

(1) Number of pages 6
(2) Date of repair 23-6-42
(3) Initials of the Referencer _____

MADRAS RECORD OFFICE.

Government of Madras.

Public Works **DEPARTMENT.**

G.O. No.	596	Press <u>Mis.</u>
S-26527		
Dated	28-3-	1862.

Not to be folded or roughly handled

*Proceedings of the Madras Government, Public Works Department,
28th March 1862.*

No. 526. Read the following letter from Lieutenant-Colonel F. H. RUNDALL, Consulting Engineer for Irrigation and Canal Company, to the Secretary to Government, Public Works Department, dated 10th March 1862, No. 90:—

SIR,

* No. 16, of 24th February 1862.

† Nos. 2 and 3, dated 3rd January and 12th February 1862 respectively.

1. The Agent* has requested me to submit the accompanying correspondence† which has passed between the Chief Engineer and the Board, relative to the amount of head-way to be given to bridges constructed on the Company's Canal.

2. On the advice of their Consulting Engineer Colonel Smith, the Board are desirous of giving a head-way of not less than 15 feet to all the bridges, in order to admit of boats being laden with light and bulky articles, such as cotton, straw, firewood, &c., with as full a cargo as possible, and they adduce by way of example the fact that the bridges over the Canals in Canada afford a head-way of 15 feet.

3. The Chief Engineer observes, that it was not so much with a view to a saving in expense that he limited the head-way to 12 feet, as to the circumstance that from the width of the Canal being 60 yards, and from rivers and large water-spreads having to be crossed, he is of opinion that boats laden to more than 8 feet above the water line, would find some difficulty in navigating the Canal in the upper section. That below the water-shed, where the Canal will be reduced to 30 yards, there would not be the same objection to high loaded boats, but that even there the Caulee and the Kundár, will have to be crossed immediately above Anicuts.

4. He observes further, that the Canal for the most part will be above, than below the surface of the ground, and that therefore the bridges will have to be proportionately raised, and in some instances the approaches would occupy one-third of a mile, and altogether he is of opinion that the limit of the head-way should be 12 feet.

5. There is some force in the Chief Engineer's arguments, but on the whole I agree rather with the Board and their Consulting Engineer, as though a head-way of 12 feet may be found sufficient at first, yet there is no doubt that it would be desirable not to fix so low a limit, especially as steamers will ply on the Canals, and it will probably be found expedient to use boats with an upper deck. I do not attach any weight to the objection that some of the rivers will have to be passed just above Anicuts, as such rivers are but narrow, and the number of days that water will be passing over the Anicuts in quantities sufficient to create a strong current will be very few. By placing the Locks moreover judiciously, all risk may be avoided.

6. The principal objection appears to me to be the very long approaches that will be required where the surface water of the Canal is much above the level of the country, but with a little management, by turning the road and taking advantage of the tail walls of the Locks, such sites may probably be found to be very few.

7. It was however this objection that weighed with me hitherto, in not suggesting an increase in the head-way; but the importance of utilizing the navigation to the utmost extent is so great, that I consider it *would* be preferable to undergo the inconvenience and expense of long approaches and increase the head-way, as wished by the Board, to 15 feet.

8. I would however add, the head-way of the bridges over Cochrane's Canal is only 10 feet, but there is no doubt that it has been fixed too low, and that eventually as the Canal is extended to the north, and the traffic increases, it will be found expedient to raise those bridges, as it is with difficulty that even now a small steamer like the "Progress" can pass under them.

No. 527. ORDER THEREON, 28th March 1862, No. 596.

The Government agree with the Consulting Engineer that the Board's suggestion to raise the head-way of the bridges to 15 feet is judicious, and they therefore direct him to see that it is attended to, and the necessary alterations made in the plans of those bridges which have been already sanctioned.

(Signed) W. H. HORSLEY, Lieut.-Colonel,
Secretary to Government.

Consulting Engineer's Office
Irrigation Canal Comp.
10 March 1862

N^o 90

From, Lieut. Col. J. H. Randall,
Consulting for I. & C. Company.
To, The Secretary to Government,
Department of Public Works.

Sir,

N^o 46 of 24 Feb/62

N^o 243 of 3 Jan/62
12 Feb/62 respect.
-in reply-

The Agent has requested me to submit the accompanying correspondence, which has passed between the Chief Engineer and the Board, relative to the amount of headway to be given to bridges constructed on the Company's canal.

2. On the advice of their Consulting Engineer Colonel Smith, the Board are desirous of giving a headway of not less than 15 feet to all the bridges, in order to admit of boats being laden with light bulky articles, such as cotton, straw, firewood &c., with as full a cargo as possible, and they adduce by way of example the fact that the bridges over the canals in Canada, afford a headway of 15 feet.

3. The Chief Engineer observes, that it was not so much with a view to a saving in expense that he limited the headway to 12 feet, as to the circumstance that from the width of the canal - being so narrow, & from rivers and large water spreads having to be crossed, he is of opinion, that boats laden to more than 8 feet above the water line, would find some difficulty in navigating the canal in

in the upper section. That below the watershed, where the canal will be reduced to 20 yards, there would not be the same objection to high loaded boats, but that even there the canal and the Kundar, will have to be crossed immediately above annicuts. —

4. He observes further, that the canal for the most part will be more above, than below the surface of the ground, and that therefore the bridges will have to be proportionately raised, and in some instances, the approaches would occupy 1/2 of a mile, and altogether he is of opinion, that the limit of the headway should be 12 feet.

5. There is some force in the Chief Engineer's comments, but on the whole, I agree rather with the Board and their Consulting Engineer, as though a headway of 12 feet may be found sufficient at first, yet there is no doubt that it would be desirable not to fix so low a limit, especially as it may will apply on the canals, and it will probably be found expedient to use boats with an upper deck. I do not attach any weight to the objection that some of the rivers will have to be passed just above annicuts, as such rivers are but narrow, and the number of days that water will be passing over the annicuts in quantities sufficient to create a strong current, will be very few. By placing the locks moreover judiciously, all risk may be avoided. —

6. The principal objection, appears to me to be, the

the very long approaches that will be required, where the surface water of the canal, is much above the level of the country, but with a little management, by turning the road and taking advantage of the tail walls of the locks, such sides may probably be found to be very few. —

7. It was however this objection that weighed with me hitherto, in not suggesting an increase in the headway; but the importance of utilizing the navigation to the utmost extent, is so great, that I consider it would be preferable to undergo the inconvenience and expense of long approaches, and increase the headway, as wished by the Board to 15 feet. —

8. I would however add, the headway of the bridges over Sachranee's canal, is only 10 feet, but there is no doubt that it has been fixed too low, and that eventually as the canal is extended to the North, and the traffic increases, it will be found expedient to raise those bridges, as it is with difficulty, that even now a small steamer like the "Progress" can pass under them. —

I have the honor to be,
Sir,

Your most obedient servant,
J. W. Russell Esq. Secy. to Govt.
for S. H. Co. Secy.

Compt. B.

Copy to Mr. H. 1962. Dated
Jan. 1862. for review.

The Consulting Engineer
W. B. B.

To
The Secretary of War

In the Office of the
Chief of Engineers

Washington
21st of March 1862

Enclosure

One letter with enclosure
submitted, concerning
which has passed between
the Chief Engineer the Board
relative to the amount of
necessary to be given to
the Engineer's enclosure
on the Company's case
& officers remarks thereon.
With an enclosure

15th March 1862

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The Government agree with the
Consulting Engineer that the Board's
suggestions to raise the height of
the bridges to 15 feet is
judicious, and they therefore
direct him to see that it is
attended to, and the necessary
alterations made in the Plans of the
Bridges which have been already done.

Directed -

20th March 1862

20th March 1862

Copy to Mr. H. 1962. Dated
Jan. 1862. for review.

1862