(1) Number of pages 24

5 (2) Date of repair 28/10/88

(3) Initials of the Referencer

TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

P.W.D. DEPARTMENT

G.O. No. 2966. Press.
~~B.P. No.~~ ~~Mis.~~

Dated 2. 12. 1884. ~~198~~ .

[illegible] 12

Not to be folded or roughly handled.

Archives —I 10,006-9 80

(12)

P. W. DEPARTMENT.

2986

READ the following :—

Letter No 3297, dated 26th Nov/84 from S.E. V Circle.

No 86

FOR ORDERS.

This letter adds really nothing to the information given by the S.E. in his former letter No 3265 dated 24th Nov/84, which it was considered, when ~~circulating~~ the Note & Draft Order circulated ~~proposal connected~~ therewith ~~to~~ were ~~circulated~~ drawn up, was ~~so~~ full and complete for the purpose of answering the queries asked by Govt. in para 1 of G.O. No 1057 S, dated 24 Nov/84

or an average × about 835 lbs per square foot where the breach took place

stand

2. It has already been shown that on the 9th instant when 12" of water was passing over the waste weir the tank bund sustained the maximum water pressure brought against it this season ~~and that after~~ ~~to~~ – a water pressure far greater than that to which it was subjected when the breach took place during ~~the time~~ ~~of the cyclone~~. It was also

⊕ Water pressure 793 lbs per square foot ~~Which~~ ~~[illegible]~~

stand

shewn

that after having undergone this severe test, and after the heavy rains of the monsoon, it shewed no signs of weakness whatever when inspected by the S.E. within 48 hours of the time it breached. That neither the great pressure ~~to~~ which the bank had sustained, nor its saturation by heavy rain had produced any visible subsidence or percolation whatever, is a sufficient proof that the bank was in excellent order, and was of ~~str~~ ample strength. ~~The S~~ The S.E. satisfied himself on this point, and it is submitted that in saying that the embankment was maintained up to full section, and was in thorough order, he did all that could be expected to insure the safety of the tank.

3. The other points on which Govt. apparently desires fuller information ~~are~~ is whether the disaster could have been ~~[illegible]~~

FOR ORDERS.

P. W. Department.

Read the following :— 2966

FOR ORDERS.

FOR ORDERS.

P. W. DEPARTMENT.

~~[illegible]~~

296

READ the following :—

~~Seen to [illegible] by say~~
averted by wise foresight
~~[illegible], have been [illegible]~~

this ~~letter~~ query can be met with a most emphatic negative, the former question can be answered by saying that, though it was of course impossible to foresee this particular cyclone, it was believed that the tank was sufficiently protected against as will be apparent from the following:—

FOR ORDERS.

~~First~~ 1st. At the time the tank breached the water pressure against the ~~tank~~ bund was far less than had been the case for many days previous. As the tank had not suffered in any way from this pressure (which had for many days been steadily moderating) the causes of the breach must be sought for elsewhere. The only additional forces brought against the bund

3

FOR ORDERS.

at the time it breached were the wind pressure plus the force of the waves. ~~The total wind and water pressure~~ at ~~the time of the~~ no possible measures that could have been taken could in any way have diminished the destructive violence of these prime agents of the disaster.

2nd The danger to which large tanks are liable during cyclones, from storm waves being driven over their embankment, is well known, and was provided for in the case of the Red Hills tank by a 'wave-breaker', a stone wall of about 3' high placed on the top of the front-ward of the bund, which was [illegible] 6 ft above F.T.L that this 'wave-breaker' was demolished by the continued violence of the wind and waves is certain, as it has gone in portions of the bund which are otherwise intact. This possible danger was therefore foreseen and

---

P. W. DEPARTMENT.

2966

READ the following :—

provided for, but, as the result has proved, the provision thus made was inadequate. For this, the District Officers cannot be held

FOR ORDERS. responsible.

3rd The 'wave-breaker' once demolished, it is certain that the waves must have swept over the earthen bund and (it need hardly be added) when this occurred the destruction that followed was inevitable. That the waves did sweep over the bund is proved

(1) from the evidence of a competent observer (vide para 3 of S.E.'s letter No 3265 of 24th instant)

(2) from the fact of the demolition of the 'wave-breaker', which the force of the wind alone* was almost certainly insufficient to overturn

(3) from the plain evidences it has left of having done so ~~as proved by the signs of the long grass in~~

*12 lbs per square foot when blowing at its maximum rate of 49 miles per hour

FOR ORDERS.

~~the rear of the bund being portions of the bund~~ as proved by the long grass, at the rear of portions of the bund still intact, being beaten down by the rush of water down the slopes; by the length and peculiar character of the breach; and by other unmistakable signs.

It is submitted that there is not an iota of reason for supposing that the waves did not sweep over the bund. In the note sent with the S.E.'s letter, the fact was, ~~more or less~~ assumed as being self-evident, ~~but~~ and it was shown that, under the peculiar conditions under which the cyclone occurred, it was only to be expected. The tank was nearly full; and the wind was blowing at the time the breach occurred from the S. W quarter over about 4 miles of water—the greatest length of water in the tank. As the height of waves increases in a direct ratio with the

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P. W. DEPARTMENT. 2966

READ the following :—

length of the expanse of water over which they are generated, the greatest height of the waves would ~~necessarily~~ be at the north eastern end of the

FOR ORDERS.

bund, where the breach occurred, and the danger of ~~such a~~ breach there by waves dashing over the bund would be immense, ~~the conclusion is obvious~~. Had either of the conditions under which the cyclone occurred been absent, it is possible that the waves would not have washed over the top of the bund. Combined, all experience goes to show that it is almost certain they would do so after the fall of the wave breaker.

It is submitted that the fact of the waves passing over the bund has now been proved. Granted that this is ~~so~~ no human energy could not have averted the catastrophe that followed. It is exceedingly improbable that men ~~were~~ would have turned out to work in such a

FOR ORDERS.

a storm. Even had they been induced, so it is almost certain that they could not have ~~[illegible]~~ worked in so exposed a situation, ~~on the top of a bund~~ in the ~~midst~~ teeth of a violent ~~storm~~ gale of wind. ~~At~~ The early hour of the morning, at which the breach occurred, prevented men being collected, and finally, admitting that they could have been collected and could have worked, it is ~~[illegible]~~ impossible that they could have repaired ~~the breaches~~, ~~or~~ over a length of 3 miles of bund, the breaches caused by a succession of breaking waves, ~~as fast as~~ as ~~possibly~~ [illegible] ~~[illegible]~~ as they were made.

To sum up what has been advanced in ~~the~~ ~~[illegible] para~~; considering the force of the waves being driven on the bund it is a fact which does not admit of question it is submitted that the breaches were due to the storm waves breaking over the ~~bund~~ embankment, and that the destruction which followed could not have been averted.

P. W. DEPARTMENT.

2966

READ the following :—

~~4. Should Govt. consider that any further point requires elucidation, a~~

4.

~~4. Should Govt. desire information on any further point~~

FOR ORDERS.

~~4. The tank bund has become~~

4. If the Govt. are still after the explanations now given not satisfied, it is suggested that a special reference to Col. [illegible] be made specifying distinctly any points on which doubt is still entertained. The papers can then lie over until Colonel Hasted is able to ~~give the version of the matter~~ repyt. direct to Govt. in the matter.

It may, however, be noted that ~~so~~ as Govt. have in para 1 of G O No 1051

FOR ORDERS.

G/24 Nov/84 called for a ~~distinct~~ specific report, ~~on~~ which is now been laid before them

2966

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the

READ the following

From the S. E. V Circle No 3265 dt 21st Novr 1884
Note by the Chief Engineer for Irrign H.E. No ·a/

I daresay this is all right but before expressing any decided opinion it seems desirable that Govt shd have before them the report called for in G.O. 24th inst No 1051 I

26/11

The whole matter must be most carefully looked into before any opinion is expressed. The Report merely proves, what was sufficiently evident before that its author foresaw nothing! There is not one jot or tittle of evidence set before us that human sagacity

The Government Not are satisfied that the bursting of the embankment of the Red Hills tank could by no possibility have been averted, that the Cyclone occurred under conditions the most unfavourable for the safety of the bank, and that the breaches are due to the storm waves sweeping over the

~~the embankment.~~

~~2. The revised design of the section of the bund will need and should receive the most careful considera-tion~~

~~ASK~~
~~25. 11. 84~~

The Hon. Col. [illegible]
The Rt. Hon. the Govr.

Could do nothing to prevent the Disaster.

It may well be that this was so; but it must be **proved**.

I have struck out entirely word of the highly premature office note in the shape of an order. We [illegible]
Nov 27th/84

once a body may get from white-washing the Department

D. S.
27/11/84

To

The Chief Engr. for Irrgn.
" Supg. Engr. V Circle
Lt. Col. J. Pennycuick R.E.
Financial Department
Revenue Department
Ex. and Sr. P.W. Accounts

Cir: 25/11/84

No. 461 M.

2466

All communications should be addressed to the Secretary.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

Civil Works.
Miscellaneous.

To
The Secy: to the Govt. of Madras,
Public Works Deptt.

Fort William, 4th December 1882.

Sir,

With reference to the Administration Report of the Public Works Deptt. General and Buildings and Roads Branch, in the Madras Presidency for the year 1881-82, of which 45 copies have been received I am directed to request that in future only 3 copies of such reports may be sent to this Office.

I have the honor to be,
Sir,
Your most obedt. Servt.
G. F. L. Marshall Major R.E.
Under Secy: to the Govt. of India

Wb

No. 3256 W. d/ 18th Dec/.

B/

Recorded –

H. C
Librarian
Despatcher
} to note

12/12

18/12

Entd. in Reg.

3074/12

No. 436 M.

2966

2966 2966

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

STANDING ORDERS.

P. W. D. CODE, 4TH EDITION, VOL. II.

No. 36.

CHAPTER XV.

Para. 132, *substitute the following for the last sentence :—*

The like arrangements apply in the case of the Military Works and other Imperial Establishments executing Provincial and Local Fund Works.

For para. 133, *substitute the following :—*

133.—When one fund executes work for another fund, the charge for the use of tools and plant will be calculated at the rate of 1½ per cent. of the outlay on the works and repairs executed.

[xxxvi—9-7-83.]

No. 37.

CHAPTER XIV.

Para. 183 *as amended by S. O. No. XX of* 28*th July* 1882.

Expunge the words—by whom they will be reviewed in the Local Administration Report referred to in Chapter XIV, paras. 208 to 212.

CHAPTER XV.

In heading of Section vii, for, Administration Reports, *read,* Administration Reports and Financial Accounts.

For para. 209, *substitute—*

The Local Administration Report will be prepared, by the Secretary to each Local Government or Administration in the Public Works Department, by the Director General of Railways, by the Director General of Telegraphs, and by the Inspector General of Military Works.

9 9

be sent to this office.–

Six copies of these reports should reach the Government of India by the 1st August following the year to which they relate; the report of the Inspector General of Military Works, and the section of the other reports relating to the expenditure on Military Works being submitted to the Government of India in the Military Department.

Add as para. 209 *A*—

209 A. The Financial Accounts (Code XIV-180) will be prepared by the Examiners of Public Works Accounts, and forwarded to the Accountant General, Public Works Department, by whom a brief note (for each Province and Administration) on the financial operations of the year will be compiled and submitted to the Government of India. Twenty printed copies will be required of the Military Works Financial Accounts, and twelve printed copies of the Financial Accounts of Civil Buildings, Roads and Services, Irrigation and Railways, respectively. If printed copies cannot be despatched to reach the Accountant General by the prescribed date, 1st August, the first copy should be sent in manuscript.

Add the following to para. 212 :—

Military Works should be treated as a separate section, as required by para. 209.

[xxxvii—9-7-83.]

No. 38.

CHAPTER XVI.

Para. 10.—Omit the last clause.

[xxxviii—9-7-83.]

No. 365, P. W. D. Press—13-7-83—2,800.

Librarian } To note
Despatcher }

2074/12

Entd. in Rec 12/12

No. 436 M.

2961

All communications should be addressed to the Secretary.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

Civil Works
Miscellaneous.

11

To

The Secy: to the Govt. of Madras.
Public Works Deptt

Simla, 2nd November 1883.

Sir,

With reference to the Administration Report of the P.W. Deptt General and Buildings and Roads Branch in the Madras Presidency for the year 1882-83, of which six copies have been received, I am directed to invite your attention to P.W. Deptt No. 461 M. dated 4th December 1882, and to request that in future only 3 copies of such reports may be sent to this office.—

P. W. C. No. 97/95
106/70 of 3

Recd 8. 11. 83

I have the honor to be,
Sir,
Your Most Obedt. Servt.
G. F. L. Marshall Major, R. E.
Under Secy. to the Govt. of India

Recd 21/1/84
En: 1

Chepauk
9th Novr/83

No. 2364 W

R. No. 783.
9. 11. 83.
Encl: 1.

To C/

Please note with reference to Govt. of India Standing Order No 37. (herewith) when it comes to be issued for adoption in Madras.

E/No. 783. of 19th Jany/84.
Encl: 1.

Returned as required

OC

B/
No. 195 W d/22d. January/84

Recorded.

N: 195 W dated 22d Jany/84

21-1-84.

D. W.

RS
19.1-84

21-1-84

8/11

In original to be returned.

21-1-84

Despatched to write
R. S.

No. 448 M.

All communications should be addressed to the Secretary.

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
CIVIL WORKS.
Miscellaneous.

To
The Secy: to the Govt of Madras
P. W. Deptt

Fort William, 25th November 1884.

Sir,

With reference to the Administration Report of the P. W. Deptt General and Buildings and Roads Branches in the Madras Presidency for the year 1883-84, of which 6 copies have been received, I am directed to invite your attention to the letters noted in the margin and to again state that no more than 3 copies of such reports are required in this Office.

P. W. Deptt No 461 M d/4th Decr/82.
" " 436 M D/2nd Novr/83.

I have the honor to be,
Sir,
Your Most obedt. Servt.

A W Sampson
Under Secy: to the Govt of India

(127)

No. 2966. Wd/ 2nd December/84

Recorded.

C.S.
1.12.84

W.S.
1.12.84

3268 W [illegible] 4/12/84
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N.B. _ Title noted by the Librarian in the Library list. Noted [illegible] 3/12/84

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