

758
Public Works (1898) Department.

✓ G.O., No. 122,123 J

DATED

12 February 1898

1/1/98

[Despatch Abstract.]

Pudum Railway bridge - Estimate of Rs. 7,754 for constructing an extra span of 40 ft for the — which has been executed by the Bezwada Madras Railway sanctioned and a copy of the Pros: order to be forwarded to the Govt. of India for information.

Forwarding a copy of the Pros: sanctioning an estimate of Rs. 7,754 for constructing an extra span of 40 ft for the —, which has been executed by the Bezwada Madras Railway.

Forwarding a copy of the Proceedings sanctioning an estimate of Rs. 7,754 for constructing an extra span of 40 feet for the — which has been executed by the Bezwada-Madras Railway.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Irrigation.
Account.

READ—the following papers:—

From the Engineer-in-Chief, Bezwada-Madras Railway, to the Chief Engineer for Irrigation, Ootacamund, dated Madras, 11th June 1897, No. B. 3266/418.

In reply to your No. 165 M. of May 11th and subsequent reminder of June 5th, I have the honour to forward, herewith, a list of the openings provided from the Pennér river to the Pyderu river, *i.e.*, in a length of 6 miles north of the Pennér river, which list also gives the particulars asked for by you.

2. I have further to remark that provision has been made for the purpose of passing the extra flood water, which it is computed will cross the line when the projects of the Canal department are carried out:—

(a) In the Maldevi drainage basin. | (b) At the Pyderu bridge.

3. For the Maldevi drainage, the opening in the road through which all flood waters now discharge as compared with the openings in the railway which runs near the road on the eastern side, is as follows:—

Road.	Railway.
1 twenty-four ft arch = 24 one-ft. opposite	2 twelve-ft. girders = 24 one-ft.
5 twelve-ft. arch = 60 one-ft. "	5 twenty-ft. " = 100 one-ft.
5 six-ft. arch = 30 one-ft. "	5 twelve-ft. " = 60 one-ft.
Total ... 114 one-ft. against	Total ... 184 one-ft. ;

giving 70 feet additional waterway.

The above addition was made at the request of, and in consultation with, the Executive Engineer, Nellore division.

4. I may remark that the girder openings on the railway give a much greater headway than the arched openings on the road, while the tops of the floors are sunk to the following depths below the lowest point in the bed of the streams:—

	FEET.
For 12-foot girder openings	3
" 20-foot "	4

5. The Pyderu river crosses our line near chain 543.00 in the 119th mile from Madras, and the original provision was four spans of 40-foot girders. The provision in the trunk road on the upstream side of the bridge is five spans of 30-foot arches and is ample for the present flood discharge.

6. The extra anticipated flood discharge from the Kanigiri reservoir is 3,500 cubic feet per second, and at the request of the Superintending Engineer, II Circle, an extra span of 40 feet was given to the Pyderu.

7. The additional waterway therefore allowed for, at the request of the Irrigation Department beyond that at present actually required, may be reckoned at 70 feet in the case of Maldevi and 40 feet in the case of the Pyderu, and the additional cost of this extra allowance is under the Railway Act debitable to the Irrigation Department.

8. In the case of the Maldevi basin I propose in order to allow for the extra cost of abutments over piers to debit you with $\frac{60}{184}$, say one-third of the cost of the three bridges provided for the Maldevi discharge instead of $\frac{70}{184}$ the actual proportionate increase of waterway, and in the case of the Pyderu the cost of one pier and one span of girders, and shall be glad if you will advise me of your acceptance of this arrangement. I need scarcely remark that a great saving to the Irrigation Department has been effected in giving this increase now instead of making the extra provision after the completion of the railway.

ENCLOSURE.

List of waterways in the Pennér division from Pennér to Pyderu with R.L. top on floor and headway.

Chainages.	Description.	R.L. top of floor.	Headway.	
6,715	2 × 12' girders.	41.60	11.79	
8,190	1 × 12' "	44.50	8.44	
9,399	1 × 12' "	39.78	13.96	
15,600	1 × 6' "	44.80	7.49	
21,070	1 × 12' "	39.00	7.94	
22,400	1 × 6' "	41.75	5.74	
23,200	1 × 6' "	41.25	6.24	
26,150	2 × 12' "	35.00	11.94	Maldevi.
27,750	5 × 20' "	29.75	17.07	Do.
28,866	5 × 12' "	31.00	15.94	Do.
30,160	1 × 12' "	39.50	7.44	
33,200	3 × 12' "	40.08	6.86	
35,050	3 × 6' "	41.25	6.24	
40,270	1 × 12' "	38.25	8.69	
41,925	2 × 6' "	40.75	6.74	
50,300	1 × 12' "	31.35	9.69	
54,247	5 × 40' "	23.00	15.86	Pyderu.
Smaller Irrigation openings of spans from 1½ to 4 feet 124 L. feet.				

To the Superintending Engineer, II Circle, dated 29th June 1897, No. II 38/N.E.

To the Engineer-in-Chief, Bezwada-Madras Railway, dated 29th June 1897, No. 220 M.

From the " " " " 6th July " No. 3801/418 F.

From Major W. L. C. BADDELEY, R.E., Superintending Engineer, II Circle, to the Chief Engineer for Irrigation, dated Bezwada, 7th August 1897, No. 280 N.L.

In reference to your No. II/38 N.L., dated 28th June 1897, I have the honour to inform you that the estimates for improving the Maldevi drain will provide for increasing the length of waterway in the bridges on the trunk road just above the railway bridge over the Maldevi.

2. The improvements carried out to the Kanigiri reservoir escape (*vide* G.O., No. 689 I., dated 27th August 1895,) will enable that work to discharge, in cases of need, no less than 7,000 cusecs, and, in my opinion, the length of 184 feet given to the railway bridge is fully justifiable, and will certainly be required eventually.

3. The maximum discharge of the Maldevi is calculated at 13,705 cusecs, but it is extremely impossible that anything like this discharge will ever take place.

4. As regards the Pyderu drainage, the statement in the report printed with G.O., No. 147 I., dated 10th February 1896, that the road bridge is capable of discharging 3,500 cusecs from the Kanigiri reservoir in addition to the usual drainage through it, is a mistake. The bridge has five spans of 30 feet, while the total discharge may be, according to calculation, 12,395 cusecs, including the 3,500 cusecs from the Kanigiri reservoir. The bridge must, therefore, some day be enlarged if the Pyderu scheme is to be carried out. The railway originally provided four spans of 40-feet for their bridge just below the road bridge, but after discussing the matter with Mr. Michell, the Executive Engineer of that section, I decided that it would be advisable to put in five spans of 40-feet. As regards your remark that it has never been

proposed to increase the Maldevi discharge, I must point out that the increase in the discharge of the Kanigiri reservoir escape must eventually force us to widen and increase the discharge of the Maldevi, which now floods its banks and does great harm to crops. Also the Pyderu scheme is totally distinct from the proposal to increase the discharge from the Kanigiri reservoir (*vide* my letter, No. 263 N.L., dated 9th July 1895, to the Chief Engineer for Irrigation). To sum up, it was found that the calculated discharges down the Maldevi and the Pyderu were 13,705 and 12,395 cusecs, respectively. To meet the extra discharge down the drains, it was proposed to widen the road bridges, the Maldevi bridges by 60 feet, making the total length of the waterway 184, while the addition to the Pyderu bridge was not settled. With the discharges given, the velocities would be enormously high through the bridges and the water would back up and flood the country.

It is however, as I said before, extremely improbable that these discharges will ever take place, and the proposal to increase the length of the waterway of the railway bridges, as decided by Mr. Michell and myself when we discussed the matter at Nellore on the 4th May 1896, appears to me to be thoroughly sound.

As regards the incidence of cost, I presume the Sangam project must pay a reasonable share of the cost of the increased waterway.

To the Engineer-in-Chief, Bezwada-Madras Railway, of 24th Aug. 1897, No. 279 M.
From the " " " of 4th Sept. " No. B. 5178/418.
To the " " " of 14th " " No. 310 M.

From the Engineer-in-Chief, Bezwada-Madras Railway, to the Chief Engineer for Irrigation, dated Madras, 23rd December 1897, No. B./7844.

With reference to the correspondence ending with your No. 310 M. of 14th September 1897, I have the honour to forward, herewith, an estimate, amounting to Rs. 7,754, of cost of one extra 40 feet span for the Pyderu bridge on this railway.

I shall be glad if you will intimate, as early as possible, your acceptance of this estimate and the sanction of the Madras Government to the cost of the work being borne by the Irrigation Department. On receipt of this sanction, I shall issue instructions for raising a debit against your department. The work, I may add here, is complete.

No. 17 I.

Note by the Chief Engineer for Irrigation.

In G.O., No. 407 I., dated 9th May 1896, an estimate amounting to Rs. 2,08,000 was sanctioned for diverting the surplus water of the Kanigiri reservoir of the Sangam anicut system into the Pyderu river. When this scheme is carried out, extra flood water to the extent of 3,500 cubic feet per second will cross the Bezwada-Madras Railway line at the railway bridge on the Pyderu river in the Nellore district. The additional waterway beyond that at present actually required for the purposes of the railway, may be reckoned at 40 feet, necessitating the construction of an extra span to the Pyderu railway bridge. At the instance of the Superintending Engineer, II Circle, the Railway Department carried out the work. Its execution before the completion of the railway has effected a great saving to the irrigation system. The Engineer-in-Chief, Bezwada-Madras Railway, now submits for acceptance an estimate of Rs. 7,754 for the work.

2. In the circumstances reported, the estimate may be approved and is recommended for sanction, the cost being charged to the Sangam anicut system, under the provisions of section 11 (3) (c), chapter III of the Indian Railways Act of 1890. The work, which is not directly remunerative on itself, may be classed as unremunerative and justly charged to "Capital," as it is necessary for the full development of the project, being part of the Pyderu drainage scheme.

(Signed) W. HUGHES,
Chief Engineer for Irrigation.

21st January 1898.

ORDER—No. 122 I., dated 12th February 1898.

The following estimate, which has been executed by the Bezwada-Madras Railway, is sanctioned:—

Irrigation.	
43. Minor Works and Navigation.	
Minor Works for which Capital and Revenue Accounts are kept.	
Sangam Anicut System.	
Open Capital Account.	
I. Works.	
4. Drainage and Protective Works.	
Pyderu Drainage Scheme.	
3. Works.	
Unremunerative Work.	
Constructing an extra span of 40 feet for the Pyderu Railway Bridge.	
Estimate—	RS.
I. Works	6,228
II. Establishment	1,433
III. Tools and plaut	93
Total	7,754

2. This sanction is registered as No. 165 I. of 1897-98.

3. The Examiner of Public Works Accounts will arrange for the adjustment of the cost of the work.

4. Ordered that a copy of these Proceedings be forwarded to the Government of India for information.

[Here enter No. 123 I., dated 12th February 1898.]

(True Extract.)

(Signed) W. HUGHES,
Joint Secy. to Government,
Irrigation Branch.

To the Chief Engineer for Irrigation.

- " Superintending Engineer, II Circle.
- " Consulting Engineer for Railways.
- " Engineer-in-Chief, Bezwada-Madras Railway.
- " Examiner, Public Works Accounts.

ENDORSEMENT—No. 123 I., dated 12th February 1898.

Forwarded.

(By order.)

(Signed) W. HUGHES,
Joint Secy. to Government,
Irrigation Branch.

Exd. Md. Pahlwan.

Public Works (1898) Department.

CURRENT No. 758

Order

From The Chief Engr for Irr.

No. 17 I.

Dated 21st January 1898

Received 28.1.98

Enclosures ¹³ / Abstract Estimate

Spare copies

SUBJECT.

Praderi Railway Bridge
estimate of Rs 7,754 for
Constructing an extra span of
40 feet for the - Note recommending
for sanction the -

PUBLIC WORKS DEPARTMENT,

IRRIGATION BRANCH.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Estimate of Rs 7754 for constructing an extra span
of 40 ft for the Puducherry Railway Bridge UNDER date the

UNDER date the

READ the following

From the Engineer in Chief, Bagwada-Madar, Ry. (H.E. N. B. $\frac{3266}{418}$ dated 11. 6-97).

To the Supg. Engineer, Second Circle. (H.E. No. II dated 29. 6. 87).
38-924

To the Engineer in Chief, Baywater-Medical Ry. (H.E. No. 220-M. dated 29.6.37).

From _____ do _____ do _____ (Hq. W. F. 3801 dated 6.7.87)

From the Supvy. Engineer, Second Circle. (HQ N^o 280- N^o 418, dated 7. 8. 97).

To the Engineer in Chief, Bezgrada Madhu Rg. (H.E. No. 2794, dated 24.8.57).

Sum — ds — ds — (48 W.R. $\frac{578}{418}$ dated 4-9-97).

To do do do ——— 48
49. No. 310 - M. dated 14-9-97/

From — do — do — (H.E. N° B 7844 dated 23-12-87).

№ 17.9 дуч. 10-98

Note by the Chief Engineer for Irrigation

* Hagger J.

In G.O. No 407-1, dated 9th May 1896,

an estimate amounting to Rupees 2,08,000, was sanctioned for diverting the surplus water of the Kaniyiri reservoir of the Sanguam tributary system into the Pyderm river. When this scheme is carried out, extra flood water to the extent of 3,500 cfs per second will cross the Bezawada-Madras Railway line at the railway bridge on the Pyderm river in the Nellore district. The additional water-way beyond that at present actually required for the purposes of the

the railway, may be reckoned at 40 ft., necessitating the construction of an extra span to the Pydem railway bridge. At the instance of the Superintending Engineer, Second Circle, the Railway Department carried out the work. Its execution before the completion of the Railway has effected a great saving to the Irrigation system. The Engineer in Chief, Berwada - Madras Railway, now submits, for acceptance, an estimate of Rupees 7,754 for the work.

2. In the circumstances reported, the estimate may be approved and is recommended for sanction, the cost being charged to the Sangam Ancient system, under the provisions of Section 11 (3) (c) Chapter III of the Indian Railways Act of

1890

* vide letter flapped L.

A.S.H.

Is fine

W.H.

9

26.1.90

1/85

1890. The work, which is not directly remunerative in itself, may be classed as unremunerative, and justly charged to "Capital", as it is necessary for the full development of the project, being part of the Pydem drainage scheme.

24/1
58

W.H. 90
21

N^o 122 of 12.2.90

Order thereon.

The following estimate, which has been executed by the Berwada - Madras Railway, is sanctioned:-

Irrigation.

43, Minor Works & Navigation.

Minor Works for which Capital and Revenue Accounts are kept.

Sangam Ancient System.

Open Capital Account.

I - Works.

4, Drainage and protective works.

Pydem drainage scheme.

3 - Works.

Unremunerative Work.

Constructing an extra span of 40 feet for the Pydem Railway bridge.

Estimate -

I - Works. ———— R. 6228.

II - Establishment. ———— 1,433.

III - Tools & plant. ———— 93

Total 7,754

A.S.H.
25.1.90

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40
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C
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A
f

2. This sanction is registered as No. 165 J of 1897-98.
3. The Examiner of Public Works Accounts, will arrange for the adjustment of the cost of the work.
4. Ordered that a copy of these Proceedings be forwarded to the Govt. of India for information.

A.H.
25.1.98

Indorsement. N-123/12.2.98
Forwarded.

W.H.
21.1.98
2/8
98
1

12/2/98
SC
17/7/98

7.5.98
28.1.98

- To The Chief Engineer for Irrigation.
- Supr. Engineer, Second Circle
- Consulting Engineer for Ry.
- Engineer in Chief, Bezirada-Madras Railway.
- Examiner, P.W. Accounts.

17/7/98

18/1/98
18/1/98

Public Works (1897) Department.

CURRENT No. 643 M.

Order

From the Engr-in-Chief
B. M. Ry

No. B
7844

Dated 23 — 12 — 97.
Received 27 — 50 —
Enclosures 1
Spare copies

SUBJECT.

Extra span for the
Pyderu Railway Bridge
requesting to intimate
the acceptance of the
of Govt. to the cost of
the — being borne
by the Bridge Dept.

Dr. D. S. P. for app. rate and the sanction
of Govt. to the cost of
the — being borne
by the Bridge Dept.

18/1/98

18/1/98

18/1/98

BACK PAPERS.

FURTHER PAPERS.

No.	Date.
9310	Aug 14 - 97
10413	Aug 14 - 97
1279	Aug 14 - 97

No.	Date.

BEZWADA-MADRAS RAILWAY.

Pennet Division.

Estimate No.

Name of work *Cost of one extra span for the Pyduru Bridge.*

Amount Rs. *6,584 7/54/-*

Main Head } *Transfers - P.W.D. Irrigation*
Sub-Head } *Bellore Division*

REFERENCES.

As per Engineer-in-Chief's No. 13/5607/418 of 21/5/97

REPORT AND SPECIFICATION.

On the same data as for Pyduru Divisional estimates.

*Placed
258/58*

*This certified
Engineer in Charge*

Details of Measurements.

Name of work.....

[illegible]

Details of Measurements.

Name of work.....

[illegible]

CHIEF ENGINEER
FOR IRRIGATION.
24 DEC. 1897
643 em

Abstract of Cost.

Quantities.	Sub-Head.	Rate.		Amount.	Total.
		Rs.	Per.		
	English Expenditure				
	Ironwork in girders including	105/8	7 1/2	1161	
11 tons	4/5 sea freight	45/4	4	457	
	Total English Expenditure				1161 11/2
	Indian Expenditure				
4680 cft	Excavation wet	35	100 cft	164	✓
2 tons	well curbs	300	ton	600	✓
1796 cft	Masonry in stining	35	% cft	629	✓
315 sq ft	Plastering walls cement	6	% sq ft	19	✓
285 "	do in line	4	"	11	✓
19 sq ft	Well sinking	28	sq ft	532	✓
222 sq ft	Concrete in cement	25	% cft	56	✓
381 cft	do in brick	19	%	72	✓
1822 cft	do under slab	20	%	364	✓
148 "	Masonry in footing	34	"	50	✓
696 "	do Superstructure	38	"	264	✓
60 "	do Granite Course	75	"	45	✓
90 "	do Ashlar S.S. course	150	"	135	✓
432 sq ft	Pointing	4	"	17	✓
2182 cft	Flooring	22	"	480	✓
11 tons	Ironwork in girders Indian	100/2	7 1/2	1108	✓
11 tons	4/5 sea freight, port charges, etc.	45/4	4	457	✓
11 tons	do erecting	15	ton	165	✓
15 "	do Laying	4/1	% cft	44	✓
15 "	do Laying	15	% cft	23	✓
180 cwt	Petty iron work	14	cwt	25	✓
125 lbs	Lead sheeting	0.3-0	lbs	23	✓
100 cft	Timber	2.14-0	cft	288	✓
	Add Contingencies @ 5%			5091	
	Add Tools & Plant			5047	
	Grand Total			6593	5425
	Side Chap IV of P.W. Code (1894) 1/2 page			126	
	147 I & IV			126	
	Grand Total			7154	6581

In your reply please quote the number and date of this letter.

No. 10/7844

From

THE ENGINEER-IN-CHIEF,

BEZWADA-MADRAS RAILWAY,

To

THE Chief Engineer

for Irrigation

Dated Madras, the 23rd December 1897.

Sir,

With reference to the correspondence ending with your No. 210 M of 14-9-97 I have the honour to forward herewith an Estimate, amounting to Rs.7754 of cost of one extra 40 feet span for the Paideru Bridge on this Railway.

I shall be glad if you will intimate as early as possible your acceptance of this estimate and the sanction of the Madras Government to the cost of the work being borne by the Irrigation department. On receipt of this sanction I shall issue instructions for raising a debit against your department. The work, I may add here, is complete.

I have the honour to be

Sir

Your most obedient servant

W. D. Doyle
for Engineer-in-Chief.

Enclosures.

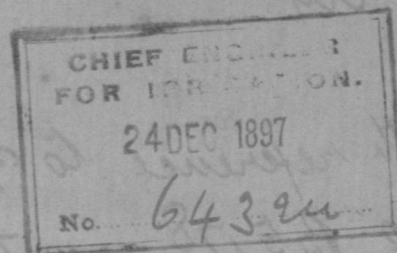
Public Works (1897) Department.

CURRENT No. 413^m

Order

To the Engr in Chief
B. M. Ry

From The Engr in Chief
Berwada-Badma
Railway



Sir With reference to your
letter No B 5178 of 4th Instant
I have the honor to request
that you will be so good as
to forward an estimate
of the cost of the extra
span of the Pyderh Ry bridge
proposed to be charged
to irrigation.

No. B 5178
418

Dated 4th Sept 1897
Received 8th do
Enclosures 1
Spare copies

SUBJECT.

Railway Bridge over
Pyderh — req^d to
recommend to Govt.
to pay the cost of one
extra span of the
under the additional
information now
submitted.

D. E. J.

10/9/97

10/9/97

10/9/97

14.9.97

6/5/97

10/9/97

6/5/97

BACK PAPERS.

No.	Date.
J 279 m dy	24-8-97
R 316 m dy	12. 7. 97

FURTHER PAPERS.

Copy of letter No.65 B.C dated 10th May 1896 from the Superintending Engineer II Circle Bezwada to the Engineer-in-Chief B.M.Ry., Madras.

In reference to the bridge about to be constructed by the Railway of the Pyderu, a few miles north of Nellore town I have the honour to suggest that 5 spans of 40' be provided in place of 4 spans of 40' as decided upon.

2. The decision appears to be based on a letter from the late Mr. Marjor banks in which he says that the road bridge of 150' clear water way higher up the stream is amply sufficient, but I am doubtful whether he took into consideration the 3000 c.ft. per second additional supply that may be passed to the Pyderu valley from the Kanigiri Reservoir if certain contemplated is carried out.

3. As I understand that the alteration of the bridge hereafter from 4 to 5 spans would be difficult owing to the high bank, I have made the suggestion referred to above which I hope you will accept.

True copy
W^m
6/7.

CHIEF ENGINEER
FOR IRRIGATION.
12 JUL. 1897
No.

In your reply please quote
the number and date of
this letter.

No. B/5178
418

From

THE ENGINEER-IN-CHIEF,

BEZWADA-MADRAS RAILWAY,

To

THE Chief Engineer for Irrigation

Ootacamund.

Dated Madras, the 4th September 1897.

Sir,

Your No. 279 M of the 24th August 1897.

With reference to your above I have the honour to state

1. With regard to your statement that the Superintending Engineer II Circle "suggested" and "not requested the addition of one span to the Pyderu bridge" I would refer you to the concluding remarks of the Superintending Engineer in his No. 35 B.C. of the 10th May last sent with this office No. F 3301/418 of the 3th July which states "I have made the suggestion referred to above which I hope you will accept"- which appears to me to be a request to carry out his suggestions.

I may also add that I personally went into the whole of the questions as to the drainage for the Maldevi and Pyderu at Mellore with Major Baddelley and we agreed, after full and careful investigation that 5 spans were required for the passing of the extra flood waters from the Kanagiri Reservoir.

2. I enclose herewith a copy of letter No. 47 ⁷³⁴ of the 13th February from the Executive Engineer Pennar Division reporting on the

*Refers to
No. 35 B.C.
10th May 1897*

Just

*Over
258/98*

Enclosures.

enc.

way required at the bridge from data supplied by your department showing clearly
necessity for the extra span we have built and giving you the information you have
ad for in your letter under reply.

I trust from the additional information I have now submitted you will be able to
commend to your Government to pay the cost of one extra span provided by our depart-
nt.

I have the honour to be

Sir

Your most obedient servant

W. H. G.
for Engineer-in-Chief.



*0254
258/50*

734
Copy of a letter No. 47 dated 18th February 1893 from the Executive
309

Engineer Penner Division, to the Engineer-in-Chief B.M. Railway, Madras.

Your No. 311 of 6th February 1893.

Waterway for the Paideru River.

As requested in your above I have the honour to submit herewith the
following report.

1. The Executive Engineer of the Nellore Division informs me that the to
amount of water estimated to pass down the Pyderu river near our crossing
is 12,562 c.ft. per sec 9562 c.ft. being the calculated amount due to the
catchment area drainage and 3000 c.ft. to be allowed for spills from tanks
fed from the Penner.

2. Assuming that the catchment area is 86 miles as given in the calculation
sent

$D = CM^{\frac{2}{3}}$ - where $C = 562.5$ [the value adopted by the Irrigation De
partment]

$\therefore D = 562.5 \times 86^{\frac{2}{3}} = 10959$ c.ft which is a little larger than the
amount [9562] as computed by the Irrigation department.

3. To allow a total discharge of 12562 c.ft to pass per second and assum
that the velocity would be 5 ft and the height of water 12.6 [allowing an
afflux of 6" at the bridge] we should require a waterway $= \frac{12562 \times 2}{5 \times 25} = 201$
= Say 200 l.ft. or 5 spans of 40 ft.

4. From the above calculations it will be seen we should allow an extra
ft span to pass the flood water to be provided for.

5. The road bridge up stream is one of 5 - 30 ft arches and that has so

all the flood waters causing, I presume, the water to dam up against the road
flooding the fields till the flood supply become less than the amount passing
ugh the arches.

I have written the Executive Engineer Mellore Division asking him whether they
ose to increase the waterway and on receipt of a reply will further discuss the
ject.

CHIEF ENGINEER
FOR IRRIGATION.
8-SEP 1897
No. 4138u

6225
258/58

Public Works (1897) Department.

IRRIGATION BRANCH.

ISSUE No. 2794

To

The Engr. in Charge
Madras Bezawada Ry.

(Reply to letter No. ^{F3801}₄₆₈, dated 6/7/97)

Dated 24-8-97

Despatched 30-8-97

Enclosures *

* Particulars of Enclosures.

SUBJECT.

Railway bridge over
States that the SE. has sug-
gested the advan-
ment of the — and y-
present reasons are given
its cost being borne by the
branch, he will recommend
to pay for its payment

Indexed

BACK PAPERS.

No.	Date.
R4212	7-8-97

Sent to Government with No. I.,
dated 1897.
Printed with G.O., No. I.,
dated 189 .

REMINDERS ISSUED.

No.	1,	dated	189 .
"	2	"	"
"	3	"	"
"	4	"	"
"	5	"	"

KEEP-WITHS.

FURTHER PAPERS.

No.	Date.
R413m	4-977
R643m	23-12-97

No 279-4

To the Engineer-in-Chief
Madras District R?

Sir,

In reply to your No F/3807
418
of 6 July 1897 I beg to
point out that the Sup? Engineer
has suggested, not requested,
the addition of one span to
the Pydum Bridge -
2. The calculated max^m flood
discharge of the Pydum is reported
by the Sup? Eng? to be ~~437~~
12395 cub ft per second
inclusive of 3500 cub ft per
second which it is intended
to discharge into it from the
Kanyin Reservoir. I have
not been able to ascertain
what the flood level would be
for this discharge at the Kanyin
bridge and have nothing to
say in addressing Govt. in regard
to the incidence of cost of
the extra span. If you will
kindly give me reasons for
believing that the bridge as
originally designed was deficient
in the length, strength, or headroom

required for the additional
proposed discharge of 3500 cub.
ft per second or would cause
such afflux as to raise
to any large amount the
top flood level above the
bridge. I shall of course
recommend that Government
pay the cost of the work
provided the railway was
sanctioned as I think it
was prior to 10 Feb 1896.

W.D. 97 W.H.
JH
57

Public Works (1897) Department.

CURRENT No. 42 N.L.

From

Major W.L.C. Baddley
Superintendent

No. 280 M

Order 41.

Contains definite proposals for the
management of surplus from the
Kamigiri reservoir. The amount
to be disposed of at Pyden &
Molderi crossings of railway
would appear to be uncertain.

JH
11/8/97

Dated 7 August 1897

Received 10 do

Registered

Enclosures

Spare copies

SUBJECT.

Waterway of Bridges
over Malden Drain
Explaining how the
is increased &c.

To D.S.

Paper

JH
10/8/97

Note

229 HL/97 + connected papers
(regarding raising of the Kamigiri
reservoir reclamation) put
up with R 40 HL/97 + sent
to D on 7-8-97. R 11-8-97

note for Kamigiri
reservoir
reclamation

10/8/97

R 11/8/97

BACK PAPERS.

No.	Date.
J 38 N.L. 27	28.6.97
R 662 M 27	7.9.95
R 51 N.L. 27	11.7.95
R 137 J 27	28.2.96

FURTHER PAPERS.

No.	Date.
J 279 M	24.8.97
J 279 M	
R 413 M	4.9.97
R 643 M	23.12.97

SUPERINTENDING ENGINEER'S OFFICE,
SECOND CIRCLE, *Odeywaron*

No. 280 M.

DATED 7 August 1897

FROM,

Major W.L.C. Baddeley R.E.
SUPERINTENDING ENGINEER,
II CIRCLE.

TO,

The Chief Engineer,
For Irrigation,
Madras.

Inclos:

In reference to your N. 27/38 N.L. d, 28th June 1897. I have the honour to inform you that the estimates for improving the Maldevi drain will provide for increasing the length of water way in the bridge on the Trunk road just above the Railway bridge near the Maldevi.

2. The improvements carried out to the Kanigiri reservoir escape, Vide L.P. no 689 J 27 27.8.95, will enable that work to discharge, in cases of need, no less than 7,000 Cusecs, and in my opinion the length of

of 184 feet given to the Railway bridge is fully justifiable, and will certainly be required eventually.

3. The maximum discharge of the Maldeni is calculated at 13,705 Cusecs but it is extremely impossible that ~~any~~ thing like this discharge will ever take place.

4. As regards the Pydum drainage, the statement in the report printed with G.O. 147 S. d. 10.2.96 that the road bridge is capable of discharging 3,500 cusecs from the Kanigiri Reservoir in addition to the usual drainage through it, is a mistake. The bridge has 5 spans of 30 feet while the total discharge may be, according to calculation, 12,395 Cusecs, including the 3,500 cusecs from the Kanigiri Reservoir. The bridge must, therefore, some day be enlarged if the Pydum Scheme is to be carried out. The Railway originally provided 4 spans of 40 feet for their bridge just below the road bridge, but after discussing the matter with Mr. Mitchell the Executive Engineer of that section I

I decided that it would be advisable to put in 5 spans of 40 feet. As regards your remark that it has never been proposed to increase the Maldeni discharge I must point out that the increase in the discharge of the Kanigiri reservoir escape must eventually force us to widen and increase the discharge of the Maldeni, which now floods its banks & does great harm to crops. Also the Pydum Scheme is totally distinct from the proposal to increase the discharge from the Kanigiri reservoir.

- Vide my letter No. 263 S.L. d. 9.7.95.

RSTH 195+com
- meeting papers to the Chief Engineer for Irrigation.
put up with R164/97
in linked file -

To sum up, it was found that the calculated discharges down the Maldeni and the Pydum were 13,705 & 12,395 Cusecs respectively.

To meet the extra discharge down the drains it was proposed to widen the road bridges, the Maldeni bridges by 60 feet making the total length of waterway 184, while the addition to the Pydum bridge was not settled.

With

It is however, as I said before extremely improbable that these discharges will ever take place, and the proposal to increase the

As regards the incidence of cost. I presume the Pangam project must pay a reasonable share of the cost of the increased water way.

Sci.

West Baden

† Maymoe

Subgr: $\frac{11}{1}$ miles.

05/1852
25330

CURRENT No. 316 m.

El

129. 5. 82 attached

W. S. E. looking for

Explanation regarding

the stud - made by Self

architect might be

1/12/5

W.H.
14.7 97

14/7/57

The Engineer-in-Chief

Berwara Madras. Railway

No. F 3801

418

6-7-57

15-20-

1

Spare copies

SUBJECT.

Span and pier of the Pyderu
river — requesting to recommend
to Govt. that the cost of a — be borne
by the Irrigation Department es-
pecially as the addition of a span
was made in consultation with
the S.E. II

To D E J

Papers Town

less

18-7-9

BACK PAPERS.

No.	Date.
I 220 M	28.6.97
I 38 H L	28.6.97
R 278 M	11.6.97

FURTHER PAPERS.

No.	Date.
R 42 H L	7.8.97
R 413 M	4.9.97
R 643 M	23.12.97

In your reply please quote the number and date of this letter.

No. *E/3801*
418

From

THE ENGINEER-IN-CHIEF,

BEZWADA-MADRAS RAILWAY,

To

THE Chief Engineer for Irrigation

Ootacamund.

Dated Madras, the *6th* July 1897

Sir,

With reference to your letter No. 220 M dated 28-6-97 I have the honour to forward herewith copy of a letter No. 65 B.C. dated 10th May 1897 from the Superintending Engineer in circle in which he requests me, if provision had not been made for the extra discharge of 3000 c.ft. from the Kanigiri reservoir to add an extra span of 40 feet. The original provision of 150 feet, i.e., 10 ft in excess of that allowed in the road bridge, did not include any allowance for the 3000 [really 3500] c.ft. per second, additional discharge from the Kanigiri reservoir and I therefore complied with his suggestion for reasons stated in the last para of his letter.

The extra 10 ft. in the railway opening in excess of the 150 ft in the road opening is neutralized by the construction of a paved cart crossing at the northern end of the bridge.

I trust therefore as at the time the bridge drawings were made out and work commenced and no time could be spared for long correspondence, you will see your way to recommending to the Government of Madras that the cost of 1 span and pier of the Palderu river be borne by the irrigation department, especially as the addition of 1 span was made in consultation with and at the

Enclosures.

of an officer of the standing of Major Eaddeley.

I have the honour to be

Sir

Your most obedient servant

for Engineer-in-Chief.

6/17
6/17
6/17

CHIEF ENGINEER
FOR IRRIGATION.

12 JUL. 1897

Public Works (1897) Department.

IRRIGATION BRANCH.

ISSUE No. 2208

To

*The Engineer in Chief
Belwada Moras by
Moras*

(Reply to letter No. , dated).

Dated 28. 6. 97

Despatched 2. 7. 97

Enclosures *

* Particulars of Enclosures.

SUBJECT.

*Water-way of certain bridges
in the Priner Delta - Declines
to accept the proposal to dehi-
the Ingn. Belw. with the cost
of increasing the - for the
reasons given.*

6/17
6/17
6/17

Declines

BACK PAPERS.

No.	Date.
R 278 M	11-6-97

Sent to Government with No. I.,
dated 1897.
Printed with G.O., No. 1.,
dated 189 .

REMINDERS ISSUED.

No. 1, dated 189 .
" 2 "
" 3 "
" 4 "
" 5 "

KEEP-WITHS.

FURTHER PAPERS.

No.	Date.
R 315 M	6-7-97
R 422 M	7-8-97
R 413 M	4-9-97
R 643 M	23-12-97

No 220 M d/29.6.97

To the Engineer-in-Chief
Berwala Madras Railway

Sir,

In reference to your letter
No B/3266 d/11th June 1897
I regret I cannot accept your
proposal to debit the Irrigation
Branch with the cost of increasing
the waterway of certain bridges in
the Pennar Delta - Under the
Railway Act ^{the Government} alone can
in this case send a requisition for
the enlargement of waterways and the
advice given by any of its officers
cannot be taken as a requisition.
There is no proposal to increase the
drainage across the line at the
Malden drain and in its neighbourhood
In fact it should be reduced to some
extent by the diversion of into the
Pydum of over a third of the surplus
of the Kangin Reservoir all of which
now passes into the Malden.
2- In reply to the Pydum ^{only} the information
I have is the statement in the report
with which the estimate was submitted for
Sanction that the bridge on the Drunk Road
is of sufficient size to pass the
proposed increased discharge (3500 cfs)
and as your railway bridge was originally

designed of greater waterway than the
 road bridge I am not satisfied that
 the additional span since allowed is
 necessary. Enquiry will however be
 made and if it be found that the
 enlargement of the bridge is reasonably
 necessary I shall not object to ask the
 sanction of Govt. to pay the cost
 provided the estimate for that railway
 section of the railway was sanctioned
 by the Govt. of India prior to their
 sanction of the proposed new escape
 from the Reservoir into the R. deira.
 viz 10 Feb 1896.

29.6.97 W.H.

[Handwritten signature]
 29/6/97

005.00
 258/50

Public Works (1897) Department.

IRRIGATION BRANCH.

ISSUE No. 38. 1.2

To
 The Supg Engineer
2nd Circle

(Reply to letter No. , dated).

Dated 28. 6. 97

Despatched 2. 7. 97

Enclosures * 1 copy of Encl. letter

* Particulars of Enclosures.

SUBJECT.

Waterway of bridges for
 passing holden drainage
 Forward copy of letter from
 the Engr-in-Chief Berwanda to
 Ry. with a request to explain
 the statement that the — was
 increased at the request of Ry.
 an extra span of 40ft was given
 to the Rydon bridge at the request
 of the Ry.

[Handwritten signature]

BACK PAPERS.

No.	Date.
R278m	11-6-97

Sent to Government with No. I.,
dated 1897.
Printed with G.O., No. I.,
dated 189 .

REMINDERS ISSUED.

No. 1, dated 189 .
" 2 "
" 3 "
" 4 "
" 5 "

KEEP-WITHS.

FURTHER PAPERS.

No.	Date.
R316m	6-7-97
R422m	7-8-97
R413m	4-9-97
R643m	23-12-97

II
No 38 12 29. 6 97

S. E. II.

A copy of letter No B/3266
410
of 11 June from the Engineer-
in-Chief Barwade Madras
Railway is forwarded to the
Sup. Engr. who will be
good enough to explain the
statement that the widening of
bridge for passing the Malden
drainage was increased at
the request of the Executive Engineer
and an extra span of 40 ft.
was given to the Ryderm Bridge.
at the request of the S.E.
2. It has never been proposed to
increase the Malden discharge
in fact it will be reduced
by the diversion of
part of the Reservoir surplus
into the Ryderm - with regard
to the Ryderm discharge it is stated
in the report printed with G.O.
No 47 I of 10 Feb 1896 that the
bridge on the Trunk Road is
large enough to take the proposed
extra discharge and as the

Enclot.

Railway bridge is originally designed was larger than the Road bridge the advice to add another span requires explanation -

3. The Engineer-in-Chief was of course at liberty to accept a report advice from the Asst & Exec. Engineers and their action does not bind the Head of the railway as he should have known that such advice could not be taken as equivalent to a requisition, which Government alone has power to make, his view that the cost of the extra waterway is "debatable to the Irrigation Department" is not understood. The Railway Act (ch 3 sec 12) is quoted but does not seem to apply to the case.

20697 W.H.

29/6/97

258/97

Public Works (1897) Department.

CURRENT No. 2787M.

1000

Order

W.H.

The file is not complete requires 165 M. + connected papers.

2/3 17/6

Put up Sub 18/6

Q1

Do you not want the papers relating to the proposal of S.E. II to raise level of Kanagiri reservoir and to the level at which water should be maintained - also ed. for widening modern drains

2/5/6

W.H. 18/6

These papers should be put up

W.H.

The following files are put up

- (1) No 23 N. 6/97 with papers about Kanagiri reservoir reservoir raising
- (2) No 31 N. 4/97 re Moldevi drain improvement

From The Engineer-in-Chief
Maddur-Bexwada
Railway

No. B/3266
418

Dated 11 June 1897

Received 16 do do

Enclosures 1

Spare copies

SUBJECT.

Measurements of waterway with levels of sills or floors of bridges & openings provided on the Railway between the North of Permer river in Nellore DK & a point six miles north - Forward a list and certain other details in connection with the

To DES

W.H.

16/6/97

BACK PAPERS.

No.	Date.
I 165m	11-5-77
I 199m	5-6-77
I 312m	1/97
I 292m	1/97

FURTHER PAPERS.

No.	Date.
I 200m } 25-6-77	
I 382m }	
R 316m	6-7-77
R 422m	7-8-77
R 413m	4-9-77
R 643m	23-12-77

In your reply please quote the number and date of this letter.

No. B/3266
418

From

110

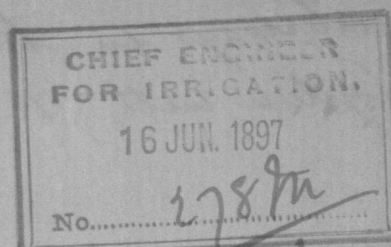
List of waterways in the Penner Division from Penner to Pyderu with R. L. top of floor and headway.

Chainages	Description	R. L. top of floor	Headway	
6715	2x12' girders	41.60	11.79	
8190	1x12' "	44.50	8.44	
9399	1x12' "	39.78	13.96	
15600	1x6' "	44.80	7.49	
21070	1x12' "	39.00	7.94	
22400	1x6' "	41.75	5.74	
23200	1x6' "	41.25	6.24	
26150	2x12' "	35.00	11.94	Inalderu
27750	5x20' "	29.75	17.07	do
28866	5x12' "	31.00	15.94	do
30160	1x12' "	39.50	7.44	
33200	3x12' "	40.08	6.86	
35050	3x6' "	41.25	6.24	
40270	1x12' "	38.25	8.69	
41925	2x6' "	40.75	6.74	
50300	1x12' "	31.35	9.69	
54247	5x40' "	23.00	15.86	Paideru

Smaller irrigation openings of spans from 1 1/2 to 4 feet 124 L. ft.

BACK PAPERS.

FURTHER PAPERS



In your reply please quote
the number and date of
this letter.

No. B/3266
418

From

THE ENGINEER-IN-CHIEF,

BEZWADA-MADRAS RAILWAY,

To

THE Chief Engineer for Irrigation

Madras.

Ootacamund

Dated Madras, the 11th June 1897.

Sir,

In reply to your No.135 M of May 11th and subsequent reminder of June 5th I have the honour to forward herewith a list of the openings provided from the Penner River to the Paidure River, i.e., in a length of 8 miles north of the Penner river which list also gives the particulars asked for by you.

2. I have further to remark that provision has been made for the purpose of passing the extra flood water which it is computed will cross the line ~~where~~ ^{when} the projects of the canal department are carried out

[a] In the Maldevi drainage basin

[b] At the Paideru Bridge

3. For the Maldevi drainage the opening in the road through which all flood waters now discharge as compared with the openings in the railway which runs near the road on the eastern side are as follows:

Road	Railway
1-24 ft arch = 24 l.ft. opposite	2-12 ft girders = 24 l.ft.
5-12 ,, ,, = 60 ,, ,,	5-20 ,, ,, = 100 ,,
5-6 ,, ,, = 30 ,, ,,	5-12 ,, ,, = 60 ,,
Total 114 l.ft. against	Total 184 l.ft.

Enclosures.
m

giving 70 feet additional waterway.

The above addition was made at the request of and in consultation with the Executive Engineer Nellore Division.

4. I may remark that the girder openings on the railway give a much greater headway than the arched openings on the road-while the tops of the floors are sunk to the following depths below the lowest point in the bed of the streams:

For 12 foot girder openings ----- 3 feet
,, 20 ,, ,, ,, ----- 4 ,,

5. The Paideru River crosses our line near chain 543.00 in the 119th mile from Madras and the original provision was 4 spans of 40 feet girders. The provision in the trunk road on the upstream side of the bridge is 5 spans of 30 feet arches- and is ample for the present flood discharge.

6. The extra anticipated flood discharge from the Kanagiri reservoir is 3,500 c.ft. per second and at the request of the Superintending Engineer ii Circle an extra span of 40 ft was given to the Paideru.

7. The additional waterway therefore allowed for at the request of the Irrigation Department beyond that at present actually required may be reckoned at 70 feet in the case of Maldevi and 40 ft in the case of the Paideru, and the additional cost of this extra allowance is under the Railway Act debitable to the Irrigation Department.

8. In the case of the Maldevi basin I propose in order to allow for the extra cost of abutments over piers to debit you with $\frac{30}{184}$ say 1/3rd of the cost of the 3 bridges provided for the Maldevi discharge instead of $\frac{70}{184}$ the actual proportionate increase of waterway, and in the case of the Paideru the cost of one pier and one span of girders-and shall be glad if you will advise me of your acceptance of this arrangement. I need scarcely remark that a great saving to the Irrigation Depart-

ment has been effected in giving this increase now instead of making the extra provision after the completion of the Railway.

I have the honour to be

Sir

Your most obedient servant

J. Doyle
for Engineer-in-Chief.
11/6

Chap 3
Sec 112
of Act
of 1890

CHIEF ENGINEER
FOR IRRIGATION.
16 JUN. 1897
No. 2789m

0154.12
258/28