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TAMIL NADU ARCHIVES

GOVERNMENT OF TAMIL NADU

Public Works DEPARTMENT

(Spare Copy)

G.O. No. 336-37 (W) Press.
~~B.P. No.~~ Mis.

Dated 8-2-1881 ~~197~~ .

To be folded or roughly handled

GOVERNMENT OF MADRAS.

PUBLIC WORKS DEPARTMENT.

8th February 1881, No. 336 W.

General.
Establishment.

Read the following papers:—

No. 19.	From	Government of India,	dated	23rd October	1880, No. 169-A I.
No. 20.	From	,, ,,	,,	29th ,,	,, ,, 326 I.
No. 21.	From	Examiner of P.W.A.,	,,	26th November	,, ,, 157 W.
No. 22.	From	,, ,,	,,	6th December	,, ,, 164 W.

No. 23. ORDER THEREON, 8th February 1881, No. 336 W.

ORDERED that the following letter be sent to the Government of India.

(Here enter No 337 W., dated 8th February 1881.)

(True Ex ict.)

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

Exd. E. C. Shunker.
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336-337 us
8-2-1881

GENERAL
ESTABLISHMENT

Gobt. of 1881. Illinois.

PUBLIC WORKS.

Acting Librarian, Gen.

Issued.

Rec'd. Read.

33

G. O. 9th February 1881. No. 10 W.

FEBRUARY
Nos. 10—23.

Normal Establishment of the Public Works.
Department of the Marine Engineer.
On the subject of the—

An Approximate Comparative Statement showing the Cost of Establishment, Public Works Department, M[illegible] as it s[tood] on the [illegible] September 1879 and on the 30th September 1880, and the probable Net Savings to Government effected by the reconstruction.

Effective Establishment as it stood on 30th September 1879.					Effective Establishment as it stood on 30th September 1880.				
Particulars.	Cost per Mensem.				Particulars.	Cost per Mensem.			
	Number.	Permanent.	Number.	Temporary.		Number.	Permanent.	Number.	Temporary.
1	2	3	4	5	6	7	8	9	10
		Rs.		Rs.			Rs.		
Engineer Establishment ..	(g) 74	53,715	..	..	Engineer Establishment ..	(g) 56	40,622	..	..
Upper Subordinate Establishment	241	27,495	2	300	Upper Subordinate Establishment	150	18,459	..	..
Lower Subordinate do. ..	247	7,812	..	..	Lower Subordinate do. ..	..	..	..	..
Office Establishment ..	904	22,828	12	195	Office Establishment	397	14,280	..	..
Total ..	1,466	1,11,850	14	495	Total ..	603	73,401	..	..
Petty Establishment	4	253	854	7,804	Petty Establishment	..	..	880	8,783
Examiner's Establishment ..	3	(h) 5,063	..	..	Examiner's Establishment ..	2	(i) 2,961	..	..
Accountants and Clerks ..	134	10,150	40	800	Accountants and Clerks ..	92	6,234	..	..
Total ..	..	15,213	..	800	Total ..	..	9,195	880	8,783

(a) This column represents difference between columns 2 and 7.
(b) Do. do. between do. 4 and 9.
(c) Of this total the numbers against "Engineer" and "Upper Subordinate" Establishments are actuals. Those against "Lower Subordinate" [illegible] approximates.
(d) It is believed that mostly all the Lower Subordinates whose services were not required in the Public Works Department have been kept on under the [illegible] Fund Boards. No applications for pensions or gratuities have been received from such.
(e) This amount has been arrived at by assuming that the less cost (7,812—600—6,840) viz., 372, is the average emoluments of the [illegible] Rs. 5 to Rs. 8) who are entitled to average gratuity of 12 months pay for service above 12 years and under 15 years. Average age 40 years.
(f) This amount represents the pension of 66 men at an average of Rs. 11-4-2 per man. The average has been arrived at by dividing [illegible] this office and recommended for sanction by the number of men to whom those pensions refer.
(g) This represents the total amount of gratuities of 324 men at an average per man of Rs. 89. This average has been arrived at by dividing [illegible] required by this office and recommended for sanction by the number of men to whom those gratuities refer.
(h) The amounts entered in this column have been calculated on the total amounts of gratuities and bonuses on the principles laid down in tables [illegible] Part II of the Civil Pension Code. In the case of Engineer and Upper Subordinate Establishments actuals, and in the case of Lower Subordinate and Office Establishments approximates. Average age 40 years.
(i) It has been found impracticable to ascertain the present cost of this establishment. Nearly all the men belonging to this establishment were [illegible] belonging to the temporary establishment, and it is believed on their ceasing to belong to the Public Works Department were taken over by Local Fund Boards with the Local Fund Works, excepting a few appertaining to lascars who were on the permanent establishment before Separation took place, but who [illegible] Petty Establishments. No applications for pensions or gratuities have been submitted to this office on behalf of this establishment.
(k) This represents the pay and allowances of one Examiner and two Deputy Examiners, the normal strength of officers for this office. [illegible] at this time (September 1879) an additional officer (Assistant Examiner Mr. Bourne) was also temporarily attached to this office. His pay and allowances, amounting to Rs. 450 per mensem, have been omitted from the figures entered in this statement.
(l) The difference (Rs. 102) between this amount and that entered at (k) is due to the difference in the pay and allowances of Major Cuppage, the [illegible] Major Trail, the present Examiner.
(m) This number were actually retired in the Accounts Branch giving an actual reduction of Rs. 2,007 per mensem. But on account of the post of the [illegible] Accountant-General, Madras, and Presidents, Local Fund Boards, in excess of Rs. 261 per mensem has actually resulted.
(n) The *actual* excess against Examiner Establishment is Rs. 750 per mensem, caused by the appointment of a Local Fund Auditor in the [illegible] Deputy Officers. This amount has been reduced by the difference noticed in remark (l).
(o) Represents pay of two retired Accountants, whose services are at present being temporarily retained on the temporary establishment [illegible] out of leave, and on other duties, to deaths, resignation, remand to military duties, &c.
(p) Omitting the cost of temporary establishment, the actual excess which has resulted by the change in the audit of Local Fund [illegible] per mensem.
(q) The non-agreement of the differences in the numbers entered in columns 2 and 7 with those entered in column 12 is due to [illegible] Commission 1882, being sanctioned and carried out [illegible] excess in the Accounts Branch.
(r) This saving of Rs. 1,833 will further be reduced or altogether disappear on the arrangements referred to in paragraph 8 of [illegible]

Madras,
November 1880.

(Signed) D. H. TRAIL, Major, R.E.,
Offg. Examiner, Public Works Accounts.

Estimate of the Cost of the Public Works Establishments, &c.—*cont.*

Number. 1880-81	Number. 1881-82	Particulars.	Salary of Office.	Estimate for 1881-82. Per Mensem.	Per Annum.	Total.	Estimate for 1880-81.	Remarks.
		ENGINEER ESTABLISHMENT—*cont.*	Rs.	Rs.	Rs.	Rs.	Rs.	
		Executive Engineers—cont.						
		Difference between consolidated salary and the aggregate of Staff pay and full Military pay and allowances of two Captains, R.E.	133⅓	267				
		Net Military pay proper of two Captains, R.E.	140	280				
		Difference between the aggregate of Staff pay and Military pay and allowances of a Captain, R.E.	183½	184				
		Net Military pay and allowances of four Lieutenants, R.E.	70	280				
24	* 31	Total ..	..	†25,758				* Omitting two Railway Branch Officers. † Does not include the special allowance at Rs. 100 for five Superintendents of Works added at end of "Engineer Establishment."
		Deduct moiety of pay and allowances of a Lieutenant, R.E. (Lieutenant Baddeley) chargeable to Public Works Workshops.	..	335				
		Net Total, Executive Engineers.	..	25,423	2,05,076	..	2,26,524	
		Assistant Engineers.						
12	15	Assistant Engineers, 1st Grade.	450	6,750				
24	26	Do. do. 2nd Grade ..	350	9,100				
..	3	Do. do. 3rd „ ..	250	750				
		Three Supernumerary Assistant Engineers, 2nd Grade.	350	1,050				
		Net Military pay proper of two Lieutenants, R.E.	70	140				
		Difference between the consolidated salary and the Staff pay and Military allowances of three Lieutenants, R.E.	65⅔	197				
36	44	Total, Assistant Engineers.	..	17,987	2,15,844	..	1,65,900	
		Total, Engineer Establishment.	..	..	..	6,63,084		
		Special allowance at Rs. 100 each for five Superintendents of Works.	100	500	6,000	6,000		
		Grand Total, Engineer Establishment.	..	..	..	6,69,084	5,28,572	
		UPPER SUBORDINATE ESTABLISHMENT.						
		Sub-Engineers.						
4	6	Sub-Engineers, 1st Grade ..	400	2,400				
4	5	Do. 2nd „ ..	300	1,500				
6	11	Do. 3rd „ ..	250	2,750				
		Difference of Military pay of a Lieutenant and Deputy Assistant Commissary (Warrant Officer) on receipt of consolidated salary of an Assistant Engineer, 1st Grade.	50	50				
		Extra pay of a Captain and Deputy Commissary on receipt of pay and allowances of an Upper Subordinate.	150	150				
14	22	Total, Sub-Engineers ..	..	6,850	82,200			

Estimate of the Cost of the Public Works Establishments, &c.—*cont.*

Number. 1880-81.	Number. 1881-82.	Particulars.	Salary of Office.	Estimate for 1881-82. Per Mensem.	Per Annum.	Total.	Estimate for 1880-81.	Remarks.
		UPPER SUBORDINATE ESTABLISHMENT—*cont.*	Rs.	Rs.	Rs.	Rs.	Rs.	
		Supervisors.						
12	17	Supervisors, 1st Grade ..	250	3,500				
18	28	Do. 2nd	150	4,200				
		Military pay and allowances of two Conductors.	20	40				
		Do. do. of seven Sub-Conductors.	30	210				
30	45	Total, Supervisors ..	..	7,950	94,200	..	64,440	
		Overseers.						
30								
30	* 111	Overseers	80	8,880				* Distribution of Overseers among Circles not given, and calculation on mean pay (viz. $\frac{80+40}{2}$) Rs. 60 per mensem.
40								
		Military pay and allowances of about thirteen Sergeants.	45	598				
100	111	Total, Overseers ..		9,478	1,13,736	..	99,120	
		Total, Upper Subordinate Establishment.	..	..	2,50,136			
		Deduct the pay of a Sub-Engineer, Third Grade, chargeable to Workshops.	250	250	3,000			
		† *Net Total, Upper Subordinate Establishment.*	..	..	..	2,37,136	2,15,100	† Actuals on this date.
10	18	*Sub-Divisional Allowance for 18 Upper Subordinates.*	30	540	6,480	6,480	3,600	
		Grand Total, Upper Subordinate Establishment.	..	..	..	₹2,93,616	2,18,700	
		LOWER SUBORDINATE ESTABLISHMENT.						
..	(a) 5	Sub-Overseers, 1st Grade ..	60	300				
..	(b) 14	Do. 3rd Grade ..	20	300				
		Total, Lower Subordinate Establishment.	..	600	7,200	7,200	..	
		PETTY ESTABLISHMENT.						
..	25	Store-keepers as per G.O., No. 1,204 W., dated 28th May 1880.	15, 20, 25 & 30	660				
..	1	‡ Assistant Apothecary ..	62½	62½				
..	4	§ Hospital Assistants with Joypore allowance at Rs. 25 for one.	25, 40 and 60	175				
..	1	‖ Cumastah	5	5				
..	1	‖ Mistry	40	40				
..	11	§ Lascars, Tatties, Cook, &c., of the Medical Establishment.	2 to 7	44½				

(a) Two for Kurnool and three for Trichinopoly.

(b) Six for Kurnool, two for Vizagapatam, and seven for Trichinopoly.

‡ G.O., No. 1,155 W., dated 12th August 1880; and G.O., No. 95 W., dated 15th January 1880; No. 147 W., dated 19th January 1880.

§ G.O., No. 1,362 W., dated 14th June 1880.

G.O., No. 1,346 W., dated 8th June 1880.

G.O., No. 1,118 W., dated 14th May 1880.

‖ G.O., No. 1,035 W., dated 12th Aug. 1880.

§ G.O., No. 1,337 W., dated 22nd July 1880.

N.B.—(1) The additional Military pay and allowances of Military Officers and Subordinates entered in column "Estimate for 1881-82" represent actuals (*i.e.*) the allowances which are actually being drawn on this date.

(2) The cost of Upper Subordinate Establishment as shown above has been arrived at by distributing the total number (178) into grades as per "statement annexed to letter No. 2,277 W., dated 1st October 1880, to the Government of India. But if the provisions of Government of India Resolution No. 1,789 G., dated 15th October 1880, sanctioning revised proportions as regards grades are adopted, the cost of this establishment (total 178) *excluding* Military allowances will be Rs. 20,720 per mensem or † Rs. 220,656 per annum.

Estimate of the Cost of the Public Works Establishments, &c.—*cont.*

Number. 1880-81.	Number. 1881-82.	Particulars.	Salary of Office.	Estimate for 1881-82. Per Mensem.	Per Annum.	Total.	Estimate for 1880-81.	Remarks.
		PETTY ESTABLISHMENT—*cont.*	Rs.	Rs.	Rs.	Rs.	Rs.	
360	* 450	Lascars	6	2,700	..	..	25,920	* This includes the 12 lascars sanctioned for Public Works Stores.
		Total, Petty Establishment.	..	3,627	43,524	43,524	25,920	
		OFFICE ESTABLISHMENT.						
		For Chief Engineer and Secretary to Government, Public Works Department.						
1	1	Chief Assistant	† 600	600				† *Vide* Office note from the Secretary to Government, Public Works Department, dated 9th December 1880.
1	1	Second Assistant	† 300	300				
1	1	Clerk, 1st Class, 3rd Grade..	225	225				
2	2	Do. 2nd ,, 2nd ,, ..	140	280				
1	1	Do. 2nd ,, 3rd ,, ..	110	110				
5	5	Do. 3rd ,, 2nd ,, ..	70	350				
3	3	Do. 3rd ,, 3rd ,, ..	55	165				
1	1	Do. 4th ,, 1st ,, ..	45	45				
2	2	Do. 4th ,, 2nd ,, ..	35	70				
1	1	Do. 4th ,, 3rd ,, ..	25	25				
				2,170				
2	2	Draughtsmen, 1st Class ..	60	120				
1	1	Do. 2nd Class ..	42½	42½				
				162½				
2	2	Muchies or Daftries ..	18 & 14	27				
2	2	Head Messengers ..	9 & 11	20				
7	7	Messengers	7	49				
		Total, Public Works Secretariat.	..	2,428½	29,142	..	29,100	
		‡ *Lithographic Establishment.*						‡ *Vide* G.O., No. 1,449 W., dated 21st June 1880.
	1	Superintendent	250	250				
	1	Head Draughtsman ..	120	120				
	1	Second do. ..	100	100				
	1	Third do. ..	80	80				
	1	Fourth do. ..	60	60				
	1	Fifth do. ..	40	40				
	1	Sixth do. ..	30	30				
	1	Seventh do. ..	25	25				
	1	Eighth do. ..	20	20				
	1	Ninth do. ..	15	15				
	1	Tenth do. ..	10	10				
	1	Tracer and Recordkeeper ..	25	25				
	1	Do. and Muchi ..	16	16				
	1	Head Printer	20	20				
	1	Second do.	12	12				
	1	Third do.	12	12				
	2	Pressmen	9	18				
	6	Do.	8	48				
	2	Do.	7	14				
	2	Do.	5	10				
		Total, Lithographic Establishment.	..	925	11,100	..	3,000	
		§ *For Chief Engineer and Joint Secretary to Government, Irrigation Branch.*						§ G.O., No. 491 W., dated 3rd March 1880.
	1	Clerk, 1st Class, 3rd Grade..	225	225				
2	1	Do. 2nd ,, 2nd ,, ..	140	140				
	1	Do. 2nd ,, 3rd ,, ..	110	110				
1	1	Do. 3rd ,, 1st ,, ..	90	90				
1	1	Do. 3rd ,, 2nd ,, ..	70	70				

Estimate of the Cost of the Public Works Establishments, &c.—*cont.*

Number. 1880-81.	Number. 1881-82.	Particulars.	Salary of Office.	Estimate for 1881-82. Per Mensem.	Per Annum.	Total.	Estimate for 1880-81.	Remarks.
		OFFICE ESTABLISHMENT—*—cont.*	Rs.	Rs.	Rs.	Rs.	Rs.	
		**For Chief Engineer and Joint Secretary to Government, Irrigation Branch—cont.*						* G.O., No. 461 W., dated 3rd March 1880.
		Office Establishment to be provided for 4 Executive Engineers on special projects.	40	160	1,920			
		Office Establishment to be provided for 51 Sub-Divisional Officers. Appendix C, No. 10, G.O., No. 3,674 W., 18th Sept. 1878.—						
		One Clerk, 4th Class, 3rd Grade	25					
		One Messenger ..	6					
			31	31	1,581	18,972		
		Office Establishments for 50 Upper Subordinates above the rank of Overseer at—						
		One Clerk, 5th Class, 1st Grade	17½	875		10,500		
		Office Establishments for 111 Overseers.	12½	1,387½		16,650		
		Toll Establishment for the upkeep of Buckingham Canal as per G.O., No. 2,516 W.,† 2nd Nov. 1880.	761	761		9,132		
		Pay of Sooba Row,‡ Clerk, Superintending Engineer's Office, Third Circle (not absorbed yet).	25	25		300		† For details, see G.O quoted. ‡ G.O., No. 1,581 W., dated 6th July 1880.
		Total "Office Establishment" under "Construction." (*See Budget* 1880-81.)	..	..		2,25,438	1,08,910	
		NOTE.—No personal allowance has been provided for, as the mean pay entered will, it is believed, cover the charges on account of such allowances.						
		Total, Office Establishment.	..	..	..	2,25,438	1,52,260	
		IRRIGATION ESTABLISHMENT.						
		Survey	..	..	15,000	§ 15,000	15,000	§ Details for Irrigation Establishment not yet received from the Chief Engineer for Irrigation. The amount provided for in the last year's budget has therefore been taken as an approximation.
		Water Regulation ..	..	..	84,038			
		Navigation	..	..	28,989			
		River Conservancy ..	..	..	3,568			
						§ 1,16,595	1,16,595	
		Special Revenue Investigations by Mr. Wilson.						
		Office Establishment required for the preparation of Irrigation Accounts—*Vide* G.O., No. 443-A. I., dated 6th August 1879.	..	..	10,000	10,000	13,000	
		Total, Irrigation Estabt. ..	..	..	..	1,40,595	1,42,595	
		TEMPORARY ESTABLISHMENT.	..	..	..	25,000	25,000	
		LOCAL ALLOWANCES.						
		Upper Godávari Allowance.	50	50	600	..	..	G.O., No. 1,203 W., dated 20th May 1880; G.O., No. 2,360 W., dated 5th Nov. 1880; and paras. 32, 35, and 673 of the Madras Public Works Code.
		Wynaad Allowance	..	..	2,060	..	..	
		Polingy Ghat or Joypore Allowance	..	..	3,000	..	..	
		Presidency House Rent ..	..	555	6,660	..	..	
		Do. Allowances ..	..	600	7,200	..	..	
		Total, Local Allowances ..	..	..	19,460	13,460	10,000	
		Total, Salaries (see Abstract next page)	..	..	..	14,33,917	11,05,113	

Estimate of the Cost of the Public Works Establishments, &c.—*cont.*

Number. 1880-81.	Number. 1881-82.	Particulars.	Salary of Office.	Estimate for 1881-82. Per Mensem.	Per Annum.	Total.	Estimate for 1880-81.	Remarks.
		Local Allowances—*cont.*	Rs.	Rs.	Rs.	Rs.	Rs.	
		Travelling Allowances ..	..	..	..	2,00,000	1,18,000	
		Contingencies including postage—						
		4 Superintending Engineers' Offices.						
		5 Superintendents of Works' Offices.						
		21 Executive Divisional Offices.						
		28 at Rs. 100 per mensem ..	..	2,800	..	..	..	
		2 Chief Engineers—						
		Secretary to Government, Public Works Department ..	500					
		Chief Engineer for Irrigation	150					
			650	650	..	..	..	
				3,450	47,400	47,400	46,200	
		Grand Total, Executive Branch.	..	..	..	16,81,317	12,86,813	
		Abstract of the foregoing.						
		Engineer Establishment ..	..	..	6,60,084	..	5,24,573	
		Upper Subordinate Establishment.	..	..	2,03,616	..	2,13,760	
		Lower Subordinate Establishment.	..	..	7,200	..	..	
		Petty Establishment ..	..	..	11,328	..	24,000	
		Office do. ..	..	..	2,25,438	..	1,92,266	
		Irrigation do. ..	..	..	*3,40,595	..	1,43,555	
		Temporary do. ..	..	..	75,000	..	24,000	
		Local Allowances	..	..	16,460	..	10,000	
		Total, Salaries ..	..	..	14,33,917	..	11,05,113	
		Travelling Allowances ..	..	..	2,00,000	..	1,18,000	
		Contingencies ..	..	..	47,400	..	46,200	
		Grand Total, Executive Branch.	..	..	..	16,81,317	12,86,813	
		Grand Total, Accounts Branch.	..	..	..	1,57,060	1,30,720	
		Total, Public Works Department, Madras Presidency.	..	..	..	†18,38,377	†14,16,033	
		Account Establishment.						
		Examiners.						
1	1	Examiner, 1st Class, 2nd Grade.	1,350	..	..	..	..	
		Difference between the Staff pay and Military pay and allowances and the consolidated salary of a Major, R.E.	40½	1,260½	..	..	..	
2	2	Deputy Examiners, 1st Grade.	550	1,100	..	..	..	
		Difference between the pay and allowances of a Staff Corps Officer and that of a Civilian.	50	50	..	..	..	
3	3	Total, Examiner Establishment.	..	2,510½	30,126	..	32,130	
		Accountants.						
1	1	Accountant, 1st Grade ..	300	400	..	..	..	
3	3	Do. 2nd ,, ..	225	338	..	..	..	
4	4	Do. 3rd ,, ..	200	800	..	..	..	

* Details for Irrigation, Survey, Water Regulation, Navigation and River Conservancy Establishments and yet received from Chief Engineer for Irrigation. The amounts as shown in the last year's budget have therefore been taken.

† This does not include the pay and allowances of the Railway Branch Officers and Establishment.

Estimate of the Cost of the Public Works Establishments, &c.—*cont.*

Number. 1880-81.	Number. 1881-82.	Particulars.	Salary of Office.	Estimate for 1881-82. Per Mensem.	Per Annum.	Total.	Estimate for 1880-81.	Remarks.
		Account Establishment —*cont.*	Rs.	Rs.	Rs.	Rs.	Rs.	
		Accountants—cont.						
10	10	Accountant, 4th Grade ..	115	1,150	..	..	..	
34	34	Do. 5th ,, ..	57½	1,956	..	..	..	
52	52	Total, Accountants ..	..	5,190	62,280	..	62,280	
		Clerical Establishment.						
1	1	Clerk, 2nd Class, 2nd Grade.	140	140	..	..	..	
1	1	Do. 3rd ,, 1st ,,	90	90	..	..	..	
1	1	Do. 3rd ,, 2nd ,,	70	70	..	..	..	
3	3	Do. 3rd ,, 3rd ,,	55	165	..	..	..	
5	5	Do. 4th ,, 1st ,,	45	225	..	..	..	
6	6	Do. 4th ,, 2nd ,,	35	210	..	..	..	
10	10	Do. 4th ,, 3rd ,,	25	250	..	..	..	
3	3	Do. 5th ,, 1st ,,	17½	52½	..	..	..	
		Total, Clerks ..	..	1,202½	14,430	..	..	
		Menial Servants ..	..	102½	1,230	..	..	
		Total, Office Establishment.	..	..	15,660	15,660	15,660	
		Local Allowances.						
		Presidency House Rent / Do. Allowance	..	..	13,000	13,000	10,000	
		Total Salaries	..	..	..	1,26,430	1,20,130	
		Travelling Allowances ..	..	..	..	2,400	2,400	
		Contingencies	..	..	..	4,500	4,500	
		Grand Total, Permanent ..	..	..	..	1,33,330	1,27,030	
		Deduct contributions for four Accountants as follows:— Madras Harbour Works. 1 Presidency Workshops. 1 Dowlaishweram do. .. 1 Central Office .. .. 1 — 4	..	..	..	5,910	5,910	
		Net Total, Permanent Establishment.	..	..	..	1,27,420	1,21,120	
		Temporary Office Establishment for the preparation of Capital and Revenue Accounts—*Vide* G.Os., Nos. 3,443, 412 I., and 948 I., dated 3rd December 1875, 15th May 1878, and 21st November 1878, respectively; *vide* also this Office No. 145 W., dated 18th November 1880.	..	800	9,600	9,600	9,600	
		Grand Total, Account Establishment.	..	..	..	1,37,020	1,30,720	
		Accountants.						
		Additional Account Establishment which will be necessary according to rule if the proposals embodied in letter, No. 2,277 W., dated 1st October 1880, to the Government of India are sanctioned.	..	..	1,005	..	..	
		Clerks and Menial Servants.	..	..	265	..	..	
		Presidency Allowance and House Rent.	..	..	350	..	..	
			..	..	1,670	20,040	..	
		Grand Total, Account Establishment.	..	..	..	1,57,060	..	

MADRAS,
December 1880.

(Signed) D. H. TRAIL, Major, R.E.,
Offg. Examiner, Public Works Accounts.

C.

Statement of Irrigation of various classes extracted from Part II, Famine Commission Report, Section V.

Class.	——	Funds.	Punjab.	North-West Provinces.	Oudh.	Madras.	Bengal.	Bombay.	Sindh.	Remarks.
			ACRES.	ACRES.	ACRES.	ACRES.	ACRES.	ACRES.	ACRES.	
I.	Perennial Canals...	Public ...	740,000	1,691,000	...	*1,700,000	560,000	†17,000	...	In the Punjab, North-West Provinces, and Oudh it is believed that the acreage both of the Khareef and Rabbi crops are given. Were this done in Madras the acreage would be greatly increased in the returns. Moreover in Madras no entry is made under "Small Channels, &c.," of which there are large areas in the Southern Districts.
II.	Tanks	Public or Private according to circumstances.	...	...	...	3,522,000	...	...	...	
III.	Inundation Canals.		933,000	...	...	...	...	...	1,800,000	
IV.	Small Channels, &c.	Private ...	642,000	1,985,000	1,082,000	...	...	450,000	500,000	
V.	Ponds		143,000							
VI.	Wells		3,176,000	4,480,000	1,314,000	2,000,000	600,000			
		Total ...	5,634,000	8,159,000	2,396,000	7,222,000	960,000	467,000	2,300,000	
				11,455,000				2,767,000		

* Cauvery, Kistna, and Godavari only. † Rose to 25,000 in 1877.

D.

Receipts.	Estimated Receipts in 1870-71.	Actuals for 1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	Remarks.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	
Imperial Allotment for Provincial Services.	73,94,880	76,06,292	79,74,658	81,59,040	85,88,539	83,08,266	81,18,735	80,82,000	80,75,063	* 84,86,120	* Including four lakhs for Stationery
Jails	73,000	2,64,853	1,65,807	2,11,923	2,36,656	2,56,524	3,19,804	3,39,597	3,27,023	2,58,887	
Registration	3,40,000	3,54,749	3,20,402	3,31,150	3,71,800	3,80,530	3,92,035	4,45,524	5,20,375	5,30,164	
Police	3,23,500	82,458	28,646	26,995	29,250	37,680	57,270	78,457	1,01,948	1,63,630	
Education	69,000	1,04,088	1,20,950	52,916	55,397	28,698	63,024	37,035	1,58,545	1,54,479	
Medical	...	10,048	11,626	11,051	1,80,513	62,213	57,072	35,279	52,351	1,45,933	
Printing	12,600	28,631	31,933	27,408	27,340	26,723	26,125	27,244	27,020	31,806	
Marine	...	...	...	24,779	24,373	25,141	19,618	11,118	12,331	17,629	
Miscellaneous ...	...	39,059	90,974	84,683	1,01,178	1,32,850	1,39,365	1,45,963	95,180	3,10,127	
Public Works ...	...	55,064	86,451	57,802	51,836	79,669	1,01,418	1,32,968	1,76,190	2,01,665	
Total ...	...	86,34,645	88,37,447	89,87,747	99,19,882	93,38,294	92,69,466	93,96,185	95,46,020	+1,03,60,509	† This year's receipts are not much above those of preceding years, if the new grant of 4 lakhs for Stationery be excluded, and 4 lakhs entered under "Miscellaneous," representing recoveries, much of the remainder of Receipts is due to the receipts from the Buckingham Canal.
Charges.	Estimated Charges in 1870-71.										
Jails	9,19,830	8,23,384	8,54,306	9,59,703	8,61,909	10,57,532	12,66,118	9,75,918	12,20,187	13,31,818	
Police	2,29,700	2,38,202	2,32,931	2,30,106	2,44,781	2,68,562	2,82,636	3,06,471	3,47,597	3,65,131	
Registration	35,07,300	33,96,293	33,83,985	34,56,133	35,67,250	35,39,997	40,01,750	34,40,660	37,18,517	38,20,703	
Police	9,00,520	8,05,852	8,72,273	9,36,392	7,30,575	8,75,308	8,54,950	9,32,883	9,91,300	10,05,461	
Education	6,16,960	4,24,057	5,05,708	6,66,378	7,29,714	5,87,429	5,72,979	6,76,042	7,19,450	6,32,876	
Medical	2,58,490	2,47,157	2,39,952	2,50,981	2,21,997	2,40,357	2,70,088	3,13,555	3,06,990	2,74,096	
Printing	...	...	10,964	8,469	11,886	...	...	...	7,974	26,840	
Marine	...	2,15,068	2,31,216	4,02,753	3,08,663	14,66,083	5,66,735	2,47,828	4,69,903	4,56,435	
Miscellaneous ...	...	...	1,89,806	1,42,317	1,44,566	2,36,841	2,38,195	2,15,029	1,98,911	2,01,520	
Minor Establishments.	23,34,550	20,41,397	22,51,572	29,81,235	26,47,902	10,91,566	17,41,132	19,31,710	17,81,450	14,09,101	
Public Works											
Office Rent, Rates and Taxes	...	46,803	65,727	58,319	67,853	85,032	73,911	82,783	87,251	1,20,421	
Refunds	...	...	19,686	4,057	2,048	4,601	4,389	7,762	15,183	8,515	
Stationery	...	...	...	...	...	...	...	...	...	4,16,174	
Total ...	...	82,30,904	88,56,168	1,01,51,343	95,39,744	94,51,158	99,77,174	91,30,040	98,54,813	1,01,28,900	

Abstract

Total Receipts 1871-72 to 1879-80	... ...	... ...	... ...
Do. Charges do.	... ...	... ...	... ...
		Excess Charges	...

RS.
8,39,26,284
8,34,29,248
4,97,036

PUBLIC WORKS DEPARTMENT.

General.
Establishment.

No. 337 W.

No. 24.

FROM

THE SECRETARY TO THE GOVERNMENT OF MADRAS,

Public Works Department,

To

THE SECRETARY TO THE GOVERNMENT OF INDIA,

Public Works Department.

SIR,—With reference to your letter, No. 1,918 G., of 4th November 1880, calling on this Government to reconsider the scheme for the normal establishment of the Department of Public Works in this Presidency, submitted with my No. 2,277 W. of 1st October 1880, and which has been pronounced (paragraph 13) "from an economical point of view to be entirely unsatisfactory," I am desired to offer the following observations for the favorable consideration of His Excellency the Governor-General in Council.

2. The proposals of this Government as regards the number of Chief Engineers, Superintending Engineers, and with reference to the bestowal of the powers of a Superintendent of Works on Mr. Chisholm as Consulting Architect, having been accepted by the Government of India, no remark appears called for with reference to paragraphs 1, 2, and 3 of the letter under reply.

3. Paragraph 4 states the specific objections to the appointment of five selected officers with powers of Superintendents of Works and an extra staff salary of Rs. 100 per mensem. These are—(1) that the Chief Engineer for Irrigation considered that Superintendents of Works for the Cauvery and Kistna Deltas were unnecessary, and that he objected to the Tanjore and Negapatam Divisions forming a charge for an officer of this class; (2) that it does not appear that the combined charge of Ganjam with Vizagapatam and (3) the Buckingham Canal require Superintendents of Works.

4. With reference to (1) and (2), I am to observe that, in the last re-organization of the department (September 1878), the following six Executive Divisions comprehended in the First Circle, viz.:—

Ganjam,
Vizagapatam,
Eastern Godávari,
Western do.,
Eastern Kistna,
Western do.,

were formed into a charge for one Superintending Engineer, and that notwithstanding the appointment of the best officer in the department of this grade to the post, the arrangement, after a sufficiently long trial, broke down in such a way as to satisfy this Government that it could in nowise be adhered to or be again recommended for adoption.

5. The proposals made by the Chief Engineer for Irrigation took in the four Delta Divisions, but left Ganjam and Vizagapatam entirely outside of his scheme, to form part of a charge of a Superintending Engineer, which at the same time was to include divisions placed so widely apart as Cuddapah, Kurnool and Bellary, and even the Western Coast, involving a circuit of not less than two-thirds of the whole Presidency.

have considerably greater responsibility than ordinary Executive Engineers, it is only right and in accordance with the practice of other departments that they should receive some such allowance, not a very high one in this case—of Rs. 100 per mensem.

15. An allowance of this character is distinctly permitted by the Code of the Government of India, and, it is believed, that officers in this position have invariably in all other provinces drawn up to Rs. 200 per mensem extra to the ordinary pay of their grade.

16. In compliance with the instructions given in paragraph 4 of the Government of India letter under reply, the extra allowances have, I am to state, already been stopped from the 1st December, but this Government would urge the propriety of their being again given, at least to the present incumbents, as the duties are precisely those contemplated by the Code, and as the amount is after all but small.

17. Paragraphs 5 to 9 inclusive of the letter under reply deal with the cost of establishment, and, with a view to clear up all doubts on the subject, the Examiner has framed two statements annexed, (A) and (B), showing, *first*, the effect of the reductions ordered in establishment in 1879 as a general financial measure, and, *second*, the cost of the proposed normal establishment as sent up with my letter of 1st October.

18. It will be observed from (A) that taking into account temporary establishments and the value of the pensions, and calculating the gratuities and bonuses to retired officers on the principles laid down in the Civil Pension Code, the total saving in the Executive Branch has been only Rs. 1,883 per mensem, and in the Accounts Branch Rs. 989 after allowing for changes recently introduced in the system of auditing Local Funds under Madras Act IV of 1871 (which is not a State charge, and which changes were not induced by the Public Works reductions as a necessary consequence and relate to other services beside works), and this notwithstanding that 495 individuals in the first and 67 in the second branch were actually retired. But as the pensions of many of the retired men who took service under the Local Fund Boards have been stopped by the orders of the Government of India, the actual saving to the State while this order holds good is necessarily much greater than shown by Major Trail's figures.

19. After allowing for the cost of the new agency engaged by Local Fund Boards the saving is about Rs. 15,000 per mensem, reducible to Rs. 6,838 if the value of the compensation pension and gratuities be deducted. These figures exclude Petty Establishment which had been a purely Local Fund charge, and also the portion due to the Account Department, neither of which, properly speaking, affect the question of the Public Works Establishment under Government.

20. Whatever its results, the measure of transferring the execution of Local Fund Boards' works was, as noted in previous communication, one which gave that reality to Act IV of 1871 which its framers contemplated, and which, if that Act be retained in the Statute Book, must sooner or later have been brought about; it also enabled the Public Works Establishment to free itself of many inefficient members, and to take a much more sound position as a professional body than was possible under the old organization.

21. Even, however, if these results had not been so fully attained as is the case, it is now, I am to observe, clear that the step has been finally taken and that there is no revoking it.

22. With regard to the observation in paragraph 10, that the "Government of Madras has assigned 41 lakhs of expenditure to Local Boards," I am to submit that there is no question of assignment, as the money belongs to the several Local Fund Boards by law, and that there would thus seem to be a misapprehension on the part of the Government of India as to the character of these funds, which are derived from special rates levied for a special purpose under a special law which provides for their administration by a special agency.

23. Turning now to statement (B), it will be observed that, whereas the existing Provincial Establishment for the whole department, "Provincial" and "Imperial," costs Rs. 13·86 lakhs per annum, the normal one proposed will probably amount to

18·38 lakhs. Some adjustments on both sides of the account may have to be made, *e.g.*, if effect be given to the provisions of the Government of India Resolution, No. 1,787 G., of 15th October 1880, sanctioning revised proportions in the grades of the Upper Subordinates, about Rs. 27,000 per annum will have to be added to the total; but on the other hand certain contributions from (1) Local Fund Boards in Kurnool, Trichinopoly, &c., and (2) payments for work done by the Lithographic Establishment, &c., will come in as "*per contra*" credits.

24. It may therefore be accepted that, whereas the re-organization scheme of 1878 amounted to 21·38 lakhs (see paragraph 8 of General Fraser's letter), the proposed normal establishment will cost about 18·38 or 3 lakhs less.

25. If all the needful adjustments were made the difference would be fully 3½ lakhs in favor of the present scheme for the normal establishment.

26. The Government of India, in paragraph 9 of the letter under reply, observe that the proportion the establishment bears to works is "out of the question after making all allowances for the area to be supervised," and again that by the proposal sent up "it will cost nearly 10 annas to spend a rupee on Public Works." From these observations and others it has become evident to this Government that the grounds of their proposal and the peculiar circumstances of this Presidency have not been so fully understood and appreciated by the Government of India as could be desired.

27. The total outlay (Provincial and Imperial) supervised by the department is at present as nearly as possible 50 lakhs, and the establishment charge for spending this, viz., 18·38, would thus amount to 36·8 per cent. and not to 60 per cent. as supposed by the Government of India; but even this gives an incorrect view as compared with other provinces, as here much of the charge for establishment employed on (Imperial) Irrigation Works is borne by the Public Works Department instead of being debited to "Revenue," a matter which it is intended shortly to submit for consideration.

28. Again, as will be seen from paragraph 37 of my letter, No. 2,277 W., of 1st October, the special want of the department, which it was intended by the normal scale to meet, was "the provision of adequate establishment for investigating projects either of general importance or specifically for famines," and was not merely a work establishment. This with the immediately succeeding observations appear, I am to observe, to have escaped the Government of India, as no notice whatever of them appears in the letter under reply.

29. Taking all these circumstances and observations into consideration, it appears to the Right Honorable the Governor in Council that the time has arrived, when it becomes his imperative duty, to draw the very serious attention of the Government of India to the anomalous position which Madras has held over since the decentralization order (Resolution of Government of India, No. 3,334, of 14th December 1870). The working of this order will at once be seen from an examination of the attached statement marked (D).

30. Here taking the "charges" side it will be observed that, while under all the sub-heads, Jails, Registration, Police, Education, Medical, Miscellaneous, &c., the Provincial expenditure has, from causes beyond control, run up to an amount far above what it was only ten years ago, the Provincial income remaining practically constant, the outlay under Public Works has perforce gradually dwindled to a fraction of its former amount. In 1873-74 the Provincial outlay on Public Works was Rs. 29,81,235, whereas in 1879-80 it had been reduced to Rs. 14,69,101, of which, small as it is, one lakh had to go to meet an interest charge on the Madras Water Works. A careful review of the figures will show that if some consideration be not given by the Government of India to the question now

NOTE.—In the nine years 1871-72 to 1879-80 there has been an excess of Rs. 13,39,045 of charges over receipts.

NOTE.—The charge for Roads and Miscellaneous Public Improvements is now borne by Municipal and Local Funds raised under Madras Acts III and IV of 1871, which aggregated nearly 28½ lakhs in 1879, showing that every effort has been made by this Presidency to accept local burdens.

pressed on their attention, and it matters be allowed to proceed in the future as in the past the total extinction of the Department of Public Works in this Presidency, so far as concerns Provincial Works, is a foregone conclusion.

31. The establishment has been simply living from hand to mouth, and although on all sides there are projects of the highest promise and of the most vital importance to the welfare of the Presidency demanding the fullest consideration, and although the orders of the Government of India as to the necessity of being prepared with projects of works in case of famine are distinct and precise, it has been absolutely impossible for this Government to give that full consideration or to carry out these orders. There have been no officers to spare even for the preliminary work of investigation, still less for detailed preparation, so that, if famine were again to come upon this Presidency, there are only a very few, and those comparatively unimportant, projects in a sufficiently advanced state to admit of their being at once put in hand, and it is needless to point out the folly, extravagance, and waste of great opportunities which results from works being suddenly undertaken, the real utility of which has not been thought out and their mode of construction properly decided upon and estimated.

32. In proof of this it may be as well to say that the great work of the last famine, the Buckingham Canal, upon which over 36 lakhs have been spent, and on which at one time no less than 100,000 people were employed, has never even yet been properly estimated for.

33. Madras, it must at the same time be observed, claims a larger proportional share of outlay than any other province as tested by principles recognized by the Government of India for the apportionment of public funds;

First, it has admittedly the most extensive zone over which famine is possible, calling for the execution of *protective* works. In the last famine 1876-1878, as shown in paragraph 60, Famine Commission Report, Part I, 19½ millions of people were affected by this great calamity in Madras on an area of 83,800 square miles;

Second, it has in its facilities for the creation of new and the development of already existing irrigation works, a perfectly unrivalled field for works classed as "*Productive*."

34. In regard to this latter point, attention is invited to the annexed tabular statement marked C, the facts recorded in which are extracted from Part II, Section V, of the Famine Commission Report. By that report Madras with 7,300,000 acres shown as ordinarily irrigated stands second to the North-Western Provinces and Oudh with 11,500,000, but large as is the proportion thus given to Madras even these statements are utterly misleading as will at once be seen by a reference to the attached statement. The large figure given for the latter province is made up of:—

	Acres.
Well irrigation	5,794,000
Rivers and ponds	2,097,000

while canals on permanently irrigated land with unfailing sources of supply have only 1,694,000; and in addition to this it appears that even this acreage is made up by adding the whole area irrigated separately in the Kharif and Rabbi crops together, much of the acreage being thus counted twice over, and an incorrect impression being given as to the area irrigated at any one time.

35. The fact is that in Irrigation works Madras stands practically alone. On its three great Delta works, it has 1,700,000 acres under irrigation at one time, and were other works of the same class added, the area under permanent irrigation of the first class would be found to be not less than two and a half, if not three, times as much as in the whole North-Western Provinces and Oudh. In fact it is not too much to assert that tested in any equitable manner Madras has more first-class irrigation than the whole of the rest of India taken together, and stands quite the leading country in the world in this respect. Moreover the character of the irrigation supplied under the Northern Canals at the best is merely flooding, only needing one-fifth of the water required in the Madras irrigation (chiefly rice) with necessarily a very much smaller yield in food crops per acre.

36. The Famine Commission, Part II, page 161, observe that there "can be no question as to the value of the Delta works," and consistently urge both the extension of these and others on the serious attention of the Government of India concluding with the following words, paragraph 66, page 165:—"In short we consider that in the Madras Presidency the subject of irrigation requires a more comprehensive and systematic treatment than it has ever yet experienced. We have little doubt that it cannot be put on a satisfactory basis without increased expenditure * * *. But without a policy of vigour as well as of judgment, irrigation in Madras will not be brought into a condition in which it will supply to the country all these extremely great advantages it can confer or afford the full protection against famine which can be obtained from it, and which in our judgment the British Government is bound to secure for the people." Yet from the way in which the provision of a proper establishment and the means for even framing the requisite projects are denied to the department, this Government cannot but feel that the just claims of the Presidency have not received the attention they deserved; not as the Right Honorable the Governor in Council feels certain owing to any desire on the part of the Government of India to undervalue the importance of the subject to the welfare of the Presidency and its people, but from the inherent difficulty of fully realising the position, and this is shown even in the letter from the Government of India now under reply, when the enforced impecuniosity of the Government of Madras is used as an argument to prevent any improvement being made in what it must be evident is a very deplorable condition for any department to be reduced to.

37. As serving to show the widely different considerations accorded to the claims of the Bombay Presidency, (for instance) it may be seen from the public accounts that the land revenue of Madras for the fourteen years, 1862-63 to 1876-77, exceeded that of Bombay by nearly 1,100 lakhs, whereas in the sixteen years extending to end of 1877-78, Bombay had assigned to it under Ordinary and Extraordinary (Productive) Works 635 lakhs more than Madras. The Madras Government, in their letter, dated 2nd April 1879, to the Government of India, with accompanying papers, has also pointed out that under an equitable estimation of the *net* Imperial revenue for ten years, while Bengal* contributed a net annual surplus of £5,667,069 and Bombay† only £2,433,615, Madras‡ had given £5,400,540.

No. 781, Agricultural.

* Area square miles	...	...	157,989
Population	...	...	60,502,897
† Area square miles	...	...	124,462
Population	...	...	16,349,206
‡ Area square miles	...	...	139,271
Population	...	...	31,358,125

38. The population of Bombay is only about one-half that of Madras, but the Right Honorable the Governor in Council desires to rest the case of Madras, not on comparison with any other province of India, but on its own inherent claims; considering, however, the capabilities for Productive Works, the frequent famines and the great population of the Presidency, it is impossible to arrive at any other conclusion but that Madras has not hitherto received that amount of consideration which the importance of its interests demand.

39. An examination of the "forecast of expenditure on Irrigation works for the five years ending 1883-84" submitted to the Famine Commission by the Bombay Government brings out this fact in a more decisive manner. From this statement it would appear that Bombay has already secured an outlay on—

	LAKHS.
A. Sanctioned works	97·00
B. Famine relief works	101·64
	198·64

and evidently intends to secure the whole of the Rs. 3,76,60,736 demanded. Notwithstanding the singular, and indeed inconsistent, support given to the Bombay schemes by the Famine Commission, they are compelled to admit it to be "mortifying" to find that only 19,300 acres received the benefit of irrigation during 1877-78. The last received Administration Report showed in fact that the accumulated deficit already amounts to over 24 lakhs, and that the actual areas under irrigation were most meagre, amounting to some 25,000 acres.

40. Comparison with Madras here and its existing irrigated area of 5,300,000 acres is quite unnecessary, and yet the fact remains that whereas Bombay has a large establishment and ample outlay on its Public Works, Madras is reduced to such an extent that it cannot even frame projects suitable for famine relief. The manner in which the Productive Works of this Presidency have been starved while other provinces have received apparently every consideration from the Government of India will however be best seen from the following brief table extracted from the Proceedings of the Government of India, 2nd November 1880, No. 174-A I.

	Grants, 1880-81.	Actuals.		
		1879-80.	1878-79.	1877-78.
	Rs.	Rs.	Rs.	Rs.
Madras	1,55,000	1,24,241	2,40,815	3,55,279
Bombay	3,00,000	2,24,787	3,62,404	4,70,890
Bengal	14,00,000	15,80,528	25,57,900	28,74,338
North-Western Provinces and Oudh.	20,00,000	16,09,208	22,60,876	27,57,539
Punjab	23,00,000	22,65,725	26,74,380	28,46,500
Reserve	1,45,000	...	...	...
	63,00,000	58,04,489	80,66,375	83,04,546

41. In part I of the recently received report by the Indian Famine Commission it is laid down, paragraph 127, that the relief of the able-bodied should "be tendered promptly and before the people have begun to lose strength from want of food;" in paragraph 128, that the selection of the works thus required "should be the duty of the Public Works Department * * * who should be held responsible for *keeping a list of such works ready to be put in hand without delay when any such emergency occurs.* If possible one such work should be opened in each sub-division of a district in which such distress prevails."

42. In the opinion of this Government it is no exaggeration to say that in the face of these and other similar injunctions by the Famine Commission any orders by which this department are deprived of all means for fulfilling this most obvious duty of having works in readiness for famine have almost the appearance of cruel mockery.

43. It cannot be too often or too emphatically submitted that to improvise works, which can in any true sense be considered reliable (especially Irrigation works which often need years for the collection of the data) when famine has once declared itself, is simply impossible; the time for proper projection of such work has then passed, and nothing but financial failure must be counted on as the inevitable result.

44. The deplorable financial results of the Madras Irrigation and Canal Company, which was the hasty outcome of the famine of 1854 and those of probably the majority of all schemes similarly entered on in other provinces, not even excepting the late Bombay schemes, prove this incontestible fact.

45. Any Government which has only half worked out projects at hand, or which has to improvise such schemes has necessarily no other course than to make the best selection it can, usually a haphazard one, when famine appears; and that this is a position fraught with financial danger it is unnecessary to insist upon.

46. Such, however, is the position of the Madras Presidency at this moment, although the late terrible famine only closed, it may be said, yesterday; and this state of matters must in the view of this Government be perpetuated and rendered incurable if the establishment of this department is not given the means of meeting the requirements of its position.

47. The scheme sent up with my letter, No. 2,277 W., of 1st October 1880, will, it is believed, on a careful review be found to be framed on the most economical scale commensurate with efficiency, and with the most pressing needs of the Presidency. A small addition to it will probably be very soon needed owing to the lately purchased Madras Irrigation and Canal Company's works having to be provided for—

a contingency foreseen, but not specifically provided for in the normal scale sent up for acceptance.

48. It may be that the views here expressed may, if accepted, lead to the reconsideration of the Provincial assignments made by the Government of India in their Financial Department Resolution of the 14th December 1870, No. 3,334 (Accounts); but, looking to the urgent necessity for relieving the Public Works Department from its present helpless condition, the Right Honorable the Governor in Council most earnestly hopes that the much needed sanction may not be withheld pending the discussion of a question of such a complicated character.

49. I am to add that a copy of this correspondence will be forwarded for the information of the Secretary of State for India.

I have the honor to be,

Sir,

Your most obedient servant,

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

Fort St. George,
8th February 1881.

Exd. E. C. Shunker.
Spare Copies

Proceedings of the Government of Madras, Public Works Department, dated 3rd February 1880, No. 265 W.

General—Establishment.

Read the following paper:—

No. 2 W.

Memorandum by the Chief Engineer for Irrigation.

THE material reductions in the Public Works Department found requisite having rendered it necessary to provide specially for the future work of the Irrigation Department, it has to be determined what divisions or parts of divisions will need a special irrigation establishment and, with reference to the work to be done, what establishment should be provided; also what divisions will no longer require to be maintained.

It is probable that the withdrawal of certain divisions from the operations of the Public Works Department will not result in any material reduction of *works* outlay in the Irrigation Department, because it has been well known for many years past that the work done hitherto has been far less than that urgently needing to be carried out, and that improvements necessary to the safety and efficiency of tanks and other irrigation works generally have made but little progress owing to the smallness of the grants available, and partly also to the inadequacy of the establishment, as compared with the many demands made upon it.

2. GANJAM DIVISION.—Commencing with the northern part of the Presidency it may be concluded that the abolition of the Ganjam Division is, at any rate for a time, unavoidable. The average expenditure on irrigation and agricultural works has for the last three years been Rupees 48,309, and no special and suitable establishment can be maintained to carry out so small a quantity of work. There is no prospect of money being forthcoming, for some years at any rate, to carry out the Rooshikulia, Mallada Tumpara, and other similar projects, and the assessment on irrigated lands is so low as to make it very difficult to improve the condition of this description of cultivation. Moreover, the Collector is averse to the sanction of repair estimates for tanks and channels, the wet assessment of the lands under which is but little more than that of dry lands. He considers that these works should be maintained by the ryots holding the lands under them, as no doubt was the case prior to about twenty-five years ago. A grant-in-aid of about 10,000 will probably enable the Collector to assist the ryots in cases in which he may deem the work to be done to be beyond their power or means. Rupees 1,000 also may be allowed for river embankments.

	Rs.
1876-77	51,484
1877-78	67,901
1878-79	25,544
	3)1,44,929
	48,309

3. VIZAGAPATAM DIVISION.—There are only two taluks in the southern part of the district, in which there are irrigation works in which Government have an interest, and there are hardly any such works over which Government can exercise any complete control, as Zemindars or proprietors are largely interested in most of them, and no satisfactory arrangements have so far been made to allow of their being properly dealt with, or to ensure the contributions of the proprietors being forthcoming when needed. The average outlay of the past three years has been Rupees 11,610. It is considered that little or no advantage would be obtained by continuing to maintain an establishment to look after irrigation works, even were expense a matter of little moment. The abolition of this division is therefore recommended. Rupees 8,000 may be reserved as a grant-in-aid for minor irrigation works, and Rupees 1,000 for river embankments.

	Rs.
1876-77	17,240
1877-78	12,407
1878-79	5,183
	3)34,830
	11,610

4. Godavari Delta.—The Godávari Eastern and Central Delta Division and Western Delta Division must, of course, be retained and adequately officered. There are a few outlying works, such as the river embankments above the anicut which will need attention from time to time, and these may, as already directed, continue to be attached to the divisions from which they can most conveniently be worked.

The superior executive establishment should consist of—

Executive Engineers			2
Assistant Engineers—			
3 Sub-divisions of E. and C. Delta		*3	
2 Do. W. Delta		2	
			5

* It is proposed to retain Mr. Sub-Engineer Ellis in charge of one sub-division.

5. Rajahmundry Division.—Apart from the works which are to be attached to the Godávari Delta Division there is no need to maintain an irrigation establishment in this division, which has already been practically abolished. The outlay of the past three years amounted on the average to Rs. 16,055, and it is not practicable to provide an establishment for so small an extent of work. Rs. 10,000 may be reserved as a grant-in-aid for minor irrigation works maintenance.

	Rs.
1876-77	*19,511
1877-78	17,854
1878-79	10,999
	3)48,164
	16,055

* Exclusive of the outlay on river embankments and river conservancy.

6. Kistna Delta.—There are two executive divisions, viz.:—

the Eastern Delta Division,
the Western do.

at present for the former two sub-divisions will suffice, but when the completion estimates are undertaken a head-quarter sub-division will be essential. For the Western Delta two sub-divisions will permanently suffice.

The superior executive establishment will be—

Executive Engineers	2
Assistant Engineers	4

7. Guntur Division.—This has been abolished or removed from the operation of the Public Works Department. One work, the Kistna left flood bank above Bezváda, has been attached to the Kistna Eastern Delta Division, and there is no other work of importance to be considered.

Rs. 5,000 may be reserved as a grant-in-aid for the maintenance of minor irrigation works.

	Rs.
1876-77	25,826
1877-78	36,947
1878-79	15,275
	3)76,048
	25,349

8. Ongole Division.—There are no irrigation works of much importance. The area is large and the outlay has averaged for the past 3 years Rs. 25,349. There is no option but to cease to deal with it in any way by the professional department. Rs. 5,000 may be allowed as a grant-in-aid.

9. Nellore Division.—This division as constituted in 1878 comprised the part of the Nellore Taluk north of the Pennér, and the part of the district south of that river. As the Pennér anicut system will in any case have to be looked after, and as the irrigation under the Sungam channels is important, while there are some valuable tanks and channels to the south of the river, outside the Delta, it is considered that this division may be left unchanged, and that for it the superior establishment required will be—

Executive Engineer	1
Assistant do.	1

Should the Sungam project be sanctioned a special establishment will be required for it.

10. Government have recently decided to place officers, designated as Superintendents of Works, in charge of the Godávari and Kistna Deltas, in order to relieve the Superintending Engineer from an excess of work, and to ensure closer attention being given to the requirements of these very important systems. There will no longer be any work other than irrigation, with perhaps an occasional special building, for the Superintending Engineer to look after, and it is considered that—

(1) Superintendents of Works are unnecessary;
(2) They would inevitably make the establishment too costly.

It is recommended that the—

Godávari Delta with its 2 divisions,
Kistna " " 2 "
Nellore Division in which is the Pennér anicut,

be made the 1st Irrigation Circle under a Superintending Engineer.

The superior establishment will then be—

1	Superintending Engineer,
5	Executive Engineers,
*10	Assistant do.
3	Supernumerary Engineers,

* Nine so long as Mr. Sub-Engineer Ellis is in charge of a sub-division.

will be required to take the place of officers on privilege leave or furlough, and to provide a third sub divisional officer for the Kistna Eastern Delta in due course. There is special work to be done in connection with the Godávari Central Delta completion estimates at present and the supernumerary officers' services would be at the disposal of the Superintending Engineer for this and any other special duty at times when they may not be required to fill executive charges. It is considered that the inclusion of the Nellore Division in the First Circle is a proper and suitable arrangement, because it will, after one complete inspection, not occupy very much of the time of the Superintending Engineer, and it will be accessible to him by canal, boat or coasting steamer without much loss of time, when a special visit may be found necessary. It has for a long time past been very much neglected, and it will, it is hoped, be properly attended to in the future.

11. Cuddapah, Madanapalle, Kurnool, Bellary and Anantapur Divisions.—These Divisions all present the same characteristics, viz., large areas, numerous scattered works, of which a few are of some importance and the rest individually of very little consequence. It is recommended that under present circumstances there be no Public Works Establishment retained in these divisions on account of irrigation works, and that the following sums be reserved as grants-in-aid for maintenance of such works:—

	Rs.
Cuddapah Division	
Madanapalle "	15,000
Kurnool "	7,500
Bellary "	12,000
Anantapur "	12,000
	10,000

12. Chingleput Division.—This is too important a division to be given up, whether the works or the revenue dependent upon irrigation be considered. The area is moderate, and it can probably be fairly well managed, so far as irrigation alone is concerned, by one Executive Engineer with two sub-divisional officers who need not be Assistant Engineers. It is assumed that if there be military buildings or other non-irrigation work to be attended to these will be looked after by another officer.

13. Vellore Division.—There is a good deal of work to be done in this division, and there is now a prospect of its being carried out, as money can be transferred from divisions which are to be given up. The improvements to the principal channels of the north section of the Palar anicut system should be taken up where they were left at the close of the famine; very many of the numerous tanks connected with this system require to be put to rights; the south section has been left incomplete for some twenty years. The Poiney anicut channels and those of the Cheyár anicut, with the tanks connected with them, need much attention in order

to make the most of the water-supply. For some years to come it will be advisable to allow two sub-divisions for this division, viz :—

(1) Northern.
(2) Southern.

All the principal channels of the north section of the Pálár anicut system should be attached to the (1) sub-division, whether they lie in Chingleput or not, as the water main regulation should be entirely in the hands of one officer. The minor channels and tanks of the system in Chingleput would remain in charge of the Executive Engineer of the latter Division.

The sub-divisions should be held by Assistant Engineers.

14. Chittoor Division.—The greater part is Zemindari, and there is nothing to make its retention under present circumstances desirable. Any part of the Poiney anicut channels or any tanks supplied by them, which may be in this division, can be attached to the Vellore Division. A grant-in-aid of 12,000 rupees may be reserved for the maintenance of minor irrigation works.

15. Hosur Division.—There is at present but little work in progress of a kind needing skilled supervision, but it will be desirable to complete the Marandahully and Barur projects, which were commenced for famine-relief purposes. The Barur project at any rate is a promising work. There is also something remaining to be done to the Pennagoondapuram tank, another famine work. It will be advantageous therefore to constitute a special division for these works, and it may be left to be determined hereafter what the ultimate constitution of the division is to be; for the present one Executive Engineer and upper subordinates for individual works will be needed. For the maintenance of minor irrigation works a grant-in-aid of Rs. 7,500 may be allowed.

16. Salem Division.—There is nothing in this to make its retention under present circumstances desirable, and it is recommended that it be given up. The two or three incomplete tanks of the Womalore river series which are under repair should be completed before the end of the year.

For the maintenance of minor works a grant-in-aid of Rs. 10,000 may be allowed.

17. Coimbatore Division.—This, as recently modified, includes the old Coimbatore Division and the part of the Erode Division to the south of the hill country of Collegal. There are many irrigation works of importance, and there is plenty of useful work to be done. It is recommended that there should be two sub-divisions with—

One Executive Engineer,
One Assistant do.,

the second sub-division being held by an Upper Subordinate.

18. South Canara and Calicut Divisions.—The Irrigation Department has no interest in either of these divisions, though in the latter a small sum has been allowed yearly for the management of two dams for the exclusion of salt-water from irrigated tracts. The average expenditure of the last three years has been Rs. 1,535, and this sum may be continued as a grant-in-aid to be disbursed under the orders of the Collector.

		Rs.
1876-77	... ...	2,063
1877-78	... ...	1,503
1878-79	... ...	2,038
		3) 4,604
		1,535

19. Tendivanam Division.—This has recently been amalgamated with Cuddalore, but the connection is not desirable or indeed feasible under present circumstances. A small grant-in-aid will be necessary.

20. Cuddalore Division.—The Irrigation Department can undertake the management of the Pelandorni anicut and of all the works for which individually a continuous record has been ordered to be maintained, and this includes all the tanks

connected with them. They are detailed in Proceedings of Madras Government, No. 1,297, dated 16th April 1877, and are as follow :—

Numbers.	Name of River.	Name of Irrigation Work or System.
1	Coleroon.	Lower Anicut.
2	Vellár.	Shatiatope Anicut.
3-A	Manimuthanuddy.	Vriddháchalam Anicut.
3-B	Do.	Mehmatur Anicut.
3-C	Myorenuddy.	Katumloor Anicut.
4-A	Guddelum.	Tiruvadi Anicut.
4-B	Do.	Vánamádévi Anicut.
4-C	Do.	Tiruvendipuram Anicut.
5	Kullar.	Vikravándi Anicut.
6	Ponniár.	Tirukoilúr Anicut.

The necessary superior establishment will be—

One Executive Engineer.
One Assistant do.

Any other irrigation works included in the general area occupied by the above works can likewise be looked after by this establishment.

21. Tanjore and Negapatam Divisions.—These two divisions have recently been amalgamated, and Government have directed the appointment of a Superintendent of Works for the charge of the whole of Tanjore with a part (so far undefined) of Trichinopoly, and under this officer an Executive Engineer and two Assistant Engineers. It is considered that this organisation is not well suited to the requirements of the Delta, that it will not enable the most to be made of the establishment allowed, and that this establishment is inadequate if the Pudukóta Taluk be retained and provided for. Considering the revenue derived from Tanjore and the profits which have accrued in the last forty years, it would seem to be somewhat illiberal to leave any part of this district neglected. However, the Pudukóta Taluk is a very large one, and would need a good deal of attention, and upon its retention or rejection will depend whether one executive division will suffice, or two will be required. Assuming that Pudukóta is to be left out of consideration, there will be one division and four sub-divisions and all the latter should be held by Assistant Engineers.

Superior executive establishment required—

Executive Engineer 1.
Assistant Engineers 4.

If Pudukóta be included there will be two divisions and four sub-divisions, and the establishment required will be—

Executive Engineers 2.
Assistant do. 4.

22. Trichinopoly Division.—According to the final issue of the budget of 1879-80 the provision in this division was for—

		Rs.	Rs.
Minor Original Works.			
Irrigation and Navigation	... ...	6,000	
Agricultural Drainages	... ...	1,000	
Miscellaneous	... ...	300	
			7,300
Repairs.			
Irrigation and Navigation	... ...	44,000	
Agricultural—			
River Conservancy	... ...	18,000	
River Embankments	... ...	25,000	
Drainages	... ...	1,500	
Miscellaneous ...	... ...	300	
			88,800
			96,100

The irrigated area of the district is—

1877-78.	Proceedings of Madras Government, No. 482 I., 1st September 1879.	Area	207,817
		The revenue	Rs. 1,58,493
		Average rate per acre	,, 0·84

It will not be advisable to abandon this division, but it will be necessary to provide as economical an establishment as possible, and not to include in the division the north-east taluk* in which there are no works of importance; and possibly the extreme south of the district may also be omitted. An Executive Engineer without a sub-divisional officer will then, it is considered, be able to manage the division.

*Udayárpálaiyam.

For minor works maintenance in the parts of the district proposed to be abandoned a grant-in-aid of Rs. 6,000 may be allowed.

23. Dindigul and Madura Divisions.—There is nothing likely to be done in the Madura District to warrant under present circumstances the retention of an Irrigation Establishment therein, and it may be abandoned altogether. A grant-in-aid of Rs. 15,000 may be allowed for maintenance of minor works. In the absence of a regular machinery for dealing comprehensively with irrigation in Madura, it is doubtful whether even so much need be provided.

24. Satur and Tinnevelly Divisions.—It is proposed to abandon the Satur Division and the Nánguneri Taluk of the Tinnevelly Division, retaining the rest of the latter which will then embrace the whole of the Támbraparni irrigation, and nearly all that of its principal tributary, the Chittár. Two sub-divisions will be necessary, and both should be held by Assistant Engineers.

Establishment required—

Executive Engineer 1.
Assistant Engineers 2.

For the minor works maintenance in the abandoned parts of the district a grant-in-aid of Rs. 20,000 may be allowed.

25. It is recommended that the—
Cuddalore Division,
Tanjore Division one or two as the case may be,
Trichinopoly do.,
Tinnevelly do.,
be formed into a second Irrigation Circle under a Superintending Engineer.

The superior establishment of the Circle would be—
1 Superintending Engineer,
4 or 5 Executive Engineers,
7 Assistant Engineers, with
2 Supernumerary Engineers,
to fill vacancies and undertake any special duties required.

26. A third Circle will be required which will comprise the—
Presidency Division (non-irrigation).
Chingleput do.
Vellore do.
Special works, Oosoor Division.
Coimbatore Division. } non-irrigation.
Nilgiris do.
Banglore do.
&c., &c.

27. It is supposed that the establishments of the Irrigation Divisions will be available to carry out, with the aid, if necessry, of special temporary establishments, such work, Imperial or Provincial, as Government may require, *e.g.*, it is understood that a jail is to be built at Palamcottah, and this could be supervised by the Executive Engineer with the assistance of a special Overseer in addition to the petty establishment usually provided from the contingencies of the estimate. In that

case a percentage charge would be made for supervision to the debit of the fund concerned.

28. The following abstract shows the establishment proposed for the two Irrigation Circles and the Irrigation Divisions of a Third Circle:—

Circles.	Systems.	Superintending Engineers.	Executive Engineers.	Assistant Engineers.	Sub-Engineers and Supervisors.	Overseers.
1st Irrigation.	Godávari Delta ...	1	2	5	4	8
	Kistna do. ...		2	5	4	8
	Nellore Division ...		1	1	2	3
	Supernumerary ...		...	2	...	...
	Total, 1st Irrigation Circle	1	5	13	10	19
2nd Irrigation.	Cuddalore Division...	1	1	1	1	3
	Tanjore do. ...		1	4	4	8
	Trichinopoly do. ...		1	...	1	3
	Tinnevelly do. ...		1	2	2	4
	Supernumerary ...		...	2	...	...
		1	4	9	8	18
3rd (General).	Chingleput Division.	½	1	...	2	4
	Vellore do. ...		1	2	2	4
	Hosúr (Special) Division		1	...	1	3
	Coimbatore		1	1	2	4
	Supernumerary ...		...	1	...	...
		½	4	4	7	15
		2½	13	26	25	52

29. It is not proposed to make any alteration in the budget provision for—

	Rs.
(1) Temporary Survey Establishments	15,000
(2) Revenue investigations under Mr. Wilson	13,000

Chepauk,
8th January 1880.

(Signed) J. MULLINS, Colonel, R.E.,
Chief Engineer for Irrigation.

To the Secretary to Government, Public Works Department,
through the Chief Engineer, Public Works Department.

Order thereon, No. 265 W., dated 3rd February 1880.

His Grace the Governor in Council concurs generally in the views expressed by the Chief Engineer for Irrigation in the memorandum read above, but is of opinion that certain modifications in the details of the scheme proposed by that officer will be necessary.

2. The state of the Provincial finances renders a further reduction in the general establishment absolutely necessary, and as the establishment thus reduced will be so small as to render the regulation of appointments and promotions exceedingly difficult, the whole establishment of the Department, Irrigation as well as General, will continue to be borne upon one list for the purposes above mentioned, though the cost will be divided between Irrigation and other Services in accordance with the actual distribution and employment of the establishment.

3. His Grace in Council also considers it essentially necessary that the works of the Godávari and Kistna Districts should each be under the charge of a single officer

Vizagapatam.	Consulting Architect.	
Cuddapah	Buckingham Canal	18. The remaining six Divisions
Presidency.	West Coast,	will be considered Provincial, and the cost of establishments employed therein distributed accordingly.

19. For purposes of direction the Presidency will, for the present, be divided into three circles, and it is desirable that these should be so arranged as to facilitate as far as possible a return to the present distribution into five circles, when the existing financial pressure has passed away. With this object the 1st Circle will include the Vizagapatam, Cuddapah, and Nellore Divisions, the 2nd will include Chingleput, North Arcot, Salem, Coimbatore, and the West Coast, while the 3rd will include South Arcot, Tanjore, Trichinopoly, and Tinnevelly.

20. The Godávari, Kistna, Presidency and Buckingham Canal Divisions being under the charge of Superintendents of Works are not included within the limits of any circle.

21. One-half the cost of the Superintending Engineer's Establishment of the 1st Circle, three-fourths that of the 2nd Circle, and the whole of that of the 3rd Circle will be charged to Irrigation, the balance being charged to Provincial. Irrigation will also be debited with the cost of the Chief Engineer for Irrigation and his office establishment, and with a sum which will, for the present, be fixed at Rs. 30,000 per annum on account of a share of the general expenses of the Public Works Secretariat. This amount will be open to re-consideration hereafter if necessary.

22. In addition to the officers required for the organization detailed above, an Executive Engineer and an Assistant Engineer will be provided as Assistants to the Chief Engineers, with one Executive and five Assistant Engineers as supernumeraries or for special work.

23. The subordinate establishments will be considerably reduced, it being intended that even in the divisions in which Public Works establishments are retained those establishments shall only be employed on works of moderate importance, petty and outlying works being executed either by the departments concerned or by the Local Fund Establishments, which will doubtless be made available on payment of a fixed per-centage on the value of the work done.

24. With regard to office establishments, His Grace the Governor in Council considers that it is not advisable to introduce the differing scales proposed by the Chief Engineer for Irrigation in his memorandum under consideration; but that the offices of the Superintending Engineers should be of the strength ordered in G.O., No. 3,674 W., of 18th September 1878, with the addition of a technical Assistant on a salary of Rs. 200 per month, in place of the Engineer Assistants hitherto allowed, and that all Executive and Sub-divisional Officers should come under one of the classes detailed in that order. If additional assistance is required in any particular office, it should be provided for by temporary appointments.

25. The Superintendents of Works will have office establishments of the same strength as those of a 1st-class Executive Division.

26. Statement No. 1 attached to this order shows the executive establishment of each division, its "class" as regards office establishment, and the number of separate sub-divisional establishments required; it will be seen that the alterations now ordered will involve considerable reductions in the subordinate and office establishments, in addition to those already made, the number of executive subor dinates being reduced from two hundred, at which it now stands, to one hundred and forty-four.

27. In carrying out these reductions the following course will be adopted.

28. Superintending Engineers will at once complete provisionally, from the establishments now under their orders, the subordinate establishments of the new divisions included in their present circles. A complete nominal list of the men thus proposed to be provisionally retained, and those in excess of future requirements (as shown by Statement No. 1) of each circle should be submitted to the Chief Engineer at the earliest possible date; and in the case of men for whom no place can be found on the reduced establishment, but whose services it may be considered specially desirable to retain, a brief statement of the grounds of recommendation should be given.

29. It must be understood that in the case of subordinates the list thus prepared are only provisional, and the Chief Engineer will exercise his discretion in

transferring specially deserving men in excess of the requirements of one circle to fill places in another.

30. If in any circle there should be an insufficient number of subordinates of any grade to make up the required establishment, the vacancies are not to be filled up but reported to the Chief Engineer.

31. Subordinates who remain finally in excess of the requirements of the department will be discharged from the 29th February, the sanction of the Government of India having been accorded to the grant to such men of the concessions allowed by the Government of India Resolution of the 31st July 1879, No. 2,079.

32. Superintending Engineers are requested to encourage by every means in their power the voluntary retirement or transfer to Local Fund Establishments of subordinates and especially of Overseers serving under them.

33. With regard to office establishments the same principles will be followed, save that Superintending Engineers will complete their establishments without further reference to Government, men whose services are not required being discharged,—those whose names appeared in lists (*b*) referred to in the Government orders quoted in the margin,* from the 29th February, those whose names appeared in list (*a*) from the 31st March. Complete lists of all men thus discharged should be forwarded for the information of Government.

* G.O., No. 2,435 W., dated 25th Sept. 1879.
" " 2,482 W., " 2nd Oct. "
" " 2,483 W., " " "
" " 2,523 W., " 7th " "
" " 2,530 W., " " "
" " 3,191-A W., " 12th Dec. "
" " 3,194-A W., " " "
" " 3,218 W., " 15th " "

34. The office establishment of the future Superintending Engineer, 1st Circle, will be dealt with by the Superintending Engineer, 2nd Circle, in communication with the Superintending Engineer, 1st Circle; that of the future 2nd Circle, by the present Superintending Engineer, 3rd Circle, in communication with the Superintending Engineer, 4th Circle; and that of the future 3rd Circle by the present Superintending Engineer, 5th Circle. The office establishments of the Superintendents of Works, Godávari and Kistna, will be organized by the present Superintending Engineer, 1st Circle, and that of the future Presidency Division by the Superintending Engineer, 3rd Circle.

35. In addition to the reductions now ordered in the divisional and circle establishments, the strength of the Secretariat and Accounts Offices will also be reduced; these offices as well as that of the Public Works Stores and Workshops will be separately dealt with.

* Lieutenant-Colonel Hunter, Executive Engineer, 1st grade.
Lieutenant-Colonel Burton, Executive Engineer, 1st grade.
Major Smalley, Executive Engineer, 1st grade.
Major Ross-Thompson, R.E., Executive Engineer, 2nd grade.
Lieutenant Dobson, R.E., Executive Engineer, 4th grade.
† Lieutenant Dorward, R.E., Executive Engineer, 4th grade.
Lieutenant Rawson, R.E., Executive Engineer, 4th grade.
Lieutenant Boddy, Assistant Engineer, 1st grade.
Lieutenant Hamilton, R.E., Assistant Engineer, 1st grade.
Lieutenant Henderson, R.E., Assistant Engineer, 1st grade.
Lieutenant Langley, R.E., Assistant Engineer, 1st grade.

36. The Government of India will be addressed as to the mode of dealing with the officers named in the margin, who* are now on special leave, and of those† temporarily transferred to military duty; in the meantime the services of the latter will be definitely replaced at the disposal of the Military Department, and their names struck off the strength of the Public Works establishment from the 29th February, unless the Government of India are prepared to provide them, as they will be requested to do, with suitable employment in the Public Works Department.

(True Extract.)

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

No. 1.

STATEMENT showing Strength of Officers and Subordinates required for each Division.

	Class.	No. of Sub-Divisions.	Superintendents of Works.	Executive Engineers.	Assistant Engineers.	Sub-Engineers and Supervisors.	Overseers.
Irrigation.							
Godávari—Eastern	I	3	1	1	2	2	4
Do. Western	I	2		1	3	2	4
Kistna—Eastern	I	3	1	1	3	2	4
Do. Western	I	2		1	2	2	4
Nellore	II	1	...	1	1	2	4
Chingleput	II	2	...	1	...	2	4
North Arcot	II	2	...	1	2	2	4
Salem	III	...	...	1	...	1	3
Coimbatore	II	2	...	1	1	2	4
South Arcot	I	1	...	1	1	1	3
Tanjore—Northern	I	2	...	1	2	3	6
Do. Southern	II	2	...	1	2	2	4
Trichinopoly	II	1	...	1	1	2	6
Tinnevelly	I	2	...	1	2	2	4
Secretariat and Supernumeraries ...	...	...	...	1	4	2	6
	...	25	2	15	26	29	64
Provincial.							
Vizagapatam	III	2	...	1	1	3	4
Cuddapah	II	3	...	1	1	3	9
Presidency	I	3	1	...	3	3	7
Consulting Architect	Special.	...	...	1	...	...	...
Buckingham Canal	I	3	1	...	1	2	4
West Coast	II	3	...	1	2	3	9
Secretariat and Supernumeraries ...	...	...	...	1	2	1	3
	...	14	2	5	10	15	36
Irrigation	...	25	2	15	26	29	64
Provincial	..	14	2	5	10	14	36
	...	39	24		36	44	100

From the Secretary to the Government of Madras, Public Works Department, to the Secretary to the Government of India, Public Works Department, dated Fort St. George, 3rd February 1880, No. 266 W.

General—Establishment.

I am directed to forward, for the information of the Government of India, a copy of Proceedings of the Madras Government, No. 265 W., dated 3rd February 1880, and of certain papers printed therewith, and to submit the following remarks thereon.

2. The reduction by eight lakhs of the Provincial grant for 1880-81, in accordance with the telegrams noted in the margin, rendered necessary considerable reductions in the executive staff of the Public Works Department; and during the latter part of 1879 orders were issued for the proper accomplishment of this object, the general result of which was the reduction by ten of the number of executive divisions.

From His Excellency the Viceroy, to the Governor of Madras, dated 28th July 1879.
From His Grace the Governor of Madras, to the Viceroy, dated 15th October 1879.

3. It was found at once that, with the increased areas thus given to each division, the departmental staff would be unequal to the task of supervising as at present nearly the whole of the Public Works expenditure of the various Local Fund Circles, and it became necessary, as explained in my letter, No. 150 W., of 20th January 1880, to offer to the Local Fund Boards the option of making their own arrangements for the execution of their public works.

4. This option was taken advantage of to a greater extent than was at first expected, with the result of a reduction estimated at five and a half lakhs of rupees in the contribution of Local Funds to the cost of the Public Works Establishment.

5. At the same time, the Imperial grants for military and other services were reduced (for 1880-81) to Rs. 5,13,823,* being less by Rs. 4,54,177 than those for the current year.

	1880-81.
	Rs.
Military	4,13,877
Other Services	99,946
	*5,13,823

	1879-80.
	Rs.
Military	6,96,712
Other Services	2,71,288
	9,68,000

6. It was, therefore, obvious that unless a considerable further reduction was made in the strength of the Public Works Establishments, the charge to Provincial Funds would be greatly in excess of what those funds could bear.

7. The Chief Engineer for Irrigation pointed out in his memorandum printed with the Proceedings herewith forwarded, that the establishment thus reduced would not suffice for the proper conservancy of the irrigation works on which so much of the prosperity of this Presidency depends, and submitted a scheme for the organization of a separate Irrigation Establishment at a cost of Rs. 6,98,677, exclusive of Secretariat, Accounts, and one or two other minor charges, which would bring the total charge against Irrigation to about Rs. 8,95,000.

8. The Proceedings now forwarded explain the action which this Government has determined to take under the circumstances above described.

9. It will be seen that they involve a reduction in the number of executive divisions from thirty-nine, at which it stood at the beginning of this year, to nineteen, with corresponding reductions in the number of officers and subordinates of all grades.

10. The number of officers and subordinates required for the officering of the different divisions is shown in the statement marked No. I, attached to the order, and the estimated cost of the establishment, reduced as proposed, with its distribution between Irrigation and Provincial, is shown in the statement in budget form attached to this letter.

11. It will be seen that the charge against Irrigation amounts to Rs. 9,01,212, which is but slightly in excess of the sum which the Chief Engineer was willing to pay for efficient supervision; the charge to Military and other Imperial services as well as to Local Funds will be as at present 25 per cent. on the actual cost of work. The balance debitable to Provincial is estimated at Rs. 3,02,919.

12. The following table shows in a succinct form the arrangement of the Executive and Superintending Engineers' charges as they were previous to the recent alterations, and as they will stand in accordance with the arrangements now proposed :—

	Former. Divisions.	Proposed. Divisions.	
First Circle.	Ganjam	Vizagapatam.	First Circle.
	Vizagapatam	(Abandoned.)	
	Rajahmundry	Godâvari, Eastern *	
	Godâvari E. and C. Delta	Do. Western *	
	Godâvari Western do.	Kistna, Eastern *	
	Kistna, Eastern do.	Do. Western *	
	Kistna, Western do.	(Abandoned.)	
	Guntur		

	Former. Divisions.	Proposed. Divisions.	
Second Circle.	Ongole	Nellore.	First Circle.
	Nellore		
	Kurnool		
	Cuddapah	Cuddapah.	
	Madhanapalle		
	Bellary		
	Anantapur	(Abandoned.)	
	Presidency	(Do.)	
Third Circle.	Bangalore	Presidency. *	
	Buckingham Canal	Buckingham Canal.*	
	Chingleput	Chingleput.	Second Circle except South Arcot.
	Vellore	North Arcot.	
	Chittoor		
	Tindevanum	South Arcot.	
	Cuddalore		
Fourth Circle.	Salem	Salem.	
	Oossoor		
	Coimbatore	Coimbatore.	
	Erode		
	Nilgiris		
	Wynad	West Coast.	
	Calicut		
	Canara		
Fifth Circle.	Negapatam	Negapatam.	Third Circle with South Arcot.
	Tanjore	Tanjore.	
	Trichinopoly	Trichinopoly.	
	Madura	(Abandoned.)	
	Dindigul	(Do.)	
	Tinnevelly	Tinnevelly.	
	Satur		

13. The divisions marked * will be under Superintendents of Works, and omitting these, the proposed First Circle includes the present First and Second, and the proposed Second Circle the present Third and Fourth, with the exception of South Arcot which is transferred to the present Fifth, proposed Third Circle.

14. This arrangement has been adopted in order to cause the least possible dislocation of existing arrangements and to facilitate as much as possible the reversion to the present distribution in five circles, which this Government is of opinion must take place when the existing financial pressure is removed.

15. It will be seen that it is proposed to retain the full number of four Superintending Engineers sanctioned in Government of India's Proceedings No. 1,506-33 E.G., dated 28th August 1879, although there will be for the present employment as such for only three officers; this is done in order to reduce as far as possible the inevitable block in promotion caused by the reductions now in contemplation. At present there are only two officers doing duty in this Presidency who hold permanent rank as Superintending Engineers, and it is not proposed to make temporary appointments beyond the required number of three, but to use the fourth Superintending Engineership as an addition to the regular number of Executive Engineers, 1st Grade; should the number be raised beyond three by the return from furlough of the permanent holders of the office, the fourth Superintending Engineer will be employed as a Superintendent of Works. It is, morever, considered, as explained above, that it will shortly be necessary to revert to the present distribution of the Presidency into five circles.

16. It is probable that two officers and between fifty and sixty subordinates (not ninety as at first supposed) will have to be retired in order to carry out the arrangements now proposed. In my letter, No. 150 W., dated 20th January, the sanction of the Government of India has been requested to the extension to those individuals of the terms granted by the Resolution of the 31st July 1879, No. 2,079, to officers and subordinates retiring before the 31st December 1879; the reasons for this request having been fully explained in the letter named, it is unnecessary to allude further to the subject here.

17. It will also probably be found desirable to allow two or three officers of the Royal Engineers to proceed on special leave under the terms of the Government of India Resolution No. 1,695-27 E.G., dated 3rd September 1879, and I am directed to request the sanction of the Government of India to the grant of such leave.

Lieutenant-Colonel J. N. Hunter, R.E.
Major H. Smalley, R.E.
Lieutenant-Colonel W. H. Burton, R.E.

This leave has already been granted to the three officers named in the margin.

18. In paragraph 36 of the order forwarded herewith it is directed that certain officers now temporarily employed on military duty shall revert permanently to such duty, unless the Government of India are prepared to find them suitable employment in the Public Works Department, which I am directed to state that His Grace the Governor in Council strongly recommends may be done.

19. The reductions now being made are, it is believed, larger in proportion to the strength of the existing establishment than is the case in any other Province, and cannot but have a prejudicial effect upon the position and prospects of those officers whose services are retained; with a view to diminishing as far as possible the hardship to individuals thus caused, I am directed to request the sanction of the Government of India to the grant of the following concessions:—

1*st*. The exclusion (until absorbed) from the list of Executive Engineers of the two Superintending Engineers who will become supernumerary by the reduction of the number of officers holding that rank from six to four, or, in other words, the permanent completion of the full number of Executive Engineers now provided for, notwithstanding the fact of there being two supernumerary Superintending Engineers. It will be understood that this proposal refers to permanent grading only; temporary promotions will not be made in place of officers on furlough so long as the number of Superintending Engineers present for duty amounts to four or more. At present this number amounts to two only, the other four being on furlough.

2*nd*. The filling up of the strength of the various grades irrespective of the officers named in the margin who are now on special leave and of such others (not exceeding three in number) as may hereafter be granted such leave. No one of these officers is likely to return to departmental duty before the end of 1881, if at all, and by that time the conditions will probably have altered to an extent which will allow of their re-absorption into the department without practical inconvenience.

Lieut.-Col. J. N. Hunter, R.E.
Major H. Smalley, R.E.
Lieut.-Col. W. H. Burton, R.E.

20. Immediate steps will be taken towards carrying out the re-distribution of Executive and Superintending charges now contemplated; but as it is highly desirable that the present uncertainty as to the position and prospects of the department should terminate as soon as possible, I am directed to request an early reply to the questions raised in this letter, and also that so far as may be practicable, the substance of that reply may be communicated by telegraph.

Proceedings of the Government of Madras, Public Works Department, dated 1st October 1880, No. 2,276 W.

Read the following papers:—

From Major-General J. S. TREVOR, R.E., Officiating Secretary to the Government of India, Public Works Department, (General,) to the Secretary to the Government of Madras, Public Works Department, dated Fort William, 19th March 1880, No. 725 G.

I AM directed to acknowledge your letter, No. 266 W., of the 3rd ultimo, on the subject of the re-organization of the Public Works Department in Madras, and the Governor-General in Council has directed me to communicate the following remarks and orders.

2. The Government of Madras has apparently misunderstood the intentions and the orders of the Government of India in regard to the late reduction in establishments. In Public Works Department letter of the 8th August, it was requested that an estimate might be made of the *permanent* staff required for the normal wants of the department. It was clearly said "the scale of establishment engaged in the maintenance and working of Productive and other remunerative Public Works need not be reduced, unless it is clear that such reduction is desirable, and can be attained without loss of efficiency." The grant for Productive Public Works was to be reduced from 4 to $2\frac{1}{2}$ millions, and it was estimated by the Government of India that the whole department throughout India would, roughly speaking, have to be reduced by one-fourth.

3. The Government of Madras has, however, so far reduced its staff of Engineers that it becomes necessary to make over to Local Fund Boards the maintenance of the minor irrigation and other local works, giving them grants-in-aid, when considered necessary, from Imperial funds. This is practically a reversion to the system that existed in 1854, before the formation of the Public Works Department in Madras.

The re-arrangement of the work might be advantageous if the system of statute labor for the maintenance of irrigation works were revived, as recommended by the Committee on Madras Irrigation in 1878, but under the system now proposed there will be a large outlay of public, including Imperial funds, and no indication is given of the means it is intended to adopt to supervise the expenditure.

4. It is obvious that there must be very great waste of money, if works of any importance are to be carried out by the Local Fund Boards without professional aid. It is understood indirectly from a reference made by the Madras Government to the Government of India in the Department of Finance, that some of the Boards are endeavouring to get such aid from the officers who have lately left the Public Works Department.

On this subject orders will be issued in a separate letter. As matters stand, these officers, to whom the Government has given special inducements to retire, or who have received special concessions in consideration of their compulsory retirement, or fresh men altogether, are to be engaged at a period when the Governments of India and Madras assert that their staff is too strong for their diminished requirements.

5. It must be further pointed out, that, in response to a call for a statement of the permanent requirements of the Province, the Government of India has had placed before it a scheme of re-organization, involving the above-mentioned objectionable elements, which is professedly only temporary, and which, it is acknowledged, will lead to an expansion of the professional staff at some future time. It certainly was not the intention of the Government of India to diminish the strength of the department by the expensive measure of giving officers pensions and gratuities for the sake of effecting a temporary reduction in establishment charges, more especially when it seems likely that a part of the reduction will be only apparent. The object the Government of India had in view was to re-organize the department on a scale that would, under ordinary circumstances, supply a sufficient number of highly skilled officers to supervise the regular expenditure on public works, and it was the intention, when there was a demand for outlay for famine or other unusual purposes, that the skilled staff should be supplemented by temporary hands, or by the employment of experienced contractors.

6. I am, in the first place, to request, that in all cases in which the Local Boards are to carry out the public works in their districts, they shall be required, so far as this is now possible, to take over part of the public works staff for the supervision of those works.

7. I am, in the next place, to request, that the Government of India may be furnished, in the form prescribed by the Code, with an estimate of the staff of Engineers and Upper Subordinates which the Madras Government considers ought to be commensurate with its permanent normal requirements, in place of the present scheme for the reduction of that staff to a strength confessedly inadequate to the efficient maintenance of the existing works.

for the principal Irrigation Divisions will serve to indicate that their Establishments are necessarily based not merely upon the outlay on Works and Repairs, but on the management of the irrigation and the distribution of the water :—

Division.	Capital Works and Regular Annual Repairs.	Executive Establishment Rs.	Percentage of Col. 3 on Col. 2.	Direction and Account Rs.	Percentage of Col. 5 on Col. 2.	Total Charge Col. 3 + Col. 5.	Percentage of Col. 7 on Col. 2.	Percentage of Col. 7 on Col. 4.	
1	2	3	4	5	6	7	8	9	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Godávari E. and C. Delta.	3,24,395	24,879	21,994	27,218	20,163	52,218	17,27,668	2·26	63,572 + share of Superintendency, 8,122 = 71,694.
Do. W. do.									
Kistna E. Delta	3,11,450	42,226	87,406	45,119	19,389	61,498	8,42,000	7·72	70,688 + share of Superintendency, 7,547 = 97,485.
Do. W. do.									
Tanjore Cauvery Delta.	1,93,399	26,784	89,255	33,872	6,945	71,778	28,83,000	3·81	61,581 + share of Superintendency, 6,966 = 85,506.
Nagapatam Cauvery Delta.									
	..	..	..	1,55,906	..	1,52,587	54,12,668	3·53	

In the Kistna Delta the grant for Productive Public Works, Capital, is only Rs. 10,000. Were the improvements estimated for, or even those required to meet the wants of the existing area of irrigation, now inadequately supplied, allowed to be proceeded with, the grant for Works and Repairs would be about Rs. 3,51,430, and the delta would stand as regards Establishment as follows :—

	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
* Kistna Delta ...	3,51,430	70,286	87,405	17,119	19,380	36,499	8,42,000	4·33

The Executive Establishments for these Delta Divisions have been fixed with reference to their normal requirements, and they cannot be reduced without risk of loss. Whenever they have fallen below the normal strength, and this unfortunately has but too often occurred of late years, appreciable loss has resulted, *e.g.*, the loss of some 30,000 annually for some years in the Eastern Delta, Godávari, and several cases of unnecessary cost of works owing to inadequate supervision. It is an extremely easy thing to lose 2 or 3 per cent. of the revenue owing to the absence of that constant care in the distribution of water without which the crops are liable to suffer, while the fact that they are suffering does not become known until perhaps too late to provide for their recovery.

Column 5 of the above statement shows the loss which Provincial would suffer from the debit to Imperial for Executive Establishments being based, in the case of these Divisions, on the grant for Works and Repairs, without taking into account the other duties to perform which Establishment has to be provided.

Letter No. 187 I., 25th March 1880.

4. Recently a proposal was made to the Government of India to debit Revenue receipts with a per-centage on account of Establishment. This proposal was negatived in their letter No. 106 A.—I., of the 8th June 1880, and it was directed that the principles laid down in Government of India Resolution No. 316-31 A.—I., of the 27th September 1875, should be adhered to. The rules therein laid down contemplate—

Proceedings of Madras Government, No. 437 I., 9th July 1880.

Proceedings of Madras Government, No. 3,062, 28th October 1875.

1st, that, broadly, the whole cost of the Establishment of an Irrigation Division will be chargeable to Imperial (Irrigation) ;

2ndly, that then the distribution of that cost will be effected under the rules prescribed.

The effect of the rules as regards the more important Irrigation Divisions is to distribute the cost of Establishments thus :—

First, a charge of 20 per cent. for Executive Establishment is made on Capital or Original Works outlay.

Second, the balance of the cost of the actual Establishment employed is debited to Revenue.

The six divisions given in the above statement were at once ordered to be so treated, and in the other divisions the procedure would be just the opposite, viz., Revenue or Repairs would be charged 20 per cent. for Executive supervision, and the rest of the cost of Establishment would be chargeable to Capital or Original Works.

G.O., No. 437 I., 9th July 1880.

5. The instructions of the Government of India in their letter, No. 142 A.—I., of the 20th August 1880, make it impracticable to carry into effect the rules which they require to be adopted, except to the very limited extent resulting from the debit to Revenue in the above six Divisions of the difference between 20 per cent. on the grant for Capital and Original Works and 20 per cent. on the Capital and Original Works Expenditure. As the whole charge for Executive Establishment is limited by that letter to 20 per cent. on the grants for Works and Repairs, there can be nothing to charge to Revenue in excess of the 20 per cent. on the grant under that head, except the difference just mentioned.

6. The only convenient and equitable arrangement is to allot to the Irrigation Divisions the Executive Establishments which they require for the expenditure of the grants and for the management of the irrigation, and to charge the cost of such Establishments to the divisions in which they are employed under the rules embodied in the Government of India Resolution No. 316-31 A.—I., of the 27th September 1875. For any work done for other Services by such Establishment a recovery of 20 per cent. for Executive Establishment and 5 per cent. for Direction and Account, and similarly, for Irrigation work done in Provincial Divisions, a corresponding payment would be made, but these adjustments would amount to but a small sum, the net recovery estimated for the current year being Rs. 30,135. This arrangement was provided for in the proposals submitted to the Government of India in the letter to which their letter of the 20th August is a reply. It was, so far as Executive Establishment is concerned, strictly in conformity with their own rules of September 1875, and it seems not improbable that its rejection was due to a misapprehension of its scope and intention.

Proceedings of Madras Government, No. 456-A I., 16th July 1880, page 3.

7. It would be most unfortunate and, financially, ere long disastrous were Government obliged, from the enforcement of the rule sanctioned by the Government of India in January 1875, to cut down the Executive Establishments of the Irrigation Divisions to the scale which would be covered by the 20 per cent. on Works grants. The statement in paragraph 3 shows at once what this would necessitate, viz., a reduction of Rs. 1,35,066 for the six divisions there detailed and corresponding reductions in the other eight divisions. In the divisions which include the Cauvery Delta, with its 28·63 lakhs of revenue due to Irrigation, upwards of 70 per cent. of the establishment considered to be necessary would have to be got rid of, and the result would be a rapid deterioration of the works and a loss of revenue which would far more than counterbalance the saving effected by reduction of establishments. No doubt a reversal of the policy which had led to such loss would then be ordered, but it would take long to recover the lost ground, while the lost revenue would be irrecoverable. In the Godávari and Kistna Deltas, in which the system of irrigation is more artificial, the results would probably be much more disastrous. If the works be neglected, and they cannot be properly looked after with but two-thirds to one-half of the necessary establishments, a collapse may be the not improbable result, and the financial effect as well as the discredit of such a catastrophe need no demonstration. Imperial can perfectly well afford to pay for the efficient maintenance of these great systems which

have been eminently profitable to the State and eminently advantageous to the people. Provincial, on the other hand, has not the means, and is under no obligation to contribute to the upkeep of those systems or of the rest of the Irrigation works from which it derives no revenue whatever, all of which goes to Imperial. The rule of January 1875 was propounded and accepted at a time when Provincial was very differently circumstanced. Not only were the Irrigation grants* greater, but the Provincial grants were very materially larger, and Government had the Local Funds Public Works allotments to take their share of Establishment charges. In view of this rule of January 1875 being equitably applied now, it would be necessary to raise the grants for Irrigation Works and Repairs to an amount on which the cost of the Establishments (executive) required for the Irrigation Divisions would amount to the 20 per cent. allowed to be charged to Imperial under this head; or to fix the normal grants at that amount and to make the contribution of Imperial for Establishments 20 per cent. on that sum, whatever the actual grants of the year might be. The result would be exactly that proposed in July last, and not accepted by the Government of India. Provincial cannot maintain, and Establishment to provide for Imperial Work when a large part of the work done is not allowed to be taken into account in determining the charges to be debited to Imperial; neither can Provincial provide an establishment able to meet the varying needs of the Irrigation Branch, these variations being caused by the financial necessities of the Government of India. It follows that the system sanctioned in January 1875, to which the Government of India desire to adhere, should be superseded by one under which the charge to Imperial would be neither more nor less than the actual cost of doing the Imperial (Irrigation) work. This actual cost will generally not be at all excessive: out of the six Divisions of the three principal Irrigation systems it has been shown that the per-centage charge on the revenue of two of the systems for irrigation management is not large, and that in the third system, the Kistna Delta, it is large accidentally, and it may be hoped temporarily, only because the improvements necessary for the security of the existing irrigation and for its further development are at a stand still. With a very moderate outlay on these improvements, this per-centage would become perfectly reasonable; and by the time the improvements are completed 3 or 4 per cent. on the revenue, which will ultimately amount to about 14 lakhs, will be sufficient to bear the cost of the establishment required for its security.

* *Vide* Appendix A.

8. With regard to the proposed charges to Imperial (Irrigation) for Direction and Account, it is considered that they can and should be reduced to more reasonable dimensions. The rules of September 1875 allow in Madras 5 per cent. on outlay, in addition to the cost of the Chief Engineer for Irrigation and his Establishment. This 5 per cent. was also part of the 25 per cent. allowed for Establishment generally in the rule of January 1875. Usually 3 per cent. is supposed to be the allowance for Direction and 2 per cent. that for Account. In the arrangements detailed in Proceedings of Madras Government, No. 456-A I., of the 16th July 1880, the provision for—

	Rs.
Direction is	1,32,887
Account	92,075
Total ...	2,24,962

On the grant for Works and Repairs as given in the final issue of the budget, viz., Rs. 17,99,150, the per-centages would be—

Direction	7·36
Account	5·12
Total ...	12·50

The charge for Direction is made up of the following items:—

		Rs.
½	Superintending Engineer, First Circle	16,027
¾	Do. do., Second do.	*20,619
1	Do. do., Third do.	21,630
½	Superintending Engineer, supernumerary	11,061
2¼	Superintending Engineers	69,337
2	Superintendents of Works	41,084
		1,10,421
	Deduct refunds ...	7,534
	Total of Superintending Engineers and Superintendents of Works.	1,02,887
	Contribution to Public Works Secretariat	30,000
	Total Direction ...	1,32,887

* After correcting a mistake made in the charge for Second Circle at page 10 of Proceedings of Madras Government No. 456-A I., 16th July 1880.

It will be seen that there are only two items on which to effect reduction:—

(1) Superintending Engineers and Superintendents of Works.

By substituting for 2¼ Superintending Engineers and 2 Superintendents of Works, 3 Superintending Engineers, the cost of which latter would be about Rs. 81,176, and, after deducting Rs. 7,534 for refunds, as above, Rs. 73,642, a saving of Rs. 29,245 would be effected.

In Appendix 5 to a memorandum No. 20 W., dated 6th May 1880, an arrangement for three Irrigation Circles has been worked out.

Vide Appendix B to this memorandum.

(2) Contribution to Public Works Secretariat.

The undersigned has already given an opinion that the work which requires to be done in the Public Works Secretariat for the Irrigation Branch should be covered by a charge of Rs. 6,000; and were the control of Establishments employed in the Irrigation Branch transferred to the Chief Engineer for Irrigation, an arrangement which obtains under every other Government or Administration in which the irrigation work is sufficiently important to constitute a separate branch under a Chief Engineer, the cost of exercising this control would probably not amount to more than Rs. 3,000, if so much. Consequently Rs. 9,000 instead of Rs. 30,000 may be taken to be the necessary cost of this part of Direction, and the saving would be Rs. 21,000. Whatever arrangements Government may decide to retain for the administration of the Department, there appears to be no sufficient reason for proposing to charge to Imperial (Irrigation) the greater part of the cost of the Chief Engineer, Public Works Department, his Deputy and Establishment, in addition to the whole cost of the Chief Engineer for Irrigation and his Establishment.

With the reductions above specified the charge for Direction would amount to Rs. 82,642, or 4·57 per cent. on the grants for Works and Repairs of the current year. The charge would be still higher than is proper, but the grants are abnormally low and were what may be taken as the normal grant, viz., Rs. 22 lakhs,* made the basis of the calculation, the per-centage would be 3·76, below which it does not seem practicable to reduce it.

* *Vide* Appendix A.		Rs.
Average grant Ordinary		18,64,118
Add fixed limit of grant for P. W. Capital ...	4,50,000	
Less estimate charges	1,12,500	3,37,500
		22,01,618

9. With regard to Accounts, this office cannot name the specific reductions which can be made, but it is believed that it would be advantageous to the Executive Branch of the Department were the system of accounting simplified, and the work to be done in connection therewith materially reduced. The duties of Executive Engineers with regard to accounts as laid down

the grants for works and repairs have not been taken as a whole, but in two distinct portions. Consequently, when the grant in one case has exceeded the expenditure, and in the other case the expenditure has exceeded the grant, the grant in the former case has been added to the expenditure in the latter case to make up the total on which the establishment charges have been assessed. There is nothing in the rule as originaly laid down to warrant this procedure, and, indeed, it may be presumed that the rule contemplated that the whole of the Imperial grants for Works and Repairs, whether Irrigation, Military or other, or the whole of the corresponding expenditure, would be taken as the basis for determining the per-centage credit to Provincial on account of Establishments employed on Imperial work. As regards Irrigation taken separately the effect of the departure from the rule is shown below :—

Proceedings of Madras Government, 2nd March 1875, No. 595.

Years.	Grants.	Expenditure.	Amount on which Establishment charges were		Amount		Difference.	Remarks.
			Leviable.	Levied.	Chargeable.	Charged.		
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1874-75	22,76,000	23,47,008	23,47,008	24,06,437	5,36,752	6,01,609	14,857	Expenditure exceeded grants.
1875-76	26,48,142	26,12,459	26,48,142	26,85,892	6,62,335	6,71,473	9,138	Grants exceeded expenditure.
1876-77	22,42,421	20,68,030	22,42,421	22,42,421	5,60,605	5,60,605	..	Do.
1877-78	22,28,919	28,61,012	28,61,012	30,57,831	7,15,253	7,64,458	49,205	Expenditure exceeded grants.
1878-79	22,84,807	24,56,657	24,56,657	27,90,192	6,14,164	6,97,548	83,384	Do.
1879-80	23,36,202	16,79,476	23,36,202	23,36,202	5,84,050	5,84,050	..	Grants exceeded expenditure.
Totals ..	1,40,16,491	1,39,24,542	1,48,91,442	1,55,18,975	..	Excess	1,56,884	chargo.
Averages ..	23,36,082	23,20,757	24,81,907	25,86,496				

This table gives also several interesting particulars :—

		Rs.
(1)	The average amount of the grants of the last six years ...	23,36,082
(2)	The average expenditure do. do. ..	23,20,757
(3)	The average amount in excess of the grants on which Establishment charges were leviable under the rule	1,45,825
(4)	The average amount in excess of the grants on which establishment charges were levied under the rule as applied in the Account's office	2,50,414
(5)	The amounts chargeable varied from Rs. 5,60,605 to 7,15,253, a difference of	1,54,648

a sufficiently large difference to seriously affect Provincial finance arrangements.

12. In the next place it has to be noticed what the effect was on a certain class of expenditure of applying the rule in this particular way. The Establishment charges were assessed separately on the Extraordinary or Productive Public Works (Capital) grants or expenditure, whichever were the greater, and the grants were always greater than the expenditure, as indeed they would always be, but the great difference shown is due to a considerable part of the grants not being actually available for expenditure owing to the estimates not having been sanctioned. Not only, however, were they so assessed, but they were debited accordingly to the works concerned, by striking an average per-centage upon the whole capital outlay. Thus the capital grants for Productive Public Works were for the six years altogether ... Rs. 28,31,781
Establishment charges, 25 per cent ... ... ,, 7,07,945
Expenditure of the six years ... ... ,, 15,78,788
Per-centage of Establishment charges on outlay ... ... 44·84

This arrangement is quite opposed to the rules of September 1875, governing the distribution of Establishment charges, under which of the amount of these charges debitable to a division or to the divisions in which an Irrigation system is situated, 25 per cent. only on Capital outlay should have been charged to Capital for Establishments, and the rest to Revenue.

On the other hand, under the rules framed by the latter in paragraph 11, the amount to be charged under these heads would be Rs. 1,68,000 and the amount leviable on the expenditure was ... ... 27,23,040 per-centage of Establishment charges on expenditure ... ... 1,95,840 which does not vary much, on the average, from the amount provided by the rules of 1875 (September the Public Department of Government, that charge would have been debited to Productive Public Works Capital, as a outlay of Rs. 16,78,758, at 25 per cent ... ... 4,19,697 leaving to be charged to Revenue and other heads ... ... 12,58,103 And the corresponding outlay being ... ... 1,24,46,744 the average percentage of the Establishment charges chargeable thereto would have been ... ... 25·76

It appears then from the above figures that the way in which Establishment charges have actually been distributed has considerably exceeded a very liberal and unnecessary inequality of incidence, and that the rules of September 1875, if carried out so far as they could be applied to the circumstances, would have made the inequality greater. As the procedure adopted has had a very injurious effect on the claims to the system concerned, it is recommended that the Examiner should be instructed to readjust the distribution of Establishment charges upon the principle of the rules of September 1875.

13. It must not be forgotten that an establishment will ere long, and possibly very shortly, be required for the Madras Irrigation and Canal Company's Canal, the intimation of the transfer of which to Government may be expected at any time. Under the rule of January 1870 Provincial will not be able to provide the requisite establishment for it, and the work of that establishment will be principally to manage the irrigation and water distribution, which work, under this rule, is not recommended by any charge.

Ootacamund,
16th September 1880. (Signed) JOHN MULLINS, Col., R.E.,
Chief Engineer for Irrigation.

To the Joint Secretary to Government, Public Works Department, Irrigation Branch.

APPENDIX A.

STATEMENT showing the Grant or Outlay on which 25 per cent. on account of Establishment chargeable for Irrigation.

Year.	Extraordinary.			Ordinary.			Total amount on which Establishment Charges calculated Cols. 4 + 7.	Establishment Charges at 25 per cent. credited to Provincial.	Remarks.
	Grant.	Expenditure.	Grant or Expenditure on which the per-centage has been calculated.	Grant.	Expenditure.	Grant or Expenditure on which the percentage has been calculated.			
1	2	3	4	5	6	7	8	9	10
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1874-75	5,95,000	5,35,571	5,95,000	16,81,000	18,11,437	18,11,437	24,06,437	6,01,609	Columns 1 to 7 furnished by the Examiner of Public Works Accounts the rest have been added.
1875-76	4,97,692	4,24,259	4,97,692	21,50,450	21,88,200	21,88,200	26,85,892	6,71,473	
1876-77	3,66,080	2,02,012	3,66,080	18,76,341	18,66,018	18,76,341	22,42,421	5,60,605	Grants for works and Repairs 1880-81 ... 17,99,150
1877-78	3,75,087	1,78,268	3,75,087	18,53,832	26,82,744	26,82,744	30,57,831	7,64,458	
1878-79	4,41,393	1,07,858	4,41,393	18,43,414	23,48,799	23,48,799	27,90,192	6,97,548	Corresponding charge for Establishment creditable to Provincial 4,49,787
	Productive Public Works.			Irrigation and Navigation Ordinary Productive Public Works.					Average of preceding 6 years 6,46,624
	Grant.	Expenditure.	Grant or Expenditure on which per-centage charge has been calculated.	Grant.	Expenditure.	Grant or Expenditure on which per-centage charge has been calculated.			Difference ... 1,96,837
1879-80	5,56,529	1,30,850	5,56,529	17,79,673	14,48,556	17,79,673	23,36,202	5,84,050	
Totals ...	28,31,781	15,78,788	28,31,781	1,11,84,710	1,23,45,754	1,20,87,191	...	38,76,743	
Averages	4,71,963	2,63,131	4,71,963	18,64,118	20,57,626	21,14,532	...	6,46,624	
				4,71,963					
Average grants				23,36,081					

(Signed) JOHN MULLINS, Colonel, R.E.,
Chief Engineer for Irrigation.

APPENDIX B.

Statement of the composition of these Irrigation Circles.

Circles.	Divisions.	Remarks.
First.	Godavari Eastern and Central Deltas. Godavari Western Delta. Kistna Eastern Delta. Kistna Western Delta.	
Second.	Nellore. Chingleput. Vellore. Kurnool. Cuddapah. Salem. Coimbatore.	The Madras Irrigation and Canal Company's Canals, when transferred, would be included in this circle and would form an extra Division.
Third.	Cuddalore. Tanjore. Negapatam. Trichinopoly ... ... Tinnevelly	Including Imperial Irrigation Works in Madura.

(Signed) JOHN MULLINS, Colonel, R.E.,
Chief Engineer for Irrigation.

Order thereon, No. 2,276 W., dated 1st October 1880.

Ordered that the following letter be sent to the Government of India.

(True Extract.)

(Signed) R. B. SANKEY, Colonel, R.E.,
Secy. to Govt., P.W.D.

From the Secretary to the Government of Madras, Public Works Department, to the Secretary to the Government of India, Public Works Department, dated 1st October 1880, No. 2,277 W.

General—Establishment.

In acknowledging the receipt of your letter, No. 725-G, dated 19th March 1880, conveying sanction to the temporary measures adopted in regard to the reductions in the Establishment of this department carried out towards the close of last, and commencement of the present, year, and (para. 7) requesting that the Government of India might be furnished with a statement of the permanent normal requirements of this Government, I am desired to forward for sanction the annexed statement in Code form. In so doing, I am to submit for consideration the following observations.

2. Answers have already, in great measure, been afforded on much of the matter of your letter under reply, with reference to the position and work devolving on the Local Funds Boards; and also to the position of officers and subordinates who, after the reduction of establishment in this department, were re-employed under these bodies, *see* this office No. 1,642-B W., dated 13th July 1880, and previous correspondence.

3. It is considered, therefore, here sufficient to submit, in regard to the general implication contained in your communication that the reductions of Establishment

had gone further than was either intended or desirable, that looking to the general tenor of the instructions received and the pressing demand for reduced expenditure, this Government considered they had no option but to respond in a loyal manner to these requisitions; viewed in this light, therefore, they are not conscious of having in any way over-stepped the limits laid down for their guidance, and consider that reduction of the Imperial grant and of the Imperial assignment for Provincial services left no alternative to the course followed.

4. By Act IV of 1871, Sections 8 and 10, all public roads and streets in each circle are vested in the Local Funds Boards. All hospitals, dispensaries, schools, chuttrums, markets, tanks and wells, not being private property or otherwise governed by law may be so vested; and under this provision all such institutions and buildings and water-supply works have, as a general rule, been so vested in the Local Funds Boards, which are corporate bodies by law and independent of Government. So far as the executive staff is concerned (Section 24), the control of Government is restricted to check on numbers and salaries and the budget provision for the service.

5. The reduction orders of the Government of India were avowedly based on the presumption that a superfluous strength of establishment existed in Madras in the same manner as in most of the provinces under the Government of India; but I am to observe that nothing of the kind as a fact either at that or any previous date existed here.

6. The scattered nature of much of the work done in this Presidency, owing chiefly to the tank-system, had placed the department here on quite an exceptional footing, and it had long been the complaint of the professional officers of Government that the strength of the establishment was never capable of fairly coping with the demands made upon it.

7. This state of matters has been quite notorious and the frequently succeeding re-organizations of the departmental establishment (the last of which had only taken place so late as September 1878) made with the object of endeavouring, by various expedients and by changing the distribution, to make up for the acknowledged want in numbers, affords of itself abundant proof that such had always existed here, and had been a constant source of anxiety and trouble to the Government.

8. Looking, then, to the exceptional character of the duties performed by this Department, it was really a matter of little consequence whether a reduction in the Imperial grant was made or not, so long as this did not, in some radical way, affect the general character of the duties to be performed over large areas of country.

9. In all the provinces of Northern India, where work is chiefly of a large and concentrated character, as also in Bombay, the reduction of the Imperial grant would necessarily be followed by diminished need for Establishment; and, as a fact, it is understood that in each and all of these provinces there had existed, even before the late famine, a large superabundant staff of Engineers for whom there was practically no suitable employment.

10. Whereas, therefore, a demand for reduction of actually existing superfluous establishment must have come as a distinct relief to other provinces, it had necessarily a totally opposite effect in this Presidency; and the question here necessarily resolved itself into one of how it would be feasible, with the least sacrifice to the public interests involved, to meet the demands for reduction made by the Government of India.

11. At first it was hoped that an arrangement could be made by which the establishment of this department in most of the divisions could still continue to execute a large portion of Local Fund work, which being paid for at 25 per cent. a sensible relief would still be afforded in recoupment of the outlay under this head as charged against "Provincial;" but, on the matter being fully gone into, it was found that this very payment on the part of the several Boards so trenched on their funds that they had not sufficient means left to provide themselves with a suitable

establishment for the execution of the balance of the work proposed to be handed over to them.

12. With the exception of Kurnool and Trichinopoly, one and all of the Local Funds Boards professed their inability to provide a sufficiently skilled and reliable establishment, unless the whole of the work (aggregating some 11 lakhs of rupees worth) were made over to them for execution through their own agency.

13. The Government, on the various representations made, being satisfied as to the soundness of the demands preferred, and seeing no possible means for continuing to execute as formerly the whole of the Local Fund work through their own agency, considered that the time had arrived for giving full effect to the Local Funds Act as above indicated, throwing upon the several Boards the full duties and responsibilities as therein contemplated.

14. In coming to this resolution, the Government believe that, in addition to the advantages which are indirectly connected with the complete exercise of local self-government, and thus giving full effect to the views and intentions of the framers of the Act, they have met in the only feasible manner the demand for reductions of the Public Works Establishment.

15. The re-organization of the establishment, reported in G.O. of 3rd February 1880, No. 265 W., was professedly of a temporary character, and it is needless to say that in giving effect to a change of so radical a nature, which involved a dislocation of the whole machine, some important considerations had to be set aside for the moment, though even at this date such omissions have, on the whole, not been found as numerous or important as might have been anticipated under the circumstances.

16. Following, moreover, so closely on the re-organization of September 1878, the disturbance of the ordinary work of the department has been such that Government have considered it better to refrain from immediate further action, though changes of a beneficial character have necessarily suggested themselves on the experience gained during the interval that has elapsed since last February. This, it is hoped, may also explain the apparent delay which has occurred in meeting the call made in your letter under reply.

17. In submitting for sanction the present scale of normal establishment, I am, in the first place, to explain that His Grace the Governor in Council entirely accepts the views of the Government of India as conveyed in paragraph 5 of your letter, viz., that the scale, while providing for a sufficient number of highly-skilled officers to supervise the regular expenditure on Public Works, should admit of being supplemented by temporary hands, or by the employment of experienced contractors, when there may be a demand for outlay on famine or other unusual or special works.

18. Not only is this the case, but provision for several possible contingencies of the near future have also been omitted. Among these may be mentioned:—

(1) The extension of the Kistna Delta works on receipt of sanction for the contemplated work, which is believed to be only a matter of a short time.

(2) The Madras Irrigation and Canal Company's works which may not improbably have ere long to be taken over by Government.

(3) A tank restoration division which may also have to be organized in view to a commencement being made with the more systematic treatment of these works.

(4) The extension of the Buckingham Canal on receipt of the probable sanction of Government to the complete estimate now being framed for submission.

19. Excluding these, for which increases to the normal establishment (or special agency as may appear best at the time) will be asked in submitting the

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respective estimates for sanction of the Government of India, the increase on the scale of the 3rd February would be as follows:—

Departmental Grades.	Scale of 3rd Feb. 1880.	Normal as now proposed.	Increase.
Chief Engineer, I	3	3	...
Do. II			
Do. III			
Superintending Engineer, I	4	4	...
Do. II			
Do. III			
Superintendents of Works	4	5	1
Executive Engineer, I	22	30	8
Do. II			
Do. III			
Do. IV			
Assistant Engineer, I	36	44	8
Do. II			
Do. III			
Sub-Engineer, I	144	178	34
Do. II			
Do. III			
Supervisor, I			
Do. II			
Overseer, I			
Do. II			
Do. III			

20. No change in the number of Chief Engineers is proposed. By the scheme sent up previously it was proposed, while reserving the power of increasing the number of Superintending Engineers to four, to endeavour to work with only three, but experience has shown that this latter gives unworkable circles. The present No. I Circle, which embraces Vizagapatam and Ganjam as well as Cuddapah, Kurnool, Bellary, and Nellore, has proved altogether too large.

21. With reference to the number of Superintendents of Works, which are now to be one in excess of the February scheme, I am to remark, with reference to the objections stated in paragraph 8 of your letter under reply, that, on fully weighing the requirements of the Presidency, the Government consider this a most important feature in the proposals, and quite essential towards securing proper administration.

22. Under the system which existed prior to the re-organization of September 1878, there were twenty-two District Engineers who had powers corresponding to Superintending Engineers.

23. This arrangement, otherwise good in itself and well suited to the requirements of this Presidency, failed from the fact that it was impossible to find in a small establishment so many officers who were in all respects fitted to exercise the high class of powers thus conferred; but it may be safely averred that, were it possible to find an adequate number of officers who possessed the requisite qualifications, the arrangement is one peculiarly suited to much of the work in this Presidency. The great delta systems of irrigation under the Godávari, Kistna, and Cauvery rivers have never, it is believed, received closer attention or been better administered than under the old District Engineer system.

24. While, therefore, the larger circles are left for Superintending Engineers, it has been decided by Government to revert, as far as possible, to the good features of the old organization in this respect, and hence the three delta systems are now to be placed each under a Superintendent of Works, which is only another designation for District Engineer.

25. For some time an officer of this grade has been in charge of the Godávari Delta works, and another has latterly been appointed to the Kistna. No officer has

however, been appointed for the Cauvery, though a very capable officer is available, and can at once be nominated on the present scheme being sanctioned.

26. Owing to the isolated position of the Vizagapatam and Ganjam divisions, which it has been found quite impossible to work into any Superintending Engineer Circle, an officer of this class (Superintendent of Works) is likewise proposed. This is the more necessary as late events have shown the necessity for improving the communications in this long-neglected portion of the Presidency.

27. The Buckingham Canal is also a work which it appears most suitable should be under this description of control, and as a fact an officer of this class has been in charge since the early part of the year, with much advantage to the work. The total length of canal now open is 239 miles, and the officer has much responsibility, not only in regard to the execution of the work itself and the preparation of the complete estimate, but in connection with the management of the traffic. When the estimate now framing has been sanctioned by the Supreme Government, he will need the assistance of probably one Executive and two Assistant Engineers, also six Upper Subordinates not included in the scale now sent up, or it may possibly be found desirable to engage a Special Engineer as contractor for the job.

28. Before concluding this portion of the subject, it may be desirable to mention that it has latterly been found convenient to give the powers of Superintendent of Works to the Consulting Architect, and that, although not here shown in this grade, it would probably be most convenient to include him in it.

29. For some years past Mr. Chisholm has, under the special sanction of the Government of India, though classed as an Executive Engineer, 1st Grade, drawn Rs. 1,200 per mensem. In addition to his particular duties as Consulting Architect, he has the execution of special buildings, and in connection with this the conference of the powers in question it would, in the opinion of this Government, be desirable to recognise his being, for the future, permanently classed as a Superintendent of Works.

30. The additional allowance of Rs. 100 per mensem has been paid (though not finally passed by the Examiner pending this reference) since the assumption of charge to the three officers of this grade (*i.e.*, of the Godávari, Kistna, and Buckingham Canal Divisions), and the sanction of the Government of India is now requested to this being recognised as the remuneration to officers of this class, excepting the Consulting Architect who, as shown, has always had special allowances.

31. As regards the number and arrangement of the several Superintending Engineer and Superintendent of Works Circles, it may at once be said that the experience gained since the re-organisation of September 1878 has shown that no other grouping of the several executive divisions is likely to answer so well as that now advocated. This subject has been closely studied by all officers of experience in the department; and it is hoped that the Government of India may be disposed to accept the arrangement without the necessity of offering further detailed explanations which, owing to the nature of the question, would be difficult without the aid of maps, statements of areas and works, &c.

32. Turning now to the number of Executive Engineers who are to form the normal establishment, it will be observed that counting the extra Superintendent of Works there would in all be ten more in this grade than before. The actual increase is very small if it be considered that this includes 10 per cent. as supernumeraries to meet the contingencies due to absence on furlough, &c.

33. The only actual additions to the divisional charges gained in February last are as follow:—

1*st*.—An Executive Engineer for Bellary.—This and Anantapur were given up as divisions and merely as sub-division retained for the Military works of the station and attached to the new Cuddapah-Kurnool Division. With the large number of important Imperial tanks in Bellary and Anantapur, it is now held that this division must be reconstituted.

34. For much the same reason the Madura and Tinnevelly Divisions, owing to the numbers of tanks and channels contained in them, require the presence of professional officers.

35. But the special want of the department, and one which it is now intended to meet, is that of some adequate establishment for investigating projects either of general importance or specially for famines.

36. It is understood that the Famine Commission have recommended the preparation of schemes of communication by road, railway, and water, and that these should always be in readiness with plans and estimates prepared to meet any sudden demand for employment in case of famine.

37. Although there are several half-investigated projects on the files of the Chief Engineer's office, it cannot be said that any have as yet reached the stage in which they could be safely put in execution; even as regards several promising projects (*e.g.*, the extension of the Kistna Delta works) on which so much of the advancement in wealth and prosperity of the Presidency depends, the needful investigations have, as the Government of India are aware, been retarded for years.

38. The provision made, therefore, with this special object, in the present scheme, of four officers of the Executive Engineer class, six Assistant Engineers, and ten Upper Subordinates, is, considering the work before them, the least that can be named for the duty, but quite as few as will for the future be certainly needed as forming an integral portion of the normal establishment.

39. It is needless here to enter on the special reasons for assigning the specific numbers of Assistant Engineers given in the scale; but taking the number as a whole, viz., forty-four, it is thought that as compared with the total number of officers in the Executive Grades (including Superintendents of Works), thirty-five, the proportion should provide for a fair flow of promotion,—a point on which this Government is disposed to lay much stress.

40. The number (178) of Upper Subordinates, which has been strictly decided on the known requirements of the different divisions, calls for no remark.

41. No attempt, it will be observed, has been made to form a distinct Irrigation Branch with a separate establishment. However desirable in the abstract, His Grace the Governor in Council has, after mature consideration, come to the conclusion that any such arrangement would, in the present circumstances of this Presidency, be unsuited to its needs, as the work of the several divisions (*see* the explanatory letters in column 3 of the annexed statement) is of too mixed a nature to admit of a rigid line being drawn, which would be consistent with the economical execution of the work to be done. The claims of promotion and other matters requiring adjustment between a large separate irrigation branch and a small one whose duties would be confined entirely to non-irrigation work, would, it is foreseen, cause considerable difficulties which, in present practice, are not found to exist.

42. No inconvenience has, as a fact, been found to connect itself with the arrangement of having a combined department, as, by both practice and tradition, officers showing special aptitude for its different branches are easily and indeed necessarily retained in their particular line. The opinion of Government is, moreover, based on those of the great majority of the professional officers in this Presidency, who are decidedly opposed to any change in this respect.

43. In conclusion, I am to observe that, while the Government are anxious to receive the earliest possible sanction to the scheme as sent up, with a view to give the promotions which would correspond to those of other provinces, as notified in Government of India General No. 1,198—1,211-G., dated 9th June 1880, with effect from 1st June, they do not propose to themselves to carry out at once the whole scheme; at the same time, they are desirous of having perfect freedom of action in this respect so as to admit of such measures being taken in the formation of the new circles of superintendence and of executive divisions as circumstances may show to be most opportune. If meeting the complete approval of His Excellency the Governor-General in Council, I am to solicit the favor of the sanction being conveyed by telegram for the scheme as now sent up.

Distribution Statement showing proposed Normal Strength of Department of Public Works.

Circles.	Divisions.	Head.	Number of Sub-Divisions.	Establishments. S. E.	S. of Ws.	E. E.	A. E.	U. S.	Remarks.
I	1. Nellore	P. & I.	2			1	1	7	Irrespective of the Madras Irrigation Company's canal.
	2. Cuddapah	P. & I.	3	1	..	1	1	6	
	3. Kurnool	P. & I.	2			1	1	4	
	4. Bellary	P. & I.	2			1	..	4	
II	5. Presidency* ..	P.	2			1	2	7	*Includes Public Works Workshops and Stores.
	6. Bangalore	P.	..			1	1	4	
	7. Chingleput	P. & I.	2	1	..	1	..	6	
	8. South Arcot ..	P. & I.	2			1	1	5	
	9. Salem	P. & I.	1			1	..	5	
III	10. Coimbatore	P. & I.	2			1	1	5	
	11. West Coast	P.	3	1	..	1	2	12	
	12. North Arcot ..	P. & I.	2			1	1	5	
IV	13. Trichinopoly ..	P. & I.	2			1	1	8	
	14. Madura	P. & I.	2	1	..	1	1	8	
	15. Tinnevelly	P. & I.	2			1	2	7	
V	16. Ganjam	P.	2	..		1	2	8	
	17. Vizagapatam ..	P.	2	..					
VI	18. Godâvari, Eastern ..	I.	3	..	1	2	1 2	7	* Includes 1 Assistant Engineer and 2 Under Subordinates for any works needed in the old Rajahmundry Division or Ramps.
	19. Godâvari, Western.†	I.	2	..			1 2	7	
VII	20. Kistna, Eastern ..	I.	3	..	1	2	1 2	6	† Does not include provision for extension works in the Kistna Delta.
VIII	21. Kistna, Western ..	I.	2	..			1 2	7	
	22. Buckingham Canal ..	P.	3	..	1	..	1	4	
IX	23. Tanjore	I.	2	..	1	1	2	8	
	24. Negapatam	I.	2	..	1	1	2	7	
	25. Consulting Architect	P.	..	..	..	..	1	3	
	Secretariat	P. & I.	..	..	..	1	1	..	
	Special work‡ ..	I.	..	..	..	4	6	10	‡ The special work consists of completing the many famine projects now in an incoherent condition.
	Guaranteed Railways.	..	..	..	..	2	..	..	
	Supernumeraries§ ..	P. & I.	..	..	..	1	4	18	§ Calculated at 10 per cent.
	Grand Total of Establishment, excluding Chief Engineers.	..	..	4	6	30	44	178	
					35				

N.B.—The letters P and I in the third column are not used in the absolute sense of Provincial and Irrigation, respectively, but are simply intended to furnish a general indication of the preponderance of the work under each in the several divisions.

Statement showing the Cost of Engineer and Upper Subordinate Establishments, as proposed in Madras Government letter, No. , dated to the Secretary to Government of India, Public Works Department.

Proposed Number.	Distribution as per Code Rule. Number.	Rate.	Cost (consolidated pay exclusive of all Military Pay and Allowances). Per Mensem.	Per Annum.	Total.	Remarks.
			Engineer Establishment.			
			Chief Engineers.			
1	1	Rs. 2,500	Rs. 2,500	Rs. 30,000	Rs.	
1	1	2,000	2,000	24,000		
1	1	1,800	1,800	21,600		
*3	Total ..	..	6,300	75,600	75,600	* Includes, it is believed, the Consulting Engineer for Guaranteed Railways. It is not known under what circumstances the future appointment of Railway Consulting Engineer has been taken in the Chief Engineer class. Under the orders of the Government conveyed in Public Works Department Resolution Nos. 1,506—1,533 E.G., dated 28th August 1879, this appointment was reduced to a Superintending Engineer charge, and it was only, as a special case, that Colonel Shaw-Stewart, R.E., the present holder of the appointment, has been allowed to retain the rank and pay as a Chief Engineer.—*Vide* Government of India No. 2,296, dated 18th October 1879, published with G.O., No. 467 C.L., dated 24th October 1879.

Statement showing the Cost of Engineer and Upper Subordinate Establishments, &c.—*cont.*

Proposed Number.	Distribution as per Code Rule. Number.	Rate.	Cost (consolidated pay exclusive of all Military Pay and Allowances). Per Mensem.	Per Annum.	Total.	Remarks.
			Engineer Establishment—*cont.*			
			Superintending Engineers.			
2	2	Rs. 1,600	Rs. 3,200	Rs. 38,400	Rs.	
1	1	1,350	1,350	16,200		
1	1	1,100	1,100	13,200		
*4	Total ..	..	5,650	67,800	67,800	* Agrees with the number sanctioned in Government of India Resolution Nos. 1,506—1,533 E.G., dated 28th August 1879.
			Executive Engineers (including Superintendents of Works).			
6	6	950	5,700	68,400		
9	9	800	7,200	86,400		
9	9	650	5,850	70,200		† Includes the two officers of the Executive Engineers Grade at present attached as Deputy Consulting Engineers to the office of the Consulting Engineer for Railways.
11	11	550	6,050	72,600		
†35	Total ..	..	24,800	2,97,600		
	Special allowances at Rs. 100 for five Superintendents of Works.		500	6,000		
	Total ..		25,300	3,03,600	3,03,600	
			Assistant Engineers.			
15	15	450	6,750	81,000		Of the present sanctioned scale of 24 Assistant Engineers of the 2nd and 3rd Grades and Apprentices, the actual numbers are— Of the 2nd Grade .. 22 ,, 3rd Grade .. 2 Total .. 24
26	26	350	9,100	1,09,200		
‡ 3	3	250	750	9,000		
44	Total ..	..	16,600	1,99,200	1,99,200	
36	Total, Engineer Establishment ..				6,46,260	The number 29½ Assistant Engineers, 2nd and 3rd Grades, and Apprentices arrived at, under Code proportions, have been divided as near as possible proportionately.
			Upper Subordinate Establishment.			
			Sub-Engineers.			
6	6	400	2,400	28,800		
5	5	300	1,500	18,000		
11	11	250	2,750	33,000		
22	Total ..	..	6,650	79,800	79,800	
			Supervisors.			
17	17	200	3,400	40,800		
28	28	150	4,200	50,400		
45	Total ..	..	7,600	91,200	91,200	
			Overseers.			
111	111	Mean pay of the 3 grades. 80	8,880	1,06,560	1,06,560	Distribution of the sanctioned scale amongst different grades not given, cost calculated on mean pay, *viz.*, Rs. 80.
178	Total, Upper Subordinate Establishment ..				2,77,560	
Lower Subordinate Establishment						Not provided for in proposals.
Petty Establishment						
Office do.						
Irrigation Conservancy Establishment						
Temporary Establishment						
Accounts Establishment						Not provided for in proposals. The strength and cost of the Accounts Branch can only be arrived at when the executive arrangements have been finally decided upon. In this will have to be included the cost of the establishments required for special divisions or sub-divisions, such as the various Workshops, Harbour Works, &c.

Notes.—(1) The amounts above referred to do not include any military pay and allowances of Military Officers and Subordinates.

(2) No provision or mention is made in the Distribution Statement or in the letter to the Government of India of the cost of—

(*a*) Local allowances including sub-divisional allowance.
(*b*) Travelling allowances.
(*c*) Contingencies.

(True Copy.)

Madras,
15th October 1880.

(Signed) H. CAREY,
for Offg. Examiner, P.W. Accounts.

Proceedings of the Government of Madras, Public Works Department, dated 2nd December 1880, No. 2,781 W.

General—Establishment.

Read the following paper :—

From Major-General A. FRASER, R.E., Secretary to the Government of India, Public Works Department, (General,) to the Secretary to the Government of Madras, Public Works Department, dated Simla, 4th November 1880, No. 1,918 G.

I AM directed to acknowledge your letter No. 2,277 W., dated 1st October, forwarding a statement of the estimated *normal* establishments of Engineers and Upper Subordinates required for Madras, and to communicate the following remarks.

2. The number of Chief and Superintending Engineers proposed is—

Three Chief Engineers.
Four Superintending Engineers.

This is already sanctioned so long as Colonel Shaw-Stewart holds the post of Consulting Engineer for Guaranteed Railways. When this post becomes vacant the sanctioned numbers will be—

Two Chief Engineers.
Five Superintending Engineers.

3. The Government of India has no objection to the Consulting Architect exercising the powers of a Superintending Engineer, without any increase to his present salary.

4. The proposal to appoint five Superintendents of Works in addition to four Superintending Engineers with additional allowances of Rs. 100 per mensem, is intended to preserve, to that extent, the advantages said to have been found in the former system of District Engineers. But it is to be observed that the District Engineers did not, as such, draw any extra allowances, and to accede to the present proposals would be to give nearly all the Executive Engineers in the 1st Grade more than the regulated pay of that grade. In his memorandum, dated 8th January last, the Chief Engineer for Irrigation considered that Superintendents of Works for the Godávari and Kistna Deltas were unnecessary. He also objected to the Tanjore and Negapatam Divisions forming a charge of a Superintendent of Works. It does not appear, moreover, that the combined charge of Ganjam and Vizagapatam with a staff of one Executive and two Assistant Engineers and the Buckingham Canal with a staff of one Assistant Engineer, require Superintendents of Works to supervise them. The Honorable the President in Council requests that this portion of the proposals may be reconsidered, and, meanwhile, desires that the payment of the extra allowances may cease.

5. The Government of India is not in a position to discuss the question of the staff of Executive and Assistant Engineers in detail, but that Government is bound to see that in a general way the proposals put before it, for its approval and that of the Secretary of State, are as economical as possible.

6. Three sets of proposals have during the past two years been laid before the Government of India—

(1) Those submitted in September 1878 on which no orders were passed, as it was understood that further proposals would shortly be made.

(2) Those of February 1880 which were professedly *ad interim*, and, as such, sanctioned temporarily with the exception of four Superintendents of Works.

(3) The present proposals.

These three are compared in the following table :—

	Executive Engineers.	Assistant Engineers.	Upper Subordinates.
September 1878	37	45	243
February 1880	26	36	144
October ,, ...	35	44	178

The thirty-seven Executive Engineers of 1878 did not apparently include the two Deputy Consulting Engineers, while the later figures do.

7. The outlay administered by the department was taken at 102 lakhs in the discussions of 1878. For next year it will be about 49 lakhs, as nearly as it can at present be estimated. That is, roughly speaking, the expenditure will have been reduced by one-half, while the establishment is reduced from the proposals of 1878 by only—

3 Executive Engineers.
1 Assistant Engineer.
65 Upper Subordinates.

8. The total cost of the proposals of 1878 was put down at Rs. 21,38,251 per annum. No complete estimate of the cost of the present proposals is submitted ; the salaries of the Engineer and Upper Subordinate Establishments only are given, exclusive of military and other allowances. These items are compared, so far as it is possible to do so, in the following figures :—

	Engineers.	Upper Subordinates.
1878	6,95,720	3,04,440
Present proposals	6,46,200	2,77,560
Decrease ...	49,520	26,880
	76,400	

or about three-fourths of a lakh of rupees only.

9. It is not easy to form an estimate of the absolute total cost of the present proposals. The cost of the proposals of 1878, including military allowances, travelling allowances, office establishment, lower subordinates, accounts establishment, &c., was Rs. 21,38,000. Deducting from this the aggregate salaries given above of the Engineers and Upper Subordinates there remains a balance of Rs. 11,77,000. Probably Rs. 10,00,000 may be taken as the corresponding sum for the present proposals. This would give the total cost, Rs. 19,24,000, out of a total expenditure of about 49 lakhs. If this calculation is correct the cost of establishments will be more than 60 per cent. on the outlay of works. In other words, it will cost nearly 10 annas to spend a rupee on public works. It appears to the Government of India that any such proportion is out of the question, after making all allowance for the area to be supervised, and the Honorable the President in Council is not prepared to recommend the present proposals for the acceptance of the Secretary of State.

10. A considerable portion of your letter under reply is devoted to showing that the circumstances of Madras are such that a diminution of total outlay on public works cannot lead to any appreciable diminution in the establishment charges, and as a matter of fact the new proposals do not materially differ from those submitted in 1878, when the expenditure was about double. Yet the Honorable the President in Council observes that the Government of Madras has assigned 41 lakhs of expenditure to Local Boards, thereby not only leading to these proposals for large unproductive outlay under Imperial and Provincial, but causing the creation of a separate establishment to supervise the outlay placed under Local Fund Boards, of the cost of which the Government of India has no information. In the first place it was stated that the reduction of the Imperial establishment rendered necessary the transfer of Local Funds to the Local Boards, and then, that transfer having been carried out, it is reported that a permanent reduction of establishment is impracticable.

11. In Public Works Department letter No. 1,639 G., dated 17th September last, the Government of India pointed out that, as then informed, one of two things must happen from the transfer of Local Fund expenditure to the Local Boards, viz.,

either (1) the proportional cost of establishment for Imperial and Provincial Works must be inordinately high, or (2) the Local Fund officers must carry out a considerable amount of the Imperial and Provincial outlay, those funds receiving the usual percentage. There is another alternative, viz., (3) to replace the Local Fund expenditure under the Public Works Department.

12. The Honorable the President in Council regrets that a decision regarding the long discussed organization of the Public Works Department in Madras must be further deferred by the request of the Government of India that the whole question may be reconsidered by His Grace in Council in the light of the foregoing remarks.

13. Although the state of the Engineer Establishment in Madras is as shown above, from an economical point of view, entirely unsatisfactory, yet out of consideration for individual interests the Government of India will not object to placing that establishment as sanctioned in Public Works Department letter No. 725 G, dated 19th March, as a temporary arrangement, on the same footing as in other provinces. The following change of sanction may therefore have effect from 1st June 1880 :—

		*Present.	New Sanctioned.
Chief Engineers	... ...	2	2
Superintending Engineers	... ...	5	5
Executive Engineers, Grade	i.	5	7
Do.	do. ii	5	8
Do.	do. iii.	6	8
Do.	do. iv.	7	7
Assistant Engineers,	do. i.	8	4
Do.	do. ii, iii, &c.	19	20
		24	16

* Including the two Deputy Consulting Engineers.

Order thereon, No. 2,781 W., dated 2nd December 1880.

In this letter the Government of India pass orders on the proposals submitted to them in letter of the 1st October 1880, No. 2,277 W., regarding the normal strength of the Public Works Establishments of the Presidency and the re-organisation of the Department.

2. Pending the submission of information which is being collected in regard to (1) the cost of all present Local Fund Establishments, (2) the total cost of the proposed normal establishment of the department, and other statistics connected with Provincial assignments, the consideration of the general questions raised by the Government of India will be deferred.

3. Meanwhile there are two matters on which immediate action may be taken:—

(1) The cessation of the payment of Rs. 100 per mensem, directed in paragraph 4 of the letter from the Government of India, to the officers classed as Superintendents of Works ; and

(2) the promotions due to the change of scale sanctioned in paragraph 13.

4. The officers personally affected by the stoppage of the extra allowance of Rs. 100 are Mr. Rundall, Mr. Walch, Major Vibart, R.E., and Captain Awdry, R.E. As regards the last-mentioned officer, the promotion which he will receive under the present orders will compensate for the loss of special emolument. In the other cases there is no alternative. The orders of the Government of India are absolute and must be carried into effect. The special allowances will cease therefore from the 1st December.

5. The following is the revised scale of establishment sanctioned, and includes the officers of the Railway Branch :—

Chief Engineers	... ...	2
Superintending Engineers	... ...	5*
Executive Engineer,	i grade	7
Do.	do., ii do.	8
Do.	do., iii do.	7
Do.	do., iv do.	4
Assistant Engineers,	i do.	20
Do.	do. ii and iii grade	16

* Includes the Consulting Engineer for Railways, the present holder of which office holds the personal rank of Chief Engineer.

6. On a review of the existing establishments it is found that the following promotions can be made :—

To the	1st Grade Executive Engineers	2
,,	2nd ,, ,, ,, ...	3
,,	3rd ,, ,, ,, ...	3
,,	1st Grade Assistant Engineers	8

These will be separately notified.

7. It will however be clearly understood that officers who have not passed the examinations prescribed in paragraphs 153 to 157 of the Public Works Code for promotion to Assistant Engineer, 1st Grade, will have no claim to be so promoted after the 1st January next, till which date His Grace the Governor in Council has been pleased to grant an extension of time. In any case promotions will only have effect from date of passing. All others made under this order will have effect from the 1st June 1880.

(True Extract.)

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

Proceedings of the Government of Madras, Public Works Department, dated 8th February 1881, No. 336 W.

Read the following papers :—

From Major-General A. FRASER, R.E., Secretary to the Government of India, Public Works Department, (Account—Irrigation,) to the Joint Secretary to the Government of Madras, Public Works Department, Irrigation Branch, dated Simla, 23rd October 1880, No. 169 A. I.

From the annual accounts for 1878-79 and 1879-80, it appears that the amounts charged to Establishment on Productive Public Works during those two years were 112 and 117 per cent., respectively, on the outlay on works, the percentage having been calculated, in accordance with the orders of the Government of India, on the original grant for works instead of on the actual outlay of the year. The very large amounts charged for Establishment for supervising outlay on Productive Public Works is so very excessive that it appears necessary to revise the orders on this matter without further delay.

2. I am therefore directed to state that, so far as Productive Public Works in the Madras Presidency are concerned, the charges for Establishment should be limited to 25 per cent. on the actual *bond fide* net capital outlay on works, excluding all charges for land.

3. If the original budget grant for the year for Productive Public Works is reduced by the Government of India, the differences between the Establishment charges calculated on the original grant and that on the actual outlay will be borne by the Imperial ordinary grant for irrigation and navigation works, if the Government of Madras can show that the action of the Government of India has thrown extra charges on Madras Provincial Funds, and if the Government of Madras have applied to the Government of India in good time for the removal of the establishment rendered surplus by the reduction of the grant under Productive Public Works without any additional grant being assigned under other heads.

4. It is sometimes observed that the grants assigned from Imperial Ordinary Funds could not be worked up to for certain local causes, such as famine or the want of estimates duly sanctioned by competent authority. In such cases it is not proper that the Imperial Funds should be held liable for lapses of this nature.

From Major D. H. TRAIL, R.E., Officiating Examiner, Public Works Accounts, to the Secretary to Government, Public Works Department, dated Madras, 4th December 1880, No. 164 W.

I HAVE the honor to forward herewith, for information and such action as Government may consider necessary, a statement showing Establishment charges audited, under all heads, to end of September 1880, that is, for the first six months of the year 1880-81, as compared with the budget grants for the same modified to end of November 1880.

2. From the amounts entered in the last column of the statement against "monthly average" under modified grant and outlay, it will be observed that at present there is a monthly excess of Rs. 13,742 under "outlay," which will amount, at the end of the year, to about Rs. 1,65,000.

3. This excess will further be greatly enhanced on account of the additional outlay due to the promotions, with retrospective effect from 1st June 1880, of the thirteen Engineer Officers ordered in your Office Note No. 577, dated 2nd instant, and by the appointments of the seven Assistant Engineers who were lately sent out by the Secretary of State from the Royal Indian Engineering College, Cooper's Hill.

4. *Excluding* cost of travelling allowance, this further excess will, at the end of the year, be about Rs. 25,000, which, added to the sum referred to in paragraph 2 above, will amount to Rs. 1,90,000.

5. It is essentially necessary that a further additional grant of say 2,00,000 should be, at once, sanctioned to meet this anticipated excess, under Establishment, and I have accordingly to request sanction may be obtained at an early date to an additional grant of 2 lakhs.

6. The present outlay, as compared with the amount (Rs. 13,86,033) entered in the Provincial Budget for 1880-81, has, to end of September 1880, been Rs. 1,960 per mensem less. But as the provisions actually made in the several budgets are in the aggregate Rs. 2,56,533, as explained further on, less than the cost (Rs. 13,86,033) of the normal establishment of the Presidency entered in the Provincial Budget referred to above, the monthly average outlay becomes Rs. 13,742 in excess.

7. The difference (2,56,533) less provided for in the several budgets is made up as follows :—

Heads.	Cost of Normal Establishment detailed in Provincial Budget, Pages 17—27, under "General" including Accounts	Provision actually made in Budgets	Difference.
	Rs.	Rs.	Rs.
Provincial	4,09,764	3,02,919	...
Imperial, Military, and Other Services		1,00,750	...
Local and Special Funds		73,977	...
Total ...	4,09,764	4,77,646	— 67,882
Irrigation.			
Irrigation Productive Public Works	9,76,269	1,53,634	...
Special		1,23,651	...
Irrigation, Navigation		3,10,153	...
Do. do. Special		73,416	...
Total ...	9,76,269	6,51,854	3,24,415
Grand Total ...	13,86,033	11,29,500	2,56,533

8. From G.O., No. 458 A. I., dated 16th July 1880, it would appear that the matter of this anticipated deficiency in the provision for establishments has already been before Government, and has formed the subject of correspondence with the Government of India.

9. The favor of very early orders is solicited.

ORDER THEREON, 8th February 1881, No. 336 W.

ORDERED that the following letter be sent to the Government of India.

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

From the Secretary to the Government of Madras, Public Works Department, to the Secretary to the Government of India, Public Works Department, No. 337 W.

General—Establishment.

SIR,—With reference to your letter, No. 1,913 G., of 4th November 1880, calling on this Government to reconsider the scheme for the normal establishment of the Department of Public Works in this Presidency, submitted with my No. 2,277 W. of 1st October 1880, and which has been pronounced (paragraph 13) "from an economical point of view to be entirely unsatisfactory," I am desired to offer the following observations for the favorable consideration of His Excellency the Governor-General in Council.

2. The proposals of this Government as regards the number of Chief Engineers, Superintending Engineers, and with reference to the bestowal of the powers of a Superintendent of Works on Mr. Chisholm as Consulting Architect, having been accepted by the Government of India, no remark appears called for with reference to paragraphs 1, 2, and 3 of the letter under reply.

3. Paragraph 4 states the specific objections to the appointment of five selected officers with powers of Superintendents of Works and an extra staff salary of Rs. 100 per mensem. These are—(1) that the Chief Engineer for Irrigation considered that Superintendents of Works for the Godavari and Kistna Deltas were unnecessary, and that he objected to the Tanjore and Negapatam Divisions forming a charge for an officer of this class; (2) that it does not appear that the combined charge of Ganjam with Vizagapatam and (3) the Buckingham Canal require Superintendents of Works.

4. With reference to (1) and (2), I am to observe that, in the last re-organization of the department (September 1878), the following six Executive Divisions comprehended in the First Circle, viz. :—

Ganjam,
Vizagapatam,
Eastern Godávari,
Western do.,
Eastern Kistna,
Western do.,

were formed into a charge for one Superintending Engineer, and that notwithstanding the appointment of the best officer in the department of this grade to the post, the arrangement, after a sufficiently long trial, broke down in such a way as to satisfy this Government that it could in nowise be adhered to or be again recommended for adoption.

5. The proposals made by the Chief Engineer for Irrigation took in the four Delta Divisions, but left Ganjam and Vizagapatam entirely outside of his scheme, to form part of a charge of a Superintending Engineer, which at the same time was to include divisions placed so widely apart as Cuddapah, Kurnool and Bellary, and even the Western Coast, involving a circuit of not less than two-thirds of the whole Presidency.

6. It is almost needless to say that such an arrangement was very much more impracticable than the one it was proposed to replace, and as such it was necessarily rejected by this Government. Colonel Maitland proposes in fact almost solely at creating an exclusive Irrigation Branch Establishment without duly considering the requirements of the "Roads and Buildings" Branch and the general needs of the Presidency; but, as will be observed from Paragraphs 41 and 42 of my letter, No. 2,277 W., of 1st October 1880, proposals of this character after mature consideration have had to be negatived by this Government, no further remark is here called for.

7. On the other hand, it had been distinctly recognized that for the management of the Delta Works (situated, chiefly, within the limits of the two Godavari Districts) Engineers (who had similar powers to the proposed Superintendents of Works) had a very marked advantage, as residing on the spot, over officers of equivalent rank who should carry with him all the powers of a Superintending Engineer, though graded lower in the department and drawing less salary.

8. After the practical experience which has now been made of officers in this position (Mr. Walsh as Superintendent of Works for the two Godavari Divisions and Mr. Rundall for the two Kistna Divisions), it may be safely said that it would be impossible to secure better or closer supervision for these important works, and that to replace them now, after the advantages of the arrangement have been sufficiently proved in practice, by a single Superintending Engineer, would in the opinion of this Government, be a retrograde measure which they would regret to see adopted. The provision of this description of supervising authority having thus shown itself to be the best for these Northern Delta Divisions it is needless to say that it would be equally applicable to and necessary for the works in the Cauvery Delta.

9. It follows on this that Tanjore and Vizagapatam must, as the only inaccessible charge to the north and as forming an isolated group, be the outlying Superintending Engineers, as provided for by a similar agency, though it may be admitted that, unless the present low limit for this Establishment can be materially increased, the work of an officer as it is under such arrangements can be the projection of the works which are so greatly needed for opening this most backward portion of the Presidency.

10. Lastly, it is clear from the great length (250 miles) and peculiar character of the works of the Buckingham Canal, involving the supervision of a series of heavy engineering works, control of traffic, &c., that in the same way they cannot be advantageously linked with any circle forming the charge of a Superintending Engineer.

11. The arrangement of a number of charges for officers in the grade of Superintendents of Works in addition to the four Superintending Engineers' circles proper as submitted for the approval of the Government of India is thus shown to be the only one that is feasible having regard (1) to that efficiency in supervision by which alone true economy can be secured, and (2) to the geographical arrangement of the various charges.

12. The distribution of the whole of the Presidency of Madras into five circles for Superintending Engineers was proved to be impracticable from the experience gained by the re-organization of September 1878, and it is therefore needless to say that the division into four as required by the Government of India must be still more so.

13. If, after considering what has above been advanced, the Government of India are still indisposed to sanction any officer in the grade of Superintendents of Works, the only arrangement giving a chance of success would, I am to observe, be that of six Superintending Engineers' circles as already stated in my letter to the Government of India of 1st October, but in the opinion of this Government this would be greatly inferior to the scheme put forward therein.

14. Should the Government of India, however, accept the scheme sent up, this Government trusts that their decision to refuse any charge allowance may be also reconsidered on the grounds that, as these officers exercise much higher powers and

have considerably greater responsibility than ordinary Executive Engineers, it is only right and in accordance with the practice of other departments that they should receive some such allowance, not a very high one in this case—of Rs. 100 per mensem.

15. An allowance of this character is distinctly permitted by the Code of the Government of India, and, it is believed, that officers in this position have invariably in all other provinces drawn up to Rs. 200 per mensem extra to the ordinary pay of their grade.

16. In compliance with the instructions given in paragraph 4 of the Government of India letter under reply, the extra allowances have, I am to state, already been stopped from the 1st December, but this Government would urge the propriety of their being again given, at least to the present incumbents, as the duties are precisely those contemplated by the Code, and as the amount is after all but small.

17. Paragraphs 5 to 9 inclusive of the letter under reply deal with the cost of establishment, and, with a view to clear up all doubts on the subject, the Examiner has framed two statements annexed, (A) and (B), showing, *first*, the effect of the reductions ordered in establishment in 1879 as a general financial measure, and, *second*, the cost of the proposed normal establishment as sent up with my letter of 1st October.

18. It will be observed from (A) that taking into account temporary establishments and the value of the pensions, and calculating the gratuities and bonuses to retired officers on the principles laid down in the Civil Pension Code, the total saving in the Executive Branch has been only Rs. 1,833 per mensem, and in the Accounts Branch Rs. 989 after allowing for changes recently introduced in the system of auditing Local Funds under Madras Act IV of 1871 (which is not a State charge, and which changes were not induced by the Public Works reductions as a necessary consequence and relate to other services beside works), and this notwithstanding that 495 individuals in the first and 67 in the second branch were actually retired. But as the pensions of many of the retired men who took service under the Local Fund Boards have been stopped by the orders of the Government of India, the actual saving to the State while this order holds good is necessarily much greater than shown by Major Trail's figures.

19. After allowing for the cost of the new agency engaged by Local Fund Boards the saving is about Rs. 15,000 per mensem, reducible to Rs. 6,838 if the value of the compensation pension and gratuities be deducted. These figures exclude Petty Establishment which had been a purely Local Fund charge, and also the portion due to the Account Department, neither of which, properly speaking, affect the question of the Public Works Establishment under Government.

20. Whatever its results, the measure of transferring the execution of Local Fund Boards' works was, as noted in previous communication, one which gave that reality to Act IV of 1871 which its framers contemplated, and which, if that Act be retained in the Statute Book, must sooner or later have been brought about; it also enabled the Public Works Establishment to free itself of many inefficient members, and to take a much more sound position as a professional body than was possible under the old organization.

21. Even, however, if these results had not been so fully attained as is the case, it is now, I am to observe, clear that the step has been finally taken and that there is no revoking it.

22. With regard to the observation in paragraph 10, that the "Government of Madras has assigned 41 lakhs of expenditure to Local Boards," I am to submit that there is no question of assignment, as the money belongs to the several Local Fund Boards by law, and that there would thus seem to be a misapprehension on the part of the Government of India as to the character of these funds, which are derived from special rates levied for a special purpose under a special law which provides for their administration by a special agency.

23. Turning now to statement (B), it will be observed that, whereas the existing Provincial Establishment for the whole department, "Provincial" and "Imperial," costs Rs. 13·86 lakhs per annum, the normal one proposed will probably amount to

18·38 lakhs. Some adjustments on both sides of the account may have to be made, &c., if effect be given to the provisions of the Government of India Resolution, No. 1,787 G., of 15th October 1880, sanctioning revised proportions in the grades of the Upper Subordinates, about Rs. 27,000 per annum will have to be added to the total; but on the other hand certain contributions from (1) Local Fund Boards in Kurnool, Trichinopoly, &c., and (2) payments for work done by the Lithographic Establishment, &c., will come in as "*per contra*" credits.

24. It may therefore be accepted that, whereas the re-organization scheme of 1878 amounted to 21·38 lakhs (see paragraph 8 of General Fraser's letter), the proposed normal establishment will cost about 18·38 or 3 lakhs less.

25. If all the needful adjustments were made the difference would be fully 3½ lakhs in favor of the present scheme for the normal establishment.

26. The Government of India, in paragraph 9 of the letter under reply, observe that the proportion the establishment bears to works is "out of the question after making all allowances for the area to be supervised," and again that by the proposal sent up "it will cost nearly 10 annas to spend a rupee on Public Works." From these observations and others it has become evident to this Government that the grounds of their proposal and the peculiar circumstances of this Presidency have not been so fully understood and appreciated by the Government of India as could be desired.

27. The total outlay (Provincial and Imperial) supervised by the department is at present as nearly as possible 50 lakhs, and the establishment charge for spending this, viz., 18·38, would thus amount to 36·8 per cent. and not to 60 per cent. as supposed by the Government of India; but even this gives an incorrect view as compared with other provinces, as here much of the charge for establishment employed on (Imperial) Irrigation Works is borne by the Public Works Department instead of being debited to "Revenue," a matter which it is intended shortly to submit for consideration.

28. Again, as will be seen from paragraph 35 of my letter, No. 2,277 W., of 1st October, the special want of the department, which it was intended by the normal scale to meet, was "the provision of adequate establishment for investigating projects either of general importance or specifically for famines," and was not merely a work establishment. This with the immediately succeeding observations appear, I am to observe, to have escaped the Government of India, as no notice whatever has been taken of them in the letter under reply.

29. Taking all these circumstances and observations into consideration, it appears to the Right Honorable the Governor in Council that the time has arrived, when it becomes his imperative duty, to draw the very serious attention of the Government of India to the anomalous position which Madras has held ever since the decentralization order (Resolution of Government of India, No. 3,334, of 14th December 1870). The working of this order will at once be seen from an examination of the attached statement marked (D).

30. Here taking the "charges" side it will be observed that, while under all the sub-heads, Jails, Registration, Police, Education, Medical, Miscellaneous, &c., the Provincial expenditure has, from causes beyond control, run up to an amount far above what it was only ten years ago, the Provincial income remaining practically constant, the outlay under Public Works has perforce gradually dwindled to a fraction of its former amount. In 1873-74 the Provincial outlay on Public Works was Rs. 29,81,235, whereas in 1879-80 it had been reduced to Rs. 14,69,101, of which, small as it is, one lakh had to go to meet an interest charge on the Madras Water Works. A careful review of the figures will show that if some consideration be not given by the Government of India to the question now pressed on their attention, and if matters be allowed to proceed in the future as in the past the total extinction of the Department of Public Works in this Presidency, so far as concerns Provincial Works, is a foregone conclusion.

NOTE.—In the nine years 1871-72 to 1879-80 there has been an excess of Rs. 13,39,945 of charges over receipts.

NOTE.—The charge for Roads and Miscellaneous Public Improvements is now borne by Municipal and Local Funds raised under Madras Acts III and IV of 1871, which aggregated nearly 28½ lakhs in 1879, showing that every effort has been made by this Presidency to accept local burdens.

31. The establishment has been simply living from hand to mouth, and although on all sides there are projects of the highest promise and of the most vital importance to the welfare of the Presidency demanding the fullest consideration, and although the orders of the Government of India as to the necessity of being prepared with projects of works in case of famine are distinct and precise, it has been absolutely impossible for this Government to give that full consideration or to carry out these orders. There have been no officers to spare even for the preliminary work of investigation, still less for detailed preparation, so that, if famine were again to come upon this Presidency, there are only a very few, and those comparatively unimportant, projects in a sufficiently advanced state to admit of their being at once put in hand, and it is needless to point out the folly, extravagance, and waste of great opportunities which results from works being suddenly undertaken, the real utility of which has not been thought out and their mode of construction properly decided upon and estimated.

32. In proof of this it may be as well to say that the great work of the last famine, the Buckingham Canal, upon which over 36 lakhs have been spent, and on which at one time no less than 100,000 people were employed, has never even yet been properly estimated for.

33. Madras, it must at the same time be observed, claims a larger proportional share of outlay than any other province as tested by *principles* recognized by the Government of India for the apportionment of public funds;

First, it has admittedly the most extensive zone over which famine is possible, calling for the execution of *protective* works. In the last famine 1876-1878, as shown in paragraph 60, Famine Commission Report, Part I, 19½ millions of people were affected by this great calamity in Madras on an area of 83,800 square miles;

Second, it has in its facilities for the creation of new and the development of already existing Irrigation works, a perfectly unrivalled field for works classed as "*Productive*."

34. In regard to this latter point, attention is invited to the annexed tabular statement marked C, the facts recorded in which are extracted from Part II, Section V, of the Famine Commission Report. By that report Madras with 7,300,000 acres shown as ordinarily irrigated stands second to the North-Western Provinces and Oudh with 11,500,000, but large as is the proportion thus given to Madras even these statements are utterly misleading as will at once be seen by a reference to the attached statement. The large figure given for the latter province is made up of:—

	ACRES.
Well irrigation	5,794,000
Rivers and ponds	3,967,000

while canals on permanently irrigated land with unfailing sources of supply have only 1,694,000; and in addition to this it appears that even this acreage is made up by adding the whole area irrigated separately in the Kharif and Rabbi crops together, much of the acreage being thus counted twice over, and an incorrect impression being given as to the area irrigated at any one time.

35. The fact is that in Irrigation works Madras stands practically alone. On its three great Delta works, it has 1,700,000 acres under irrigation at one time, and were other works of the same class added, the area under permanent irrigation of the first class would be found to be not less than two and a half, if not three, times as much as in the whole North-Western Provinces and Oudh. In fact it is not too much to assert that tested in any equitable manner Madras has more first-class irrigation than the whole of the rest of India taken together, and stands quite the leading country in the world in this respect. Moreover the character of the irrigation supplied under the Northern Canals at the best is merely flooding, only needing one-fifth of the water required in the Madras irrigation (chiefly rice) with necessarily a very much smaller yield in food crops acre for acre.

36. The Famine Commission, Part II, page 161, observes that there "can be no question as to the value of the Delta works," and somewhat urges both the extension of these and others on the serious attention of the Government of India concluding with the following words, paragraph 66, page 165:—"In short we consider that in the Madras Presidency the subject of irrigation requires a more comprehensive and systematic treatment than it has ever yet experienced. We have little doubt that it cannot be put on a satisfactory basis without increased expenditure. * * * But without a policy of vigour as well as of judgment, irrigation in Madras will not be brought into a condition in which it will supply to the country all those extremely great advantages it can confer or afford the full protection against famine which can be obtained from it, and which in our judgment the British Government is bound to secure for the people." Yet from the way in which the provision of a proper establishment and the means for even framing the requisite projects are denied to the department, this Government cannot but feel that the just claims of the Presidency have not received the attention they deserved; not as the Right Honorable the Governor in Council feels certain owing to any desire on the part of the Government of India to undervalue the importance of the subject to the welfare of the Presidency and its people, but from the inherent difficulty of fully realising the position, and this is shown even in the letter from the Government of India now under reply, when the enforced impecuniosity of the Government of Madras is used as an argument to prevent any improvement being made in what it must be evident is a very deplorable condition for any department to be reduced to.

37. As serving to show the widely different considerations accorded to the claims of the Bombay Presidency, (for instance) it may be seen from the public accounts that the land revenue of Madras for the fourteen years, 1862-63 to 1876-77, exceeded that of Bombay by nearly 1,100 lakhs, whereas in the sixteen years extending to end of 1877-78, Bombay had assigned to it under Ordinary and Extraordinary (Productive) Works 635 lakhs more than Madras. The

No. 781, Agricultural. Madras Government, in their letter, dated 2nd April 1879, to the Government of India, with accompanying papers, has also pointed out that under an equitable estimation of the net Imperial revenue for ten years, while Bengal* contributed a net annual surplus of £5,067,069 and Bombay† only £2,433,615, Madras‡ had given £6,400,540.

* Area square miles 157,989
Population 24,696,090
† Area square miles 60,532,807
Population 124,462
‡ Area square miles 18,349,206
Population 139,671
... 31,358,125

38. The population of Bombay is only about one-half that of Madras, but the Right Honorable the Governor in Council desires to rest the case of Madras, not on comparison with any other province of India, but on its own inherent claims; considering, however, the capabilities for Productive Works, the frequent famines and the great population of the Presidency, it is impossible to arrive at any other conclusion but that Madras has not hitherto received that amount of consideration which the importance of its interests demand.

39. An examination of the "forecast of expenditure on Irrigation works for the five years ending 1883-84" submitted to the Famine Commission by the Bombay Government brings out this fact in a more decisive manner. From this statement it would appear that Bombay has already secured an outlay on—

	Lakhs.
A. Sanctioned works	97·00
B. Famine relief works	101·64
	198·64

and evidently intends to secure the whole of the Rs. 3,76,96,736 demanded. Notwithstanding the singular, and indeed inconsistent, support given to the Bombay schemes by the Famine Commission, they are compelled to admit it to be "mortifying" to find that only 19,300 acres received the benefit of irrigation during 1877-78. The last received Administration Report showed in fact that the accumulated deficit already amounts to over 24 lakhs, and that the actual areas under irrigation were most meagre, amounting to some 23,000 acres.

40. Comparison with Madras here and its existing irrigated area of 5,300,000 acres is quite unnecessary, and yet the fact remains that whereas Bombay has a large establishment and ample outlay on its Public Works, Madras is reduced to such an extent that it cannot even frame projects suitable for famine relief. The manner in which the Productive Works of this Presidency have been starved while other provinces have received apparently every consideration from the Government of India will however be best seen from the following brief table extracted from the Proceedings of the Government of India, 2nd November 1880, No. 174-A I.

	Grants, 1880-81.	Actuals. 1879-80.	1878-79.	1877-78.
	Rs.	Rs.	Rs.	Rs.
Madras	1,55,000	1,24,241	2,40,815	3,55,279
Bombay	3,00,000	2,24,787	3,32,404	4,70,890
Bengal	14,00,000	15,80,523	25,57,900	23,74,338
North-Western Provinces and Oudh.	20,00,000	16,99,208	22,60,876	27,57,639
Punjab	23,00,000	22,60,725	26,74,380	23,46,500
Reserve	1,45,000	...	...	...
	63,00,000	58,94,489	80,66,376	83,04,546

41. In part I of the recently received report by the Indian Famine Commission it is laid down, paragraph 127, that the relief of the able-bodied should "be tendered promptly and before the people have begun to lose strength from want of food;" in paragraph 128, that the selection of the works thus required "should be the duty of the Public Works Department * * * who should be held responsible for *keeping a list of such works ready to be put in hand without delay when any such emergency occurs.* If possible one such work should be opened in each sub-division of a district in which such distress prevails."

42. In the opinion of this Government it is no exaggeration to say that in the face of these and other similar injunctions by the Famine Commission any orders by which this department are deprived of all means for fulfilling this most obvious duty of having works in readiness for famine have almost the appearance of cruel mockery.

43. It cannot be too often or too emphatically submitted that to improvise works, which can in any true sense be considered reliable (especially Irrigation works which often need years for the collection of the data) when famine has once declared itself, is simply impossible; the time for proper projection of such work has then passed, and nothing but financial failure must be counted on as the inevitable result.

44. The deplorable financial results of the Madras Irrigation and Canal Company, which was the hasty outcome of the famine of 1854 and those of probably the majority of all schemes similarly entered on in other provinces, not even excepting the late Bombay schemes, prove this incontestible fact.

45. Any Government which has only half worked out projects at hand, or which has to improvise such schemes has necessarily no other course than to make the best selection it can, usually a haphazard one, when famine appears; and that this is a position fraught with financial danger it is unnecessary to insist upon.

46. Such, however, is the position of the Madras Presidency at this moment, although the late terrible famine only closed, it may be said, yesterday; and this state of matters must in the view of this Government be perpetuated and rendered incurable if the establishment of this department is not given the means of meeting the requirements of its position.

47. The scheme sent up with my letter, No. 2,277 W., of 1st October 1880, will, it is believed, on a careful review be found to be framed on the most economical scale commensurate with efficiency, and with the most pressing needs of the Presidency. A small addition to it will probably be very soon needed owing to the lately purchased Madras Irrigation and Canal Company's works having to be provided for—

a contingency foreseen, but not specifically provided for in the normal scale sent up for acceptance.

48. It may be that the views here expressed may, if accepted, lead to the reconsideration of the Provincial assignments made by the Government of India in their Financial Department Resolution of the 14th December 1870, No. 3,334 (Accounts); but, looking to the urgent necessity for relieving the Public Works Department from its present helpless condition, the Right Honorable the Governor in Council most earnestly hopes that the much needed sanction may not be withheld pending the discussion of a question of such a complicated character.

49. I am to add that a copy of this correspondence will be forwarded for the information of the Secretary of State for India.

38

An Approximate Comparative Statement showing the probable Net Savings to Government effected by the recent

Particulars.	Executive Establishment as it stood on 30th September 18					Cost per Measure.				Difference.							
										Excess.				Less.			
	Number.	Permanent.	Number.	Temporary.	Number.	Permanent.	Number.	Temporary.		Number.	Permanent.	Number.	Temporary.	Number.	Permanent.	Number.	Temporary.
1	2	3	4							19	20	21	22	23	24	25	26
		Rs.				Rs.					Rs.		Rs.		Rs.		Rs.
Engineer Establishment	54	56,712	..											(a)			
Lower Subordinate Establishment	301	37,163	3											18	2,462	..	
Lower Subordinate do.	217	7,919	..											91	1,849	..	180
Office Establishment	864	32,819	12									39	600	(d) 217	949	..	..
												96	1,605	507	2,157	..	..
Total ...	1,436	1,34,613	15							..	..	135	2,205	833	6,988	..	180
Police Establishment ...	1	900	834							2,088					7,044		
										..	..	..	..		2,363		
														Net ...	4,681		
															2,980		
Deduct cost of additional establishment sanctioned since 18th September 1880, as per paragraph 2 of letter, No. 127 W., dated 24th November 1880, forwarding this statement...																	
														Net on current date ...	(e) 1,833		
Examiner's Establishment ...	3	(b) 3,000															
Accountants and Clerks ...	104	10,200	40							..	..	30	348	..	..	..	..
										..	..	264	..	2	(e) 80	..	..
Total ...		13,200								..	..	(c) 903	..		80	..	..
												903					
												(e) 903					

(a) This column represents difference between columns 2 and 7.
(b) Do. do. between do. 4 and 8.
(c) Of this total the numbers against "Engineer" and "Upper
(d) It is believed that mostly all the Lower Subordinates whose
(e) This amount has been arrived at by assuming that the less
(f) This amount represents the pension of 56 men at an average of over 12 years and under 15 years. Average age 40 years.
(g) This represents the total amount of gratuities of 334 men at
(h) The amounts entered in this column have been calculated
months approximately. Average age 50 years.
(i) It has been found impracticable to ascertain the present cost of men to whom these gratuities refer.
with the Local Fund Works, excepting a few appertaining
(k) This represents the pay and allowances of one Examiner and
have been omitted from the figures entered in this statement.
(l) The difference (Rs. 102) between this amount and that entered
(m) This number were actually retired in the Accounts Branch
(n) The *actual* excess against Examiner Establishment is Rs. 750
(o) Represents pay of two retired Accountants, whose services are
(p) Omitting the cost of temporary establishment, the actual
(q) The non-agreement of the differences in the numbers entered
(r) This saving of Rs. 1,833 will further be reduced or altogether

Establishments accruals, and in the case of Lower Subordinate and Office Establishments
ng to the Public Works Department were taken over by Local Fund Boards along
been submitted to this office on behalf of this establishment.
y attached to this office. His pay and allowances, amounting to Rs. 429 per mensem
of Rs. 261 per mensem has actually resulted.
(i).
Indies &c.
excess in the Accounts Branch.

A.

An Approximate Comparative Statement showing the Cost of Establishment, Public Works Department, Madras, as it stood on 30th September 1879 and on the 30th September 1880, and the probable Net Savings to Government effected by the recent general Reductions.

Effective Establishment as it stood on 30th September 1879.					Effective Establishment as it stood on 30th September 1880.					Additional cost of Establishments transferred from Local Fund Works	Cost of Pensions and Gratuities to retired Officers and Subordinates.					B	Difference.							
	Cost per Mensem.					Cost per Mensem.						Pensions and Gratuities.					Total Net Cost.	Excess.				Less.			
Particulars.	Number.	Permanent.	Number.	Temporary.	Particulars.	Number.	Permanent.	Number.	Temporary.		Number retired.	Monthly Pensions.	Gratuities and Bonuses.	Monthly Value of Gratuities and Bonuses.	Total of Columns 13 and 15.		Columns 8+11+15.	Column 16.	Number.	Permanent.	Number.	Temporary.	Number.	Permanent.	Number.	Temporary.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16		17	18	19	20	21	22	23	24	25	26
																EXECUTIVE BRANCH.										
Engineer Establishment ..	(a) 74	Rs. 56,715	..	..	Engineer Establishment ..	(g) 66	Rs. 40,622	..	Rs. ..		(g)	Rs.	Rs.	Rs. (4)	Rs.	Rs.	Rs.	Rs.		Rs.	(6)	Rs.		Rs.		Rs.
Upper Subordinate Establishment	241	27,495	2	300	Upper Subordinate Establishment	159	18,195	2	150		16	2,769	1,11,110	747	3,516		54,313	..	..	..	..	..	(a) 15	2,402	..	..
Lower Subordinate do. ..	217	7,812	..	..	Lower Subordinate do. ..	..	..	2	120		79	2,839	95,740	684	3,523		33,148	1,03	..	..	..	..	64	1,349	..	120
Office Establishment ..	964	22,825	12	195	Office Establishment ..	397	14,280	26	600		(d) 10	..	(e) 4,479	32	32		6,072	6,40	..	..	20	600	(d) 217	940	..	..
Total ..	1,496	1,14,850	14	495				105	1,800		369	(f) 743	(g) 28,838	207	950		93,631	15,0	..	..	96	1,605	597	2,147	..	..
					Total ..	803	73,401	130	2,520		(c) 496	6,216	2,40,156	1,670	7,986		1,88,012	2,520	..	..	116	2,205	853	6,838	..	120
Petty Establishment	4	..	253	854	Petty Establishment ..	..	..	380	2,761		..	..	..	..	..		..	..								
											..	..	..	..	..		..	..								
																				2,205		..		7,073		
																						..		2,205		
																							Net ..	4,868		
																			Deduct cost of additional establishment sanctioned since 30th September 1880, as per paragraph 6 of letter, No. 107 W., dated 28th November 1880, forwarding this statement.					3,050		
																							Net on present date ..	(c) 1,833		
Examiner's Establishment ..	3	(b) 3,063	..	..	Examiner's Establishment ..	3	(f) 2,961	..	..							ACCOUNTS BRANCH.										
Accountants and Clerks ..	104	10,150	40	800	Accountants and Clerks ..	92	6,234	39	350		..	..	..	..	..		..	..								
Total ..		13,213	..	800	Total ..	..	9,195	..	350		(m) 67	1,140	25,333	174	1,314		13,111	682	..	(n) 648	..	..	..	..	..	..
	..	..	..	..		..	..	..	..		..	1,140	25,333	174	1,314		13,122	680	..	(o) 260	2	(o) 30	..	..	..	..
											..	..	..	..	..		..	..								
																				988				....		
																			Net ..	(o) 980		..		....		

(a) This column represents differences between columns 2 and 7.
(b) Do. do. between do. 4 and 9.
(c) Of this total the numbers against "Engineer" and "Upper Subordinate" Establishments are estimate. Those against "Lower Subordinate" and "Office Establishments approximate.
(d) It is believed that mostly all the Lower Subordinates whose services were not required in the Public Works Department have been kept on under the Boards. No applications for pensions or gratuities have been received from such.
(e) This amount has been arrived at by assuming that the less cost (Rs. 812—240—6,340) viz., 372, is the average emoluments of the total number of persons who are entitled to average gratuity of 12 months' pay for service over 12 years and under 16 years. Average age 40 years.
(f) This amount represents the pension of 50 recent an average of Rs. 11-4-2 per man. The average has been arrived at by dividing the total amount of gratuities checked by this office and recommended for sanction by the number of men to whom these gratuities refer.
(g) This represents the total amount of gratuities of 324 men at an average per man of Rs. 86. This average has been arrived at by dividing the total amount of gratuities checked by this office and recommended for sanction by the number of men to whom these gratuities refer.
(h) The amounts entered in this column have been calculated on the total amounts of gratuities and bonuses on the principles laid down in tables A and E, of the Civil Pension Code. In the case of Engineer and Upper Subordinate Establishments actuals, and in the case of Lower Subordinate and Office Establishments approximate. Average age 40 years.
(i) It has been found impracticable to ascertain the present cost of this establishment. Nearly all the men belonging to this establishment were regarded as belonging to the temporary establishment, and it is believed on their ceasing to belong to the Public Works Department were taken over by Local Fund Boards along with the Local Fund Works, excepting a few appertaining to lascars who were on the permanent establishment before September 1878, but who were transferred to Petty Establishment. No applications for pensions or gratuities have been submitted to this office on behalf of this establishment.
(k) This represents the pay and allowances of one Examiner and two Deputy Examiners, the normal strength of officers for this office. But at this time (September 1879) an additional officer (Assistant Examiner Mr. Barrow) was also temporarily attached to this office. His pay and allowances, amounting to Rs. 420 per mensem, have been omitted from the figures entered in this statement.
(l) The difference (Rs. 102) between this amount and that entered at (f) is due to the difference in the pay and allowances of Major Conway-Gordon, the then Examiner, and of Major Traill, the present Examiner.
(m) This number were actually retired in the Accounts Branch giving an actual reduction of Rs. 2,007 per mensem. But on account of the cost of Audit Offices in Accountant-Generals, Madras, and Presidency, Local Fund Boards, an excess of Rs. 261 per mensem has actually resulted in the *actual* excess against Examiner Establishment is Rs. 750 per mensem, caused by the appointment of a Local Fund Auditor in the Accountant-General's Office. This amount has been reduced by the difference noticed in remark (l).
(n) Represents pay of two retired Accountants, whose services are at present being temporarily retained on the temporary establishment under orders of Government.
(o) Omitting the cost of temporary establishment, the actual excess which has resulted by the change in the audit of Local Fund Accounts is Rs. (261+30) per mensem.
(p) The non-agreement of the differences in the numbers entered in columns 2 and 7 with those entered in column 12 is due to absentees on furlough and pay to absentees on furlough and on other duties, to deaths, resignation, removal to military duties &c.
(q) This saving of Rs. 1,833 will further be reduced or altogether disappear on the arrangements referred to in paragraph 8 of letter, No. 157 W., dated 28th November 1880, being sanctioned and exempted out necessarily causing also a saving in the Accounts Branch.

B.

Estimate of the Cost of the Public Works Establishments according to the proposals contained in letter No. 2,277 W., dated 1st October 1880.

Numbers.		Particulars.	Salary of Office.	Estimate for 1881-82.			Estimate for 1880-81.	Remarks.
1880-81.	1881-82.			Per Measem.	Per Annum.	Total.		
		Revenue Establishment.	Rs.	Rs.	Rs.	Rs.	Rs.	
		Chief Engineer.						
1	1	Chief Engineer, 1st Class, and Secretary to Government, General and Buildings and Roads Branches.	1,500					
		Net Military pay proper of a Colonel, R.E.	304½					
1	1		1,804		1,804			
1	1	Chief Engineer, 2nd Class, and Joint Secretary to Government, Irrigation Branch.	1,800					
		Net Military pay proper of a Colonel, R.E.	304½					
1	1		2,104½		2,104½			
2	*2	Total, Chief Engineers ..	..		3,908½		61,296	* Omitting Col Shaw-Stewart, R.E., as Railway Branch Officers are not included.
		Superintending Engineers.						
3	3	Superintending Engineers, 1st Class.	1,500	3,300				
1	1	Do. do. 2nd Class ..	1,350	1,350				
1	1	Do. do. 3rd „ ..	1,200	1,200				
		Difference between consolidated salary and the aggregate of Staff pay and Military pay and allowances of a Lieutenant-Colonel, R.E. (Superintending Engineer, 1st Class).	792½	792				
		Net Military pay proper of a Lieutenant-Colonel, R.E. (Superintending Engineer, 1st Class).	344½	344				
		Difference between the aggregate of Staff pay and Military pay and allowances and the consolidated salary of a Lieutenant-Colonel, R.E. (Superintending Engineer, 2nd Class).	422½	423				
		Difference between the aggregate of Staff pay and Military pay and allowances and the consolidated salary of a Major, R.E. (Superintending Engineer, 3rd Class).	240½	241				
4	4	Total, Superintending Engineers.	..	6,736	80,868	..	7,832	
		Executive Engineers.						
5	†5	Executive Engineers, 1st Grade.	350	4,750				* Omitting Major C. J. Smith, as Railway Branch Officers are not included.
6	12	Do. do. 2nd Grade ..	800	9,600				
6	9	Do. do. 3rd „ ..	650	5,850				
7	11	Do. do. 4th „ ..	500	6,050				
		Difference between the pay of the Consulting Architect and Executive Engineer, 1st Grade.	250	250				
		Difference between the aggregate of Staff pay and Military pay and allowances and the consolidated salary of four Majors, R.E.	704½	1,184				
		Difference between consolidated salary and maximum salary of one Major, R.E.	282½	283				

Estimate of the Cost of the Public Works Establishments, &c.—*cont.*

Numbers.		Particulars.	Salary of Office.	Estimate for 1881-82.			Estimate for 1880-81.	Remarks.
1880-81.	1881-82.			Per Measem.	Per Annum.	Total.		
		Engineer Establishment—*cont.*	Rs.	Rs.	Rs.	Rs.	Rs.	
		Executive Engineers—cont.						
		Difference between consolidated salary and the aggregate of Staff pay and full Military pay and allowances of two Captains, R.E.	133½	267				
		Net Military pay proper of two Captains, R.E.	140	280				
		Difference between the aggregate of Staff pay and Military pay and allowances of a Captain, R.E.	182½	184				
		Net Military pay and allowances of four Lieutenants, R.E.	70	280				
24	*33	Total ..	..	†25,753				* Omitting two Railway Branch Officers. † Does not include the special allowance at Rs. 100 for five Superintendents of Works added at end of "Engineer Establishment."
		Deduct moiety of pay and allowances of a Lieutenant, R.E. (Lieutenant Baddeley) chargeable to Public Works Workshops.	..	330				
		Net Total, Executive Engineers.	..	25,423	3,06,076	..	2,26,524	
		Assistant Engineers.						
12	15	Assistant Engineers, 1st Grade.	450	6,750				
24	26	Do. do. 2nd Grade ..	350	9,100				
..	3	Do. do. 3rd „ ..	250	750				
		Three Supernumerary Assistant Engineers, 2nd Grade.	350	1,050				
		Net Military pay proper of two Lieutenants, R.E.	70	140				
		Difference between the consolidated salary and the Staff pay and Military allowances of three Lieutenants, R.E.	65½	197				
36	44	Total, Assistant Engineers.	..	17,987	2,15,844	..	1,65,900	
		Total, Engineer Establishment.	..	..	..	6,63,084		
		Special allowance at Rs. 100 each for five Superintendents of Works.	100	500	6,000	6,000		
		Grand Total, Engineer Establishment.	..	..	..	6,69,084	5,29,573	
		Upper Subordinate Establishment.						
		Sub-Engineers.						
4	6	Sub-Engineers, 1st Grade ..	400	2,400				
4	5	Do. 2nd „ ..	300	1,500				
6	11	Do. 3rd „ ..	250	2,750				
		Difference of Military pay of a Lieutenant and Deputy Assistant Commissary (Warrant Officer) on receipt of consolidated salary of an Assistant Engineer, 1st Grade.	50	50				
		Extra pay of a Captain and Deputy Commissary on receipt of pay and allowances of an Upper Subordinate.	150	150				
14	22	Total, Sub-Engineers ..	..	6,850	82,200			

Estimate of the Cost of the Public Works Establishments, &c.—*contd.*

Number. 1880-81.	Number. 1881-82.	Particulars.	Salary of Office.	Estimate for 1881-82. For Measures.	For Actuals.	Total.	Estimate for 1880-81.	Remarks.
		Petty Establishment—*contd.*	Rs.	Rs.	Rs.	Rs.	Rs.	
360	*450	Lascars	8	3,780	..	..	36,480	* This includes 150 to remain absent on leave for Public Works Service.
		Total, Petty Establishment ..		6,987	46,870	53,857	51,310	
		Office Establishment.						
		For Chief Engineer and Secretary to Government, Public Works Department.						
1	1	Chief Assistant	1,250	1500				
1	1	Second Assistant	1,000	1200				† This Office Staff
1	1	Clerk, 1st Class, 3rd Grade ..	250	250				from the Public
2	2	Do. 2nd .. 2nd „ ..	140	280				Works Department
1	1	Do. 2nd .. 3rd „ ..	110	110				to the Irrigation
5	5	Do. 3rd .. 2nd „ ..	75	375				Works Branch,
3	3	Do. 3rd .. 3rd „ ..	55	165				which, however, will
1	1	Do. 4th .. 1st „ ..	45	45				remain under the
2	2	Do. 4th .. 2nd „ ..	40	80				Executive Engr.
1	1	Do. 4th .. 3rd „ ..	35	35				
				2,440				
2	2	Draughtsmen 1st Class ..	75	150				
1	1	Do. 2nd Class ..	85	85				
				235				
2	2	Machine or Daftries ..	12 & 14	28				
2	2	Head Messengers ..	9 & 11	20				
7	7	Messengers	7	49				
		Total, Public Works Secretariat ..		3,432	20,142		20,160	
		† *Lithographic Establishment.*						
1		Superintendent	250	250				
1		Head Draughtsman	120	120				
1		Second do.	100	100				
1		Third do.	80	80				
1		Fourth do.	60	60				
1		Fifth do.	40	40				
1		Sixth do.	30	30				
1		Seventh do.	25	25				
1		Eighth do.	20	20				
1		Ninth do.	15	15				
1		Tenth do.	10	10				
1		Tracer and Recordkeeper ..	25	25				
1		Do. and Munshi ..	15	15				
1		Head Printer	20	20				
1		Second do.	12	12				
1		Third do.	12	12				
2		Pressmen	9	18				
6		Do.	8	48				
2		Do.	7	14				
2		Do.	5	10				
		Total, Lithographic Establishment. ..		925	11,100	..	3,000	
		‡ *For Chief Engineer and Joint Secretary to Government, Irrigation Branch.*						
2	1	Clerk, 1st Class, 3rd Grade ..						
	1	Do. 2nd „ 2nd „ ..	225	225				‡ G.O., No. 1291 W., dated 31st March 1880.
1	1	Do. 2nd „ 3rd „ ..	140	140				
1	1	Do. 3rd „ 1st „ ..	110	110				
1	1	Do. 3rd „ 2nd „ ..	80	80				
			70	70				

Estimate of the Cost of the Public Works Establishments, &c.—cont.

Number.		Particulars.	Salary of Office.	Estimate for 1880-81.			Remarks.
				Per Mensem.	Per Annum.	Total.	
		Office Establishment—cont.					
		For Chief Engineer and Joint Secretary to Government, Irrigation Branch—cont.					
		Office Establishment to be provided for 4 Executive Engineers on special pro-forma	40	160	1,920		
		Office Establishment to be provided for 21 Sub-Divisional Officers. Appendix C, No. 10, G.O., No. 3,674 W., 16th Sept. 1878—					
		One Clerk, 4th Class, Rs. 3rd Grade .. 25					
		One Messenger .. 6					
		31	31	1,581	18,972		
		Office Establishment for 95 Upper Subdivisions above the rank of Overseer at—					
		One Clerk, 5th Class, 1st Grade	17½	875	10,500		
		Office Establishment for 111 Overseers	124	1,387½	16,650		
		Toll Establishment for the widen of Buckingham Canal as per G.O., No. 2,513 W., 2nd Nov. 1878	761	761	9,132		
		Pay of Books Exd. Clerk, Superintending Engineer's Office, Third Circle (not classified yet)	25	25	300		† For details, see G.O. quoted ‡ G.O., No. 1,561 W., dated 6th July 1880.
		Total "Office Establishment" under "Conservation" (*See Budget* 1880-81.)	..	..	‡ 25,445	..	1,05,559	
		NOTE.—No personal allowance has been provided for, as the mean pay entered will, as is believed, cover the charges on account of such allowances.					
		Total, Office Establishment	..	..	..	2,35,456	1,72,595	
		IRRIGATION ESTABLISHMENT.					
		Survey	..	..	15,000	§ 15,000	15,000	§ Details for Irrigation Establishment not yet received from the Chief Engineer for Irrigation. The amount provided for in the last year's budget has therefore been taken as an approximation.
		Water Regulation	..	..	34,428			
		Navigation	..	..	98,589			
		River Conservancy ..	..	..	2,568			
						§ 1,15,595	1,15,595	
		Special Revenue Investigations by Mr. Wilson.						
		Office Establishment required for the preparation of Irrigation Accounts—*Vide* G.O., No. 443-A. I., dated 6th August 1879	..	..	12,000	12,000	12,000	
		Total, Irrigation Estabt. ..	..	..	..	1,40,595	1,42,595	
		TEMPORARY ESTABLISHMENT.	..	..	..	35,000	35,000	
		LOCAL ALLOWANCES.						
		Upper Godáveri Allowance.	50	50	600	..	..	G.O., No. 1,263 W., dated 20th May 1880; G.O., No. 2,560 W., dated 8th Nov. 1880: and paras. 33, 35, and 373 of the Madras Public Works Code.
		Wynaad Allowance	..	..	2,500	..	..	
		Pottagy Ghat or Jeypore Allowance	..	..	3,000	..	..	
		Presidency House Rent ..	..	555	6,660	..	..	
		Do. Allowances ..	..	600	7,200	..	..	
		Total, Local Allowances..	..	..	19,460	19,460	19,060	
		Total, Salaries (see Abstract next page)	..	..	..	14,58,917	11,05,113	

Estimate of the Cost of the Public Works Establishments, &c.—cont.

Number.		Particulars.	Salary of Office.	Estimate for 1880-81.			Estimate for 1881-82.	Remarks.
				Per Mensem.	Per Annum.	Total.		
		Office Establishment—cont.						
		For Chief Engineer and Joint Secretary to Government, Irrigation Branch—cont.						* G.O., No. 422 W., dated 3rd March 1880.
		Office Establishment to be provided for 4 Executive Engineers on special pro-forma	40	160	1,920			
		Office Establishment to be provided for 21 Sub-Divisional Officers. Appendix C, No. 10, G.O., No. 3,674 W., 16th Sept. 1878—						
		One Clerk, 4th Class, Rs. 3rd Grade .. 25						
		One Messenger .. 6						
		31	31	1,581	18,972			
		Office Establishment for 95 Upper Subdivisions above the rank of Overseer at—						
		One Clerk, 5th Class, 1st Grade	17½	875	10,500			
		Office Establishment for 111 Overseers	124	1,387½	16,650			
		Toll Establishment for the widen of Buckingham Canal as per G.O., No. 2,513 W., 2nd Nov. 1878	761	761	9,132			
		Pay of Books Exd. Clerk, Superintending Engineer's Office, Third Circle (not classified yet)	25	25	300			† For details, see G.O. quoted ‡ G.O., No. 1,561 W., dated 6th July 1880.
		Total "Office Establishment" under "Conservation" (*See Budget* 1880-81.)	..	..	‡ 25,445	..	1,05,559	
		NOTE.—No personal allowance has been provided for, as the mean pay entered will, as is believed, cover the charges on account of such allowances.						
		Total, Office Establishment	..	..	..	2,35,456	1,72,595	
		IRRIGATION ESTABLISHMENT.						
		Survey	..	..	15,000	§ 15,000	15,000	§ Details for Irrigation Establishment not yet received from the Chief Engineer for Irrigation. The amount provided for in the last year's budget has therefore been taken as an approximation.
		Water Regulation	..	..	34,428			
		Navigation	..	..	98,589			
		River Conservancy ..	..	..	2,568			
						§ 1,15,595	1,15,595	
		Special Revenue Investigations by Mr. Wilson.						
		Office Establishment required for the preparation of Irrigation Accounts—*Vide* G.O., No. 443-A. I., dated 6th August 1879	..	..	12,000	12,000	12,000	
		Total, Irrigation Estabt. ..	..	..	..	1,40,595	1,42,595	
		TEMPORARY ESTABLISHMENT.	..	..	..	35,000	35,000	
		LOCAL ALLOWANCES.						
		Upper Godáveri Allowance.	50	50	600	..	..	G.O., No. 1,263 W., dated 20th May 1880; G.O., No. 2,560 W., dated 8th Nov. 1880: and paras. 33, 35, and 373 of the Madras Public Works Code.
		Wynaad Allowance	..	..	2,500	..	..	
		Pottagy Ghat or Jeypore Allowance	..	..	3,000	..	..	
		Presidency House Rent ..	..	555	6,660	..	..	
		Do. Allowances ..	..	600	7,200	..	..	
		Total, Local Allowances..	..	..	19,460	19,460	19,060	
		Total, Salaries (see Abstract next page)	..	..	..	14,58,917	11,05,113	

Estimate of the Cost of the Public Works Establishments, &c.—cont.

Number.		Particulars.	Salary of Officer	Estimate for 1880-81.			Remarks.
Sanctioned.	Proposed.			Per Mensem.	Per Annum.	Total.	
		Account Establishment—cont.	Rs.	Rs.	Rs.	Rs.	
		Accountants—cont.					
10	10	Accountant, 4th Grade	125	1,250	..	..	
34	34	Do. 5th " ..	75	2,550	..	..	
52	52	Total, Accountants ..	..	5,150	60,600	..	65,750
		Clerical Establishment.					
1	1	Clerk, 2nd Class, 2nd Grade	140	140	..	..	
1	1	Do. 3rd " 120 ..	90	90	..	..	
1	1	Do. 3rd " 75 ..	75	75	..	..	
2	2	Do. 3rd " 60 ..	55	110	..	..	
5	5	Do. 4th " 50 ..	45	225	..	..	
6	6	Do. 4th " 40 ..	34	204	..	..	
10	10	Do. 4th " 30 ..	25	250	..	..	
3	9	Do. 4th " 20 ..	17½	52½	..	..	
		Total, Clerks ..	..	1,502½	11,430	..	..
		Menial Servants ..	..	102½	1,230	..	..
		Total, Office Establishment	..	..	15,660	15,660	15,660
		Local Allowances.					
		Presidency House Rent Do. Allowance	..	..	18,000	18,000	18,000
		Total Salaries ..	..	..	..	1,26,430	1,26,430
		Travelling Allowances ..	..	..	..	2,400	2,400
		Contingencies ..	..	..	..	4,500	4,500
		Grand Total, Permanent ..	..	..	..	1,33,330	1,27,030
		Deduct contributions for four Accountants as follows:— Madras Harbour Works. 1 Presidency Workshops. 1 Bowlaishweram do. .. 1 Central Office 1					
		4	..	..	..	5,910	5,910
		Net Total, Permanent Establishment.	..	..	..	1,27,420	1,21,120
		Temporary Office Establishment for the preparation of Capital and Revenue Accounts—*Vide* G. Os., Nos. 3,413, 412 I., and 948 I., dated 3rd December 1878, 15th May 1878, and 21st November 1878, respectively; *vide* also this Office No. 145 W., dated 18th November 1880.	..	809	9,600	9,600	9,600
		Grand Total, Account Establishment.	..	..	..	1,37,020	1,30,720
		Accountants.					
		Additional Account Establishment which will be necessary according to rule if the proposals embodied in letter, No. 3,277 W., dated 1st October 1880, to the Government of India are sanctioned.	..	..	4,055	..	..
		Clerks and Menial Servants.	..	..	265	..	..
		Presidency Allowance and House Rent.	..	..	350	..	..
			..	..	4,670	20,040	..
		Grand Total, Account Establishment.	..	..	..	1,57,060	..

C.

Statement of Irrigation of various classes extracted from Part II, Famine Commission Report, Section V.

Class.	——	Funds.	Punjab.	North-West Provinces.	Oudh.	Madras.	Bengal.	Bombay.	Sindh.	Remarks.
			ACRES.	ACRES.	ACRES.	ACRES.	ACRES.	ACRES.	ACRES.	
I.	Perennial Canals...	Public ...	740,000	1,694,000	...	*1,700,000	300,000	†17,000	...	In the Punjab, North West Provinces, and Oudh it is believed that the acreage both of the Kharief and Rabbi crops are given. Were this done in Madras the acreage would be greatly increased in the returns. Moreover in Madras no entry is made under "Small Channels, &c.," of which there are large areas in the Southern Districts.
II.	Tanks	Public or Private according to circumstances.	...	...	...	3,522,000	...	...	...	
III.	Inundation Canals.		933,000	...	...	...	...	...	1,800,000	
IV.	Small Channels, &c.	Private ...	642,000	1,985,000	1,982,000	...	...	490,000	500,000	
V.	Ponds		143,000							
VI.	Wells		3,176,000	4,480,000	1,314,000	2,000,000	600,000			
		Total ...	5,634,000	8,159,000	3,296,000	7,222,000	900,000	487,000	2,300,000	
			11,155,000					2,787,000		

* Cauvery, Kistna, and Godavari only. † Rose to 25,000 in 1877.

D.

Receipts.	Estimated Receipts in 1870-71.	Actuals for 1871-72.	1872-73.	1873-74.	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	Remarks.
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	
Imperial Allotment for Provincial Services.	73,94,880	76,96,202	79,74,658	81,59,040	85,58,589	83,08,286	81,13,735	80,92,000	80,75,003	* 84,86,120	*Including four lakhs for stationery.
Jails	78,000	2,04,856	1,65,807	2,11,923	2,36,656	2,56,524	3,19,804	3,39,597	3,27,023	2,58,887	
Registration	3,40,000	3,54,749	3,26,402	3,31,150	3,71,809	3,80,530	3,92,635	4,45,524	5,29,375	5,30,164	
Police	3,23,500	82,458	28,646	26,995	26,256	37,680	57,270	78,457	1,01,948	1,63,639	
Education	69,000	1,04,088	1,20,950	52,916	55,397	28,608	63,024	87,035	1,58,545	1,54,479	
Medical	..	10,048	11,626	11,051	1,86,515	62,213	37,972	35,279	52,351	1,16,903	
Printing	12,600	28,031	31,953	27,408	27,340	26,733	26,125	27,244	27,020	31,806	
Marine	...	...	...	24,770	24,973	25,141	13,618	11,116	13,331	17,639	
Miscellaneous ...	...	39,059	90,974	84,083	1,01,178	1,54,850	1,30,365	1,45,063	95,180	3,10,127	
Public Works ...	...	55,064	86,451	57,802	51,836	79,609	1,01,418	1,92,968	1,76,190	2,61,665	
Total ...	...	86,34,645	88,37,447	89,87,747	96,19,882	93,38,204	92,69,166	93,96,185	96,46,926	†1,03,60,509	† This year's receipts are said much above those of preceding years; if the new grant of 4 lakhs for Stationery be rejected, and if the sum due "Miscellaneous" for processing returns, much of this remains for difference under the receipts from the Irrigation Canal.
Charges.	Estimated Charges in 1870-71.										
Jails	9,19,830	8,23,381	8,54,306	9,33,703	8,61,969	10,57,632	13,66,118	9,75,918	12,20,187	13,31,818	
Registration	2,29,700	2,38,292	2,32,921	2,30,100	2,44,781	2,66,952	2,22,086	3,06,471	3,47,587	3,65,137	
Police	35,07,300	33,96,293	33,83,985	34,66,135	35,67,260	35,39,937	40,01,750	34,46,060	37,18,317	38,20,703	
Education	9,00,520	8,06,853	8,72,273	9,96,[illegible]	7,30,575	8,75,[illegible]	8,54,220	9,32,888	9,91,300	10,05,461	
Medical	6,16,960	4,24,057	5,03,708	6,66,[illegible]	7,29,714	5,87,429	5,72,979	6,76,042	7,16,450	6,32,876	
Printing	2,58,400	2,47,157	2,39,952	2,50,[illegible]	2,21,997	2,46,357	2,75,088	3,13,555	3,06,060	2,74,096	
Marine	...	..	10,064	8,409	11,886	...	...	...	7,074	20,840	
Miscellaneous ...	...	2,15,668	2,31,218	4,02,759	3,08,603	14,66,032	5,66,735	2,47,828	4,09,903	4,36,435	
Minor Establishments.	...	...	1,89,806	1,42,817	1,44,506	2,30,801	2,58,193	2,15,029	1,98,911	2,01,399	
Public Works ...	23,34,550	20,41,337	22,51,572	29,31,235	26,47,962	19,91,566	17,41,153	19,31,719	17,81,459	14,60,101	
Office Rent, Rates and Taxes	...	46,863	65,777	58,313	67,853	85,032	73,911	82,783	87,351	1,20,421	
Refunds	...	...	19,686	4,657	2,048	4,601	4,389	7,762	15,183	8,513	
Stationery	...	...	...	...	...	...	...	...	...	4,16,174	
Total ...	...	82,39,904	88,56,168	1,01,51,343	97,39,744	94,51,158	99,77,174	91,30,046	98,54,813	1,01,28,000	

		Rs.
Total Receipts 1871-72 to 1879-80	Abstract.	8,40,30,206
Do. Charges do.		5,52,29,259
	Excess Charges	12,59,645