Govt. of {1891} Madras.

REVENUE.

No. 2543 W 4/22 Sept 1891

Communicated to the Supdg Engineer IV Circle

1 Add J.P.

W

Issued

Recd. *Encl.*

G.O., 8th September 1891, No. 841.

SEPTEMBER.

Famine relief.

List of Civil Agency works suitable for — in the Coimbatore district for 1891-92, recorded.

Sd. IV Circle

C. E. for S.

With order

Enclosure to Director General of Railways' Circular No. 16, dated the 30th July 1891.

RATE LIST.

CLASS B.

ENGINEERS' PLANT

(*Excluding Petty Tools*)

FOR 1890.

Enclosure to Director General of Railways' Circular No. 16, dated the 30th July 1891.

Statement showing the average rate per ton for entire sea freight on class B. Stores imported from England at the several ports during 1890-91.

Class of Stores.	Port of Bombay.	Port of Calcutta.	Port of Karachi.	Port of Rangoon.	Remarks.
	s. d.	*s. d.*	*s. d.*	*s. d.*	
Class B.—"Engineers Plant" (excluding petty tools)	20 0	23 0	20 0	27 6	

CLASS OF STORES. B.— ENGINEERS' PLANT (EXCLUDING PETTY TOOLS).

Contracted for in 1890.

Contract number	and date.	Articles.	Details.	Rate—Free on Board. Amount. £	s.	d.	Unit.	Remarks.
3975	21-10-90	Apparatus, Diving.	Complete, with fittings for a depth of 90 feet, of which 80 feet is water and 10 feet above water, *vide* Appendix A.	112	0	0	Set.	
3391	28-3-90	Beaters ...	Platelayers, with solid steel ends, weight about 11 lbs.	0	2	3	Each.	
4034	25-10-90		„ iron, with solid steel ends, 7 lbs. each	0	1	6½	„	
		Blocks.	Differential, pulley, Weston's, with chain, complete—					
3898	9-10-90		To lift 10 cwts.	1	11	6	Each.	With 52 feet chain.
„	„		„ 1 ton	2	8	0	„	With 55 feet chain.
4074	3-11-90		„ 1 „	2	5	3	Set.	
„	„		„ 1½ „	3	19	0	„	
3167	15-5-90		„ 2 „	3	17	6	„	
4074	3-11-90		„ 5 „	9	10	0	„	
„	„		„ 8 „	18	15	6	„	
3351	18-3-90	Boilers ...	Locomotive type, multitubular, 25 H. P. nominal, working pressure 80 lbs. per square inch, fitted with chimney and piping and fittings, complete, with extra large fire-box of Lowmoor iron	455	0	0	Each.	

CLASS OF STORES. B.—ENGINEERS, PLANT (EXCLUDING PETTY TOOLS)—*contd.*

Contracted for in 1890.

Contract number and date.		Articles.	Details.	Rate—Free on Board. Amount. £	s.	d.	Unit.	Remarks.
3740	26-7-90	Boilers.—*concld.*	Locomotive type, compound, high pressure, multitubular, semi-portable, 30 H. P. nominal, working pressure 140 lbs. per square inch, with all fittings, steam piping, and chimneys, complete	545	0	0	Each.	Same as contract No 403 of 1887.
3890	8-10-90		Locomotive type, tubular, 20 H. P. working pressure 100 lbs. per square inch, with all fittings, steam piping and chimney, &c., complete	274	0	0	,,	
			Note.—The Boiler is to be fitted with a donkey pump of an approved description and a steam jet for forcing the draught, an injector need not be supplied with the boiler. The chimney for the boiler must not be less than 12 feet long. The boiler is to be mounted on four cast iron flanged wheels 2 feet diameter and suitable for travelling on a metre-gauge Railway.					
3904	9-10-90	Cranes.	Steam, portable, 5 tons	670	0	0	Each.	
3921	10-10-90	Engines, Steam.	Pile drivers (Sissons and White's patent); with endless steel pitched chain, steam winch and spike wheel drum, vertical boiler and steam and feed connections, complete	380	0	0	Each.	
4142	11-11-90		Hauling or winding, stationery, under ground, horizontal, high pressure, non-condensing type, 20 H. P. nominal, double cylinder, with boiler, &c., complete	730	0	0	,,	
			Extra large fire box, for—	16	10	0	,,	
			Note.—The engine is to be of extra strength throughout for a steam pressure of 90 lbs. per square inch, and is to run at a speed of 120 revolutions per minute. The engine is required for colliery work.					

CLASS OF STORES. B.—ENGINEERS' PLANT (EXCLUDING PETTY TOOLS)—*contd.*

Contracted for in 1890.

Contract number and date.		Articles.	Details.	Rate—Free on Board. Amount. £	s.	d.	Unit.	Remarks.
3890	8-10-90	Engines, Steam—*concld.*	Portable, 25 H. P., working pressure 100 lbs. per sq. inch	540	0	0	Each.	
			Note.—The boiler is to have a pump on one side and an injector on the other both fitted with all necessary suction and other piping. The injector is to be of the description known as Gresham's and Craven's patent of sufficient capacity for feeding the boiler when working at its full power, arranged to take to pieces for cleaning or repairs.					
3354	18-3-91	Engines, Steam—Spare parts of—	Fire-box, for Marshall's 30 H. P. semi-fixed winding engine, boilers, same as in Contract C 257 of 1883	74	10	0	Each.	See Appendix.
3589	19-6-89		Fire-box, for Robey's engine, with rivets, 34 ferrules, 150 stays, 24 cross bar bolts, nuts and washers, 2 bearer bars, and 1 brass plug	42	12	0	,,	
4092	5-11-90	Forges ...	Portable, with hearth-plates, 24″ diameter and 2′ 6″ high	9	14	6	Each.	
3197	25-1-90	Glasses, Gauge.	16″ × $\frac{5}{8}$″ external diameter	0	3	1	Doz.	
,,	,,		15″ × $\frac{5}{8}$″ ,, ,, ...	0	3	0	,,	
3202	28-1-90		Rings for—internal diameter $\frac{1}{2}$″, external diameter $1\frac{5}{16}$″	0	4	0	%	
3401	5-4-90	Jacks.	Carriage lifting, 5 tons	3	2	6	Each.	
4016	23-10-90		Hydraulic, to lift 200 tons to a height safely of one foot	25	0	0	,,	
3591	19-6-90		Screw, traversing, to lift 10 tons	4	5	0	,,	
3778	19-8-90		Screw, traversing, with levers and ratchets, 20 ton, with steel cylinder, screws and angles; and gun-metal nuts	5	14	0	,,	

CLASS OF STORES. B.—ENGINEERS' PLANT (EXCLUDING PETTY TOOLS)—*contd.*

Contracted for in 1890.

Contract number and date.		Articles.	Details.	Rate—Free on board. Amount. £	s.	d.	Unit.	Remarks.
3736	24-7-90	Jim Crows.	With levers, 2¼″ screw ... ... for 41¼ lbs. flat-footed rails	2	5	0	Each	
3869	30-9-90		,, ,, ...	2	15	0	,,	
3949	15-10-90		,, ,, ...	3	8	0	,,	
4043	29-10-90		,, ,, ...	2	12	0	,,	Span 20 inches diameter.
3736	24-7-90		With levers, 2½″ screw	3	5	0	,,	
3949	15-10-90		,, 2¼″ screw for 50 lbs. flat-footed rails	2	8	0	,,	
4043	29-10-90		,, 2½″ screw	2	15	0	,,	Ditto.
4043	29-10-90		With levers, 2¾″ screw, for 68 lbs. D. H. rails	4	0	0	,,	Span 24 inches diameter.
4127	7-11-90		With levers, 2¾″ screw for 75 lbs. flat-footed rails	4	0	0	,,	Ditto.
			,, ,, ...	4	0	0	,,	Ditto.
4094	6-11-90	Mills, Mortar.	One Double, Lucop's pulverizer, F size, with latest improvements ...	456	0	0	Total	
			One Single ,, D ,, ,, ,, ...					
			Note.—*Spare wearing parts for above machine, and 50 pieces wire gauze to suit pulverizers, cut to shape of 2 sizes, 8 wires and 6 wires per inch, strong iron wire not galvanized.*					

CLASS OF STORES. B.—ENGINEERS' PLANT (EXCLUDING PETTY TOOLS)—*contd.*

Contracted for in 1890.

Contract number and date.		Articles.	Details.	Rate—Free on Board. Amount. £	s.	d.	Unit.	Remarks.
3044	26-11-90	Monkeys, Pile driving.	Cast iron, ½ ton	5	15	0	Each.	
4034	25-10-90	Picks ...	Beater, Platelayer's, 8 lbs. each	0	1	9	Each.	
4123	7-11-90	Presses, Rail-straightening.	Suitable for bending or straightening steel rails, of the Vignoles section weighing 41¼ lbs. per yard. No punching gear or punches are required.	32	10	0	Each.	
3900	9-10-90	Pulsometer	No. 9 size, each with wrought iron suction and discharge pipes, and connections, and 2 bends, suitable for 40 feet lift.	160	0	0	Each.	
3886	4-10-90	Pumps.	Hydraulic, for testing boilers, with copper pipes and connections, complete...	46	5	0	Each.	
4057	30-10-90		Cameron's patent, double ram, with steam cylinders 12″ diameter and pump barrels 6″ diameter, working pressure 40 lbs. per square inch, suitable for colliery purposes.	473	0	0	,,	
3218	15-2-90	Ropes, Wire.	Each 500 feet long, for shafts, to have a spliced eye at each end, the splices warranted for a load of 50 tons. Note.—*To be suitable for a working load of 8 tons and to work round a drum 4 feet in diameter. The breaking strain of the ropes is to be not less than 80 tons.*	53	13	9	Each.	Similar to those supplied under Contracts Nos. 2019 and 2181 of 1889.
3377	25-3-90		Each 200 fathoms long, circumference 4½″, weight per fathom 19 lbs., breaking strain 80 tons, working strain 13 tons.	3	7	0	Cwt.	

CLASS OF STORES. B.—ENGINEERS' PLANT (EXCLUDING PETTY TOOLS)—*contd.*

Contracted for in 1890.

Contract number and date.		Articles.	Details.	Rate—Free on Board. Amount. £	s.	d.	Unit.	Remarks.
3377	25-3-90	Ropes, Wire—*contd.*	Each 860 fathoms, weight per fathom 8½ lbs., breaking strain 36 tons, working strain 6 tons.	3	7	0	Cwt.	
			Note.—*The ropes on contract No. 3377 are to be of the description known as Lang's patent, and are required to work over 4′ 6″ pulleys, eyes or attachments not needed.*					
3787	23-8-90		Of extra plough steel, each 290 fathoms long—					
			Circum erence 4½″, Weightper fathom 19 lbs., breaking strain 80 tons, working strain 13 tons.	2	1	0	Cwt.	
				or				
				100	17	0	Rope.	
			Note.—*The ropes are required to work over 4′ 6″ pulleys, eyes or attachments are not required.*					
4036	27-10-90		Flexible steel, 2½″ circumference, 1,450 feet long. The twist of the wires in the strands and the strands round the core to be in the same direction as Lang's patent. Best plough steel alone to be used in construction ...	35	0	0	Each.	
4039	28-10-90		Special steel, for running tackle, breaking stress 135 tons per square inch, diameter of rope ¾″, to be in lengths of 500, 250, 200 and 150 feet. (Total 1,100 feet long)	25	10	0	Total.	
″	″		Special steel, for standing rigging, breaking stress 100 ton per square inch, diameter of rope 1″, for use as derrick guys, in lengths of 250, 225 and 200 feet. (Total 675 feet long).	24	10	0	″	
			Note.—*The ropes have a thimble rigged at each end of sufficient size to pass a hook of the same strength as the rope.*					

CLASS OF STORES. B.—ENGINEERS' PLANT (EXCLUDING PETTY TOOLS)—*contd.*

Contracted for in 1890.

Contract number and date.		Articles.	Details.	Rate—Free on Board. Amount. £	s.	d.	Unit.	Remarks.
4124	7-11-90	Ropes, Wire—*concld.*	Winding, Lang's patent, made of best plough steel wire, each 400 feet long, ⅞″ diameter and weighing 7½ lbs. per fathom.	10	0	0	Each.	
			Caps or sockets for above rope made of Lowmoor iron	0	12	0	″	
			Note.—*Each rope to be suitable for winding on a drum 6 feet diameter, with a maximum load of not less than 5 tons at a speed of 30 feet per minute and to work over pulleys 12 feet diameter at angles of 63° and 57°.*					
			Lang's patent, made of best plough steel wire, 1,250 feet long, ¾″ diameter and weighing 4½ lbs. per fathom.	20	0	0	″	
			Caps or sockets for above rope made of Lowmoor iron	0	10	0	″	
			Note.—*To be suitable for an underground hauling engine and to wind on a drum 36″ diameter with a working load not less than 2 tons, 5 cwt.*					
			Guide, made of steel wire, with steel core, 300 feet long and weighing 9 lbs. per fathom.	4	16	8	″	
138	11-11-90	Screws, Mooring and Guy, cast iron.	On wrought iron round shanks, each with a ring 6″ internal diameter at one end, in lengths as under—					
			Long. Diameter. Thick in shank. No. ordered					
			6 ft 18″ 2½″ 8					
			8 ft. 20″ 2½″ 8	124	0	0	Lot.	
			10 ft. 22″ 2¾″ 8					
			12 ft. 24″ 3″ 8					

CLASS OF STORES. B.—ENGINEERS' PLANT (EXCLUDING PETTY TOOLS)—*concld.*

Contracted for in 1890.

Contract number and date.	Articles.	Details.	Rate—Free on Board. Amount. £	s.	d.	Unit.	Remarks.
4017 23-10-90	Tester, Cement.	Complete in every respect, and supplied with an equivalent weighing machine, 2 moulds (extra), and an automatic filler, including 28 lbs. shot.	19	0	0	Each.	
3596 20-6-90	Tools, Earth Boring in sets, complete.	*Vide* Schedule in Appendix B	45	0	0	Set.	
3590 19-6-89	Tools, Earth Borings, spare parts of.	Tubes, boring, 5¼″ outside diameter	186	12	6	for 800 feet.	
		,, 4⅛″ ,, ...					
		,, 3⅝″ ,, ...					
3854 25-9-90	Trollies.	Wheels with axles for 2 feet gauge, outside bearings ...	6	0	0	Pair.	
3252 17-2-90		Wheels and axles for 2′ 0″ diameter, metre gauge (platelayer's)	5	14	6	Set.	of 4 wheels and 2 axles.
3849 23-9-90		Wheels and axles, light, for 5′ 6″ gauge	5	3	0	,,	
4070 3-11-90		Cast steel, 10″ diameter, in sets, each set consisting of one axle with one fixed and one loose wheel attached (Plant for Dandot Colliery) ...	1	0	9	,,	
		Pedastals, cast iron, for	0	6	1	Each.	

Appendix A.

List of Stores to be supplied to form 1 set of Diving Apparatus as per Contract No. 3975.

1 Improved, two cylinder, double action diving machine air pump, complete in strong chest.
2 Handles, pump.
1 Spanner $1\frac{1}{4}'' \times \frac{7}{8}''$, 1 Spanner $\frac{5}{8}'' \times \frac{9}{16}''$, 1 Spanner $\frac{3}{4}'' \times \frac{7}{8}''$.
1 Socket spanner, 1 washer punch, 1 oil can.
2 Screw drivers.
1 Joint, union, double, connecting, male.
1 ,, ,, ,, ,, female.
1 ,, ,, for air pump, male.
1 ,, ,, ,, ,, female.
2 Caps, iron, to protect crank ends.
1 Tin box containing—
2 Springs top inlet valve pump.
1 Valve top outlet pump.
1 Valve bottom ,, ,,
6 Nuts, brass wing Helmet collar.
6 Screws for Helmet collar.
2 Springs Inlet helmet.
2 ,, Outlet ,,
1 Wing spanner, for nuts on oval frames on Helmet.
1 Nozzle overflow.

Note.—All the foregoing are contained in the Pump Chest.

2 Wheels, fly, cast iron.
1 Strong double Wicker Basket containing—
1 Improved tinned copper Helmet, with breast plate fitted speaking apparatus.
1 Set of speaking apparatus, consisting of mouth piece and diaphragm for Helmet.
Copper connection and shut up nut.
90 feet speaking pipe, with couplings.
Attendant's Mouth piece and tube.
,, Belt.
1 Body shackle, 90 feet air piping with couplings.
1 Helmet cushion.
1 Seamen's chest containing—
2 Dresses, diving, waterproof, 1 pair cuff expanders.
1 Spanner, Wing, and Helmet nut, 12 wrist rings.
3 Frocks, Woollen, 3 pairs Drawers, woollen.
3 Pairs stockings, woollen inside.
1 ,, ,, ,, overall.
1 Woollen cap, 1 neckerchief, 1 dress canvas overall.
180 feet reverse laid signal line.
1 Pair lead soled boots.
1 ,, ,, weights with mountings.
1 Belt weight, to carry 30 lbs.
1 Knife in watertight case.
1 Leather knife belt, 1 holder pipe, air.
2 ½ lb. tins solution, 1 yard prepared twill.
1 Screw frame, with glass for helmet.
2 Spare glasses for helmet.
1 Book of instructions.

Specification.

The air piping tendered for, to be made of vulcanized india-rubber in and outside, inlaid with metallic wire, and fitted with gun metal union joints. To be made of the best Para Caoutchouc, and with no other ingredients whatever than sulphur and white oxide of zinc, the sulphur not to exceed 3 per cent., the oxide of zinc, 30 per cent., to endure a dry heat test of 270° Fahrenheit for an hour, and a moist heat of 320° Fahrenheit for three hours without its quality being impaired.

The diving dresses to be made of india-rubber between tanned twill, with insertion between the parts of india-rubber of collars, the cuffs to be made of solid rubber without insertion.

Appendix B.

Detail of set of Earth Boring Tools as supplied under Contract 3596 of 1890.

Description.	No.
Augurs, clay, 2′ long, for 4″ hole	1
,, shell or wimble scoop 2′ long, 4″ hole	1
,, worm (short) "spiral," 2′ long, 4″ hole (for extracting broken rods) ...	1
,, ,, (long) 2′ long, 4″ hole (for loosening stuff in bore hole) ...	1
Ball valve sludger 2′ long, 4″ hole	1
Bell or screw or screw box, 2′ long, 4″ hole (for extracting rods in case of breakage)	1
Chisel, flat, or straight bits 2′ long, 4″ hole...	1
,, T, 2′ long, 4″ hole	1
,, double T, 2′ long, 4″ hole	1
,, V, or diamond point 2′ long, 4″ hole...	1
Common block sludger 2′ long, 4″ hole	1
Crows feet 2′ long, 4″ hole	1
Dogs, hand, to fit $1\frac{1}{4}$″ square rods (rod wrench)	1
Dogs, lifting, to fit $1\frac{1}{4}$″ square rods	1
Kinds plug, to raise tubes	1
Lengthening pieces of $1\frac{1}{4}$″ square iron, to suit rods with loop swivel top, 4′ long...	1
Nipping tongs, or tigers, to fit $1\frac{1}{4}$″ square rods	1
Pipe, clamp, for 4″ bore to suit tubing	1
Rods, $1\frac{1}{4}$″ square, mild steel, each 10′ long	70 feet.
Stone breaker, 2′ long, for 4″ hole	1
Tiller, or brace head, to fit $1\frac{1}{4}$″ square rods	1
Tubes, flush, outside, screw joints in 10′ lengths, 4″ in external diameter ...	80 feet.

GOVERNMENT OF MADRAS.

LOCAL AND MUNICIPAL DEPARTMENT.

READ—again the following papers :—

G.O., dated 2nd April 1891, Mis. No. 479 M., Local and Municipal.

Read—the following papers :—

From J. A. JONES, Esq., MEM. INST. C.E., F.R.S.E., Sanitary Engineer to Government, to the Chief Secretary to Government, dated Fort St. George, 5th December 1890, No. 637.

I have the honour to forward the marginally-noted correspondence, and, in view of the difficulty the Public Works Department have, and apparently will have, in finding duly qualified upper subordinates who can be placed in charge of works in the Sanitary Engineering Department, I find it necessary to address Government on the whole subject.

Letter from the Sanitary Engineer, to the Chief Engineer, Public Works Department, dated 28th November 1890, No. T-30.
Letter from the Chief Engineer, Public Works Department, to the Sanitary Engineer, dated 4th December 1890, No. 5005 C.

2. Kumbakónam is the only town, out of 24 water-works and 13 drainage-works schemes in view, at which work has been sanctioned and which ought to have been started long ago. Of the 24 water-works schemes and 13 drainage schemes under investigation or design, I believe that the following stand every chance of proceeding at an early date :—

	Approximately estimated. Rs.	
1. Ootacamund water-supply	63,000	
2. Coonoor do.	50,000	(Estimates not complete.)
3. Coonoor drainage	40,000	
4. Trichinopoly water-supply	3,00,000	
5. Dindigul do.	70,000	
6. Madura do.	3,00,000	
7. Adóni do.	1,53,742	
8. Bellary do.	Unknown.	
9. Kurnool do.	Do.	
10. Bezváda drainage	Do.	
11. Masulipatam water-supply	Do.	
12. Ongole do.	Do.	
13. Salem drainage	Do.	
14. Vellore water-supply or drainage	2,63,000	(For drainage.)
15. Conjeeveram water-supply	Unknown.	
16. Tirupati drainage	1,10,000	

3. The first-named town has an Engineer and therefore does not require to be further considered.

4. But as to the other towns, some staff to take immediate charge of the work must be provided and I need not point out to Government that this department is one which must, from its very *raison d' etre*, continue to expand and which Government will wish to expand as showing the increasing amount of sanitary works under construction.

5. I think, therefore, that the large question of the necessity for providing a proper staff of subordinates for the department ought at once to be faced and I think that towns might be grouped into sets of three or four and an officer of the rank of Assistant Engineer placed in charge with an Inspector under him on each work.

6. Thus Trichinopoly, Dindigul and Madura might form one group; Tirupati Vellore and Salem another; Adóni, Kurnool and Bellary another, and so on.

7. Trustworthy men of proper qualifications cannot be readily picked up. The majority of men one can get are either failures or there is some other reason why they are out of employment.

8. We can therefore in this country depend only on retired men of the upper subordinate class, but the class of work would be quite new to them and men who have retired are not usually gifted with that amount of energy which is required to lay out, start and give continued supervision to a new work and a class of works which, from their nature, require speedy execution.

9. Government have relieved Municipalities from any share in the expenditure on account of this department, and as provision is always made in the estimates for supervision of works, I do not think that any hardship would be created if each group of Municipalities (where work is proposed or started) had an Assistant Engineer on a pay of Rs. 350 to Rs. 500 per mensem.

10. I think that the appointments ought to be temporary—non-pensionable, but that a guarantee of employment for at least three years ought to be given and something must be sacrificed, if necessary, to get good men, because incapable men are not cheap at any price, but I do not think there need be any fear that there will not be enough work even after that time has expired.

11. I would propose to Government that at least three men such as I have suggested should be engaged at once. I can guarantee to find work for them even now and one might be sent to Kumbakónam at once.

12. I am proceeding to Rangoon and Calcutta on the 20th instant and I shall be obliged if this letter can be dealt with emergently, as, if Government agree to my proposals, I should be in a position to select men at Rangoon or Calcutta, or at least see them there and forward their names for approval to Government.

13. As to Kumbakónam in particular, I am much annoyed that the Municipality has been so unfortunate in the men sent down for the work; but the surveyor and draftsman there are now working up the new plans and estimates, and those for the Nandalar outfall (6 miles) will be ready shortly. I hope to get the land marked out soon and I shall send one of my assistants to Kumbakónam to push on the work throughout the Christmas holidays when he can be spared from my office. The whole of the plans, sections and estimates have had to be prepared anew and hence the long delay in starting work.

From the Sanitary Engineer to Government, dated 9th December 1890, No. 650.

Abstract.—Informs that there is no immediate urgency in disposing of the whole question of future staff for the execution of water-supply and drainage works referred to in his No. 637 of 5th December 1890, as Mr. Lord's transfer from Kumbakónam has been cancelled.

Reference—dated 19th December 1890, No. 1101.

Owing to the rapid development of the Sanitary Engineering Department and the heavy expenditure which will shortly be incurred by it, the Government is of opinion that the time has now come for considering the propriety of attaching it to the Public Works Department for the purposes of discipline and control and criticism

of the Sanitary Engineer's plans and estimates. Mr. Jones' first letter read above will therefore be referred to the Secretary to Government, Public Works Department, for remarks as to how this can best be done.

(Signed) N. S. BRODIE,
Ag. Assistant Secretary.

To the Secretary to Government, Public Works Department,
with Current Nos. 3017 and 3052 M., in original, to be returned.

No. 407 C.

Note.

The undersigned considers that the best and simplest method of attaining the end contemplated in Local and Municipal Department memorandum, No. 1101 of 19th December 1890, would be to grade the Sanitary Engineer on the Public Works establishment as a Superintending Engineer, extra to the regular scale, precisely as the Consulting Architect is now graded.

2. All estimates for works to be carried out from Municipal or Local funds should include the regular percentage for Public Works establishment, which would then be provided in the usual course. It would be open to Government in any case to relieve the Municipality concerned of the whole or any portion of this charge by a grant-in-aid from Provincial funds.

3. The designs and estimates prepared by the Sanitary Engineer would then, as a matter of course, pass through the Chief Engineer's hands before submission to Government, while the establishment employed in execution of the works would be part of the regular Public Works establishment and be subject to the same discipline and control.

4. It would be an incidental advantage of this course that the greater part of the works in question would probably be executed by the Executive Engineers of Divisions under the control of the Superintending Engineers, the Sanitary Engineer being thus relieved of executive work and left free for his own legitimate duties of design and advice.

5. The additional work thus thrown on the Public Works Department would of course require a small increase in establishment, the cost of which would be met by the percentage provided in the estimates for that purpose; this increase would be entirely in the subordinate class and in the lower grades of the Engineering class and would be almost entirely, if not entirely, "temporary;" whether any increase to the permanent establishment would be necessary, the undersigned cannot at present say with any degree of certainty, but if experience showed a small addition to be necessary, there is no reason to suppose that the Government of India would refuse to consider a proposal for its sanction.

6. The memorandum under reply asks for the views of the undersigned as to the best means of carrying out the policy indicated therein, and not as to the propriety of that policy; but the undersigned thinks it right to say that he considers the course in question to be eminently desirable. It is no slight to Mr. Jones to say that it is advisable that his schemes should be subject to further professional examination before being sanctioned for execution, and if the proposed course is advisable as regards the design of works, it is still more so as regards their execution.

7. At present there is absolutely no superior engineering control over the execution of works under the Sanitary Engineer, except that of the Sanitary Engineer himself, and no officer, however able or however active, can visit works scattered over the whole Presidency at sufficiently frequent intervals to ensure good work; the

arrangement proposed would ensure to these works the same engineering control as is given to those executed on behalf of Government.

(Signed) J. PENNYCUICK, Col., R.E.,
23*rd January* 1891. *Secretary to Government, P.W.D.*

To the Local and Municipal Department, with original papers returned.

Order—dated 2nd April 1891, Mis. No. 479 M., Local and Municipal.

The proposal that the Sanitary Engineer should be graded on the staff of the Public Works Department does not commend itself to Government. There will be no difficulty in referring Mr. Jones' plans and estimates to the Chief Engineer whenever necessary and independent professional criticism can thus be secured should occasion arise.

2. With regard to the establishment required for the execution of sanitary works, the Government is of opinion that a certain number of subordinates in the Public Works Department should be selected and placed under the orders of the Sanitary Engineer, this body being recruited from time to time from the same source. The works should be executed under the supervision of the Executive Engineer of the Division to which they appertain, a percentage of 3 per cent. on the estimates being levied for this service together with the usual charge for scrutiny of estimates and the actual cost of the subordinate establishment employed, instead of the 23 per cent. ordinarily paid to the Public Works Department when works are executed by that agency.

3. The papers will be again referred to the Chief Engineer for an expression of his opinion on these suggestions. It would be advisable that he should confer with the Sanitary Engineer and both officers should submit a joint note on the subject.

(True Extract.)
(Signed) J. F. PRICE,
Chief Secretary.

To the Secretary to Government, Public Works Department, with papers.
„ Sanitary Engineer.

G.O., dated 24th June 1891, No. 955 M, Local and Municipal.

Abstract.—Passing orders on the subject of accounting for expenditure on drainage and other works executed under the supervision of the Sanitary Engineer.

Read—also the following papers :—

From J. A. JONES, Esq., mem. inst. c.e., f.r.s.e., Sanitary Engineer to Government, to the Chief Secretary to Government, dated Fort St. George, 11th March 1891, No. 166.

In addition to works at Kumbakónam, Government have now been pleased to direct the immediate execution of works for drainage and water-supply at Coonoor and Trichinopoly, respectively, and it may be presumed that there will not be much delay in starting works at Dindigul and Madura and also at Adóni.

2. As you are aware, I have no staff to superintend the execution of such works, and, with reference to Coonoor, I have already, in anticipation of the course meeting the views of Government, taken steps to put on an officer at Coonoor—*vide* my No. 80 of 9th February 1891.

3. For Trichinopoly, however, where an expenditure of about four lakhs will be incurred, it will be necessary to have a superior officer and so also in other places where the expenditure proposed is large.

4. The works will go on increasing in number year by year, and though probably it will be impossible to have under construction, without a very large staff, more than six works at a time, it is evident that for even that amount of work I must have responsible subordinates as I cannot with my large range visit works under construction as often as is desirable.

5. I therefore open up the whole question of staff for the execution of municipal works.

6. I have in my No. T-91 of the 24th ultimo proposed a plan by which, if approved, I shall be enabled to get through all the work of an iniatory nature, but when works have been sanctioned and we arrive at the stage which requires the preparation of detail drawings, specifications, working estimates and the actual supervision and execution of the works, some more staff is necessary.

7. It has been suggested that the Public Works Department should undertake the execution of the sanctioned works—this, no doubt, if the Public Works Department can spare men to be in actual charge and Engineer to superintend would save me a great deal of time and labour, but as I shall be practically responsible for the work, the designs for which will have been prepared in my department, it would be necessary for me to superintend, at least to some extent, their execution, and it is probable that differences might arise between the Superintending Engineers and myself. I do not think that the divided responsibility would be for the benefit of work or to the advantage of Government or the Municipality concerned.

8. It appears to me, therefore, it would be better for provision to be made for a separate staff; junior officers of the Public Works Department could be put in charge of the execution of a work or group of works with a subordinate on each particular work, or special men might be engaged.

9. For instance, Trichinopoly might be grouped with Dindigul and Madura; all these places are near to one another.

10. Kurnool and Bellary might form another group; Kumbakónam and Tanjore another; Salem, Vellore and Tirupati another, and so on.

11. Coonoor and Ootacamund might also be grouped. There are two projects at the former—one sanctioned and the other likely to be so, and one at the latter; but these, with the Municipal Engineer at Ootacamund would probably not require any more than the subordinate officer I proposed to appoint at Coonoor.

12. As a beginning, an officer might be transferred from the Public Works Department for Trichinopoly or I might transfer my own assistant to that work (at an increased salary which he much deserves) and a Public Works officer might become my assistant until he is acquainted with the class of work in the department. He in turn might go out on a group of works.

13. If Government approve of this latter arrangement, it seems to me the one most desirable.

14. I have further, in connection with the execution of municipal works, to ask Government to accord sanction for the following proposals :—

(1) That it being necessary for me to appoint subordinates from time to time, power be granted to me to appoint such subordinates temporarily with pay up to a maximum of Rs. 200 monthly so long as the amount under the contingent head in each estimate is not exceeded and with regard to the amount available for establishment and contingencies.

(2) That when an estimate is sanctioned, that my powers extend to the ordering on behalf of Government and the Chairman of the Council concerned, machinery and materials as provided in the estimates and to enter into the necessary contracts for execution of the works or for making any other necessary arrangement for carrying out the sanctioned estimate. This has already been done in the special case of Kumbakónam.

(3) That so soon as an estimate is sanctioned and funds are available to the Municipality for the work, an account be opened in the local treasury in my name and

such funds as are necessary placed at my disposal from time to time as an advance or imprest, the imprest account being recouped on submission of bills properly signed and vouched for the work as completed and paid for.

(4) The appointment of an agent at home being necessary, who can arrange for the payment against bills of lading on shipment of machinery, pipes, &c. (should tenders from English Firms be accepted, and they will probably be found cheaper than local Firms), that Messrs. H. S. King and Co., who are the Madras Municipal agents, be so appointed. Their charge is $2\frac{1}{2}$ per cent., and they also appoint, when necessary, Inspectors to pass machinery and pipes before acceptance in England; their charges will be covered by the rates in the estimates which are intended to include the English price of goods *plus* shipping charges, freight, landing charges and conveyance by rail to site in this country. This course I consider very preferable to ordering machinery through the India Office Store Department, where very considerable delays occur.

15. As the works increase in number, I shall, from time to time as necessary, ask for an increased staff; but if my proposals as above are generally sanctioned, I shall be able to proceed with the works already ordered for execution.

16. As I shall not be able to do much as regards Trichinopoly until the above points are settled, I trust that orders may be issued at an early date.

No. 290.

Referred to the Chief Engineer, in continuation of G.O., dated 2nd April 1891, Mis. No. 479 M., for consideration of these proposals in connection with the questions referred in that Government order.

Fort St. George,
16*th April* 1891.

(Signed) O. V. BODDY, Major, R.E.,
Under Secy. to Govt., P.W.D.,
for *Chief Secretary*.

No. 257 D.

Endorsement.

Proceedings in the Local and Municipal Department, dated 2nd April 1891, No. 479 M.

Letter from the Sanitary Engineer to Government, dated 11th March 1891, No. 166.

Endorsement thereon by the Local and Municipal Department, dated 16th April 1891, No. 290.

Memorandum by the Sanitary Engineer to Government—A.

Joint note by the Acting Chief Engineer, Public Works Department, and Sanitary Engineer to Government, dated 21st May 1891.

Enclosures.

Proposals for establishment for Sanitary Engineer (with reference to G.O., Mis. No. 479 M., of 2nd April 1891), by Acting Chief Engineer and Sanitary Engineer.

It is evident from the large amount of work sketched out in A, that if this work is to be carried out in a satisfactory manner without hindrance, a special staff must be allowed, whether this be provided by advertising in the open market or by officers and subordinates lent by the Public Works Department.

The existing staff of the Public Works Department has more than enough work as it is, and in times of pressure it is almost impossible to carry work on satisfactorily.

It is therefore evident that the Public Works Department cannot spare a single man to lend to the Sanitary Department. Whatever happens, or however constituted, the staff of the Sanitary Department must be in excess of the present strength, and therefore a special additional service must be provided for.

This being so, the question is—how such service shall be constituted?

It is thought that the proposal that the works when designed and estimated by the Sanitary Engineer and duly approved by Government should be carried out by Executive Engineers of Divisions, will not be at all a satisfactory arrangement, for—

(1) Works of this class require *constant*, if not *continuous*, supervision, and it will be impossible for an Executive Engineer of the Public Works Department, who now-a-days has so large a charge that it takes him a year to see the whole of it, to devote sufficient time for this purpose.

(2) It is always very difficult in this class of work to carry out, without constant reference, the plans and estimates made by others.

(3) There would be a dual control—no man can serve two masters—on the one hand the Superintending Engineer of the circle would have just cause for complaint if the Executive Engineer neglected, as he would be obliged to do, his own proper work in order to supervise work for the Sanitary Engineer, and the latter would undoubtedly grumble if his work was either not carried on expeditiously or scamped in the absence of proper supervision.

Then again the Sanitary Engineer would be quite justified in declining all responsibility in the results of his designs if he were not placed in the position of a superintending officer with powers to alter or modify such designs, for in these kind of works it is impossible to foresee all requirements.

Then as regards the position of the Chief Engineer, Public Works Department, with regard to the Sanitary Department, if he is to scrutinise or revise the designs and lend his officers to the Sanitary Department to carry them out, in case of failure or misadventure, the Public Works Department would be held to blame, though, as is above shown, it will be impossible for it to undertake such works satisfactorily.

Taking all these things into consideration, it is thought advisable to make the Sanitary Engineer and his department totally independent of the Public Works Department as far as designing and execution of work is concerned, except, of course, that the Chief Engineer, Public Works Department, should act as adviser to the Government on all schemes they may wish to consult him about.

Superior Staff.—The Sanitary Engineer should have under him a staff sufficient for the purposes of investigation and execution of the works required, and for this purpose it seems that the undermentioned staff is necessary. This staff is proposed with the idea of carrying out all the works within a few years, but it might be thought advisable to commence with only one or two sets of works geographically close together, and then, on completion, transport the staff elsewhere in much the same way as the Tank Restoration Scheme is being carried on. This would, however, delay work and there are several towns lying far apart for which schemes have been more or less matured and ready almost for execution. This will be a question for the Government to decide. It is proposed to divide the Presidency roughly into three Sanitary Circles, each Sanitary Circle to consist of two Public Works Department Circles.

The Sanitary Engineer would have charge of the whole and be director of all the works whether of investigation or execution, with powers of a Superintending Engineer, Public Works Department. It might be a convenient arrangement and relieve the Local and Municipal Department of much work if the Sanitary Engineer were made Secretary to Government. Under him would be a Deputy Sanitary Engineer whose sole duty it would be to supervise generally the works under execution, or, in case of necessity where the Sanitary Engineer could not take up certain work, to direct the designing of such work; the Deputy to have the powers of an Executive Engineer, Public Works Department. Under the above would be three Assistant

Sanitary Engineers, each in charge of a Sanitary Circle, for the purposes of directing surveys, &c., under instructions from the Sanitary or Deputy Sanitary Engineer, and executing such works as may have been sanctioned.

Subordinate Staff.—This will at first be small. The number will be decided by the Sanitary Engineer and will increase as work develops; but according to Statement A, a fairly large number will be at once required, and the number will be restricted not by the amount of work there has to be done so much as by the difficulty in procuring efficient men, and herein lies the *crux* of the whole question. There is *no other source* from which experienced men (and no other sort will do for works of this nature) can be obtained except from the ranks of the Public Works Department. Some few may be obtained from retired Public Works Department men, but very few, as they must be *physically capable* men as well as experienced. The only plan that suggests itself is to augment, as early as can be, but gradually, the existing Public Works Department strength—to transfer a few capable men to the Sanitary Department, their places being taken in the Public Works Department by promoting junior and deserving men, and putting new hands in (and there are several now passed practical course men unprovided for) at the bottom. This augmentation of the Public Works Department seems to be the only way out of the difficulty, if the sanitary works are really to be carried out at all satisfactorily.

All the above staff, with the exception of the Sanitary Engineer, who will thus be the head of a separate department, will be graded for promotion, &c., in the Public Works Department, and their status will be regulated in an exactly similar manner, and individuals, either officers or subordinates, may or may not be (question to be decided by Government) transferable from one department to the other. The officers would thus remain Government officers and would not be lent to Municipalities, and no question as to pensionary contributions would arise. As regards temporary staff which will be required on each work from time to time, the employment of these could be regulated in the same manner as in the Public Works Department.

Accounts.—As regards accounts, it might be advisable to treat the whole of the Sanitary Department as one large Public Works Department Division under the Examiner, Public Works Department. The Assistant Sanitary Engineers to be as Sub-Divisional officers, Public Works Department, and the Deputy Sanitary Engineer as an Executive Engineer, to render accounts to the Examiner direct. A reference on this point has already been made to Government by the Sanitary Engineer, but no orders have as yet been received.

Stores.—As great delay is experienced in many instances where stores are ordered through the India Office, it would be advisable to order them, as is done in the Madras Municipality, through an agent in England, who could arrange with the Firms whose tenders might be accepted, for the payment against bills of lading on shipment of machinery, &c. Municipalities are not bound to get supplies through the Secretary of State. The other proposals made by the Sanitary Engineer in his No. 166 of 11th March 1891, in respect to agency and powers of making contracts and as to the manner in which funds will be placed at his disposal, seem satisfactory.

Funds.—As regards the contributions from Municipal funds towards Establishment and Works, it will rest with the Government to decide the amount in each particular case, but doubtless the bulk of the money will have to be provided from Provincial funds, but it may be pointed out that the Municipalities under the above scheme will be relieved from making the grants now required for surveys, &c.

Office.—An increase in the office staff is apparently desirable, but Mr. Jones will submit separate proposals on this head which will include the necessary Accounts staff.

(Signed) A. C. SMITH, Lt.-Col., R.E.,
Ag. Chief Engineer, P.W.D.
(„) J. A. JONES,
Sanitary Engineer to Govt.

Extract from Memorandum by the Sanitary Engineer to Government.

* * * * *

The towns which are now being dealt with are as follow:—

North Arcot District.

Vellore.—Water-supply scheme, levels taken.
Tirupati.—Drainage scheme, levels taken.

South Arcot District.

Chidambaram.—Water-supply scheme, levels being taken by Public Works Department.

Bellary District.

Bellary.—Water-supply scheme, levels not yet taken nor any investigation made.
Adóni.—Scheme submitted, but details, schedules, abstract plans, &c., yet to be done.

South Canara District.

Mangalore.—Drainage scheme, ordered to be investigated.

Chingleput District.

Conjeeveram.—Water-supply scheme, to be prepared; no levels taken yet.
Chingleput.—Drainage scheme, is to be prepared.

Coimbatore District.

Coimbatore.—Water-supply and drainage schemes, under investigation; levels taken.
Erode.—Drainage scheme, to be prepared.
Karúr.— Do. do. do.

Cuddapah District.

Cuddapah.—Drainage scheme, ordered to be prepared; funds granted.

Ganjam District.

Berhampore.—Water-supply scheme, under investigation; levels taken by Public Works Department.
Chicacole.—Drainage scheme, to be prepared; funds granted.

Godavari District.

Cocanada.—Water-supply scheme, to be prepared; funds granted.
Rajahmundry.—Water-supply scheme, to be prepared; but funds not as yet granted.
Ellore.—Drainage scheme, to be prepared.

Kistna District.

Masulipatam.—Water-supply required, artesian well to be bored (sanctioned).
Guntur.—Water-supply scheme, under investigation.
Bezváda.—Water-supply and drainage, under investigation; levels taken.

Kurnool District.

Kurnool.—Water-supply, under investigation; preliminary report submitted.

Madura District.

Madura.—Water-supply scheme, estimate under preparation.
Dindigul.—Water-supply scheme, estimates submitted.
Periyakulam.—Drainage, estimate to be prepared.
Palni.— Do. do. do.

Malabar District.

Calicut.—Drainage scheme, to be prepared.
Cochin.—Water-supply and drainage scheme, ordered.
Tellicherry.—Drainage and water-supply schemes.
Cannanore.—Drainage scheme.

Nellore District.

Nellore.—Drainage scheme, ordered; water-supply, to be investigated; funds asked for.
Ongole.—Water-supply scheme, estimates ordered.

Nilgiris District.

Ootacamund—South.—Water-supply, estimates submitted.
Coonoor.—Drainage, under execution ; water-supply, schemes submitted.

Salem District.

Salem.—Drainage and water-supply projects, under investigation ; levels taken.

Tanjore District.

Tanjore.—Water-supply, estimates under preparation.
Negapatam.—Drainage scheme, ordered to be prepared.
Kumbakonam.—Drainage, under execution.

Tinnevelly District.

Tinnevelly.—Report on water-supply scheme, ordered.
Palamcottah.— Do. do. do.
Tuticorin.— Do. do. do.

Trichinopoly District.

Trichinopoly.—Water-supply scheme, estimates submitted.
Srirangam.—Report on water-supply, submitted.

Vizagapatam District.

Vizagapatam.—Water-supply scheme, estimates to be prepared.

(Signed) A. C. SMITH, Lt.-Col, R.E.,
Ag. Chief Engineer, P.W.D.
(„) J. A. JONES,
Sanitary Engineer to Govt.

The joint note required by paragraph 3 of the orders quoted above, is herewith transferred to the Local and Municipal Department together with a note "for orders," dated 22nd May 1891, and the rescript of the Honorable Member thereon.

2. It is thought that the proposed application to the Government of India for the services of Assistant Engineers should be deferred until it is decided whether they, with the Sanitary Engineer, would be attached to, or be outside, the ordinary Public Works Department.

Ootacamund,
26*th May* 1891. (Signed) A. C. SMITH, Lt.-Col., R.E.,
Ag. Jt. Secy. to Govt., P.W.D.

To the Local and Municipal Department, with the 4 enclosures forwarded with No. 479 M., dated 2nd April 1891, and the following papers:—(1) Letter from Sanitary Engineer to Government, with endorsement by Local and Municipal Department, No. 290, dated 16th April 1891 ; (2) Memorandum by the Sanitary Engineer to Government, marked A ; (3) Joint note by the Acting Chief Engineer and Sanitary Engineer, dated 21st May 1891 ; (4) Note "for orders," dated 22nd May 1891, and the rescript of the Honorable Member thereon.

Order—dated 14th August 1891, No. 1306 M., Local and Municipal.

In the papers read above, the Sanitary Engineer with Government makes certain proposals with a view to carrying out the works entrusted to him with greater efficiency and despatch than is possible at present. His Excellency the Governor in Council now proceeds to deal with these suggestions and those of the Public Works Department contained in the second letter read above. The proposals made are briefly as follow:—

(1) That the Sanitary Engineer should be attached to, and graded upon, the staff of the Public Works Department.

(2) That he should be empowered to deal, as Secretary, directly with the members of Government.

(3) That he should be placed at the head of a Department, to be recruited (for executive purposes) from the staff of the Public Works Department.

(4) That as regards accounts, the whole of the Sanitary Department should be treated as a Public Works Department Division under the Examiner of Public Works Accounts.

(5) That definite orders should be passed with regard to the question of entering into contracts and ordering stores, &c., for works under contemplation.

2. (1) The first of these points has been fully considered and decided in the negative by G.O., dated 2nd April 1891, No. 479 M., paragraph 1.

(2) In view of the fact that the Sanitary Engineer is, to a large extent, an inspecting as well as an executive officer, and for other reasons, it is not considered expedient that he should be appointed a Secretary to Government.

(3) The Government of India will be addressed in the Public Works Department for the loan of the services of three Assistant Engineers who will be placed under the Sanitary Engineer as suggested by the Chief Engineer or will take the place of Madras officers detailed for work under Mr. Jones. These officers will be treated as being outside the ordinary Public Works Department. The necessary subordinate staff will be provided by the latter department, their places therein being taken by temporary substitutes. These subordinate officers, although lent to the Sanitary Department, will be graded and promoted according to the ordinary rules of the Public Works Department, on whose list their names will be retained. Under the arrangements now sanctioned, all expenses incidental to the preparation and execution of schemes will be paid from Provincial funds and a percentage on the total estimated cost of works will be entered in the estimates submitted by the Sanitary Engineer with a view to meeting this expenditure. It is considered that a rate of 15 per cent. will suffice for this purpose.

(4) The proposals of the Public Works Department, with regard to the preparation and audit of accounts, are not in consonance with the provisions of the District Municipalities Act and cannot therefore be approved. The sums disbursed by the Sanitary Engineer must always be obtained from the Municipal Fund, and under section 28 (2) of the Act, payments from that fund can only be made under the orders of the Chairman or, in his absence, of two Municipal Councillors. The responsibility for expenditure rests finally, therefore, with the Chairman, and the final audit of the accounts must be carried out in his office. There is, however, no objection to the Chairman transferring the requisite funds as an "Advance recoverable" to the Sanitary Engineer, the latter spending the money and submitting vouchers for it, from time to time, to the Municipal Council. This course should be invariably adopted in future. The Accountant-General will further make special arrangements for auditing the accounts rendered by the Sanitary Engineer in accordance with the above procedure, the results of the audit being communicated to the Municipal Councils for incorporation in their accounts.

(5) This subject has been separately dealt with in G.O., dated 24th June 1891, No. 955 M.

(True Extract.)

J. F. PRICE,
Chief Secretary.

To the Public Works Department,
with copy of G.O., dated 24th June 1891, No. 955 M.
„ Sanitary Engineer.
„ Accountant-General.
„ Chairmen of all Municipal Councils,
through the Collectors concerned.
„ President, Municipal Commission, Madras,
with copy of G.O., dated 24th June 1891, No. 955 M.

Exd. P. L. Pereira.

Govt. of {1891} Madras.

LOCAL AND MUNICIPAL.

Issued

Recd. Encl.

G.O., 14th Aug. 1891, No. 1306 M.

AUGUST.

Sanitary Works.

Passing orders on the proposals submitted by the Sanitary Engineer with a view to carry out the works entrusted to him with greater efficiency and despatch than is possible at present.

No. 2516 W dt 18 Sept. 1891.

Communicated to S. Es for information

2. The following letter will be addressed to the Govt. of India.

(Sd) J. P.

×No 2517 W dt 18-9-91.

original with Chief
10/9/91 sent
& SKW dtd 23.10.91

apl Engr for duty under the Sanitary Engr - Instl that he can be spared for P.W.

S. Es
C. A. to Govt
Exr. P. W. Accts.

Ind

Proposals of Sanitary Engineer with explanatory Notes are intended for the Educational Dept & should be submitted to that dept.

The Educational Dept. distributed them as follows —

Rev. Dept — 2 sets
D. P. Instructions — 8 sets
P. W. Dept 5 sets.

By mistake, the letters are always addressed to the P. W. Dept. & have to be transferred to Educational.

The mistake arises apparently because the underlying Proposals signed for the Chief Engr when the Govt. is addressed.

It is proposed, a letter will be drafted to the Govt of India Dept asking them to send the letters in future direct to the Chief

The Proposals of the Sanitary Engineer with the Govt and Educational Dept Govt. Govt understand the arrangement

OOO
26.8

Secy. Edn Dept
have already
Rs 2/- a month
on the plea that
received.

26/4/91

Attendance
1891

A. 1891

Secretary Education Department
Can W. Sheets Esq

S. Es
C. A. to Govt
Exr. P. W. Accts.

No 6240 W dt 6-3-91

4773 W dt 19-2-91

8444 C dt 16-2-91

4421 W dt 14-2-91

5755 C dt 2-2-91

189 /.

P. W. DEPARTMENT.

Current No. 9040

From The offg. Surveyor Gen.
In charge Photo: & Litho: Off
Calcutta

No. 1067 / P

Dated 21-8-1891

Received 25-8-

ENCLOS.— 2
1 packet of plates

SUBJECT.

Forwarding 15 copies each of the plates XX to XXIII of 1889 & I to VI of 1891 of the Technical Art Series with their texts and also 15 sets of text of plates XXIII & XXIV previously supplied together with a Book-debit bill in triplicate for Rs 18-2-9

DISPOSAL.

No. 3850 C dated 26 August 1891

Transferred to the Educational Department.

1 Ad/ OV. 13

27/8/91

8th September 1891, No. 841, Revenue.

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 20th August 1891, No. 534:—

MR. CLOGSTOUN.

Read—the following letter from W. J. TATE, Esq., Acting Collector of Coimbatore, to the Secretary to the Commissioner of Revenue Settlement and Director of the Department of Land Records and Agriculture, dated Coimbatore, 15th August 1891, No. 616:—

With reference to Board's Proceedings, dated 26th May 1891, Mis. No. 2589, I have the honour to forward the list of Civil Agency works suitable for famine relief in this district for 1891-92 revised with reference to the instructions contained in paragraph 5 of G.O., dated 24th February 1891, communicated with Board's Proceedings, dated 18th March last, No. 148.

Resolution—dated 20th August 1891, No. 534.

The revised list of famine relief works for 1891-92 received from the Collector of Coimbatore will be submitted for the information of Government.

2. The following abstract statement shows the estimated cost of the works in each taluk:—

Taluks.	By the Collector.		By the Local Boards.		By the Municipalities.		Total.	Amount for which estimates are ready.
	Rs. 5,000 and upwards.	Less than Rs. 5,000.	Rs. 5,000 and upwards.	Less than Rs. 5,000.	Rs. 5,000 and upwards.	Less than Rs. 5,000.		
	Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	
1. Coimbatore	60,000	65,030	2,00,669	56,292	1,40,000	..	5,21,991	Not reported.
2. Satyamangalam ..	18,400	49,810	2,03,015	5,298	..	..	2,76,523	
3. Kollegál	29,500	46,500	51,499	14,148	..	..	1,41,647	
4. Bhavání	23,200	23,450	1,01,111	35,436	..	..	1,83,197	
5. Erode	1,03,350	62,010	2,79,129	46,893	..	..	4,91,382	
6. Karúr	74,000	43,345	1,71,994	59,845	5,000	..	3,54,184	
7. Dhárápuram	..	20,120	2,15,709	37,806	..	..	2,73,635	
8. Udamalpet	1,32,500	34,380	73,239	11,616	..	..	2,51,735	
9. Polláchi	5,000	43,470	1,26,192	4,248	..	..	1,78,910	
10. Palladam	..	3,11,840	2,66,807	27,854	..	..	6,06,501	
Total ..	4,45,950	6,99,955	16,89,364	2,99,436	1,45,000	..	32,79,705	..

3. The above sum, viz., Rs. 32,79,705, at an average wage of annas two per diem, is sufficient to afford employment for one year to 72,882 persons or 3·6 per cent. of the total population (1,999,432) of the district according to the recent Census.

4. A note should have been made in the column for remarks as to the works for which estimates are ready. The information should be furnished at an early date.

5. It is observed that no provision has been made for the repair of irrigation works in Bhavâni, Udamalpet and Palladam, and that, in several other taluks, the necessities of the minor works do not appear to have been fully considered with reference to the instructions conveyed in Board's Proceedings, dated 23rd July 1891, No. 450. This matter should receive the Collector's early attention.

(A true Copy and Extract.)

(Signed) R. V. SRINIVASIAR,
Acting Secretary.

To the Secretary to Government, Revenue Department, with one list.
,, Collector of Coimbatore.

ORDER—dated 8th September 1891, No. 841, Revenue.

Miscellaneous.	Recorded.

(True Extract.)

(Signed) C. A. GALTON,
Secretary to Government.

To the Commissioner of Revenue Settlement, Land Records and Agriculture.
,, the Local and Municipal Department.
,, the Public Works Department (W).
,, the ,, ,, ,, (I).

Exd. C. A. Munisawmy.

80 Copies.

Govt. of {1891} Madras.

REVENUE.

No 2543 Wa/22 Sept 1891

Communicated to the Supty. Engineer IV Circle

Issued

Recd. Encl.

G.O., 8th September 1891, No. 841.

SEPTEMBER.

Famine relief.

List of Civil Agency works suitable for — in the Coimbatore district for 1891-92, recorded.

With order.

Ltr. to Circle

C. E. for I

GOVERNMENT OF MADRAS.

REVENUE DEPARTMENT.

READ—the following Proceedings of the Board of Revenue (Revenue Settlement, Land Records and Agriculture), dated 20th August 1891, No. 534 :—

MR. CLOGSTOUN.

Read—the following letter from W. J. TATE, Esq., Acting Collector of Coimbatore, to the Secretary to the Commissioner of Revenue Settlement and Director of the Department of Land Records and Agriculture, dated Coimbatore, 15th August 1891, No. 616 :—

With reference to Board's Proceedings, dated 26th May 1891, Mis. No. 2589, I have the honour to forward the list of Civil Agency works suitable for famine relief in this district for 1891-92 revised with reference to the instructions contained in paragraph 5 of G.O., dated 24th February 1891, communicated with Board's Proceedings, dated 18th March last, No. 148.

Resolution—dated 20th August 1891, No. 534.

The revised list of famine relief works for 1891–92 received from the Collector of Coimbatore will be submitted for the information of Government.

2. The following abstract statement shows the estimated cost of the works in each taluk :—

Taluks.	By the Collector.		By the Local Boards.		By the Municipalities.		Total.	Amount for which estimates are ready.
	Rs. 5,000 and upwards.	Less than Rs. 5,000.	Rs. 5,000 and upwards.	Less than Rs. 5,000.	Rs. 5,000 and upwards.	Less than Rs. 5,000.		
	Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	
1. Coimbatore	60,000	65,030	2,00,669	56,292	1,40,000	..	5,21,991	Not reported.
2. Satyamangalam ..	18,400	49,810	2,03,015	5,298	..	..	2,76,523	
3. Kollegál	29,500	46,500	51,499	14,148	..	..	1,41,647	
4. Bhavání	23,200	23,450	1,01,111	35,436	..	..	1,83,197	
5. Erode	1,03,350	62,010	2,79,129	46,893	..	..	4,91,382	
6. Karúr	74,000	43,345	1,71,994	59,845	5,000	..	3,54,184	
7. Dhárápuram	..	20,120	2,15,709	37,806	..	..	2,73,635	
8. Udamalpet	1,32,500	34,380	73,239	11,616	..	..	2,51,735	
9. Pollách	5,000	43,470	1,26,192	4,248	..	..	1,78,910	
10. Palladam	..	3,11,840	2,66,807	27,854	..	..	6,06,501	
Total ..	4,45,950	6,99,955	16,89,364	2,99,436	1,45,000	..	32,79,705	..

3. The above sum, viz., Rs. 32,79,705, at an average wage of annas two per diem, is sufficient to afford employment for one year to 72,882 persons or 3·6 per cent. of the total population (1,999,432) of the district according to the recent Census.

4. A note should have been made in the column for remarks as to the works for which estimates are ready. The information should be furnished at an early date.

5. It is observed that no provision has been made for the repair of irrigation works in Bhavâni, Udamalpet and Palladam, and that, in several other taluks, the necessities of the minor works do not appear to have been fully considered with reference to the instructions conveyed in Board's Proceedings, dated 23rd July 1891, No. 450. This matter should receive the Collector's early attention.

(A true Copy and Extract.)

(Signed) R. V. SRINIVASIAR,
Acting Secretary.

To the Secretary to Government, Revenue Department, with one list.
" Collector of Coimbatore.

ORDER—dated 8th September 1891, No. 841, Revenue.

Miscellaneous. Recorded.

(True Extract.)

(Signed) C. A. GALTON,
Secretary to Government.

To the Commissioner of Revenue Settlement, Land Records and Agriculture.
" the Local and Municipal Department.
" the Public Works Department (W).
" the " " " (I).

Exd. C. A. Munisawmy.

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Govt. of {1891} Madras.

REVENUE.

Issued

Recd. *Encl.*

G.O., 8th September 1891, No. 841.

SEPTEMBER.

Famine relief.

List of Civil Agency works suitable for — in the Coimbatore district for 1891-92, recorded.

No 2543 Wa/22 Sept 1891

Communicated to the Supdg. Engineer IV Circle

1/9/91 J P W

S. E. IV Circle C. A. for I

With oblen

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