current.	Arrears.	Current.	Arrears.	Current.	

IX-B.—LIST showing the Budget Grants with subsequent Additions, Alterations and Deductions of Local Funds of the (District or Taluk) Board of the District for the Official Year 1884-85.

Items of expenditure.	Budget grant.	Subsequent additions.	Subsequent deductions.	Total grant up to date of the submission of the budget.	References and remarks regarding entries in columns 3 and 4.
1	2	3	4	5	6
Entries as per form I-B of the budget.					

X.—LIST of Fixed Establishments in the District in 1885-86.

(To accompany the budget for 1885-86).

Particulars.	Number.	Salary per mensem.	Authority for the scale of establishment entertained.
1	2	3	4
Grant I (c).			
(2) Engineering establishment ..			
(3) Tolls and Ferry establishment ..			
Grant II.			
(a) Inspection			
(b) to (d) Schools—			
Masters			
Do.			
Do.			
Do.			
Do.			
Grant III.			
(a) Hospitals and dispensaries ..			
(b) Vaccination			
(d) Markets			
(e) Choultries			
(f) Bungalows			
Grant IV.			
(b) Collector's office			
(d) Local Board's office			

APPENDIX II.

I-A.—Comparative Statement of Receipts of the (District or Taluk) Board of the District for the Official Year 1884-85.

Heads.	Actuals, 1883-84.	Estimate, 1884-85.	Actuals, 1884-85.	Increase over the estimate.	Decrease under the estimate.	Explanation of variations.
Balance on 1st April 1884 ..						
1. Rates and taxes—						
(a) Cess on land						
(b) Tolls { Under Act V of 1884.						
Contributions from municipalities.						
(c) House-tax						
2. Education—						
(a) School-fees						
(b) Contributions—						
(1) From municipalities ..						
(2) From other District funds.						
(3) From private individuals.						
(c) Sale-proceeds of books ..						
(d) Income from endowments ..						
(e) Miscellaneous						
3. Medical—						
(a) Hospital receipts						
(b) Sale of medicines						
(c) Contributions—						
(1) From municipalities.						
(2) From other District funds						
(3) From private individuals.						
d Income from endowments ..						
(e) Miscellaneous						
4. Interest—						
(a) On Government securities.						
(b) On arrears of revenue ..						
5. Miscellaneous—						
(a) Contributions for purposes other than Education, Medical or Works.						
(1) From municipalities.						
(2) From other District funds.						
(3) From private individuals.						
(b) Choultry rents						
(c) Market rents						
(d) Bungalow fees						
(e) Fees and fines						
(f) Ferry rents						
(g) Grass rents						
(h) Fishery rents						
(i) Rents and produce of land.						
(j) Avenues						
(k) Sale of stores						
(l) Sundry receipts						
6. Public works—						
(a) Sale of buildings						
(b) Sale of tools and plant ..						
(c) Sale of old materials ..						
(d) Contributions—						
(1) From municipalities ..						
(2) From other District funds.						
(3) From private individuals.						
(e) Refund of expenditure ..						
(f) Miscellaneous						
7. Contributions from Provincial Funds—						
(a) Education						
(b) General purposes						
(c) Public works						
(d) Choultries						
8. Contributions from Special Funds						
(a) Pound fund						
(b) Canal and Ferry fund ..						
9. Allotments from the District fund						
Total ..						

I-A.—Consolidated Comparative Statement of Receipts of the District Board of the District for the Official Year 1884-85.

Heads.	Actuals, 1883-84.			Estimate, 1884-85.			Actuals, 1884-85.			Increase over the estimate.			Decrease under the estimate.			Explanation of variations.
	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.	
Balance on 1st April 1884 ..																
1. Rates and taxes—																
(a) Cess on land																
(b) Tolls { Under Act V of 1884.																
Contributions from municipalities.																
(c) House-tax																
2. Education—																
(a) School-fees																
(b) Contributions—																
(1) From municipalities.																
(2) From other District funds.																
(3) From private individuals.																
(c) Sale-proceeds of books ..																
(d) Income from endowments.																
(e) Miscellaneous																
3. Medical—																
(a) Hospital receipts																
(b) Sale of medicines																
(c) Contributions—																
(1) From municipalities.																
(2) From other district funds.																
(d) Income from endowments.																
(e) Miscellaneous																
4. Interest—																
(a) On Government securities.																
(b) On arrears of revenue ..																
5. Miscellaneous—																
(a) Contributions for purposes other than Education, Medical or Works.																
(1) From municipalities.																
(2) From other District funds.																
(3) From private individuals.																
(b) Choultry rents																
(c) Market rents																
(d) Bungalow fees																
(e) Fees and fines																
(f) Ferry rents																
(g) Grass rents																
(h) Fishery rents																
(i) Rents and produce of land.																
(j) Avenues																
(k) Sale of stores																
(l) Sundry receipts																
6. Public works—																
(a) Sale of buildings																
(b) Sale of tools and plant ..																
(c) Sale of old materials ..																
(d) Contributions—																
(1) From municipalities.																
(2) From other District funds.																
(3) From private individuals.																
(e) Refund of expenditure ..																
(f) Miscellaneous																
7. Contributions from Provincial Funds—																
(a) Education																
(b) General purposes																
(c) Public works																
(d) Choultries																
8. Contributions from Special Funds																
(a) Pound fund																
(b) Canal and Ferry fund ..																
9. Allotments from the District fund																
Total ..																

I-B.—COMPARATIVE Statement of Expenditure of the (District or Taluk) Board of the District for the Official Year 1884-85.

Heads.	Actuals, 1883-84.	Estimate, 1884-85.	Actuals, 1884-85.	Increase over the estimate.	Decrease under the estimate.	Explanation of variations.
Grant I, Public Works—						
(a) New Works—						
(1) Communicctions						
(2) Civil buildings						
(3) Miscellaneous public improvements						
(b) Repairs—						
(1) Communications						
(2) Civil buildings						
(3) Miscellaneous public improvements						
(c) Establishment—						
(1) Public Works department supervision						
(2) Local Fund Engineering establishment						
(3) Tolls and ferries						
(d) Tools and Plant						
(e) Contingencies						
(f) Contributions to—						
(1) Provincial Funds						
(2) Other District Boards						
(3) Municipalities						
(4) Private individuals						
(g) Miscellaneous						
Total, Grant I						
Grant II, Education—						
(a) Inspection						
(b) Normal schools—						
(1) Salaries of masters						
(2) Stipends of students						
(3) Clerks and servants						
(4) Miscellaneous						
(c) Secondary schools. Salary system						
(c) Secondary schools. Combined system						
(1) Salaries of masters						
(2) Clerks and servants						
(3) Miscellaneous						
(d) Elementary schools. Salary system						
(d) Elementary schools. Combined system						
(1) Salaries of masters Fixed						
(1) Salaries of masters School-fees						
(1) Salaries of masters Results						
(2) Servants						
(3) Miscellaneous						
(e) Grants-in-aid—						
(1) Salary grants						
(2) Results grants						
(3) Building						
(4) Miscellaneous						
(f) Contributions to—						
(1) Provincial services						
(2) Other District Boards						
(3) Municipalities						
(4) Private individuals						
(g) Miscellaneous—						
(1) Purchase of books						
(2) Commission on sale of books						
(3) Miscellaneous, *e.g.*, stipends to agricultural students, &c.						
Total, Grant II						
Grant III, Medical Services, Vaccination, Sanitation and Public and Charitable Institutions—						
(a) Hospitals and dispensaries—						
(1) Superintendents						
(2) Medical subordinates						
(3) Clerks and servants						
(4) Diet of patients						
(5) Medicine and surgical instruments						
(6) Supplies						
(7) Midwives and Midwifery pupils						
(8) Medical pupils						
(9) Medical practitioners						
(10) Zillah Surgeon's establishment including travelling allowance, &c.						
(11) Cholera charges						
(12) Contingencies						
(13) Miscellaneous						

I-B.—Comparative Statement of Expenditure of the (District or Taluk) Board, &c.—*cont.*

Heads.	Actuals, 1883-84.	Estimate, 1884-85.	Actuals, 1884-85.	Increase over the estimate.	Decrease under the estimate.	Explanation of variations.
(b) Vaccination—						
(1) Fixed charges						
(2) Contingencies						
(c) Sanitation—						
(1) Improvement of water-supply						
(2) Improvement of village-site						
(3) Scavengering establishment						
(4) Arrangements at fairs and festivals						
(5) Other sanitary outlay						
(d) Markets						
(e) Choultries—						
(1) Establishment						
(2) Feeding travellers						
(3) Contingencies						
(f) Public bungalows						
(g) Contributions to—						
(1) Provincial Services—						
(1) Medical college						
(2) Sanitary inspection						
(3) Medical reserve staff						
(4) Cutler's establishment						
(5) Lunatics						
(2) Other District Boards						
(3) Municipalities						
(4) Private individuals						
(h) Miscellaneous—						
(1) Miscellaneous endowed institutions						
(1) Rewards for killing dogs						
(3) Miscellaneous						
Total, Grant III						
Grant IV, Miscellaneous—						
(a) Controlling establishment at the presidency						
(b) Establishment in the Collector's office						
(c) Local Board's office establishment						
(d) Contingencies—						
(1) Stationery						
(2) Postal charges						
(3) Printing charges						
(4) Travelling allowance to non-official members						
(5) Travelling allowance to office establishment						
(6) Miscellaneous						
(e) Pensions						
(f) Refunds						
(g) Loans—						
(1) Principal						
(2) Interest						
(h) Miscellaneous						
Total, Grant IV						
Reserve						
Grand Total, Expenditure						
Balance—						
Deduct—						
(1) Balance under House-tax, if any						
(2) Balance under Endowments, if any						
Net balance available for general purposes						

I-B.—CONSOLIDATED Comparative Statement of Expenditure of the District Board of the District for the Official Year 1884-85.

Heads.	Actuals, 1883-84.			Estimate, 1884-85.			Actuals, 1884-85.			Increase over the estimate.			Decrease under the estimate.			Explanation of variations.
	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.	
	RS	RS	RS.	RS	RS	RS.	RS	RS	RS.	RS	RS	RS.	RS	RS	RS.	RS.
Grant I, Public Works—																
(a) New Works—																
(1) Communications																
(2) Civil buildings																
(3) Miscellaneous public improvements																
(b) Repairs—																
(1) Communications																
(2) Civil buildings																
(3) Miscellaneous public improvements																
(c) Establishment—																
(1) Public Works department supervision																
(2) Local Fund Engineering establishment ..																
(3) Tolls and ferries																
(d) Tools and plant																
(e) Contingencies																
(f) Contributions to—																
(1) Provincial Funds																
(2) Other District Boards																
(3) Municipalities																
(4) Private individuals																
(g) Miscellaneous																
Total, Grant I ..																
Grant II, Education—																
(a) Inspection																
(b) Normal schools—																
(1) Salaries of masters																
(2) Stipends of students																
(3) Clerks and servants																
(4) Miscellaneous																
(c) Secondary schools { Salary system																
{ Combined system																
(1) Salaries of masters																
(2) Clerks and servants																
(3) Miscellaneous																
(d) Elementary schools { Salary system																
{ Combined system																
(1) Salaries of masters. { Fixed																
{ School fees																
{ Results																
(2) Servants																
(3) Miscellaneous																
(e) Grants-in-aid—																
(1) Salary grants																
(2) Results grants																
(3) Building																
(4) Miscellaneous																
(f) Contributions to—																
(1) Provincial services																
(2) Other District Boards																
(3) Municipalities																
(4) Private individuals																
(g) Miscellaneous—																
(1) Purchase of books																
(2) Commission on sale of books																
(3) Miscellaneous, e.g., stipends to agricultural students, &c.																
Total, Grant II ..																
Grant III, Medical Services, Vaccination, Sanitation and Public and Charitable Institutions—																
(a) Hospitals and dispensaries—																
(1) Superintendents																
(2) Medical subordinates																
(3) Clerks and servants																
(4) Diet of patients																
(5) Medicine and surgical instruments																
(6) Supplies																
(7) Midwife and Midwifery pupils																
(8) Medical pupils																
(9) Medical practitioners																
(10) Zillah Surgeon's establishment including travelling allowance, &c.																
(11) Cholera charges																
(12) Contingencies																
(13) Miscellaneous																

I-B.—Consolidated Comparative Statement of Expenditure of the District Board, &c.—*cont.*

Heads.	Actuals, 1883-84.			Estimate, 1884-85.			Actuals, 1884-85.			Increase over the estimate.			Decrease under the estimate.			Explanation of variations.
	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.	Taluks.	District.	Total.	
	RS	RS	RS.	RS	RS	RS.	RS	RS	RS.	RS	RS	RS.	RS	RS	RS.	
(b) Vaccination—																
(1) Fixed charges																
(2) Contingencies																
(c) Sanitation—																
(1) Improvement of water-supply																
(2) Improvement of village-sites																
(3) Scavengering establishment																
(4) Arrangements at fairs and festivals																
(5) Other sanitary outlay																
(d) Markets																
(e) Choultries—																
(1) Establishment																
(2) Feeding travellers																
(3) Contingencies																
(f) Public bungalows																
(g) Contributions to—																
(1) Provincial services—																
(1) Medical college																
(2) Sanitary inspection																
(3) Medical reserve staff																
(4) Cutler's establishment																
(5) Lunatics																
(2) Other District Boards																
(3) Municipalities																
(4) Private individuals ..																
(h) Miscellaneous— ..																
(1) Miscellaneous endowed institutions																
(2) Rewards for killing dogs																
(3) Miscellaneous																
Total, Grant III ..																
Grant IV, Miscellaneous—																
(a) Controlling establishments at the presidency ..																
(b) Establishment in the Collector's office																
(c) Local Board's office establishment																
(d) Contingencies—																
(1) Stationery																
(2) Postal charges																
(3) Printing charges																
(4) Travelling allowance to non-official members ..																
(5) Travelling allowance to office establishment ..																
(6) Miscellaneous																
(e) Pensions																
(f) Refunds																
(g) Loans—																
(1) Principal																
(2) Interest																
(h) Miscellaneous																
Total, Grant IV ..																
Reserve ..																
Grand Total, Expenditure ..																
Balance—																
Deduct—																
(1) Balance under House-tax, if any																
(2) Balance under Endowments, if any																
Net balance available for general purposes																

II.—STATEMENT of Receipts and Expenditure of the Union of in the Taluk (or District) of of the District for the Official Year 1884-85.

Receipts.					Expenditure.				
Heads.	Actuals, 1883-84.	Estimate, 1884-85.	Actuals, 1884-85.	Explanation of variations.	Heads.	Actuals, 1883-84.	Estimate, 1884-85.	Actuals, 1884-85.	Explanation of variations.
1. Balance on 1st April 1885.					I. Sanitation—				
2. House-tax—					(a) Scavengering establishment ..				
(a) Current ..					(b) Improvement of village-sites ..				
(b) Arrears ..					(c) Improvement of water-supply ..				
3. Fees					(d) Sanitary arrangements at fairs and festivals ..				
4. Contributions from Taluk Boards ..					(e) Miscellaneous ..				
					II. Public works—				
					(a) New works ..				
					(b) Repairs				
					(c) Miscellaneous ..				
					III. Schools				
					Total ..				
					Balance ..				
Total ..					Total ..				

II-A.—STATEMENT of Receipts and Expenditure of Unions in the Taluk (or District) of or District for 1884-85.

Name of Union.	Receipts.					Expenditure.		
	Balance.	From House-tax.	Fees.	Contributions.	Total.	Sanitation.	Public works.	Total.
Total ..								

III.—STATEMENT showing the Progress of New Works and Repairs in the (Local Fund Taluk of or) District for the Official Year 1884-85.

Taluk.	Number of item in the budget.	Description of work.	Amount of estimate.	Date and number of sanction.	Total amount sanctioned in the year.	Expenditure.					Remarks on the progress made during the year.
						From the commencement of the work up to the close of the preceding year.	In the year under report.				
							By Public Works department.	By Local Fund Engineering department.	By other agency.	Total.	

IV.—STATEMENT showing the Mileage and Cost of Roads constructed and repaired out of Local Funds in the (Taluk or) District during the Official Year 1884-85.

Taluks.	Number of miles of road in charge at the commencement of the year.			Number of miles of new road constructed during the year.			Cost of new roads constructed during the year.			Number of miles of road repaired during the year.			Cost of repairs.			Average cost of maintaining each mile of road repaired.		
	Village.	Taluk.	District.	Village.	Taluk.	District.	Village.	Taluk.	District.	Village.	Taluk.	District.	Village.	Taluk.	District.	Village.	Taluk.	District.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19

Taluks.	Number of miles of road in progress and surveyed.			Expenditure on roads surveyed and in progress.			Total outlay on roads.				Land-cess appertaining to			Percentage of column 26 to column 30.	Percentage of column 27 to column 31.	Percentage of column 28 to column 32.	Remarks.
	Village.	Taluk.	District.	Village.	Taluk.	District.	Village.	Taluk.	District.	Total.	Union.	Taluk.	District.				
	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36

V.—STATEMENT showing the Receipts and Charges of Tolls and Ferries in the Taluk of or District for 1884-85.

Names of tolls and ferries.	Date and number of sanction.	Rate of tolls (maximum, half the maximum, &c.)	Under amani or leased.	Receipts.			Expenditure.												Remarks.
							On works.			Establishment.			Contingencies.			Total.			
				RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	
Tolls under the management of the Local Board—																			
A. Toll-gate—																			
RS.																			
Gross receipts																			
Deduct contribution to																			
B. Toll-gate																			
C. Toll-gate																			
Total ..																			
Other Tolls.																			
1. From A. Board for toll-gate																			
2. From B. Municipality for toll-gate																			
3. From C. Municipality for toll-gate																			
Total ..																			
Ferries.																			
A. Ferry																			
B. Do.																			
Total ..																			
Grand Total ..																			

35

VI.—STATEMENT of Receipts and Expenditure on account of Endowment in the (Local Fund Taluk of or) District for the Official Year 1885-86.

Designation of endowments.	Receipts.									Expenditure.									Balance.	Remarks.
	Balance.	Government contributions.	Other contributions.	Interest.	Rents and produce of land and market fees.	Miscellaneous.	Contribution from General Local revenues.		Total.	Allotted for public works.	Cost of supervision and tools and plant.	Fixed charges.	Contingent charges.	Allotted for education.	Allotted for dispensary.	Allotted for other purposes.	Repayment of loan.	Total.		
							As loan.	As contribution.												
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Schools																				
Total ..																				
2. Hospitals and dispensaries.																				
Total ..																				
3. Choultries ..																				
Total ..																				
4. Markets																				
Total ..																				
5. Miscellaneous ..																				
Total ..																				
Grand Total ..																				

VII.—Statement of Demand, Collection and Balance of Land-cess in the Taluk of or District for 1884-85.

Taluks.	Rate of land-cess.	Current demand of 1883-84 as given in the report for that year.	Actual demand of 1883-84, ascertained after Jamabandy.	Current collections in 1883-84.	Current balance at the close of 1883-84.	Arrears balance at the close of 1883-84.	Demand of 1884-85.			Collections.			Arrears remitted.	Balance.			Remarks.
							Arrears (total of columns 6 and 7).	Current.	Total.	Arrears.	Current.	Total.		Arrears.	Current.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	A. P.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	
Taluk																	
Ryotwar																	
Permanently-settled estates																	
Inams																	
Miscellaneous																	
Total for taluk ..																	
Grand Total ..																	

Particulars of years to which the arrears in column 15 relate.

Years.	Ryotwar.	Permanently-settled estates.	Inams.	Miscellaneous.	Total.
Total ..					

VIII.—Statement showing the Demand, Collection and Balance of Miscellaneous Items of Revenue in the District for 1884-85.

	Items.	Demand.			Collection.			Remissions.	Balance.			Remarks.
		Arrears.	Current.	Total.	Arrears.	Current.	Total.		Arrears.	Current.	Total.	
	1	2	3	4	5	6	7	8	9	10	11	12
		RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
1	Lease of tolls											
2	Fishery rent											
3	Ferry rent											
	&c. &c.											
4	House tax											
	Endowment Fund.											
4	Interest on Government securities .											
5	Money-rent of land											
6	Value of produce and rent in kind of land.											
7	Money allowances due from Government.											
	&c. &c.											
	Total ..											

Details of arrears (column 9).

Items.	1881-82.	1882-83.	1883-84.	Total.
	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.
1. Lease of tolls				
2. Fishery rent				
3. Ferry rent				
&c. &c.				
Endowment Fund.				
4. Interest on Government securities				
5. Money-rent of land				
6. Value of produce and rent in kind of land ..				
7. Money allowances due from Government ..				
&c. &c.				
Total ..				

IX.—Statement showing the Cost, &c., of Local Fund Schools in the Taluk of or District for 1884-85.

Schools.	Number of schools.				Number of pupils on the rolls.	Average attendance.	Rate of school-fees.			Number of masters.	Rates of pay.			Number of stipendiary students.	Rate of stipends.			Receipts.					
	At the beginning of the year.	Opened during the year.	Closed in the year.	At the close of the year.														Grants from Provincial Funds.			School-fees.		
1	2	3	4	5	6	7	8			9	10			11	12			13			14		
							RS.	A.	P.		RS.	A.	P.		RS.	A.	P.	RS.	A.	P.	RS.	A.	P.
1. Normal school at																							
A																							
B																							
Total ..																							
2. Secondary schools } Salary system.																							
A .. } Combined system.																							
B .. }																							
Total ..																							
3. Elementary schools—																							
Salary system																							
Boys—																							
X. Taluk																							
Y. Taluk																							
Girls—																							
X. Taluk																							
Y. Taluk																							
Total ..																							
Combined system																							
Boys—																							
X. Taluk																							
Y. Taluk																							
Total																							
Girls—																							
X. Taluk																							
Y. Taluk																							
Total ..																							
Total, Elementary schools ..																							
Grand Total of all Local Fund schools..																							

IX.—Statement showing the Cost, &c., of Local Fund Schools in the Taluk of or District for 1884-85—*continued.*

Schools.	Receipts—(*contd.*)						Expenditure.																					Average cost per pupil in each description of Local Fund schools.			Remarks.
	Other receipts.			Total.			Masters.									Stipends of students.			Servants.			Contingencies and miscellaneous.			Total.						
							Fixed salary.			Results grant.			School-fees.																		
	15			16			17			18			19			20			21			22			23			24			25
	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	
1. Normal school at																															
A																															
B																															
Total ..																															
2. Secondary schools { Salary system																															
A .. .. { Combined system ..																															
B																															
Total ..																															
3. Elementary schools—																															
Salary system																															
Boys—																															
X. Taluk																															
Y. Taluk																															
Girls—																															
X. Taluk																															
Y. Taluk																															
Total ..																															
Combined system																															
Boys—																															
X. Taluk																															
Y. Taluk																															
Total ..																															
Girls—																															
X. Taluk																															
Y. Taluk																															
Total ..																															
Total, Elementary schools ..																															
Grand Total of all Local Fund schools ..																															

X.—STATEMENT showing the Educational Operations in the District for 1884-85.

Name or class of schools.	Number of schools.	Number of pupils on the rolls.	Average attendance.	Number of pupils examined.	Number of pupils found qualified.	Amount of grant earned.			Amount disbursed.									Number of villages visited by inspecting schoolmasters for starting new schools.	Number of schools visited.	Number of visits paid.	Remarks.
									For current year.			For previous year.			Total.						
1	2	3	4	5	6	7			8			9			10			11	12	13	14
						RS.	A.	P.	RS.	A.	P.	RS.	A.	P.	RS.	A.	P.				
1. Local Fund schools—																					
(a) Combined system schools ..																					
(b) Other schools																					
Total ..																					
2. Grant-in-Aid schools—																					
Salary grant																					
A																					
B																					
Total ..																					
Results grant																					
X. Taluk																					
Y. Taluk																					
Total ..																					
3. Unaided Indigenous schools—																					
X. Taluk																					
Y. Taluk																					
Total ..																					

XI.—STATEMENT showing the Receipts and Charges, &c., of the Choultries and Bungalows in the Taluk of or District for 1884-85.

No.	Name.	Number of travellers halted.	Class of bungalow and rate of fees collected.	Receipts.			Number of travellers fed.	Charges.					Remarks.
				Fees from travellers.	Other receipts.	Total.		Cost of feeding.	Establishment charges.	Contingent charges.	Public Works expenditure.	Total.	
	Choultries												
	ws												

XII.—Statement showing the Working of the Local Fund Hospitals and Dispensaries in the Taluk of or District in 1884-85.

Name of dispensary.	Class.	Whether held in Local Fund or rented building.	The number of in-patients for whom there is accommodation in the building.	Number of patients treated.			Expenditure.							Cost of each patient treated.		Remarks.
				In.	Out.	Total.	Superintendence.	Medical subordinates.	Clerks and servants.	Medicines and apparatus.	Diet of patients.	Miscellaneous.	Total.	In.	Out.	
			NO.	NO.	NO.	NO.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	RS. A. P.	
Total ..																

XIII.—Statement showing the Strength and Cost of Vaccine Establishment and the Number of Operations performed by them in the Taluk of or District for 1884-85.

Deputy Inspectors.					First-class Vaccinators.		Second-class Vaccinators.		Number of probationers and pupil-vaccinators.	Total cost of vaccinators and probationers.	Travelling allowance to vaccinators and probationers.	Rewards to vaccinators and probationers.	Rewards to village munsifs.	Batta to mothers of vaccine-supplying children.	Total cost.	Number vaccinated.	Successful cases.	Percentage of successful cases to total number.	Average cost of each successful case.	Remarks.
Number.	Rate of salary.	Payment for the year.	Deputy Inspector's peon.	Contingencies including travelling allowance.	Number.	Rate of pay.	Number.	Rate of pay.												

XIV.—Statement showing the Details of Expenditure incurred on Sanitation in the Taluk of or District for 1884-85.

Important villages or taluks.	Scavengering establishment.	Improvement of village-sites.	Improvement of water-supply.	Sanitary arrangements at fairs and festivals.	Miscellaneous.	Total.	Remarks.
Total ..							

XV.—List of Buildings and other Properties belonging to, or under the control of, the Taluk Board of the (or District Board,) District in 1884-85.

Taluk.	Village.	[illegible] building.	Purpose for which building is used.	Value of the building.	Accommodation.	Whether built or purchased by Local Board or made over to them.	Authority (number and date of sanction).	If any endowment is attached, the nature and value of the endowment.	Remarks.

XVI.—Nominal List of Members of the Taluk Board of the (or District Board) of the District for 1884-85.

Number.	Names of members.	Number of meetings held.	Attendance of each member.	Average attendance of each class of members.	Remarks.
	Official.				
1					
2					
3					
4	*Non-official.*				
5					
6					
7					
8					

APPENDIX III.

STATEMENT of Proposition for Revision of Establishment.

Order sanctioning present establishment.		Office to which the proposition refers.	Nature of charge.								Proposition.						Grounds of proposition.	Recommendations of the District Board and orders of Government.
			Present scale.				Proposed scale.				Permanent.		Temporary.					
			No.	Designation.	Pay.		No.	Designation.	Pay.		Increase per month.	Decrease per month.	Increase per month.		Decrease per month.			
No.	Date.				Minimum.	Maximum.			Minimum.	Maximum.	Amount.	Amount.	Period.	Amount.	Period.	Amount.		
					RS.	RS.			RS.	RS.	RS.	RS.		RS.		RS.		

C No. 845-8

Govt. of (1885) Madras.

FINANCIAL.

+ Sent to Ody 1-10-85 —

Issued

Recd. *Encl.*

G.O., 18th Sept. 1885, No. 741 L.F.

SEPTEMBER.

Local Fund Rules.

Ordering the publication in the Fort St. George and District Gazettes of the draft — framed under section 144 of the Local Boards Act, and stating that any objection or suggestion which may be made in respect of these rules will be considered on or after 1st November 1885.

Attached to No. 21636 15-12-85

41

Calicut
Aug 27. 85

My dear Shaw Stewart,

I have just sent in to ye Under Secretary a scheme wh. we have been meditating for some time here — for procuring Standard Designs, Estimates & Specifications for Iron superstructures & piers for our Road Bridges. —

Anderson has gone into the thing Con amore as usual & has drawn up a very good scheme I think in full detail —

It wd. save yr. Dept. no end of
bother in checking designs &c
if we had Standard plans &c
– It wd save the D Bds money
for the more bridges we can order
of these standard designs the
cheaper the contractors at hom
will be able to supply us. –
It wd. save the time of our Di
Engr who cannot afford the month
reqd. for drawing up Special pla
&c for such works

– It wd. facilitate immensely also
the passage of the orders for work
through the India Office. –
And in fact it wd. be a saving
all round. –

I hope you may be able to
approve of Anderson's proposals
& if you do I hope you will press
the matter on the attention of all
the D. Bds. – the cost some Rs12000,
is more than we alone ought to
bear I think considering how use-
ful such Standard Plans &c will
be. – Yrs sincerely

Bangalore.
28th Sept 02

My dear Colonel,

I received yours of 25th yesterday. I have some recollection of the matter referred to by Mr Logan having come before me, but in what shape I do really cannot recall, nor how I disposed of it. That I saw a proposal by Mr Anderson to have drawn up Standard designs for Road iron bridges & that the idea struck me as very good I remember, but beyond this my mind is a perfect blank. If the Collector worked the proposal in a d/o to me I fancy I must have replied to it at once — if the question came up in official form the possibility is it were to the S. Es. for their opinions, but in that case the papers would of course have been endorsed by you. Altogether I am puzzled as to how the proposal came to my knowledge it might have come before me simply in the "perusal" papers on which no action would be even taken. Perhaps Mr Logan would kindly enlighten us ——

~~I shall do my very best to be here on 14th & 15th to meet you and go into the water supply question. I leave this tomorrow morning with Mr Huddleston for the Kolar Gold Fields after visiting which on Wednesday he returns to Bangalore whilst I go on for a rapid tour through~~

~~the portions of the Kolar District threatened with scarcity. The Dewan, who is himself doing a similar tour of inspection in the Chitaldrug direction, has asked me to follow him to Mysore on my return, to discuss the situation & this may possibly interfere with our meeting. I shall however manage to make my movements fit in with yours —~~

~~Col. Neil Campbell has not turned up here yet.~~

Yours very sincerely

C. Unwin.

Calicut
Oct 6. 85

My dear Shaw Stewart,

I return Bowen's note:–

The papers went in along with my reply to a requisition from B. as to what changes were needed in the Local Fund Rules regarding checking of plans, estimates &c by yr Departmt. – Perhaps I ought

to have kept them separate
but the matter was intimat
Connected with these sa
Rules.—

I have no doubt the paper
will turn up all right
in time.—

But if the L. F. Rules
are likely to delay disposa

of the matter it would be a
great convenience to us
if they could be taken
up separately. — as we
have many bridges on hand
& in prospect —

Thanks very much for the
trouble you are taking about
the matter.—

Yrs sincerely
W Hayes

Cresh

W

47

Mr Anderson C.E. Malabar advocates the preparation of Standard Iron Bridge designs for 1st Class Roads (24 ft. wide), & 2nd Class Roads (18 to 21 ft. wide), using Rolled beams or plate girders, from 5 up to 30 feet spans, & pin jointed lattice girders for effective spans from 33 up to 152 feet.

Superstructures to be used with either masonry, or screw pile, piers.

Similarly, Standard designs of wrought iron screw pile piers for Bridges from 15 ft. to 50 ft. in height.

A large number of these are required to replace shaky wooden Bridges in Malabar, & the Local Funds Engineer has no agency to sit down & make out detailed designs

r, one copy to

Drawings & designs of the newest patterns for each river that has to be bridged.

Every Indian Narrow Gauge Railway nowadays has standard Girders, of which Bridges are composed, according to the capacity of the section.

The same principle might be applied to Roads.

There are a few standard sizes of Girders adopted by Genl. Sankey in the Mysore [illegible] supporting a wooden roadway or one of buckled plates.

As it is, however, when designs for Iron Bridges are called for Executive Engineers have to refer to Bombay and Calcutta Metal Mart illustrated Catalogues, in which a very few Bridge designs appear at the end, which may or may not be adapted to the place, otherwise, to rely upon what they are able to draw for themselves, or modify.

Suitable designs for Railway Bridges of every sort are easily come by, but Iron Road Bridges of moderate spans have been seldom constructed because the Roads of civilized Countries have been long bridged with masonry works or timber, & it is only in India that there has been a demand for them not yet supplied.

The requirements of India are peculiar, & manufacturers have not turned their attention to designing Indian Road Bridges, except to order.

At the same time drawings of rolled beams & plate girders exist in abundance, in connection with priced catalogues.

The principal difference between Iron Bridges for Indian Roads, & those that would be required elsewhere, are, that the width of roadway is less, being just enough to allow two Carts to pass, or from 16 to 18 feet.

Wider Bridges cannot be afforded.

The pieces must be portable, having to be carried long distances in half ton bullock carts.

Turned bolts must take the place of rivets in all loose joints.

The girders would as a rule be placed on Brick, or Stone, piers.

It has to be recollected that Iron Screw piles will decay in the tidal Estuaries of Malabar.

All that the Local Funds Agency can do at present is take the of Streams to be Bridged, with calculations of waterway, & erect the Bridges when the Ironwork arrives.

Some means of quickly estimating the cost of the Ironwork, in addition to choosing the most suitable design, is wanting.

It would it seems cost Rs 12000, to procure sets of complete drawings & specifications.

But if the Local Boards would be satisfied with what would most resemble an "illustrated priced Catalogue" of Iron Road Bridges for India, it must be possible to have it drawn up at a much less figure.

What they actually require is a fair idea of the Bridges to be indented for, & its outside cost, from any of the numerous standard designs that would be included in such a catalogue, the

District

Engineer's draftsman, under his direction, could piece together an intelligible design to accompany an Indent upon the Secretary of State.

The Manufacturer would then be bound to supply detailed drawings, Calculation Sheets & Specifications, with the Superstructure.

The preparation of an "Illustrated Official Catalogue" of Road Bridges & Piers, would be attended with some expense, but it does not seem absolutely necessary that it should contain more detail than is sufficient to make it clear what was being ordered.

Either a collection of lithographed plans, & any available specifications, ought to be procured & sent out by the India Office to be revised & printed in India & then

eturned to the Store
Dept. there for manufacture
price;
or else, the India
Office might take
measures for its preparation
on a few leading principles,
furnished from this country.

By degrees as Bridges
were bought, & put up,
a large stock of
highly complete drawings
& specifications would
accumulate, & Mr.
Anderson's intention
be realized —

ACF

Octr. 17. 1885

D.W.

Please report
each initial
the draft now
submitted. It
is based on your
note with alter-
ations directed
by W.G.

F.B.

Oct 17.12

12-12-5

Secretary D.W.

To D.W.

I concur generally in your remarks. but I would accept Mr Anderson's proposals respecting type drawings of bridges, &c, as they stand. i.e. for spans from 5' to 152', - and for the two widths of roadways named by him, 14' and 9'.

I agree with you that there are likely to be few places suited to the use of pile piers, and would therefore omit that part of Mr Anderson's proposals.

I am of opinion that the P.W. Dept. may well undertake to bear one half of the cost, - the remainder being borne by the various L.F. Boards.

Please have a reply drafted on above lines to reference from Financial Dept. No. 395 of 9-10-85, - which escaped my notice for some time.

11-12-85

Note

Mr Anderson C.E.
local Fund Engineer
Malabar, proposes that
a complete set of
type drawings, specifications
and estimates for iron
bridges for all spans
from 5' clear to 152'
effective and for 14' to
9' clear roadways
should be prepared in
England by a Consulting
Engineer: one copy of
them should be retained
in the India Office store
Depart., one copy with
the Chief Engineer P.W.
and one copy with each of
the District Board Engineers.

The advantages claimed
are

1st Time will be saved
by having designs at hand

instead of having to get
them prepared by officers
who are little used to
such work.

2nd The designs being
prepared by specialists
will be better & cheaper

3rd Time will be saved
by rendering it unnecessary
to have the designs
checked by the I.O.

4th There will be no chance
of designs having to be
redone owing to alterations
made by the authority who
passes them.

5 Orders can be more
quickly complied with
by the India Office.

6 The most economic
plan can be arrived at
quickly & correctly.

The spans proposed for
the bridges for which type
designs are to be prepared
are from 5' to 152' clear spans.

from 5' to 30' clear span it is purposed to use Plate Girder or Rolled beam & the designs are to increase in span by increments of 2½' thus one design for 5' another for 7½' another for 10' and so on up to 30' effective span From 33' up to 152' the designs are to be for lattice girders increasing by increments of 11' thus the designs would be for 33', 44, 55 & so on up to 152'. The total number of spans for which designs would be required is therefore 21 & Mr Anderson states that that number of designs would be required; but as there are two widths of roadway it seems that 42 designs would be required.

It is doubtful if it is necessary to prepare type designs for ~~[illegible]~~ spans under 20' clear, and it

It is also doubtful if it is advisable to prepare designs for effective spans over 104' as bridges of such large spans are rarely required.

Mr Anderson further proposes to have standard designs for open trestle & screw pile piers from 15' in height increasing by 5' to 50' & 8 such designs would therefore be required.

There are it is believed few cases in which bridges on piles would be required & as a rule it would be cheaper & better to build masonry piers, the expediency of preparing standard designs is therefore doubtful.

Mr Anderson gives the total cost of

the designs as about Rs 12000 it is not clear how he arrived at this figure: but from his data it would appear to be more than sufficient even if the two widths of roadway are taken into account, span being 20' & also 104' being written.

Mr Anderson proposes that the cost should be divided amongst the District Boards each of which would then have to pay about Rs 500 & for this sum they would be supplied with a complete set of designs, while it actually costs ~~th~~ about that sum to have one design prepared at their own Engineers.

There can be no doubt about the great advantages of having type designs –

and this has been the custom in railway departments for a long time. The design would be of the greatest use to the D.P.W. as many bridges are required in connection with irrigation work, it would therefore be well for Govt to pay a share of the cost and half would probably be a fair amount, but to arrive accurately at the proper share, the average annual expense of Govt & of the L.F. Boards on bridges during the last 5 years should be ascertained.

Mr Anderson has gone most carefully & fully into the matter, and prepared most excellent instructions for the preparation of the designs.

~~It~~ It should first be decided how much Govt are willing to pay towards the cost of preparation. The proposal should then be circulated to all L. F. Boards to ascertain if they are willing to contribute the rest of the money required; if all agree, Mr Sutherland's instructions, drawings, specification &c should be sent to some Engineer whose speciality is designing iron bridges for his opinion & suggestions. When this is received the papers can be sent to some Engineer for an estimate of the cost of preparing the drawings &c.

L

preparation of the designs.

~~The~~ It should first be decided how much Govt are willing to pay towards the cost of preparation. The proposals should then be circulated to all L. G. Boards to ascertain if they are willing to contribute the rest of the money required; if all agree, Mr Inchellam's instructions, drawings specification & should be sent to some Engineer whose specialty is designing iron bridges for his opinion & suggestions. When this is received the papers can be sent to some Engineer for an estimate of the cost of preparing the drawings &

Dept, one copy to

C.A.W.

With advertence to these do. letters — from Mr Logan & Major Bowen — Can you ascertain where the papers are to which Mr Logan alludes

8.10.85

C.A.W.

Under instructions from W the papers were submitted to DW yesterday for note.

HB

14/10/5

Dept, one copy to

D.W.

65

W directed me to submit this file to you for a note of remarks, and an expression of your opinion on Mr Logan's proposals.

Submitted —

FB

13/10/85.

India Office Store

Dept, one copy to

Note by the Chief Engineer P.W.D.

—

Mr. Anderson, M.I.C.E., Local Fund Engineer, Malabar, proposes that ~~a~~ complete sets of type drawings, specifications, & estimates, for iron bridges for ~~all~~ various spans from 5 ~~clear~~ feet to 152 feet, ~~Effective, and for~~ with width of roadway of either ~~14, to 9 clear~~ 14 feet or 19 feet clear, ~~roadways~~, be prepared in England by a competent Engineer; one copy of each complete set to be retained in the India Office Store Dept, one copy to be filed in the Chief Engineer's office, and one copy to be in the charge of each of the Local Fund Board Engineers in the Presidency.

2. The advantages claimed from ~~from~~ the foregoing system are—

(1) Time will be saved by having designs ready at hand, instead of having to get them prepared by officers who are little used to such work.

(2) The designs being prepared by ~~a~~ Specialists will be better & more satisfactory ~~cheaper~~.

(3) Time will be saved as it will be unnecessary to have the designs checked ~~in~~ by the P. W. Dept.

(4) There will be no necessity to have designs redone owing to alterations made by the authority who checks & passes them.

(5) Orders on the India Store Dept can still be more quickly

quickly disposed of.
(6) The most economic span can will be arrived at quickly & correctly.

3. The spans proposed for the bridges for which type designs are to be prepared are from 5 feet clear to 152 feet effective. From 5 feet to 30 feet clear spans it is proposed to use plate girders or rolled beams and the designs are to increase in span by increments of 2½' — thus — one design for 5 feet, another

for

for 7½ feet another for 10 feet and so on up to 30 feet. From 33' up to 152' effective spans the designs are to be for lattice girders increasing by increments of 11 feet; thus the designs would be for 33', 44', 55', feet and so on up to 152'. The total number of spans for which designs would be required is therefore twenty one, and Mr. Anderson states that is the correct

A [illegible] set of designs was
not required [illegible]
of the [illegible] girders [illegible]
[illegible]

number. ~~but as there are two widths of roadway it seems that 42 designs would be required.~~

4. The Chief Engineer approves Mr: Anderson's proposals respecting type drawings of bridges, &c., and for the two widths of roadway named by him - viz. 14' and 9'.

5. Mr Anderson further proposes to have standard designs for open trestle and screw

pile piers from 15' in height, increasing by 5' each design up to 50'. Eight designs would thus be required. The Chief Engr. is of opinion that there are few cases in which bridges on piles would be required, and as a rule it would be cheaper and better to build masonry piers. This portion of the [illegible] proposals should therefore be omitted.

5. As calculated by Mr Anderson, the total initial cost of the prepar-ation and typing the designs would be Rs: 12,000; but ~~it is not clear how he arrived at this figure. From the data supplied by him it would seem more than sufficient even if the two widths of roadway are taken into account as suggested in paragraph 3.~~ that figure is probably in excess of what will be required;

TO

and the omission of the designs for screwpile piers will reduce the cost considerably.

6. Whatever the total cost may be, Mr Anderson proposes to divide it equally amongst the L.F. Boards, and even if the cost reaches Rs: 12,000, it will be about Rs: 500 the share only to be paid by each Board. would [illegible] amount to only about For this sum they will receive a complete set of designs; whilst the compilation of a design by their

own Engineer for a single bridge would probably cost them as much. Setting financial considerations aside there can be no doubt that the standard designs would be most useful, - and not only to the L. F. Boards, but to the P. W. D. for the many bridges that are continually required in connection with irrigation

work.

7. The Chief Engineer is therefore of opinion that the P. W. D. might fairly should bear one half of the cost of the designs, the remainder being paid by the various L. F. Boards.

& 8. apparently The first step to be taken is to forward Mr: Andersons instructions, drawings, specifications &c. to an Engineer whose speciality is iron bridges, for his

opinion and
any suggestions
he may have to
offer. On receipt
of ~~this~~ which information
steps should be
taken to obtain
an estimate of
the cost of preparing
the designs &c.

9. In conclusion
the Chief Engineer
desires to note
that Mr Anderson
has gone most
carefully and
fully into the
subject and
has prepared

most excellent
instructions for
the preparation
of the designs.

W
14-12-85

Col. R.E.
Chief Engr. P.W.D.

D.E.W.

14/12/85

Copy afresh

Recd afresh

[illegible] 15th December/85

Memo. 13

C No. 8839

(Reporting on certain changes to be introduced into the proposed L. F. rules, if all the District Boards &c. combine & have specifns &c. of standard designs of iron-bridges &c. drawn up from England)

The Secretary to Govt. P.W.D. has the honor to return the correspondence received with Finl. Endorsement No. 395, dated 9th Octr: 1885, with the remark that the Govt in the P.W.D. concur in the remarks made by the Chief Engineer in his attached note regarding the proposal to ~~have~~ prepare standard designs, specifications, &c., for

iron bridges to
be constructed
in future by L. F.
Boards.

15.12.85

To The Fin. (L.F.)
Dept.
with 9 Enclos

de
15/12

No. 1941 D d/ 27-8-85
Proc: L F 741 L F d/ 18-9-85
G.O. $\frac{B}{A}$ 1870 W d/ 18-8-85
" 1373 W d/ 2-6-84
" 1190 W d/ 21-4-79

Urgent

R. No. 2163 C d/ 15-12-85

J – BH 16/12

R. No. 2176 E d/ 17th Dec/85

PWD

Endorsement

From the Financial Dept – No. 525 d/ 14th Dec/85

(Ch. No. 1881/7)

(Forwdg letter from the President District Board, Malabar, requesting that the question of the designs and estimates for Bridge superstructures and piers of wrought-iron being obtained from England may be taken as a special scheme and settled at an early date)

Returned to the Financial (L. F.) Department, with the remark that Endorsement No: 395 d 9th Oct/85, was replied to by No: 2163. C. d 15th Dec: 85.

The Chief Engr. has recommended that Mr Anderson's proposals in regard to designs for open trestle and screw pile piers be omitted, and the alterations in those proposals now suggested do not therefore affect the question.

To The Finl (L. F.) Dept with Enclo.

16.12.85 16/12/85 E.W.

No. 2163 C dy 15-12-85
" 1941 D dy 27-8-85
G.O. Fin'l 7412 7
dy 18-9-85
G.O. B/A 1870 W dy 18-8-85
" 1373 W dy 2-6-84
" 1190 W dy 21-4-79

1st February 1886, No. 269 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following papers :—

From W. LOGAN, Esq., President of the District Board, Malabar, to the Under Secretary to Government, Public Works Department, dated Vaniamkulam, 21st August 1885, No. B.

I have the honor to reply to your official memorandum, No. 194, dated 9th ultimo, on the subject of changes to be introduced into the Local Fund rules regarding the control over Local Fund public works by your department, and calling for a report on the number and kind of estimates which were, in 1884-85, sent to your department for scrutiny and sanction, and on the nature of the changes made in the estimates.

2. No. 23 of the Draft Local Fund Public Works Code directs that, in the case of important projects, involving scientific points or other considerations of special character, the report accompanying the estimate shall give a full account of the basis on which every part of it has been framed, the various considerations that have guided the designer in questions of engineering details, economy of construction, and the utility or practical working of the project when carried out.

3. I have delayed replying to your memorandum sooner because it seems to me that this rule should be modified to this extent, namely, that, when the project submitted for sanction is founded on standard designs, standard estimates, and standard specifications, this report may be dispensed with except where the standards have been departed from.

4. In the enclosed list of estimates for works submitted to your department for sanction and scrutiny in 1884-85, the two most important items are the Iritti and Meerumpoya iron bridges. The preparation of the plans, estimates and specifications for these works took up much of the valuable time of our District Engineer—more of it than could rightly be spared for such work. The plans, &c., were passed without any changes being made in your department, but when submitted to the authorities at the India Office, they proposed to change not only the design, but the materials of which the structures were to be manufactured. It is with a view to avoid the necessity for such changes in future that I now address you at considerable length.

5. It is obvious that if we had standard designs, estimates, and specifications for such works, not only would the valuable time of our District Engineer be saved, but there would be great facility in passing the projects through your department, and still greater facility in supplying the structures from England at the most economical rates.

6. It has been definitely ruled that iron work of this description, if obtained from England, is to be obtained by indent to be sent through the India Office.

7. My District Board has still some hundreds of bridges with wooden superstructures which we wish gradually to replace by more durable structures of iron, and when these are finished, and we can apply our surplus funds to the opening up of new roads, we shall have hundreds more of such works for construction, so that the question, in respect to this District Board, is a large and very important one.

8. After consulting our District Engineer, I requested him to take this opportunity of bringing the matter forward with a view, if possible, to combined action on the part of all the District Boards of the presidency.

9. Mr. Anderson, on whose qualifications for the task thorough reliance may be placed, has, accordingly, in the accompanying papers, prepared detailed instructions for the preparation of standard designs, estimates, and specifications of bridge superstructures for spans rising from 5 feet to 152 feet effective, and of piers rising from 15 feet to 50 feet.

10. He estimates that these standard designs, &c., would cost about Rs. 12,000, and he proposes that the originals should remain at the India Office, and that copies of them should be supplied to all the District Boards of the presidency as well as to your department.

11. The value of combination in this matter is sufficiently evident from the facts stated in paragraph 12 of Mr. Anderson's office note. Each District Board would (if combination is resorted to) obtain for about the same money which it now costs to get drawings, specifications, and estimates *for one bridge*, standard designs, &c., for no less than *twenty-one* such superstructures and *eight* bridge piers.

12. The fact that all the Railway Companies have combined in this matter (paragraph 15 of Mr. Anderson's note) is, I submit, a very strong reason why our District Boards should similarly combine for the same ends.

13. I solicit your earnest attention to paragraphs 16 to 18 of Mr. Anderson's note in regard to the facilities which the supply of such standard designs, &c., will afford to District Engineers for rapidly and economically estimating for such works.

14. In paragraphs 19 to 23 and in paragraph 30 of the note, Mr. Anderson explains the advantages of the pin system of construction in preference to the rivetting system. My District Board fully discussed this question before submitting the estimates for the Iritti and Meerumpoya bridges, and the decision was unanimous in favor of the system recommended by Mr. Anderson, for the very substantial reasons which you will find set forth in detail. Several of our rivetted bridges erected in the Wynaad some years ago are now sagged and out of shape, and rivets are constantly being found loose.

15. In paragraph 24 will be found reasons for preferring an open section for the posts, struts, and braces. The reasons adduced for this proposal are of a self-evident character and require no further remarks from me.

16. In paragraph 25 of the note and in paragraph 30 of appendix A, Mr. Anderson assigns reason for fixing the panel lengths of the standard trusses at 11 feet for spans between 33 feet and 88 feet. These trusses will, therefore, be built up of 3, 4, 5, 6, 7 and 8 panels, respectively, each panel being 11 feet long. For spans over 88 feet the panel lengths are to equal the depths of the trusses, *i.e.*, one-eighth of the spans, and the trusses will consequently be built up of 8 panels of the respective lengths of 12 feet, 13 feet, 16 feet, and 19 feet. On these points you will be a better judge than I am of the soundness of Mr. Anderson's proposals, but I may add that it seems to me that his conclusions have been very carefully worked out, and I am prepared to advise my District Board to adopt them.

17. In paragraphs 26 to 29, Mr. Anderson deals with the question of materials to be employed, wrought-iron *versus* steel, and I consider he has shown ample reasons for preferring the former.

18. In the papers accompanying Mr. Anderson's note full details are given of what is wanted in this matter, and, if approved by your department and the various District Boards, the order might go home to the India Office at an early date and be placed in the hands of Mr Batho, the Consulting Engineer named in General Hyde's memorandum printed in G.O., No. 183 L.F., Financial, dated 19th May 1885.

19. If the combined action of all the District Boards with your department herein recommended in regard to iron bridges is adopted, then, I think, the rules in paragraphs 18 to 28 of the Draft Local Fund Public Works Code may be amended considerably in order to save the District Board engineering establishments much time and labor in the preparation of estimates for such works.

No. 395, Financial.

Referred to the Public Works Department for favor of opinion.

Madras,
9th October 1885.

(By Order.)

(Signed) M. HAMMICK,
Assistant Secretary.

Note by the Chief Engineer, Public Works Department.

Mr. Anderson, M.I.C.E., Local Fund Engineer, Malabar, proposes that complete sets of type drawings, specifications, and estimates for iron bridges for spans from 5 feet to 152 feet, with width of roadway of either 14 feet or 9 feet clear, be prepared in England by a competent Engineer; one copy of each complete set to be retained in the India Office Store Department, one copy to be filed in the Chief Engineer's office, and one copy to be in the charge of each of the Local Fund Board Engineers in the presidency.

2. The advantages claimed for the proposal are—

(1) Time will be saved by having designs ready at hand, instead of having to get them prepared by officers who are little used to such work.
(2) The designs, being prepared by specialists, will be better and more satisfactory.
(3) Time will be saved, as it will be unnecessary to have the designs checked by the Public Works Department.
(4) Orders on the India Store Department will be more quickly disposed of.
(5) The most economic span will be arrived at quickly and correctly.

3. The spans proposed for the bridges for which type designs are to be prepared are from 5 feet clear to 152 feet effective. From 5 feet to 30 feet clear spans, it is proposed to use plate girders or rolled beams, and the designs are to increase in span by increments of 2½ feet. From 33 feet up to 152 feet effective spans, the designs are to be for lattice girders increasing by increments of 11 feet. The total number of spans for which designs would be required is therefore twenty-one.

4. The Chief Engineer approves Mr. Anderson's proposals respecting type drawings of bridges, &c., and for the two widths of roadway named by him, viz., 14 feet and 9 feet.

5. Mr. Anderson further proposes to have standard designs for open trestle and screw-pile piers from 15 feet in height, increasing by 5 feet each design up to 50 feet. Eight designs would thus be required. The Chief Engineer is, however, of opinion that there are few cases in which bridges on piles would be required, and that as a rule it would be cheaper and better to build masonry piers. This portion of the proposals should therefore be omitted.

6. As calculated by Mr. Anderson, the total initial cost of the preparation and typing the designs would be Rs. 12,000, but that figure is probably in excess of what will be required; and the omission of the designs for screw-pile piers will reduce the cost considerably.

7. Whatever the total cost may be, Mr. Anderson proposes to divide it equally amongst the Local Fund Boards; and even if the cost reaches Rs. 12,000, the share to be paid by each Board would amount to only about Rs. 500, for which sum they will receive a complete set of designs; whilst the compilation of a design by their own Engineer for a single bridge would probably cost as much. There can be no doubt that the standard designs would be most useful, not only to the Local Fund Boards, but also to the Public Works Department; and the Chief Engineer is of opinion that the Public Works Department might fairly bear one-half of the cost of the designs, the remainder being paid by the various Local Fund Boards.

8. Apparently, the first step to be taken is to forward the documents submitted by Mr. Anderson to an Engineer, whose speciality is iron bridges, for his opinion and suggestions; on receipt of which, steps should be taken to obtain an estimate of the cost of preparing the designs, &c.

9. In conclusion, the Chief Engineer desires to note that Mr. Anderson has gone most carefully and fully into the subject, and has prepared most excellent instructions for the preparation of the designs.

(Signed) J. SHAW-STEWART, Colonel, R.E.,
Chief Engineer, P.W.D.

15th December 1885.

Memo. from the Secy. to Govt., Public Works Dept., dated 15th Dec. 1885, No. 2163 C.
Office note from the Chief Secretary, dated 11th January 1886.
Memo. from the Secy. to Govt., Public Works Dept., dated 16th Jan. 1886, No. 216 C.

Order—dated 1st February 1886, No. 269 W., Public Works.

Ordered that the following letter be addressed to the Secretary of State for India, to whom the documents submitted by Mr. Anderson will be forwarded in original.

(True Extract.)

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

To the Superintending Engineer, Tank Maintenance Scheme.
" Financial (L.F.) Department, with copy of despatch to Secretary of State.
" Superintending Engineers, for information.
" Examiner, Public Works Accounts.

Exd. E. Fernandez
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1886} Madras.

PUBLIC WORKS.

Dated February, 1st.

Recd. *Encl.*

G.O., 1st Feb. 1886, No. 269 W.

FEBRUARY.

Type Designs for Bridge Superstructure

Orders on proposal made by the President, District Board, Malabar, for the preparation of —.

Malabar Collector's Office

78 A

List of Papers enclosed

I. Diagram No. 1
II. Do. No. 2
III. Appendix A
IV. Do. B
V ~~Letter No~~ Office Note dated 15 August/85
VI List of Bridge Estimates ~~[illegible]~~

W Logan
President

Palghaut
Aug 15.85

W Logan
Collector

I
II
III
IV

3
6
8834
25/6/86

Malabar Collector's Office
No. A Camp Vaniamkulam 20 August 1885

19

From,

W. Logan Esquire
Collector of Malabar

To,

Major C. Bowen, R.E.
Under Secretary to Govt.
Public Works Depts.
Madras

Sir,

Referring to your official letter No. 194 of 9th ultimo, I have the honor to inform you that the matter has not been lost sight of. The papers are nearly all ready for transmission, but I have had to return them to the District Engineer for correction on some technical points. I hope to despatch them this week.

2. As the papers embrace very important proposals for future working I beg you to be good enough to wait for a day or two longer.

I have the honor to be,
Sir
Your most obedient Servant
W. Logan
Collector

Despatch
27th [illegible]/85

No. 1941 D

Tr. 7380
8839/85
25/[illegible]

Transferred to the (Local Fund) Financial Department for which department these papers are apparently intended.

C. Bowen. Major R.E.

Under Secy to Govt P.W.D.

From,

the Collector of Malabar

To

the Under Secretary to Govt. P.W.D.

Dy Augt 20 - 85
Recd 22/8/85

Informing that the papers asked in Memo 194 of the 9th ult. will be sent this week

---

Read the following paper:-

Print

Noted P.W. [illegible]
Dated [illegible]

No. B.

Malabar Dt Board President's Office
Camp Vaniamkulam 21st August 1885

81

From,

W. Logan Esquire
President District Board
Malabar

To,

Major C. Bowen R.E.
Under Secretary
to Government
Public Works Deptt,
Madras.

Sir,

I have the honor to reply to your official memo. No. 194 dated 9th ultimo on the subject of changes to be introduced into the Local Fund Rules regarding the control over Local Fund Public Works by your Department and calling for a report on the number and kind of estimates which were in 1884-85 sent to your Department for scrutiny and sanction and on the nature of the changes made in the estimates —

2. No. 23 of the Draft Local Fund Public works Code directs that in the case of important projects involving scientific points or other considerations of special character the report accompanying the estimate shall give a full account of the basis on which every part of it has been framed, the various considerations that have guided the designer in questions of Engineering details, economy of construction and the utility or practical working of the project when carried out.

3. I have delayed replying to your memo. sooner because it seems to me that this Rule should be modified to this extent, namely, that when the project submitted for sanction is founded on standard designs, standard estimates and standard specifications, this report may be dispensed with except where the standards have been departed from—

4. In the enclosed list of estimates for works submitted to your Department for sanction and scrutiny in 1884-85 the two most important items were the Irrity and Meerumpoya Iron Bridges. The preparation of the plans, estimates and specifications for these works took up much of the valuable time of our District Engineer – more of it than could rightly be spared for such work. The Plans &c were passed without any changes being made in your Department, but when submitted to the authorities at the India Office they proposed to change not only the design but the materials of which the structures were to be manufactured. It is with a view to avoid the necessity for such changes in future that I now address you at considerable length.

5. It is obvious that if we had standard designs, estimates

and specifications for such works not only would the valuable time of our District Engineer be saved, but there would be great facility in passing the projects through your Department and still greater facility in supplying the structures from England at the most economical rates.

6. It has been definitely ruled that Iron work of this description if obtained from England is to be obtained by Indent to be sent through the India Office.

7. My District Board has still some hundreds of bridges with wooden superstructures which we wish gradually to replace by more durable structures of iron, and when these are finished and we can apply our surplus funds to the opening up of new roads, we shall have hundreds more of such works for construction, so that the question in respect to this District Board is a large and

very

very important one.

8. After consulting our District Engineer, I requested him to take this opportunity of bringing the matter forward with a view if possible to combined action on the part of all the District Boards of the Presidency.

9. Mr. Anderson, on whose qualifications for the task thorough reliance may be placed, has accordingly, in the accompanying papers, prepared detailed instructions for the preparation of Standard Designs, estimates and specifications of Bridge superstructures for spans rising from 5 feet to 152 feet effective and of piers rising from 15 feet to 50 feet.

x As per enclosed list.

10. He estimates that these Standard Designs he would cost about Rs (12,000) twelve thousand, and he proposes that the originals should remain at the India Office, and that copies of them should be supplied to all the District

Boards of the Presidency as well as to your Department.

11. The value of combination in this matter is sufficiently evident from the facts stated in para 12 of Mr. Anderson's office note. Each District Board would (if combination is resorted to) obtain for about the same money which it now costs to get drawings, specifications and estimates for one bridge standard. Designs &c for no less than (21) twenty one such superstructures and (8) eight bridge piers.

12. The fact that all the Railway Companies have combined in this matter (para 15 of Mr. Anderson's note) is, I submit, a very strong reason why our District Boards should similarly combine for the same ends.

13. I solicit your earnest attention to paras 16 to 18 of Mr. Anderson's note in regard to the facilities which the supply of such standard Designs &c will afford to District [illegible]

Engineers for rapidly and economically estimating for such works. &c

14. In paras 19 to 23 and in para 30 of the note Mr. Anderson explains the advantages of the Pin System of construction in preference to the rivetting system. My District Board fully discussed this question before submitting the estimates for the Irrity and Meenumpoya bridges and the decision was unanimous in favor of the system recommended by Mr. Anderson for the very substantial reasons which you will find set forth in detail. Several of our rivetted bridges erected in the Wynad some years ago are now sagged and out of shape and rivets are constantly being found loose.

15. In para 24 will be found reasons for preferring an open section for the posts, struts and braces. The reasons adduced for this proposal are of a self evident character and require no further remarks

from me.

16. In para 25 of the note and in para 30 of appendix A Mr. Anderson assigns reasons for fixing the panel lengths of the standard trusses at 11 feet for spans between 33 feet and 88 feet. These trusses will therefore be built up of 3, 4, 5, 6, 7 and 8 panels respectively, each panel being 11 feet long. For spans over 88 feet the panel lengths are to equal the depths of the trusses, i.e. ($\frac{1}{8}$) one-eighth of the spans and the trusses will consequently be built up of 8 panels of the respective lengths of 12', 13', 16' and 19'. On these points you will be a better judge than I am of the soundness of Mr. Anderson's proposals, but I may add that it seems to me that his conclusions have been very carefully worked out, and I am prepared to advise my District Board to adopt them.

17. In paras 26 to 29 Mr. Anderson deals with the question of materials

to

to be employed, — wrought iron versus steel — and I consider he has shown ample reasons for preferring the former

18. In the papers accompanying Mr. Anderson's note full details are given of what is wanted in this matter and if approved by your department and the various District Boards the order might go home to the India Office at an early date and be placed in the hands of Mr. Batho the Consulting Engineer named in General Hyde's memo. printed in G.O. 7.D. 183 L-7 dated 19 May 1885

+Not Recd

19. If the combined action of all the Dt Boards with your Department herein recommended in regard to Iron Bridges is adopted, then I think the Rules in paras 18 to 28 of the Draft Local Fund Public works Code may be amended considerably in order

to save the District Board Engineering establishments much time and labour in the preparation of estimates for such works.

I have the honour to be,
Sir,
Your most obedient Servant

President.

Public Works Dept.

[illegible]

From,

The President
of Board
Malabar

To The Under Secretary
to Government
Public Works Department
Madras

Dated Augt 21st 1885.
Recd [illegible]

W. B
[illegible]

Report on the changes to be introduced into the L. F. Rules [illegible] in [illegible]

From
Public Works Department

Copy of Chief Engineer's
of 27th

No. 1961

Dated 27th August
Received
Enclosures

SUBJECT.

Report on certain
changes to be introduced
in the Local Fund Public

Referred to C.E. P.W. for favour
of opinion
(By order)
Asst. Secretary

Malabar

83

Note by the Chief Engr.
P.W. Department

Mr. Anderson, M.I.C.
Local Fund Engineer,
Malabar, proposes that
complete sets of type
drawings, specifications,
and estimates, for iron
bridges for spans from
5 feet to 152 feet, with
width of roadway of
either 14 feet or 9 feet
clear, be prepared in
England by a compet
Engineer, one copy of

each complete set to be retained in the India office Store Department, one copy to be filed in the Chief Engineer's office, and one copy to be in the charge of each of the Local Fund Board Engineers in the Presidency.

2 The advantages claimed for the proposal are.

(1) Time will be saved by having designs [illegible] of having to get them prepared by officers who are little used to such work.

(2) The designs being prepared by specialists will be better and more satisfactory

(3) Time will be saved, as it will be unnecessary to have the designs checked by the P.W. Department

(4) Orders on the India Store Dept will be more quickly disposed of

(5)

span will be arrived at quickly and correctly.

3. The spans proposed for the bridges for which type designs are to be prepared are from 5 feet clear to 152 feet effective. From 5 feet to 30 feet clear span, it is proposed to use plate girders or rolled beams, and the designs are to increase in span by increments f 2½ feet. From 30 feet up to 152 feet effective spans, the designs are to be for lattice girders increasing by increments of 11 feet. The total number of spans for which designs would be required is therefore twenty one.

4. The Chief Engr. approves Mr. Anderson's proposals respecting type drawings of bridges, &c, and for the two widths of roadway as used by Govern-

14 feet and 9 feet.

5. Mr. Anderson further proposes to have standard designs for open trestle and screw pile piers from 5 feet in height increasing by 5 feet each design up to 50 feet. Eight designs would thus be required. The Chief Engineer is however of opinion that there are few cases in which bridges on

required, and that as a rule it would be cheaper and better to build masonry piers. This portion of the proposals should therefore be omitted.

6. As calculated by Mr. Anderson, the total initial cost of the preparation and typing the designs would be Rs 12,000, but that figure is probably

in excess of what will be required; and the omission of the designs for screw pile piers will reduce the cost considerably.

7. Whatever the total cost may be, Mr. Anderson proposes to divide it equally amongst the Local Fund Boards; and even if the cost reaches Rs 12,000, the share to be paid each Board would

amount to only about ~~Rs 500;~~ for which sum they will receive a complete set of designs; whilst the compilation of a design by their own Engineer for a single bridge would probably cost ~~the~~ as much. There can be no doubt that the standard designs would be most useful, not only to the Local Fund Boards, but also to the P.W. Dept, and the Chief Engineer is of opinion that the P.W.D. might fairly bear one half of the cost of the designs, the remainder being paid by the various Local Fund Boards.

8. Apparently the first step to be taken is to forward the documents submitted by Mr. Anderson ~~with the~~.

~~[illegible]~~

[illegible]

an Engineer whose speciality is iron bridges, for his opinion and suggestions; on receipt of which, steps should be taken to obtain an estimate of the cost of preparing the designs, &c.

9. In conclusion, the Chief Engineer desires to note that Mr. Anderson has gone most carefully and fully into the subject, and has

prepared most excellent instructions for the preparation of the designs

J. Maw Stewart
15.12.85 Col. R.E.
Chief Engr. P.W.D.

7

99

No. 2163C P.W. Department

Memorandum

The Secretary to Government, P.W. Department, has the honor to return the correspondence received with Financial Endorsement No. 395, dated 9th October 1885, with the remark that the Government in the P.W. Dept. concur in the remarks made by the Chief Engineer in his attached note regarding the proposal to prepare standard designs, specifications, &c, for iron bridges to be constructed in future by Local Fund Boards.

J. Maw Stewart
Col. R.E.

Chepâk
15th December 85

Secretary to Govt. P.W.D.

to
The Financial (L.F.) dept.
[illegible]

X² 1
1885

No. 1191 W d/ 5-4-79.
" 1372 W d/ 2-6-80
" 1978 W d/ 10-8-85.
" 721 L.B. d/ 18-9-85 (Bal)
" 2163 C d/ 15-12-85
" 2176 C d/ 17-12-85.

1885
Public Works Department
[illegible] Department

No. 2163C
Dated 15 } 12-85
Despatched
Received

Recorded pending receipt of specification [illegible] from the D.E., [illegible] in reference [illegible] (Chief Engineer)
[illegible] 14/12

Subject.

Returning with remarks correspondence relative to the proposal of obtaining specifications of standard designs for iron bridges from England.

No. 219

Office of the President Dt. Board
Malabar Camp Vythiri.
4th December 1885.

From
The President
District Board, Malabar

To
The Chief Secretary
to Government of Madras. P.W.D.
Financial Deptt

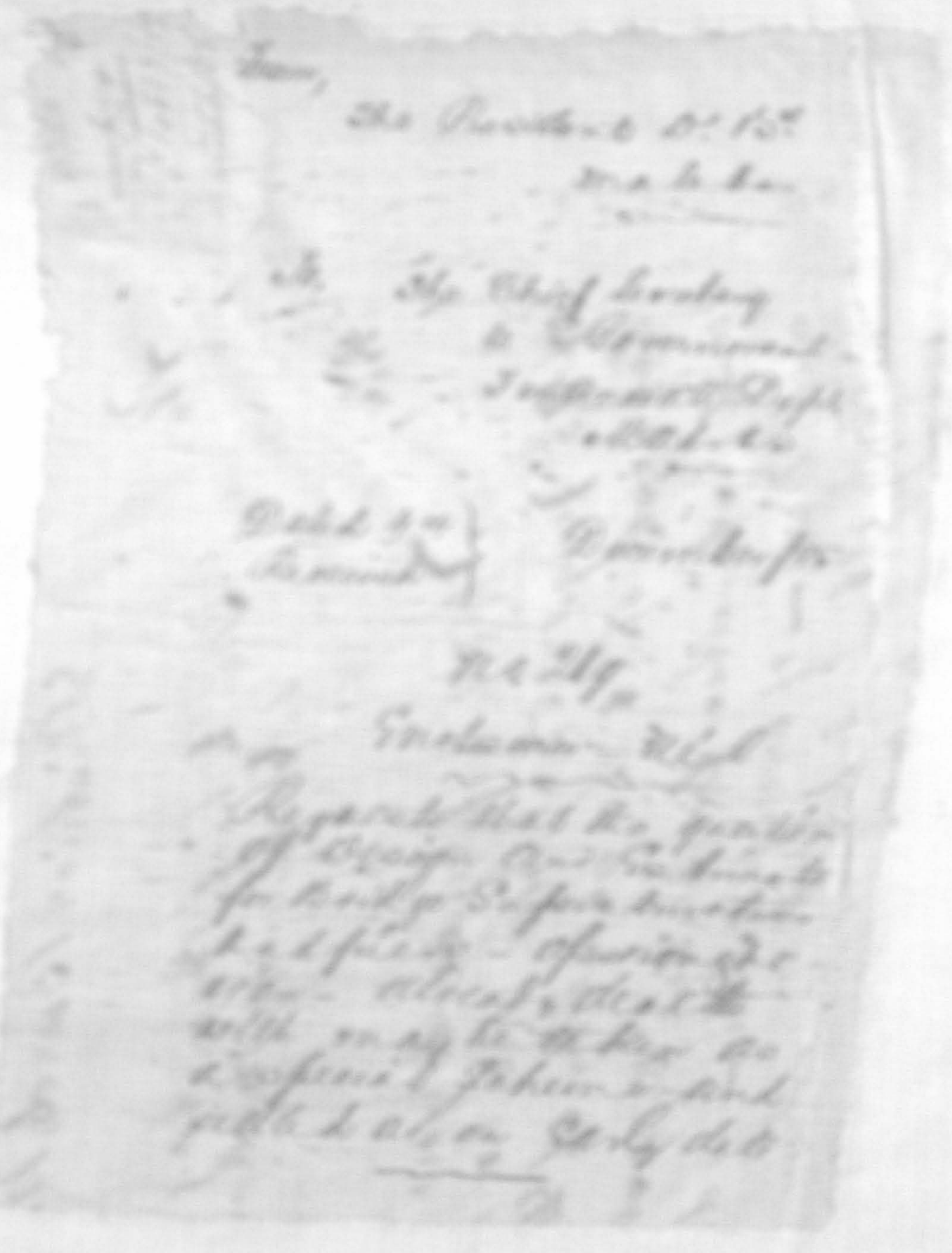
Sir,

With reference to your No. 1914 of 9th July 1885, I have the honor to request that the question of Design and Estimates for Bridge Superstructures and Piers — of wrought Iron — as dealt with in my D.O. — dated Vaniyambalam 21st Aug. 1885 may be taken up as a special sch... and settled at an early date. The District Engineer now suggests that the piers instead of rising by increments of 5 feet from 15 feet up to 50 feet — vide para 4 of his No. 110 enclosed with my letter above referred to, should rise from 10 feet by increments of 10 feet up to 50 feet from ground line.

I have the honor to be
Sir
Your most obedient servant

W. Logan

President
District Board, Malabar



From,

The President [illegible] 15th

[illegible]

To

The Chief Secretary
to Government
[illegible] Dept.
[illegible]

Dated [illegible] December [illegible]

No. 219
Enclosure [illegible]

Reports that the question of Design and Estimate for [illegible]

Fil. 108

18 DEC

No 525

Forwarded to the Public Works Department with the request that the report called for in Endorsement No 375 d/ 9th October 1885 may be expedited.

(By order)

J.W.C.

Under Secretary

18

Madras

14th December 1885

To

The Public Works Dept.

From

The Presdt Dist. Board

Malabar

No. 219

Dated 8th/7 December 85

Received 8th

Enclosures

SUBJECT.

Request that the question of Design and Estimate for Bridge Superstructure and piers of wrought iron – already dealt with may be taken as a special scheme & settled at an early date.

Financial Department
Current No.

1885.

Public Works Department.

No. 395
Order

Referred to D.P.W. for favour of opinion.

MM
1.X.

No. 395
9th Octr 1885

D. 395

Note

This paper came in after the rules drafts had gone to Press for publication. The question raised however does not seem to concern the rules, but some subsidiary arrangements recommended by the Dist. Engineer S. Malabar.

No. 1941 D
Dated
Despatched 27th August
Received 19/10/85

Subject

Report on certain changes to be introduced into the Local [illegible] Rules

---

99

No. 2176 C

P.W. Dept.

Chepauk 17th December/85

Memorandum.

Endorsement in the Finl. Department (L.F.) No. 525 of 14th December 1885.

Returned to the Financial (L.F.) Department, with the remark that endorsement No. 395 dated 9th October 1885, was replied to by No. 2163 C dated 15th December 1885.

2. The Chief Engineer has recommended that Mr Anderson's proposals in regard to designs for open trestle and screw pile piers be omitted, and the alterations in those proposals now

suggested do not therefore affect the question.

(By order)

[illegible] Campbell Captain R.E.
Dy Chief Engineer
P.W. Deptt.

To The Secy. (L. S.) Deptt.

[illegible]

1885.

Public Works Department.

[illegible] Departm

No. 2176 C.

Dated 17th December 1885.

Despatched

Received

Subject.

Reporting, that a decision on the question of Design and Estimate for Bridge superstructure and Piers of wrought iron has already been furnished

---

present Nos. 1702 L.F. & 1707 L.F.

Chief Secretariat,

Fort St. George, ~~[illegible]~~, 11th January 1886.

101

OFFICE NOTE.

From

The CHIEF SECRETARY.

To

The Secretary to Govt.

P. W. Department.

Begs the favour of information whether his Department intends to make the reference referred to in para 8 of the Chief Engineer's note.

It would probably be more convenient that the action proposed should be taken by the Department of Public Works. The Financial (L.F.) Department could only place the matter in the hands of the Secretary of State, in order to obtain the required opinions & suggestions of an expert and should this be the action contemplated by the Department of Public Works, that Department could most effectually place a matter like this before the India Office.

Chief Secretary

No. 216 C

Government of Madras. 102

[illegible] C. 17-8-85.
2113 C. 18- " "
1961 B. 27-8-85.
761 L.F. 18-9-85 [illegible]
1471 W. 18-8-85.
1378 L. 2-6-82
8[illegible] 21-6-72

PUBLIC WORKS DEPARTMENT.

Chepauk, 16th Jany 1886.

OFFICE NOTE.

From

The Secy P. W. Dept.

To

The Chief Secretary

Your Office note of 11th January 1886, on Current Nos 1782 L F and 1787 L F.

Mr Logan's letter No A dated 20th August 1885 was referred to the P. W. Dept for opinion under endorsement No 395 L. F. dated 9th October 1885, and it was thought that on the remarks submitted with this Office No 2163 C

dated

dated 15th December 1885, the further disposal of the matter would be undertaken in the Financial Department.

The papers will however be now returned and the proposed reference to the Secy of State will be made in the P.W. Department.

Sd/ J Shaw Stewart for C.E.
Secy to Govt P.W.D.

Recd 16-1-86.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

From the Presd D. Bd Malabar No. B. d 21/8/85.
Endt. from the Finl: Dept. " 395 d 9/10/85.
Note by the Chief Engineer P.W. Department dated 15th December 1885.
Memo from the Secretary to Government P.W. Deptt No. 2163 C d/ 15th December 1885.
Office Note from the Chief Secretary d/ 11th Jany 1886
Memo from the Secretary to Government P.W. Department No. 216 C d/ 16th January 1886.

Ordered that the following letter be addressed to the Secretary of State for India, to whom the documents submitted by Mr ~~plans, specifications~~ Anderson ~~&c~~ will be forwarded in original.

Finl. (L.F.) Dept.
Supg Engr for [illegible]
Exr. A.W. Acott.

H.E. No. d/ Jany 1886

To

The Right Honourable
the Secy of State for India

My Lord,

We have the honor to forward for your Lordship's information copy of our Proceedings marginally noted, relative to a proposal made by the President of the District Board

No. 11 d/ Jany 18th

Malabar, that ~~[illegible]~~ type designs ~~plans~~ be prepared for bridge superstructures, in view to saving the valuable time of Engineers ~~that~~ which is at present taken up in preparing a separate plan ~~designs~~ specifications and estimates for each bridge to be constructed.

2 Mr Anderson, the District Board's Engineer in Malabar, has ~~proposed~~ submitted

~~plans, specifications~~
~~and~~ detailed instructions
for the preparation
of the proposed
~~standard~~ type designs,
& estimates,
and ~~I have the honor~~
~~to forward~~ these
documents are forwarded herewith in original.
Mr Anderson proposes
that complete sets of
type drawings,
specifications, and
estimates, for iron
bridges for spans
from 5 feet to 152 feet,

with width of roadway
of either 14 or 9 feet
clear, should be prepared
in England by a
competent Engineer.

3 The advantages
claimed for the
proposal are set forth
in the note by the
Chief Engineer P. W.
Department which is
printed in our
Proceedings herewith
forwarded. We agree
with the remarks
made by the Chief

Engineers, and we consider that the proposal to have standard designs for open trestle and screw-pile piers may, for the reasons assigned, be omitted from the scheme.

4 ~~We are of opinion that~~ the proposed type ~~standard~~ designs will ~~would~~ be of great use ~~most useful~~ not only to Local Fund Boards, but also to the Public Works Department; ~~we have the honor to forward~~ and we recommend that the correspondence and documents ~~in view to their being~~ be submitted in the first instance to an Engineer whose speciality is iron bridges, for his opinion and suggestions; ~~we~~ ~~receipt of which we~~ and, on receipt thereof, ~~beg~~ that the necessary steps may be taken

in view to the preparation of an estimate of the cost of the proposed ~~standard~~ type designs &c

20/1/86

21.1.86

R.B.
19.1.86

C.A.W. 107

Please have this draft carefully looked through

The terms —
plans
specifications —
estimates —
designs
standard designs
type drawings

seem to be not quite accurately used in every instance —

20.1.86

To W

Pencil modification of draft submitted for approval —

[illegible].1.86

X/13 No. 2694

Public Works Department.

108

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Under date the February 1886

Read the following

From the President District Board Malabar, No. 52 d/ 21/9/85
Endorsement from the Financial Deptt No. 395 d/ 9th/10/85
Note by the Chief Engineer P.W. Department dated 10th December 1885.
Memo from the Secretary to Government P.W. Deptt No. 2163 C d/ 15th December 1885.
Office Note from the Chief Secretary d/ 11th Jany 1886.
Memo from the Secretary to Government P.W. Deptt No. 216 C dated 16th January 1886.

17

Ordered that the following letter be addressed to the Secretary of State for India, to whom the documents submitted by Mr. Anderson will be forwarded in original.

Supdt Engr I. m. Scheme
Forwd (P. 2) Dept, with copy
[illegible]
Supdg Engr for information
Sd. P. W. [illegible]

Dept
18/2/

A. E. No 2/264 W dated 1st Feby 1886

To
The Right Honourable
the Secy of State for India

My Lord

We have the honor to forward for your Lordship's information copy of our Proceeding marginally noted, relative to a proposal

No 169 W dd 1st Feby

made by the President of the District Board of Malabar, that type designs be prepared for bridge superstructures in view to saving the valuable time of Engineers which is at present taken up in preparing a separate plan, specification, and estimate, for each bridge to be constructed.

2 Mr. Anderson,

the District Board's Engineer in Malabar, has submitted detailed instructions for the preparation of the proposed type designs and estimates; and these Documents are forwarded herewith in original. Mr. Anderson proposes that complete sets of type drawings, Specifications, and estimates, for iron bridges for spans from 5 feet to 152 feet, with width of roadway of either 14 or 9 feet clear, should be prepared in England by a competent Engineer.

3 The advantages claimed for the proposal are set forth in the note by the Chief Engineer P. W. Department which is printed in our Proceedings herewith forwarded. We agree with the remarks made by the Chief Engineer; and we

Consider that the -+
proposal to have
standard designs for
open trestle and screw
pile piers may, for
the reasons assigned,
be omitted from the
scheme.

4. The proposed
type designs will be
of great use, not
only to Local Fund
Boards, but also to
the Public Works Deptt -+

and we recommend that
the correspondence and
documents be submitted
in the first instance to
an Engineer whose -+
speciality is iron bridges,
for his opinion and
suggestions; and, on
receipt thereof, that the
necessary steps ~~may~~ be
taken in view to the -+
preparation of ~~an~~ estimates
of the cost of the proposed
type designs.

WS
21.1.86

Despd
17/7/86

Corr: 22 · c. 8 6 Aug 18

256

Govt. of 1886 Madras.

PUBLIC WORKS.

Dated

Recd. Enl.

G.O. 1281 1886, No [illegible]

Type designs for
=
Bridge Superstructure
=
Based on proposal made
by the President of the Board
Malabar, ~~[illegible]~~ for the
preparation of

[illegible]

Forward correspondence
relative to the proposal made
by the President, Sr. Board
Malabar, for the preparation
of type designs for bridge
[illegible]

776

113

India Office.
London, 20th May 1886.

Public Works.

No. 2.

Sir,

1. With reference to Your Excellency's Public Works Letter, No. 2, of the 1st February 1886, recommending that type designs be prepared for bridge superstructures in order that the time of the Engineers may be saved, I have to inform you that, in accordance with the recommendation of my professional advisers, I have authorized the preparation of designs and estimates for bridges rising from 5 feet to 25 feet by increments of 5 feet, from 33 feet to 66 feet by increments of 11 feet and from 66 feet upwards

His Excellency,
The Right Honorable,
The Governor in Council,
Fort St. George

upwards by increments of 22 feet. This will give 13 types instead of 21 proposed by Mr Anderson, the District Boards - Engineer in Malabar.

2. When these types have been prepared and approved, they will be lithographed and copies will be sent to the - different Governments in India.

I have the honor to be,
Sir,
Your most obedient,
humble Servant,

Kimberley

Des. No. 2/269W. 1.12.86

No. 269W. 1.12.86.

No. 1525 W. d/ 16 June 1886

A

Communicated to the Financial Dept, & to Supdg. Engrs, with advertence to G.O. No. 269 W. dated 1st Feby: 1886.

14.6.86

No. 4620

No. 4

Public Works

20th May 1886

The

Letter to Lord St. George

No. 2

R/. 11 June

To

The Finl. Dept. ✓

" Supdg. Engrs. ✓

" S. of W. Tank [illegible] Scheme ✓

" Ch. Engr. for Irrign with copy of G.O. 269 W.

" Exr. P.W. Accts.

Desw

13/6/86

16/6/86

Ord. 13/6.

R. 16-6-86

4620

Govt. of 1880 Madras.

PUBLIC WORKS

17/6/80

Dated

Recd.

16 June 1880, No. 1525 W

Type designs for bridge superstructures

Despatch from the Secy of State intimating his having authorized preparation in England of — Commd. to the Financial Dept & to Supdg. Engineers

200/14