2667 d/27.8.86.

B. No. 2423 W d/22 Septr/86

Recorded.

In future the statements need not be returned by the Examiner.

Recorded
In future the statements need not be returned by the Examiner.

Dd
15/9/86

Jol
20/9/86

Despatch to note.

Ex: PW. acctt
Despd 22.9.86

Dd 22/9 23/9

P.W.C. No. 7145

Recd: 14.9.86

8
Mele: 1

B. No. 2423 W d/22.9.86

Indent Ast

Test, and that this fact was not known to him when the appointment was made. The Services of the Clerk were therefore dispensed with on the 3d August 1886.

I have the honor to request, under these circumstances, that the Examiner of P.W. Accounts may be authorized to pass the pay of the Clerk for the period he was employed viz: from 11th May to 2nd August 1886.

I have the honor to be
Sir
Your Most Obedt Servt.

W H Burton Col. R.E.
Supg. Engr. E. Circle

P.W.C. No 7299

From

THE SUPERINTENDING ENGINEER,
V CIRCLE,

To

THE Chief Engineer
P.W.D.

Dated 17th } September 1886.
Recd. 18 }

ENCLOSURES.

B. No 2444 W d/22-9-86

No. 2943

T. S. Sivasubramania Aiyar — Requests that the Examiner of P.W. Accounts may be authorized to pass the pay of Clerk — from 11th May to 2nd August 1886 for the reasons explained.

~~Transferred to the Educational department for favorable consideration~~

~~Johnstone Col R.E.~~
~~Secry to Govt P.W.D.~~

18/9/86

B. No 2444 W d/22d Septr/86

B — The Examiner, P.W.
Accounts is authorised to pass the pay of the clerk for the period of his employment — viz from 11th May to 2d August 1886.

The Examiner P.W. Accounts is authorised to pass the pay of the clerk for the period of his employment — viz from 11th May to 2nd Augt 1886.

21/9/86

S.E. V C.
S.E. V C. 21/9/86
Exr. P.W.A.
23.9.86
21/9

PUBLIC WORKS DEPARTMENT.

General.
Establishment.

LETTER—from

COLONEL J. SHAW-STEWART, R.E.,
Secretary to the Government of Madras,
Public Works Department,

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,
PUBLIC WORKS DEPARTMENT.

SIR,

I am directed to refer the following case for the consideration of the Government of India.

2. In June last, Mr. J. Paul, Temporary Executive Engineer, in charge of the West Godávari division, proceeded on privilege leave for 3 months, and the divisional charge fell to Mr. W. C. Lewis, an Assistant Engineer, 1st grade, on the permanent establishment. In ordinary cases, when the charge of a division devolves on an Assistant Engineer through the absence of the Executive Engineer on privilege leave, it is the practice to gazette the former as Officiating Executive Engineer.

3. In consequence, however, of Mr. Paul being a Temporary Executive Engineer sanctioned against one of the temporary divisions, but occupying a permanent post (an arrangement recently allowed by the Government of India), his *locum tenens*, during the period of his absence on privilege leave, can, in the opinion of the Examiner, Public Works Accounts, draw no charge allowance, although fully responsible for the division. This, I am to point out, is a hardship on the acting officer, which, it is hoped, the Government of India will consent to remove, both in the case of Mr. Lewis, and in similar cases when such unavoidably occur.

I have the honor to be,
Sir,
Your most obedient servant,
(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

OOTACAMUND,
28th July 1884.

Exd. E. Fernandez.
Spare Copies

GENERAL.
ESTABLISHMENT.

Govt. of {1884} Madras.

PUBLIC WORKS.

Dated July, 28th.

Recd. *Encl.*

28th July 1884, No. 1832 W.

JULY.

Charge Allowance

The Government of India requested to allow Mr. W. C. Lewis, Assistant Engineer, 1st grade, the *locum tenens* of Mr. J. Paul, a temporary Executive, but a permanent Assistant, Engineer on 3 months' privilege leave, to draw —

19th September 1884, No. 2312 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Establishment.

Read—the following letter from A. B. SAMPSON, Esq., Under Secretary to the Government of India, Public Works Department (General), to the Secretary to the Government of Madras, Public Works Department, dated Simla, 25th August 1884, No. 1003 G. :—

I am directed to acknowledge the receipt of your letter, No. 1832 W., dated 28th July 1884, on the subject of the allowance to be drawn by Mr. Lewis, Assistant Engineer, 1st grade, on the permanent establishment, for the period he held charge of the West Godávari division, during the absence, on privilege leave for three months, of Mr. J. Paul. In reply, I am to state that section 138 rule 2 of the Civil Leave Code governs the case, notwithstanding that Mr. Paul is substantively a permanent servant of Government, so that if he continued to draw the pay of the temporary appointment he holds while on privilege leave, no acting allowance is admissible to Mr. Lewis for officiating in it.

2. The Government of India, however, is of opinion that, if a permanent officer holds one of these outside appointments and goes on privilege leave, he should revert to his permanent appointment and pay for the period of his privilege leave, so as to allow his *locum tenens* to benefit by his absence.

Order—dated 19th September 1884, No. 2312 W., Public Works.

His Excellency the Governor in Council concurs in the opinion of the Government of India as expressed in paragraph 2 of the above letter. Mr. Paul must accordingly revert to his substantive rank during absence on privilege leave; and Mr. Lewis, who held charge of the division during Mr. Paul's absence, will receive the pay and allowances of an Executive Engineer on the temporary establishment for the period in question.

(True Extract.)

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

To the Superintending Engineer, I Circle.
" Examiner, Public Works Accounts.

Exd. E. Fernandez.
Spare Copies

GENERAL.
ESTABLISHMENT.

Govt. of {1884} Madras.

PUBLIC WORKS.

Dated September, 19th.

Recd. *Encl.*

G.O., 19th Sept. 1884, No. 2312 W.

SEPTEMBER.

Mr. J. Paul, Temporary Executive Engineer

Directing the reversion of —, to his substantive rank while on privilege leave to enable his *locum tenens* to draw charge allowance.

No. 2594

Superintending Engineer's Office,
V Circle, Madras,
Chepâk, 2d September 1886.

From

The SUPERINTENDING ENGINEER,
V Circle,

To

The Chief Engineer
P. W. Department.

Sir,

Enclosures.

Temporary Engineer R. Vaidyanatha Aiyar in charge of the Chingleput Sub Division having obtained privilege leave for 15 days from 20th June to 4th July 1886, Supervisor K. Duraiswami Pillai held temporary charge of this Sub Division during his absence and seems therefore to be entitled to Sub Divisional Allowance for that period.

Under G.O. No. 2312 W dated 19th September 1884, Vaidyanatha Aiyar should have reverted whilst on Privilege leave to the pay of his permanent

permanent appointment of Sub Engineer. The Examiner of P.W. Accounts audited Vaidyanatha Aiyar's pay as temporary Engineer provisionally and has deferred audit of Supervisor Duraiswami Pillai's Sub Divisional allowance for the period in question pending the orders of Government as to the rate of pay to be drawn by Vaidyanatha Aiyar for the period of his leave — I have the honor to request that necessary orders may be issued —

I have the honor to be
Sir
Your Most Obedient Servt.

W. H. Hinton Col. R.E.

Supg. Engr. 3rd Circle

G. O. 2312 W. 19.9.84
" 1832 W. 28.7.84

~~R. Vaidyanatha Aiyar B.C.E. temporary Engineer is allowed to draw his pay as tempy. Engineer while on privilege leave on the understanding that the State is put to no extra expense during the period.~~

CW
10/9/86

From C5 MCLeo 6902 √

THE SUPERINTENDING ENGINEER,
V CIRCLE,

To

THE Chief Engineer,
P.W.D.

Dated 2? }
Recd. 6 } September 1886.

ENCLOSURES.

No. 2594

R. Vythianada Iyer—
Requesting orders regarding the rate of pay of Ag. Engineer—during his absence on 15 days privilege leave.

E. W.

To S.E. V Circle
Ex. P.W. Acct.

G. O. 2312 W, 19. 9. 86

A. G.O. No. 2312 W dd 19-9-86
— — — 1832 W - 28-7-86

No. 3129 C.

Government of Madras.

PUBLIC WORKS DEPARTMENT,

Chepâk, 15th Septr 1886.

OFFICE NOTE.

From W.

W/15.9

To S. E. V.

Your letter No. 2594 dated 2d Septr 1886.

Please state what you would recommend.

R. Vaidyanatha Ayar can draw his pay as temp. Engineer while on privilege leave only on condition that the State is put to no extra expense, and in that case, the supervisor cannot draw sub divisional allowance.

(Sd) Jolt

13/9/86.

Despd. 16. 9. 86

No. 2983

I would recommend Supervisor Dorasawmi Mudr. drawing the Sub Divl. Allowance for the period he held charge of the Sub Divn.

W. H. B. SEV.

18/9/86.

R. 15-9-86

R. No. 3475

No. 3129 C 16-9-86

Government of Madras.

PUBLIC WORKS DEPARTMENT,

~~Ootacamund~~ Chepâk, 15th Septr 1886.

OFFICE NOTE.

From W

To S. E. V

Your letter No. 2594 dated 2d Sept. 1886.

Please state what you would recommend.

R. Vaidyanatha Aiyar can draw his pay as temporary Engineer while on privilege leave only on condition that the State is put to no extra expense, & in that case, the supervisor cannot draw sub divisional allowance.

Jolt

13/9/86. W

P.W.C. No. 7343 W

Recd: 20-9-86

W

S.E. V

Ref. Supg. Engr. letter No. 2594 dated 5 Septr 1886 [illegible]

Please state what you would recommend [illegible]

R. Vaidyanatha Aiyar can draw his pay as temporary Engineer while on privilege leave only on condition that the [illegible] [illegible]

I would recommend Supervisor's [illegible] recommending the Sub Divl. Allowance for the time he held charge of the Sub Divn.

Sec.
18/9/86.

PUBLIC WORKS DEPARTMENT.

No. 2443.W

PROCEEDINGS OF THE MADRAS GOVERNMENT.

22nd Septr /86

READ the following

Letter from the Supg. Engr. V Circle. A.I. No. 2594 d/ 5th Septr 1886.
Office Note from S.E. V Circle. A.I. No. 2983 d/ 18th Septr 1886.

R. Vaidyanatha Aiyar, temporary Engineer will revert to the pay of his permanent appointment as Sub Engineer for the period he was absent on privilege leave.

The usual allowance will be passed to Supervisor K. Duraiswami Pillai for the period he held charge of the Sub Division

21/9/86

D 23/9

21/9/86.

To Supg. Engr. V Circle
Examiner P.W. Accts.

3129 C. 15.9.86.
2312 W 19.9.84
1832 W 28.7.84

B. No 2443 W d/ 22-9-86

22.9

6th January 1886, No. 33 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following paper :—

Estimate, &c., for conversion of sweepers' quarters into patients' wards, &c., at lunatic asylum, Calicut.

No. 367.

Approved and forwarded to the Chief Secretary for submission to Government.

Fort St. George,
1st December 1885.

(Signed) M. C. FURNELL,
Surgeon-General with Government.

No. 2121, Judicial.

Approved, and transferred to the Public Works Department.

11th December 1885.

(Signed) W. WILSON,
Ag. Chief Secretary.

Order—dated 6th January 1886, No. 33 W., Public Works.

The estimate, amounting to Rs. ~~1,920~~ 1960, for converting into patients' wards the sweepers' quarters at the lunatic asylum, Calicut, is sanctioned.

2. As recommended by the official visitors, the work will be carried out by the Superintendent of the asylum, and passed, on completion, by the Executive Engineer. If the requisite funds cannot be provided by the Superintending Engineer before the end of the current official year, the work should be included in the statement of demands against the reserve to be submitted early in 1886-87.

3. It is observed that the execution of the work now sanctioned will render unnecessary, for the present, the larger scheme estimated to cost Rs. 10,346, and sanctioned in G.O., dated 18th November 1884, No. 2876 W.

4. The sanction accorded in paragraph 1 has been registered as Provincial, No. 192 W. of 1885-86, and classified as Civil Buildings, Original Works.

(True Extract.)

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

To the Superintending Engineer, IV Circle, with two enclosures.
„ Examiner, Public Works Accounts, with the estimate for note and return to the Superintending Engineer.
„ Judicial Department.

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1886} Madras.

PUBLIC WORKS.

Dated January, 6th.

Recd. *Encl.*

G.O., 6th January 1886, No. 33 W.

JANUARY.

Lunatic Asylum at Calicut

Estimate for converting into patients' wards the sweepers' quarters at the — sanctioned.

Accompaniment to G.O., No. 1594 W., dated 23rd June 1886.

A.—Statement showing funds applied for and those granted under Provincial.

—	Amount applied for							Amount granted.						
	Minor Works.			Repairs.			Tools and Plant.	Minor Works.			Repairs.			Tools and Plant.
	Civil Buildings.	Communications.	Miscellaneous Public Improvements.	Civil Buildings.	Communications.	Miscellaneous Public Improvements.		Civil Buildings.	Communications.	Miscellaneous Public Improvements.	Civil Buildings.	Communications.	Miscellaneous Public Improvements.	
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Ganjam	..	..	..	1,000	..	..	400	..	..	..	1,000	..	..	400
Rushikulya	100	..	..	2,000	500	..	200	100	..	..	2,000	500	..	200
Vizagapatam	500	..	..	5,000	12,500	..	7,000	500	..	..	5,000	12,500	..	5,502
Eastern Godávari	850	..	..	5,000	10,000	..	..	850	..	..	5,000	10,000	..	..
Central do.	..	..	..	500	..	..	..	..	..	..	500	..	..	..
Western do.	300	..	..	800	..	..	500	300	..	..	800	..	..	500
Eastern Kistna..	..	..	..	3,000	..	500	3,900	..	..	..	3,000	..	500	2,500
Western do.	115	..	..	400	..	..	100	115	..	..	400	..	..	100
Gudiváda	..	..	..	..	..	..	300	..	..	..	..	..	..	300
Nellore	500	..	..	5,000	..	..	2,300	500	..	..	5,000	..	..	2,300
Sangam Project	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Buckingham Canal	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bellary	700	..	..	2,000	..	..	1,000	700	..	..	2,000	..	..	1,000
Cuddapah	700	..	..	1,500	..	..	900	700	..	..	1,500	..	..	900
Kurnool	200	..	..	1,000	..	..	1,000	200	..	..	1,000	..	..	1,000
C. Project	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nílgiri	..	..	..	19,000	35,500	15,000	3,000	..	..	..	17,000	35,500	15,000	3,000
Coimbatore	500	..	..	4,000	..	..	1,200	500	..	..	4,000	..	..	1,200
West Coast	1,000	..	..	5,500	..	..	1,500	1,000	..	..	5,000	..	..	1,500
North Arcot	5,795	..	..	7,000	..	..	800	3,000	..	..	7,000	..	..	800
South do.	2,600	..	..	2,000	..	..	2,300	2,600	..	..	2,000	..	..	2,300
Chingleput	7,000	..	..	5,000	..	..	700	7,000	..	..	5,000	..	..	700
Presidency	10,000	..	..	50,000	18,000	3,000	5,726	10,000	..	..	45,000	18,000	3,000	† 5,226
Tanjore	200	..	..	2,500	..	..	1,000	200	..	..	2,500	..	..	1,000
Trichinopoly	4,000	..	..	4,000	..	..	1,000	1,000	..	..	4,000	..	..	1,000
Negapatam	200	..	..	1,500	..	..	500	200	..	..	1,500	..	..	500
Madura	500	..	..	1,000	..	..	300	500	..	..	1,000	..	..	100
Tinnevelly	200	..	..	1,000	..	..	1,000	200	..	..	1,000	..	..	1,000
Architect	2,000	..	200	20,000	..	5,000	2,642	2,000	..	200	* 20,000	..	5,000	‡ 2,642
Public Works Stores	..	..	..	..	..	..	15,000	..	..	..	..	..	..	15,000
Reserve with the Government	..	..	..	..	..	..	..	2,654	..	..	..	..	..	..
Do.* do. for Archæological Works ..	..	..	..	..	..	..	..	..	..	..	7,500	..	..	..
Total ..	37,960	..	200	1,49,700	76,500	23,500	54,268	34,819	..	200	1,49,700	76,500	23,500	50,670

* Includes provision for the estimates sanctioned in G.O., No. 1846 W., dated 10th August 1885.
† Includes provision of Rs. 2,226 for maintaining the pump and engine at the Guindy Water Works.
‡ Includes provision of Rs. 2,142 for the purchase of machinery for the Government Brickfield at Madras.

B.—STATEMENT of requirements on account of Provincial Incomplete Works for 1885-86 and of New Works sanctioned but not yet commenced.

Division.	Item No.	Name of work.	Amount of estimate.	Number and date of sanction.	Past expenditure.	Balance of estimate.	Amount applied for 1886-87. For incomplete works.	Amount applied for 1886-87. For new works.	Amount allotted. For incomplete works.	Amount allotted. For new works.	Item No.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12	13
		PROVINCIAL. *Minor Works.*	RS.		RS.	RS.	RS.	RS.	RS.	RS.		
Rushikulya ..	1	Providing accommodation for female prisoners in the district jail at Berhampore.	1,400	G.O., No. 588 W., of 4th March 1884.	..	1,400	..	1,400	..	..	1	No funds are available.
Do. ..	2	Condemned cells in the district jail at Berhampore.	720	G.O., No. 382 W., of 11th Feb. 1886.	..	720	..	720	..	720	2	From the reserve.
Vizagapatam ..	3	Alterations to the apothecary's quarters and reconstructing the guard-room for females in the lunatic asylum, Waltair.	1,334	G.O., No. 1552 W., of 3rd July 1885.	..	1,334	..	1,334	..	..	3	No funds are available.
Do. ..	4	Additions to the deputy tahsildar's office at Bimlipatam.	1,040	G.O., No. 1267 W., of 19th May 1886.	..	1,040	..	1,040	..	1,040	4	From the reserve.
Do. ..	5	Improvements to the district court at Vizagapatam.	1,861	G.O., No. 1110 W., of 3rd May 1886.	..	1,861	..	1,861	..	1,861	5	Do.
Do. ..	6	Improvements to the sub-jail attached to the sub-magistrate's office at Vizagapatam.	1,400	G.O., No. 1437 W., of 7th June 1886.	..	1,400	..	1,400	..	1,400	6	Do.
Godávari, Western.	7	Constructing a ryots' shed at the sub-magistrate's office, Pentapad.	1,180	G.O., No. 2866 W., of 15th Nov. 1884.	..	1,180	..	1,180	..	..	7	No funds are available.
Bellary ..	8	Reroofing a portion of the store-shed in the Executive Engineer's yard at Bellary.	1,418	G.O., No. 2159 W., of 15th Sept. 1885.	..	1,418	..	1,418	..	..	8	Do.
Cuddapah ..	9	Improvements to the record-room of the tahsildar's office at Badvél.	1,144	G.O., No. 338 W., of 13th Feb. 1885.	..	1,144	..	1,144	..	1,144	9	From the reserve.
Kurnool ..	10	Constructing three condemned cells in the district jail at Kurnool.	1,090	G.O., No. 3008 W., of 15th Dec. 1885.	..	1,090	..	1,090	..	..	10	No funds are available.
Nilgiri ..	11	Extending Coonoor cemetery ..	950	G.O., No. 1983 W., of 26th Aug. 1885.	380	570	570	..	570	..	11	From the reserve.
Do. ..	12	Well in the compound of the sub-magistrate's office at Gúdalúr.	720	G.O., No. 676 W., of 13th Mar. 1886.	65	655	655	..	655	..	12	Do.
Do. ..	13	Providing lightning conductors for St. Stephen's church, Ootacamund.	1,550	G.O., No. 1430 W., of 7th June 1886.	..	1,550	..	1,550	..	1,550	13	Do.
Do. ..	14	Providing lightning conductors to place of arms on Bombay Castle Hill, Ootacamund.	720	Do. ..	..	720	..	720	..	720	14	Do.
Do. ..	15	Do. do. to Bombay Castle, Ootacamund.	1,350	Do. ..	..	1,350	..	1,350	..	1,350	15	Do.
Do. ..	16	Do. do to Council Chamber, Ootacamund.	730	Do. ..	..	730	..	730	..	730	16	Do.
Do. ..	17	Providing lightning conductors to Government offices, Ootacamund.	1,850	Do. ..	..	1,850	..	1,850	..	1,850	17	Do.
Do. ..	18	Raising a portion of the 6th mile of Ootacamund-Gúdalúr road.	500	....	..	500	..	500	..	500	18	Do.
West Coast ..	19	Alterations to the tahsildar's office at Mangalore.	595	G.O., No. 1868 W., of 12th Aug. 1885.	..	595	..	595	..	595	19	Do.
Do. ..	20	Providing glazed shutters and sun shades over the windows of the district munsif's court at Udipi.	270	S. E.'s, register No. 42 of 1884-85.	..	270	..	270	..	..	20	No funds are available.
Do. ..	21	Alterations and improvements to the munsif's court at Parpanangádi.	1,534	G.O., No. 1858 W., of 12th Aug. 1885.	..	1,534	..	1,534	..	..	21	Do.
Do. ..	22	Converting into patients' wards the sweepers' quarters at the lunatic asylum, Calicut.	1,960	G.O., No. 279 W., of 1st Feb. 1886.	..	1,960	..	1,960	..	1,960	22	From the reserve.
Do. ..	23	Additions and alterations to the district munsif's court at Pynad.	1,520	G.O., No. 929 W., of 5th April 1886.	500	1,020	1,020	..	1,020	..	23	Do.
Do. ..	24	Surveying for a new munsif's court at Karakal.	3	S.E's., register, No. 5 of 1885-86.	..	3	..	3	..	..	24	To be met from the lump sum allotment to the division.
Do. ..	25	Barbed wire fence around the district munsif's court at Puttúr.	480	Do. do. No. 2 of 1886-87.	..	480	..	480	..	..	25	No funds are available.
Coimbatore ..	26	Putting the overseer's shed at Dhárápuram in good order for use as inspection bungalow.	263	Do. do. No. 16 of 1885-86.	..	263	..	263	..	..	26	Do.
Do. ..	27	Supplying and fitting iron safes for tahsildar's office at Palladam.	850	G.O., No. 1232 W., of 28th May 1885.	..	850	..	850	..	..	27	Do.
Do. ..	28	Do. do. at Karúr ..	840	Do. do. ..	..	840	..	840	..	..	28	Do.
Do. ..	29	Do. do. at Satyamangalam ..	860	Do. do. ..	..	860	..	860	..	..	29	Do.
Do. ..	30	Do. do. at Coimbatore	426	S.E's., register, No. 68 of 1884-85.	..	426	..	426	..	..	30	Do.
Do. ..	31	Do. do. at Kollegál ..	445	Do. do. No. 69 of 1884-85.	..	445	..	445	..	..	31	Do.
Do. ..	32	Do. do. at Bhávání ..	420	Do. do. No. 66 of 1884-85.	..	420	..	420	..	..	32	Do.
Do. ..	33	Do. do. at Utengiri ..	235	Do. do. No. 1 of 1885-86.	..	235	..	235	..	..	33	Do.
Do. ..	34	Do. do. at Yercaud ..	208	Do. do. No. 2 of 1885-86.	..	208	..	208	..	..	34	Do.
Do. ..	35	Constructing a wrought-iron strong-room for the huzur treasury at Salem.	1,650	G.O., No. 1826 W., of 28th July 1884.	..	1,650	..	1,650	..	..	35	Do.
Do. ..	36	Temporary establishment for survey of road from Salem to Yercaud.	2,210	G.O., No. 1876 W., of 13th Aug. 1885.	496	1,714	1,714	..	1,714	..	36	From the reserve.
North Arcot ..	37	Improving the Government school-house at Arcot.	1,210	G.O., No. 517 W., of 6th Mar. 1885.	400	810	1,030	..	810	..	37	Funds to the extent of balance of the sanctioned estimate have been provided, pending receipt of a revised estimate.
Do. ..	38	Constructing quarters for an hospital assistant attached to the central jail at Vellore.	1,490	G.O., No. 1199 W., of 12th May 1886.	..	1,490	..	1,490	..	1,490	38	From the reserve.
Presidency ..	39	Tiffin-rooms for Hindu students of the Medical College at Madras.	1,560	G.O., No. 1284 W., of 21st May 1886.	..	1,560	..	1,560	..	1,560	39	Do.

B.—Statement of requirements on account of Provincial Incomplete Works for 1885-86, and of New Works sanctioned but not yet commenced—*cont.*

Division.	Item No.	Name of work.	Amount of estimate.	Number and date of sanction.	Past expenditure.	Balance of estimate.	AMOUNT APPLIED FOR 1886-87		AMOUNT ALLOTTED.		Item No.	Remarks.
							For incomplete works.	For new works.	For incomplete works.	For new works.		
1	2	3	4	5	6	7	8	9	10	11	12	13
		PROVINCIAL.	RS.		RS.	RS.	RS.	RS.	RS.	RS.		
		Minor Works—cont.										
Tanjore ..	40	Constructing a masonry wall on the south side of the Cauvery river for the protection of the town of Kumbakónam.	2,330	G.O., No. 2345 W., of 9th Oct. 1885.	2,013	317	328	..	..	..	40	Appropriation not necessary under Code para. 2293, part III.
Tinnevelly ..	41	Additions and alterations to the huzur treasury at Kokarakulam.	2,070	G.O., No. 147 W., of 18th Jan. 1886.	..	2,070	..	2,070	..	..	41	No funds are available.
Architect ..	42	Rebuilding a portion of the outhouses attached to the Principal of the College of Engineering at Chepâk.	1,395	G.O., No. 1130 W., of 5th May 1886.	..	1,395	..	1,395	..	1,395	42	From the reserve.
		Total, Minor Works ..	..		..	..	5,317	36,841	4,769	19,865		
		Major Works.										
Vizagapatam ..	43	Providing additional accommodation for the huzur treasury at Vizagapatam.	8,870	G.O., No. 2138 W., of 29th Aug. 1884.	6,572	2,298	2,298	..	2,298	..	43	From the reserve.
Do. ..	44	Additions and alterations to the deputy tahsildar's office at Pálkonda and constructing a second-class police station in the compound.	4,920	G.O., No. 643 W., of 11th Mar. 1886.	..	4,920	..	4,920	..	4,920	44	Do.
Do. ..	45	Road from Potinghi to Korapet ..	2,72,700	G.O., No. 2365 W., of 10th Oct. 1885.	..	2,72,700	..	50,000	..	..	45	Rs. 30,000 already provided in the budget, item No. 62; further grants if necessary can be applied for later in the year.
Do. ..	46	Constructing two bridges on the new Potinghi ghât.	4,56,581	Do. do. ..	4,28,622	27,959	30,000	..	..	..	46	Rs. 30,000 do. do. Item No. 63.
Do. ..	47	Surveying road from Korapet to Central Provinces.	1,500	G.O., No. 327 W., of 6th Feb. 1886.	200	1,300	3,000	..	..	..	47	Rs. 1,300 already provided in the budget, item No. 64. The question of providing additional funds will be considered on receipt of further estimates.
Godávari, Eastern.	48	Sub-magistrate's office at Pithápuram.	8,983	G.O., No. 1928 W., of 20th Aug. 1885.	6,406	2,577	2,500	..	..	..	48	Rs. 2,500 already provided in the budget, item No. 16.
Do. ..	49	Sub-magistrate's office at Túni ..	9,436	Do. ..	4,825	4,611	3,000	..	..	..	49	Rs. 3,000 already provided in the budget, item No. 17.
Do. ..	50	Proposed water-supply and improvements to the existing drainage of the central jail at Rajahmundry.	33,030	G.O., No. 2794 W., of 23rd Nov. 1885.	24,221	8,809	5,800	..	..	..	50	Rs. 5,827 already provided in the budget, item No. 22.
Do. ..	51	Constructing a dispensary at Bhadráchalam.	4,246	G.O., No. 1804 W., of 3rd Aug. 1885.	210	4,036	3,130	..	..	..	51	Rs. 3,130 already provided in the budget, item No. 40.
Do. ..	52	Residence for the Executive Engineer at Dowlaishweram.	12,500	G.O., No. 788 W., of 31st Mar. 1885.	10,547	1,953	1,950	..	..	..	52	Rs. 2,000 already provided in the budget, item No. 43.
Do. ..	53	Additions to the Collector's office at Cocanada.	31,870	G.O., No. 2363 W., of 1st June 1878.	36,135	..	3,995	..	..	..	53	Revised estimate is said to have been submitted through the Collector. The question of funds will be considered on receipt of revised estimate.
Do. ..	54	New court-house at Rajahmundry.	41,244	G.O., No. 664 W., of 12th Mar. 1886.	39,052	2,192	2,192	..	2,192	..	54	From the reserve.
Do. ..	55	Residence for the Superintending Engineer at Dowlaishweram.	17,300	G.O., No. 1911 W., of 6th Aug. 1884.	18,574	..	1,500	..	..	..	55	Revised estimate promised. The question of funds will be considered on receipt of revised estimate.
Godávari, Western.	56	Constructing a first-class tahsildar's office at Tanuku.	21,420	G.O., No. 3563, of 20th Dec. 1875.	12,331	9,089	4,000	..	..	..	56	Rs. 4,000 already provided in the budget, item No. 1.
Do. ..	57	Do. do. at Bhimavaram ..	22,650	Do. ..	15,772	6,878	2,000	..	..	..	57	Rs. 6,368 already provided in the budget, item No. 2.
Bellary ..	58	Deputy Collector's office at Adóni.	7,415	G.O., No. 1159 W., of 8th May 1886.	6,410	1,005	1,100	..	1,100	..	58	From the reserve.
Do. ..	59	Combined office for the Superintending and Executive Engineers' office at Bellary.	18,494	G.O., No. 1129 W., of 6th May 1884.	19,099	..	1,000	..	1,000	..	59	Do. To complete the work.
Do. ..	60	Tahsildar's office at Adóni ..	31,680	G.O., No. 59, of 7th July 1875.	31,546	134	1,200	..	1,200	..	60	Do. Do. do.
Do. ..	61	Do. do. at Harpanahally.	26,715	G.O., No. 3529, of 15th Dec, 1874.	27,200	..	1,000	..	1,000	..	61	Do. Do. do.
Do. ..	62	Do. do. at Pulivendla ..	22,150	G.O., No. 2744 W., of 7th Nov. 1881.	22,603	..	3,000	..	..	..	62	The question of funds will be considered on receipt of revised estimate which is promised.
Kurnool ..	63	Sub-divisional officer's bungalow at Cumbum.	3,000	G.O., No. 1549 W., of 4th June 1883.	3,993	..	560	..	..	..	63	Revised estimate promised. The question of funds can be considered when the estimate is received.
Do. ..	64	Sub-magistrate's office at Owk ..	14,308	G.O., No. 2715 W., of 3rd Nov. 1884.	13,918	390	310	..	..	..	64	Appropriation not necessary under code paragragh 2293, part III.
Do. ..	65	Do. do. at Pyápali.	12,840	G.O., No. 2881 W., of 18th Nov. 1884.	12,261	579	200	..	..	..	65	Do. do. do.
Nílgiri ..	66	Protestant church at Wellington ..	38,161	G.O., No. 1977 W., of 12th Aug. 1884.	38,236	..	9,574	..	..	..	66	Sanction of the Government of India to the revised estimate should be awaited.
Do. ..	67	Purchase of and repairs to the properties at Ootacamund known as Blackwood and West Cottages.	9,663	G.O., No. 841 W., of 26th March 1886.	8,767	896	896	..	896	..	67	From the reserve.
Do. ..	68	Improvements to the Executive Engineer's office at Ootacamund.	2,520	G.O., No. 1509 W., of 15th June 1886.	..	2,520	..	2,520	..	2,520	68	Do.

B.—Statement of requirements on account of Provincial Incomplete Works for 1885-86 and of New Works sanctioned but not yet commenced—*cont.*

Division.	Item No.	Name of work.	Amount of estimate.	Number and date of sanction.	Past expenditure.	Balance of estimate.	AMOUNT APPLIED FOR 1886-87.		AMOUNT ALLOTTED.		Item No.	Remarks.
							For incomplete works.	For new works.	For incomplete works.	For new works.		
1	2	3	4	5	6	7	8	9	10	11	12	13
		PROVINCIAL.	RS.		RS.	RS.	RS.	RS.	RS.	RS.		
		Major Works—cont.										
Nílgiri ..	69	Improvements to the Bombay Castle property at Ootacamund.	19,945	G.O., No. 1615 W., of 13th July 1885.	3,496	16,449	4,000	..	4,000	..	69	From the reserve.
Do. ..	70	Extending organ loft, St. Stephen's church, Ootacamund.	2,787	G.O., No. 273 W., of 1st Feb. 1886.	..	2,787	..	2,787	..	..	70	No funds are available.
Do. ..	71	Exercise yard for European convicts at Ootacamund jail.	5,790	G.O., No. 144 W., of 11th March 1886.	..	5,790	..	5,790	..	5,790	71	From the reserve.
Do. ..	72	Improving and maintaining the main road from Ootacamund to Gúdalúr.	2,20,000	G.O., No. 1285 W., of 23rd May 1884.	2,02,722	17,278	5,000	..	5,000	..	72	Do.
Do. ..	73	Rest-house with out-houses on the Coonoor ghât road.	7,010	G.O., No. 1284 W., of 3rd June 1885.	1,380	5,630	120	..	120	..	73	From the reserve. In addition to Rs. 5,510 provided in the budget, item No. 65.
Do. ..	74	Constructing eight cart-stands on the road from Kullar to Ootacamund.	6,100	G.O., No. 58 W., of 7th Jan. 1886.	..	6,100	..	6,100	..	..	74	No funds are available.
Do. ..	75	Re-constructing the wooden platform bridge at Barliyar on the Coonoor ghât.	4,940	G.O., No. 1418 W., of 4th June 1886.	..	4,940	..	4,940	..	4,940	75	From the reserve.
Do. ..	76	Bazaar drainage scheme, Ootacamund.	2,07,247	G.O., No. 1497 W., of 16th June 1884.	2,02,101	5,146	5,146	..	5,146	..	76	From the reserve.
Do. ..	77	Water-supply, Lawrence Asylum, Ootacamund.	..	....	..	..	..	7,000	..	..	77	Estimate is awaited. The work should be classed as Military (*vide*, G.O., No. 2370 W., dated 25th September 1884).
Do. ..	78	Fencing Ootacamund lake with barbed wire fence.	7,200	....	..	..	..	7,200	..	..	78	Rs. 7,200 have already been provided, *vide* G.O., No. 1429 W., dated 7th June 1886.
West Coast ..	79	Re-constructing the roof of the Government church at Cochin.	..	....	1,667	..	16,333	..	..	..	79	Provision of funds will be considered when the estimate now under revision by the Superintending Engineer is submitted for sanction.
Coimbatore ..	80	Constructing a close prison at Coimbatore.	21,935	G.O., No. 3270 W., of 16th Nov. 1883.	10,183	11,752	11,752	..	11,752	..	80	From the reserve.
Do. ..	81	Constructing a new room for the huzur treasury at Salem.	2,870	G.O., No. 430 W., of 22nd Feb. 1886.	..	2,870	..	2,870	..	2,870	81	Do.
Coimbatore ..	82	Improvements to the central jail at Coimbatore.	5,745	G.O., No. 1071 W., of 28th April 1886.	..	5,745	..	5,745	..	5,745	82	From the reserve.
South Arcot ..	83	Constructing an embankment for the Gadilam river to protect the town of Tirupapuliyur from floods.	8,550	G.O., No. 361 W., of 10th Feb. 1886.	2,013	6,537	6,537	..	6,537	..	83	Do.
North Arcot ..	84	Improvements and alterations to sub-magistrate's office at Punganúr.	4,480	G.O., No. 1306 W., of 25th May 1886.	..	4,480	..	4,480	..	4,480	84	Do.
Chingleput ..	85	Constructing an upper story to the Agricultural College at Saidâpet.	18,370	G.O., No. 795 W., of 31st March 1885.	..	18,370	..	18,391	..	18,391	85	Do.
Presidency ..	86	Constructing twelve solitary cells in the Madras Penitentiary.	5,750	G.O., No. 525 W., of 7th March 1885.	1,863	3,887	3,887	..	..	..	86	Rs. 3,750 already provided in the budget, item No. 26.
Tanjore ..	87	Constructing a district jail at Tanjore.	2,11,100	G.O., No. 3059 W., of 20th Nov. 1882.	1,98,588	12,512	8,000	..	8,000	..	87	From the reserve.
Madura ..	88	Restoration of Tirumal Naick's palace and adaptation for public offices.	3,31,425	G.O., No. 697 W., of 16th March 1886.	2,82,836	48,589	18,588	..	..	..	88	A sum of Rs. 30,000 has been provided in the budget, item No. 44. The question of additional funds will be considered later in the year.
Do. ..	89	Constructing a deputy tahsildar's office at Nellakotah.	11,828	G.O., No. 515 W., of 1st Feb. 1878	11,798	30	30	..	..	..	89	Appropriation not necessary under code paragraph 2293, part III.
Do. ..	90	Improvements to the district jail at Madura.	2,820	G.O., No. 3021 W., of 16th Dec. 1885.	..	2,820	..	2,820	..	..	90	No funds available.
Tinnevelly ..	91	Improving the district court-house at Kokarakulam.	17,875	G.O., No. 506 W., of 6th March 1885.	1,944	15,931	15,931	..	..	..	91	Attention is drawn to Chief Engineer's Memorandum No. 1071 C., dated 16th March 1886. Funds required for essential improvements should be applied for separately.
Do. ..	92	Constructing a compound wall to the subsidiary jail at Sankaranainárkoil.	4,312	G.O., No. 1418 W., of 17th June 1885.	3,415	897	897	..	897	..	92	From the reserve.
Architect ..	93	Additions and alterations to the Presidency College at Chepâk, Madras.	2,946	G.O., No. 2041 W., of 2nd Sept. 1885.	2,408	538	538	..	538	..	93	Do.
Do. ..	94	Constructing an ophthalmic hospital at Madras.	1,04,954	G.O., No. 3051 W., of 18th Dec. 1885.	1,00,502	4,452	358	..	..	..	94	Appropriation not necessary under code paragraph 2293, part III.
Do. ..	95	Improvements to family quarters attached to the Civil Engineering College at Chepâk.	3,872	G.O., No. 611 W., of 14th March 1885.	3,449	423	423	..	..	..	95	Do. do.
Do. ..	96	Constructing a latrine for the Senate House at Chepâk.	6,600	G.O., No. 463 W., of 23rd Feb. 1886.	550	6,050	2,750	..	2,750	..	96	From the reserve; moiety to be met by Government.
Do. ..	97	Alterations to the roof of the north and south ends of the Public Works offices at Chepâk.	5,035	G.O., No. 2975 W., of 11th Dec. 1885.	2,081	2,954	2,954	..	2,954	..	97	From the reserve.
Do. ..	98	Improvements to the south beach promenade.	1,04,618	G.O., No. 640 W., of 16th March 1885.	1,02,828	1,705	1,705	..	1,705	..	98	Do.
Do. ..	99	Planting the foreshores of the beach from Public Works offices to the Hindu burial ground.	4,768	G.O., No. 294 W., of 2nd Feb. 1886.	1,994	2,774	2,774	..	2,774	..	99	Do.
		Total ..	..		..	..	1,91,928	1,25,563	61,859	49,656		

B.—Statement of requirements on account of Provincial Incomplete Works for 1885-86 and of New Works sanctioned but not yet commenced—*cont.*

Division.	Item No.	Name of Work.	Amount of estimate.	Number and date of sanction.	Past expenditure.	Balance of estimate.	Amount Applied for 1886-87		Amount allotted		Item No.	Remarks.
							For incomplete works.	For new works	For incomplete works.	For new works.		
1	2	3	4	5	6	7	8	9	10	11	12	13
		PROVINCIAL. *Registration.*	RS.		RS.	RS.	RS.	RS.	RS.			
Vizagapatam ..	100	Converting into a sub-registrar's office the building known as canteen in the fort at Vizagapatam.	897	G.O., No. 805 W., of 31st March 1885.	..	897	..	897	..	..	100	No funds are available.
Do. ..	101	Constructing a sub-registrar's office at Párvatipur.	2,400	G.O., No. 687 W., of 15th March 1886.	..	2,400	..	2,400	..	..	101	Do. do.
Godávari, Eastern.	102	Constructing a registrar's office at Cocanada.	4,700	G.O.. No. 352 W., of 1st Feb. 1883.	3,904	796	935	..	935	..	102	From the reserve.
Do. Central.	103	Constructing a sub-registrar's office at Razole.	2,750	G.O., No. 2989 W., of 22nd Oct. 1883.	425	2,325	2,325	..	..	..	103	Rs. 2,325 given in the budget, item No. 45.
Bellary ..	104	Constructing a sub-registrar's office at Adoni.	2,542	G.O., No. 2757 W., of 2nd Oct. 1883.	2,720	..	100	..	..	..	104	Appropriation not necessary under code paragraph 2293, part III.
Do. ..	105	Do. do. at Kampli ..	2,660	G.O., No. 21 W., of 8th January 1884.	2,322	338	338	..	..	..	105	Do. do.
Cuddapah ..	106	Do. do. at Proddutur ..	2,240	G.O., No. 1497 W., of 28th May 1883.	1,004	1,236	1,236	..	1,236	..	106	From the reserve.
West Coast ..	107	Do. do. at Kudavayur.	2,940	G.O., No. 525 W., of 26th Feb. 1886.	..	2,940	..	2,940	..	..	107	No funds are available.
Do. ..	108	Do. do. at Mannárghat.	2,450	G.O., No. 438 W., of 9th Feb. 1883.	70	2,380	2,380	..	2,380	..	108	From the reserve.
Do. ..	109	Providing additional accommodation for the sub-registrar's office at Vetalapudiengady.	1,350	G.O., No. 2926 W., of 26th Nov. 1884.	..	1,350	..	1,350	..	..	109	No funds are available.
Do. ..	110	Purchase of Local fund school at Taliparamba and converting it into a sub-registrar's office.	3,040	G.O., No. 1238 W., of 15th May 1886.	2,667	373	373	..	..	..	110	Appropriation not necessary under code paragraph 2293, Part III.
Tanjore ..	111	Converting a portion of the old tahsildar's office at Tiruvádi into a sub-registrar's office.	1,220	G.O., No. 993 W., of 16th April 1886.	800	420	420	..	..	..	111	Rs. 436 withdrawn from the grant of Rs. 856 provided in the budget, item No. 58.
Madura. ..	112	Constructing a sub-registrar's office at Tiruchuli.	2,125	G.O., No. 280 W., of 25th Janurary 1883.	2,182	..	16	..	..	..	112	Appropriation not necessary under code paragraph 2293, part III.
Tinnevelly ..	113	Do. do. at Rathapuram ..	2,330	G.O., No. 415 W., of 20th February 1886.	..	2,330	..	2,330	..	..	113	No funds are available.
		Total registration ..	..		..	..	8,123	9,917	4,551	..		
		Police.										
Rushikulya ..	114	Additions and alterations to the office of the Superintendent of Police at Chatrapur.	4,600	G.O., No. 1700 W. of 9th July 1884.	..	4,600	..	4,600	..	..	114	No funds are available.
Vizagapatam ..	115	Constructing a bungalow with outhouses for the Assistant Superintendent of Police at Jeypore.	15,350	G.O., No. 1475 W. of 11th June 1886.	14,496	854	854	..	854	..	115	From the reserve.
Do. ..	116	Constructing a police station house at Korapet.	3,895	G.O., No. 2273 W. of 30th Sept. 1885.	58	3,837	3,837	..	3,837	..	116	Do.
Do. ..	117	Constructing a second-class police station house at Kumaradu.	1,520	G.O., No. 2339 W. of 20th August 1883.	116	1,404	1,404	..	1,404	..	117	Do.
Godávari, Eastern.	118	Do. do. at Bhadráchalam ..	1,826	G.O., No. 2981 W. of 4th Dec. 1884.	989	837	837	..	837	..	118	Do.
Nílgiri ..	119	Converting the police inspector's house at Gúdalúr into eight police huts.	2,190	G.O., No. 510 W. of 6th March 8885.	1,350	840	840	..	840	..	119	Do.
West Coast ..	120	Constructing a police station house at Uppinángadi.	2,775	G.O., No. 18 W. of 7th January 1884.	..	2,775	..	2,775	..	..	120	No funds are available.
Do. ..	121	Constructing a third-class police station house at Iritti.	1,240	G.O., No. 2373 W. of 25th Sept. 1884.	..	1,240	..	1,240	..	..	121	Do.
Tanjore ..	122	Constructing an additional shed for the police station at Máyavaram.	1,130	G.O., No. 64 W. of 8th January 1885.	209	921	921	..	921	..	122	From the reserve.
Madura ..	123	Constructing a third-class police station at Iyalúr.	1,145	G.O., No. 535 W. of 2nd March 1886.	..	1,145	..	1,145	..	1,145	123	Do.
Do. ..	124	Constructing a police station and huts at Sáptúr.	4,850	G.O., No. 438 W. of 22nd Feb. 1886.	..	4,850	..	4,850	..	4,850	124	Do.
Ramnad ..	125	Converting the police hospital at Ramnad into a residence for the Assistant Superintendent of police.	3,950	G.O., No. 2701 W. of 3rd Nov. 1884.	1,101	2,849	899	..	899	..	125	From the reserve. In addition to Rs. 1,950 provided in the budget, item No. 33.
Tinnevelly ..	126	Constructing four police huts at Virudupati.	1,340	G.O., No. 2254 W. 28th Sept. 1885.	..	1,340	..	1,340	..	..	126	No. funds are available.
		Total ..	..		..	..	9,592	15,950	9,592	5,995	..	

23rd June 1886, No. 1594 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

Read—the following papers :—

From the Superintending Engineer,	I Circle,	dated	3rd June	1886,	No. 490 G.D.
,, ,, ,,	II ,,	,,	21st May	,,	(one statement).
,, ,, ,,	III ,,	,,	8th ,,	,,	(five statements).
,, ,, ,,	III ,,	,,	17th ,,	,,	No. 507.
,, ,, ,,	IV ,,	,,	11th ,,	,,	,, 142 E.W.
,, ,, ,,	V ,,	,,	11th ,,	,,	,, 565.
,, ,, ,,	V ,,	,,	11th ,,	,,	,, 566.
,, ,, ,,	V ,,	,,	11th ,,	,,	,, 567.
,, ,, ,,	V ,,	,,	11th ,,	,,	,, 569.
,, ,, ,,	V ,,	,,	11th ,,	,,	,, 570.
,, ,, ,,	VI ,,	,,	12th ,,	,,	,, 227 M.D.
,, Consulting Architect to Government,		,,	12th ,,	,,	,, 196.
Proceedings of Government, Financial Dept.,		,,	7th June	,,	,, 494. Mis.

Order—dated 23rd June 1886, No. 1594 W., Public Works.

With the papers read above, the Superintending Engineers and the Consulting Architect submit statements exhibiting demands under Provincial Minor and Incomplete Works, Repairs and Tools and Plant.

2. The demands under Repairs and Tools and Plant, and the allotments sanctioned against them, are shown in statement A. The demands under Communications and Miscellaneous Public Improvements being in excess of the budget provision under those heads, a sum of Rs. 25,080 has been transferred from the budget provision under Civil Buildings, viz., Rs. 13,080, to the grant under Communications, and Rs. 12,000 to that under Miscellaneous Public Improvements. The provision under these heads will now stand as below :—

	RS.
Civil Buildings	1,49,700
Communications	76,500
Miscellaneous Public Improvements	23,500
Total ...	2,49,700

and the demands under Tools and Plant have been so reduced as to bring the total sum within the budget provision, Rs. 50,670.

3. The budget provision under Repairs amounts to Rs. 2,91,055 and the difference between that sum and the allotment now made is Rs. 41,355, which has been resumed and added to the Provincial reserve.

	RS.
* G.O. No. 1234-A W., dated 14th May 1886 ..	17,000
,, ,, 1429 W., ,, 7th June ,, ..	7,200
,, ,, 1565 W., ,, 21st ,, ,, ..	3,080
,, ,, 1531 W., ,, 17th ,, ,, ..	379
Total ..	27,659

4. The provision in the budget under reserve was Rs. 1,77,174, but subsequent appropriations* have reduced the sum to Rs. 1,49,515. The total sum now available for distribution for incomplete and minor original works will amount to Rs. 1,91,306, as detailed below:—

	RS.
Reserve balance	1,49,515
Transferred from repairs	41,355
Surrender from budget grant (*vide* remark against item No. 111) ...	436
Total ...	1,91,306

5. Under Original Works the demands amount to—

		RS.
Incomplete minor	5,317	
Do. major	1,91,928	
Do. registration	8,123	
Do. police	9,592	
Total incomplete works ...	...	2,14,960
New minor works	36,841	
Do. major do.	1,25,563	
Do. registration works	9,917	
Do. police works	15,956	
Total new works ...	...	1,88,271
Lump sum of minor works		38,160
Total demand ...	...	4,41,391

but the demands made by the Superintending Engineer, I Circle, include many works for which funds have already been provided in the budget. The total of such demands amounts to Rs. 1,04,705. Provision is also made in the budget for completing "the 12 solitary cells in the Madras penitentiary," for which the Superintending Engineer, V Circle, has included a demand of Rs. 3,887. And the demands of the Superintending Engineer, IV Circle, include provision for "fencing Ootacamund lake with barbed wired," for which funds have already been sanctioned (*vide* G.O., No. 1429 W., dated 7th June 1886). Deducting the amounts referred to above, the actual demands will amount to Rs. 3,25,599.

6. The allotments sanctioned under Original Works are shown below:—

		RS.
Incomplete minor	4,769	
Do. major	61,859	
Do. registration works	4,551	
Do. police works	9,592	
Total incomplete works ...	...	80,771
New minor works	19,865	
Do. major do.	49,656	
Do. registration works	...	
Do. police	5,995	
Total new works ...	...	75,516
Lump sum allotment for minor works as per statement A	...	32,365
Total allotment ...	...	1,88,652

7. The demands made for grants in addition to allotments already provided in the budget have not been complied with for want of funds at present. In such cases application for additional funds, if necessary, should be made later in the year.

8. In the case of new works grants have been provided for those works only the urgency of which has already been brought to the notice of the Government and for which provision of funds was promised to be considered in disposing of the demands on account of incomplete works.

9. Funds have been provided for the completion of all the incomplete works brought forward by Superintending Engineers, excepting in cases in which revised estimates are required.

10. The Superintending Engineer, IV Circle, applies for a sum of Rs. 11,752 for completing "the close cellular prison at Coimbatore." This work should have been included in the Superintending Engineer's budget estimates, and it is with inconvenience that provision has been made for this large demand from the small reserve intended for such of the incomplete works as were expected to be completed in 1885-86, but were not completed owing to unforeseen causes.

(True Extract.)

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

To Superintending Engineers.
To the Consulting Architect to Government.
,, Examiner, Public Works Accounts.
,, Financial Department.
,, Judicial ,,
,, Educational ,,
,, Public ,,
,, Ecclesiastical ,,
,, Revenue ,,

Exd. E. Fernandez.
Spare Copies

GENERAL.
ACCOUNT.

Govt. of {1886} Madras.

PUBLIC WORKS.

Dated June, 23rd.

Recd. *Encl.*

G.O., 23rd June 1886, No. 1594 W.

JUNE.

Provincial Funds

Orders on statements of demands on — in 1886-87, for incomplete and minor works, repairs, and tools and plant, &c.

18th April 1885, No. 926 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following papers :—

From H. R. GRIMES, Esq., Inspector-General of Jails, to the Chief Secretary to Government, dated Madras, 5th December 1884, No. 356.

With reference to the order of Government, dated 28th April last, Mis. No. 1026, I have the honor to forward, for the sanction of Government, the accompanying plan and estimate, amounting to Rs. 3,420, for constructing four new cells in the district jail at Calicut for persons sent for medical observation under the provisions of the Lunacy Act XXXVI of 1858.

2. The superintendent of the district jail at Calicut reports that, on reconsideration, he thinks it best to have four new cells constructed instead of converting the two existing infection wards into four cells, and suggests that they may be built in one block and not in two, which proposal receives my approval ; and I have the honor to request that Government will be pleased to accord sanction and allot funds for the work to be executed during the current official year for reasons set forth in this office letter, No. 106, dated 17th April last.

No. 2812, Judicial.

Approved and transferred to the Public Works Department with request that an early allotment of funds may be made.

(By Order.)

(Signed) M. HAMMICK,
Acting Assistant Secretary.

17th December 1884.

No. 2133 C., Public Works.

Forwarded to the Superintending Engineer, IV Circle, for submission of an estimate for four cells in one block as suggested by the Inspector-General.

2. Return of this paper requested.

(By Order.)

(Signed) C. BOWEN, Major, R.E.,
Deputy Chief Engineer.

22nd December 1884.

From Colonel J. BEATTY, R.E., Superintending Engineer, IV Circle, to the Chief Engineer, Public Works Department, dated Ootacamund, 31st March 1885, No. 143 E.W.

With reference to your No. 2133 C., of 22nd December 1884, I have the honor to forward a plan and estimate, amounting to Rs. 3,200, for constructing four cells (in one block) in the district jail at Calicut, together with a report and duplicate abstract estimate.

2. The papers received with your endorsement are herewith returned as requested.

ORDER—dated 18th April 1885, No. 926 W., Public Works.

The estimate, amounting to Rs. 3,200, for constructing four new cells in the district jail, Calicut, is sanctioned.

2. No provision has been made for the work in the budget for 1885-86, but the Superintending Engineer will include it in his statement of demands against the reserve.

3. This sanction has been registered as Provincial No. 15 W. of 1885-86, and classified as Civil Buildings, Original Works.

(True Extract.)

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

To the Superintending Engineer, IV Circle, with ten enclosures.
" Examiner, Public Works Accounts, with duplicate abstract estimate.
" Judicial Department.

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of (1885) Madras.

PUBLIC WORKS.

Dated April, 18th.

Recd. *Encl.*

G.O., 18th April 1885, No. 926 W.

APRIL.

District Jail, Calicut

Estimate for cells in the —, sanctioned.

22nd July 1886, No. 1932, Judicial.

GOVERNMENT OF MADRAS.

JUDICIAL DEPARTMENT.

Read—the following paper:—

Note by the Chief Engineer, Public Works Department.

The estimate prepared by the Superintendent of the District Jail at Calicut, for the erection of accommodation for twelve lunatics, is defective in the following respects:—

(*a*) The nature of soil is not stated.

(*b*) The foundation should be of brick or laterite in chunam; not laterite in mud, as proposed.

(*c*) The depth and breadth allowed for the foundations appear to be insufficient.

(*d*) The omission of flooring of any description. Either asphalte or cement floor should be put down, to admit of the wards being washed daily.

(*e*) The partition walls should be of brick or laterite in chunam; not of sun-dried bricks in mud, as proposed.

(*f*) The description of tiles to be used is not stated, nor is the scantling of the rafters given.

(*g*) The slope given to the roof appears insufficient, when the heavy rainfall is taken into consideration.

(*h*) The ventilators should be placed higher, and reduced in depth from 2 to 1½ feet. They should also be provided with weather-boards.

(*i*) It is suggested that, to secure proper ventilation, the doors should be half-pannelled and half-railed (iron bars being used), instead of being made entirely of planks.

(*j*) The pillars appear to be unnecessarily large for the height, and too close together.

(*k*) The laying of the bressummers should be on edge, not flat, as shown in section.

(*l*) The amount of estimate should apparently be Rs. 1,842, not Rs. 1,800 as stated.

2. It is suggested that a revised estimate be prepared by the local public works officers, and that the work be undertaken by the Public Works Department. The revised estimate would supersede that sanctioned in G.O., No. 926 W., dated 18th April 1885.

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

13th July 1886.

+

No. 400-D.

Memorandum.

Copy of the foregoing note by the Chief Engineer is forwarded to the Judicial Department, with reference to G.O., No. 1585, dated 16th June 1886.

2. The Government in this department concur in the Chief Engineer's remarks.

3. The estimate received with the Government order quoted above is herewith returned to the Judicial Department.

Ootacamund,
14th July 1886.

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

To the Judicial Department, with four enclosures.

+ with file at Govt.

Order—dated 22nd July 1886, No. 1932, Judicial.

Communicated to the Inspector-General of Jails in continuation of G.O., 16th June 1886, No. 1585. He will inform the Superintendent of the District Jail, Calicut, that the Government await his report regarding the site for the new cells.

2. The plan and estimate will be returned to the Public Works Department in view to the cells being constructed by that department.

(True Extract.)

Chief Secretary.

To the Inspector-General of Jails.
„ Public Works Department, with plan and estimate.

Exd. T. O'Connor.

13 Ol

Nos 400 D. 14.7.86.
505 D. 7.8.86.

No 2030 W d/ 13th August 1886

Communicated with a copy of Pros dd/ 16-6-86 No 1585 Judl to the S.E. IV Circle, who will submit revised plans and estimates based on ~~the~~ Chief Engr's note of 13 July 1886.

8.8.86

13/8/86

13/8

S.E. IV Circle ✓ with 4 enclos

Judl Dept ✓ Dec

2 e/press sent 13/8/86 to off office 13/8

O.G.S. 27/8.

6.6.8.86 D. 11.8.86

(2)

S.W.C. No. 6055

Govt. of {1886} Madras.

JUDICIAL.

14 S.C

Issued

Recd. 5. 8. 86 Encl. (4. Plans)

G.O., 22nd July 1886, No. 1932.

JULY.

Jails.

Communicating to the Inspector-General of Jails memorandum from the Public Works Department regarding the erection of cells for lunatics in the district jail, Calicut, and requesting him to inform the Superintendent that Government await his report regarding the site of the new cells.

Papers sent up 7.8.86

with order

C.A.W. 6/8/86

Judicial Department.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

Read the following

from the Surgeon General with the Government of Madras, dated 18th Augt 1886 No. C/398, submitting half yearly report of lunatic prisoners detained in jail for want of accommodation.

Order thereon 3d September 1886 No. 2391 Mis.

Recorded.

2. It is observed from para 2 of G.O. 6th January 1886, No. 33 W, that the additional accommodation sanctioned for the Lunatic Asylum at Calicut is to be carried out by the Superintendent who is also Superintendent of the District Jail. If the funds required for the work have been provided by the Public Works Department the question of relieving the

District

District Jail of the lunatics awaiting accommodation at the Asylum would seem to lie entirely in the hands of the Superintendent. No further orders of Government, therefore appear called for.

(True Extract)

Chief Secretary

To The Surgeon General with the Government of Madras
— " — Public Works Department
— " — District Magistrate Malabar

1594 W 23.6.86.
33 W .6.1.86.
2876-W. 18.11.84

B. W. 2442 W d/ 22d Sept/86.

Recorded —

The required funds were provided in G.O. No. 1594 W d/ 25th June 1886.

20/9/86

16/9/86

B W 22/9

20

The S. G. T. C.
" Judicial Dept

23/9

22/9

[6]

Gobt. of 188 Madras.

To

The Public Works Department

Recd. 13.9.86

Proceedings, dated 3d September 188
No. 2391 Mis

B. W. 2442 W d/ 22.9.86

Subject.

Recording with remarks letter for the Surgeon General with the Government of Madras, submitting remarks on half yearly report of lunatic prisoners detained in jail at Calicut for want of accommodation.

B

No. 1408 R d/ 8th Decr/83.

Communicated to the Consulting Engineer for Railways for information and guidance together with manuscript copy of P. W. D. Resolution No. 876-82 C. R. dated 16th June/79

(Signed) C. J. Smith Lt. Col. R.E.

To The Cons. Engineer for Ry.
The Examiner Ry. Accts.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

RAILWAY ESTABLISHMENT.

To

No. 702R.E.
Dated Simla, October 22, 1883.
Received

B

No. 1408 R d/ 8th Decr/83.

Powers of Consulting Engineers to grant privilege leave to their Deputies.

G. C. B. Press, Simla.—No. 606 D. G. R.—27-10-83.—350.

With Order

1886.

P. W. DEPARTMENT.

Current No. 3098

From

The Examiner P.W. Accts.

Enclos.—

No. 8R

Dated 21st April 1886

Received 21 —— " ——

SUBJECT.

Forwarding letter No. 443 d/ 21- from the Consg: Engr: for Rys submitting the application of Major Sidney Sm R.E. for 3 months Privilege from ~~about~~ the 8th June.

DISPOSAL.

No. 1679 C Dated 3d May 1886

Forwarded in original to the G of India for sanction.

(Signed) J. J. Shaw Stewart, Col.
Secy. to Govt. P.W. Dep

To

The Secy: to the Govt. of India
Dspd P.W. Dept

Ed, 13/5

Entered in ~~Receipt~~ Register 3/5/86

All communications should be addressed to the Secretary.

No. 775 G.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

GENERAL.

To

The Secretary to the Government of Madras
Public Works department

Simla, 15th May 1886

Sir,

With reference to your letter No. 443 dated 21st ultimo I am directed to authorize the grant of privilege leave for three months to Major S. Smith, R.E., Deputy Consulting Engineer for Railways Madras.—

3rd May 1886

This is R's number

No. 1679

I have the honor to be,
Sir,
Your most Obdt. Servant,

W. Sampson
Under Secretary to the Govt. of India

No. 1679 C - 3 . 5 - 86
" 594 C . 12 . 2 . 86

No. 1357 W. d/ 29 May 1886

Comd. to the
C. E. for Rys and
the Exr. P. W. A.

25/5/86

27 . 5 . 86

C. E. for Rys ✓
Exr P. W. A ✓ Dec

29/5/86

Rgl. 102/5
Resubmitted 25 - 5 - 86 R. 29 . 5 . 86

Public 3913 ✓

SECRETARY TO GOVERNMENT
22 MAY 86
P. W. DEPARTMENT

Ex 25/5/86

B. No. 1357 W. d/ 29 May 1886

No. 809 G.

GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.
GENERAL.

All communications should be addressed to the Secretary.

Sent to Madras
B. 1357
29.5.86

To
The Secy: to the Government of Madras
Public Works Department

Simla 20th May 1886.

Sir

In continuation of Public Works Department No. 775 G of 15th May 1886, granting privilege leave to Major S. Smith R.E. Deputy Consulting Engineer, I am directed to invite your attention to Public Works Department Resolution No. 102 R.E. of 22nd October 1883, from which it will be seen that the sanction of the Government of India was not necessary to the grant of privilege leave to Major Smith.

I have the honor to be
Sir
your most obedient servant

W. Sampson
Under Secy: to the Govt. of India

1357 W 29-5-86.
1679 C 3-5-86.
594 C 12-2-86.

B
No. 1408 W. d/ 2d June 1886

Recorded, with reference to G.O.
No. 1408 R. d/
8th Decr 1885

1/6/86

1-6-86

4-6

2/6/86

Consg. Engr. for Rys.
with refce. to his $\frac{443}{21-4-86}$
Exr. P.W. Accts
with refce. to his $\frac{8 R}{21-4-86}$

Rd 31/5/86

B. No. 1408 W d/ 2nd June 1886

Raichur, 7th June 1886

From
The Dy: Consulting Engineer
for Railways
To,
The Consulting Engineer
for Railways

Sir,

I have the honour to report that I have availed myself from the afternoon of this day of the three months privilege leave granted to me in letter from the Government of India, No, 775 G., dated 15th May 1886, embodied in the Proceedings of Government No: 1357 W. dated 29th May 1886.

I have &c.,
(Sd) Sidney Smith
Major R.E.,
Dy. Consg. Engr. for Rys.

No:

EXAMINER
No. 145
16 JUN 1886
ENCLOSURES
P.W. ACCOUNTS.

No: 174.

True copy forwarded to the Secretary to Government, P. W. Department, through the Examiner of P. W. Accounts.

A. W. Warden
for Consg. Engr. for Rys

Madras
15th June 1886

Form No. 3.

No. 145 X
16 JUN 1886
ENCLOSURES
P. W. ACCOUNTS

B. No 1408 W 2.6.86
No 1679 C. 3.5.86
" 594 C. 12.2.86
B. No 1408 R. 8.12.83.
Endorsement No. 145 X
dated 22d June 1885

Forwarded to the
Secretary to Government
Public Works Department

V. C. Gordon

Examiner, P. W. Accts
Madras

22/6

22/6/86

No 2321 C of 30-6-86

Recorded.

25/6/86

28.6.86

This need not have been
reported - *vide* papers put up.

30.6

O.W. 141/6.
a. 25-6-86 R. 30-6-86

PWC 4048-8.

PUBLIC WORKS DEPARTMENT, MADRAS.

(2)

From

THE CONSULTING ENGINEER
FOR RAILWAYS.

No. 174

Dated 15th } June 1886.
Received 23.6.86

No. of Enclosures.

No 2321 C d/ 30-6-86

Subject.

Copy of Major Sidney Smith's report of availing himself, on the afternoon of the 7th instant, of the 3 m^s Privilege Leave granted to him.

With disposal
Entd in R.R. 3/7/86.

Consg. Engineer's Form No. 69.

COPY of a communication from the Deputy Consulting Engineer for Railways to the Consulting Engineer for Railways, Madras,

No. —, dated 10th September 1886.

With advertence to my letter No: — dated 7th June 1886, I have the honour to report that I resumed charge of my duties as Deputy Consulting Engineer for Railways, on the forenoon of the 9th September 1886

(Sd) Sidney Smith
Major R.E.
Dy. Consg. Engr. for Ry.

No: 1122

Copy forwarded to the Secretary to Government, P: W: Department, for communication to the Government of India in continuation of this Office No: 174 C., dated 15th June 1886.

Madras }
10th September }
1886 }

Major R.E.,
for Consg. Engr. for Railways

NO.
11 SEP 188
ENCLOSURES
P. W. ACCOUNTS.

M Ex 1
7167/86

Endorsement No. 36 R.
dated 14th September 1886.

Forwarded to the Secretary to Government, Public Works Department.

Major Sidney Smith. R.E. availed of the three months' privilege leave granted to him on the afternoon of 7th June 1886 and returned to duty on the forenoon of 9th Instant.

He has overstayed his leave by one day for which no pay will be admitted.

O. C. Gordon

Examiner P. W. Accts
Madras

Cu
14/9

Cu: Ace

Cu
14/9

1400 W 2. 6. 86.
1357 W 29.5.86.
1679 C. 3.5.86.
594 C. 12.2.86

B. No 2441 W d/ 22-9-86.

B

Recorded.

2. Major Smith's return to duty should be reported for the information of the Govt of India by the Consulting Engineer for Railways with reference to para 2 of the Resolution communicated by G.O. No. 1408 R dated 8th Decr 1883.

3. Copy of the Examiner's note will be furnished to the Consulting Engineer for Major Smith's information.

16/9/86

229

C. E. for Rys. 18/9/86

Exr. P.W. Accts

23/9

Mil. No 7167

Rd 15/9/86
En.

B. No 2441 W d/ 22-9-86.

5th October 1883, No. 2794 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Military Works.

Read—the following papers:—

From Brigade-Surgeon G. BIDIE, M.B., C.I.E., Officiating Sanitary Commissioner for Madras, to the Chief Secretary to Government, dated Ootacamund, 5th May 1883, No. C-1.

Having learned that the water-supply of the cantonment of Bangalore was running short, I lately paid a visit to the station, so as to ascertain the actual state of affairs, and have now the honor to submit the following remarks on the subject to the Right Honorable the Governor in Council.

2. Being situated on the crest of the water-shed between the basins of the Arkavati and South Pennér rivers, the water-supply from local sources must always be limited, and more or less precarious, being entirely dependent on the rainfall * in the immediate neighbourhood of the station; and it is greatly to be regretted that a civil community has been gradually allowed to settle down in and around the cantonment in numbers much beyond the resources of the existing tanks and wells.

3. A still more deplorable fact is the imprudence which here, as elsewhere, has allowed followers and a civil population to house themselves in the valley above the principal tank of the station, so that its gathering grounds lie to a great extent in crowded native bazaars. In other words, by the neglect of our predecessors, the chief water-supply of the station is contaminated to such an extent that it is now necessary to maintain, at great expense, pumping machinery and filtering beds to render the fluid fit for the use of the troops.

4. The water-supply of Bangalore is got partly from tanks and partly from wells. The European garrison receives its supply from the Ulsoor tank and the Dhobies' wells close behind its *bund*, while native troops and the civil population draw water from three small reservoirs known as Miller's tanks and from various wells. Miller's tanks are situated in the same valley, but higher up than the Ulsoor tank. The wells in the bazaar are all of great depth, running down through a variable thickness of decayed gneissic strata to the live rock, on the surface of which, in favorable sites, there is a limited and capricious percolation of potable water which frequently dries up in the hotter months of the year.

5. In addition to the above, a large impounding reservoir was recently constructed, at a cost of over five lakhs of rupees, in a valley near the 3rd milestone on the Bellary road. The gathering grounds of this tank consist chiefly of low rounded uncultivated hills covered largely with a tufted grass, an *Andropogon*, and are clean and all that could be desired. This scheme was to provide ten gallons of filtered water per diem to each person in a population of 90,000, but unfortunately it has never been completed, and is therefore practically useless.

* About 36 inches per annum.

6. As already stated, the gathering grounds of the Ulsoor reservoir consist largely of the inhabited area within cantonment limits; but, in addition to the water collected there, it formerly received supplies from the north side of Muntapum hill, an eminence some miles north of the station. These, it appears, have been, to some extent, diverted into the new tank referred to in the preceding paragraph, so that for some time they have been partly lost to Ulsoor and its sister tank, the Sampanjee, which used to receive any surplus flow and act as a safety valve to Ulsoor. At the same time, it further appears that, in the northern outskirts of Bangalore, the old channel leading from this distant collecting area to Ulsoor and Sampanjee has been interfered with in passing through private grounds, so that practically, by these measures, nearly all supplies from the north have been cut off from the station tanks.

7. At the time of my visit to Bangalore there was only a very small supply of water remaining in Miller's tank and in the various wells on which the native troops and the civil community chiefly depend. As regards the wells, the small quantity of water that accumulates in them during the night, when drawing is purposely stopped, is rapidly exhausted, and then numbers of people may be seen waiting till enough has again percolated to allow of its being scooped up with a special tin which they have invented for the purpose. In the Ulsoor tank, at the date of my visit, the average depth of the water was under five feet, representing a supply which ought to be sufficient till rain comes. In the present strait, however, in addition to the troops, large numbers of the civil population also draw water from the Ulsoor lake, so that its reduction, when we further take into account the great amount of evaporation, must, failing timely rain, be very rapid.

8. It will thus be seen that the civil population of the cantonment of Bangalore are now suffering greatly from a deficient and impure water-supply. Hitherto it appears to have been too much the custom to treat the matter as if the military and civil populations had conflicting interests in the water-supply; but, I am of opinion that, from a sanitary point of view, these must, as matters now stand, be regarded as identical. It is no doubt to be regretted that the civil population of the cantonment were allowed to outgrow the available water-supply and to pollute its sources, but the evils have been accomplished, and the most that we can now do is to mitigate their effects. An insufficient and bad water-supply must tell rapidly on the health of the civil population; and if they suffer from epidemic disease, we can hardly hope to restrict its ravages to the limits of the bazaar. Hitherto the station has been a fairly healthy one for troops, and it enjoys climatic and other advantages quite exceptional in the tropics, but we must face the possibility of a defective water-supply, rendering it, in course of time, untenable as a military position, if some remedy be not provided.

9. The arrangements made for the separation of sewage from storm-water in the channel leading to the Ulsoor tank from the cantonment bazaar are very ingenious and as efficient as practicable, and so are those in connection with the north tank or settling basin, but we cannot shut our eyes to the fact that this reservoir must always be liable to dangerous pollution. No doubt the supply of water formerly received from the north beyond cantonment limits and from clean gathering grounds tended to reduce this risk by dilution, and I am therefore disposed to regard the loss of the northern feeder as one of very serious consequence, not only with reference to pollution, but also with regard to possible failure of supply.

10. The lake itself is fairly conserved, but still there is room for improvement, as I observed a good deal of human ordure in the lower end of the cantonment bazaar channel and also in the upper tank or settling basin. On two occasions also, in a small inlet below the cantonment bazaar, I found people engaged in washing piles of dirty clothing and puckallies complacently filling their bags from the same source. On inquiry, I was told that this water was being collected for sale in the bazaar. Surely, when water is *so scarce* and *so precious*, a little more care might be exercised in its protection. The shallow margins of the tank are fringed with *Cyperus articulatus* (and two other species), *Panicum paludosum* (and two other species), *Jussidæ repens, Herpestes monniera, Polygonum glabrum, Marsilea quadrifolia*, &c. The body of the tank is now teeming with *Vallisneria spiralis, Potamogeton*, and *Hydrilla verticillatæ*; and

Pistiastratiotes and *Trapa bispinosa* have been introduced. These are all beneficial when kept within moderate bounds, and their presence seems to have almost entirely banished the objectionable *Confervöidede*, once so plentiful. The waters are also tenanted by one or two species of *Carp*, several *Siluridæ* and an *Ophiocephalus*; and the *Gourami* has lately been introduced. In 1882-83, filtered water was supplied to the European troops from the tank and Dhobies' wells to the extent of 53,445 gallons per diem, at a cost of 1,796 gallons per rupee.

11. As regards the quality, the water has, under the order of the Surgeon-General, Her Majesty's Forces, been periodically analysed and declared potable on filtration. The pumping and filtering arrangements are all most carefully attended to by the Engineer in charge, Mr. Smith, and the instructions given in paragraph 4 of G.O., No. 3578,* of 13th July 1882, have been punctually carried out. I was therefore surprised to find that, notwithstanding such injunctions regarding the conservancy of the rock on which the filter bed and pumping machinery are located, a pathway was being constructed up the back of the declivity from near the boat-house. This is intended, I understand, to allow the people of the station to view the boat races from the summit of the rock, and, of course, there will be the usual refreshment arrangements and congregation of native servants. I have to recommend, therefore, that the pathway under construction be at once stopped, and that no one, except on business, be allowed to enter the enclosure containing the pumping and filtering apparatus. I am also of opinion that the boat-pier and boat-house are too near the feeding pipe of the filter bed. Indeed, I was told, on good authority, that both men and dogs sometimes bathe here, within a few feet of the great feeding pipe through which the water is raised from the lake. Clearly we should scrupulously avoid everything likely to impair the quality of the water, and exercise a most fastidious cleanliness in a matter of such vital importance.

12. It now remains to say a few words regarding the future water-supply of the station. The demands on the existing tanks and wells are more likely to increase than diminish, while, on the other hand, their normal yield will doubtless be reduced by the withdrawal of the supply which used to be delivered at a high level by the channel coming in from the north, referred to in paragraph 6. Not only did this channel aid in feeding Miller's tanks and the Ulsoor lake, but also helped to keep up the supply in various wells in the lower parts of the cantonment. This, therefore, is a matter that requires early attention, although its remedy will only give partial and temporary relief. It is further most desirable that the works connected with the new tank on the Bellary road be completed as early as possible. This project, as already stated, was calculated to supply ten gallons of water per diem per head for a population of 90,000. It is possible that the yield may fall short of this estimate; but, on the other hand, if completed, it is apparently capable of delivering in the station a liberal supply of water of unexceptionable quality.

No. 890, Public

Transferred to Military Department, with the Hon'ble Colonel Sankey's demi-official note of 7th May.

(Signed) C. G. MASTER,
Chief Secretary.

Ootacamund,
7th May 1883.

No. 2641, Military.

Transferred to the Chief Engineer, Public Works Department, for favor of the necessary action.

(Signed) E. L. HANKIN, Colonel,
Secretary to Government.

Ootacamund,
8th May 1883.

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* Military Department.

Proceedings of Government, Military Department, dated 19th September 1883, No. 5092.

Read—the following letter from Brigadier-General R. C. STEWART, Quartermaster-General, to the Secretary to Government, Military Department, dated Ootacamund, 29th August 1883, No. 699 :—

The impurity of the Ulsoor tank as a source of water-supply to the troops at Bangalore has been realized by the Commander-in-Chief since his first visit to that station in December 1881, and the recent outbreak of enteric fever, of which there have been no less than forty-eight cases amongst the British troops between 1st January 1882 and 31st July 1883, of which eighteen have terminated fatally, seems to His Excellency to show that early measures should be adopted for remedying matters.

2. I am accordingly desired to forward, for submission to Government, the proceedings (A) of a special committee which assembled last year under the Commander-in-Chief's orders to report on the present source of supply, with a strong recommendation that early and earnest consideration may be given to the subject.

3. Sir Frederick Roberts is satisfied that the present supply is impure and dangerous to the health of troops and civil population, for it is impossible, in his opinion, that water taken from a reservoir, the gathering ground of a large part of one of the main feeders of which is covered by a dense bazaar, can be made safely drinkable.

4. The normal condition of the feeder referred to, and of the drains leading into it, is described in letter, copy attached (B), of a medical officer who recently inspected them, and so long as water liable to be thus contaminated is permitted to find its way into the tank, His Excellency the Commander-in-Chief feels sure that nothing will be gained by attempting to improve the supply from that source.

5. Sir Frederick Roberts has lately caused three different samples of the water distributed to the troops from the Ulsoor Tank to be analysed, as under :—

I. Water direct from the Ulsoor tank.
II. Water taken after passing through the filter bed.
III. Water taken from the Dhobies' wells.

The result of the analyses of these samples is that "all three contain a very large amount of organic impurity."

6. With reference to the above analyses, I am desired to remark that Sir Frederick Roberts has lately perused a paper in a scientific journal on this subject of analyses of water, from which it seems clear that, though organic impurities can, by analysis, be detected when present in water, science has not yet succeeded in demonstrating what portion of that organic matter is injurious to health.

7. For this purpose—to decide, in fact, as to the wholesomeness or otherwise of any particular water—it is necessary to be acquainted with the physical surroundings of its source, and no better proof of the dangerous quality of the Ulsoor tank water could, in His Excellency's opinion, be adduced than the personal experience of Dr. Waters, gained by his visit to the main feeder of the tank, the state of which is graphically illustrated in his report attached to this letter.

8. Government will observe, from the above-mentioned analyses, that one of the samples was taken after it had passed through the filter bed, and another from the Dhobies' wells. Both these samples were found to contain organic matter, and it would seem, therefore, that no amount of filtration can free water of impurity which may or may not be injurious to health in accordance with the condition of the source from whence the supply emanates.

9. It seems unnecessary to Sir Frederick Roberts to enter into discussion as to how a project for supplying the European garrison of Bangalore with water from so foul a source as the Ulsoor tank was ever originally contemplated or approved. What now concerns His Excellency is the best and most economical mode of supplying the troops with pure water, and in this he earnestly hopes to receive the support of Government.

10. The Government will perceive that in the proceedings of the committee which accompany this letter, and in the various reports which have been from time to time

written on the Ulsoor water works, the matter is well nigh exhausted. None of the recommendations for the improvement of the water of the tank commend themselves to His Excellency, believing as he does that the only true course to pursue is to obtain water for the troops from another source.

11. The Commander-in-Chief thinks there are three courses open to the Government, which he now begs to submit :—

First.—To extend the scheme originated by Major-General Sankey, C.B., R.E., when Chief Engineer in Mysore, for supplying the town of Bangalore with water, and to apply it to the use of the garrison. It is understood that two or three lakhs of rupees have already been expended on this project. With what result His Excellency is not in a position to judge, but it seems to Sir Frederick Roberts that it is a work which, if successful, would be of such enormous benefit to the garrison that it is worthy of the closest examination and the most earnest consideration.

Second.—By the construction of a channel along the south margin of the tank into which the drainage of the town would be diverted and ultimately discharged alongside the waste weir.

Third.—To undertake the construction of a series of wells in the vicinity of the European barracks from which the garrison would be supplied with drinking water.

12. His Excellency would deprecate the assembly of any further committees, but he would advocate the appointment of a specially selected officer to confer with the Government of Mysore as to the possibility of elaborating Major-General Sankey's scheme, as well as of considering the other two propositions herein mentioned.

13. The second of these would commend itself to Sir Frederick Roberts, were it possible to divert the whole of the drainage of the town from the tank, but His Excellency very much fears that a large portion of the drainage from the polluted ground to the west and north-west would still find its way into the tank, and that this scheme would not have the effect of cleansing the water of all impurity.

14. The third proposal seems to Sir Frederick Roberts to hold out the best hope of affording to the garrison a satisfactory supply of drinking water, for the wells would be under regimental supervision and free from all possible contamination.

Enclosure.

Proceedings of a Committee assembled at Bangalore on the 8th August 1882, *et seq.*, by order of Lieutenant-General W. PAYN, C.B., for the purpose of making replies to certain questions regarding the Ulsoor Military Water Works :—

President :

Lieutenant-Colonel W. H. BURTON, R.E.

Members :

Surgeon-Major WATERS, A.M.D.
Mr. SMITH, Engineer, Ulsoor Water Works.

The committee having assembled, pursuant to order, on the 8th instant, read the paper placed before it, viz., the memorandum marked "A," hereto annexed. On the 9th, 10th and 11th and 15th the committee again met and inspected the following localities and works connected with the Ulsoor water-supply :—The Ulsoor tank, cantonment bazaar supply channel, and bazaar street surface drains, the three Miller's tanks, Ooperhally village, Muntapum hill and gathering ground near the railway station. The tanneries, the Dhobies' wells, the Cavalry, Royal Artillery, and Royal Horse Artillery lines and wells mentioned in appendix "B":—

1. The committee find that, during the 12 months immediately preceding 1st August 1882, the quantity of water actually used (as stated by Mr. Smith) was as follows in column VIII, the strength of the garrison entitled to the use of the Ulsoor water during that time being as shown opposite each month, columns I—VI, the quantities and strength being the daily average of the months named :—

Period.	European. Officers and Men.	European. Women.	European. Children.	Native Followers.	Horses.	Average quantity required at 16 per man, woman and child, 12 per horse, 2 per Native follower.	Average quantity actually used daily.	Quantity unaccounted for, daily gallons.	
I	II	III	IV	V	VI	VII	VIII	IX	
1881.							As stated by Mr. Smith.	Weather	
July	..	..	..	..	..	..	..	..	..
August	1,332	167	301	772	466	35,936	53,268	Dry ..	17,332
September	1,332	202	322	774	465	36,664	62,851	½ Dry ..	26,187
October	1,336	209	328	796	494	37,488	50,829	Wet ..	13,341
November	1,296	206	326	713	425	35,774	46,280	Dry ..	10,506
December	1,286	199	326	714	422	35,468	46,003	Dry ..	10,535
1882.									
January	1,291	200	330	714	419	35,592	41,536	Dry ..	5,944
February	972	144	279	404	232	25,912	55,750	Dry ..	29,838
March	1,104	154	283	404	232	28,248	53,955	Dry ..	25,707
April	1,856	164	310	718	774	48,004	57,601	Dry ..	9,597
May	1,870	169	310	718	778	48,356	54,126	Wet ..	5,770
June	1,860	166	303	718	772	47,964	60,849	Wet ..	12,885
July	1,869	164	301	717	769	48,006	48,516	Wet ..	510
						463,412	631,564	..	168,152
Daily average throughout the year ..						38,617	52,630	..	..
Unaccounted for, stolen or wasted daily ..						..	..	..	14,013

We wish to point out that, whilst the quantities in column VIII are the quantities noted in the records of the Ulsoor water works engine-house, they bear no relation either with the strength of the garrison or the season of the year against which they are noted. It is therefore doubtful if column IX really represents the quantity of water wasted or unnecessarily used. Again, it is purely a matter of opinion whether the quantities stated in column VII as "required," are less or more than sufficient for legitimate requirements of the troops. Still it is a matter of fact that we saw this expensively steam-pumped water running to waste through the horse foot bath in Royal Artillery lines, and evidences of its being used elsewhere also for irrigation purposes as well as by the inhabitants of the populous village called Grass-cutters' lines.

The increase of this village, which may be seen by a comparison of the maps of 1870, with its present area, is very rapid and must have a prejudicial effect on the proper water-supply of the troops.

2. If the horses were watered at the wells hereafter mentioned, and the 750 native followers entitled to water (the number of followers is from the present extent of the Grass-cutters' lines, &c., population of which probably approximates to 7,000) were only allowed to use well water, as is feasible, the quantity of Ulsoor water necessary would be under 30,000 gallons per diem and if annual strength of garrison be as it was last year. The details of these calculations are in appendix C.

Plan.
Mounted Parade.

3. The existing wells in or near the lines are shown in appendix B.

Wells,* if provided with bullock ramps and watering troughs, will be suitable for the horses of I/3, R.A.—these are distant from the lines 600 yards: the wells No. 29^a and No. 28^b would similarly be sufficient for the horses Q/1, R.A., the lines of which are distant 610 and 860 yards, respectively; an encroachment at present exists round the well 29^a, which should, in any case, be removed at an early date: that well No. 29^b would similarly be sufficient for British cavalry horses, the stables of which are nearer to this well than to the existing Ulsoor water watering trough. It is very doubtful during which months in the dry season these wells would supply water, if constantly used as above, by the troop horses. There are no wells conveniently near which could be similarly used by Royal Horse Artillery, the nearest being 2,223, Dumboor tank, distant 1,600 yards.

4. The only well actually "in the lines" which could be made use of is No. 29^b

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* Nos. 25 and 26.

viz., in the British cavalry lines. The Dhobies' wells water has been analysed by Surgeon Pedlow, A.M.D. This is clear, palatable, and of good quality and contains only a small amount of organic matter which could, in a great measure, be accounted for by surface washings running into the wells direct from the surface of ground.

5. Owing to these wells not being in constant use, the water being stagnant, a fair sample, for analysis could not be obtained; but we have reason to believe it is of good quality.

6. The existing quantities now in each of these wells is shown in appendix B, column of remarks.

7. On account of these wells being pumped under varying conditions and circumstances and at uncertain periods, it is not possible to give reliable and useful answers to this question. The quantity tested by us on the 9th, 10th, 11th August 1882, averaged 18,300 gallons daily.

8. The Dhobies' wells were last thoroughly cleansed of all silt, &c., in November 1876. From the wells being constantly pumped dry, viz., on three or four days a week, the height of water in them is a variable one. The wells having been constantly pumped for seven years last past, it is impossible to say how high the water will stand if not pumped in wet or dry season. The yield is greatly affected by height of water in tank and the local rainfall. The wells would dry three or four weeks before the tank dried.

9. It is desirable to surround each well with a 12-inch parapet wall to prevent contamination by surface washings.

10. About 32,000 gallons per diem can be filtered artificially at the Dhobies' wells filter. During the last six months ending 31st July 1882, the supply from the Dhobies' wells has been almost daily supplemented by means of this filter; it is more convenient to use this filter in preference to the rock filter on account of economy of fuel.

11. The water in the Dhobies' wells filter has been analysed by Surgeons Pedlow and McLaughlin, A.M.D. The water is clear after filteration and no traces of nitric or nitrous acids are shown by the ordinary tests, and only a small quantity of chlorine and oxidisable organic matter.

It is usable at present after filtration, but its composition varies, the organic matters being now in a state of extreme dilution in the tank in consequence of the late rains.

12. If the Government would acquire the plot of municipal land near the road marked B, there would be ample room in the laterite bed for five new wells which, together with the three existing ones in this plot and with three new wells which might usefully be added to the system in the Government tope adjacent, there is reasonable hope of adding 6,000 gallons per diem to the supply; but this would not suffice for the use of the garrison.

Vide plan II, shown in yellow.

13. The bed of laterite within and without the Government land is insufficient to supply, by means of wells, the total quantity required for the daily use of the troops.

But if, in lieu of sinking more wells in this laterite, a longitudinal tank or cistern were constructed (as shown in plan II attached), its inner side made of dry stone walling, and its outer side of stone in lime mortar and cement plastered, there is every reason to believe, from the nature of the soil and surrounding circumstances, that a largely increased supply of laterite filtered water over and above what new wells would supply, will be obtained after the municipal tract of ground (B) has been acquired by Government. We would strongly recommend this in preference to sinking any more wells.

It is to be considered that the cistern will not only yield an additional supply of water over and above what a few wells could give, but it could be extended, as shown in dotted lines, so as to enclose the whole of the laterite bed, when enough laterite filtered water would, in all probability, be obtained, sufficient in fact to supply the whole garrison.

14. Eight wells and the necessary underground galleries or channels between them, will cost about Rs. 3,000. The, in our opinion, more effective cistern method would cost about Rs. 4,000, viz., if built on plot B only.

15. The Engineer's establishment, which works the steam machinery and supervises the distribution of the water in barracks, cost Rs. 537 per mensem.

The cost of fuel, all wood, for the twelve months ending 31st July 1882, was Rs. 3,463.

16. The quantities range between 30 to 35,000 gallons per diem.

17. In order to keep as much of the surface filth of the catchment basin as possible out of the tank, it will be necessary and practicable to—

(*a*) Surround the tanneries by an open ditch and bank, the ditch inside the bank, and made so as to discharge its contents into an underground masonry sewer to below the tank at a cost approximating to Rs. 25,000.

Large plan.

(*b*) Surround the Muhammadan burial ground N.N.W. of the railway station by the completion of existing bund and ditch, to ensure, by military inspection (viz., by means of a sanitary inspector acting under the orders of the Lieutenant-General), that all burials in it and other adjacent burial grounds, take place six feet below the surface as well as to prevent bazaar sweepings being deposited, as is now the case, anywhere within the catchment basin.

(*c*) Stop all the drain holes in the side walls of the main or paved feeding channel; this will prevent the greater part of the sweepings and filth of the adjacent side streets from passing directly into the channel, as is now the case, and to cause the channel to be daily cleaned.

To cut off the whole of the streets, bazaars, &c., of the cantonment bazaar and sites of houses of European population by an intercepting storm-water channel will too much reduce the natural or legitimate drainage area of the Ulsoor tank, which has already been considerably diminished (without the contemplated beneficial result to the garrison anticipated at the time) by the Bangalore new water works and by the raising of the weir of the lower Miller's tank one foot.

The reduction of legitimate drainage area here alluded to is indicated on the map hatched and tinted blue.

This reduction is the more to be regretted by the military authorities, as the gathering ground taken thereby from the Ulsoor tank was the only gathering ground it had, which was untainted by any impurity.

A perusal of appendix C, an extract from the memorandum of the Chief Engineer, dated 9th September 1868, on Mr. Humphrey's project, will show that it was the intention to fully supply the garrison with water from this tank upon its completion: this may now be said to be found impossible, and, therefore, we are of opinion that the drainage area thus taken from the Ulsoor tank should be restored to it, more especially as it is the supposed intention of the Mysore Government to divert the water of this tract from Mr. Humphrey's to the Damanbaddy or Petta tank.

(*d*) The parapet walls of the paved channel in many parts are too low to prevent filth and surface washings of the adjacent roads being swept, &c., into it.

(*e*) Two silting traps are very necessary, one at the end of the west feeder (paved channel) and one at the end of the south feeder.

(*f*) If the silt trap, proposed for safeguarding the tank from impurities coming into it by the south feeder, is made, the angle of the tank can thereby be cut off by a bund and waste weir built over the existing filth channel: this filth channel will then be wholly without the tank, and this bund would obviate any engineering difficulty of rebuilding the filth channel outside the tank.

(*g*) We think the sanitary supervision of the cantonment bazaar is conducted without due regard to the purity of the water in the Ulsoor tank. Some of the feeding channels are publicly resorted to by the natives and used as latrines; filth of all description is frequently seen in them, and, during the rainfall, washed into the tank even in the main or paved channel; old cloths, dead animals, human excreta, and filth of all description are to be seen at all times, except, of course, immediately after the heavy rain-storm.

18. The completion of a suitable paling round the lower tank and a cactus or aloe hedge round the upper tank, will be both practicable and very essential in order to preserve the water and beds of the tanks from constant direct contamination in all seasons; convenient arrangements, at certain places, being, at the same time, made to enable the native population to freely draw water into their hand vessels. Such places to be flagged and approached by a flight of steps and always kept in a proper sanitary state.

		GALLONS.
19. (*a*) The Agram or Cavalry cistern should contain	... ...	280,000
(*b*) The Ulsoor or R.H.A. do.	... ...	179,000
(*c*) The parade or B. Infantry do.	... ...	112,500
(*d*) The hospital iron cistern do.	... ...	11,495

But the Agram cistern will now contain only 184,000 gallons, and the Ulsoor only 148,000 gallons, both owing to constructive errors.

The parade and hospital cisterns contain their proper quantities respectively.

(Signed) W. H. BURTON, Lieut.-Col., R.E., President.
(„) R. WATERS, M.D., Surgeon-Major, A.M.D., } Members.
(„) J. SMITH, Engineer in Charge, "Ulsoor Water Works." } Members.

CHEPAUK,
31st August 1882.

BANGALORE,
29th September 1882.

No. 430.

(Signed) W. PAYN, Lieut.-General,
Commanding Bangalore Division.

APPENDIX "A."

Ulsoor Tank Water-supply.

What quantity of water is required daily for the troops at Bangalore, who are supplied with water from the Ulsoor tank?

2. What quantity would suffice, supposing that water was supplied to human beings only, and that horses and other animals were watered from other sources?

3. What other sources are there, and that what distance from the several lines?

4. Are there any wells in the lines which receive water from the Ulsoor tank which could be made use of to assist the supply?

5. Has the water in the wells been analysed and with what results?

6. What quantity of water could be drawn from them daily on an average?

7. What quantity of water can the Dhobies' wells supply on an average throughout the year, without any assistance from the water in the filter tank near them?

8. Have the Dhobies' wells ever been pumped out, deepened and thoroughly cleaned? If so, give the last date. At what height does the water stand in the wells in the dry and in the rainy season, and does the height correspond with the height of the water in the tank? When the tank is dry or low, do the Dhobies' wells continue to yield a fair supply of water?

9. Is it not desirable on sanitary grounds to have each of the Dhobies' wells surrounded by a low parapet wall to prevent contamination by surface washings, and to have the covers ventilated?

10. What quantity of water can the filter tank supply, and how often during the last six months has it been found necessary to resort to it to supplement the supply drawn from the Dhobies' wells?

11. Has the water in the filter tank been analysed, by whom, and with what result?

12. If the wells in the municipal tract of ground immediately adjoining the Dhobies' wells belonging to Government were made over for the use of the station, would the total quantity of water then available suffice for the use of the garrison?

13. If not, how many more wells would be required, and could room be found for them in proper soil, where the Dhobies' wells now are, or in the municipal tract of ground immediately adjoining?

14. What would be the approximate cost of sinking the number of wells required?

15. What is the cost to Government of the establishment now employed in arranging for the water-supply, and what is the average annual expenditure of fuel?

16. What amount of water is drawn on an average from the Ulsoor tank to supplement the supply from the Dhobies' wells?

17. As the impurity of the water in the Ulsoor tank is chiefly due to surface filth of every description being washed into the tank during the rains, could the tank be supplied from higher tanks or higher ground than is the case to a considerable extent at present, and the surface filth and washings of the streets, bazaars, &c., intercepted by a circular storm water channel?

18. Is there any engineering difficulty in carrying the filth channel outside the tank instead of under it as at present?

19. Would it be practicable to have the tank completely surrounded by a low wall or suitable paling, in order to preserve the water from contamination by natives directly resorting to it, and to make convenient places on a lower level with delivery taps? These places to be flagged and approached by a flight of steps.

20. What amount of water in gallons can be stored in the several reservoirs in the lines, and are these all water-tight?

(Signed) W. H. BURTON, Lieut.-Colonel, R.E.,
President.

31st August 1882.

APPENDIX B.

List of Military Wells which can assist the Water-supply from Ulsoor Tank throughout the Year.

No. of military wells marked on map. I	Situation of well. II	Distance from Royal Horse Artillery stables as walked by horses. III	Distance from Cavalry stables as walked by horses. IV	Distance from 2/1st Royal Artillery stables as walked by horses. V	Distance from Q/3rd stables as walked by horses. VI	Diameter of well. VII	Total depth from surface of ground. VIII	Depth of water in hot weather. IX	Depth of water, 9th August 1882. X	Quantity of water now in the wells. XI	Remarks. XII
		YDS.	YDS.	YDS.	YDS.	FEET.	FEET.	FEET.	FEET.	C. FT.	GALLONS.
1	Cavalry barracks, family quarters ..	..	600								
2a	Lime-kiln, south of Agram hospital ..	..		..	..	..	..	..	..	..	
2b		..	1,760	1,500	1,260	12	33	Not known.	16	1,809	
3a	Dumloor tank, west margin.	1,600	1,760	1,500	1,260	6½ × 5½	24½	Do.	7½	268	
3b			2,050	1,780	1,550	4½	15½	Do.	11	174	
3c			2,050	1,780	1,550	4½	15½	Do.	11	174	
22			2,050	1,780	1,550	4½	15½	Do.	11	174	
22d			2,290	2,020	1,790	12	16	Do.	13	1,470	9,187½
23			2,200	1,900	1,700	12	18	Do.	16	1,809	
24	Gopaul Moodellier's chattram near Dumloor tank ..		2,130	1,860	1,630	12	31	Do.	24½	2,770	17,312½
25	East of road on Lower Agram road, south of Agram barracks ..	..	2,230	1,960	1,730	9½	23	Do.	18½	1,311	
26		..	1,200	930	600	12	25	Do.	20	2,261	14,131¼
27	Slaughter-house, inside ..	..	1,200	930	600	12	34	Do.	28	3,166	19,787½
28a		..	1,260	1,000	760	4	13½	Do.	9½	1,193	
28b	Do. outside ..	..	1,260	930	700	4	13½	Do.	9½	1,193	
29a	Near Dhobies' village behind the Cavalry followers' lines near Neelasundrum road	..	1,130	860	600	12	23	Do.	16	1,809	11,306½
29b	Between Cavalry stables and Cavalry forge	..	880	610	380	12	29	Do.	9	1,017	6,356¼
10	South-west corner of Ulsoor tank ..	..	..	..	..	12	46	6	7½	1,979	2,368¾
11	Do. ..	For British Infantry, 400 yards from single men's barracks.				9½	25	1 to 2	3 IN.	212	
12	Do. ..					13	23	Do.	6 FEET.	796	
13	Do. ..					14	19	Do.	3	461	
						15	19	Do.	3	530	

Chepauk,
31st August 1882.

(Signed) W. H. BURTON, Lieut.-Colonel, R.E.,
President.

APPENDIX C.

Period.	Europeans. Men.	Europeans. Women.	Europeans. Children × 16.	Natives × 2.	Gallons.	Horses × 12.	Gallons.	Grand Total.
I	II	III	IV	V	VI	VII	VIII	IX
August 1881	1,332	167	301	772	..	466	..	..
			1,800					
Gallons ..			28,800	..	1,544	..	5,592	35,936
September	1,322	202	322	774	..	465	..	..
			1,846					
Gallons ..			29,536	..	1,548	..	5,580	36,664
October	1,336	209	328	796	..	494	..	..
			1,873					
Gallons ..			29,968	..	1,592	..	5,928	37,488
November	1,296	206	326	713	..	425	..	..
			1,828					
Gallons ..			29,248	..	1,426	..	5,100	35,774
December	1,286	199	326	714	..	422	..	..
			1,811					
Gallons ..			28,976	..	1,428	..	5,064	35,468
January 1882	1,291	200	330	714	..	419	..	..
			1,821					
Gallons ..			29,136	..	1,428	..	5,028	35,592
February	972	144	279	404	..	232	..	..
			1,395					
Gallons ..			22,320	..	808	..	2,784	25,912
March	1,104	154	283	404	..	232	..	..
			1,541					
Gallons ..			24,656	..	808	..	2,784	28,248
April	1,856	164	310	718	..	774	..	..
			2,330					
Gallons ..			37,280	..	1,436	..	9,288	48,004
May	1,870	169	310	718	..	778	..	..
			2,349					
Gallons ..			37,584	..	1,436	..	9,336	48,356
June	1,860	166	303	718	..	772	..	..
			2,329					
Gallons ..			37,264	..	1,436	..	9,264	47,964
July	1,869	164	301	717	..	769	..	..
			2,334					
Gallons ..			37,344	..	1,434	..	9,228	48,006

Chepauk,
31st August 1882.

(Signed) W. H. BURTON, Lieut.-Colonel, R.E.,
President.

APPENDIX D.

Extract from Chief Engineer's memorandum on Mr. Humphreys' project for Bangalore Water-supply, dated 9th September 1868.

* * * * *

56. The President of the Board does not consider the census of 1863 to be reliable, and probably it is not so; but that of 1862, to any one acquainted with Bangalore, exaggerates the population absurdly.

57. My own opinion is that, including European troops, followers, &c., the total will not be found to exeed 80,000 in all.

58. It will never in any case be necessary to provide a water-supply' for the whole of the residents at the station, as even now along the lowest points of the several drainage lines, and below the different reservoirs, well water is always obtainable by the inhabitants in the immediate neighbourhood, and the facilities in this respect will be very much increased the moment a sufficient supply is brought in, for the use of the residents on the upper grounds. Nothing can perhaps exceed the purity of the well water below the Ulsoor, Shoolay and Sumpenjee tanks, and consequently, taking all the circumstances into consideration, we may fairly strike 20,000 out of the above enumeration, leaving 60,000 who may now be said absolutely to require an extraneous supply, and who will at least be able to pay a small cess for having it brought within their reach.

Number of souls to be provided for.

59. To meet all reasonable demands of the future, it will, I think, be sufficient if we add 50 per cent. to the above, and say that the scheme shall provide 10 gallons of filtered water per diem for a population of 90,000 souls. This Mr. Humphreys' project will do.

* * * * *

Arrangement of the delivery mains.

69. A glance at the topographical features of the ground will at once show that the general parade ground occupies a distinct ridge, with population on either side of it, while Mootcherry and St. John's Hill lie along high ground to the north. To command, therefore, all the ground, as also to pass on supplies, if necessary, to the new Cavalry barracks and Artillery, and further allow the Sumpenjee, Shoolay and Ulsoor tanks to pick up all the tail or waste weir (which, if desired, may be employed for flooding the parade grounds occasionally or upon any other useful object), two distinct sets of iron mains will be needed (one along each of the ridges above mentioned), and from these delivery may take place in any way deemed most suitable hereafter. As the water flowing simply by gravitation will be delivered at a summit level of 80 feet above the waste weir of Ulsoor tank, it will easily command all the ground mentioned, leaving only a very few residents on the "High Ground" unprovided for. Any slight lift by pumping would give even these an ample supply.

* * * * *

74. Had the Ulsoor water-works, now being carried out, not been commenced, it would have been a simple corollary to the above proposition that the Madras Government should bear a proportion of prime cost for the benefit of the European and Native troops and followers; and even now it is much to be hoped that, in case the scheme now working out does not prove as successful as was originally anticipated, some joint action on that which I venture to put forward may yet be found practicable.

* * * * *

From Surgeon-Major R. WATERS, A M.D., Senior Medical Officer, North Station Hospital, to the Deputy Surgeon-General, Her Majesty's Forces, dated Bangalore, 8th August 1883, No. 447-83.

Amongst the causes which contribute to the pollution of the water-supply at this station, I desire to bring to your notice the foul condition of the main channel or principal feeder of the Ulsoor tank, from which is derived, in conjunction which the Dhobies' wells, all the water used by the British troops.

2. This main channel, about 30 feet wide, runs through the bazaars and receives the surface water therefrom, the overflow of the tanks on the higher ground, and the water from the collecting grounds beyond; it is flagged throughout, and has a wall on each side, so that there need not be the slightest difficulty in keeping it clean. But to all appearances there has been no attempt made in respect to its cleanliness. Yesterday I examined it carefully and found the bottom of the channel covered with accumulation of filth of every description, putrid mud, human hair (thrown in by the barbers who sit and carry on their trade at the side of the

channel), dead animals, baskets, chatties, old shoes, hats, straw, rags, vegetable debris, and refuse of every description; whilst throughout, from end to end, I found excreta of men, horses, cattle and goats. I also found the top of the walls covered in numerous places with human excreta; the channel being used as a latrine, the people sitting, for this purpose, on the low parapet walls. The roads alongside the channel are almost equally polluted, excrement and filth being deposited there and washed through the openings in the walls into the channel on the occurrence of rain.

3. On the floor of this channel, at its very commencement, at the end next the Ulsoor tank, I found yesterday within the space of a few yards sixteen deposits of fresh human excrement; one had a close resemblance to the pea-soupy character of enteric fever excreta.

4. The channel is perpetually polluted, and the filth is washed into the tank on the occurrence of every shower. I have repeatedly examined it and walked from end to end as I did yesterday, and never found it otherwise than in the condition above described.

5. As respects the Ulsoor tank itself, the same foul practices continue that were formerly reported. Yesterday I saw it used for *bathing* and ablution purposes, for watering and washing horses and cattle, washing of clothing, &c. I also saw during the short time I was there twelve men *bathing* in it, and others without number performing their ablutions with all their attendant filthy practices; of these latter, I saw one urinating at the edge of the water, and on a former occasion I saw a man urinating whilst standing up to his knees in the water washing himself.

6. I wish to bring this to your notice, as such a condition of the main channel and tank is not only horrible and repulsive, but is attended with great danger to the lives of the troops.

From W. S. MURRAY, Esq., Deputy Surgeon-General, Her Majesty's Force, Bangalore Division, to the Assistant Quartermaster-General, Bangalore Division, dated 8th August 1883, No. 1043.

Forwarded for submission to the Lieutenant-General Commanding.

I am able from my own observations to corroborate the general statements brought forward by Surgeon-Major Waters, and consider it of essential consequence to the health of the troops that effectual steps should be taken to obviate the evil conditions represented.

P.S.—Requests favor of information as to the result of steps taken.

Order—dated 19th September 1883, No. 5092, Military.

The Right Honorable the Governor in Council entirely concurs in opinion with His Excellency the Commander-in-Chief that the question of the water-supply to the troops at Bangalore imperatively demands immediate and most careful consideration and the earliest possible action, in view either to the removal of the causes that now so largely contribute to the contamination of the water of the Ulsoor tank, or to the adoption of such other measures as may be deemed desirable for securing an adequate supply of pure drinking water to the troops at Bangalore.

2. The question is, however, essentially a professional one, and will be referred for early consideration in the Public Works Department, in continuation of Military Department No. 2641, dated 8th May 1883, with the suggestion that a specially selected officer be deputed to the duty indicated in paragraph 12 of the Quartermaster-General's letter; as also to consider and report, without avoidable delay, which of the measures proposed by His Excellency the Commander-in-Chief in paragraph 10 affords the greatest promise of securing the object in view.

3. The necessary further orders will then be issued in the Public Works Department.

(True Extract.)

(Signed) E. L. HANKIN, Colonel,
Secretary to Government.

Memorandum on the Water-Supply of Bangalore.

The importance of this question has of late forced itself so much on public attention, that several schemes have been put forward for meeting the admitted want of an adequate water-supply for this large and rapidly expanding community. The most direct and comprehensive of these proposals is one entered in the Department Public Works budget of the current official year, which (long delayed for want of proper establishment) is now being elaborated by Mr. H. T. Humphreys, C.E.

2. Before, however, describing generally the scope of the project, it appears desirable to note the past and present condition of the water-supply with the opinions of those who have taken the greatest interest in the question.

Distribution of drainage.

3. From the Muntapum hill, which is the highest point in the immediate neighbourhood of Bangalore (and elevated 3,107 feet above sea level), diverge the two drainage areas, along which the densest portion of the population has grown, viz. (1) the Ulsoor catchment-basin, and (2) that, at the head of which, stands the Durmamboody tank (which forms the main water-supply of the old pettah of Bangalore). The first of these leads off naturally south-east-wards to the Pennér river; and the second would, on the other hand, have led to the Arkavutti in a south-westerly direction, but for the catch-channel supplying the Durmamboody tank, diverting the water back into the Pennér basin.

Pettah supply excluded.

4. As the old pettah does not appear to have increased very much, particularly of late years, and as its water-supply is generally considered to meet its requirements, the subject need only be incidentally considered. The main question, therefore, is more directly connected with the Ulsoor valley, and the two subsidiary ones of Shoolay and Sumpenjee, the drainage of which eventually joins it.

5. A glance at the map of Bangalore will show better the general distribution of the population than any description. The cantonment bazaar being the chief centre of population, Ulsoor and Shoolay are the next, while the mass of the well-to-do military and civil communities is scattered over all the elevated portions excepting those reserved for the parade grounds of the European and native troops.

Earliest existing tanks.

6. When the station was first formed in 1810 (it had apparently no existence before British occupation, all prior to that of any importance being confined to the pettah and fort) the Ulsoor, Sumpenjee and Shoolay tanks were, it is understood, the only reservoirs in existence. The remains of a few old ponds or "cuttays" higher up the valleys show that some of these minor works existed previously (especially in the Bederhully valley), but they were probably of little use, and chiefly intended for cattle. Below these three tanks were, and are to this day, several others, such as the Coramungul, Sonakul, Dumaloor, &c., but as all population here has the tendency of spreading up, not down, the several drainages, there is no practical use in taking these lower reservoirs into account with reference to the immediate subject in hand.

7. It may be as well here to note that apparently from prescriptive usage, the waters of the Ulsoor and Sumpenjee tanks have all along been considered as exclusively appropriated for the use of the garrison, and to this end, the irrigation sluices belonging to each were long ago closed. All cultivation under these tanks has hitherto been from wells. At the present day it is difficult to understand the reasons for the Sumpenjee tank having been devoted entirely for military purposes, as it never has been, nor indeed could be, used by the garrison.

8. In early days the old Sumpenjee supply channel, which diverts much of the water that would otherwise flow down from the Muntapum hill by both feeders of the Ulsoor tank, was looked upon as the great *safeguard of that reservoir. In fact the Resident, Mr. A. Cole, in 1814, expressed his fears that the breaching of the channel bank would be likely to destroy the "bank of the Ulsoor tank." Clearly, therefore, at this time Bangalore had more water at command than it altogether liked.

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*It is impossible now to say when the main Sumpenjee catch-channel, north of the Muntapum hill, was constructed; but by General Wetherall's letter in reply to Mr. A. Cole, dated 25th August 1814, it seems that the southern bifurcation of the channel, which drains the southern side of the Muntapum hill, was completed in 1809. The extension of irrigation under the Sumpenjee tank appears to have been the origin of both channels; and probably it was only afterwards (as the cantonment bazaar began to rise and encroach on the west corner of the Ulsoor tank) that its use as a safeguard to the tank and town was discovered.

Miller's tank.

9. A change with the growth of population gradually took place; and in 1854 Captain (now Colonel) Miller, Commissary and Superintendent of Police, undertook, first at his own cost, the construction of the tank at the head of the cantonment bazaar which still most appropriately bears his name. The Commissioner, Sir Mark Cubbon, afterwards approving of the work, paid for it from the public funds. This, it is believed, was the first effort to meet the growing wants of the place; and the work has proved itself to be one of the many benefits conferred on the community by the above-named active and philanthropic officer.

Water-supply for the new cavalry barracks.

10. The next occasion on which the question of water-supply appears to have attracted serious attention was in connection with the new cavalry barracks on the old race-course in 1859, and Captains Wilkieson and Mayne, of the Royal Engineers, jointly reported* that for the object directly in view, a store of water could be maintained in six wells, 40 feet deep and 25 feet in diameter, sufficient for 2,000 souls at five gallons each per diem; but that the means of maintaining the supply (which, however, they had not investigated) would cost a large sum.

Sir Arthur Cotton's objection.

11. Sir Arthur Cotton being called on for his opinion by the Madras Government reported, in his No. 320 of the 9th August 1859, that he was unable to concur with the Commissioner's (Sir Mark Cubbon's) suggestion that the supply for the proposed wells should be pumped up from the Ulsoor tank. His objections were: "1st., the insuperable one, that this tank receives the drainage from a large portion of the cantonment, containing a considerable town, which must render the water unfit for use; 2nd., the great expense of constantly pumping from such a depth."

12. He argued that the general supply of water for the cantonment should be considered, and that the levels would admit of water being led in from the direction of Nandidroog (31 miles north).

His first proposals.

13. Colonel Cotton's calculation was as follows:—"For 100,000 people at 20 gallons a day, the quantity would be $4\frac{1}{2}$ million of cubic yards, and taking the rainfall at 36 inches, and the quantity flowing off at $\frac{2}{3}$ of that, or 2 feet, one square-mile of ground would provide 2 millions of cubic yards, or $4\frac{1}{2}$ millions would be provided by $2\frac{1}{4}$ square miles; and allowing 50 per cent. additional for loss by evaporation, &c., $3\frac{1}{2}$ square miles would supply sufficient." He added also a calculation for flooding 1,000 acres of garden land in the cantonment, which would raise the area whose drainage should be stored to $7\frac{1}{2}$ square miles.

14. The general plan proposed was to run two small parallel banks on each side of the ridge between the cantonment and Nandidroog, half a mile apart for a length of 15 miles and terminating in a cross bund uniting the two, and so forming the tank, the whole cost being roughly estimated at Rs. 25,000. The scheme was to yield large annual returns: first in saving of the carriage of water as at present, and second in irrigating the compounds and other lands.

Colonel Green's explanation of several projects.

15. Captain (now Major) Puckle, at that time Executive Engineer, Bangalore division, was placed at Colonel Cotton's disposal for conducting the requisite surveys, &c., and Colonel Green (the then Chief Engineer) in conveying instructions on the subject † observed that Sir Mark Cubbon was prepared to increase the capacity of Miller's tank in connection with the project for constructing a sewer which was to carry off the cantonment bazaar drainage and prevent its contaminating the Ulsoor tank.

16. This increase of Miller's tank (which was 63 feet above Ulsoor) Colonel Green considered essential in connection with the drainage project, at the same time that it would be necessary to keep up the supply of the Ulsoor tank by a feeding

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* 14th May 1859.

† Letter No 1155 of 4th October 1859.

channel to the eastward. Colonel Cotton's project, he explained, was (as he understood it) to construct a reservoir at a level intermediately between the two above mentioned, so as to command the barracks and be fed by channels carried in the direction of Nandidroog.

Length of Nandidroog channel.

17. Captain Puckle in reporting proceedings stated that if the levels were extended to the 30th mile near Nandidroog, the contour line would probably exceed 150 miles in length; and subsequently it was found on actually laying out 30 miles from the starting point (the floor of the old race-course barracks) the line, which wound in an extremely tortuous manner to the eastward, had returned to a point known as Mootapah's chatrum close to Mootacherry church. The direct advance towards Nandidroog was therefore very little.

Sir Arthur Cotton's final conclusions.

18. On the completion of the levels to this extent, Colonel Cotton, in replacing Captain Puckle's services, reported, December 17th, 1859, that the following conclusions had been "fully established":—

> "1*st*. That an ample supply of water can be obtained on the west side of Nandidroog without the least injury to the present supply, by making a tank of large capacity which will store the water of copious monsoons to supply the deficiency of a following bad year.
>
> "2*nd*. That the present Mailkota tank, the calingulah of which is 50 feet above the race-course, will be a suitable site for such a tank as is proposed.
>
> "3*rd*. That a tank there to contain 10 millions of cubic yards will supply sufficient water with a large surplus—even in very bad years.
>
> * * * * * *
>
> "7*th*. That the expense of this will not be excessive, perhaps Rs. 1,40,000 including compensation; but this is a rough estimate."

Colonel Green's objections.

19. Colonel Green* expressed strong doubts as to these conclusions. He did not consider that the Mailkota tank "could be very much enlarged even though the supply of other tanks be intercepted" nor that "50 feet would be found an adequate fall on a channel which would be at least 100 miles in length."

20. The term "copious monsoons" was incorrect as applied to the character of the seasons in that part of the country. The fall of the channel would be insufficient and its direction tortuous; it would intercept in the whole of its great length the rain water from the fields and tanks lower down the slopes; it would become breached in many places accidentally, and in still more places designedly.

21. As the channel would be in "the predicament of a long tank full of water, the bund would need to be replete with waste-weirs or expensive outlets." Finally, the estimate of 1½ lakhs for this work, carried through a country intersected by deep nullahs and studded with rock, would be quite insufficient.

Proposal to pump up from the Ulsoor tank.

22. Colonel Green was of opinion that the race-course barracks would most readily be supplied by picottahs raising water in 4 lifts of from 8 to 10 feet each from the Ulsoor tank; or, if preferable, by 2 small donkey engines. Although the Ulsoor tank received impurities, he considered that the supposed deterioration of the wells adjacent to the tank to be exaggerated, and came to the conclusion that after the "improvement to Miller's tank, and the still more important and more desirable sanitary project connected with the Ulsoor tank," &c., he did not think Bangalore would have anything to complain of on the score of good and pure water.

23. This, with a letter much to the same purport addressed to Colonel Cotton, appears to have finished the discussion, and so far as can now be discovered the project of bringing in water from Nandidroog has been completely shelved. There can, however, be little doubt that the investigations then made were of considerable utility, and have in a great measure led up to the conclusions now arrived at.

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* Letter No. 1770 of 4th January 1860.

24. The sewer conveying the filth of the bazaar away from and under the Ulsoor tank was completed in due course in 1864, and the work of following the cantonment drainage system to its legitimate conclusions is now being prosecuted by this department.

Works by the Madras Government for supplying new cavalry barracks.

25. The Madras Government, moreover, undertook in 1863 to raise a water-supply for the new cavalry barracks from the Ulsoor tank, by steam pumps and pipes much in accordance with the idea put forward by Colonel Green as shown above, on a plan matured by Captain Tulloch, R.E.

26. In 1865, Colonel Lawford, when Chief Engineer, being led to believe that it was the intention of the Madras Government to endeavour to have the last-named project applied to the whole of the station and bazaars with a view to Mysore sharing in the outlay, drew up a memorandum, dated 6th July 1865, which, although submitted to the Government of India,* bears so directly on the various schemes proposed that it must be here shortly adverted to.

Colonel Lawford's objections.

27. Colonel Lawford after showing the general scope of Captain Tulloch's project, and that it was supposed to cost 1½ lakhs of rupees, observes: "It appears that in all the schemes hitherto put forward for the water-supply of this station, the very simple plan of retaining the surface drainage in reservoirs on the highest possible levels has been strangely neglected, and the consideration is overlooked, but not only does the water contract greater impurities from the wider area which it drains on its passage to the main reservoir, but that the necessity of raising it involves the most costly and precarious plans. If nearly the whole population of Bangalore is to depend on a supply received from the Ulsoor tank through the working of steam pumps, they may possibly suffer extreme distress from accidental causes which no one can foresee or prevent."

Proposed construction of high-level reservoirs.

28. He shows that the failure of the old wells being entirely attributable to the great increase of population and the character of the soil, the spring level should be raised by constructing reservoirs on the highest levels, (1) by the enlargement of the railway tank (reservoir No. 3) below Miller's, and (2) the formation of one above the latter, (this has since been constructed). He adds that "one if not more reservoirs could be formed on the upper (*i.e.*, northern) feeder of the Ulsoor tank, along which the population tends to spread." This had reference to the railway or so-called Bederhully reservoir, which Colonel Lawford often expressed a wish to see carried out, and which has lately been proposed by the Municipal Board, though in a different form. The remainder of the communication being taken up with a proposal not now likely to be carried out (though extremely good in itself) of supplying the cavalry barracks from wells to the S. W. containing a pure supply of water, and at a shorter distance than the Ulsoor water-works, it is unnecessary to follow it further.

29. The principle, however, laid down here of fixing the empounding reservoirs at the highest possible point, is that which has been consistently acted on by this department, within the limited means of the local administrations, under sanction of the Commissioner.

Works already executed on this principle.

30. Among other works thus carried on in the station of late years, chiefly under Colonel Lawford, the following may be enumerated:—

Enlargement of Miller's tank, completed in 1863.
Construction of the railway, or No. 3, reservoir in 1864.
Do. of No. 1 reservoir (above Miller's) in 1866.
Do. of No. 4 reservoir (below all the above) in 1867.

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* Replied to in Colonel Dickens' letter No. 1320*d* of 1st December 1865.

Names.	Capacity in cubic feet.	Height above Ulsoor, feet.
No. 1 Reservoir	4,500,000	64·05
No. 2 do. (Miller's) ...	6,000,000	61·05
No. 3 do. (Railway) ...	3,500,000	56·61
No. 4 do.	500,000	28·8
Total capacity in cubic feet ...	14,500,000	

31. These form a continuous chain at the head of the bazaar nullah, and not only receive a fairly pure supply of water, but tend to keep up the spring level in their neighbourhood. The three upper ones are kept free from immediate pollution, under special regulations; and their several capacities with the relative heights of high-water level, above the waste-weir of the Ulsoor tank, are given in the margin. Though of course distribution could be effected from these reservoirs which, from their relative height, command much of the cantonment bazaar, it has not appeared desirable to carry this out:—

Distribution from any of these undesirable.

1st., as neither in collective capacity, nor in relative command, are they able to do *all* the work required; 2nd., as notwithstanding the purity of the water compared with that of Ulsoor tank, it is not so unobjectionable as could be desired; 3rd., as the town may, at some future day, be expected at least to spread up to Miller's tank, and thus, in spite of the best regulations, add to the contained impurities.

The connection of reservoirs Nos. 3 and 4 with the main drain of the cantonment bazaar.

32. In addition to their present value, in affording a comparatively pure water-supply to the upper portions of the cantonment bazaar and native infantry lines, the two lower reservoirs, Nos. 3 and 4 (and especially the former), have the special object of flushing the main sewer. The attainment of this latter object has always been steadily kept in view by this department, in dealing with the several portions of the work, as follows:—

First.—The oviform sewer carried along and eventually under the end of the Ulsoor tank. The whole of this with its out-fall arrangements and accessories was completed in 1864 at a total outlay of Rs. 1,36,000.

Second.—The extension of the sewer upwards, through the cantonment bazaar (and provided with self-acting arrangements which separate the sewage from storm-waters) was commenced last year, and is now, it may be said, completed at a total outlay of Rs. 61,500.

Third.—The completion of the system as far up as No. 3 reservoir is being estimated for, with a view to the insertion of the project in next budget.

33. In a year and-a-half more, the whole arterial drainage should thus be finished and placed in immediate connection with the series of small reservoirs forming the present water-supply.

Minor reservoirs connected with the water-supply.

34. The principle advocated by Colonel Lawford has been further acted on, in the construction of several minor works, *viz.*, (1) the small reservoir and well at Mootacherry; (2) the reservoir at corner of the Government house compound; (3) that near the Executive Engineer's office; (4) the reservoir on the road of approach to the public offices; (5) one near the new cavalry barracks, &c. Some others have also been carried out by the cantonment municipality, and two more, lately undertaken, have nearly been finished by this department.

35. To complete the general list of such works, it may here be mentioned, that the Shoolay tank was effectually dealt with by this department in the years 1861 and 1863, and not only the water-supply but the whole neighbourhood improved. The Durmamboody tank had also a great deal laid out on it in 1863 under the Commissioner's sanction. The Ulsoor tank itself has also been largely improved by reclamations, &c., at different periods.

36. The gradual growth of opinion and practice following fairly on a knowledge of the wants of the community may be gathered from the foregoing; and it only remains to advert to the projects which the rapidly increasing requirements of the station within the last few years (and particularly since the opening of the railway) have given birth to.

The Madras project.

37. The *first*, which is the Madras scheme, for pumping up water from the Ulsoor tank for the use of the European troops (commenced in April 1863) has already been sufficiently noticed for my present purpose. The works are now rapidly approaching completion and will ere long be fully tested; but whether they end in success or failure, as regards their particular object, I cannot consider them adapted to meet the wants of the general community.

Major Puckle's project.

38. The *second* is the scheme put forward by Major Puckle, President of the Municipal Board, in his printed memoranda of 1st October 1867 and 20th April 1868, respectively; and this project, both from the acknowledged ability of its author and his long local acquaintance with the subject, make it the more necessary to notice its main features in detail.

39. In the first of the above memoranda, the following observations occur:—

* * * * *

"4. The Commissioner's house on the high ground is nearly, if not, the highest in Bangalore; the foot of the flag staff is 3031 feet above high-water mark at Madras, and is almost on the crest of the water-shed ridge that divides the Pennér from the Arkavutti rivers both of which rise at Nandidroog, the culminating point.

"5. For about one-fourth of the distance from Nandidroog, this ridge commands the flag-staff point; but thereafter there is a long interval, where the crest is on a general level with and in one part lower than it. The Muntapum (1 mile from the flag-staff) is 80 feet higher, but this is on a low conical hill, and the dip between it and the flag-staff is great. If water were pounded below Nandidroog, the difficulty of bringing it in for storage at any high level, would be great, on account of the necessity there would be of constructing long and lofty aqueducts; and even then, all the houses on the high ground would have to be served by force pumps.

"6. *The fall from this ridge is too sharp to admit the possibility of collecting water in the Arkavutti valley for delivery at any commanding point in Bangalore* except by increasing the Mail-kota tank, close up to Nandidroog, which Sir Arthur Cotton in 1859 thought might be done, so as to enable the water to be conveyed along a contour line a little below the crest of the water-shed ridge, into the Ulsoor tank, which is 111 feet below the flag-staff datum, but the cost of the channel contouring round the spurs would be very great, and the supply was thought to be of too precarious a nature to warrant the work being undertaken.

"7. From the peculiar position of Bangalore, it is only from the northern side that water can be collected, *and the Arkavutti valley is too steep to admit of anything but a catch-channel close under its crest, being made.*"

* * * * *

and the conclusion arrived at in para. 9, is—

"9. It has been ascertained by levels carefully taken, that water could be stored in Miller's tank (the present crest of the waste-weir of which is about 45 feet below the flag-staff datum) and in a newly proposed reservoir on the railway embankment, ¾ mile from the terminal station; *these are the highest points at which water could perhaps practically be stored with advantage.*"

* * * * *

Although agreeing in much of this, I cannot but hold that a radical error is contained in the sentences which I have put in italics, and that on this is grounded the so-called Bederhully scheme.

The project as lately modified.

40. The project, it is true, has undergone some slight modification, in consequence of the discussion to which it has been subjected; but as its scope as well as the objections to it are sufficiently summarized in my letter, No. 4089-439, of the 15th July 1866, to the Commissioner, I beg here to quote that communication:—

"3. So far as I can gather from the President's letter No. 183, the proposed tank is to supply during the hot season, if possible, the Ulsoor, Shoolay, Coramungul, and Dumlur tanks; to feed the existing wells in the neighbourhood, both public and private, and the public fountains, wells and cattle troughs, to be constructed hereafter.

"4. The reservoir was also, from the President's printed memorandum, to be capable of laying water on to the race-course barracks.

"5. If the reservoir is to supply all the tanks mentioned, during a season of drought, as also fulfil the other functions enumerated,—its capacity must be the greatest possible under the circumstances; for when its services are most required, it will itself be correspondingly reduced by the effects of the season. Thus in seasons of the most severe drought, the Shoolay, Sumpenjee, and Dumlur tanks are almost quite dry, while the Ulsoor and Coramungul tanks would only perhaps be one-third full. The Bederhully tank will not be in a much better condition than these latter; and yet the small residue left in it, must be capable of not only making up for all the deficiencies of the others that supply public fountains, &c.

"6. In addition, moreover, to the great capacity required for this work, the tank must be placed at sufficient height to command the plateau of the race-course barracks, and means must be found by piping or an aqueduct to take the water, either under pressure or by gravitation, across the valley and over the ridge which separates the proposed reservoir from the Shoolay and Sumpenjee tanks.

Objections entertained to it.

"7. Such being apparently the extensive duties to be assigned to this work, I do not think I am wrong in saying, that it will be a most expensive project, and that the objects to be attained would be quite incommensurate with the cost, and that further, even supposing that all were done, which is proposed,—the mass of the inhabitants would be nearly as badly off for water as ever; for from the slight command of the work, none of the upper portions of the cantonment bazaar would be touched, nor any of the compounds of the European residents."

* * * *

41. It appears to me, therefore, that however useful such a subsidiary tank in the neighbourhood of Bederhully might prove, in the manner originally proposed by Colonel Lawford (*vide supra*) I cannot look on it as likely to meet the objects put forward by Major Puckle. In addition to the objections already urged, I would here observe—(1) That the valley is of such a form as only to admit of a comparatively shallow reservoir; the losses from evaporation would therefore be disproportionably great. (2) Population has clearly a tendency to spread up it, and thus in time, create difficulties in retaining a pure supply. (3) There are now grave-yards and old receptacles of town filth within the catchment-basin, which, unless specially dealt with, would pollute the tank, &c.

A series of small tanks more desirable.

42. Were a series of small and inexpensive reservoirs constructed in the Bederhully valley, analogous to Nos. 1, 2, 3, and 4, at the upper end of the cantonment bazaar, I could have no doubt of their utility in raising the spring level, &c., and especially if so designed as to flush the main drain, which must at some future day be constructed to cut off the impurities of the growing town, from the Ulsoor tank.

43. As forming, however, a single head for a pure and sufficient water-supply for the station, I am quite convinced the scheme will never answer.

Departmental project.

44. The *third* and last proposal is that entered in the budget of this department, which I shall, however, only describe in the most general terms, as it will remain for Mr. Humphreys, who is now working out the project, to deal with it in detail.

Surveys and levels of the cantonment.

45. With a view to establishing a safe ground-work for any project which might be undertaken in future, either for water-supply or drainage, I had the whole station surveyed two years ago under the Commissioner's sanction. The cantonment bazaar was worked out in great detail, and the Sappers undertook to execute the general survey as also levels. The latter work was performed very satisfactorily.

First trial.

46. The next point—acting on Colonel Lawford's principle of empounding a sufficient supply of water at the highest possible level—was to obtain a survey of all the highest gathering grounds, both of the Arkavutti and Pennér rivers. From these investigations, it became clear that by making a cut to the depth of 20 feet through the narrow saddle near the new Muhammadan burial-ground (and past which the water was to be led in a brick culvert) an ample supply could be conducted

into and embounded in the valley near the railway station, just above Messrs. Binny and Co.'s coffee works.

47. The gathering grounds lie all round the Muntapum hill extending close up to Hebbal tank (N.), Subadar's Chattram (N.W.), and then (S.) along the Arkavutti drainage—in all 3 square miles skirted by a channel 13 miles in length, with a slope of 9 inches in the mile.

48. Colonels Green and Lawford, as also Major Puckle, having adopted one-third of the average annual rainfall of 36 inches as a fair proportion of the amount that could be empounded, I accepted the opinion and found the total yield (making the most liberal allowance for all sources of loss) would be sufficient for daily supply of 10 gallons of filtered water per diem to a population of 105,000, delivered at 80 feet above the Ulsoor tank. This height commands all the station and barracks, leaving only the few residents on "High Ground" unprovided for.

49. Much of the gathering grounds have hitherto lain fallow, and as the small and comparatively valueless dry crops now raised can be easily put a stop to under a trifling compensation, the perfect cleanliness of the whole area (the soil being highly silicious) may be readily insured. The slopes on all sides are rapid, and the surface if left untilled soon acquires a hard glazed skin, off which the water flows with the utmost rapidity.

Mr. Humphreys' modifications.

50. Mr. Humphreys, who has now been engaged on the project for three months, has, while adopting precisely the same gathering grounds, suggested two important modifications of the original scheme.

51. Instead of placing the empounding reservoir in the railway terminus valley, he has selected, as a site, the dip of the Toomkur road, 2 miles beyond "High Ground," situated immediately south-west of, and close under, the Muntapum hill, in fact, as near as possible the centre of the gathering grounds. In lieu of one long catch-channel circling the whole area, four channels, none of which will be over 3 miles long, will deliver the surface drainage, thus reducing loss by evaporation and sinkage to a minimum.

52. His second improvement is, to score the whole of the gathering grounds over with channels, at different levels, constructed with slopes having maximum longitudinal falls consistent with the cohesive powers of the soil, by which arrangement the discharge of all surface drainage will be expedited to the highest degree.

53. Lastly, the form of Mr. Humphreys' reservoir has great advantages, its surface being everywhere up to the highest water-level extremely small for its depth and capacity,—loss by evaporation will thus be reduced to a minimum. In this respect the site is probably the very best which could be found anywhere in the neighbourhood of Bangalore.

Census of population within municipal limits.

54. Unfortunately the available returns as to the population of the station within municipal limits are most unsatisfactory, as may be seen from the following abstracts of the censuses taken in 1862 and 1863, obligingly furnished by the President of the Municipal Board :—

Population within the Municipal limits.

Classes.	Abstract of Census of 1862.	Abstract of Census of 1863.
Hindus	86,055	42,973
Muhammadans	26,856	13,129
Europeans	1,836	5,226
Eurasians	1,586	1,436
Total ...	123,533	62,764

European and Native soldiers are said to have been excluded in the census of 1862, while European soldiers were included in that of 1863.

55. The present strength of the force is returned by the Deputy Quartermaster-General as consisting of—

European troops	1,900
Native do.	2,500
Families and followers of European and Native troops ...	11,500
Total ...	15,900 souls.

56. The President of the Board does not consider the census of 1863 to be reliable, and probably it is not so; but that of 1862, to any one acquainted with Bangalore, exaggerates the population absurdly.

57. My own opinion is that, including European troops, followers, &c., the total will not be found to exceed 80,000 in all.

58. It will never in any case be necessary to provide a water-supply for the whole of the residents at the station, as even now along the lowest points of the several drainage lines and below the different reservoirs well water is always obtainable by the inhabitants in the immediate neighbourhood, and the facilities in this respect will be very much increased the moment a sufficient supply is brought in, for the use of the residents on the upper grounds. Nothing can perhaps exceed the purity of the well water below the Ulsur, Shoolay and Sumpenjee tanks, and consequently, taking all the circumstances into consideration, we may fairly strike 20,000 out of the above enumeration, leaving 60,000 who may now be said absolutely to require an extraneous supply, and who will at least be able to pay a small cess for having it brought within their reach.

Number of souls to be provided for.

59. To meet all reasonable demands of the future, it will, I think, be sufficient if we add 50 per cent. to the above and say that the scheme shall provide 10 gallons of filtered water per diem for a population of 90,000 souls. This Mr. Humphreys' project will do.

60. In the margin are given the rainfall registers of the past twenty years taken (with slight correction) from Major Puckle's printed analysis. To this is added the averages of each pair of successive annual registrations for the following reason. The reservoir being designed to hold at any one time the whole yield of a minimum year, it is only reasonable to consider that in all cases the residue from a good year will remain stored to supplement the deficiencies of a succeeding bad one. What we have in fact to calculate on is, not the direct yield of the worst recorded year, but the average of the lowest pair of successive registrations. The years 1854 and 1855 showed the worst combined result to be 28·2 inches, and on this the calculations have been based. I may note here parenthetically that the registration of the year 1840, as given in Major Puckle's table, has been rejected as being manifestly wrong.

Table of Rainfall.

Year.	Registered Rainfall in Inches.	Average of each pair of successive Annual Registrations.	Remarks.
1861 ..	30·5		
1860 ..	33·3	31·9	
1859 ..	*26·6	29·9	
1858 ..	37·7	32·1	* Lowest reliably recorded rainfall.
1857 ..	30·3	34·0	
1856 ..	48·3	39·3	
1855 ..	27·2	37·7	
1854 ..	29·2	†28·2	† Average of the lowest pair.
1853 ..	34·8	32·0	
1852 ..	55·1	44·9	
1851 ..	35·3	45·2	
1850 ..	49·5	42·4	
1849 ..	27·8	38·6	
1848 ..	40·3	34·0	
1847 ..	37·5	38·9	
1846 ..	39·4	38·4	
1845 ..	32·8	36·1	
1844 ..	34·5	33·6	
1843 ..	37·3	35·9	
1842 ..	31·3	34·3	
1841 ..	37·9	34·6	
	20)	722·0	

36·1 inches average annual rainfall.

61. At first starting it is proposed to arrange the delivery into the reservoir by catch-channels on only two levels, the one set discharging at a height of 100 feet above the level of the Ulsoor tank waste weir and the other at 120 feet.

Total yield of the gathering ground.

62. From the less longitudinal slope given to the former set, the channels are only calculated to deliver into the reservoir one-third of the rainfall of the area drained by them; but from the much greater slope of the upper set of channels (those at 120 feet), the delivery is taken at two-fifths.

63. The whole yield of the $2\frac{1}{2}$ square miles of gathering ground so drained (taking also into account the direct rainfall into the reservoir itself, which has an average surface of 1,500,000 superficial feet), is thus, for a total rainfall of 28·2 inches, $62\frac{1}{8}$ millions of cubic feet.

64. Now the annual draught for a population of 90,000 at 10 gallons per head per diem is $52\frac{1}{2}$ millions cubic feet, and, assuming losses by evaporation, &c., to be ·2 inches per diem (in the worst season it has been shown to be ·25, but on an experiment recorded by Major Puckle, the value was only ·16), we must add $9\frac{1}{8}$ millions, bringing the total annual draught on the reservoir, by use and loss, up to $61\frac{5}{8}$ millions of cubic feet, consequently there will be a slight margin after meeting all wants.

Storage capacity of reservoir.

65. Arrangements are to be made for fixing the sill of the waste weir at 103 feet above Ulsoor tank. But even at the 100 feet level the reservoir will hold at one time 60 millions of cubic feet.

66. As speaking generally each inch of rainfall on the gathering grounds is sufficient for the annual requirements of 3,000 souls, it follows that, as a rule, the reservoir will, on the average, be able to meet the wants of 24,000 * souls in addition to the 90,000 for whom *certain* provision is made.

* Average rainfall	36·1
Do. of lowest pair of successive years	28·2

Difference, say 8 inches
8 × 3,000 = 24,000 souls.

Additional gathering grounds available.

67. But the general capabilities of the scheme are by no means restricted within these limits, as there are outlying gathering grounds, the rainfall on which can, at any future time, be brought in to supplement the requirements. One of these, a little south of Yellavunka, has an available area of two square miles, and another piece (now rejected), close adjoining the west extremity of the present gathering grounds, has an area of $\frac{1}{3}$ of a square mile. The catchment area can thus (if ever the growth of population absolutely need it) be doubled.

68. In other words, with an increased outlay which it is unnecessary at present to estimate, *certain* provision can be made for a population of 180,000 with an average yearly yield enough for 228,000.

Arrangement of the delivery mains.

69. A glance at the topographical features of the ground will at once show that the general parade ground occupies a distinct ridge with population on either side of it, while Mootcherry and St. John's Hill lie along high ground to the north. To command, therefore, all the ground, as also to pass on supplies, if necessary, to the new Cavalry barracks and Artillery, and further allow the Sumpenjee, Shoolay and Ulsoor tanks to pick up all the tail or waste weir † (which, if desired, may be employed for flooding the parade grounds occasionally or upon any other useful object), two distinct sets of iron mains will be needed (one along each of the ridges above mentioned), and from these delivery may take place in any way deemed most suitable hereafter. As the water flowing simply by gravitation will be delivered at a summit level of 80 feet above the waste weir of Ulsoor tank, it will easily command all the ground mentioned, leaving only a very few residents on the "High Ground" unprovided for. Any slight lift by pumping would give even these an ample supply.

† The Durmamboody tank, which is the head of the Pettah supply, can thus at times receive aid by placing one of the scour cocks in its feeder.

Financial arrangements.

70. The financial arrangements are those which must unquestionably require much earnest consideration after the estimate has fairly been laid before Gov-

ernment and its details approved of, and, therefore, at this stage of the question, it would appear undesirable to say more than a few words on the subject.

71. Though a very rising community, it cannot be said that Bangalore is at all a wealthy one, in the same sense as even many second-class cities of the Empire, and its Municipality has all along (though making the best use of the means at disposal) been unable, without Government aid, to carry out reforms which elsewhere are considered as purely local and provided for from local funds; I am unable therefore to see how the Municipality could be in a position to meet any of the outlay required for the scheme as above sketched. Government will, therefore, it appears to me, have in some shape to bear the cost of the head works and the two sets of arterial delivery mains referred to.

Share falling on the Municipality.

72. Were this done, it would most appropriately fall on the community to place themselves in connection with the system under, of course, certain well-defined restrictions, but generally in such a manner as best to suit the immediate requirements of the particular class or district which may choose to pay for the necessary sub-mains and other accessories.

73. While thus according an undoubted and lasting boon on the whole station, Government would, at the same time, while imposing proper restrictions, hold itself aloof from all minor details that could be infinitely better disposed of by the Municipal Board, carrying out with their own funds the distribution arrangements most suitable to the special wants of the community.

74. Had the Ulsoor water-works, now being carried out, not been commenced, it would have been a simple corollary to the above proposition that the Madras Government should bear a proportion of the prime cost for the benefit of the European and Native troops and followers; and even now it is much to be hoped that, in case the scheme now working out does not prove as successful as was originally anticipated, some joint action on that which I venture to put forward may yet be found practicable.

Bangalore,
9th September 1868.

(Signed) R. H. SANKEY, Major, R.E.,
Chief Engineer of Mysore.

Memorandum by Major-General R. H. SANKEY, R.E., C.B.

Owing to the supposed scarcity of water at Bangalore in the early portion of the present season, representations were made by the Municipality to the Mysore Government, and subsequently the station was visited by the Officiating Sanitary Commissioner, Dr. Bidie, whose report was transferred to me for remarks under endorsement, No. 2641, of 8th May 1883, by Secretary to Government in the Military Department.

2. In consequence of this reference I inspected the works at Bangalore in the middle of May, but delayed submitting my remarks, as before doing so I wished to be in possession of an analysis of certain specimens of water taken by me below the new (so-called Ooparhalli) reservoir, and forwarded to the Chemical Examiner for report.

3. Owing to a misadventure with reference to these specimens, I only received the report when I was too much occupied with other matters to take up the subject. Just now also on the eve of departure for England, I fear I can hardly do justice to a matter of such admitted importance.

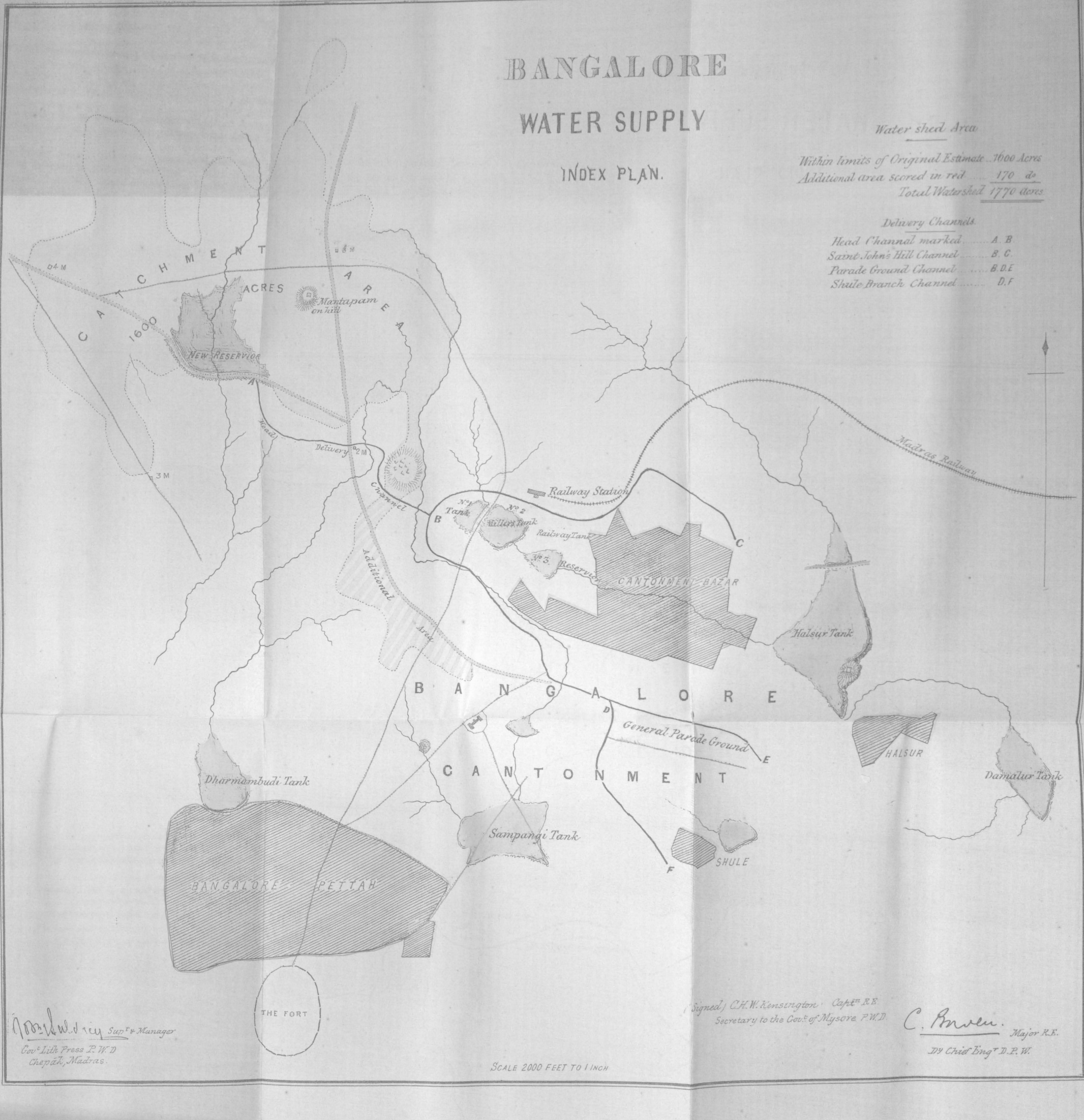
4. In addition, moreover, to bring an extremely difficult subject from an engineering point of view, complications have been introduced with the rendition of Mysore, which were not foreseen when the original schemes of water-supply were designed.

5. All I can therefore hope to do is to take a general view of the present position of matters and offer some observations as to the policy which to the best of my judgment it would be desirable to follow.

BANGALORE

WATER SUPPLY

INDEX PLAN.



Water shed Area

Within limits of Original Estimate	1600 Acres
Additional area scored in red	170 do
Total Watershed	1770 Acres

Delivery Channels.

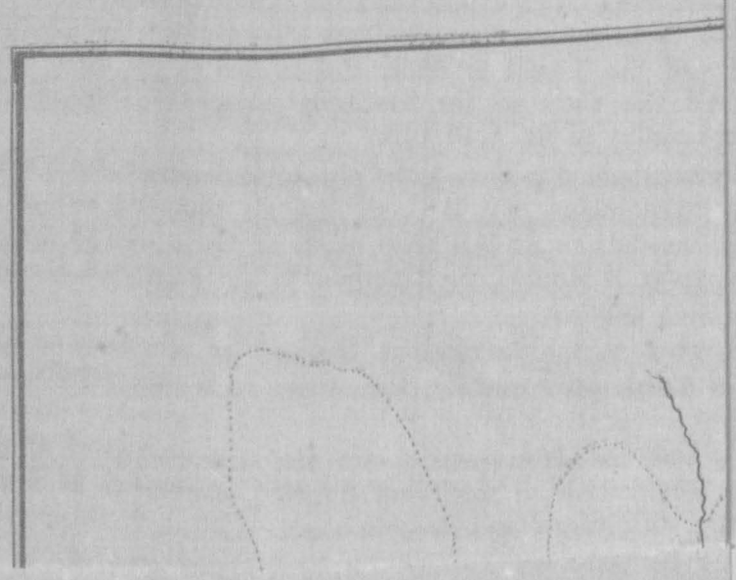
Head Channal marked	A. B
Saint John's Hill Channel	B. C.
Parade Ground Channel	B. D. E
Shule Branch Channel	D. F

Supt. & Manager
Govt. Lith. Press P.W.D.
Chepāk, Madras.

SCALE 2000 FEET TO 1 INCH

(Signed) C.H.W. Kensington Captn. R.E.
Secretary to the Govt. of Mysore P.W.D.

Major R.E.
Dy. Chief Engr. D.P.W.



6. From insufficient acquaintance with the history of the various efforts hitherto made to solve the very difficult problem of giving Bangalore a fair supply of water for domestic purposes, late writers have fallen into not a few misapprehensions. These I am at present unable to discuss, but the subject has been very fully dealt with in my printed memorandum of the 9th September 1868, submitting the general scheme for distributing water all over the station for the new Ooparhalli reservoir.

7. The annexed index map shows the broad features of this scheme. The rainfall of the catchment area, 1,600 acres in extent (with a small additional area of 170 acres to the south not yet connected), is collected in a storage reservoir situated in the third mile of the Toomkur road, and is led by an open masonry channel from A to B. All the work so far has been completed from Mysore Provincial Funds at a capital outlay of Rs. 5,40,169.

8. At B it was intended to have had a pipe head reservoir, from which distribution would be made by two mains, one, B C, serving all the north side of the cantonment bazaar, and B D the south. At D a bifurcation of the southern main was to have been made, sub-main D E serving, if necessary, the European troops, and D F the whole of the Shoolay quarter.

9. Chiefly owing to the restrictions imposed on all outlay in Mysore after the famine, it was decided, after placing the works in a safe condition, to defer completion.

10. Having been mainly responsible for the commencement of these works, it is natural that I should wish to see them finished, convinced as I am that they are designed upon the only sound and feasible basis.

11. Writing in 1859 Sir Arthur Cotton declared against the suggestion then made to supply the troops with water pumped up from the Ulsoor tank. A scheme which has since, however, been carried out. His objections were—"*first*, the insuperable one, that this tank receives the drainage from a large portion of the cantonment containing a considerable town, which must render the water unfit for use; *second*, the great expense of constantly pumping from such a depth."

12. That both one and other of these objections have, as might have been expected, proved true in practice it is needless now to affirm. The disadvantages of the position are borne out by every line of Dr. Bidie's report.

13. The inhabitants of the cantonment bazaar may be harried with endless restrictions, all kinds of works may be devised for separating sewage from storm waters along the several feeders of the Ulsoor tank, but the struggle against nature will in the future prove as hopeless and as expensive as has been the case in the past. The position is an impossible one, and should never have been accepted.

14. Dr. Bidie, in the end of his report, advocates the completion of the Ooparhalli scheme, observing that: "It is possible that the yield may fall short of this estimate (viz., 10 gallons per head per diem for 90,000 inhabitants); but on the other hand, if completed, it is apparently capable of delivering in the station a liberal supply of water of unexceptional quality."

15. In contradistinction to the polluted area which furnishes the supply of the Ulsoor tank, the catchment of the new Ooparhalli reservoir is in the first place free of even a single habitation. Most of it was, if I remember correctly, bought up for Government and thrown out of cultivation; and no doubt the rest can be readily acquired, if necessary.

16. The soil is of the usual red character, very sandy, and lateritic near the central point at the Muntapum. Unfortunately the tufted grass (an *Andropogon* according to Dr. Bidie) has been allowed to take possession of most of the area, and effectually stops the off-flow of rain-water.

17. Again, channels of quick delivery were not, as originally intended, carried out; and as a result of these combined causes, the new reservoir has not filled to the extent that it ought to have done.

18. Very careful returns have been maintained in the Chief Engineer's office in Bangalore of the deliveries into the new reservoir. From these I extract the following results:—

Year.	Fraction of the Total Rainfall on the Catchment as stored in the new Reservoir.
1878	$\frac{2}{11}$ ths.
1879	$\frac{1}{9}$ th.
1880	$\frac{1}{10}$ th.
1881	$\frac{1}{7}$ th.
1882	$\frac{1}{9}$ th.

Average of the five years above nearly 13 per cent. of the total rainfall.

19. Numerous experiments were carried out to ascertain the off-flow from the surface when in different conditions, and, although unable at the moment to quote figures, the difference observed between the results when the soil was maintained free from rank vegetation, and especially where it had attained the hard-glazed condition which with proper arrangements seems to be attainable, was such as to remove any doubts as to the adequacy of the total supply. Though ploughed ground and crops absorb and evaporate frequently nine-tenths of the rainfall, the careful experiments made by Mr. Binny for the Nagpore reservoir showed that the results were altogether reversed with surfaces in a denuded hard condition.

20. By stopping all cultivation, removing and keeping down the grass, particularly the "*Andropogon*," there should, I hope, be no reason to fear short supply. Cattle should, of course, be kept off the ground, and all means used for getting the surface into the most favorable condition, with quick delivery channels, &c.

21. Should unfortunately these efforts fail to produce all the desired results, there are clearly auxiliary methods which are at command.

22. The *first* of these (a method which I believe has already been partially adopted on a special occasion) is the pumping of a supply of water from below sluice level into the sluice cistern. Probably a 10 or 12 horse power engine and centrifugal pumps lifting to a maximum height of 15 feet would here do all that would be necessary.

23. The *second* auxiliary method was, however, the one to which I devoted most attention when last at Bangalore, and certainly at first sight it promised very satisfactory results.

24. The applicability of this method depended on turning to account certain defects in the execution of the works possibly, and certainly in the soil, which I will now very briefly explain.

25. When carrying out the central core of the bund for the new reservoir, consisting of a concrete wall sunk in places to 30 feet below the surface, the soil in places proved to be very rotten. It was soft decaying stuff, and the stoppage of the springs proved to be a most serious difficulty, if indeed it was ever fully overcome.

26. Returns for the past five years now before me show that under the combined action of evaporation and leakage the reservoir surface was lowered between 0·43 to 0·66 of an inch per diem, whereas under evaporation only it should not have fallen more than 0·30 of an inch at the outside. Captain Kensington calulated from this that the losses due to leakage alone would amount to 41,382 cubic feet per diem.

27. An examination of the main bund showed that this leakage might very well be going on either entirely under the concrete wall or round the flanks; but although the whole soil, a short way below the bund, was full of water, there was no indication of any danger or any element of weakness in the work itself.

28. Two points naturally suggested themselves in connection with this leakage—

(1) Will the sediment in the water so puddle the bed, as often occurs, in such a way as gradually but effectually to stop the leakage?

(2) Will it continue and thus present an opportunity for lifting by steam pumping the whole supply required, or in any case a good proportion, from a series of wells established below the bund?

29. Looking to the general character of the soil, I confess I was disposed to the second view, and, judging from the clear and sparkling specimens of water collected from immediately below the main bund, I was in hopes that we had at hand a means of giving practically a supply of filtered water to Bangalore.

30. The analyses (hereto attached) of the specimens collected do not bear out this conclusion in such a manner as to render the adoption of this plan feasible without much further inquiry.

31. Notwithstanding the clearness of the specimens taken, and the fact that traditionally all travellers used the old well here constantly, only two out of the four specimens have been pronounced "*usable*" by the Chemical Examiner.

32. This comparatively unsatisfactory result may, it is true, be due to the presence of rank vegetation about the holes from which these specimens were collected, but whatever the cause, it would be undesirable to build on this pending further inquiry.

33. All therefore that I at this moment would wish to advance is that in the great leakage which now takes place may yet be found a large auxiliary supply of naturally filtered water which may be pumped up for distribution at no very prohibitive cost.

34. There is also a *third* auxiliary to the scheme (alluded to in paragraph 67 of my report of the 9th September 1868), viz., the possibility of bringing in supply from a fresh catchment area believed to measure two square miles in extent situated a little south of Yellavunka. This has not been examined in detail, and whether the supply from this detached area would be brought in without prohibitive cost remains to be decided. It should certainly be examined.

35. The scheme for the supply from the new Ooparhalli reservoir was originally calculated to give 10 gallons per head per diem to 90,000 inhabitants in the Bangalore cantonment, cantonment bazaar, and military station, to the nearly total exclusion of the Pettah, which, though not well supplied, was not at the time considered to be in anything like the same urgent need in this respect.

36. By the census of 1881 it seems that the following was the population all told as being directly or indirectly concerned:—

1. Cantonment bazaar, civil and military stations	89,274
2. Pettah	62,317
3. Troops	4,259
Grand Total ...	155,850

37. In delimiting the Bangalore Municipality under the late rendition arrangements, the whole of the catchment area of the Ooparhalli reservoir and the reservoir itself were left in Mysore territory; and although the original scheme as above mentioned did not contemplate any inclusion of the Pettah population, it may be thought that as regards the future some allowance on this account would be desirable.

38. This view may, moreover, on other grounds, be considered not unreasonable, as a small portion of the catchment area of the new Ooparhalli reservoir as a fact drained into the supply channel of the Durmamboody tank, on which the Pettah in great measure depends for its water. It has thus to some extent suffered by the construction of the new reservoir. The question is in fact one for discussion between the Governments of Madras and Mysore.

39. For the moment, however, I may, I think, fairly assume that if a supply for 15,000 or 20,000 people were passed down to the Pettah from the Ooparhalli reservoir, it is all probably that would even be either asked for or deemed desirable.

40. We may thus assume that the total population to be provided for will not exceed—

For Cantonment bazaar, civil and military stations and troops ...	110,000
Pettah	20,000
Total ...	130,000

This I should consider sufficiently liberal.

41. As regards the unit of supply, viz., 10 gallons per head, I have reason to believe that this may, as the experience since gained of large Indian towns, be at once halved, and that 5 gallons may be taken as the unit. To err on the side of liberality, the cubic foot $6\frac{1}{4}$ gallons might be accepted.

42. It may here be mentioned that Bangalore has in its chain of four reservoirs (at the head of the bazaar) in the Ulsoor tank, and innumerable wells, a very good supply in all ordinary seasons for personal ablutions, for watering cattle, &c.; so that the one cubic foot above really represents little more than the amount needed for drinking and culinary purposes. To this I may further add that investigations of a very painstaking character in the town of Mysore brought out the fact that for these purposes the average amount actually used by natives only amounted to $1\frac{1}{4}$ gallons per head per diem, or just one-fifth of the quantity proposed to be given.

43. I will only add to the above that, to insure a perfectly pure uncontaminated supply, not only must all grazing and cultivation of the catchment area be stopped, but the supply must be conveyed from the reservoir sluice in closed channels and pipes to the points of ultimate delivery.

44. I wish much it had lain in my power to define in more concrete form the precise method of carrying out the Ooparhalli scheme to completion; but this is impossible. The services of a thoroughly professional officer will be necessary to frame the needful estimate after the two Governments concerned have decided on the general principles to be maintained in regard to construction and future administration of the works, the requirements and shares of the two populations concerned, and the incidence of the charges.

45. In Captain Kensington the Mysore Government have an officer not only of special intelligence in and training, but one who has for years devoted close attention to the registration of the facts connected with this work. His advice and assistance to any officer selected for getting up the project would be invaluable.

23rd September 1883. (Signed) R. H. SANKEY, Major-General, R.E.

Order—dated 5th October 1883, No. 2794 W., Public Works.

The Government concur in the opinion expressed by His Excellency the Commander-in-Chief, that the first and most essential matter in connection with the Bangalore water-supply is the extension and completion of the scheme originated by Major-General Sankey, R.E., C.B., when Chief Engineer of Mysore in 1868.

2. With this object, the services of a thoroughly competent officer will be made available, as soon as possible, for the duty of making the necessary surveys, &c., and for framing the required estimates of cost.

3. The following letter will be addressed to the Resident in Mysore:—

(Here enter No. 2795 W., dated 5th October 1883.)

(True Extract.)

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

To the Military Department.
„ Sanitary Commissioner for Madras.
„ Superintending Engineer, Fifth Circle
„ Public Department.

Exd. A. F. Goodall.
Spare Copies

BUILDINGS AND ROADS.
MILITARY WORKS.

Govt. of {1883} Madras.

PUBLIC WORKS.

Dated October, 5th.

Recd. *Encl.*

G.O., 5th Oct. 1883, No. 2794 W.

OCTOBER.

Bangalore Water-supply

Ordering the extension and completion of the scheme originated by Major-General Sankey, R.E., C.B., in 1868 for the —.

5th October 1883, No. 2795 W., Public Works.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Military Works.

Letter—from

Colonel J. SHAW-STEWART, R.E.,
Secretary to the Government of Madras,
Public Works Department,

To

The RESIDENT in MYSORE.

Sir,

On several recent occasions representations have been made to this Government respecting the quality of the water, and the sufficiency of the water-supply, available for the use of the troops and of the cantonment bazaar at Bangalore. After careful consideration of the subject, it appears to His Excellency the Governor in Council that the proper course is, if possible, to extend and complete the scheme originated in 1868 by Major-General Sankey, R.E., C.B., when Chief Engineer of Mysore.

2. With this object, His Excellency the Governor in Council is prepared to appoint a thoroughly competent officer to the special duty of making the necessary surveys, &c., and of framing the required estimates of cost. It is, however, understood that part of the country to be examined lies without the limits of the military cantonment, and I am directed to request that permission for carrying on the survey may be obtained from the Government of His Highness the Maharajah of Mysore, and that any needful assistance may be rendered by His Highness' Department of Public Works to the officer intrusted with the duty.

3. In connection with the subject of this letter, I am directed to forward copy of the Proceedings of this Government, under date the 5th October 1883, No. 2794 W., in which are embodied certain papers respecting the water-supply, together with the memorandum drawn up by Major-General Sankey in 1868, and a second memorandum written by him on the 23rd September 1883.

4. With advertence to this last paper, I am directed to draw attention to the remarks made by General Sankey in paragraphs 35 to 40; and to request that you will ascertain from His Highness' Government whether it is desired that, in the scheme now to be elaborated, provision should be made for a supply to the Bangalore Pettah; and, if so, whether the number of inhabitants to be so provided may be assumed at the figure of 20,000 named by General Sankey.

5. I am to add that, on completion of the surveys, &c., now proposed, a further communication will be made to His Highness' Government in respect to the construction and future administration of the water-works, also with respect to the incidence of the cost.

I have the honor to be,
Sir,
Your most obedient servant,
(Signed) J. SHAW-STEWART, Colonel, R.E.,
Secretary to Govt., P.W.D.

Ootacamund,
5th October 1883.

Exd. A. F. Goodall.
Spare Copies

BUILDINGS AND ROADS.
MILITARY WORKS.

Govt. of {1883} Madras.

PUBLIC WORKS.

Dated October, 5th.

Recd. *Encl.*

5th Oct. 1883, No. 2795 W.

OCTOBER.

Bangalore Water-supply

Regarding the extension of the scheme for the — originated by Major-General Sankey, R.E., C.B., in 1868.

B

No: 3101 W ~~of 1st Nov 1883.~~ P. W. Deptt

Proceedings of the Madras Govt.

Under date the 1st Nov. 1883

I approve

With reference to the Proceedings of Govt. under date the 5th October 1883 Nos 2794-5 W, His Excellency the Governor in Council resolves to depute Colonel J. Mullins R.E, Chief Engineer 2nd Class, for the special duty of drawing up the Bangalore Water Supply Scheme. The papers on the subject will be communicated to Colonel Mullins, who will submit such proposals as he may consider necessary for Establishment, &c.

2. The Chief Engineer P.W. Dept. will issue further detailed instructions.

JJS

Nov. 10. 83

G.O. 2794 W d/ 5.10.83.
" 2795 W d/ 5.10.83

No: 3101 W of 1st Nov. 1883

Dues
7/11/83

Col: J. Mullins R.E. with G.O. 2794–5 W d/ 5 Octr. -83.

Exr. P.W. Accounts

S.E. Fifth Circle

Ch. S. for Inrn.

Despd.
7/11

R.S.
Ex. As.

OLS 38/10

Sd by
M 30/10

Bangalore 14 November 1883

Despd. 17 — do

No. 1

From Colonel J. Mullins R.E.
Chief Engineer on Special duty

To the Secretary to Government
Public Works Dept.

Encls: 2

Permensem
Office Rupees 114
Survey Do. 214

Sir

I have the honour with reference to G.O. No. 3101 W. of the 1 Instant to request the sanction of Government for the office & survey Establishments detailed in the enclosed Statements, the former for 6 and the latter for 3 Months.

I have the honour to be
Sir
Your most obedient Servt.
John Mullins Colonel
Chief Engineer on Special duty

No 3303 W ay 20th Novr/83

P.W.C No, 10,211

Recd 17/11/83

Enc 2

The establishment applied for is sanctioned. An appropriation of funds will be made on a report being submitted as to the exact amount required for expenditure during the current official year.

This sanction has been registered as Provincial No 57 of 1883-84, and classified as Establishment Temporary.

17.11.83.

111
214

No 3303 Way 20-11-83

B. No 3101. W 1.11.83

F.C. 3971 W 10.1.84
" 623 W. 4-4-84.

Col J Mullins R.E.
Chief Engr on special duty
Examiner P.W.A.
20/11

With order

Entered in Remitt Regr

No 24.

From.
Col. J. Mullins R.E.
Chief Engineer on special duty.

To.
The Secretary to Government P.W.D.
Madras.

D/ Bangalore 2nd January 1884.

Sir.

I have the honor to request that the Examiner Public Works Accounts may be authorized to pass the pay of the undermentioned men during their employment in the office establishment sanctioned in Government Order No 3303 W. D/20th November 1883.

R. S. Parasuram Modelliar draughtsman, Rupees 50/- This man does not possess the certificate of qualification required by the Madras P.W. Code; but he is a qualified draughtsman of the Mysore P.W.D, and he has been lent for the special work required, by the Mysore P.W. Office, with the plans and records of which he has to deal.

B. Streenivasachary, Rupees 50/- This clerk has passed the U.C.S. Examination, but has not yet passed the Code Examination referred to in para 166 of the P.W. Code.

I.

P.W.C. No 14.

I have the honor &c
Sir
Your most obedient Servant.

J. Mullins Col. R.E.
Chief Engineer on spl. duty.

fr 3303 W - 20.11.83.

F.C.
B. No. 923 W. 4-4-84

Received 3rd Jany 1884-

No. 71 Wa/10th Jany/84

The Examiner Public Works Accounts is authorized to pass the pay of the Establishment referred to by Colonel Mullins.

CS.
7.1.84

Com 16/1/84

The Ex P.W.A.
Col. J. Mullins R.E.
Chief Engr on Special duty.

Cd Jugt 1911 Jr 78/

Entered in Rempt Regr

No. 53

Supplemental Sanction required

From

Col. J. Mullins R.E.
Chief Engineer on spl. duty.

To

The Secretary to Government
Public Works Department
Madras.

Dt. Bangalore 31st March 1884.

Sir

With reference to G. O. No. 3303 W. of the 20th November 1883, I have the honor to request supplemental Sanction for Rupees 190-0-0 as below explained.

Sanctioned for Office Establishment	
4 months at 114 Rs a month.	Rs 456-0-0
-do for Survey Establishment	
3 months at 214 a month.	642-0-0
Total Rupees	1098-0-0
Expenditure on Office Establishment	
November to March inclusive	487-6-2
Probable -do- for 10 days in april	38-0-0
-do- on Survey Establishment	646-3-5
Probable -do- for 7 days in april	28-0-0
Travelling allowances of the Office and contingencies up to 31 March	48-14-6
Probable -do- in april	35-0-0
Total Rs	1283-8-1

Supplemental Sanction required say Rupees 190-0-0.

No. 2903

2. I request also that the Examiner of Public Works Accounts may be authorized to pass the accompanying bills for Rs 29-7-0 and Rs 3-14-10, the amounts of which have been paid for the loan of an Engine and pumps by the Executive Engineer, Bangalore Division, and for firewood to work the engine used for testing the water supply in No 2 well South of the South station Hospital.

Recd 1/4/84
Sec 3

I have the honor to be
Sir
Your most obedient Servant
J. Mullins Col. R.E.
Chief Engineer on Special duty.

Sanction all

No. 928 W a/4th April 84

PUBLIC WORKS DEPARTMENT.

No. 928 W

PROCEEDINGS OF THE MADRAS GOVERNMENT.

UNDER date the 4th April 84

READ the following

Letter from Col. J. Mullins R.E.
Chief Engineer on Special duty. H.E. No. 53 d/ 31st March/84.

The Examiner P.W. Accounts is authorised to pass the charges, subject to the usual audit.

CJ
1.4.84

JM
2.4.84

Ex: P.W. Accts.
with 3 enclos } Despd 4/4/84

Col. J. Mullins R.E. }
Chief Engineer

B 7/4 10.1.84

No. 925 W a/4 2 April /86

M
4/4

No. 1808 T

OFFICE OF THE SUPTG. ~~ENGINEER~~ of Works,
TANK MAINTENANCE SCHEME,
Chepák, 9th June 1886.

From
THE SUPERINTEND~~ING~~T of Works ENGINEER,
TANK MAINTENANCE SCHEME,

To
THE Chief Engineer
P.W. Deptt.,

Enclosures.

SIR,

The Examiner of P.W. Accounts has declined to audit the pay of Head Clerk B. Streenivasa Charry of No. I Tank Division, on the ground that he has not passed the prescribed P.W. Code examination. B. Streenivasa Charry was first employed as Head Clerk under Colonel (now Major General) J. Mullins R.E., in the Bangalore Water Work Project when he was exempted from passing the above examination for the period he held the above Head Clerkship vide G.O. No. 71 W dated 10th January /84. On the abolition of the above Project Division, he was taken as Clerk on Rs 40 in the No. II Tank Divn,

for which post he was permitted
to exchange his appointment with
M. Kanniah Pillay the former
Head Clerk of the No I Tank Divn,
I have therefore the honor to request
you will be so good as to authorize
the Examiner to pass the Clerk's ~~pa~~
pay till the Code examination take
place in July 1886

1886?

I have the honor to be,
Sir,
Your most obedt. servt.
Jn. Campbell Major R.E.
Supdt of Works
I.M.S.

P 8/6

B. No 923 W. 4. 4. 84
" 71 W. 10. 1. 84
" 3303 W 20. 11. 83
" 3101 W 1. 11. 83
G. O. 2794/2795 W. 5. 10. 83.

No. 1538 W. d/17th June 1886

B

The Exr. P.W.a.
is authorised to
pass the clerk's
pay pending
the result of the
Code examination
to be held in July
1886.

11/6/86

14. 6. 86

S.W. T.M.S.
Ex: Exr. accts:

Desp'd
18/6/86

O.S. 21/6.
6-12: 6. 86

(2) MCl 4436

From

The Supt: of Works
T. M. Scheme

To

The Chief Engineer
P.W.D.

No: 1808 T
Dated 9th } June 1886
Despd: }
Recd. 10

No. 1538 W. d/17th June 1886

Subject

Requesting to authorize the Examiner P.W. Accounts to audit the pay of Head Clerk R. B. Streenevasa chari till the Code Examination takes place in July 1889.

Entd in R.R.
23/6.

No. 2321 T

OFFICE OF SUPERINTENDING ENGINEER,
TANK MAINTENANCE SCHEME,
19th July 1886.

From

THE SUPERINTENDI~~NG ENGINEER~~ent of Works,
TANK MAINTENANCE SCHEME,

To

THE Chief Engineer
P. W. Department

Enclosures.

SIR,

I have the honor to inform you that consequent on the death of Thiruvengada Moodelly, Head Clerk in No 3 Tank Division at Kurnool, the 2nd Clerk, S. E. Gopalachar in the Division, who was recommended by the Executive Engineer, as thoroughly acqainted with the work and capable of carrying out the duties, has been promoted to the vacan post. He has not passed the examination in P. W. Procedure and practice, but has applied for permission to appear at the ensuing examination which will be held

on

B. 20923 W. 4.4.84

on the 31st Instant. I have therfore to request you will be so good as to authorise the Examiner of P. W. Accounts to audit the clerk's pay till the result of the examination is made known.

I.W.C. No 5620.

Major R.E.
Superintendent of Works
Y. M. Scheme

Recd: 19.7.88.

R

7/8 16/7

extende

B. [illegible]

No. 1886 W. d/ 27 July 1886

B

The Examiner is authorised to admit the Clerk's pay pending the result of the ensuing Examination

19/7/86

23-7-86

S/w T. M. S ✓
[illegible]
Eyr:

Dr

27/7

Q.L.S. 1/7.

Ed 20/7

1/8

Hosur 21.7.86

M 23.7.86
R. 24.7.86

3/8

I.W.C. No. 5620 ✓

(3)

From

(The) Superintendent of Works
T. M. Scheme

To

(The) Chief Engineer
P.W.D.

No: 2321 T
Dated 19th July 1886
Despd.
Recd. 19th July 1886

B. No. 1886 W. d/ 27th July 1886

Enclosures

Nil

Subject

Request to authorize the Examiner, P.W. Accts to audit the pay of Head Clerk S.C. Gopala charlu till the result of the code Examination is made known.

Entd in R.R. 4/8

With order

C. 7317

Dr.

The original recommendation in Sreenivasa Charry's case was for exemption till July 1887, but in your note dated 11 June 1886 you considered it unadvisable to authorise the Exr: to audit the Clerk's pay for such a long period.

The recomdn now made is, however, to exempt the clerk till July 1887 - and orders are required whether the recomdn is to be sanctioned. Perhaps there are other (duly qualified) clerks who could conduct the duties of Head Clerks?

J.B.

20/7/86.

C-7317

As exemption has been allowed in the case of two other men I think it should be allowed in the case of the men recommended by the Dir. of Works.

I did not approve of the exemption in the case of the other men, as it really amounts to cancelling the rules about passing: but I do not think it fair to grant the favour to some & not to others equally deserving.

One of the men exempted to whom I refer is Ghulam Khadir.

20/9/81.

B. No 923 W. 4-4-84
" 71 W.

OFFICE OF THE SUPTG. ~~ENGINEER~~ of Works,
TANK MAINTENANCE SCHEME,
Chepâk, 18th September 1886.

No. 3099 T

From
THE SUPERINTENDING^T ~~ENGINEER~~ of Works,
TANK MAINTENANCE SCHEME,

To
THE Chief Engineer
P.W. Department

Enclosures.

SIR,

With reference to G.O.'s Nos. 1538, and 1886 W, dated 17th June & 27th July 1886, I have the honor to state that the individuals R. Sreenivasa Charry and S.E. Gopala Charlu, who were promoted, as head Clerks of the Nos. I and III Tank Divisions, in consideration of the good services rendered by them have failed to pass the prescribed examination in the P.W. procedure and practice, & I request that the exemption granted them in the G.O.'s above referred to may be extended

extended till the next examination takes place.

I have the honour to be
Sir,
Your most obedt servt
John Campbell Major R.E.
Inspt of Works

Fm Schinne

1886 w 27.7.86. 2795 w 5.10.83
1538 w 17.6.86 2794 w 5.10.83
923 w 4.4.84
71 w 10.1.84.
3303 w 20.11.83.
3101 w 1.11.83.

B. No. 2440 W a/ 22d Septr /86

B

The Examiner
P.W.A. is authorised
to admit the pay
of the clerks referred
to pending the
result of the next
Examination in
P.W. practice and
procedure

20/9/86

20/9/86

S.W.T.M.S. √
Exr. P.W.A. √ Desp 22.9.86

21/9

P.W.C. No. 7317

1886.

From

THE SUPERINTENDENT OF WORKS,

Tank Maintenance Scheme,

To

THE Chief Engineer
P.W.D.

No. 3099 T

Dated 18 September 1886

Despatched

Received 20.9.86

ENCLOSURES.

Nil

B. No. 2440 W a/ 22-9-86.

Subject.

Requests that exemption granted to the individuals B. Shreenivasa chari & S.E. Gopaula charlu may be extended till the next code examination takes place.

19TH JUNE 1885, No. 1434 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

READ—the following letter from R. F. CHISHOLM, Esq., Consulting Architect to Government, to the Chief Engineer, Public Works Department, dated Chepâk, 11th June 1885, No. 373 :—

I have the honor to inform you that the new painted window for St. Andrew's church has arrived, and that the work of fixing it will be at once commenced.

2. I shall feel obliged if you will place the funds sanctioned in G.O., No. 296 W., dated 7th February 1885, at my disposal.

3. I have now the honor to submit a revised estimate providing the protection mentioned in paragraph 2 of the above-quoted order.

ORDER—dated 19th June 1885, No. 1434 W., Public Works.

The revised estimate, amounting to Rs. 549, for fixing and protecting a stained-glass window at the east end of St. Andrew's church, Madras, is sanctioned, and the amount is appropriated from the Provincial reserve with Government.

2. This sanction has been registered as Provincial No. 67 W. of 1885-86, and classified as Civil Buildings, Original Works.

(True Extract.)

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

To the Consulting Architect to Government.
,, Examiner, Public Works Accounts, with the estimate for note and return to the Consulting Architect.
,, Ecclesiastical Department.

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1885} Madras.

PUBLIC WORKS.

Dated June, 19th.

Recd. *Encl.*

G.O., 19th June 1885, No. 1434 W.

JUNE.

St. Andrew's Church, Madras

Revised estimate for fixing and protecting a stained-glass window at the east end of —, sanctioned.

Church of Scotland.

Bangalore
23rd June 1886

From the Revd
James Jollie
Acting Senior Chaplain
Church of Scotland,

To The Chief Engineer
and Secretary to Government
P. W. D.

Sir,

1) I have the honor to forward a letter which I have received from the Chaplain in Charge of St. Andrew's Church, Madras, regarding the dilapidated condition of the walls, et cetera, of St. Andrew's Cemetery, Madras.

2) I take this opportunity of bringing to your notice the unfinished state of the interior of the beautiful dome of St. Andrew's Church, Madras.

It—

3/2220/06

Church of Scotland.

It was replastered with Portland Cement three years ago, but, to the constant regret of the Chaplains, Kirksession and Congregation, and all interested in the Kirk, it has never been suitably painted, and so remains in a rough, unsightly condition, a disfigurement rather than the chief ornament of the fine Church.

3) I have the honor, therefore, most respectfully to request that you will be good enough

to

to recommend to His Excellency the Governor in Council that these two important works be executed at as early a date as may be possible.

I have the honor
to be Sir

Your most obedient Servant
James Jollie
Acting Senior Chaplain
Church of Scotland.

as
eting
f —,

2/2226/86
2/25 84/86

Pr. Enl 7169/86

O.W. 13076

SECRETARY TO GOVERNMENT
25 JUN 86
DEPARTMENT MADRAS

Church of Scotland.
Saint Andrew's Church
Madras,
17th June 1886.

From The Revd J. N. Ogilvie, M.A.,
Chaplain
St. Andrew's Church,
Madras,

To The Revd James Jollie
Senior Chaplain
Church of Scotland, Bangalore.

Revd. and dear Sir

I have the honor to report to you concerning the state of St. Andrew's Cemetery, Madras. For some time back repairs to Walls &c, have been very necessary; so much so that last month I received a notice from the Madras Municipality calling on me to have the repairs to the walls executed within twenty days. I thereupon communicated with the Executive Engineer, Presidency Division, asking him to give orders for the half yearly inspection of the Cemetery by Engineer and Chaplain (Revised Eccl. Rules No XXI). The inspection was thereupon made by Sub Engineer Lt. Plummer and myself, and the repairs found to be much needed. A report to this effect would be forwarded to be dealt with by you: but the report made a year ago has not yet been considered.

On May 7th 1885, The

---

as
eting
f —,

The P. W. Department framed an estimate for all necessary repairs to St. Andrew's Cemetery, and this was forwarded to Government for sanction. As that sanction, however, has never been given, the Cemetery is still unrepaired and naturally is fallen into a worse condition.

I have therefore the honor to request that you would again approach Government in the matter, more especially as the local Municipal Authorities have now communicated with me in the subject.

I have the honor to be
Rev. and Dear Sir
Your obedient Servant
(Sd.) James N. Ogilvie
Chaplain
St. Andrew's Church
Madras

True Copy
James Jollie
Acting Senior Chaplain
Church of Scotland

Bengalore
22 June 1886

M Reg 7164/13

No. 2882

SUPERINTENDING ENGINEER'S OFFICE,
V CIRCLE, MADRAS,
Chepâk, 14th September 1886

From
THE SUPERINTENDING ENGINEER,
V CIRCLE,

To
THE Chief Engineer
P. W. Deptt.

SIR,

Enclosures. 2
returned

Orig. Memo:

In reference to your Memorandum No. 301 D dated 25 June 1886, and enclosures all of which are returned, I have the honor to report that the dilapidated condition of walls &c. of St. Andrew's Cemetery & of the Cemetery generally has been now remedied and cost thereof debited to Provincial Repairs.

As regards the unfinished state of the interior of the beautiful

beautiful dome of St. Andrews Kirk" - The history of this is as follows. In 1883, the dome plastered inside & out with shell lime mortar, leaked and the interior plaster and decoration constantly fell in flakes: to remedy this it was determined to plaster inside and out with Portland Cement - and afterwards if it was found the roof no longer leaked to repaint the underside of the dome.

The dome, I may say, is built of pot tiles filled with straw an exceedingly pretty construction in theory - but a roof always more or less subject to settlements and leaks - as Trinity Church Bangalore for instance -

Mr.

Mr. Chisholm when consulted advised me to cover the dome with Willesden paper and an Estimate was submitted accordingly to Colonel Prendergast - but as I pointed out to him the flimsy character of such a roof covering in a gale of wind sanction was not accorded: then Mr. Chisholm suggested covering the Willesden paper with 2 layers of ordinary Native pan tiles.

And as the dampness in the roof is due, or may be due as much to condensation of air as to actual leaks, an Estimate is under preparation providing for ventilation also - The Executive Engineer Presidency will submit this Estimate "very shortly"

shortly" - Still it will not be submitted to Government for sanction with much confidence - the tiles will, I think, entirely spoil the outside appearance of the Church & the Congregation & public generally will be dissatisfied with the work - the whole fault lies in the original construction of the dome -

I have also directed Executive Engineer Presidency to submit an estimate providing for merely painting the underside of the dome - this is to be recommended as the least costly remedy & one which may answer.

I have the honor to be
Sir
Your most Obed.t Serv.t

W H Burton Col.l R.E.
Supg Engr 5th Circle

B. No. 2436 W d/22d Sept/86

The Senior Chaplain, Church of Scotland, will be informed in reply to his letter dated 23rd June 1886, that the necessary repairs to the walls &c of St. Andrew's Cemetery have been carried out.

2. The submission of the estimate for painting the inside of the dome of the Kirk which is at present under preparation, is awaited.

Dilw C
15/9/86

Sen
18/9/86

Senior Chaplain
Church of Scotland
thro' the Eccles.l Dept
S. E. V circle.

23/9

From

THE SUPERINTENDING ENGINEER,
V CIRCLE,

To

THE Chief Engineer
P.W.D.

Dated 14th } September 1886
Recd. 15

ENCLOSURES. 2

B. No. 2436 W d/22-9-86.

No. 2882

St. Andrew's Cemetery

Reports that the dilapidated condition of walls &c of — has been now remedied

---

No. 1365 G.d.

FROM,

THE SUPERINTENDING ENGINEER
FIRST CIRCLE,

TO,

THE Chief Engineer
Public Works Department

Dowlaishweram, 2d September 1886.
Recd 7-9-86.

SIR,

I have the honor to request that Rs 400 of the grant of Rs 500 given for the Godavari Western Division under Provincial "Tools and Plant" may be resumed as that sum cannot be utilized.

I have the honor to be
Sir
Your most obedt Servant

Superintending Engineer 1st Circle

P.W.C. No. 711

From
The Supdg Engineer
First Circle

To
The Chief Engineer
P. W. Depart.

Dated 2 } 9-86
Despd 9 } 9-86
Recd: 13.9.86

No. 1365 G.D.

Grant for Godavari
Western Dn. under
Provl. Tools & Plant —
Requests to resume
Rs. 400 out of —.

B

No. 2435 W

PROCEEDINGS OF THE MADRAS GOVERNMENT.

22nd Septr/86

READ the following

B/

From the Suptg. Engr. I Circle. H.E. No: 1365 G.D. d/ 2nd September 1886

The sum of Rs. 400 surrendered by the Suptg. Engineer, I Circle, from the allotment to the Godavari Western Division under Provincial, Tools and Plant, is resumed and added to the reserve with the Govt. under Provincial.

13/9/86

20/9/86.

To The Suptg. Engr. I Circle ✓
" Examiner of P.W. Accts. ✓

23/9/86

13/9

B Noted W 22/9

B-No 2435 W dy 22-9-86

Judicial Department.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

READ the following

from the Collector of Vizagapatam, dated 21st August 1886 No 1446, requesting supply of Magisterial seals and certain Acts to the eight special 3rd class Magistrates, appointed in Government Notification No 257, published in the Fort St George Gazette of the 2nd July last.

Order thereon 10th September 1886 No 2459 M.

The District Magistrate will furnish to the Superintendent of Public Works Workshops, a design for the seals required, and the Superintendent will be requested in the Public Works Department to make and supply the seals. The Agent will state how

many

many he requires.

2. The Acts indented for will be supplied by the Superintendent of the Government Press.

(True Extract)

Chief Secretary

To

(B)/ The Public Works Department.

B. No. 2434 W a/ 22 Septr/86
B

Com^md: to the
Suptg: Engr. V Circle
for the information
and guidance of
the Genl Supt: P.W.
Workshops

Com^d to the
Supg Engr. V Circle
for the information
and guidance of
the Genl Supt P.W.
Workshops

17/9/86

20/9/86

S.E. V C. Despd. 22.9.86
S.E. V. C.

Vol. 7266

Govt. of (188) Madras.

To

The P.W. Dept.

Recd 17/9/86

Proceedings, dated 10 Sept 1886
No. 2459 Mn

Subject.

B. No. 2434 W a/ 22-9-86

Directing the Dt Magt of Vizagapatam to furnish to the Supt of Public Works Workshop a design for the seals required.

20th November 1882, No. 3059 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

No. 121.

Read—the following papers :—

From Colonel T. E. TENNANT, Inspector-General of Jails, to the Chief Engineer, Public Works Department, dated Ootacamund, 3rd November 1882, No. 310.

With reference to the Proceedings of Government noted in the margin I have the honor to submit, for the approval and sanction of Government, the accompanying plans and estimates for constructing a new District Jail at Tanjore.

G.O., dated 11th March 1874, No. 423.
„ „ 17th April „ „ 661.
„ „ 5th January 1876, „ 11.
„ „ 26th August „ „ 1756.
„ „ 23rd Nov. 1881, „ 2418.
„ „ 31st March 1882, „ 862 W.

2. The original block plans for this jail were designed for keeping the convicts in association and the buildings were calculated to accommodate—

Males	298
Females	30
Total ...	328

as sanctioned in G.O., dated 5th January 1876, No. 11, Judicial Department, but it was ultimately determined that the new prison should be constructed on the cellular system and the present estimates provided for eight radial blocks containing 250 separate cells. This accommodation has been calculated on the daily average strength and maximum number confined in the jails both at Tranquebar and Tanjore during the last three years.

G.O., dated 26th August 1876, No. 1756.
„ „ 16th Nov. „ „ 2379.

3. In addition to the eight radial blocks containing 250 cells, accommodation is provided for—

	NO.
Under trials	30
Civil Debtors	12
Quarantine	18
Females	20
Juveniles	8
Condemned cells	4
Solitary cells	3
Hospital for males	13
Do. for females	3
Total ...	111

making the total accommodation as follows :—

Males	338
Females	23
Total ...	361

4. With regard to the construction and size of the cells the Palamcottah plans have been followed. The general arrangement and disposition of the buildings have been determined in communication with the Superintending and Executive Engineers and with reference to the accommodation required. The hospital for males and the special wards for contagious diseases are placed in the north-west corner of the jail enclosure, as the prevailing winds are from the south and south-east. The women are put in the south-west corner. The wards for under trial prisoners and for civil debtors are situated in the north-east angle of the enclosure and the quarantine cells in the opposite angle.

5. The estimates amount to Rs. 2,11,100, or about Rs. 584 per head. The Superintending Engineer states that, according to the experience gained at the new Palamcottah Jail, the value of the work which can be performed by convict labor may be estimated at Rs. 9,000. This is but a small amount and will only reduce the outlay required to Rs. 2,02,100. I am however in hopes of being able to utilize convict labor more extensively at Tanjore than has been done at Palamcottah. The Central Jail at Trichinopoly is within easy distance by rail and gangs of prisoners can be conveyed to Tanjore without much trouble. Certain preliminary works necessary for the security of the prisoners will have to be performed by free labor, such as erecting the boundary wall and providing accommodation for the guard. Long sentenced prisoners and convict artizans may then be usefully employed and I hope and believe with considerable saving to the State.

6. Early sanction is therefore solicited in order that the work may be put in hand without delay. An allotment of Rs. 40,000 has been given for this official year, and I would propose to supplement this sum by transfer of Rs. 10,000 from the allotment made in the budget for the Kurnool District Jail and Rs. 10,000 from the Palamcottah Jail.

Public Works Budget	Rs. 20,000
Convict Labor Fund Budget ...	„ 20,000

7. I would suggest that the construction of the boundary wall, the wells, and drains be commenced at once. The guard-rooms and buildings at the entrance as well as the quarters for the prison officials and police lines should also be put in hand. If these arrangements be approved I shall be able to transfer 200 or 300 prisoners from Trichinopoly to Tanjore for work on the new jail.

List of Enclosures.

One Book of thirty-four Plans.
„ Detailed Estimate with Land Statement.
„ Abstract with general Statement.
„ Abstract Estimate.
„ Specification.
„ Note by Superintending Engineer, Sixth Circle.

ENCLOSURE.

Note by the Superintending Engineer, Sixth Circle.

The Executive Engineer of Tanjore Division forwards with his letter No. 2847, of 14th October 1882, plans and estimate, &c., in connection with the District Jail at Tanjore.

Estimate Rs. 2,11,100—of which a sum of Rs. 9,000 is entered in the estimate as works to be executed by the convicts.

One Book of Plans.
„ Detailed Estimate with Land Statement.
„ Abstract with general Statement.
„ Abstract Estimate to the Examiner.
„ Specification.

References.

G.O., Public Works Department, No. 97 of 19th May 1874.
„ „ „ 2973 W. of 29th November 1881.
„ „ „ 862 W. of 31st March 1882.

Report.

The abandonment of Tranquebar and Tanjore Jails, as recommended by the Inspector-General, is ordered and estimates were directed to be prepared for building a new jail in the outskirts of the town of Tanjore for 276 prisoners of the classes described in Colonel Wilson's letter, dated 19th March 1874, No. 43, printed with G.O., Judicial Department, of 17th April 1874, No. 661.

The accommodation now provided for in the estimate is as follows :—

	NO.
Convicts, Male	250
Under trial do.	30
Debtors do.	12
Condemned do.	4
Solitary do.	3
Quarantine do.	18
Convicts, Female	16
Under trial do.	4
Juveniles	8
	345
Hospital accommodation—	
Sick beds for male	10
Contagious do.	3
Sick beds for female	3
	16
Total ...	361

The suggestions and requirements of the Inspector-General of Jails have been complied with.

The site of the building has been settled by the Collector and approved of by the Inspector-General of Jails. A sum of Rs. 7,000 has been provided in the estimate for the compensation of land.

The rates entered in the estimate are considered fair.

Early sanction is requested in order that the work may be put in hand without delay and the allotment of Rs. 80,000 given for this official year utilised.

TRICHINOPOLY,
28th October 1882.

(Signed) H. R. MEAD, Lieut.-Col., R.E.,
Superintending Engineer, Sixth Circle.

No. 122.

ORDER—dated 20th November 1882, No. 3059 W., Public Works.

The plans and estimates amounting to Rs. 2,11,100, for constructing a new District Jail at Tanjore, are sanctioned.

2. The balance of grant for this work in the Public Works Provincial Budget for 1882-83 is Rs. 10,000, and a sum of Rs. 20,000 is also provided from Convict Labor Funds, making a total grant of Rs. 30,000 for expenditure during the current official year.

3. The suggestions of the Inspector-General of Jails in the concluding paragraph of his letter read above will receive the attention of the Superintending Engineer.

4. This sanction has been registered as Provincial No. 164 W. of 1882-83 and classified as Civil Buildings, Original Works.

(True Extract.)

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

To the Superintending Engineer, Sixth Circle, with four enclosures.
„ Examiner, Public Works Accounts, with Abstract Estimate.
„ Inspector-General of Jails.
„ Judicial Department.

Exd. S. T. Austin.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1882} Madras.

PUBLIC WORKS.

Dated November, 20th.

Recd. *Encl.*

G.O., 20th Nov. 1882, No. 3059 W.

NOVEMBER.
Nos. 121-122.

District Jail, Tanjore.

The Plans and Estimates for constructing a new —, sanctioned.

3rd December 1885, No. 2884 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following letter from H. R. GRIMES, Esq., Inspector-General of Jails, to the Chief Secretary to Government, dated Madras, 12th November 1885, No. 317 :—

I have the honor to forward the accompanying three estimates, amounting to Rs. 4,730, for constructing a European warder's quarters with out-buildings, one head warder's, and two warders' huts, at the district jail at Tanjore, in addition to those already sanctioned in G.O., No. 1268 W., dated 1st June 1885. As these buildings are actually required, I request Government will be pleased to accord sanction for their construction.

2. The Superintending Engineer reports that no additional funds are required for these works, as there will be sufficient saving in the jail estimate sanctioned in G.O., dated 20th November 1882, No. 3059 W., to meet the cost of these works.

No. 1995, Judicial.

Approved and transferred to the Public Works Department.

(By Order.)

(Signed) H. A. STUART,
Ag. Assistant Secretary.

23rd November 1885.

Order—dated 3rd December 1885, No. 2884 W., Public Works.

The undermentioned estimates are sanctioned against the anticipated savings on the general estimate of Rs. 2,11,100 sanctioned for the district jail at Tanjore in G.O., No. 3059 W., dated 20th November 1882 :—

		RS.
$\frac{175}{1}$	Constructing quarters with out-houses for the chief warder ...	3,270
$\frac{175}{2}$	Constructing a hut for the head warder	680
$\frac{175}{3}$	Constructing huts for two warders	780

2. This sanction has been registered as Provincial, No. $\frac{175 \text{ W.}}{1, 2 \& 3}$ of 1885-86, and classified as Civil Buildings, Original Works.

(True Extract.)

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

To the Superintending Engineer, VI Circle, with ten enclosures.
" Examiner, Public Works Accounts, with duplicate abstract estimate for (1) and estimates for (2) and (3) for note and return to Superintending Engineer, VI Circle.
" Judicial Department.

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Gobt. of (1885) Madras.

PUBLIC WORKS.

Dated December, 3rd.

Recd. *Encl.*

G.O., 3rd Dec. 1885, No. 2884 W.

DECEMBER.

District Jail at Tanjore

Estimates for warders' quarters for the —, sanctioned.

16th August 1886, No. 2048 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Civil Works.

Read—the following letter from Lieutenant-Colonel W. S. McLEOD, Acting Inspector-General of Jails, to the Chief Secretary to Government, dated Ootacamund, 17th July 1886, No. 210:—

I have the honor to submit the accompanying plans, estimates, and specification for reconstructing the compound walls to warders' huts at the district jail, Tanjore, amounting to Rs. 1,420.

2. The necessity for the work is fully set forth in the Superintending Engineer's report No. 515 T.J., dated the 10th July 1886 (also accompanying), in which it is suggested that amount of the estimate may be met from the savings of the main estimate sanctioned in G.O., No. 3059 W., dated the 20th November 1882, and as the full grant of Rs. 8,000 for the current year will not be required, Rs. 1,420 may be transferred thereupon.

No. 1273 C., Judicial.

Approved and transferred to the Public Works Department.

(By Order.)

(Signed) A. G. CARDEW,
Acting Assistant Secretary.

Ootacamund,
4th August 1886.

Order—dated 16th August 1886, No. 2048 W., Public Works.

The estimate, amounting to Rs. 1,420, for reconstructing the compound wall to warders' huts at the district jail, Tanjore, is sanctioned, and the amount is allotted by transfer from the current year's grant of Rs. 8,000 for the district jail.

2. If, as stated by the Superintending Engineer, the whole of the grant for the district jail will not be required, he will report what portion thereof can be surrendered.

3. This sanction has been registered as Provincial, No. 83 W. of 1886-87, and classified as Civil Buildings, Original Works.

(True Extract.)

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

To the Superintending Engineer, VI Circle, with six enclosures.
" Examiner, Public Works Accounts, with the estimate for note and return to Superintending Engineer, VI Circle.
" Judicial Department.

Exd. P. L. Pereira.
Spare Copies

BUILDINGS AND ROADS.
CIVIL WORKS.

Govt. of {1886} Madras.

PUBLIC WORKS.

Dated August, 16th.

Recd. *Encl.*

G.O., 16th Aug. 1886, No. 2048 W.

AUGUST.

District Jail, Tanjore

Estimate of Rs. 1,420 for reconstructing the compound wall to warders' huts at the —, sanctioned and funds provided.

---

p 1

CURRENT NO. 2656 Jud.

No. 210

Ootacamund
17th July 1886.

From,

Lt. Col. W. S. McLeod
Ag: Inspector General of Jails.

To,

The Hon'ble E. F. Webster
Chief Secretary to Government
Ootacamund

Enclosures
1 packet

Sir,

I have the honor to submit the accompanying plans Estimates, and specification for reconstructing the compound walls to Warders huts at the district Jail, Tanjore, amounting to Rs 1,420.

2. The necessity for the work is fully set forth in the Superintending Engineers report No. 515 T. J. dated the 10th July 1886 (also accompanying) in which it is suggested that amount

of

of the Estimate may be met from the savings of the main Estimate sanctioned in G. O. No. 3059 W. dated the 20th November 1882 and as the full grant of Rs 8000 for the current year will not be required, Rs 1420 may be transferred thereupon

Encls 1
P.W. 6086/86

I have the honor to be

Sir,

Your Most Obedt Servant

W. S. McLeod. Lt. Col.
Ag: Inspector General of Jails

G.O. 3059 W. 20.11.82
" 2884 W. 3.12.85

Judicial P.W.C. 4/8/86

JUDICIAL. CURRENT No. 2656

Jail (1886) Department

No. 1273 C
Ooty - 4th August 86

C 30/7

Approved & transferred to the Public Works Department.

By order.

for Actg. Asst. Secy.
7. 86.

FROM

THE Ag. INSPECTOR-GENERAL
OF JAILS,

TO

THE CHIEF SECRETARY
TO GOVERNMENT.

Ootacamund

2048 W

Enclos: 8 (+ 2 Plans)

Dated 17th
Received 18 } July 1886.

No. 210

BH
7/8/86

ENCLOSURE 1 packet

SUBJECT.

Submits Plans, Estimates &c. for re-constructing compound walls to warders huts at the Tanjore Jail.

HM 29/7
R 30/7

Ackd. 2/8.

Resubmitted to C. 10-8-86 R. 16-8-86

B of R
Works

No. 2048 W

PUBLIC WORKS DEPARTMENT.

A

PROCEEDINGS OF THE MADRAS GOVERNMENT.

16th August 86.

READ the following

From the Inspector General of Jails - H. E. No: 210 d/ 17th July 1886.
Endorsement by the Judicial Department. H. E. No: 1273 C d/ 4th August 1886.

3

The estimate amounting to Rs. 1,420, for reconstructing the compound wall to warders' huts at the District Jail, Tanjore, is sanctioned, ~~and, as proposed by the Supdg. Engineer~~, and the amount is allotted by transfer from the current year's grant of Rs. 8,000 for the District Jail.

2. If, as ~~reported~~ stated by the Supdg. Engineer, the ~~District Jail has almost been completed and the~~ whole of the grant ~~current year's grant of Rs.~~ for the District Jail will not be required, he will report what portion thereof ~~of the grant he~~ can be surrendered ~~to admit of its being utilised on other works~~.

3. This sanction has been registered as Provincial No: 83 W

of

G.O. 3059 W. 20.11.82
" 2884 W. 3.12.85

No 2

No. 1273 C
Ooty - 4th August 86

HM

G.C.C. 30/7

Approved & transferred to the Public Works Department.

By order.

J. W.
Ag. Asst. Secy.
7.86.

B. G. Carden

Judicial P.W.C. Apps

JUDICIAL. CURRENT No. 2656

Jail (1886) Department

FROM

THE Ag. INSPECTOR-GENERAL
OF JAILS,

TO

THE CHIEF SECRETARY
TO GOVERNMENT.

Ootacamund

2048 W

Enclos: 8. (+ 2 Plans)

Dated 17th } July 1886.
Received 18. }

No. 210

B.H. 7/8/86

ENCLOSURE 1 packet

SUBJECT.

Submits Plans, Estimates &c for re-constructing Compound walls to Warders huts at the Tanjore Jail

HM 29/7
R 30/7

Asg. 2/8.

Resubmitted to C. 10.8.86 R. 16.8.86

No. 2048 W

PUBLIC WORKS DEPARTMENT.

B of R Works

PROCEEDINGS OF THE MADRAS GOVERNMENT.

16th August /86.

READ the following

From the Inspector General of Jails - H. E. No: 210 d/ 17th July 1886.
Endorsement by the Judicial Department. H. E. No: 1273 C d/ 4th August 1886.

3

The estimate amounting to Rs. 1,420, for reconstructing the compound wall to warders' huts at the District Jail, Tanjore, is sanctioned, ~~and as~~, ~~proposed by the Supdg. Engineer~~, and the amount is allotted by transfer from the current year's grant of Rs. 8,000 for the District Jail.

2. If, as ~~reported~~ stated by the Supdg. Engineer, the ~~District Jail has almost been completed and the~~ whole of the grant ~~current year's grant of Rs. will~~ for the District Jail will not be required, he will report what portion thereof ~~of the grant he~~ can be surrendered ~~or can be~~ ~~to admit of its being utilised on other works~~.

3. This sanction has been registered as Provincial No: 83 W

of

1886-87, and classified as Civil Buildings, Original Works.

10/8/86

12-8-86

/8

16/8/86

23/8/86

To The Suptg. Engr. VI Circle with 6 enclos.

" Examiner of P. W. Accts with the estimate for note & return to S. E. VI

" Judicial Department.

O. 10.8.86 R. 16.8.86

R 30/7

O. S. 7/8.

O. 10.8.86 R. 16.8.86

6086

Govt. of (1886) Madras.

PUBLIC WORKS.

Dated 17/8/86

Recd 5 Jan

Recd Encl.

G.O. 16 August 1886, No. 2048 W

District jail, Tanjore

Estimate of Rs 1,420 for reconstructing the Compound wall to warders 2 huts at the — Sanctioned & funds provided

60/4

Dis 17/8 Ida 17/8

Exe: Engineers Office
Tanjore 10th Sept./86

No. 2337.

From
The Executive Engineer
Tanjore Dn.

To
The Superintending Engineer
6th Circle

Sir

With reference to para 2 of G.O. No. 2048 W. dated 16th August/86, received with your No. 735. T.J of 27-8-86, I have the honor to report that of the current years grant of Rs 8000 for District Jail Tanjore Rs 2300 may be surrendered if there is no likelihood of the drain Estimate being sanctioned.

I have &c.

(Sd) C. M. Smith
Exe: Engr.

No. 809. T.J

Submitted

2048 W 16.8.86.
2084 W 3.12.85
3059 W 20.11.82

B. No. 2433 W d/22 Sept. /86
B/

Recorded with reference to G.O. No. 2048 W d/16 August 1886.

From,

The Supg. Engineer
6th Circle.

To,

The Chief Engr.
P.W.D.

No. 809 T.J

Dated 13 September /86

16/9/86

Jott 20/9/86

B. No. 2433 W d/22-9-86.

States that it is not possible to surrender any portion of the existing grant for the District Jail Tanjore, at present.

13 W 22/9

With Order

3rd September 1886, No. 489, Marine.

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

Read—the following paper:—

From the Hon. R. W. Barlow, C.S., Chairman, Harbour Trust Board, Madras, to the Chief Secretary to Government, dated Madras, 20th August 1886, No. 311.

I have the honor to forward herewith copy of the Proceedings of the Harbour Trust Board at a meeting held at the Sea Custom House on Thursday, 12th August, and confirmed at a meeting of the board held on the 19th instant.

2. Copies of the above proceedings and of the proceedings of the meeting of the board held on the 5th instant have been forwarded to the Superintendent of the Government Press for publication in the *Fort St. George Gazette*, in compliance with G.O., dated 28th July 1886, No. 412, Marine.

Enclosure.

Proceedings of the Harbour Trust Board appointed under the provisions of section 7 of the Madras Harbour Trust Act (II of 1886), at a meeting held at the Sea Custom House, on Thursday the 12th August 1886, at 5-30 p.m.

* * * *

1. Read the minutes and confirmed the proceedings of last meeting.

2. Read letter from Port Storekeeper of State Railway Stores, dated 30th July 1886, No. 219 S.R., and correspondence connected therewith.

[illegible] to the Port Storekeeper of State Railway Stores that, had he adopted the suggestion to rent a piece of ground as approved by the Director-General of Railways, the difficulties of which he complains would have been minimised. The blocking of the shore end of the pier causes great obstruction to the general traffic, and therefore no extension of time can be granted for removal of stores landed at that portion of the harbour precincts.

The chairman expressed his opinion that, having regard to the difficulty attending the removal of heavy boilers and machinery under existing conditions, the suggestions of the Port Storekeeper are reasonable, and may be granted, as a special case, on the same terms as in the precedents quoted by him, allowed by the Marine Department when in charge of harbour dues.

Major Campbell supported this view.

Mr. Dawson seconded Mr. Orr's resolution, which was carried by a majority.

3. Read G.O., No. 401, Marine, dated 26th July, G.O., No. 414, Marine, of same date, and memorandum from the Accountant-General showing approximate balance of harbour dues on 30th June 1886.

Ordered to be recorded.

4. Read letter from Port Officer, Madras, dated 9th August, No. 7562, regarding security of Messrs. P. Ramanjaloo Naidu and Sons, pier cooly contractors.

Read letter No. 233, dated 11th August from the Chairman, Harbour Trust Board, in reply to the above.

Read letter, dated 12th August, from Messrs. P. Ramanjaloo Naidu and Sons consenting to the transfer of the security from the Port Officer to the Chairman of the Harbour Trust Board.

Resolved that the Port Officer be requested to hand over the security referred to to the Chairman of the Harbour Trust Board.

5. Read G.O., Marine, No. 403, dated 26th July 1886.

Resolved that, pending the permanent organization of the Harbour Trust establishments, Mr. Corfield's engagement, as Assistant Harbour Master, be continued as a temporary arrangement.

6. Read progress report from the Superintendent, Madras Harbour Works, No. 27 W., dated 5th August 1886, and examined plan accompanying it.

Resolved that the report and plan be submitted to Government for information with a request that the latter may be returned for record in the office.

2048 W 16.8.86.
2884 W 3.12.85
3059 W 20.11.82

P.W.D. No. 7203 W

From,

The Supg. Engineer
6th Circle.

To,

The Chief Engr.
P.W.D.

No. 809 T.J

Dated 13th September/86

Recd: 16.9.86

16/9/86

B. No. 2433 W d/22nd Septr./86
B/

B. No. 2433 W d/22-9-86.

Recorded with reference to G.O. No. 2048 W d/16th August 1886.

States that it is not possible to surrender any portion of the existing grant for the District Jail Tanjore, at present.

20/9/86

22/9

M/7 6/10

W

With Order

3rd September 1886, No. 489, Marine.

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

Read—the following paper :—

From the Hon. R. W. BARLOW, C.S., Chairman, Harbour Trust Board, Madras, to the Chief Secretary to Government, dated Madras, 20th August 1886, No. 311.

I have the honor to forward herewith copy of the Proceedings of the Harbour Trust Board at a meeting held at the Sea Custom House on Thursday, 12th August, and confirmed at a meeting of the board held on the 19th instant.

2. Copies of the above proceedings and of the proceedings of the meeting of the board held on the 5th instant have been forwarded to the Superintendent of the Government Press for publication in the *Fort St. George Gazette*, in compliance with G.O., dated 28th July 1886, No. 412, Marine.

Enclosure.

Proceedings of the Harbour Trust Board appointed under the provisions of section 7 of the Madras Harbour Trust Act (II of 1886), at a meeting held at the Sea Custom House, on Thursday the 12th August 1886, at 5-30 P.M.

* * * *

1. Read the minutes and confirmed the proceedings of last meeting.

2. Read letter from Port Storekeeper of State Railway Stores, dated 30th July 1886, No. 219 S.R., and correspondence connected therewith.

Proposed by Mr. R. G. Orr that the board desire to point out to the Port Storekeeper of State Railway Stores that, had he adopted the suggestion to rent a piece of ground as approved by the Director-General of Railways, the difficulties of which he complains would have been minimised. The blocking of the shore end of the pier causes great obstruction to the general traffic, and therefore no extension of time can be granted for removal of stores landed at that portion of the harbour precincts.

The chairman expressed his opinion that, having regard to the difficulty attending the removal of heavy boilers and machinery under existing conditions, the suggestions of the Port Storekeeper are reasonable, and may be granted, as a special case, on the same terms as in the precedents quoted by him, allowed by the Marine Department when in charge of harbour dues.

Major Campbell supported this view.

Mr. Dawson seconded Mr. Orr's resolution, which was carried by a majority.

3. Read G.O., No. 401, Marine, dated 26th July, G.O., No. 414, Marine, of same date, and memorandum from the Accountant-General showing approximate balance of harbour dues on 30th June 1886.

Ordered to be recorded.

4. Read letter from Port Officer, Madras, dated 9th August, No. 7562, regarding security of Messrs. P. Ramanjaloo Naidu and Sons, pier cooly contractors.

Read letter No. 233, dated 11th August from the Chairman, Harbour Trust Board, in reply to the above.

Read letter, dated 12th August, from Messrs. P. Ramanjaloo Naidu and Sons consenting to the transfer of the security from the Port Officer to the Chairman of the Harbour Trust Board.

Resolved that the Port Officer be requested to hand over the security referred to to the Chairman of the Harbour Trust Board.

5. Read G.O., Marine, No. 403, dated 26th July 1886.

Resolved that, pending the permanent organization of the Harbour Trust establishments, Mr. Corfield's engagement, as Assistant Harbour Master, be continued as a temporary arrangement.

6. Read progress report from the Superintendent, Madras Harbour Works, No. 27 W., dated 5th August 1886, and examined plan accompanying it.

Resolved that the report and plan be submitted to Government for information with a request that the latter may be returned for record in the office.

6652 in Pres

7. Read letter from Messrs. Merryweather and Sons, dated London, 2nd July 1886, forwarding photograph of steam launch fire-engine, with advertisement sheets referring to it and similar vessels.

Ordered to be recorded.

8. Read again letter from Secretary to Government, No. 480-D, dated Ootacamund, 4th August 1886, respecting the harbour intercepting sewer, and correspondence in connection therewith.

Resolved that the Superintendent, Madras Harbour Works, be consulted on the subject.

9. Read letter from the Secretary, Harbour Trust Board, regarding a system of additional check over collections of harbour dues.

Resolved that the Secretary's suggestions be approved, and that the question of establishment shall stand over till next meeting, at which the Secretary should submit a memorandum of his requirements.

10. Read letter from Superintendent of Harbour Works, No. 177 M., dated 7th August, giving cover to a list of establishments of Madras Harbour Works.

Resolved that the Superintendent be requested to furnish a complete list of all employés, no matter how their salaries are debitable.

11. Read statement of payment made in England to Mr. Parkes, on account of Madras Harbour Works general charges, during the month of June, for the quarter ending 24th June 1886.

Ordered to be recorded.

12. Read G.O., No. 402, Marine, dated 26th July 1886, sanctioning the appointment of Mr. C. Pinsent as Secretary to the Harbour Trust Board.

Ordered to be recorded.

13. Read letter from Messrs. P. Orr and Sons, dated 11th August, enclosing design for the Seal of the Trustees of the Harbour of Madras as a corporation.

Resolved that the design be approved for an embossing stamp to be made on a rather reduced scale.

14. Read letter from Superintendent, Madras Harbour Works, No. 178 M., dated 9th August, requesting sanction for the purchase of stores required from England.

Sanctioned.

15. Read memorandum from Deputy Chief Engineer, Public Works Department, No. 2694-C, dated 6th August 1886, together with copy of letter from Messrs. Arbuthnot and Co., dated 14th July 1886, regarding Portland cement.

Resolved that the Superintendent, Madras Harbour Works, be invited to express his opinion.

16. Read letter from the Chairman, Chamber of Commerce, approving of the suggested alteration in the method of collecting export harbour dues.

Resolved that further papers and fuller information be circulated, and that consideration of the subject be postponed till next meeting.

At 5 P.M. all the trustees present at the meeting adjourned to the shore end of the pier accompanied by—

Colonel W. H. Burton, R.E., Superintending Engineer, V Circle,
Lieut.-Colonel F. Smalley, Officiating Deputy Assistant Quarter Master General,
Lieut.-Colonel C. W. Brereton, R.A., Officiating Inspector-General of Ordnance,
Colonel J. C. Gunning, Deputy Commissary-General,

with a view to selecting a site, for the erection of Military store godowns, in conformity with G.O., No. 4490, Military Department, dated Ootacamund, 26th July, when it was decided to await receipt of a more definite statement from the departments concerned as to the accommodation required.

(Signed) R. W. BARLOW,
Chairman, Harbour Trust Board.

Order—dated 3rd September 1886, No. 489, Marine.

Recorded.

(True Extract.)

Chief Secretary.

To the Chairman, Harbour Trust Board.
„ Port Officer, Madras.
„ Public Works Department.
„ Military Department.

Exd. T. O'Connor.

13-S-C.

B. Rc. 2432 W d/22d Septr/86

Miller 7177

Govt. of 1886 Madras.

MARINE.

Recorded

B.C

Delivd
16/9/86

4

Issd
20/9/86.

Issued

Recd. 15/9/86 Encl.

G.O., 3rd September 1886, No. 489.

B. Rc. 2432 W d/22-9-86

SEPTEMBER.

Harbour Trust Board.

Recording letter from the chairman forwarding copy of the proceedings of the — at a meeting held on the 12th August 1886.

2 Copies to O O Ly

3rd September 1886, No. 489, Marine.

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

Read—the following paper:—

From the Hon. R. W. BARLOW, C.S., Chairman, Harbour Trust Board, Madras, to the Chief Secretary to Government, dated Madras, 20th August 1886, No. 311.

I have the honor to forward herewith copy of the Proceedings of the Harbour Trust Board at a meeting held at the Sea Custom House on Thursday, 12th August, and confirmed at a meeting of the board held on the 19th instant.

2. Copies of the above proceedings and of the proceedings of the meeting of the board held on the 5th instant have been forwarded to the Superintendent of the Government Press for publication in the *Fort St. George Gazette*, in compliance with G.O., dated 28th July 1886, No. 412, Marine.

Enclosure.

Proceedings of the Harbour Trust Board appointed under the provisions of section 7 of the Madras Harbour Trust Act (II of 1886), at a meeting held at the Sea Custom House, on Thursday the 12th August 1886, at 5-30 p.m.

* * *

1. Read the minutes and confirmed the proceedings of last meeting.

2. Read letter from Port Storekeeper of State Railway Stores, dated 30th July 1886, No. 219 S.R., and correspondence connected therewith.

Proposed by Mr. R. G. Orr that the board desire to point out to the Port Storekeeper of State Railway Stores that, had he adopted the suggestion to rent a piece of ground as approved by the Director-General of Railways, the difficulties of which he complains would have been minimised. The blocking of the shore end of the pier causes great obstruction to the general traffic, and therefore no extension of time can be granted for removal of stores landed at that portion of the harbour precincts.

The chairman expressed his opinion that, having regard to the difficulty attending the removal of heavy boilers and machinery under existing conditions, the suggestions of the Port Storekeeper are reasonable, and may be granted, as a special case, on the same terms as in the precedents quoted by him, allowed by the Marine Department when in charge of harbour dues.

Major Campbell supported this view.

Mr. Dawson seconded Mr. Orr's resolution, which was carried by a majority.

3. Read G.O., No. 401, Marine, dated 26th July, G.O., No. 414, Marine, of same date, and memorandum from the Accountant-General showing approximate balance of harbour dues on 30th June 1886.

Ordered to be recorded.

4. Read letter from Port Officer, Madras, dated 9th August, No. 7562, regarding security of Messrs. P. Ramanjaloo Naidu and Sons, pier cooly contractors.

Read letter No. 233, dated 11th August from the Chairman, Harbour Trust Board, in reply to the above.

Read letter, dated 12th August, from Messrs. P. Ramanjaloo Naidu and Sons consenting to the transfer of the security from the Port Officer to the Chairman of the Harbour Trust Board.

Resolved that the Port Officer be requested to hand over the security referred to to the Chairman of the Harbour Trust Board.

5. Read G.O., Marine, No. 403, dated 26th July 1886.

Resolved that, pending the permanent organization of the Harbour Trust establishments, Mr. Corfield's engagement, as Assistant Harbour Master, be continued as a temporary arrangement.

6. Read progress report from the Superintendent, Madras Harbour Works, No. 27 W., dated 5th August 1886, and examined plan accompanying it.

Resolved that the report and plan be submitted to Government for information with a request that the latter may be returned for record in the office.

7. Read letter from Messrs. Merryweather and Sons, dated London, 2nd July 1886, forwarding photograph of steam launch fire-engine, with advertisement sheets referring to it and similar vessels.

Ordered to be recorded.

8. Read again letter from Secretary to Government, No. 480-D, dated Ootacamund, 4th August 1886, respecting the harbour intercepting sewer, and correspondence in connection therewith.

Resolved that the Superintendent, Madras Harbour Works, be consulted on the subject.

9. Read letter from the Secretary, Harbour Trust Board, regarding a system of additional check over collections of harbour dues.

Resolved that the Secretary's suggestions be approved, and that the question of establishment shall stand over till next meeting, at which the Secretary should submit a memorandum of his requirements.

10. Read letter from Superintendent of Harbour Works, No. 177 M., dated 7th August, giving cover to a list of establishments of Madras Harbour Works.

Resolved that the Superintendent be requested to furnish a complete list of all employés, no matter how their salaries are debitable.

11. Read statement of payment made in England to Mr. Parkes, on account of Madras Harbour Works general charges, during the month of June, for the quarter ending 24th June 1886.

Ordered to be recorded.

12. Read G.O., No. 402, Marine, dated 26th July 1886, sanctioning the appointment of Mr. C. Pinsent as Secretary to the Harbour Trust Board.

Ordered to be recorded.

13. Read letter from Messrs. P. Orr and Sons, dated 11th August, enclosing design for the Seal of the Trustees of the Harbour of Madras as a corporation.

Resolved that the design be approved for an embossing stamp to be made on a rather reduced scale.

14. Read letter from Superintendent, Madras Harbour Works, No. 178 M., dated 9th August, requesting sanction for the purchase of stores required from England.

Sanctioned.

15. Read memorandum from Deputy Chief Engineer, Public Works Department, No. 2694-C, dated 6th August 1886, together with copy of letter from Messrs. Arbuthnot and Co., dated 14th July 1886, regarding Portland cement.

Resolved that the Superintendent, Madras Harbour Works, be invited to express his opinion.

16. Read letter from the Chairman, Chamber of Commerce, approving of the suggested alteration in the method of collecting export harbour dues.

Resolved that further papers and fuller information be circulated, and that consideration of the subject be postponed till next meeting.

At 5 P.M. all the trustees present at the meeting adjourned to the shore end of the pier accompanied by—

Colonel W. H. Burton, R.E., Superintending Engineer, V Circle,
Lieut.-Colonel F. Smalley, Officiating Deputy Assistant Quarter Master General,
Lieut.-Colonel C. W. Brereton, R.A., Officiating Inspector-General of Ordnance,
Colonel J. C. Gunning, Deputy Commissary-General,

with a view to selecting a site, for the erection of Military store godowns, in conformity with G.O., No. 4490, Military Department, dated Ootacamund, 26th July, when it was decided to await receipt of a more definite statement from the departments concerned as to the accommodation required.

(Signed) R. W. BARLOW,
Chairman, Harbour Trust Board.

ORDER—dated 3rd September 1886, No. 489, Marine.

Recorded.

(True Extract.)

E. F. WEBSTER,
Chief Secretary.

To the Chairman, Harbour Trust Board.
,, Port Officer, Madras.
,, Public Works Department.
,, Military Department.

Exd. T. O'Connor.

B. Lr. 2432 W d/ 22-9-86.

Recorded

1Sd/ J. O.H.

W

Govt. of {1886} Madras

MARINE.

Issued

Recd. Encl.

G.O., 3rd September 1886, No. 489.

SEPTEMBER.

Harbour Trust Board.

Recording letter from the chairman forwarding copy of the proceedings of the — at a meeting held on the 12th August 1886.

With order

8th September 1886, No. 496, Marine.

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

Read—the following paper :—

From the Hon. R. W. BARLOW, C. S., Chairman, Harbour Trust Board, Madras, to the Chief Secretary to Government, dated Madras, 27th August 1886, No. 336.

I have the honor to forward herewith, for the information of Government, copy of proceedings of the Harbour Trust Board at a meeting held at the Sea Custom House on the 19th August, the same having been confirmed at the meeting of the trustees held last evening.

2. In accordance with G.O., No. 412, Marine, dated 28th July 1886, a copy of these proceedings has been forwarded to the *Fort St. George Gazette* for publication.

Enclosure.

Proceedings of the Harbour Trust Board, appointed under the provisions of section 7 of the Madras Harbour Trust Act (II of 1886), at a meeting held at the Sea Custom House on Thursday, 19th August 1886.

• • •

1. Read the minutes and confirmed proceedings of the last meeting held on the 12th instant.

2. Read letter from Messrs. Branson and Branson regarding cooly contractor's agreement. Resolved the Secretary communicate with the contractor.

3. Read memorandum, No. 275, from the Secretary, regarding the proposed alteration in the method of collecting export harbour dues from firms having fixed deposits in the Chairman's hands.

Resolved that the change of procedure with regard to payment of export harbour dues, suggested by Messrs. Binny and Company and Messrs. Wilson and Company and approved by the members of the Chamber of Commerce, be conceded on the understanding that it shall only apply to those firms who have a standing deposit with the Chairman, and that any goods "shut out" are liable to charges for pier contractor's expenses incurred in re-hoisting.

4. Read letter from the Superintendent, Madras Harbour Works, No. 194-M, dated 17th August, regarding Portland cement.

Ordered to be recorded.

5. Read G.O., dated 12th August, No. 2012-N, Public Works, sanctioning the increase of salary to the Superintendent, Madras Harbour Works.

Read also letter No. 247-X, dated 13th August 1886, from Examiner, Public Works Accounts, relating to same subject.

Ordered to be recorded.

6. Read letter, No. 2267, dated Chepâk, 16th August, from the—

Inspector-General of Ordnance,
Commissary-General,
Deputy Assistant Quartermaster-General,
Superintending Engineer, V Circle,

regarding proposed site for military store godowns.

Ordered to be recorded.

7. Read statement of payments made in England during the month of July on account of Madras Harbour Works.

Ordered to be recorded.

8. Read endorsement order, No. 2015, dated 12th August, Public Works Department, communicating statement of estimated outlay in England against indents not yet executed.

Ordered to be recorded.

9. Read letter, No. 185 M, dated 12th August, from Superintendent, Madras Harbour Works, forwarding travelling bills of the staff of his office for the month of July last.

Resolved that, before submitting the bills to Government, the Superintendent of the Madras Harbour Works be requested to state under what circumstances carriage allowances have been sanctioned.

10. Read letter from Port Storekeeper of State Railway Stores, No. 266 S.R., dated 16th August, requesting that one ground be assigned for his use alongside the pier on the hard for stacking railway materials previous to removal.

Read also memorandum from the Secretary, No. 305, dated 19th August, in reference thereto.

Resolved that the Port Storekeeper of State Railway Stores be informed that it is impossible to comply with his request to grant him a piece of ground alongside the pier on the hard, but the low-lying sand on the north of the pier can be allotted to him, or a plot to the south of the enclosure opposite to Messrs. Arbuthnot and Company's offices on the hard, upon the usual rental terms and conditions, subject to the understanding that the space may be resumed by the trustees, after due notice, if at any time required for other purposes.

11. Read letter, No. 2348, dated 19th August 1886, from the Accountant-General, intimating that the balance of harbour dues in his hands can be transferred to the credit of the Chairman, Harbour Trust Board, provided that any re-adjustments of the amount which might be found necessary hereafter be agreed to.

Resolved that the Chairman be invited to request the Accountant-General to hand over the balance to him at as early a date as possible, and that the Board have no objection to re-adjustment hereafter should such be found necessary.

12. Read memorandum from Secretary, No. 303, dated 18th August, regarding office establishment and accommodation, &c.

Resolved that the Secretary's proposals be adopted and sanctioned as a tentative measure for a period of three months.

ORDER—dated 8th September 1886, No. 496, Marine.

Recorded.

(True Extract.)

E. F. WEBSTER,
Chief Secretary.

To the Chairman, Harbour Trust Board.
„ Public Works Department.
„ Port Officer, Madras.
„ Military Department.

Exd. A. Raitt.

Order thereon No: 2431 Wa/22·9·86.

Recorded.

(Sig) D. M. C.
20·9·86

Govt. of (1886) Madras.

MARINE.

Issued

Recd. Encl.

G.O., 8th September 1886, No. 496.

B No. 2431 W.A./22nd Sept/86

SEPTEMBER.

Harbour Trust Board.

Recording letter from the Chairman, forwarding copy of proceedings of the — at a meeting held on the 19th August 1886.

With order

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

Read—the following paper :—

From the Hon. R. W. BARLOW, C. S., Chairman, Harbour Trust Board, Madras, to the Chief Secretary to Government, dated Madras, 27th August 1886, No. 336.

I have the honor to forward herewith, for the information of Government, copy of proceedings of the Harbour Trust Board at a meeting held at the Sea Custom House on the 19th August, the same having been confirmed at the meeting of the trustees held last evening.

2. In accordance with G.O., No. 412, Marine, dated 28th July 1886, a copy of these proceedings has been forwarded to the *Fort St. George Gazette* for publication.

Enclosure.

Proceedings of the Harbour Trust Board, appointed under the provisions of section 7 of the Madras Harbour Trust Act (II of 1886), at a meeting held at the Sea Custom House on Thursday, 19th August 1886.

* * * *

1. Read the minutes and confirmed proceedings of the last meeting held on the 12th instant.

2. Read letter from Messrs. Branson and Branson regarding cooly contractor's agreement.
Resolved the Secretary communicate with the contractor.

3. Read memorandum, No. 275, from the Secretary, regarding the proposed alteration in the method of collecting export harbour dues from firms having fixed deposits in the Chairman's hands.

Resolved that the change of procedure with regard to payment of export harbour dues, suggested by Messrs. Binny and Company and Messrs. Wilson and Company and approved by the members of the Chamber of Commerce, be conceded on the understanding that it shall only apply to those firms who have a standing deposit with the Chairman, and that any goods "shut out" are liable to charges for pier contractor's expenses incurred in re-hoisting.

4. Read letter from the Superintendent, Madras Harbour Works, No. 194-M, dated 17th August, regarding Portland cement.
Ordered to be recorded.

5. Read G.O., dated 12th August, No. 2012-N, Public Works, sanctioning the increase of salary to the Superintendent, Madras Harbour Works.

Read also letter No. 247-X, dated 13th August 1886, from Examiner, Public Works Accounts, relating to same subject.
Ordered to be recorded.

6. Read letter, No. 2267, dated Chepâk, 16th August, from the—

Inspector-General of Ordnance,
Commissary-General,
Deputy Assistant Quartermaster-General,
Superintending Engineer, V Circle,

regarding proposed site for military store godowns.
Ordered to be recorded.

7. Read statement of payments made in England during the month of July on account of Madras Harbour Works.
Ordered to be recorded.

8. Read endorsement order, No. 2015, dated 12th August, Public Works Department, communicating statement of estimated outlay in England against indents not yet executed.
Ordered to be recorded.

9. Read letter, No. 185 M, dated 12th August, from Superintendent, Madras Harbour Works, forwarding travelling bills of the staff of his office for the month of July last.

Resolved that, before submitting the bills to Government, the Superintendent of the Madras Harbour Works be requested to state under what circumstances carriage allowances have been sanctioned.

10. Read letter from Port Storekeeper of State Railway Stores, No. 266 S.R., dated 16th August, requesting that one ground be assigned for his use alongside the pier on the hard for stacking railway materials previous to removal.

Read also memorandum from the Secretary, No. 305, dated 19th August, in reference thereto.

Resolved that the Port Storekeeper of State Railway Stores be informed that it is impossible to comply with his request to grant him a piece of ground alongside the pier on the hard, but the low-lying sand on the north of the pier can be allotted to him, or a plot to the south of the enclosure opposite to Messrs. Arbuthnot and Company's offices on the hard, upon the usual rental terms and conditions, subject to the understanding that the space may be resumed by the trustees, after due notice, if at any time required for other purposes.

11. Read letter, No. 2348, dated 19th August 1886, from the Accountant-General, intimating that the balance of harbour dues in his hands can be transferred to the credit of the Chairman, Harbour Trust Board, provided that any re-adjustments of the amount which might be found necessary hereafter be agreed to.

Resolved that the Chairman be invited to request the Accountant-General to hand over the balance to him at as early a date as possible, and that the Board have no objection to re-adjustment hereafter should such be found necessary.

12. Read memorandum from Secretary, No. 303, dated 18th August, regarding office establishment and accommodation, &c.

Resolved that the Secretary's proposals be adopted and sanctioned as a tentative measure for a period of three months.

Order—dated 8th September 1886, No. 496, Marine.

Recorded.

(True Extract.)

Chief Secretary.

To the Chairman, Harbour Trust Board.
" Public Works Department.
" Port Officer, Madras.
" Military Department.

Exd. A. Raitt.

P.W.C. No. 7340

Govt. of {1886} Madras.

MARINE.

B. No. 2431 W d/ 22d Septr/86

~~Recorded~~ Recorded

B.S.C.

20/9/86

Issued

Recd. 20-9-86 4 Encl.

2/9/86

G.O., 8th September 1886, No. 496.

B. No. 2431 W d/ 22-9-86

SEPTEMBER.

Harbour Trust Board.

Recording letter from the Chairman, forwarding copy of proceedings of the — at a meeting held on the 19th August 1886.

2 Copies to Ooty

Part 24/9 3/9

8th September 1886, No. 496, Marine.

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

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2. In accordance with G.O., No. 412, Marine, dated 28th July 1886, a copy of these proceedings has been forwarded to the *Fort St. George Gazette* for publication.

Enclosure.

Proceedings of the Harbour Trust Board, appointed under the provisions of section 7 of the Madras Harbour Trust Act (II of 1886), at a meeting held at the Sea Custom House on Thursday, 19th August 1886.

* * * *

1. Read the minutes and confirmed proceedings of the last meeting held on the 12th instant.

2. Read letter from Messrs. Branson and Branson regarding cooly contractor's agreement.
Resolved the Secretary communicate with the contractor.

3. Read memorandum, No. 275, from the Secretary, regarding the proposed alteration in the method of collecting export harbour dues from firms having fixed deposits in the Chairman's hands.

Resolved that the change of procedure with regard to payment of export harbour dues, suggested by Messrs. Binny and Company and Messrs. Wilson and Company and approved by the members of the Chamber of Commerce, be conceded on the understanding that it shall only apply to those firms who have a standing deposit with the Chairman, and that any goods "shut out" are liable to charges for pier contractor's expenses incurred in re-hoisting.

4. Read letter from the Superintendent, Madras Harbour Works, No. 194-M, dated 17th August, regarding Portland cement.
Ordered to be recorded.

5. Read G.O., dated 12th August, No. 2012-N, Public Works, sanctioning the increase of salary to the Superintendent, Madras Harbour Works.

Read also letter No. 247-X, dated 13th August 1886, from Examiner, Public Works Accounts, relating to same subject.
Ordered to be recorded.

6. Read letter, No. 2267, dated Chepâk, 16th August, from the—

Inspector-General of Ordnance, Commissary-General,	Deputy Assistant Quartermaster-General, Superintending Engineer, V Circle,

regarding proposed site for military store godowns.
Ordered to be recorded.

7. Read statement of payments made in England during the month of July on account of Madras Harbour Works.
Ordered to be recorded.

8. Read endorsement order, No. 2015, dated 12th August, Public Works Department, communicating statement of estimated outlay in England against indents not yet executed.
Ordered to be recorded.

9. Read letter, No. 185 M, dated 12th August, from Superintendent, Madras Harbour Works, forwarding travelling bills of the staff of his office for the month of July last.

Resolved that, before submitting the bills to Government, the Superintendent of the Madras Harbour Works be requested to state under what circumstances carriage allowances have been sanctioned.

10. Read letter from Port Storekeeper of State Railway Stores, No. 266 S.R., dated 16th August, requesting that one ground be assigned for his use alongside the pier on the hard for stacking railway materials previous to removal.

Read also memorandum from the Secretary, No. 305, dated 19th August, in reference thereto.

Resolved that the Port Storekeeper of State Railway Stores be informed that it is impossible to comply with his request to grant him a piece of ground alongside the pier on the hard, but the low-lying sand on the north of the pier can be allotted to him, or a plot to the south of the enclosure opposite to Messrs. Arbuthnot and Company's offices on the hard, upon the usual rental terms and conditions, subject to the understanding that the space may be resumed by the trustees, after due notice, if at any time required for other purposes.

11. Read letter, No. 2348, dated 19th August 1886, from the Accountant-General, intimating that the balance of harbour dues in his hands can be transferred to the credit of the Chairman, Harbour Trust Board, provided that any re-adjustments of the amount which might be found necessary hereafter be agreed to.

Resolved that the Chairman be invited to request the Accountant-General to hand over the balance to him at as early a date as possible, and that the Board have no objection to re-adjustment hereafter should such be found necessary.

12. Read memorandum from Secretary, No. 303, dated 18th August, regarding office establishment and accommodation, &c.

Resolved that the Secretary's proposals be adopted and sanctioned as a tentative measure for a period of three months.

ORDER—dated 8th September 1886, No. 496, Marine.

Recorded.

(True Extract.)

E. F. WEBSTER,
Chief Secretary.

To the Chairman, Harbour Trust Board.
,, Public Works Department.
,, Port Officer, Madras.
,, Military Department.

Exd. A. Raitt.

13-5-09

Govt. of (1886) Madras.

MARINE.

Order then No: 2431 W a/22/9/86

Recorded.

(Sd) M. C.

D.N.

Issued

Recd.

Encl.

G.O., 8th September 1886, No. 496.

SEPTEMBER.

Harbour Trust Board.

Recording letter from the Chairman, forwarding copy of proceedings of the — at a meeting held on the 19th August 1886.

With order

No. 8815
A 3/79

POSTMASTER GENERAL'S OFFICE,
MADRAS, 11th Sept 1886.

FROM
H. Farrer Esquire B.C.S
POSTMASTER GENERAL,
MADRAS,

To

THE SECRETARY TO GOVERNMENT,
Public Works DEPARTMENT,
FORT ST. GEORGE.

SIR,

I have the honor to forward herewith copy of a letter from the Superintending Engineer 1st Circle to the Director General of the Post Office No. GD/1092 dated 3rd August 1886, and to request that you will be so good as to inform me whether the sum of Rs 524 asked for therein, should be allotted by the Director General of Post Office. Bhadrachallam is not shewn as an incomplete work of 1885/86 in Appendix B to Government of Madras Public Works Department No. 1595 dated 23rd June 1886.

I have the honor &c.,
Sir,
Your most obedient Servant,
H Farrer
Postmaster General.

copy

Copy of a communication No $\frac{GD}{1892}$ dated 3d August 1886 from the Superintending Engineer 1st Circle Dowleishwaram to the Director General.

I have the honor to request that you will be so good as to allot Rs 524 for the undermentioned incomplete work of the last Official year.

Work	Amount of Estimate Rs	Outlay to end of 1885-86 Rs	Balance now required
Repairing and Improving the Post Office building at Bhadrachallam sanctioned in your letter No 8394 of the 13 October/84 printed in G.O/No 2623W of 27 October 1884 —	830	306	524

The work is reported to have been completed

True copy

G. Ramasawm[illegible]
Manager
Postmaster General's Office

1596 ~~ 23. 6. 86.
2623 ~~ 27. 10. 84 29. 5. 06

P. W. C. No. 7096

(188) DEPARTMENT

B. No. 2430 W d/ 22d Sept/86

The sum of Rs 524 applied for by the S. E. I Circle for completing the post office at Bhadrachallam should be allotted by the Director General of Post office.

The S. E. 1st Circle should explain the circumstances in which the above work was not included in his statement of demands for incomplete works submitted with his letter No. 490 G. D d/ 3rd June 1886.

13/9/86

From

The Postmaster General,

MADRAS.

No. ————

Dated ——— } ——————188 .
Received 13 } 9. 86

B. No. 2430 W d/ 22-9-86.

No. ————

SUBJECT.

Requests to be informed whether the sum of Rs 524 asked for by the Supdg Engineer for additions to the Bhadrachalam P. O. should be allotted by the Director General of the Post Office —

20/9/86

13/9

22/9

23/9

To

The S. E. I Circle

Post Master General
Madras

2ND JULY 1883, No. 1836 W., PUBLIC WORKS.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Military Works.

READ—the following papers :—

From Lieutenant-Colonel R. C. STEWART, Officiating Quartermaster-General, to the Secretary to Government, Public Works Department, dated Ootacamund, 10th May 1883, No. 232.

I have the honor, by order, to inform you that a plan and estimate, amounting to Rs. 26,230, for constructing quarters for three warrant and five non-commissioned officers of the Commissariat Department on the Esplanade, Madras, have been approved by His Excellency the Commander-in-Chief and forwarded this day to the Superintending Engineer, Fifth Circle, for submission to Government in the usual way.

2. His Excellency the Commander-in-Chief is of opinion that this work is very urgently required, and hopes that it may be possible to commence it at once, funds being made available from the amount allotted in the budget to barracks at Poonamallee, on which it seems desirable that no further expenditure should be incurred.

3. I am directed to request you will be so good as to move Government to accord sanction accordingly.

No. 2702, Military.

Forwarded.

OOTACAMUND,
12th May 1883.

(Signed) E. L. HANKIN, Colonel,
Secretary to Government.

From Colonel H. L. PRENDERGAST, R.E., Superintending Engineer, Fifth Circle, to the Chief Engineer, Public Works Department, dated Chepauk, 31st May 1883, No. 838.

I have the honor to submit, for sanction, a plan and estimate of Rs. 26,740 for constructing quarters for three warrant and five non-commissioned officers of the Commissariat Department on the Esplanade at Madras.

- 1 Detailed Estimate.
- 2 Abstract Estimates.
- 1 Plan.
- 1 Report and Specification.

2. The work is entered as Item 36, Class B, Appendix B, of the current year's budget, and the Quartermaster-General, in sending me the estimate, writes: "His Excellency the Commander-in-Chief is of opinion that this work is very urgently required, and hopes that it may be possible to commence it at once, funds being made available from the amount allotted to barracks at Poonamallee, on which work no further expenditure should be incurred, Government having been addressed accordingly."

1596 w 23. 6. 86.

No. 1085 C., Public Works.

Submitted for the approval of Government in the Military Department.

(By Order.)

MADRAS,
6th June 1883.

(Signed) C. BOWEN, Major, R.E.,
Deputy Chief Engineer, P.W.D.

No. 3272, Military.

Approved.

OOTACAMUND,
9th June 1883.

(Signed) E. L. HANKIN, Colonel,
Secretary to Government.

ORDER—dated 2nd July 1883, No. 1836 W., Public Works.

The plan and estimate, amounting to Rs. 26,740, for constructing quarters for three warrant and five non-commissioned officers of the Commissariat Department on the Esplanade, Madras, are sanctioned.

2. With reference to the transfer of funds proposed by His Excellency the Commander-in-Chief, the Superintending Engineer, Fifth Circle, will report, as soon as possible, the amount that can be made available from the source indicated, and submit the usual re-appropriation statement for submission to the Government of India.

3. It is noticed that the detailed and abstract estimates have been carelessly prepared as to form, and that a "General Abstract" in proper form has not been submitted.

4. This sanction has been registered as Imperial Ordinary No. 14 W. of 1883-84 and classified as Military, Original Works.

(True Extract.)

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

To the Superintending Engineer, Fifth Circle, with five Enclosures.
,, Examiner, Public Works Accounts.
,, Military Department.

Exd. A. F. Goodall.
Spare Copies

BUILDINGS AND ROADS.
MILITARY WORKS.

Govt. of {1883} Madras.

PUBLIC WORKS.

Dated July, 2nd.

Recd. *Encl.*

G.O., 2nd July 1883, No. 1836 W.

JULY.

Quarters

Plan and estimate for constructing — for certain officers of the Commissariat Department at Madras, sanctioned with remarks.

20th January 1886, No. 164 W., Public Works.

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

Buildings and Roads.
Military Works.

Read—the following letter from Brigadier-General R. C. STEWART, Quartermaster-General, to the Secretary to Government, Military Department, dated Ootacamund, 7th January 1886, No. 50 A:—

I have the honor, by order, to forward, for sanction and transfer to the Public Works Department for disposal, the estimate, plan, &c., below mentioned, which have been approved by the Commander-in-Chief. The plan and estimate have been countersigned:—

> Detailed and abstract estimates, amounting to Rs 544, with report and plan, for putting up bamboo trellis-work and planting shrubs in rear of the warrant and non-commissioned officers' quarters, of the Commissariat Department, in the Ordnance lines at Madras, so as to screen the out-houses from the public roads.

2. This estimate has been prepared under authority of G.O., dated 27th August 1885, No. 528 E., Public Works.

No. 198, Military.

Approved, and transferred to the Public Works Department for disposal.

(By Order.)

Fort St. George, 9th January 1886. (Signed) A. R. KENNEY-HERBERT, Lieut.-Col., Secretary to Government.

Order—dated 20th January 1886, No. 164 W., Public Works.

The estimate, amounting to Rs. 544, for erecting trellis-work and planting shrubs between the public road and the Commissariat warrant officers' quarters at Madras, is sanctioned as supplemental to the estimate of Rs. 26,740 sanctioned in G.O., No. 1836 W., dated 2nd July 1883.

2. This sanction has been registered as Imperial, Ordinary, No. 58 W. of 1885-86, and classified as Military, Original Works.

(True Extract.)

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

To the Superintending Engineer, V Circle, with two enclosures.
„ Examiner, Public Works Accounts, with the estimate for note and return to Superintending Engineer, V Circle.
„ Military Department.

Exd. E. Fernandez.
Spare Copies

BUILDINGS AND ROADS.
MILITARY WORKS.

Govt. of {1886} Madras.

PUBLIC WORKS.

Dated January, 20th.

Recd. *Encl.*

G.O., 20th Jan. 1886, No. 164 W.

JANUARY.

Trellis-work and Shrubs between the Road and Commissariat Warrant Officers' Quarters, Madras

Estimate for —, sanctioned.

Appendix to G.O., No. 1595 W., dated 23rd June 1886.

A.—STATEMENT showing amounts applied for and those granted under Imperial—Military and Civil Works.

—	AMOUNTS APPLIED FOR.								AMOUNTS GRANTED.							
	Minor Works.				Repairs.				Minor Works.				Repairs.			
	Military.	Civil Works.			Military.	Civil Works.			Military.	Civil Works.			Military.	Civil Works.		
		Postal.	Telegraph.	Salt.		Postal.	Telegraph.	Salt.		Postal.	Telegraph.	Salt.		Postal.	Telegraph.	Salt.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Ganjam	..	..	..	..	..	150	..	..	..	..	..	..	..	150	..	..
Rushikulya ..	500	..	..	..	1,000	350	..	..	..	..	..	..	1,000	350	..	..
Vizagapatam ..	700	100	..	..	2,000	500	500	..	..	..	..	..	2,000	300	500	..
Eastern Godávari ..	..	..	..	..	400	300	300	..	..	..	..	..	400	200	300	..
Central do. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Western do. ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Eastern Kistna ..	..	..	..	..	..	150	250	..	..	..	..	..	..	150	250	..
Western do. ..	..	..	..	..	..	..	300	..	..	..	..	..	..	..	300	..
Gudiváda	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nellore	..	..	..	..	..	388	..	..	..	..	..	..	..	300	..	..
Sangam Project ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Buckingham Canal ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Bellary	1,000	..	100	..	25,000	200	200	..	..	..	..	..	25,000	200	200	..
Cuddapah	..	..	..	..	..	200	..	..	..	..	..	..	..	200	..	..
Kurnool	..	..	..	..	..	200	..	..	..	..	..	..	..	200	..	..
Nilgiri	..	..	..	..	25,000	1,000	..	..	..	..	..	..	25,000	800	..	..
Coimbatore ..	..	..	..	..	4,000	600	..	..	..	..	..	..	4,000	500	..	..
West Coast ..	1,000	200	..	..	37,000	500	..	..	..	..	..	..	37,000	500	..	..
North Arcot ..	3,500	500	..	..	3,000	500	42	..	..	..	..	..	3,000	350	42	..
South Arcot ..	..	..	..	..	200	200	..	..	..	..	..	..	200	200	..	..
Chingleput ..	5,000	..	..	..	30,000	..	..	..	..	..	..	..	30,000	..	..	..
Presidency ..	7,000	..	..	..	1,75,000	..	..	..	..	..	..	..	1,75,000	..	..	..
Tanjore	..	..	..	..	600	200	..	..	..	..	..	..	600	200	..	..
Trichinopoly ..	200	..	..	..	5,000	..	..	..	..	..	..	..	5,000	..	..	..
Negapatam ..	..	..	..	..	640	..	..	..	..	..	..	..	640	..	..	..
Madura	..	..	..	..	180	100	..	..	..	..	..	..	180	100	..	..
Ramnad	..	..	..	..	240	..	..	..	..	..	..	..	240	..	..	..
Tinnevelly	..	..	..	..	720	300	100	..	..	..	..	..	720	300	100	..
Consulting Architect.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Officers Commanding Divisions and Districts	..	..	..	..	..	..	..	..	7,937	..	..	..	..	..	..	..
Director-General of Post Office ..	..	..	..	..	..	..	..	..	..	7,065	..	..	..	..	..	..
Director-General of Telegraphs ..	..	..	..	..	..	..	..	..	..	..	698	..	..	..	..	..
Reserve with the Government	..	..	..	..	..	..	..	..	..	..	..	..	485	..	3,308	..
Total ..	18,900	800	100	..	3,09,980	5,838	1,692	..	7,937	7,065	698	..	3,10,465	5,060	5,000	..

B.—STATEMENT of requirements on account of Imperial Incomplete Works for 1885-86 and of New Works sanctioned but not yet commenced.

Division.	Item No.	Name of work.	Amount of estimate.	Number and date of sanction.	Past expenditure.	Balance of estimate.	AMOUNT APPLIED FOR 1886-87		AMOUNT ALLOTTED		Item No.	Remarks.
							For incomplete works.	For new works.	For incomplete works.	For new works.		
1	2	3	4	5	6	7	8	9	10	11	12	13
		IMPERIAL.	RS.		RS.	RS.	RS.	RS.	RS.	RS.		
		CIVIL WORKS.										
		Minor Works										
Kistna Western.	1	Post office at Duggirala ..	900	G.O., No. 1918 W. of 9th July 1883.	143	757	757	..	757	..	1	From minor works grant.
Nellore ..	2	Quarters for a postmaster at Gúdúr.	1,260	G.O., No. 665 W. of 12th March 1886.	28	1,232	1,232	..	1,232	..	2	Do. do.
Tanjore ..	3	Extending post office at Kumbakónam for the accommodation of telegraph office.	..	....	..	..	..	1,000	..	..	3	Estimate is awaited.
Madura ..	4	Constructing a sixth-class post office at Batlagundu.	1,340	G.O., No. 665 W. of 12th March 1886.	144	1,196	1,195	..	1,195	..	4	From minor works grant.
Ramnad ..	5	Additions to post office building, Ramnad.	780	Do. do. ..	..	780	..	780	..	..	5	Application for funds should be made to the Director-General.
		Total ..	..		..	..	3,184	1,780	3,184	..		
		Major Works.										
Godávari Eastern	1	Constructing quarters for telegraph signallers at Cocanada.	34,135	G.O., No. 2099 W. of 25th Aug. 1884.	32,311	1,824	1,824	..	1,824	..	1	From minor works grant.
Do. ..	2	Improvements to the telegraph office at Cocanada.	4,000	G.O., No. 1084 W., of 8th May 1885.	2,889	1,111	1,111	..	1,111	..	2	Do. do.
West Coast ..	3	Constructing a post office at Kalpathi.	2,910	G.O., No. 523 W. of 16th Feb. 1883.	..	2,910	..	2,910	..	..	3	No funds available.
Architect ..	4	Constructing a telegraph office at Madras.	3,19,969	G.O., No. 2789 W. of 21st Nov. 1885.	3,17,602	2,367	2,367	..	2,367	..	4	From minor works grant.
Do. ..	5	Constructing a post office at Madras.	3,72,125	Do. do. ..	3,63,248	8,877	8,877	..	..	..	5	Rs. 9,000 were provided in G.O., No. 931 W., dated 5th April 1886.
		Total ..	..		..	..	14,179	2,910	5,302	..		
		MILITARY.										
		Minor Works.										
Rushikulya ..	1	School-room for a regiment of Madras Infantry at Berhampore.	1,390	G.O., No. 3536 W. of 10th Dec. 1883.	..	1,390	..	1,390	..	1,390	1	From minor works grant.
Vizagapatam ..	2	Additions to regimental hospital of the 16th Madras Native Infantry at Vizianagrum.	515	G.O., No. 179 W. of 21st Jan. 1884.	..	515	..	515	..	..	2	No funds available.
Do. ..	3	Improvements to the regimental hospital of the 16th Madras Native Infantry at Vizianagrum.	545	G.O., No. 1746 W. of 16th July 1884.	..	545	..	545	..	..	3	Do. do.
Do. ..	4	Constructing a magazine for the 16th Madras Native Infantry at Vizianagrum.	1,530	G.O., No. 278 W. of 5th Feb. 1885.	..	1,530	..	1,530	..	..	4	Do. do.
Bellary ..	5	Compound wall for the quarters of the Army Hospital corps at Bellary.	1,346	G.O., No. 790 W. of 31st Mar. 1885.	..	1,346	..	1,346	..	..	5	Do. do.
Do. ..	6	Compound wall with 2 gates to enclose the female hospital attached to the station hospital at Bellary.	1,300	G.O., No. 3662 W. of 20th Dec. 1883.	..	1,300	..	1,300	..	..	6	Do. do.
Do. ..	7	Compound wall for the medical subordinates' quarters at the station hospital at Bellary.	535	G.O., No. 611 W. of 6th March 1884.	..	535	..	535	..	..	7	Do. do.
Do. ..	8	Enlarging a well in the cantonment at Bellary.	854	G.O., No. 2949 W. of 9th Dec. 1885.	..	854	..	854	..	..	8	Do. do.
Do. ..	9	Dismantling and re-roofing with Mangalore tiles the coffee shop of the Royal Artillery at Bellary.	1,063	G.O., No. 167 W. of 20th Jan. 1886.	..	1,063	..	1,063	..	1,063	9	From minor works grant.
Nílgiri ..	10	Laying a pipe from the drinking-water cistern to the station hospital at Wellington.	2,226	G.O., No. 893 W. of 2nd April 1886.	..	2,226	..	2,226	..	..	10	No funds available.
Do. ..	11	Improving and altering the hospital nursery dormitories of male and female branches, Lawrence Asylum, Ootacamund.	1,700	G.O., No. 2370 W. of 25th Sept. 1884.	134	1,566	1,566	..	1,566	..	11	From minor works grant.
Do. ..	12	Constructing five bath-rooms to Paymaster Serjeant's quarters at Wellington.	895	G.O., No. 2337 W. of 21st Aug. 1883.	330	565	565	..	565	..	12	Do. do. do.
West Coast ..	13	Fixing iron dampers to the ovens of the Government bakery at Cannanore.	..	....	92	658	658	..	658	..	13	Do. do. do.
Do. ..	14	Converting the beer godown at Malapuram into a gymnasium shed.	790	G.O., No. 348 W. of 13th Feb. 1885.	..	790	..	790	..	..	14	No funds available.
Do. ..	15	Constructing a platform and pump for a well at the Malapuram barracks.	1,110	G.O., No. 1034 W. of 2nd May 1885.	..	1,110	..	1,110	..	..	15	Do. do.
Do. ..	16	Forming a soldiers' garden at Malapuram.	220	Superintending Engineer's Register No. 9 of 1885-86	..	220	..	220	..	..	16	Do. do.
Do. ..	17	Converting into a cook-room the godowns attached to the married quarters at the West Hill barracks, Calicut.	40	Do. No. 29 of 1885-86.	..	40	..	40	..	..	17	Do. do.
Do. ..	18	Deepening a well in the cholera camping ground at Malapuram.	410	G.O., No. 1403 W. of 16th June 1885.	..	410	..	410	..	..	18	Do. do.
Do. ..	19	Constructing a slaughter-house and hanging shed at the West Hill barracks, Calicut.	1,954	G. O., No. 2548 W. of 2nd Nov. 1885.	..	1,954	..	1,954	..	..	19	Do. do.
Do. ..	20	Converting into a bakery the cook-room at the West Hill barracks, Calicut.	1,010	G.O., No. 2740 W. of 16th Nov. 1885.	..	1,010	..	1,010	..	..	20	Do. do.
Do. ..	21	Improving the well below the married quarters at the West Hill barracks, Calicut.	150	Superintending Engineer's Register No. 60 of 1885-86.	..	150	..	150	..	..	21	Do. do.

B.—Statement of requirements on account of Imperial Incomplete Works for 1885-86, &c.—*cont.*

Division.	Item No.	Name of work.	Amount of estimate.	Number and date of sanction.	Past expenditure.	Balance of estimate.	Amount applied for 1886-87: For incomplete works.	Amount applied for 1886-87: For new works.	Amount allotted: For incomplete works.	Amount allotted: For new works.	Item No.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12	13
		Minor Works—cont.	RS.		RS.	RS.	RS.	RS.	RS.	RS.		
West Coast ..	22	Building an urinary for the station hospital at Cannanore.	68	Superintending Engineer's Register No. 25 of 1883-84.	..	68	..	68	..	..	22	No funds available.
Do. ..	23	Sinking a well in the compound of the station hospital at Cannanore.	700	G.O., No. 1778 W. of 21st July 1884.	..	700	..	700	..	..	23	Do. do.
Do. ..	24	Building an urinary for the plunge bath of the Royal Artillery barracks at Cannanore.	30	Superintending Engineer's Register No. 24 of 1883-84.	..	30	..	30	..	..	24	Do. do.
Do. ..	25	Alterations to the floor of the ovens of the Government bakery at Cannanore.	440	Superintending Engineer's Register No. 22 of 1884-85.	..	440	..	440	..	..	25	Do. do.
Do. ..	26	Constructing laterite drains to the Government bakery at Cannanore.	200	Superintending Engineer's Register No. 33 of 1884-85.	..	200	..	200	..	..	26	Do. do.
Do. ..	27	Providing a compound wall and wooden ceiling for the European Infantry cells at Cannanore ..	756	G.O., No. 345 W. of 8th February 1886.	..	756	..	756	..	..	27	Do. do.
Do. ..	28	Constructing a permanent verandah for the Quartermaster stores Native Infantry Regiment at Mangalore.	630	G.O., No. 1648 W. of 1st July 1884.	..	630	..	630	..	..	28	Do. do.
Do. ..	29	Substituting asphalte for chunam in the flooring of the wards and surgery of the hospital attached to the Native Infantry Regiment at Mangalore.	695	G.O., No. 1647 W. of 1st July 1884.	..	695	..	695	..	..	29	Do. do.
Do. ..	30	Flooring with tar composite the Native Infantry place-of-arms at Mangalore.	653	G.O., No. 285 W. of 6th February 1885.	..	653	..	653	..	..	30	Do. do.
Do. ..	31	Deepening well on cholera hill at Malapuram.	..	....	..	..	..	605	..	..	31	Do. do. Estimate is awaited.
Do. ..	32	Do. do. ..	..	....	..	..	..	610	..	..	32	Do. do. do.
Do. ..	33	Constructing a compound wall and supplying furniture to the church at Malapuram.	..	....	..	..	..	1,370	..	..	33	Do. do. do.
Do. ..	34	Converting the five family quarters of No. 2 block at the West Hill barracks, Calicut, into a Commissariat Staff Serjeant's quarters and store rooms.	650	G.O., No. 841 W. of 6th April 1885.	..	650	..	650	..	..	34	No funds available.
Coimbatore ..	35	Improvements to the rest house at Pódanur.	1,190	G.O., No. 1457 W of 9th June 1886.	73	1,117	777	..	777	..	35	From minor works grant.
Do. ..	36	Constructing two cisterns to hold water for fire engines at the Remount Depôt, Matagiri.	1,330	G.O., No. 961 W. of 23rd April 1885.	200	1,130	1,130	..	1,130	..	36	Do. do.
North Arcot ..	37	Supplying materials for the sanitary improvements to the courtyards of sepoy lines at Vellore.	2,110	G.O., No. 146 W. of 18th January 1886.	503	1,607	1,607	..	1,607	..	37	Do. do.
		Total ..	..		..	..	6,303	24,395	6,303	2,453		
		Major Works.										
Vizagapatam ..	1	Constructing a store shed for the 16th Regiment, Madras Native Infantry, at Vizianagrum.	3,480	G.O., No. 2628 W. of 27th Oct. 1884.	..	3,480	..	3,480	..	..	1	No funds available.
Nilgiri ..	2	Bakery at Wellington	32,000	G.O., No. 1838 W. of 29th July 1884.	24,074	7,926	6,100	..	6,100	..	2	From minor works grant.
Do. ..	3	Alterations to the school hospital attached to the Lawrence Asylum, Ootacamund.	31,538	G.O., No. 3281 W. of 12th Dec. 1882.	..	31,538	..	31,538	..	..	3	No funds available.
Do. ..	4	Adding two lying-in wards to the station hospital at Wellington.	3,036	G.O., No. 1573 W. of 6th July 1885.	..	3,036	..	3,036	..	..	4	The amount applied for has been provided in the Military budget for 1886-87, item No. 2, class B works.
West Coast ..	5	Improving and fixing lightning conductors to the Madras Infantry magazine at Quilon.	3,880	G.O., No. 552 W. of 3rd March 1886.	..	3,880	..	3,880	..	3,880	5	From minor works grant.
Do. ..	6	Providing shelves and racks for the storage of ammunition in the double magazine and treasure room in the Cannanore Fort.	3,590	G.O., No. 2368 W. of 24th Sept. 1884, and No. 1263 W. of 19th May 1886.	2,419	1,171	1,170	..	1,170	..	6	Do. do.
Presidency ..	7	Alterations to the Coast batteries at Madras.	14,265	G.O., No. 2126 W. of 11th Sept. 1885.	6,219	8,046	2,021	..	2,021	..	7	From minor works grant, in addition to Rs. 6,025 provided in the budget.
		Total ..	..		..	..	9,291	41,934	9,291	3,880		

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

General.
Account.

Read—the following papers:—

From the Superintending Engineer,	I Circle, dated	3rd June 1886,	No. 490 G.D.	
,, ,, ,,	II ,, ,,	19th May ,,	(one statement)	
,, ,, ,,	III ,, ,,	8th ,, ,,	(three statements).	
,, ,, ,,	IV ,, ,,	11th ,, ,,	No. 142 E.W.	
,, ,, ,,	V ,, ,,	11th ,, ,,	,, 571.	
,, ,, ,,	V ,, ,,	11th ,, ,,	,, 572.	
,, ,, ,,	V ,, ,,	11th ,, ,,	,, 573.	
,, ,, ,,	V ,, ,,	11th ,, ,,	,, 574.	
,, ,, ,,	V ,, ,,	7th June ,,	,, 952.	
,, ,, ,,	V ,, ,,	7th ,, ,,	,, 964.	
,, ,, ,,	VI ,, ,,	12th May ,,	,, 227 M.D.	
,, Consulting Architect to Government	,,	12th ,, ,,	,, 196.	

Order—dated 23rd June 1886, No. 1595 W., Public Works.

With the papers read above, the Superintending Engineers and the Consulting Architect submit statements of the estimated requirements, under Imperial "Military" and "Civil" Works, in lump sums, against each division, for minor works, and repairs, and, in detail, for incomplete works of 1885-86, and for new works proposed to be undertaken in the current official year.

2. Under Imperial "Military," the demands against Original Works amount to—

	RS.
For minor works, lump sums	18,900
,, incomplete minor works	6,303
,, ,, major ,, ...	9,291
,, new minor works	24,395
,, ,, major ,, ...	41,934
	1,00,823

and the budget grant for minor works amounts to only Rs. 27,000. The Superintending Engineer, V Circle, having surrendered a sum of Rs. 2,864 from the current year's grant for armament in Fort St. George, it will be resumed, in anticipation of sanction by the Government of India, and added to the grant for minor works, which will then be Rs. 29,864. Of that amount, Rs. 15,594 for incomplete works, and Rs. 6,333 for three new works* considered emergent, have been allotted; and the balance, Rs. 7,937, has been placed, in lump sums, at the disposal of Officers Commanding Divisions and Districts, to whom Superintending Engineers will apply for funds required to meet outlay on such works as are indispensably necessary to be carried out during the year.

3. The demands under Repairs amount to Rs. 3,09,980, against the budget grant of Rs. 3,10,465. The necessary allotment has been made, as will be found in statement A.

* *Vide* G.Os., No. 1320 W., dated 26th May 1886, No. 1355 W., dated 25th May 1886, and No. 1148 W., dated 7th May 1886.

The allotment to the Presidency division includes provision for re-roofing the mess-house in Fort St. George, and for the Commissariat granary buildings on the beach at Madras.

4. A sum of Rs. 844 was applied for by the Superintending Engineer, V Circle, for improving the roof of family quarters, Poonamallee; but as the sanction to the work was ordered to be cancelled (*vide* G.O., No. 585 W., dated 12th March 1885) no appropriation is necessary.

5. Under Imperial "Civil" Works, the demands against Original Works, Postal, amount to—

	RS.
For minor works, lump sum	800
,, incomplete minor works	3,184
,, ,, major ,, ...	8,877
,, new minor works	780
,, ,, major ,, ...	2,910
Total ...	16,551

of which, only Rs. 3,184 have been allotted for incomplete minor works. The balance of the budget grant for minor works, after the above allotment, is Rs. 6,816, to which must be added a sum of Rs. 249 transferred from the grant for a new post office at Anantapur. The total, Rs. 7,065, is placed at the disposal of the Director-General of Post Offices, who will allot the requisite funds for works to be undertaken during the year.

6. The demands against Original Works, Telegraph, amount to—

	RS.
For minor works, lump sum	100
,, incomplete major works	5,302
,, new minor works	1,000
Total ...	6,402

7. Funds have been allotted for all the incomplete works to the extent of Rs. 5,302; and the balance, Rs. 698, of the budget provision for minor works, has been placed at the disposal of the Director-General of Telegraphs, as shown in statement A.

8. The allotment under Repairs (Postal and Telegraph) will be found in statement A. The demands of Superintending Engineers under Postal amount to Rs. 5,838, but have been reduced to Rs. 5,000 to bring the sum within the provision in the budget.

9. Ordered that copies of these proceedings be forwarded to the Government of India in the Military and Public Works departments.

(Here enter No. 1596 W., dated 23rd June 1886.)

(True Extract.)

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

To Superintending Engineers,
To the Consulting Architect to Government.
,, Examiner, Public Works Accounts.
,, Director-General of Post Offices.
,, Director-General of Telegraphs.
,, Military Department.

Exd. E. Fernandez.
Spare Copies

GENERAL.
ACCOUNT.

Govt. of {1886} Madras.

PUBLIC WORKS.

Dated June, 23rd.

Recd. *Encl.*

G.O., 23rd June 1886, No. 1595 W.

JUNE.

Imperial Military and Civil Works

Orders on statements of estimated requirements in 1886-87 under — for incomplete and minor works and repairs.

No. 2646

SUPERINTENDING ENGINEER'S OFFICE,
V CIRCLE, MADRAS,
Chepák, 4th Septr 1886.

From
THE SUPERINTENDING ENGINEER,
V CIRCLE,

To
THE Chief Engineer
P.W. Department.

Enclosures.

SIR,

With reference to the estimate of Rs 544 for erecting trellis work and planting shrubs &c between the Public Road and the Warrant Officers' quarters in the Ordnance Lines Sanctioned in G.O. No. 164 W of 20th January 1886 and treated as ordered therein as supplemental to the large estimate of Rs 26740 for constructing all the quarters for the Warrant and Non-Commissioned Officers of of the Commissariat Department; I have the honor to report that the trellis work &c. was completed as an urgent work in the Official year 1886-86. and paid for in the Current year. But [illegible] this outlay is now treated as objectionable by the Examiner for want of funds, I have therefore the honor to request that a sum of Rs 500 may be allotted for adjustment of the outlay in question.

I have the honor to be
Sir,
Your most obdt. Servt.
W H Burton Coll. R.E.

Supg: Engineer 5th Circle

G.O. 1595 W. 23.6.86
" 164 W. 20.1.86
" 1836 W. 2.7.83.

B/B. No. 2326 W d/ 14 Septr/86

As there are no funds reserved with the Govt under Imperial Military the S.E. will if possible propose a reappropriation from the grants for other works in the circle

The S.E. should have foreseen this requirement, and included it in his statement of demands for incomplete and minor works disposed of in G.O. No. 1595 W. dated 23rd June 1886.

7/9/86

B W 14/9

Jn 8/9/86.

The S.E. V circle 14/9/86

O.H. 3089
6.7.9.86 R. 11.9.86 Despd 25/9

From (12) [illegible] 6/9/86

THE SUPERINTENDING ENGINEER,
V CIRCLE,

To

THE Chief Engineer
P.W. Deptt.

Dated 4th }
Recd. 6th } September 1886

ENCLOSURES.

B. No. 2326 W d/ 16-9-86

No. 2646.

Ordnance Lines-
Madras.

Requests that a sum of Rs 500 may be allotted for adjustment of the outlay on the work of erecting trellis & planting shrubs &c at the Warrant & N.C. Officers' Qrs in the

With order

No. 2953

SUPERINTENDING ENGINEER'S OFFICE,
5TH CIRCLE, MADRAS,
Chepauk, 18th Septbr 1886.

From

THE SUPERINTENDING ENGINEER,
5TH CIRCLE,

To

THE Chief Engineer
P.W. Department.

Enclosures.

SIR,

With reference to G.O. No. 2326 dated 14th September 1886, I have the honor to propose that the required grant of Rs 500 for adjustment of the outlay on the work of erecting trellis & planting of shrubs &c between the road & Commissariat Warrant Officers' Quarters Madras may be transferred from the grant of Rs 1210 for alterations to the British Cavalry Barracks at Bangalore – Budget Item B/6.

I have the honor to be
Sir
Your most obedt. Servt.
W H Burton Col. R.E.
Superintending Engineer
5th Circle

From P.W.C. No. 7325

THE SUPERINTENDING ENGINEER,

5TH CIRCLE,

To

THE Chief Engineer

P.W. Depmt

Dated 18 } September 1886.
Recd. 20 }

ENCLOSURES.

No. 2953.

British Cavalry Barracks at Bangalore.

Proposes that the required grant of Rs 500 for erecting trellis & planting shrubs &c at W.O. Offrs qrs Madras may be transferred from the grant of Rs 1210 for alterations to the ——

No. 2429 W

PUBLIC WORKS DEPARTMENT.

PROCEEDINGS OF THE MADRAS GOVERNMENT.

22 Septr /86.

READ the following

From the Suptg. Engineer V Circle. H. E. No: 2953 d/18 September 1886.

The following transfer of funds is sanctioned:—

Imperial Military

Original Works.

From		To	
Alterations to the British Cavalry Barracks at Bangalore ——	Rs. 500	Erecting trellis work and planting shrubs between the public road and the Commissariat warrant officers' quarters at Madras —	Rs 500

21/9/86

21/9/86.

The Suptg. Engr. V Circle

" Examiner of P. W. Accts.

23/9

W 21/9

The Chief Engineer P. W. Department

2326 W 14.9.86.
1595 W 23.6.86.
164 W 20.1.86
1836 W 2.7.83.

2704 W. 12.11.85
2605 W 5.11.85
2447 W 20.10.85.
2287 W 2.10.85
684 E. 1.10.85
2264 W 29.9.85
2212 W 21.9.85
2087 D 15.9.85
2086 D 15.9.85
1428 C 31.8.85
1834 D 10.8.85
1280 C 24.7.85
1471 W 24.6.85
3087 W 15.12.84
2457 D 2.12.84
2889-90 W 19.11.84
1685 W 7.7.84
209 }
216 } D 5.3.83
178 W 22.1.85
246 W 2.2.85
1706 W 9.7.84

E. I.

OFFICE OF THE CHIEF ENGINEER
FOR IRRIGATION,
Chepak,
14th September 1886.

No. 76 Ew

Irrigation.

Enclosures.

MEMORANDUM.

An expenditure of Rs 11-14-- was incurred in making up five teak wood frames with glasses for certain photographs of irrigation works sent to London exhibition of 1886. The Examiner of P.W. Accounts states that the charge may be debited to "Provincial Original works, Civil buildings" to which head similar charges were debited under G.O. No. 2264 dated 29th September 1885 and your office note No. 2293.D dated 9th October 1885. As the Ex: Engineer, Presidency Division has requested that arrangements may be made for the adjustment of this expenditure, it is requested that an appropriation of Rs 12 may be made to admit of the amount outstanding against this office being adjusted.

R. Davidson
For Chief Engineer for Irrigation

To
The Chief Engineer P.W. Department

B No. 2424 W of 22d Septr. /86

A sum of Rs 12 required to cover the expenditure incurred by the Executive Engineer Presidency division for making five teak wood frames with glasses for certain photographs of irrigation works sent to London Exhibition of 1886 is appropriated from the reserve with the Government under Provincial

P.W.C. No. 7187

188 1.85

From

THE CHIEF ENGINEER FOR IRRIGATION,

Dated
Despatched
Received 16.9.86

ENCLOSURES.

No.

B No. 2424 W of 22-9-86

Subject.

To

The S. E. Vth Circle
" Exr. of P.W. accts
" Chief Engr. for Irrgn.

Jn. 2369 Dated 17/9/86
20/9/86
24/9

No. 2369

SUPERINTENDING ENGINEER'S OFFICE,
5TH CIRCLE, MADRAS,
Chepauk, 19th August 1886

From

THE SUPERINTENDING ENGINEER,
5TH CIRCLE,

To

THE Chief Engineer
P. W. Deptt.

SIR,

Enclosures. 1

I have the honor to submit for Sanction a Statement, in the prescribed form of Articles of European manufacture required to be purchased locally for the P.W. Workshops.

I have the honor to be
Sir
Your Most Obedt. Servt.

W H Hutton
Col. R.E.
Supg. Engr. 5th Circle

B. No 1950 W. 6.8.86
G.O. 1679 W. 2.7.86
" 2022 W 25.1.86

B. No 2167 Wa/ 27-8-86

Sanctioned
Sanctioned

23/8/86

24-8-86

From (1) Wk No 6503

THE SUPERINTENDING ENGINEER,
5TH CIRCLE,

To

THE Chief Engineer
P.W.D.

Dated 19th } August 1886.
Recd. 21 }

ENCLOSURES. 1

No 2167 Wa/ 27-8-86

No. 2369

W
27/8

27/8/86

S.E. VI C.
Engr with statement
to be returned

Articles of European Manufacture.

Submits for sanction a Statement of ——— required to be purchased locally for the P.W. Workshops.

DW

21/8.

30/8.

"Stores manufactured in Europe but purchased in India under parag
3 of Govt of India Resolution (Finl) No 105, dated 10th January 1883"

Description or class of Stores	No. or quantity	Actual cost in India			Estimated cost if obtained through India Office			Remarks
		Average price or rate	Incidental charges Carriage &c.	Total Cost	Average price or rate	Incidental charges Freight exchange &c.	Total cost	
	per	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	
Iron T 2½" × 1½" × 3/8" — feet	225 About lbs 1040	66 2 6	.. .. ..	66 2 6	54 2 8	.. .. ..	54 2 8	Not obtainable in the P.W. Stores and required at once for carrying out orders received in the Workshops for execution.
Iron Angle 1¾" × ¼" — feet	180 About lbs 540	36 12 2	.. .. ..	36 12 2	30 15 ..	.. .. ..	30 15 ..	
Iron Angle 1" × ¼" — feet	180 About lbs 270	18 6 1	.. .. ..	18 6 1	15 7 6	.. .. ..	15 7 6	
Iron Sheet 12' × 3' × 1/8" — Sheets	9 About lbs 1020	117 8 4	.. .. ..	117 8 4	92 13 ..	.. .. ..	92 13 ..	
Iron Round 1⅛" — feet	400 About lbs 1620	90 6 5	.. .. ..	90 6 5	84 6 ..	.. .. ..	84 6 ..	

Accts
Madras
13/9

Madras
12th August 1886

Strahan O'Connell
Genl. Supdt. P.W. Workshops

Sanctioned in G.O.
No. 2167 W dated
27-8-86.

S.G.H.

1/2742
13-8-86

ENCLOSURE
953W
30 AUG 86
EXAMINER P.W. ACCTS

7145/

Endorsement No. 953W
dated 13th September 1886.

Returned to the Secretary to the Government, Public Works Department, with reference to G.O. No. 2167W dated 27th August 1886; but it is pointed out that if these statements are to be returned, they should be submitted in duplicate.

J. C. Gordon

Examiner P.W. Acct.
Madras

Cri
13/9

Eno
13/9

Enc: One

No. 2943

SUPERINTENDING ENGINEER'S OFFICE,
V CIRCLE, MADRAS,
Chepâk, 17th September 1886.

From

THE SUPERINTENDING ENGINEER,
V CIRCLE,

To

THE Chief Engineer
P. W. Department.

SIR,

Enclosures.

J. S. Sivasubramania Iyer, who passed the Matriculation Examination, was appointed by the Executive Engineer Chingleput Division as a temporary Clerk on Rs 20 from the 11th May 1886. On my enquiry as to whether Sivasubrahmania Iyer was fully qualified, under the Examination Rules, to hold the appointment, the Executive Engineer states that the clerk is not fully qualified, as he has not passed the Hand writing

Test

2667 x 27-8-86.

B. No 2423 W d/22-Septr/86

Recorded.

In future the statements need not be returned by the Examiner.

Dilwl
15/9/86

Jole
20/9/86

Despatcher to note

Ex: PW acctnt

Desptd 22.9.86

22/9 23/9

23.8.86

P.W.C. No 7145

Recd: 14.9.86

Encl: 1

B. No 2423 W d/22.9.86

Indexed

13th September 1886, No. 507, Marine.

GOVERNMENT OF MADRAS.

MARINE DEPARTMENT.

Read—the following paper:—

From the Hon. R. W. BARLOW, C.S., Chairman, Harbour Trust Board, Madras, to the Chief Secretary to Government, dated Madras, 3rd September 1886, No. 390.

I have the honor to forward herewith, for the information of Government, copy of Proceedings of the Harbour Trust Board at a meeting held at the Sea Custom House on the 26th August, the same having been confirmed at the meeting of the Trustees held last evening.

2. In accordance with G.O., No. 412, Marine, dated 28th July 1886, a copy of these proceedings has been forwarded to the *Fort St. George Gazette* for publication.

Enclosure.

Proceedings of a meeting of the Madras Harbour Trust Board, appointed under the provisions of section VII of Act (II of 1886) at a meeting held at the Sea Custom House on Thursday, 26th August 1886.

* * * *

1. Read the minutes and confirmed the proceedings of the last meeting held on the 19th instant.

2. Read letter, No. 205 M., dated 19th August, from the Superintendent, Madras Harbour Works, in reference to the harbour intercepting sewer.

Resolved that the Chairman be invited to address the President of the Madras Municipality on the subject.

3. Read letter from the Superintendent, Madras Harbour Works, No. 218 M., dated 21st August 1886, requesting sanction for purchase of 1,000 detonators for the use of Pallávaram quarry, and of a boat from the S.S. *Gulf of Mexico* required for surveying purposes.

Sanctioned; but the Secretary is requested to inform the Superintendent of the Madras Harbour Works that, when applying for sanction for the purchase of the boat, the price ought to have been named.

4. Read letter, No. 224 M., dated 24th August, from Superintendent, Madras Harbour Works, in relation to monthly carriage and travelling allowances.

Resolved that the allowances be sanctioned, and the bills forwarded to Government; and that Government be solicited to favor the Board with a copy of the rules regulating and sanctioning such allowances.

5. Read G.O., No. 1980 W., Public Works.

Ordered to be recorded.

6. Read letter, No. 281 S—R, dated 26th August, from the Port Storekeeper of State Railway Stores, requesting that the Board should reconsider their decision not to allow more time for the removal of railway materials.

Proposed by Mr. Orr and seconded by Major McNeil Campbell, that the Board adhere to their former resolution, but will be prepared to consider on their merits any special cases which may from time to time be brought to their notice by the Secretary through the Chairman.

Carried by a majority.

7. Read letter from the Commissary-General, dated 26th August, No. 3974, requesting that the shed on the ground to the south of the pier be allotted to embarkation officer, for the use of troops leaving for Burmah in September.

Resolved that the Secretary report to the Chairman whether the shed can be spared, and that the Chairman is authorised to deal with the matter.

Due
10

2067 W 27-8-86

8. Read G.O., No. 456, dated 9th June 1886, regarding the proposal to set aside a certain space near the northern groyne of the Madras harbour for the purpose of landing coal.

Ordered to be recorded.

9. Read memorandum from the Secretary, Harbour Trust Board, regarding defects in the present system of working cargo in the harbour, and the means which appear most readily available to overcome the difficulties.

Resolved that the Secretary be requested to re-circulate his able note for further consideration.

ORDER—dated 13th September 1886, No. 507, Marine.

Recorded.

(True Extract.)

Chief Secretary.

To the Chairman, Harbour Trust Board.
" Port Officer, Madras.
" Public Works Department.
" Military Department.

Exd. A. Raitt.

2067 W 27-8-86.

P.W.C. No. 7347

Govt. of {1886} Madras.

MARINE.

No. 2420 W d/ 22 Septr/86.
B

13.S.C

Recorded.

Recorded

4

2/9/86

Issued
Recd. 20-9-86 Encl.

Gen
21/9/86

G.O., 13th September 1886, No. 507.

B. No. 2420 W d/ 22-9-86

P.W
21/9

SEPTEMBER.

Harbour Trust Board.

Recording letter from the Chairman, forwarding copy of proceedings of the — at a meet held on the 26th August 1886.

2 Copies to Ooty

No. of G.O.	For what purpose.	When taken	Name of the party by whom taken.
2358 W	one Copy forreno–		
2347 w cm	for 4389 d/ – – 814 d 27-1-92	22-4-91	

Mis. W. for Sept/86
Bundle 2.

P. W. D.

No.

Memorandum of papers from the Records of the Madras Government for reference.

2338 W for l. no 7255 d/ 17/9/86

2380 W + files for l. no 7283 d/ 20/9/86

2332 W + files for l. nos 7005/7282 d/ 21/9/86

~~2438/2439 W for l. no 7386 d/ 23/9/86~~

2406 W + files for l. no 7515 d/ 25/9/86

~~2452/2464 W one copy of each for [illegible] 7174 d/ 27/9/86~~

2370 W one copy for R. 7589 d/ 27/9/86

~~2484 W + file for R. 7600 d/ 29/9/86~~

~~23[illegible] [illegible] 7641 d/ 1/10/86~~

~~2488 W for B. d/ 7/10/86~~

~~2486 W + files for l. no 7704 d/~~

~~2480 W orig for l. no 4/10/86~~

~~2460 W orig + files for l. no 7707 d/ 4/10/86 7720 d/ 4/10/86~~

~~2507 W orig + files for l. no 7702 d/ [illegible]~~

No. of G.O.	For what purpose.	When taken	Name of the party by whom taken.
2359 W orig for l. no 7757		5-10-86	
~~2366 W + files for l. no 7797 d/~~		~~9/10/86~~	
~~2405 W + files for l. no 7845 d/~~		~~9/10/86~~	
2343 W orig + files for l. no 7858 d/		9/10/86	
~~2404 W + file for R. 7807 d/~~		~~11/10/86~~	
~~2408 W + files for l. no 7875 d/~~		~~11/10/86~~	
2377 W for l. no 7949		13-10-86	
2361 W + file for R. 7967 d/		13/10/86	
2400 W + files for l. no 7983 d/		14/10/86	
2406 W and file for l. no 8091		18-10-86	
~~2408 W + file for R. 8111 d/~~	through	~~B. 18/10/86~~	
~~2363 W for l. no 8091~~		~~19-10-86~~	
~~2360 W with file for l. no 8091~~		~~19-10-86~~	
2362 W for l. no 8111		19-10-86	
2334 W + file for R. 8139 d/		19/10/86	
2348 W one copy for R. 8305 d/		25/10/86	
2349 W and file for l. no 8358		27-10-86	
~~2401 W and file sent to C. E. Office~~		~~28-10-86~~	
2335 W for R. 7370 & 8458 d/		1/11/86	
2382 and file for l. no 8695		8-11-86	
2364 W + files for l. no 8757 d/		10/11/86	
2358 W orig + files for l. no 8821 d/		13/11/86	
~~2341 W and file for l. no 8856~~		~~15-11-86~~	~~through B~~
~~2379 W~~	~~do~~	~~do~~	

No. of G.O.	For what purpose.	When taken	Name of the party by whom taken.
2346 W	– for cc no 8934 – 16-11-86		
2333 W	one copy for cc no	8981 d/ 17/11/86	
2360 W	& files for cc no 9108 d/	23/11/86	
~~2366 W~~	~~& file for ch 9194 d/~~	~~24/11/86~~	
2375 W	for ch. 9311 d/ —	29/11/86	
2402 W	file for C.C. No 9644 d/	9-12-86 -	
~~2405 W~~	~~for cc no 9655 d/~~	~~10/12/86~~	
~~2336 W~~	~~& files for cc no: 9773 d/~~	~~17/12/86~~	
2336 W	– and file for cc no 9918 —	21-12-86	
2357 W	& files for cc no:	1108 d/ 10/2/87	
~~2358 W~~	~~one copy for ch 1914 d/ —~~	~~9/3/87~~	
~~2331 W~~	~~orgl and file for cc no 2052 – 15-3-1887~~ ~~through Jayaram moodily~~		
~~2370 W~~	one Copy for cc no 2976	~~– 19-4-87~~	
2345 W	for cc no: 5122 d/	6/7/87	
~~2331 W~~	~~and file – for W – to [illegible] – [illegible]~~	~~18-7-87~~	
~~2331 W~~	~~for cc no: 7712 d/~~	~~4/10/87~~	
~~2429 W~~	~~& files for cc no: 748 d/~~	~~25/1/88~~	
2363 W	– for cc no 2435	13-3-88	
2352 W	file for cc no 9443 d/	20-9-88	
~~2404 W~~	~~file for cc~~	I. Office 12-10-88	
2358 W	one copy for ch 10660 d/	8/11/93	

No. of G.O.	For what purpose.	When taken	Name of the party by whom taken.
2464 W	Original & file for ch 7884 d/	11/10/86	d/ ch 7914 d/ 86. 379/87
2464 W	one copy for ch 7914 d/	12/10/86	
~~2528 W~~	~~one copy for ch 7957 d/~~	~~13/10/86~~	
~~2554 W~~	~~– for cc no 7842 –~~	~~13-10-86~~	
2477 W	– for cc no 7966 —	13-10-86	
2466 W	for ch 8007 d/ —	14/10/86	
~~2470~~ 2471 W	for ch 8092 d/ —	18/10/86	
2449 W	Complete file for C.C. No 8104 d/ -	18/10/86	
~~2463 W~~	~~orgl and file for cc no 8091 –~~ ~~through [illegible]~~	~~19-10-86~~	
2488 W	– for cc no 8091 – through – B.	19-10-86	
~~2448 W~~	~~– with file for cc no 8112 –~~	~~20-10-86~~	
2426 W	& files for cc no 8342 d/	27/10/86	
2475 W	& file for ch 8424 d/ -	29/10/86	
~~2461 W~~	~~single for cc no 8473 d/~~	~~1/11/86~~	
2487 W	and file for C.C. No 8539 S-A-W }	5/11/86	
2431 W	one Copy for ch 8707 d/	8/11/86	
~~2478 W~~	~~for ch 8791 d/ –~~	~~12/11/86~~	
2430 W	& files for cc no 8964 d/	17/11/86	
~~2429 W~~	~~& file for ch 9047 d/~~	~~26/11/86~~	
2448 W	and file for cc no 9551 –	7-12-86	
[illegible] W	[illegible] ch [illegible]	[illegible] Revenue Dept	22/11/86

No. of G.O.	For what purpose.	When taken	Name of the party by whom taken.
~~[illegible]~~			
2463 W	Original and file for No. 9817 of	15/12/86	Vide Bk 2430 D 8/9/87
~~2469 W~~	~~for C.No. 10013~~	~~21-12-86~~	
2485 W	File for No. 227 of	14/1/87	
2469 W	for C.No. 254	15-1-87	
~~2470 W~~	~~for [illegible]~~	~~26/1/87~~	
~~2494 W~~	~~files for C.No. 643 of~~	~~31/1/87~~	
~~2421 W~~	~~for [illegible]~~	~~8-2-87~~	
2425 W	and file for C.No. 1136	11-2-87	
2457 W	for C.No. 1396 of	22/2/87	
2432 W	one copy for C.No. 1590	28-2-87	
2431 W	one copy for C.No. do	do	
2489 W	File for C.No. 3029 of	20-4-87	
~~[illegible]~~	~~files for C.No. 3[illegible] of~~	~~19/5/87~~	
~~2461 W~~	~~files for C.No. 4209 of~~	~~4/6/87~~	
2462 W	one copy for C.No. 5456 of	16/7/87	
2454 W	one copy for C.No. 5536 of	19/7/87	
2447 W	files for C.No. 6299 of	2/8/87	
2482 W	and file for C.No. 6768	30-8-87	
2474 W	for C.No. 9388 of	31/1/88	

No. of G.O.	For what purpose.	When taken	Name of the party by whom taken.
2434 W	for C.No. 1383 of	13-2-88	
2462 W	one copy for do 1483 of	16/2/88	
~~2424 W~~	~~file for C.No. 1671~~	~~17-3-88~~	
~~2441 W~~	~~for C.No. 3967~~	~~30-4-88~~	
2464 W	one copy for C.No. 6577 of	13/7/88	
2464 W	one copy for C.No. 8078 of	16-8-88	
~~2431 W~~	~~Regd for Dy W through S.A.W~~	~~31-8-88~~	
2447 W	for C.No. 11307 of	6-11-88	
2436 W	files for C.No. 13109 of	4/12/88	
~~2459 W~~	~~files for C.No. 2369 of~~	~~12/3/89~~	
2459 W	files for C.No. 12183 of	21/11/91	

Mis. W. Supplt
86

Bundle XV

P. W. D.

No.

Memorandum of papers from the Records of the Madras Government for reference.

2438/2439 W for letters 7386 of 23/9/86

2452/2464 W one copy of each for letters 7174 of 27/9/86

2484 W & files for letters 7600 of 29/9/86

2488 W & files for 15 of 1/10/86

2486 W & files for letters 7704 of 4/10/86

~~2480 W orig for letters 7707 of~~ 4/10/86

2460 W orig for letters 7720 of 4/10/86

~~2507 W orig & files for letters 7702 of 4/10/86~~

~~2566 W orig for letters 7797 of 8/10/86~~

~~2528 W original and file for C.E.~~ 7866 of 11-10-86 -

2499 W & file for C.E. 7880 of 11/10/86

~~2425 W and previous file for C.Aud. 12-10-86~~

No. of G.O.	For what purpose.	When taken	Name of the party by whom taken.
2554 W for letters	7377 of	18/8/90	—

Mis. W for Septr/86
Bundle 4

P. W. D.

No.

Memorandum of papers from the Records of the Madras Government for reference.

2507 W origl & files for lr no 7702 of 4/10/86

2566 W origl & files for lr no 7797 of 8/10/86

2528 W origl & files for lr no 7866 of 11/10/86

2528 W one copy for lr no 7952 of 13/10/86

2554 W for lr no 7843 of 13/10/86

2538 W to ch. 7972 d/ 13/10/86

2558 W & files for lr no 8005 of 14/10/86

2519 W & files for lr no 7820 of 15/10/86

2512 W — with file for CWO - 8009 - 15-10-86 through - B

~~2532 W & file to ch. 8781 of 20/10/86~~

~~2537 W to [illegible] 52 G.O. [illegible]~~

2509 W & files for lr no 8287 of
2560 W & file to ch. 8409 25/10/86
28/10/86

No. of G.O.	For what purpose.	When taken	Name of the party by whom taken.
2555	W & files for lr no 8450 of	29/10/86	
2514	W & file to ch. 8458 d/ —	1/11/86	
~~2503~~	~~W File for CWO 8486 d/~~	~~1-11-86~~	
~~2525~~ ~~2526~~	~~W File for C audt~~	~~5/11/86~~	
2525 2526	W & files for lr no 8571 of	5/11/86	
2533	W & files for lr no 8822 of	13/11/86	
~~2562~~ ~~2563~~	~~W & files for lr no 8822 of~~	~~13/11/86~~	
~~2540~~ ~~2541~~ 39	~~W File for CWO 8990 d/~~	~~17-11-86~~	
~~2540 17~~	~~W and file for CWO 9163~~	~~23-11-86~~	
2527	W one copy for CWO 9460 d/ —	3/12/86.	
2524	W — for CWO 9485 —	4-12-86	
2511	W & files for lr no: 9891 of	17/12/86	
2527	W one copy for lr no: 9893 of	17/12/86	
2502	W — and file for CWO 9998 —	21-12-86	
2557	W & file to ch. 1263 thro Caw	4/3/87	
~~2513~~	~~W for lr no: 2223 of~~	~~19/3/87~~	
~~2567~~	~~W file for S A W d/~~	~~21/3/87.~~	
2559	W and file for CWO 2290 —	21-3-87	
~~2553~~	~~W - origl. and file for CWO 2276 —~~	~~19-1-87~~	

No. of G.O.	For what purpose.	When taken	Name of the party by whom taken.
~~2562 2563~~	~~W & files for Cro. 2313 of~~	~~2/5/87~~	
~~2559 W~~	~~& files for Cro. 3301 of~~	~~4/5/87~~	
2501 W	& files for C. 3352 of	5/5/87	
~~2531 W~~	~~files for C. 2111 of~~	~~20/5/87~~	
~~2564 W~~	~~& files for Cro. 4909 of~~	~~28/6/87~~	
2516 W	& files for Cro. 5776 of	26/7/87	
2540 W 2541 W	} for Cro. 6269 —	~~11-8-/87~~	
~~2562~~-63	~~W & files for Cro. 7374 of~~	~~21/9/87~~	
2500 W	for C.O. 7516 —	27-9-/87	
2557 W	one copy for [illegible]	8/3/88	
2550 W	- one copy for Cro. 4177 of	5/5/88	
~~[illegible] W~~	~~file for S. A. W.~~	~~15-6/88~~	
~~2531 W~~	~~file~~ for Ooty - sent to Ooty - ~~through S. A. W.~~	15-6/88 }	
2550 W	origl. and file for Cro. 10761 of - - -	24/10/88	
~~2531 W~~	~~& files for Cro. 11697 of~~	~~14/11/88~~	
2539 W	original & files for Ch. 780 of	28/1/89	
~~2536 W~~	~~File for Cro. 9580 -~~	~~12-10-89.~~	
2540 2541	W C.O. No. 7821/88 or 7273 of	6-8-89	

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f G.O.	For what purpose.	When taken.	Name of the party by whom taken.
2332 W	and file for Ch. 7005 or 7282 of	21/9/86	
2241 W	and file for C.O. No. 7386 —	21-9-/86	
2281 W	one copy for E. D. officer of —	22/9/86	
2226 W	and file for C.O. 7442 -	23-9-/86	
~~2438 W 2439 W~~	~~} for C.O. 7386 —~~	~~23-9-/86~~	
2298 W	& files for Cro. 7462 of	23/9/86	
~~2406 W~~	~~& files for Cro. 7515 of~~	~~25/9/86~~	
~~2452 2464~~	~~} W one copy each for Ch. 7774 of~~	~~27/9/86~~	
2281 W	one copy for Cro. 7525 of	27/9/86	
2329 W	one copy for Cro. 7581 of	29/9/86	
2309 W	for Ch. 7593 of —	29/9/86	
2308 W	for Ch. 7595 of —	29/9/86	
2281 W	one copy for Ch. 7614 of —	30/9/86	
2198 W	origl. for Cro. 7715 of	4/10/86	
2243 W	- for C.O. 7758 —	5-10-/86	
2266 W	for Ch. 7760 of —	5/10/86	
2256 W	one copy for Exrt. P. W. Accts. 7 of	6/10/86	
~~2275 W~~	~~for Ch. 7807 of~~	~~8/10/86~~	
2244 W	for C.O. 7826 —	8-10-/86	
2247 W	one copy for Ch. 7827 of	8/10/86	
~~2278 W~~	~~& files for Cro. 7826 of~~	~~9/10/86~~	
2315 W	& files for Cro. 7845 of	9/10/86	
~~2317 W~~	~~file for C.O. 7871 of -~~	~~11/10/86~~	
2281 W	one copy for Cro. 7868 of	11/10/86	
~~2246 W~~	~~origl. for C.O. 7893 —~~	~~11-10-/86~~	

No. of G.O.	For what purpose.	When taken.	Name of the party by whom taken
2322 W	for C. A. [illegible]	29-9-186	
2319 W 2320	for Ch. 7869 D	11/10/86	
2246 W	~~one copy~~ origl for Lr No 7894 d/		11/10/86
2296 W	for C Ch. No 8009 D	14/10/86	
2267 W	for Ch. 8008 D	14/10/86	
2300 W	Original and file for Ch. 8045 D		15/10/86
2258 W	for Ch. No 8081 D	18/10/86	
2268 W	for Ch. 8190 D	21/10/86	
~~2197 W~~	~~and file for [illegible] for W through C. A. H.~~	~~21-10-186~~	
2257 W	one copy for Ch. 8149 D	29/10/86	
2261 W	for Ch. 8524 D	2/11/86	
2197 W	Original and file for Dy W this case D		3/11
~~2202~~ ~~2276~~ W	~~files for Lr No 8368 through B. J.~~		~~4/11/86~~
2321 W	File for C No 8577 d/	4/11/86	
2315 W	files for Lr No 8607 d/	5/11/86	
2316 W	for Lr No 8622 d/	5/11/86	
2239 W	guarantee B. M. a/10/11/86		
~~2301 W~~	~~and file for Lr No 8774~~	~~11-11-186~~	
2281 W	File for C No 8898 d/	15/11/86	
2327 W	for Lr No 8934	16-11-186	
2235 W	for Ch. 9364 D	1/12/8	
2310 W	file for Ch. 9398 D	2/12/86	
2238 W	for Lr No 9739	13-12-186	

No. of G.O.	For what purpose.	When taken.	Name of the party by whom taken.
~~2277 W~~	~~for B. J.~~	~~18/12/86~~	
2911 W	and file for Lr No 393	20-1-187	
2191 W	one copy for R office D	26/1/87	
2297 W	file for C Ch. No 822 D	3/2/87	
~~2190 W~~	~~file for Ch. No 1300 D~~	~~18/2/87~~	
2199 W	origl for Lr No : 1586 d/	28/2/87	
2211 W	for Lr No 1614	1-3-187	
~~2270 W~~	~~files for Lr No : 1972 d/~~	~~11/3/87~~	
2193 W	origl for C No 1957 d/	11/3/87	
2278 W	File for C No 2744 d/	5-4-87	
2275 W	File for C No 2840 d/	9-4-87	
2324 W	for Lr No 3184	26-4-187	
2191 W	one copy for Lr No 3244 d/		4/5/87
2218 W	origl for Lr No : 4694 d/		21/6/87
2281 W	for Lr No 4830	29-6-187	
~~2304 W~~	~~for Administration Report~~	~~12-7-187~~	
2240 W	for Lr No : 5541 d/	15/7/87	
~~2273 W~~	~~origl for Lr No 6198 d/~~	~~9-8-87~~	
2230 W	for Lr No : 7227 d/	15/9/87	
2201 W	for Lr No 7899	7-10-187	
2318 W	one copy for Lr No 8120	13-10-187	
~~2325 W~~	~~file Lr No 3987~~	~~10-11-187~~	