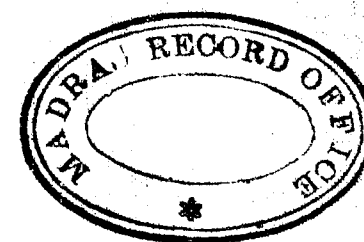


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-2- PERIYAR PROJECT.

REPORT ON THE CLOSURE OF THE CONSTRUCTION ESTIMATE.

Brief history of the project.—The Periyár river rises in unsurveyed country approximately in north latitude 9°10' and east longitude 77°30' among the Western Ghats. It runs northwards till it reaches north latitude 9°31', where it turns due west for a short distance during which its course is within a few miles of the water-shed. It then turns northerly again gradually trending westwards and eventually reaches the sea near Cochin. It runs throughout within the territory of the Maharaja of Travancore.

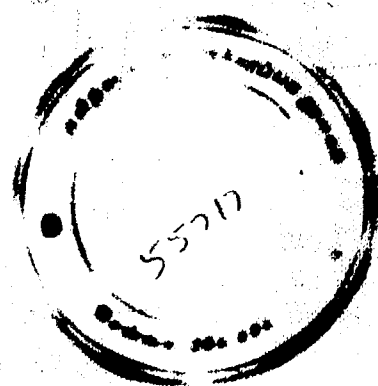
2. On the other side of the water-shed is the British district of Madura in which the rainfall is sparse and precarious, and which has constantly been visited by famine, whereas the catchment of the Periyár enjoys an unfailing, and sometimes a heavy, rainfall. The first record of any proposal to utilize the Periyár river for irrigation in Madura dates back to 1808. From that time the subject was constantly discussed in more or less detail, investigations were made, and various projects submitted. Finally, Major Pennycuik, R.E., was placed on special duty in 1882 to prepare complete plans and estimates, and that officer submitted in the same year a report with detailed plans and estimates.

3. *Description of various estimates and causes of excess and statement of Capital cost to date of closure of construction estimate.*—First estimate sanctioned.—The estimates for the project amounting to Rs. 61,85,000 for direct charges, or Rupees 64,39,913 including indirect charges were sanctioned by the Secretary of State in his despatch No. 53, Public Works, dated 18th September 1884, communicated with the Government of India letter No. 90 I., embodied in Proceedings of the Madras Government, No. 386 I., dated 29th May 1886. Owing to financial pressure, work on the project could not be commenced till August 1887 when the Government of India sanctioned an allotment of 1.50 lakhs. In course of execution of the work, it was found necessary to revise the estimates as the original provision for "Head works" and "Tools and Plant" was found insufficient.

Revised estimates of 1894.—In July 1894 revised estimates were submitted for the sanction of the Government of India. These estimates are compared below by departmental heads with the original estimates :—

Departmental heads.	Original estimates.	Revised estimates.
<i>Direct Charges.</i>		
<i>Works—</i>	Rs.	Rs.
(1) Head Works]	30,80,000	43,47,000
(2) Main Canals and Branches	13,67,000	12,64,000
(3) Distributaries	7,53,000	7,15,000
	52,00,000	63,26,000
Establishment	9,25,000	14,01,000
Tools and Plant	60,000	7,57,000
Less receipts on Capital Account	—	— 13,000
Total ...	61,85,000	84,71,000
<i>Indirect Charges.</i>		
Loss by exchange	40,000	—
Capitalised abatement of land revenue	85,413	(a) 82,500
Leave and pension allowances	1,29,500	1,96,500
Total ...	2,54,913	2,79,000
Grand Total ...	64,39,913	87,50,000
Excess ...		23,10,087

(a) Included in Tools and Plant under "Direct Charges".



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4. The revised estimates exceeded the original estimates by about Rs. 23 lakhs

P.M.G., No. 97 I., dated 3rd February 1894. in the Chief Engineer's note which accompanied them. The principal cause

was insufficiency of the rates allowed in the original estimates. In the original rates the price of machinery was included for each sub-head and a small sum of Rs. 60,000 was provided for tools and plant. In the course of execution it was found that the machinery was so mixed up with several sub-heads of different works that it was impossible to debit it equitably to each. A separate sub-head—Tools and plant—was therefore opened to which a sum of Rs. 7,57,000 was debited against the original provision of Rs. 60,000. In spite of this separation, the original rates were found to be insufficient. The rubble and concrete of which the main dam was composed cost about Rs. 33-8-0 for 100 cubic feet against Rs. 15 allowed in the original estimate. The quantities were also increased by a chasm discovered in the river-bed and extra work found necessary at the flanks. Generally, it was found that the difficulties in commencing operations were considerably under-estimated. Those difficulties and the actual mode of operation adopted in carrying out the works are described in Mr. Mackenzie's history of the project, pages 109 to 116.

The reduction of Rs. 1,41,000 in the distribution works was due in general terms to the complete abandonment of the original estimates. The estimates for these works were prepared in 1872-73 and were not revised by Major Pennycook, R.E., when he in 1882 revised the estimates for head works. The revision of these distribution works estimates was only made when the project estimates were revised, the alignment of the channels having been altered and the design for every masonry work completely redrawn, aqueducts or superpassages being substituted in every case for inlets or outlets provided in the original estimates with a saving of cost and increase in efficiency. The revised estimates were sanctioned by the Secretary of State in his despatch No. 38, Public Works, dated 26th July 1894, communicated with the letter from the Government of India, No. 197 I., dated 15th October 1894, printed in Proceedings of Madras Government, No. 1957 I., dated 22nd December 1894.

5. *Opening of the project.*—The project was finally opened on the 10th October 1895 by His Excellency Lord Wenlock, C.C.I.E., then Governor of Madras.

6. *Closure of construction estimate.*—Under the orders conveyed in the letter from the Government of India, No. 183 I., dated 17th July 1895, embodied in Proceedings of Madras Government, No. 602 I., dated 1st August 1895, the construction estimate of the project was closed on the 31st March 1897. On the date of the closure of the construction estimate, the head works were completed in all respects except the tower at the end of the main dam which was in progress. All works in the first to twelfth reaches of the main channel were practically completed. Work on the seventh branch channel was in abeyance and on the eleventh and twelfth branch channel had not been commenced. On all the other branch channels, work was in progress or almost completed.

7. *Outlay incurred up to 31st March 1897.*—The outlay incurred on the project up to 31st March 1897 compared by main and departmental heads with the revised estimate is as shown below:—

	Revised estimate	Expenditure up to 31st March 1897.
Direct Charges.		
Works—	Rs.	Rs.
(1) Head works	43,47,000	42,26,700
(2) Main canals and branches	12,64,000	13,44,028
(3) Distributaries	7,15,000	4,99,024
Total	63,26,000	60,69,752
Establishment	14,01,000	13,46,177
Tools and plant	7,57,000	7,28,291
Less receipts on capital account	—13,000	—14,203
Total	84,71,000	81,30,017
Indirect Charges.		
Capitalized abatement of land revenue	82,500	34,661
Leave and pension allowances	1,96,600	1,88,466
Total	2,79,100	2,23,127
Grand Total	87,50,100	83,53,144

8. *Description of works as completed—Area commanded.*—The tract commanded by the Periyár project is bounded on the north by the Periyár main canal and on the south by the Vaigai river. The total culturable area according to a recent careful estimate is—

		ACS
Government land commanded by the main canal and branches	{ 1st crop ... 106,495 2nd „ ... 51,030	
Whole inam and zamin wet land	{ 1st „ ... 20,460 2nd „ ... 8,970	

9. *Supply available.*—In designing the distribution works the estimated delivery into the lake was taken at 32,900 millions cubic feet from which was deducted 1,740 millions for evaporation in the lake, 990 millions for evaporation in the Suruliyar and the Vaigai and 500 millions for preliminary absorption in the beds of these rivers leaving 29,670 millions available for irrigation. This quantity was considered to be easily capable of irrigating 90,000 acres of first crop and 60,000 acres of second crop. During the year 1896-97, the first year of supply, the amount delivered into the Periyár was about 24,000 millions of cubic feet and there was about 16,000 millions of cubic feet of surplus discharged over the escape. Adding 2,000 millions of cubic feet for evaporation on the Periyár lake and 1,000 millions for addition to the contents, the total delivery into the lake was 43,000 millions of cubic feet. The season 1896-97, however, chanced to be one of rather heavy rainfall. The delivery into the lake during the subsequent years allowing 1,740 millions cubic feet for evaporation was—

	MILLS. C.F.T.
1897-98	38,217
1898-99	23,053
1899-1900	26,289
	3,97,559
Or an average of	29,186

10. *Head works—Main dam.*—The main dam is 1,241 feet long at top, with 12 feet top width including parapets and bottom width 144' 6" at the lowest part. Height of dam is 176 feet above deep bed of the river. The dam as constructed abuts upon a low hill on each end. It has front and rear face walls of rubble masonry, the interior being filled with concrete in surki mortar. The front face is pointed with cement. The parapets are 2 feet thick and 3 feet high. The foundations are on solid rock throughout.

11. *Escape.*—The flood escape is on the right flank and is formed by cutting the rock to a length of 434 feet to a level 14 feet below the top of the main dam. A raised escape on the left flank originally proposed was abandoned and the depression filled by a masonry dam 221 feet long with its crest 2 feet above that of the main dam. A wing wall was added in front at the left or south end connected with high ground by a bank 240 feet long with top width 12 feet and crest 8 feet over the crest of the main dam. The side dam on the left is in section and structure similar to the main dam. The bank above the wing in front is heavily revetted and the slope in rear turfed. The parapet walls are built similar to those of the main dam with their tops + 180' 00.

12. *Tunnel cutting.*—The passages through the water shed consist of—

- (1) an open cutting to the tunnel proper 5,342 feet long on the south side,
- (2) a tunnel 5,704 feet long,
- (3) an open cutting 500 feet long on the north or Madura side.

The cutting on the south side which is known as the "water-shed cutting" consists of 3,000 feet on the level with bed at + 115.00 and the remaining 2,342 feet with a fall of 1 in 320, the bottom width being 21 feet throughout with sides vertical in rock and slopes $1\frac{1}{2}$ to 1 in earth. The tunnel proper is in rock throughout and has a sectional area of about 96 square feet with a gradient of 1 in 75. The maximum discharge through the tunnel has been taken as 1,100 cubic feet per second, but this can only be considered as approximate. The open cutting on the north or Madura side is 500 feet long and is from 0 to 20 feet in depth. It is 21 feet wide and has a fall of 1 in 250. The entrance to the tunnel is fitted with a Stoney's patent gate. The sluice chamber is $15\frac{1}{2}$ feet wide and $10\frac{1}{2}$ feet deep, internal dimensions, and is built of dressed stone in Portland cement mortar to $20\frac{1}{2}$ feet above floor and rubble in surki mortar above that level with the faces pointed with cement. On the upstream side a groove is provided for a temporary shutter and also a screen to prevent drifting trees, etc., being carried into the tunnel.

13. *Measuring weir.*—At the end of the open cutting on the north is a measuring weir 71' 8" long with a vent $8' \times 4'$ through which the Periyár water enters into the natural bed of the Vairavanar and thence into the Suruliyar and the Vaigai. This work is intended for the purpose of gauging the discharging capacity of the tunnel.

14. Plate III is a general plan of the tract commanded by the project. It shows—

- the position of the old Peranai anicut across the Vaigai river,
- the position of the head and scouring sluices at Peranai as built,
- the courses of the main and branch channels as well as the distributaries,
- position of all Government and private tanks affected by the Periyár water and proposed to be retained,
- the position of all important masonry works constructed along the main and branch channels.

Peranai.—The Periyár water after leaving the tunnel first enters the bed of the Vairavanar, then that of the Suruliyar and lastly that of the Vaigai, and so reaches the Peranai anicut, an old work across the last-named river, distant about 86 miles from the tunnel. From this anicut the distributary channels take off, the anicut is, as stated, an old work of native construction and runs in a tortuous line skew to the river, having a length of 1,300 feet, of which 400 feet at the left end is about a foot higher than the rest. The only improvements made to the work are—

- the construction of a scouring sluice at the left end of the anicut,
- the construction of a head sluice for the main channel.

The scouring sluice has five vents each $5\frac{1}{2}' \times 6'$ worked by screw-gearing shutters from a platform $10\frac{1}{2}$ feet above the crest of the anicut, the sill of vents being $7\frac{1}{2}$ feet below the crest of anicut.

The head sluice which is built at right angles to the scouring sluice consists of 8 vents of 10 feet span with sluice gates $10\frac{3}{4}' \times 8'$ worked by double screws connected by a chain on toothed pinions. The sills of the vents are 6 feet below the crest of the anicut, the platform being at the same level as that of the scouring sluice. The head sluice is designed to pass about 2,016 cubic feet per second with an area of vents 480 square feet and velocity 4.20 feet.

As Peranai is the site selected for offtake channels from the Vaigai, the Vadarai channel which had an open head from the Peranai, now takes off from the right bank of the Periyár main channel at 3 furlongs, 433 feet where a head sluice has been provided.

The main channel has a length of 35 miles, 7 furlongs 180 feet and is divided into 11 reaches. It was designed and constructed to discharge the supply shown in the following hydraulic statement:—

Number of reach.	Length.			Bottom width in feet.	Side slopes horizontal vertical.	Depth of water in feet.	Bedfall in feet per mile.	Velocity in feet per second.	Discharge in cusecs.
	Miles.	Furlongs.	Feet.						
1	0	3	362	100	$1\frac{1}{2}$ to 1	6	1.16	2.81	1,889
	1	7	525	72	..	6	1.16	2.91	1,414
	1	3	455	50	..	6	2.53	3.91	1,383
	2	2	498	80	..	6	..	2.42	1,295
2	1	1	201	Natchikulam tank.		..	..	..	..
	2	7	298	71	..	..	1.13	2.68	1,286
	6	6	5	67	..	6	1.20	2.75	1,264
	1	2	79	62	..	6	1.21	2.70	1,150
3	1	4	650	51	..	6	1.24	2.72	986
	0	0	100	46	..	6	2.19	..	..
	0	0	100	44	..	6	2.19	..	..
	0	0	100	41	..	6	2.19	..	..
4	0	0	100	39	..	6	2.19	..	..
	0	3	357	36	..	6	2.19	..	..
	1	7	595	36	..	6	2.24	3.50	917
	0	4	200	Vedarkulam tank.		..	..	..	..
5	1	3	257	48	..	6	1.25	2.72	982
	1	6	610	47	..	6	1.25	2.71	912
6	1	1	533	46	..	6	1.25	2.71	895
7	1	1	521	43	..	6	1.27	2.72	840
8	0	6	292	27	..	6	1.37	2.65	572
9	6	2	590	15	..	6	1.59	2.60	574

From the main canal 12 branch channels take off, the total length of these when all are completed being 67 miles, 7 furlongs and 70 feet. The only channel remaining to be dug is No. 7 in the list, the excavation of which has for the present been postponed. The following table gives the mileage and full supply discharge of each of these branch channels.

Number of branch channel.	Length.			Bottom width in feet.	Side slopes horizontal vertical.	Depth of water in feet.	Bedfall in feet per mile.	Velocity in feet per second.	Discharge in cusecs.
	Miles.	Furlongs.	Feet.						
1	6	..	245	12.00	$1\frac{1}{2}$ to 1	2	6	2.41	72
2	1	3	640	4.5	..	2	6	2.01	39
3	4	1	290	7.75	..	2	6	2.23	18
4	4	7	580	19.50	..	2	6	2.55	115
5	5	4	656	5.00	..	2	6	2.06	83
6	2	5	..	3.50	..	2	6	1.79	21
7	..	3	70	3.50	..	1.50	6	1.48	12
8	5	..	594	4.00	..	2	6	1.94	27
9	10	1	07	30.00	..	3	3	2.54	261
10	8	1	200	27.6	..	3	3	2.51	241
11	5	2	300	12.00	..	2.75	3	2.10	93
12	13	6	344	28.00	..	4.00	1.5	2.37	323

* Field channel.

There are also 7 important subsidiary branch channels taking off, from Nos. 4, 9 and 10 in the list above given. The total length of these offtakes is $32\frac{1}{4}$ miles and they, like the branch channels, are maintained by Government.

In addition to the above, several minor distributaries or field channels have been dug from the branch channels, the position of the important ones being shown in dotted lines on Plate III.

15. *Comparison of completed cost with the revised estimate of 1894.*—Statement A of the Appendices to this report is a schedule of works carried out under the construction estimate of the project showing expenditure up to 31st March 1897, the date on which the construction estimate was closed. It shows that the total direct charges incurred against the estimate were Rs. 81,30,017 or Rs. 3,40,983 less than the sanctioned estimate.

Statement B (Appendix) is schedule of works sanctioned but not completed before the 31st March 1897 showing (a) expenditure up to that date and (b) probable further expenditure required to complete the works. The total outlay on these works up to 31st March 1897 was Rs. 38,54,992. The further outlay is estimated at Rs. 2,22,739 or Rs. 2,71,000 including establishment and tools and plant.

Statement C (Appendix) is a schedule, called for in paragraph 2 of the Government of India letter No. 304 I., dated 30th November 1897, printed in P.M.G. No. 1147 I., dated 2nd December 1897, of the estimates sanctioned against the Open Capital Account of the system. It includes all estimates sanctioned up to date. The total sanction under this head amounts to Rs. 3,86,038 of which Rs. 1,11,539 are for unremunerative works.

Statement D (Appendix) shows the comparison of expenditure by reaches and branch channels with provision in estimates sanctioned by the Secretary of State for the Government of India.

16. The following is a complete abstract showing all charges incurred up to 31st March 1897, the charges incurred under the Open Capital account up to the 31st March 1902, and the probable further charges required to complete the project. The total Rs. 94,91,340 represents the ultimate capital cost of the project so far as can at present be foreseen :—

Head of Account.	Outlay.			Probable future charges.	Total.
	To end of 31st March 1897.	Under Open Capital Account up to 31st March 1902.	Total.		
<i>Direct charges.</i>	Rs.	Rs.	Rs.	Rs.	Rs.
Works	80,69,752	3,22,431	84,92,183	4,51,554	89,43,737
Establishment	13,46,177	82,016	14,28,193	97,360	15,25,553
Tools and Plant	7,28,291	— 4,360	7,23,931	..	7,23,931
Total	81,44,220	4,70,117	86,14,337	5,48,914	91,63,251
Less receipts on Capital Account	— 14,203	— 123	— 14,416	..	— 14,416
Net	81,30,017	4,69,994	85,99,921	5,48,914	91,48,835
Loss by exchange	..	..	..	..	..
Total Direct charges	81,30,017	4,69,994	85,99,921	5,48,914	91,48,835
<i>Indirect charges.</i>					
Capitalized abatement of Land Revenue	34,561	59,156	93,816	35,107	1,28,923
Leave and pension allowances	1,88,466	11,486	1,99,952	13,630	2,13,582
Total Indirect charges	2,23,127	70,641	2,93,768	48,737	3,42,505
Grand Total	83,53,144	5,40,635	88,93,689	5,97,651	94,91,340

17. *Financial results—Forecast which accompanied the revised estimate of 1894.*—The estimate of revenue on which the forecast statements which accompanied the revised estimate of 1894 was based is as shown below :—

	First crop.	Increase.	Second crop.	Increase.	Total.
	ACS.	RS.	ACS.	RS.	RS.
I. Ryotwar occupied—					
(1) Dry	27,410	1,37,201	13,720	41,160	1,78,561
(2) Wet	13,446	93,919	21,723	52,428	1,46,347
II. Ryotwar occupied, including tank beds	38,744	2,15,018	29,626	94,356	3,04,403
III. Minor Inams—					
(1) Dry	4,847	21,236	2,424	7,271	31,567
(2) Wet	6,041	..	2,520	5,437	5,437
IV. Whole Inam and Zamindaris	..	..	8,000	24,000	24,000
Total	114,518	4,70,404	77,913	2,24,651	6,95,065

According to the above statement, the project was expected to yield a gross revenue of Rs. 6,95,055, to which a sum of Rs. 25,645, being 4 per cent. on sale-proceed of tank-bed lands (Rs. 6,41,133) was added making a gross revenue of Rupees 7,20,700. Deducting Rs. 1,61,924 being the anticipated working expenses (both direct and indirect), the net revenue was shown to be Rs. 5,58,776. The forecast statements showed that ten years after the completion of the work, i.e., at the end of

1906–1907, there would be a net excess of charges amounting to Rs. 17,75,945, which, when added to Rs. 87,50,000, the total of the direct and indirect charges, would make the sum-at-charge of the project Rs. 1,05,25,945. The net revenue of Rupees 5,58,776 represented a return of 5.31 per cent. on the sum-at-charge.

The forecast referred to above was framed by taking the total estimate of the ultimate area (old and new irrigation) and revenue, and crediting annually for the first ten years a tenth to the project, and was therefore based on wrong assumptions. The actuals much exceeded the forecast figures which had therefore to be set aside. The Collector has now furnished two revised forecasts, which have been prepared with reference to letter, No. 410 C.W.I. of 11th

G.O., No. 532 I., dated 12th May 1902. April 1902, of the Government of India in which instructions were given that, with

regard to the question whether the zamindari and inam lands advantageously situated should be supplied with the Periyar water in preference to Government lands situated at tail ends of channels, it might be assumed that the decision would be in favour of the former course. Forecast No. 1 shows that the area to be irrigated by the project would be 125,491 acres first crop, and 82,640 acres second crop, with a gross revenue of Rs. 8,31,724; while according to forecast No. 2 the ultimate area is expected to be 126,955 acres first crop, and 60,000 acres second crop, the gross revenue being Rs. 6,82,756. In both cases it is expected that the ultimate area will be reached in 1909–1910, or thirteen years after the date of the completion of the project.

With regard to these forecasts, the Executive Engineer, Madura division, writes : “In an ordinary average year after the settlement of the question of what land is to be irrigated, the return ought, when the cultivation extends and tank beds are sold, to be that given in forecast No. 2. In a very good year, it might be possible, after the project has settled, to reach the figure given in forecast No. 1. I should, however, not consider it a sound policy to base expectations on this basis and would prefer to adopt No. 2 which seems to me to be sounder. I do not say that we cannot work up to the higher estimate, but I consider that it will take some time to work up to, whereas No. 2 can be worked up to in a reasonable time”.

The Board of Revenue agree with the Executive Engineer in considering that forecast No. 2 may be adopted as being safer and as being likely to be worked up to in a reasonable time.

Both the forecast statements are appended to this report. According to forecast No. 2, which the Board recommend for adoption, there will be a net excess of charges amounting to Rs. 19,28,737 at the end of the tenth year after the completion of the project (1896–97). This, when added to the Capital outlay (direct and indirect), makes the sum-at-charge of the project Rs. 1,14,20,077. At that period the net revenue will be Rs. 4,79,805, which is equivalent to a return of 4.20 per cent. on the sum-at-charge.

It must be noted that, at the end of the tenth year, the project does not irrigate the ultimate area which is expected to be reached only in 1909–1910, or the thirteenth year after the completion of the project. At this period, the net return on the sum-at-charge will be 4.70 per cent.

18. For an irrigation work to be classed as “productive” it must satisfy one of the following conditions :—

(a) There must be good reason to believe that the revenue from it will, within ten years after the probable date of completion, repay the annual interest on the capital invested with all arrears of simple interest up to that date, and also the capitalized value of land revenue and of leave allowances and pensions.

(b) If the system has been completed for more than ten years it must pay, on the average, at least 4 per cent. on the sum at charge.

The project, according to the second of the two forecasts, repays the annual interest on the capital invested in 1904–1905, or the eighth year after completion, and gives a return of 4.20 per cent. on the sum-at-charge at the end of the tenth year; but the full amount of interest and indirect charges will be repaid only at the end of

the 25th year after completion. The project does not therefore fully satisfy the first of the two conditions quoted above. It, however, fulfils the second condition, as, at the end of the tenth year it is expected to pay a return of over 4 per cent. on the sum-at-charge, there is always, moreover, the chance of the higher figures shown in forecast No. 1 being worked up to. In these circumstances, it is considered that the project should continue to be classed as a productive public work, and the restrictions placed by the Government of India on further sanctions under "Imperial—49. Capital Expenditure not charged to Revenue—Open Capital Account" should be withdrawn.

19. The following plates are appended to the report:—

(1) *Plate I*.—Sketch-map of the Periyár Project showing the Periyár and Vaigai rivers and the locality affected by the project.

(2) *Plate II* showing the plan of lake and ground in its immediate neighbourhood with contours at 50 feet vertical intervals.

(3) *Plate III* showing the main and branch channels, etc., of the project.

(4) *Plate IV* showing the cross section of the main dam.

(5) *Plate V* showing the plan and section of the water-shed tunnel.

(Signed) J. P. DAVIDSON,
Ag. Chief Engineer for Irrigation.

According to Forecast No. I.

PERIYÁR PROJECT.

TABLE I.—Summary of actual and estimated direct charges on capital account.

1	Works.					Total.	Less receipts on capital accounts.	Net total.
	Land compensation.	Other works.	Total.	Establishment.	Tools and plant.			
2	3	4	5	6	7	8	9	
RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	
Actuals to end of 1896-97	1,14,898	59,54,854	60,69,752	13,46,177	7,28,291	81,44,220	14,203	81,30,017
" during 1897-98	5,725	1,32,205	1,37,930	29,265	4,360	1,62,835	..	1,62,835
" " 1898-99	8,740	1,07,305	1,16,045	24,045	..	1,40,090	..	1,40,090
" " 1899-1900	4,456	57,928	62,379	12,935	..	75,314	..	75,314
" " 1900-1901	2,585	38,475	41,060	8,979	..	50,039	..	50,039
" " 1901-1902	5,344	29,673	35,017	6,822	..	41,839	213	41,626
	26,850	3,65,581	3,92,431	82,046	4,360	4,70,117	213	4,69,904
Total, Actuals	1,41,748	63,20,435	64,62,183	14,28,223	7,23,931	86,14,337	14,416	85,99,921
Final grant, 1902-1903	4,277	36,849	41,126	8,474	..	49,600	..	49,600
Budget estimate, 1903-1904	28,968	2,74,660	2,98,628	63,172	..	3,61,800	..	3,61,800
Amounts included in the programme for the year ending 1904-1905	..	66,800	66,800	15,364	..	82,164	..	82,164
" "								

TABLE II.—Summary of actual and estimated indirect charges on capital account.

Years.	Capitalized abatment of land revenue.	Leave and pension allowances.	Total.
	RS.	RS.	RS.
Actuals to end of 1896-97	34,661	1,88,466	2,23,127
Actuals during 1897-98	9,062	4,097	13,159
" " 1898-99	9,011	3,366	12,377
" " 1899-1900	12,548	1,811	14,359
" " 1900-1901	14,096	1,257	15,353
" " 1901-1902	14,438	955	15,393
	59,153	11,486	70,641
Total, Actuals	93,816	1,99,952	2,93,768
Final grant, 1902-1903	5,348	1,186	6,532
Budget estimate, 1903-1904	29,761	8,841	38,605
Amounts included in the pro- gramme for the year ending 1904-1905	..	2,151	2,151
Amounts included in the pro- gramme for the year ending 1905-1906	..	1,449	1,449
Total	35,107	13,630	48,737
Grand Total	1,28,923	2,13,582	3,42,505

TABLE III.—Estimate of the growth of irrigation and revenue receipts and charges with reference to the Board's revised forecast No. I.

Years.	Area charged as irrigated at end of each year.		Estimate of revenue receipts and charges.					
			Gross revenue due to improvements.			Working expenses (Direct and Indirect).	Net revenue due to works.	
	First crop.	Second crop.	Direct.	Indirect.	Total.		Including indirect revenue.	Excluding indirect revenue.
1	2	3	4	5	6	7	8	9
Actuals to end of 1896-97	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	..
Actuals during 1897-98	72,365	22,040	684	1,10,355	1,10,895	44,160	66,215	..
" " 1898-99	79,377	29,648	581	2,16,894	2,11,578	89,565	1,22,013	..
" " 1899-1900	93,374	35,859	1,220	2,76,702	2,77,288	1,33,583	1,43,730	..
" " 1900-1901	104,352	38,517	1,624	3,41,050	3,42,270	1,25,337	2,16,933	..
" " 1901-1902	110,799	48,063	1,615	4,07,625	4,09,240	1,06,511	3,02,788	..
Total, Actuals	..	..	5,724	18,12,330	18,18,054	6,94,113	11,93,941	..
Probable during 1902-1903	108,514	87,660	1,600	5,09,794	5,11,394	1,60,040	3,51,354	..
Estimate for 1903-1904	113,941	63,170	1,600	5,79,339	5,80,989	1,67,268	4,13,701	..
" " 1904-1905	119,321	66,630	2,000	6,48,649	6,50,649	1,71,017	4,79,632	..
" " 1905-1906	124,891	71,190	2,000	7,17,129	7,19,129	1,74,483	5,44,646	..
" " 1906-1907	130,181	75,650	2,000	7,88,869	7,90,869	1,78,073	6,12,792	..
Total	..	..	9,200	32,43,810	32,53,010	8,50,831	24,02,179	..
Grand Total	..	..	14,924	50,56,140	50,71,064	14,74,944	35,06,120	..

* The figures for this year are actuals as given by the Board of Revenue.

TABLE IV.—Estimate of net financial results.

Years.	Direct Capital outlay during the year.	Direct Capital outlay to end of the year.	Simple interest at 4 per cent. on outlay to end of 31st March 1900, 3½ thereafter, and on half the outlay of the year.	Net revenue including indirect revenue (column 8 of Table III).	Simple interest less net revenue.	Net revenue less simple interest.
1	2	3	4	5	6	7
	RS.	RS.	RS.	RS.	RS.	RS.
Actuals to end of 1896-97	..	81,30,017	16,08,402	66,215	15,40,187	..
Actuals during 1897-98	1,62,855	82,92,852	3,28,167	1,22,013	2,06,044	..
" 1898-99	1,40,690	84,32,942	3,34,616	1,43,730	1,90,786	..
" 1899-1900	75,314	85,08,256	3,38,824	2,16,938	1,21,891	..
" 1900-1901	50,039	85,68,295	3,41,268	3,02,738	38,530	..
" 1901-1902	41,026	85,99,921	3,42,987	3,42,312	676	..
Total	..	..	32,92,454	11,93,941	20,98,513	..
Final grant for 1902-1903	49,600	86,49,521	3,44,698	3,51,354	..	6,556
Budget estimate, 1903-1904	3,61,800	90,11,321	3,52,411	4,13,701	..	61,290
Estimate, 1904-1905	82,164	90,98,485	3,69,786	4,78,632	..	1,18,896
" 1905-1906	55,350	91,48,835	3,63,314	5,44,696	..	1,81,384
" 1906-1907	..	91,48,835	3,64,352	6,12,796	..	2,48,444
Total	..	..	17,85,511	24,02,179	..	6,16,670
Total	..	..	50,77,965	35,96,120	20,98,513	6,16,670
					14,61,845	

According to Forecast No. II.

TABLE I.—Summary of actual and estimated direct charges on capital account.

Years.	Works.			Establishment.	Tools and plant.	Total.	Less receipts on capital account.	Net total.
	Land reclamation.	Other works.	Total.					
1	2	3	4	5	6	7	8	9
	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
Actuals to end of 1896-97	1,14,898	69,54,854	60,69,752	13,46,177	7,28,291	81,44,220	14,203	81,30,017
Actuals during 1897-98	5,725	1,32,205	1,37,930	29,265	— 4,360	1,62,835	..	1,62,835
" 1898-99	8,740	1,07,305	1,16,045	24,045	..	1,40,090	..	1,40,090
" 1899-1900	4,559	67,923	72,482	12,925	..	75,814	..	75,814
" 1900-1901	2,585	36,475	39,060	8,979	..	50,039	..	50,039
" 1901-1902	5,344	29,973	35,317	6,822	..	41,839	218	41,696
Total, Actuals	26,859	8,65,681	3,92,481	82,046	— 4,360	4,70,117	218	4,69,904
Final grant, 1902-1903	4,277	36,849	41,126	8,474	..	49,600	..	49,600
Budget estimate, 1903-1904	23,968	2,74,660	2,98,628	63,172	..	3,61,800	..	3,61,800
Estimate, 1904-1905	..	66,800	66,800	15,364	..	82,164	..	82,164
Estimate, 1905-1906	..	45,000	45,000	10,350	..	55,350	..	55,350
Total	28,245	4,23,309	4,51,554	97,360	..	5,48,914	..	5,48,914
Grand Total	1,69,993	67,43,744	69,13,737	15,25,583	7,23,931	91,63,261	14,416	91,48,845

TABLE II.—Summary of actual and estimated indirect charges on capital account.

Years.	Capitalized abatement of land revenue.	Leave and pension allowances.	Total.
	RS.	RS.	RS.
Actuals to end of 1896-97	31,661	1,88,466	2,23,127
Actuals during 1897-98	9,062	4,097	13,159
" 1898-99	9,011	3,366	12,377
" 1899-1900	12,548	1,811	14,359
" 1900-1901	14,096	1,257	15,353
" 1901-1902	11,438	955	12,393
Total, Actuals	59,155	11,486	70,641
Final grant, 1902-1903	5,846	1,186	6,532
Budget estimate, 1903-1904	29,761	8,844	38,605
Amounts included in the programme for the year ending 1905-1906	..	2,151	2,151
" 1905-1906	..	1,449	1,449
Total	55,107	13,630	68,737
Grand Total	1,28,923	2,13,582	3,42,505

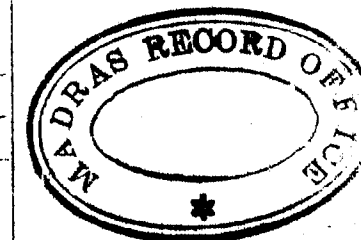


TABLE III.—Estimate of the growth of irrigation and revenue receipts and charges.

Years.	Area charged as irrigated at end of each year.		Estimate of revenue receipts and charges.					Net revenue due to works.
	First crop.	Second crop.	Gross revenue due to improvements.			Working expenses (direct and indirect).	Including indirect revenue.	Excluding indirect revenue.
1	2	3	4	5	6	7	8	9
	ACS.	ACS.	RS.	RS.	RS.	RS.	RS.	RS.
Actuals to end of 1896-97	..	..	..	1,10,395	1,10,395	44,180	66,215	..
Actuals during 1897-98	72,365	22,040	684	2,10,804	2,11,578	89,565	1,22,013	..
" 1898-99	79,377	29,646	581	2,76,702	2,77,283	1,33,553	1,43,720	..
" 1899-1900	93,373	35,859	1,220	3,41,050	3,42,270	1,25,337	2,16,933	..
" 1900-1901	104,352	38,517	1,624	4,07,625	4,09,249	1,06,511	3,02,738	..
" 1901-1902	110,799	43,063	1,613	4,65,664	4,67,279	1,44,967	3,42,312	..
Total	..	..	5,724	18,12,330	18,18,054	6,24,113	11,93,941	..
Revised estimate, 1902-1903	106,813	44,015	1,600	4,66,200	4,67,800	1,56,750	3,11,050	..
Budget estimate, 1903-1904	110,535	48,680	1,600	4,95,494	4,97,094	1,53,789	3,43,305	..
Estimate, 1904-1905	114,315	49,185	2,000	5,47,551	5,49,551	1,61,448	3,88,103	..
" 1905-1906	117,385	51,850	2,000	5,94,496	5,96,496	1,63,774	4,32,724	..
" 1906-1907	121,595	54,405	2,000	6,44,086	6,46,086	1,66,281	4,79,805	..
Total	..	..	9,200	27,48,127	27,57,327	8,02,040	19,55,287	..
Estimate, 1907-1908	..	..	14,924	45,60,457	45,75,381	14,26,153	31,49,228	..
" 1908-1909	123,945	58,270	2,000	6,59,151	6,61,151	1,66,115	4,95,036	..
" 1909-1910	126,325	58,125	2,000	6,74,296	6,76,296	1,66,595	5,09,401	..
" 1909-1910	126,355	59,000	2,000	6,80,756	6,82,756	1,66,000	5,16,756	..
Total	..	..	6,000	20,14,203	20,20,203	4,99,010	15,21,193	..
Estimate, 1910-11	..	..	20,924	65,74,660	65,95,584	19,25,163	46,70,421	..
" 1911-12	..	..	2,000	6,80,756	6,82,756	1,66,000	5,16,756	..
" 1912-13	..	..	2,000	6,80,756	6,82,756	1,66,000	5,16,756	..
" 1913-14	..	..	2,000	6,80,756	6,82,756	1,66,000	5,16,756	..
" 1914-15	..	..	2,000	6,80,756	6,82,756	1,66,000	5,16,756	..
" 1915-16	..	..	2,000	6,80,756	6,82,756	1,66,000	5,16,756	..
" 1916-17	..	..	2,000	6,80,756	6,82,756	1,66,000	5,16,756	..
" 1917-18	..	..	2,000	6,80,756	6,82,756	1,66,000	5,16,756	..
" 1918-19	..	..	2,000	6,80,756	6,82,756	1,66,000	5,16,756	..
" 1919-20	..	..	2,000	6,80,756	6,82,756	1,66,000	5,16,756	..
Total	..	..	20,000	68,07,560	68,27,560	16,60,000	51,67,560	..
Grand total	..	..	40,924	1,33,32,220	1,34,24,144	35,85,163	98,37,981	..

* The figures for this year are actuals as given by the Board of Revenue.

TABLE IV.—Estimate of net Financial results.

Years.	Direct capital outlay during the year.	Direct capital outlay to end of the year.	Simple interest at 4 per cent. on outlay to end of 31st March 1900, and on half the outlay of the year.	Net revenue including indirect revenue (column 5 of Table III).	Simple interest less net revenue.	Net revenue less simple interest.
1	2	3	4	5	6	7
Actuals to end of 1896-97 ..	RS.	RS.	RS.	RS.	RS.	RS.
Actuals during 1897-98 ..	1,62,835	81,30,017	16,06,402	66,215	15,40,187	..
" " 1898-99 ..	1,40,090	84,32,942	3,31,516	1,22,013	2,06,044	..
" " 1899-1900 ..	75,314	85,08,256	8,38,824	1,43,730	1,90,786	..
" " 1900-1901 ..	50,039	85,58,295	8,41,268	2,16,933	1,31,891	..
" " 1901-1902 ..	41,626	85,99,921	8,42,987	3,02,788	38,530	..
Total ..	..	..	32,02,454	11,93,941	20,98,613	..
Final grant for 1902-1903 ..	49,600	86,49,521	3,44,698	3,11,050	33,648	..
Budget estimate, 1903-1904 ..	3,61,800	90,11,321	3,52,411	3,43,305	9,106	..
Estimate, 1904-1905 ..	82,164	90,93,485	3,60,736	3,88,403	..	37,667
" 1905-1906 ..	55,350	91,48,835	3,63,314	4,32,784	..	62,410
" 1906-1907 ..	..	91,48,835	3,64,352	4,79,806	..	1,16,453
Total ..	..	..	17,85,511	19,55,287	42,754	2,12,530
Estimate, 1907-1908 ..	..	91,48,835	3,64,352	4,95,030	..	1,30,564
" 1908-1909 ..	..	91,48,835	3,64,352	5,09,401	..	1,45,049
" 1909-1910 ..	..	91,48,835	3,64,352	5,16,756	..	1,52,404
Total ..	..	..	10,93,056	15,21,193	..	4,28,137
Estimate, 1910-11 ..	..	91,48,835	3,64,352	5,16,756	..	1,52,404
" 1911-12 ..	..	91,48,835	3,64,352	5,16,756	..	1,52,404
" 1912-13 ..	..	91,48,835	3,64,352	5,16,756	..	1,52,404
" 1913-14 ..	..	91,48,835	3,64,352	5,16,756	..	1,52,404
" 1914-15 ..	..	91,48,835	3,64,352	5,16,756	..	1,52,404
" 1915-16 ..	..	91,48,835	3,64,352	5,16,756	..	1,52,404
" 1916-17 ..	..	91,48,835	3,64,352	5,16,756	..	1,52,404
" 1917-18 ..	..	91,48,835	3,64,352	5,16,756	..	1,52,404
" 1918-19 ..	..	91,48,835	3,64,352	5,16,756	..	1,52,404
" 1919-20 ..	..	91,48,835	3,64,352	5,16,756	..	1,52,404
Total ..	..	..	36,13,520	51,67,560	..	15,23,040
Grand Total ..	..	..	98,14,541	98,37,081	21,41,267	21,64,707
						23,410

PERIYAR PROJECT.

STATEMENT A.—Schedule of works carried out under the construction estimate showing expenditure to 31st March 1897, the date on which the construction estimate sanctioned by the Secretary of State was closed.

Serial number.	Classification.		Names of works.	Amount of estimate.	Expenditure to end of 31st March 1897.		Difference.		Reference to order sanctioning the estimate.	Explanation of important variations between estimate and expenditure.
	Main head.	Sub-head.			RS.	RS.	Saving.	Excess.		
1	(1) Head works		49. IRRIGATION.	80,355	81,086	..	..	731	G.O. No. 97 I., dated 3rd February 1894.	Excess due to the change of the design directed by the Chief Engineer in his notice printed in the progress report for March 1895, vide G.O. No. 448 I., dated 30th May 1895.
2	Do.	1. Preliminary expenses.	Preliminary expenses	24,60,000	24,18,297	41,703	..	..	G.O. No. 97 I., dated 3rd February 1894.	
3	Do.	2. Works	Main dam	29,115	29,115	..	..	..	G.O. No. 557 I., dated 13th July 1896.	
4	Do.	Do.	Temporary dams	2,70,000	2,71,202	..	..	1,202	G.O. No. 97 I., dated 3rd February 1894.	
5	Do.	Do.	Right bank escape	79,885	90,882	..	..	10,997	G.O. No. 557 I., dated 13th July 1896.	
6	Do.	Do.	Left bank escape	2,47,000	2,48,537	..	..	1,537	G.O. No. 763 I., dated 20th September 1895.	
7	Do.	Do.	Watershed cutting	4,91,000	5,26,009	..	..	35,009	G.O. No. 97 I., dated 3rd February 1894.	Excess due to a larger outlay having been incurred on sluices and to the provision of a measuring weir at a cost of Rs. 3,000 vide G.O. No. 761 I., dated 6th February 1896.
8	Do.	4. Buildings	Buildings	3,50,000	2,82,981	67,019	..	..	G.O. No. 97 I., dated 3rd February 1894.	
9	Do.	5. Miscellaneous items	Miscellaneous items	1,80,000	1,76,647	3,353	..	..	G.O. No. 131 I., dated 6th February 1896.	
10	Do.	6. Maintenance	Maintenance during construction	96,945	74,559	22,386	..	..	G.O. No. 97 I., dated 3rd February 1894.	
11	Do.	Unforeseen works.	Unforeseen works	60,000	27,665	32,335	..	..	G.O. No. 97 I., dated 3rd February 1894.	
12	(2) Main canals and branches.		Total (1) Head works	43,47,000	42,96,700	1,20,300	..	..		
13	Do.	Preliminary expenses	Surveying, lockpitting, etc.	34,708	24,650	10,058	..	..		
14	Do.	Land	I. Reach	18,191	18,373	182	..	..		
15	Do.	Do.	II. "	8,988	7,431	1,557	..	..		
16	Do.	Do.	III. "	19,496	19,549	53	..	..		
17	Do.	Do.	IV. "	5,554	5,610	56	..	..		
18	Do.	Do.	V. "	9,501	9,463	38	..	..		
19	Do.	Do.	VI. "	3,837	4,171	334	..	..		
20	Do.	Do.	VII. "	2,409	2,499	90	..	..		
21	Do.	Do.	VIII. "	1,038	1,396	358	..	..		
22	Do.	Do.	IX. "	725	735	10	..	..		
23	Do.	Do.	X. "	361	367	6	..	..		
24	Do.	Do.	XI. "	5,854	4,050	1,804	..	..	G.O. No. 97 I., dated 3rd February 1894.	
25	Do.	Do.	XII. "	500	..	500	..	..		

Statement A.—Schedule of works carried out under the construction estimate showing expenditure to 31st March 1897, the date on which the construction estimate sanctioned by the Secretary of State was closed—cont.

Serial number	Classification.		Names of works.	Amount of estimate.	Expenditure to end of 31st March 1897.	Difference.		Reference to order sanctioning the estimate.	Explanation of important variations between estimate and expenditure.
	Main head.	Sub-head.				Saving.	Excess.		
			49. IRRIGATION—cont.						
			L. Reach.	Rs.	Rs.	Rs.			
			Head sluice to Perany ..						
			Securing sluice at Perany ..						
			Head sluice to Vadagalai channel ..						
			Store shed at Perany ..	50,834	49,928	906			
			Irrigation sluice at 1 mile, 180 feet ..						
			Do. at 5 miles, 4 furlongs ..						
			II. Reach.						
			Regulator, and sluice to supply Rengasamudram tank.	12,190	11,225	965			
			III. Reach.						
			Sluices Nos. 1 to 3, and sluice at 11 miles 5 furlongs and 500 feet.	5,408	7,971	..	2,475		
			IV. Reach.						
			Sluice ..	1,388	1,386	..	..		
			V. Reach ..	..	693	..	693		
			VII. Reach ..	..	543	..	543		
			VIII. Reach. a						
			Regulator and bridge combined ..	8,160	7,944	216	..		
			IX. Reach.						G.O. No. 97 L., dated 3rd February 1894.
			Sluice ..	650	633	17	..		
			X. Reach.						
			Sluice ..	660	..	660	..		
			XI. Reach.						
			Sluice ..	1,150	..	1,150	..		
			I. Reach.						
			Fall and bridge ..	6,625	4,500	2,125	..		
			III. Reach.						
			Drop ..	2,075	2,075	..	..		
			IV. Reach.						
			Weir for Konyangulam tank ..	592	..	..	..		
			Weir in the Konyangulam sluicing ..	158	..	..	..		
			VI. Reach.						
			Weir at the west end of Vadakkulam tank ..	3,929	3,929	..	..		

VIII. Reach.								
40	(2) Main canals and branches.	Falls and weir	Outlet weir, Papatukam right bank ..	2,440	2,440	..		
41	Do.	Do.	Do. do. left bank ..	..	..	..		
XI. Reach.								
42	(2) Main canals and branches.	Falls and weir	Outlet weir to Davimangalam tank ..	1,780	..	..		
43	Do.	Do.	Do. to Pudukulam tank ..	2,830	5,961	1,499		
44	Do.	Do.	Number 2 outlet weir to Pudukulam tank ..	1,700	..	..		
45	Do.	Do.	One fall ..	1,160	..	..		
XII. Reach.								
46	(2) Main canals and branches.	Falls and weir	One fall ..	1,000	..	1,000		
47	(2) Main canals and branches.	Rivers and hill torrent works.	Aqueduct of 3 vents ..	17,485	(a) 17,485	..		
48	(2) Main canals and branches.	Other cross drainage works.	Surplus sluice for Kamaraipuram tank ..	34,543	..	..		
49	Do.	Do.	Culvert at 4 furlongs ..	9,310	..	..		
50	Do.	Do.	Do. at 2 miles, 4 furlongs ..	7,250	..	..		
51	Do.	Do.	Sheet iron trough ..	1,000	..	..		
52	Do.	Do.	Aqueduct at 2 miles, 7 furlongs and 234 feet ..	3,441	76,023	1,921		
53	Do.	Do.	Culvert at 3 miles, 1 furlong and 470 feet ..	4,545	..	..		
54	Do.	Do.	Aqueduct at 3 miles, 2 furlongs and 500 feet ..	4,858	..	..		
55	Do.	Do.	Culvert at 5 miles, 4 furlongs ..	3,120	..	..		
56	Do.	Do.	Do. at Kamaraipuram ..	5,035	..	..		
II. Reach.								
57	(2) Main canals and branches.	Other cross drainage works.	Culvert at 8 miles ..	5,070	..	..		
58	Do.	Do.	Aqueduct of 2 vents at 10 miles ..	19,874	28,384	..		
59	Do.	Do.	Cross drainage works ..	8,440	..	..		
III. Reach.								
60	Do.	Do.	Superpassage ..	15,418	..	..		
61	(2) Main canals and branches.	Other cross drainage works.	Aqueduct of 3 vents ..	24,852	..	..		
62	Do.	Do.	Superpassage at 13 miles ..	13,736	1,10,733	1		
63	Do.	Do.	Do. at 14 miles ..	15,747	..	..		
64	Do.	Do.	Do. at 15 miles ..	11,749	..	..		
65	Do.	Do.	Do. at 15 miles, 4 furlongs and 589 feet ..	15,757	..	..		
66	Do.	Do.	Do. at 15 miles, 7 furlongs and 410 feet ..	14,253	..	..		
IV. Reach.								
67	(2) Main canals and branches.	Other cross drainage works.	Culvert at left approach, 3rd accommodation bridge ..	222	..	..		
68	Do.	Do.	Do. at 17 miles and 3 feet ..	6,767	..	..		
69	Do.	Do.	Sheet iron trough ..	1,083	8,978	..		
70	Do.	Do.	Do. (new one) ..	1,178	..	..		

(c) Included under F (1) in the administrative accounts.

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Statement A.—Schedule of works carried out under the construction estimate showing expenditure to 31st March 1897, the date on which the construction estimates sanctioned by the Secretary of State was closed—cont.

Classification.		Names of works.	Amount of estimate.	Expenditure to end of 31st March 1897.	Difference.		Reference to order sanctioning the estimate.	Explanation of important variation between estimate and expenditure.
Main head.	Sub-head.				Saving.	Excess.		
49. IRRIGATION—cont.								
V. Reach.								
71	(2) Main canals and branches.	Other cross drains.	Superpassage for Shattayar crossing ..	17,211				
72	Do.	Do.	Do. for Marangulbar ..	26,616	55,374			
73	Do.	Do.	Iron trough at 12 miles, 6 furlongs ..	863				
74	Do.	Do.	Do. at 19 miles and 400 feet ..	867				
75	Do.	Do.	Culvert at 19 miles and 379 feet ..	5,379				
76	Do.	Do.	Do. at 19 miles, 6 furlongs and 489 feet ..	3,458				
VI. Reach.								
77	(2) Main canals and branches.	Other cross drains.	Syphon culvert at 21 miles, 4 furlongs and 475 feet ..	4,324				
78	Do.	Do.	Do. at 21 miles, 7 furlongs and 323 feet ..	4,941				
79	Do.	Do.	Sheet iron trough at 21 miles, 7 furlongs and 500 feet ..	782				
80	Do.	Do.	Superpassage ..	8,890	22,965	572		
81	Do.	Do.	Culvert at 24 miles, 1 furlong and 110 feet ..	2,850				
82	Do.	Do.	Sheet iron trough at 24 miles, 9 furlongs and 360 feet ..	1,011				
VII. Reach.								
83	(3) Main canals and branches.	Other cross drains.	Culvert at 24 miles, 6 furlongs and 212 feet ..	3,791				
84	Do.	Do.	Superpassage at 25 miles, 4 furlongs and 70 feet ..	10,192	20,402	1,233		
85	Do.	Do.	Culvert at 26 miles, 3 furlongs and 360 feet ..	6,609				
VIII. Reach.								
86	(2) Main canals and branches.	Other cross drains.	Diverting Vaguram odai to Kanninar odai ..	1,000	1,654	54		
IX. Reach.								
87	(3) Main canals and branches.	Other cross drains.	Culvert at 27 miles, 6 furlongs and 100 feet ..	7,983	12,840			
88	Do.	Do.	Do. at 28 miles, 2 furlongs and 560 feet ..	5,546				
X. Reach.								
89	(3) Main canals and branches.	Other cross drains.	Culvert at 28 miles, 7 furlongs and 300 feet ..	3,500	9,177			
90	Do.	Do.	Do. at 29 miles, 4 furlongs and 420 feet ..	5,637				
XI. Reach.								
91	(3) Main canals and branches.	Other cross drains.	Culvert at 30 miles, 3 furlongs and 579 feet ..	3,500				
92	Do.	Do.	Superpassage at 31 miles, 240 feet ..	2,550				
93	Do.	Do.	Do. at 22 miles, 5 furlongs and 410 feet ..	2,600				
94	Do.	Do.	Culvert at 23 miles, 3 furlongs ..	1,930				
95	Do.	Do.	Do. at 25 miles, 3 furlongs and 600 feet ..	2,110				
96	Do.	Do.	Do. at 26 miles, 4 furlongs and 200 feet ..	1,300				
97	Do.	Do.	Outlet work to Kallarank tank at 24 miles, 4 furlongs and 500 feet ..	1,720	21,755			
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98	Do.	Do.	Outlet work to Odayanthal tank at 35 miles 2 furlongs and 400 feet.	3,050						
99	Do.	Do.	Three iron troughs ..	3,900						
XII. Reach.										
100	(2) Main canals and branches.	Other cross drains.	One outlet work ..	1,000				1,000		
101	(2) Main canals and branches.	Bridges	Bridge for South Indian Railway ..	14,860						
102	Do.	Do.	Bridge at 1 mile 4 furlongs and 803 feet ..	2,716						
103	Do.	Do.	Accommodation bridge to replace the one built by the ryots at 4 miles ..	3,148	26,138					
104	Do.	Do.	Bridge at 7 miles ..	5,414						
II. Reach.										
105	(2) Main canals and branches.	Bridges	Bridge ..	5,906	6,903					
III. Reach.										
106	(2) Main canals and branches.	Bridges	No. I. Accommodation bridge ..	3,290						
107	Do.	Do.	Do. 2. ..	3,385						
108	Do.	Do.	Do. 3. ..	3,957	10,632					
IV. Reach.										
109	(2) Main canals and branches.	Bridges	Bridges at 17 miles 7 furlongs 495 feet ..	3,100	3,071	29				
V. Reach.										
110	(2) Main canals and branches.	Bridges	Bridge ..	3,809						
111	Do.	Do.	Do. ..	3,552	7,361					
VI. Reach.										
112	(2) Main canals and branches.	Bridges	Bridge at 20 miles 6 furlongs and 300 feet ..	2,100						
113	Do.	Do.	Do. at 21 miles 5 furlongs and 640 feet ..	2,600						
114	Do.	Do.	Do. at 23 miles 1 furlong and 64 feet near Velichattam ..	3,394	7,975	119				
VII. Reach.										
115	(2) Main canals and branches.	Bridges	Bridge at 24 miles 7 furlongs, 480 feet ..	3,854						
116	Do.	Do.	Do. across cart-track from Thopampatti to hills at 26 miles 2 furlongs 160 feet ..	3,140	4,641	2,028				
117	Do.	Do.	Culvert in the north approach to Nattam bridge ..	330						
X. Reach.										
118	(2) Main canals and branches.	Bridges	Bridge at 29 miles 1 furlong and 240 feet ..	2,000	1,938	62				
XI. Reach.										
119	(2) Main canals and branches.	Bridges	Bridge at 30 miles 1 furlong ..	2,160						
120	Do.	Do.	Do. at 32 miles 3 furlongs and 580 feet ..	1,460	4,231	2,969				
121	Do.	Do.	One bridge near Pulipattin tract ..	2,560						
122	Do.	Do.	Do. near Kunjattam tank near Vellalattitrack ..	1,000						

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Statement A--Schedule of works carried out under the construction estimate showing expenditure to 31st March 1897, the date on which the construction estimate sanctioned by the Secretary of State was closed--cont.

Classification.		Names of works.	Amount of estimate.	Expenditure to end of 31st March 1897.		Difference.	Reference to order sanctioning the estimate.	Explanation of important variations between estimate and expenditure.
Main head.	Sub-head.			Rs.	Pross.			
49. IRRIGATION—cont.								
I. Reach.								
123	(2) Main Canals and Branches.	Buildings	Lascar shed at Ramarajapuram	1,698				
124	Do.	Do.	Shed at Peranal: Improving—	98				
125	Do.	Do.	Do.	1,206	6,453	387		
126	Do.	Do.	Nachikulam shed repairs	253				
127	Do.	Do.	Lascar shed No. 1 at Peranal	1,419				
128	Do.	Do.	Do. No. 2	1,417				
II. Reach.								
129	(3) Main Canals and Branches.	Buildings	Buildings	..	310	310		
III. Reach.								
130	(2) Main Canals and Branches.	Buildings	Rest-house at Andipatti	244	1,963	1,719		
V. Reach.								
131	(2) Main Canals and Branches.	Buildings	Rest-house with outhouses at Mettupatti	4,214	4,627	327		
132	Do.	Do.	Do. maintenance	86				
VIII. Reach.								
133	(2) Main Canals and Branches.	Buildings	Rest-house at Kallandri	2,332	2,980	698		G.O. No. 97 L, dated 3rd February 1894.
IX. Reach.								
134	(2) Main Canals and Branches.	Buildings	Shed at Mangalam	445				
135	Do.	Do.	Rest-house for No. II Division near Nachikulam	2,708				
136	Do.	Do.	Stables and bath-rooms attached to Peranal storeroom.	111				
137	Do.	Do.	Providing roofing doors and windows to the store head at Peranal.	674				
138	Do.	Do.	Providing roofing doors and windows to the rest-house at Nachikulam.	60				
139	Do.	Do.	Rest-house at Nachikulam: Demolishing	78				
140	Do.	Do.	Thatched shed at Peranal	67				
141	Do.	Do.	Constructing a rest-house at Andipatti in 3rd reach with outhouses.	2,480				
142	Do.	Do.	Constructing cook-room and stable for rest-house at Kallandri in the 8th reach.	1,115	14,436	..		
143	Do.	Do.	One new bungalow at Pulipatti, 11th reach	8,400				
144	Do.	Do.	Lascar's shed at regulator in the 2nd reach	1,650				
145	Do.	Do.	Do. for regulator at the 8th reach	1,650				
X. Reach.								
146	(2) Main Canals and Branches.	Buildings	Buildings	..	98	98		

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II. Reach.										
I. Reach.										
147	(2) Main Canals and Branches.	Buildings	Buildings		7,221			7,221		
Earthwork										
148	(2) Main Canals and Branches.	Earthwork	Earthwork	1,50,000						
149	Do.	Do.	Embankment to left Vadamalai channel	260	1,81,151			30,393		
150	Do.	Do.	Embanking Vadamalai channel left bank	498						
II. Reach.										
151	(2) Main Canals and Branches.	Earthwork	Earthwork	53,541	53,541					
III. Reach.										
152	(2) Main Canals and Branches.	Earthwork	Earthwork	1,03,023	1,03,644			416		
153	Do.	Do.	Annual repairs to banks	125						
IV. Reach.										
154	(2) Main Canals and Branches.	Earthwork	Earthwork	24,992	24,992					
V. Reach.										
155	(2) Main Canals and Branches.	Earthwork	Earthwork	30,300	30,300					
VI. Reach.										
156	(2) Main Canals and Branches.	Earthwork	Earthwork	49,300	51,395			2,095		
VII. Reach.										
157	(2) Main Canals and Branches.	Earthwork	Earthwork	22,405	22,405					
VIII. Reach.										
158	(2) Main Canals and Branches.	Earthwork	Earthwork	14,500	14,952			452		
IX. Reach.										
159	(2) Main Canals and Branches.	Earthwork	Earthwork	10,099	10,108			9		
X. Reach.										
160	(2) Main Canals and Branches.	Earthwork	Earthwork	4,200	4,365			165		
XI. Reach.										
161	(2) Main Canals and Branches.	Earthwork	Earthwork	39,512	65,398			25,886		
XII. Reach.										
162	(2) Main Canals and Branches.	Earthwork	Earthwork	6,000	6,532			532		
General.										
163	(2) Main Canals and Branches.	Miscellaneous	Demarcating the line of main and branch channels from the beginning to the end and land required for Government buildings.	6,800	5,433			867		
164	Do.	Do.	Sluice at 5 feet 10 chains	203						
165	Do.	Do.	Sluice at 12 miles, 3 furlongs and 150 feet	632						
166	Do.	Do.	Sluice at Valangulam channel	729	3,613			1,127		
167	Do.	Do.	Sluice at right bank	572						
168	Do.	Do.	Maintenance of work during construction	260						
169	Do.	Do.	Maintenance of work during construction	17,098	3,380			13,718		

Excess due to sub-soil met with in course of excavation having been of a different nature from that anticipated.

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Excess due to payment of extra rates for excavation of harder soil than anticipated.

Statement A.—Schedule of works carried out under the construction estimate showing expenditure to 31st March 1897, the date on which the construction estimate sanctioned by the Secretary of State was closed—*cont.*

Classification.		Names of works.	Amount of estimate.	Expenditure to end of 31st March 1897.	Difference.		Reference to order sanctioning the estimate.	Explanation of important variations between estimate and expenditure.
Main head.	Sub-head.				Saving.	Excess.		
49. IRRIGATION— <i>cont.</i>								
I. Reach.								
170	(2) Main Canals and Branches.	Culvert No. 1 in Mattapara fields at 2 miles 7 furlongs. Repairs to —.	164					
171	Do.	Culvert No. 2 in Mattapara fields at 3 miles 1 furlong and 400 feet. Repairs to —.	102					
172	Do.	Culvert No. 3 in Mattapara fields at 3 miles 3 furlongs and 400 feet. Repairs to —.	130					
173	Do.	Culvert at 6 miles between Ramarajapuram and Nachikulam tanks.	84					
174	Do.	Working shutters at Ramarajapuram surplus sluice ..	454					
175	Do.	Do. do. ..	518					
176	Do.	Working shutters of head and scouring sluice and Vadagara head sluice at Paramal.	489					
177	Do.	Do. do. ..	518					
178	Do.	Branches in banks of Mattapara fields in 2nd, 3rd and 4th miles, closing ..	164	30,286		23,293		
179	Do.	First 2½ miles, maintenance ..	500					
180	Do.	Culvert at 3 miles 3 furlongs, maintenance ..	145					
181	Do.	Do. at 2 " " " "	81					
182	Do.	Strengthening old wing of Peralai anicut and joining front wing.	86					
183	Do.	Graveling Nachikulam tank bund, 1st reach ..	320					
184	Do.	Culvert at 3 miles 1 furlong, maintenance ..	140					
185	Do.	Do. at 3 " " 7 furlongs ..	138					
186	Do.	Providing tin covers to screw shafts to regulator, 1st reach.	90					
187	Do.	Repairing the culvert at 2 miles 2 furlongs, 1st reach.	170					
188	Do.	Raising banks to full height ..	2,030					
189	Do.	Cutting approaches to regulator at 7 miles 3 furlongs.	700					
II. Reach.								
190	(2) Main Canals and Branches.	Main channel maintenance ..	1,455					
191	Do.	Raising banks to full height ..	709					
192	Do.	Paving length of No. 2 masonry work for cart traffic ..	336					
193	Do.	Training the drainage channels through No. 3 masonry dam.	609					
194	Do.	No. 2 Cross drainage works, repairs ..	86					
195	Do.	Removing silt in the bed of main channel ..	817	9,215		3,981		
196	Do.	Temporary fascines to work the screw shutters in regulator, 2nd reach, 7 miles 3 furlongs.	182					
197	Do.	Maintenance and repairs, masonry works, 2nd reach ..	280					
198	Do.	Removing two barriers and making a road-way from Vadipatty to 2nd cross drainage work, 2nd reach. Repairing 2nd cross drainage works and its approaches at 8 miles 6 furlongs and 485 feet.	610					
			290					
Excess due to want of provision in the revised estimate of the project for the upkeep and general maintenance, silt clearance, etc., of channels.								
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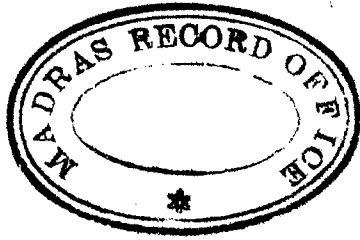
Excess due to want of provision in the revised estimate of the project for the upkeep and general maintenance, silt clearance, etc., of channels.

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III. Reach.								
199	(2) Main canals and Branches.	Maintaining main channel ..	370					
200	Do.	Do. rest-house, Andipatty ..	36					
201	Do.	Do. and repairing earthwork and masonry ..	708					
202	Do.	Forming dry stone apron to superpassage at No. 6 cross drainage work.	175					
203	Do.	Clearing silt in No. 6 cross drainage work ..	130					
204	Do.	Clearing and widening diversion cut at No. 1 cross drainage work.	214					
205	Do.	Clearing silt in 5th cross drainage ..	45					
206	Do.	Extending dry stone apron to superpassage at 2nd cross drainage and 4th cross drainage works.	218					
207	Do.	Strengthening main channel at 17 miles ..	353					
208	Do.	Maintaining 3rd Reach ..	392					
209	Do.	Do. masonry works ..	465					
210	Do.	Closing breaches and maintenance and repairs to earthwork.	1,353					
211	Do.	Andipatty rest-house, maintaining ..	47					
212	Do.	Do. do. maintenance ..	70					
213	Do.	Strengthening weak portions, main channel banks, at 5th cross drainage works.	665					
214	Do.	Strengthening banks of main channel near Thathavandampatty.	250					
215	Do.	Maintaining main channel ..	372					
216	Do.	Closing gaps in right bank of main channel at Nullah below, 1st accommodation bridge.	370					
217	Do.	Raising and strengthening both banks of third reach above 3rd cross drainage work.	500					
218	Do.	Raising and widening low portions of banks between 6th and 7th cross drainage works ..	1,060					
219	Do.	Two bankers to look after 3rd reach ..	144					
220	Do.	Widening diversion cut leading to 6th cross drainage work at 15 miles, 4 furlongs ..	450					
221	Do.	Closing breaches and clearing silt in diversion cut leading to 4th, 5th cross drainage works, 3rd reach.	250					
IV. Reach.								
222	Do.	Maintaining main channel ..	149					
223	Do.	Do. do. ..	181					
224	Do.	Closing breaches and repairs ..	55					
225	Do.	Removing barriers in the channel ..	460					
226	Do.	Rooting out sambai or bulrush ..	278					
227	Do.	Cutting drainage channel to Kuvankulam fields to protect the eastern too.	160					
228	Do.	Two bankers to look after 4th reach ..	144					
229	Do.	Clearing slush from culvert at 17 miles, 3 furlongs and 821 feet.	127					
230	Do.	Repairing banks, 4th reach ..	300					

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Statement A.—Schedule of works carried out under the construction estimate showing expenditure to 31st March 1897, the date on which the construction estimate sanctioned by the Secretary of State was closed—*cont.*

Serial Number	Classification.		Name of work.	Amount of estimate.	Expenditure to end of 31st March 1897.	Difference.		Reference to order sanctioning the estimate.	Explanation of important variations between estimate and expenditure.
	Main head.	Sub-head.				Saving.	Excess.		
49. IRRIGATION—cont.									
V. Reach.									
231	(2) Main Canals and Branches.	Maintenance	Maintaining main channel	Rs. 200	Rs.	Rs.			
232	Do.	Do.	Maintaining rest and storehouse at Mettupatty	45					
233	Do.	Do.	Maintaining rest house at Mettupatty	86					
234	Do.	Do.	Closing breaches and repairs	101					
235	Do.	Do.	Rooting out sand and brush	309					
236	Do.	Do.	Closing gaps and strengthening work portions of banks in						
237	Do.	Do.	Marangaliyar valley	143					
238	Do.	Do.	Maintaining 5th reach	177					
239	Do.	Do.	Widening nallah at superpassage, Marangaliyar	300					
240	Do.	Do.	Raising and strengthening low portions of 5th reach banks.	1,450	6,024		1,908		
241	Do.	Do.	Groynes at superpassage and revetment to 5th reach at Shattayar.	480					
242	Do.	Do.	Periodical repairs to rest house, Mettupatty	323					
243	Do.	Do.	Repairing and deepening well attached to rest house, Mettupatty.	126					
244	Do.	Do.	Revetment at low portions on the outside of left bank main channel.	100					
245	Do.	Do.	Clearing silt in the vents of culvert, 19 miles, 6 furlongs.	75					
246	Do.	Do.	Revetment to superpassage of Marangaliyar, 5th reach.	650					
VI. Reach.									
247	(2) Main Canals and Branches.	Maintenance	Closing breaches and repairs	457					
248	Do.	Do.	Maintaining retaining wall to rear dry stone apron of superpassage at Kuthikal odai.	174					
249	Do.	Do.	Raising Poolampatty tank bund overlying main channel.	130					
250	Do.	Do.	Closing breaches in Kuthikal odai	273	3,498		1,386		
251	Do.	Do.	Maintaining main channel.	167					
252	Do.	Do.	Protection at the head of diversion cut and revetment to superpassage at Kuthikal odai.	333					
253	Do.	Do.	Repairing both banks, 6th reach	300					
254	Do.	Do.	Cutting a catch drain to divert a small aulakh along the outer toe of left bank.	268					
VII. Reach.									
255	(2) Main Canals and Branches	Maintenance	Shed at chittampatty	25					
256	Do.	Do.	Closing breaches	146					
257	Do.	Do.	Maintaining	473					
258	Do.	Do.	Do.	1,520					
259	Do.	Do.	Maintaining culvert Sandi odai	200					

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260	Do.	Do.	Maintaining superpassage Alasingachi odai	..	100	..	..	..	..	..
261	Do.	Do.	Do.	..	150	..	..	..	..	..
262	Do.	Do.	Revetting the rear slope of left bank from Nattam bridge to coconut tree (25-32 chains).	..	170	..	..	..	..	..
VIII. Reach.										
263	(2) Main Canals and Branches.	Maintenance	Rest-house, Kallandry. Maintaining	..	28	..	..	..	..	..
264	Do.	Do.	Do.	..	28	..	..	..	..	..
265	Do.	Do.	Do.	..	170	1,007	..	468	..	..
266	Do.	Do.	Maintaining main channel, 8th reach	..	300	..	..	..	..	..
267	Do.	Do.	Do.	..	15	..	..	..	..	..
IX. Reach.										
268	(2) Main Canals and Branches.	Maintenance	Maintaining main channel, 9th reach	..	550	..	..	..	..	..
269	Do.	Do.	Maintaining culvert Valayapattan odai	..	100	..	..	..	..	..
270	Do.	Do.	Do.	..	150	1,897	..	852	..	..
271	Do.	Do.	Shed at Mangalam Periyayanni odai	..	212	..	..	..	..	..
272	Do.	Do.	Maintenance and repairs to 9th reach	..	250	..	..	..	..	..
X. Reach.										
273	(2) Main Canals and Branches.	Maintenance	Maintenance and repairs to 10th reach	..	360	..	..	..	..	..
274	Do.	Do.	Maintaining main channel, 10th reach	..	600	..	..	..	..	..
275	Do.	Do.	Do.	..	212	2,826	..	1,404	..	..
276	Do.	Do.	Do.	..	250	..	..	..	..	..
XI. Reach.										
277	(2) Main Canals and Branches.	Maintenance	Shed Kidaripatty maintenance	..	15	..	..	..	..	..
278	Do.	Do.	Watchman for rest-houses, 3rd, 5th, 8th, 10th and 11th reaches.	..	312	2,181	..	1,854	..	..
279	(3) Distributaries.	Preliminary	Old outlay	..	12,64,000	13,41,028	..	80,028	..	..
280	(3) Distributaries.	Preliminary	Preliminary expenses 2nd Branch Channel.	..	7,665	7,665	..	..	..	..
281	(3) Distributaries.	Preliminary	Preliminary expenses 3rd Branch Channel.	..	150	150	..	..	..	..
282	(3) Distributaries.	Preliminary	Preliminary expenses 3, 4, 5, and 6 branch channels	..	134	1,276	..	..	..	..
283	(3) Distributaries.	Preliminary	Surveying and lock-spitting 5th Branch Channel.	..	313	313	..	..	..	..
284	(3) Distributaries.	Preliminary	Surveying and lock-spitting 6th Branch Channel.	..	92	92	..	..	..	..
285	Do.	Do.	Aligning and lock-spitting the distributary channel and taking levels.	..	1,000	850	150	..	..	..
286	Do.	Do.	1st Branch channel, 43 acres wet	..	15,554	9,204	6,350	..	..	..
287	Do.	Do.	2nd " 18 " dry	..	810	425	385	..	..	..

G.O. No. 97 I., dated
3rd February 1894.

Statement A.—Schedule of works carried out under the construction estimate showing expenditure to 31st March 1897, the date on which the construction estimates sanctioned by the Secretary of State was closed—*cont.*

Classification.		Names of works.	Amount of estimate.	Expenditure to end of 31st March 1897.		Difference.		Reference to order sanctioning the estimate.	Explanation of important variations between estimate and expenditure.
Main head.	Sub-head.			Rs.	lbs.	Saving.	Excess.		
IRRIGATION— <i>cont.</i>									
6th Branch Channel— <i>cont.</i>									
287	(3) Distributaries.	Land	3rd Branch channel, 70 acres dry	3,150	2,714	438	..	..	..
288	Do.	Do.	4th " 180 "	8,100	6,063	2,047	..	..	..
289	Do.	Do.	5th " 65 "	2,525	966	1,619	..	..	..
290	Do.	Do.	6th " 15 "	1,221	971	250	..	..	..
291	Do.	Do.	7th " 20 "	1,000	41	956	..	..	..
292	Do.	Do.	8th " 60 "	2,900	770	2,130	..	..	..
293	Do.	Do.	9th " 200 "	12,950	4,270	8,680	..	..	..
294	Do.	Do.	5 acres wet, 205 acres dry	12,075	8,044	4,031	..	..	..
295	Do.	Do.	7 acres dry	8,150	2,372	771	..	..	..
296	Do.	Do.	130 acres dry	5,850	3,567	283	..	..	..
297	(3) Distributaries.	Regulators	1st Branch Channel.	936	4,310	..	2,260	..	..
298	(3) Distributaries.	Regulators	2nd Branch Channel.	1,114	..	..	..	..	..
299	(3) Distributaries.	Regulators	3rd Branch Channel.	2,260	1,624	2,250	..	..	..
300	Do.	Do.	Do.	1,624	..	..	..	..	..
301	(3) Distributaries.	Regulators	Head sluice	1,864	..	..	..	..	..
302	Do.	Do.	Do.	1,431	..	..	..	..	..
303	Do.	Do.	No. 1 regulator at 1 mile 5 furlongs and 470 feet for Thandalay tank.	448	5,394	..	1,408	G.O., No. 97 L, dated 3rd February 1894.	..
304	Do.	Do.	No. 4 regulator for Thandalay tank at the off-take of the minor distributary from Thandalay.	243	..	..	..	..	..
305	(3) Distributaries.	Regulators	5th Branch Channel.	1,071	1,071	..	480	..	..
306	Do.	Do.	Regulator	480	..	..	..	..	..
307	(3) Distributaries.	Regulators	6th Branch Channel.	1,100	733	267	..	..	..
308	(3) Distributaries.	Regulators	7th Branch Channel.	1,100	914	186	..	..	..
309	(3) Distributaries.	Regulators	8th Branch Channel.	1,100	1,205	855	..	..	..
310	Do.	Do.	Head sluice	960	..	..	..	..	..
311	(3) Distributaries.	Regulators	9th Branch Channel.	1,920	..	..	..	..	..
312	Do.	Do.	Five regulators	2,440	..	..	..	..	..
313	Do.	Do.	Head sluice at 23 miles 7 furlongs 100 feet. Regulator and drop combined to Chittampatti off-take at 24 miles 40 feet.	540	..	..	..	..	..
314	Do.	Do.	Regulator and drop combined to Kunmathur off-take	690	..	..	..	..	..
315	(3) Distributaries.	Regulators	10th Branch Channel.	1,150	3,629	2,281	..	..	..
316	Do.	Do.	Head sluice	840	..	..	..	..	..
317	Do.	Do.	3 Regulators	1,440	..	..	..	..	..
318	Do.	Do.	Head sluice, 20 miles 320 feet	2,430	..	..	..	..	..
319	(3) Distributaries.	Regulators	11th Branch Channel.	1,050	..	1,530	..	..	..
320	Do.	Do.	Regulator	480	..	..	..	..	..
321	(3) Distributaries.	Regulators	12th Branch Channel.	2,500	..	3,940	..	..	..
322	Do.	Do.	3. Regulators	1,440	..	..	..	..	..
323	(3) Distributaries.	Falls and weirs	I. Branch Channel.	931	..	..	..	..	..
324	Do.	Do.	No. 1, fall and sluice combined	671	..	..	..	..	..
325	Do.	Do.	do.	832	..	..	..	..	..
326	Do.	Do.	do.	809	..	..	..	..	..
327	Do.	Do.	do.	819	..	..	..	..	..
328	Do.	Do.	do.	832	..	..	..	..	..
329	Do.	Do.	do.	834	..	..	..	..	..
330	Do.	Do.	Lump sum	388	..	..	..	..	..
331	(3) Distributaries.	Falls and weirs	II. Branch Channel.	992	..	..	..	..	..
332	Do.	Do.	Fall and sluice combined at 3 furlongs 62 feet	1,013	2,005	640	..	..	..
333	Do.	Do.	Do. at 1 mile 3 furlongs and 14 feet	840	..	..	..	..	..
334	(3) Distributaries.	Falls and weirs	III. Branch Channel.	1,440	..	..	..	..	..
335	Do.	Do.	Two falls	980	..	..	..	..	..
336	Do.	Do.	One fall	1,092	..	..	..	..	..
337	Do.	Do.	No. 1, fall and sluice combined	1,147	..	..	..	..	..
338	Do.	Do.	do.	560	..	..	..	..	..
339	Do.	Do.	do.	594	..	..	..	..	..
340	Do.	Do.	do.	827	..	..	..	..	..
341	Do.	Do.	Fall	927	..	..	..	..	..
342	Do.	Do.	Do.	744	..	..	..	..	..
343	Do.	Do.	Seventh fall and sluice combined	1,098	..	..	..	..	..
344	(3) Distributaries.	Falls and weirs	IV. Branch Channel.	1,072	..	..	..	..	..
345	Do.	Do.	Fall with 2 sluices combined at 2 furlongs 144 feet	673	..	..	..	..	..
346	Do.	Do.	No. 2, fall in Thandalay branch at 5 furlongs 9 feet	1,010	..	..	..	..	..
347	Do.	Do.	Fall at 7 furlongs 483 feet	944	..	..	..	..	..
348	Do.	Do.	No. 3, fall and road tunnel combined in the Thandalay branch at 7 furlongs 589 feet.	947	..	..	..	..	..
349	Do.	Do.	Fall at 1 mile 2 furlongs and 488 feet	1,106	..	..	..	..	..
350	Do.	Do.	Fall and weirs combined at 1 mile 7 furlongs and 207 feet.	921	..	..	..	..	..
350	Do.	Do.	Fall and weirs combined at 1 mile 7 furlongs and 609 feet.	921	..	..	..	..	..

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Statement A.—Schedule of works carried out under the construction estimate showing expenditure to 31st March 1897, the date at which the construction estimate sanctioned by the Secretary of State was closed—*cont.*

Serial number.	Classification.		Names of works.	Amount of estimate.	Expenditure to end of 31st March 1897.		Difference.		Reference to order sanctioning the estimate.	Explanation of important variations between estimate and expenditure.
	Main head.	Sub-head.			Rs.	Rs.	Saving.	Excess.		
49. IRRIGATION—cont.										
IV. Branch Channel—cont.										
351	(3) Distributaries—cont.	Falls and weirs—cont.	No. 5, fall at 2 miles 2 furlongs and 117 feet	877						
352	Do.	Do.	Fall at 2 miles 3 furlongs and 539 feet	316						
353	Do.	Do.	No. 6, fall at 2 miles 5 furlongs and 437 feet	779						
354	Do.	Do.	Fall and 2 sluices combined at 2 miles 5 furlongs and 519 feet.	678						
355	Do.	Do.	No. 7, fall with two sluices at 3 miles 557 feet	988						
356	Do.	Do.	No. 8, fall at 3 miles 3 furlongs and 570 feet	932						
357	Do.	Do.	Fall and sluices combined at 4 miles 3 furlongs and 500 feet.	744						
358	Do.	Do.	No. 10, fall with two sluices combined at 4 miles 4 furlongs and 432 feet.	984						
359	Do.	Do.	No. 9, fall and sluices combined at 4 miles 7 furlongs and 360 feet.	723	17,194		1,817			
360	Do.	Do.	No. 1, fall with two sluices in the minor distributary, Thandalay branch at 4 furlongs 550 feet.	610						
361	Do.	Do.	No. 2, fall with two sluices in the minor distributary, Thandalay branch, 5 furlongs 306 feet.	380						
362	Do.	Do.	No. 3, fall with two sluices in the minor distributary, Thandalay branch, 6 furlongs 400 feet.	460						
363	Do.	Do.	No. 4, fall with two sluices in the minor distributary, Thandalay branch, 1 mile 2 furlongs and 200 feet.	610						
364	Do.	Do.	No. 5, fall with two sluices in the minor distributary, Thandalay branch, 1 mile 3 furlongs and 540 feet.	360						
365	Do.	Do.	Two falls	1,280						
366	Do.	Do.	One fall	870						
367	Do.	Do.	One fall	750						
V. Branch Channel.										
368	(3) Distributaries.	Falls and weirs.	Three falls	2,010						
369	Do.	Do.	Four "	2,560						
370	Do.	Do.	Two "	1,220						
371	Do.	Do.	Two "	1,180						
372	Do.	Do.	Fall No. 1 (aqueduct and sluice combined) at 350 feet.	799	5,289		4,152			
373	Do.	Do.	Do. 2 at 1 furlong 90 feet	284						
374	Do.	Do.	Do. 3 at 1 " 440 feet	478						
375	Do.	Do.	Sluice in Achampatti tank combined with fall No. 4	350						
376	Do.	Do.	No. 5, fall at 1 mile 1 furlong and 10 feet	560						
VI. Branch Channel.										
377	(3) Distributaries.	Falls and weirs.	Two falls	1,380						
378	Do.	Do.	Fall	600						
379	Do.	Do.	Two falls	1,260						
380	Do.	Do.	Falls and sluices, combined at 600 feet	580	2,465		2,185			
VII. Branch Channel.										
381	(3) Distributaries.	Falls and weirs	No. 2 fall at 4 furlongs 160 feet	240						
382	Do.	Do.	No. 3 " at 6 " 340 "	340						
383	Do.	Do.	No. 4 " at 7 " 380 "	280						
VIII. Branch Channel.										
384	(3) Distributaries.	Falls and weirs	Five falls	2,950			4,590			
385	Do.	Do.	Three falls	1,740						
IX. Branch Channel.										
386	(3) Distributaries.	Falls and weirs	Five falls	3,400						
387	Do.	Do.	Four "	2,520	2,687		5,063			
388	Do.	Do.	Three "	1,830						
IX. Branch Channel.										
389	(3) Distributaries.	Falls and weirs	Three falls	1,020						
390	Do.	Do.	Eight "	3,360						
391	Do.	Do.	Fall	650						
392	Do.	Do.	Four falls	2,560						
393	Do.	Do.	Fall No. 1 at 1 furlong 440 feet	3,060						
394	Do.	Do.	2 at 2 furlongs 180 feet	1,860						
395	Do.	Do.	" 3 at 3 " 120 "	1,320						
396	Do.	Do.	" 4 at 4 " 500 "	1,360						
397	Do.	Do.	" 5 at 1 mile 42 feet	1,340						
398	Do.	Do.	" 6 at 1 " 1 furlong 550 feet	1,930						
399	Do.	Do.	" 7 at 1 " 2 furlongs 600 "	1,000						
400	Do.	Do.	" 8 at 2 " 1 furlong 80 "	950						
401	Do.	Do.	" 9 at 5 " 2 furlongs 418 "	1,375						
402	Do.	Do.	" 10 and superpassage at 5 miles 3 furlongs 120 feet.	690						
403	Do.	Do.	Fall No. 11 at 5 miles 3 furlongs 580 feet	1,750	20,304		16,346			
404	Do.	Do.	" 12 at 5 " 5 " 238 "	720						
405	Do.	Do.	" 13 at 5 " 6 " 178 "	715						
406	Do.	Do.	" 14 at 7 " 395 feet	720						
407	Do.	Do.	" 15 at 8 " 315 "	1,200						
408	Do.	Do.	" 16 " "	860						
409	Do.	Do.	No. 1 fall and 2 sluices to Chittampatti offtake	750						
410	Do.	Do.	" 2 " at 1 furlong 540 feet	500						
411	Do.	Do.	" 3 " at 2 miles 5 furlongs	600						
412	Do.	Do.	" 4 " at 6 " in Kunathur offtake at 3 furlongs 260 feet.	610						
413	Do.	Do.	No. 2 fall at 4 furlongs 60 feet	500						
414	Do.	Do.	" 3 " at 4 " 360 "	780						
415	Do.	Do.	" 4 " at 5 " 800 "	640						
416	Do.	Do.	" 5 " at 6 " 340 "	640						
417	Do.	Do.	" 6 " at 6 " 340 "	640						
X. Branch Channel.										
418	(3) Distributaries.	Falls and weirs	Two falls	3,940						
419	Do.	Do.	Fall	1,960						
420	Do.	Do.	Two falls	3,040						
421	Do.	Do.	" "	1,740						
422	Do.	Do.	Fall	1,620						
423	Do.	Do.	" "	1,800						
424	Do.	Do.	Two falls	1,660						

G.O., No. 97 L, dated 3rd February 1894.

Statement A.—Schedule of works carried out under the construction estimate showing expenditure to 31st March 1897, the date on which the construction estimate sanctioned by the Secretary of State was closed—*cont.*

Line number	Classification.		Names of works.	Expenditure to end of 31st March 1897.		Difference.		References to order sanctioning the estimate.	Explanation of important variations between estimate and expenditure.
	Main head.	Sub-head.		Rs.	Rs.	Saving.	Excess.		
425	(3) Distributaries.	Falls and weirs	Three falls	2,280					
426	Do.	Do.	Four "	3,000	21,047				
427	Do.	Do.	Two "	1,260					
428	Do.	Do.	No. 1 fall with 2 sluices at 1 furlong 340 feet	1,200					
429	Do.	Do.	" 2 " at 2 furlongs 180 "	870					
430	Do.	Do.	" 3 " at 2 " 580 "	1,040					
431	Do.	Do.	" 4 " at 4 " 260 "	1,040					
432	Do.	Do.	" 5 " at 5 " 300 "	1,040					
433	Do.	Do.	XI. Branch Channel.						
434	(3) Distributaries.	Falls and weirs	Fall	800					
435	Do.	Do.	Four falls	3,120					
436	Do.	Do.	Fall	760					
437	Do.	Do.	Four falls	3,000					
438	(3) Distributaries.	Falls and weirs	Fall	2,040					
439	Do.	Do.	Four falls	3,200					
440	(3) Distributaries.	Other cross drainage works.	Superpassage below Shikavandan tank	1,220					
441	Do.	Do.	No. 1 culvert	1,000					
442	Do.	Do.	Aqueduct " at 1 mile 32 feet.	1,400					
443	(3) Distributaries.	Other cross drainage works.	Culvert	752					
444	Do.	Do.	Culvert at left approach to road bridge at 4 furlongs 460 feet.	200					
445	(3) Distributaries.	Other cross drainage works.	Superpassage at 1 mile 3 furlongs 30 feet	1,003					
446	(3) Distributaries.	Other cross drainage works.	Aqueducts						
447	(3) Distributaries.	Other cross drainage works.	Superpassage at 4 miles 7 furlongs 310 feet	1,700					
448	Do.	Do.	Culvert at 6 miles 1 furlong	1,030					
449	Do.	Do.	" at 6 miles 3 furlongs 180 feet	1,030					
450	Do.	Do.	Superpassage	1,200					
451	(3) Distributaries.	Other cross drainage works.	19. Culverts	52,060					

G.O., No. 97 L., dated 3rd February 1894.

452	(3) Distributaries.	Bridges	1st Branch Channel.	400	365	35			
453	(3) Distributaries.	Bridges	Road tunnel at 1 mile 5 furlongs 520 feet						
454	Do.	Do.	2nd Branch Channel.	415	615				
455	(3) Distributaries.	Bridges	Road tunnel " at 4 furlong, 460 feet "	239					
456	Do.	Do.	3rd Branch Channel.	615					
457	(3) Distributaries.	Bridges	Road tunnel						
458	Do.	Do.	4th Branch Channel.						
459	Do.	Do.	Road tunnel and fall	2,931					
460	Do.	Do.	Slab drain crossing Nattam road at 1 mile 4 furlongs 360 feet.	281					
461	Do.	Do.	Road tunnel at 15 miles 4 furlongs 360 feet	445					
462	(3) Distributaries.	Bridges	" at 2 miles 1 furlong 277 feet	360					
463	Do.	Do.	Road tunnel from the head of Thandalay offake at 350 feet	590					
464	Do.	Do.	Road culvert in minor distributary, Thandalay at 6 furlong 440 feet.	240					
465	(3) Distributaries.	Bridges	5th Branch Channel.						
466	Do.	Do.	Bridge at 5 furlongs 450 feet	330					
467	Do.	Do.	6th Branch Channel.						
468	(3) Distributaries.	Bridges	Slab drain crossing Nattam road	280					
469	Do.	Do.	9th Branch Channel.						
470	(3) Distributaries.	Bridges	Two road tunnels	1,270					
471	Do.	Do.	Road culvert at 7 miles 4 furlongs 93 feet	740					
472	Do.	Do.	Do. at Chittampatty offake at 2 miles 4 furlongs	530					
473	(3) Distributaries.	Bridges	Road culvert at Kunathore offake	600					
474	Do.	Do.	10th Branch Channel.						
475	(3) Distributaries.	Bridges	Road tunnel	1,270					
476	Do.	Do.	11th Branch Channel.						
477	(3) Distributaries.	Bridges	Road tunnel	960					
478	Do.	Do.	12th Branch Channel.						
479	(3) Distributaries.	Bridges	Road tunnel	1,270					
480	Do.	Do.	Do.	960					
481	Do.	Do.	1st Branch Channel.	790					
482	(3) Distributaries.	Bridges	Lump sum	1,600					
483	Do.	Do.	9th Branch Channel.						
484	(3) Distributaries.	Bridges	New buildings at Chittampatty in the 9th branch channel.	2,400					
485	Do.	Do.	Earthwork	6,038					

G.O., No. 97 L., dated 3rd February 1894.

Statement A.—Schedule of works carried out under the construction estimate showing expenditure to 31st March 1897, the date on which the construction estimate sanctioned by the Secretary of State was closed—*cont.*

Serial number	Classification.		Names of works.	Amount of estimate.	Expenditure to end of 31st March 1897.	Difference.		Reference to order sanctioning the estimate.	Explanation of important variations between estimate and expenditure.
	Main head.	Sub-head.				Saving.	Excess.		
49. IRRIGATION— <i>cont.</i>									
12th Branch Channel.									
531	(3) Distributaries.	Miscellaneous	2 sluices	..	..	..	..	G.O., No. 97 L., dated 3rd February 1894.	
532	Do.	Do.	16 "	..	..	..	..		
533	Do.	Do.	5 "	..	..	..	..		
534	Do.	Do.	7 "	..	..	..	..		
535	(3) Distributaries.	Maintenance	Lump sum	..	..	..	..		
2nd Branch Channel.									
536	(3) Distributaries.	Maintenance	Maintaining	..	75	..	..		
3rd Branch Channel.									
537	(3) Distributaries.	Maintenance	Maintaining	..	..	..	..		
538	Do.	Do.	"	..	138	..	..		
539	Do.	Do.	"	..	144	..	..		
540	Do.	Do.	"	..	200	..	..		
			Excavating catch drain from superpassage 1 mile 4 furlongs to 2 miles 4 furlongs and closing breaches.	..	1,072	..	..		
4th Branch Channel.									
541	(3) Distributaries.	Maintenance	Maintaining	..	..	..	..		
542	Do.	Do.	"	..	320	..	..		
543	Do.	Do.	"	..	397	..	..		
			"	..	465	..	..		
5th Branch Channel.									
544	(3) Distributaries.	Maintenance	Maintaining	..	..	..	..		
545	Do.	Do.	Unforeseen Works	..	..	..	..		
			"	..	95	..	..		
			"	..	3,844	..	..		
			"	..	103	..	..		
			"	..	4,855	..	..		
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PERIYAR PROJECT.

Statement B.—Schedule of works sanctioned but not completed before 31st March 1897 being the date on which General estimate of the Periyar Project was closed.

Item number in the schedule printed with G.O., No. 97 L., dated 3rd February 1894.	Classification of main and sub-heads.	Names of works.	Amount sanctioned in G.O., No. 97 L., dated 3rd February 1894.		Expenditure to end of 31st March 1897.	Further expenditure.	Probable dates of completion.
			Amount.	Sanctioned register number.			
1	2	3	4	5	6	7	8
3	Works	HEAD WORKS. Periyar valley.	Rs.	Rs.	Rs.	Rs.	Rs.
..	Tools and plant	Main dam	21,80,000	G.O., No. 97 L., dated 3rd February 1897.	24,18,293	41,702	..
..	..	Conveying surplus stores from Thekady to Madras	10,000	No. 8 of 1896-97	21,275	1,031	..
212	Miscellaneous	MAIN CANALS AND BRANCHES. <i>Remunerative.</i>	6,300	No. 43 of 1891-92	5,435	867	..
218	Do.		1,030	No. 137 of 1896-97	246	731	..
..	Maintenance		490	No. 96 of 1895-96	399	77	..
..	Do.		160	No. 65 of 1895-96	116	44	..
197	Earthwork	I. Reach.	1,550	No. 51 of 1896-97	608	942	..
..	Do.		650	No. 100 of 1896-97	434	246	..
..	Do.		1,840	No. 136 of 1896-97	1,210	1,840	..
..	Do.		620	No. 90 of 1895-96	1,330	24	..
50	Other cross drainage works.	II. Reach.	2,170	No. 131 of 1896-97	1,358	840	..
..	Do.		1,370	No. 37 of 1896-96	1,238	70	..
..	Do.		1,370	No. 36 of 1895-96	1,238	20	..
..	Do.		1,350	No. 89 of 1895-96	715	714	..
70	Land	III. Reach.	3,480	No. 61 of 1896-96	3,865	115	..
..	..		480	No. 112 of 1896-97	490	490	..
..	..		18,191	G.O., No. 97 L., dated 3rd February 1894.	19,689	..	..
200	Earthwork		1,000	No. 71 of 1896-97	463	537	..
86	Regulators	IV. Reach.	1,650	No. 68 of 1891-92	1,467	183	..
201	Earthwork		2,300	No. 121 of 1896-97	415	1,885	..
..	Do.		870	No. 110 of 1896-97	126	744	..
201	Do.		710	No. 109 of 1896-97	98	644	..
..	Do.	V. Reach.	250	No. 74 of 1894-95	145	105	..
..	..		19,896	No. 130 of 1892-93	19,549	347	..
..	..		..	..	..	..	..
..	..		..	..	..	..	..

Statement B.—Schedule of works sanctioned but not completed before 31st March 1897 being the date on which General estimate of the Periyar Project was closed—cont.

Item number in the schedule printed with G.O., No. 97 I., dated 3rd February 1894.	Classification of main and sub-heads.	Names of works.	Amount sanctioned in G.O., No. 97 I., dated 3rd February 1894.	Expenditure to end of 31st March 1897.	Further expenditure.	Probable dates of completion.	
1	2	3	4	5	6	7	8
DISTRIBUTARIES—cont.							
IX. Branch Channel.							
341	Land ..	Compensation for land ..	Rs. 12,450	G.O., No. 97 I., dated 3rd February 1894.	Rs. 4,270	8,680	
571	Earthwork ..	Excavation of IX Branch channel ..	77,000	G.O., No. 362 I., 24th April 1896.	76,698	302	
..	Do. ..	Excavating field channels from sluices in drop No. 1. ..	500	No. 69 of 1896-97 ..	239	261	
..	Do. ..	Excavating field channels from sluices in drop No. 5 ..	170	No. 70 of 1896-97 ..	50	129	
..	Do. ..	Excavating distributary and field channel from sluice at 5 miles ..	3,480	No. 128 of 1896-97 ..	1,460	2,020	
..	Miscellaneous ..	Constructing slab drain at 2 miles 3 furlongs ..	320	No. 108 of 1895-96 ..	261	59	
532	Other cross drainage works.	" syphon culvert at 5 miles 7 furlongs ..	380	No. 111 of 1896-97 ..	..	390	
..	Do. ..	" a masonry culvert at 5 miles 4 furlongs ..	490	No. 112 of 1896-97 ..	..	490	
538	Do. ..	Superpassage and bridge combined at 6 miles 5 furlongs 320 feet ..	440	No. 13 of 1896-97 ..	..	440	
Chittampatty offtake.							
571	Earthwork ..	Excavating a field channel from the proposed irrigation sluice 2nd mile.	270	No. 72 of 1896-97 ..	193	77	
..	Do. ..	Excavating distributary and field channel from left sluice of drop No. 9.	1,200	No. 99 of 1896-97 ..	553	647	
..	Do. ..	Excavating distributary and field channel from right sluice of drop No. 9.	850	No. 97 of 1896-97 ..	433	417	
..	Do. ..	Field channel from proposed sluice at 3 miles 3 furlongs ..	120	No. 98 of 1896-97 ..	38	62	
Kunthythur offtake.							
..	Do. ..	Excavating distributary channel from drop No. 1.	2,860	No. 85 of 1896-97 ..	1,500	1,360	
..	Do. ..	" supply channel to Tindiyar Koomoy from right sluice of drop No. 9.	250	No. 133 of 1896-97 ..	..	260	
571	Do. ..	Excavating field channel from left sluice of drop No. 1. ..	1,000	No. 86 of 1896-97 ..	765	235	
..	Miscellaneous ..	No. 6 fall and road bridge at 7 furlongs 500 feet ..	900	No. 112 of 1893-94 ..	350	250	
..	Do. ..	Bridging the falls and its offtakes ..	300	No. 44 of 1896-97 ..	96	241	
..	Do. ..	Aqueduct at 1 mile 4 furlongs 180 feet ..	2,370	No. 127 of 1896-97 ..	..	2,570	
..	Do. ..	Sluice at 3 miles 3 furlongs and distributary and field channel in the same.	1,585	No. 83 of 1897-98 ..	766	819	
X. Branch Channel.							
342	Land ..	Compensation for land ..	Rs. 12,075	G.O., No. 97 I., dated 3rd February 1894.	Rs. 8,044	1,000	
572	Earthwork ..	Excavation of X Branch channel ..	95,890	G.O., No. 393 I., dated 5th April 1897.	87,265	8,624	
582	Other cross drainage works.	No. 2 masonry trough on No. 2-A superpassage ..	1,450	No. 7 of 1896-97 ..	..	1,450	
..	Do. ..	No. 1-A superpassage at 2 miles 5 furlongs 110 feet ..	1,340	No. 95 of 1894-95 ..	1,337	359	
537	Miscellaneous ..	Closing breaches between 2nd and 3rd mile ..	1,000	No. 113 of 1896-97 ..	..	1,000	
Theravath offtake.							
587	Other cross drainage works.	Constructing a masonry culvert at 3 miles 400 feet ..	250	No. 114 of 1895-96 ..	..	250	
..	Do. ..	Sluice culvert at 3 furlongs and 100 feet ..	100	No. 122 of 1896-97 ..	..	100	

Since completed.

..	Miscellaneous ..	Providing a covering slab over fall Nos. 6 and 7 ..	56	No. 53 of 1896-97 ..	..	56	
..	Falls and weirs ..	No. 11 fall at 3 miles 7 furlongs 40 feet ..	440	No. 94 of 1894-95 ..	237	203	
372	Regulators ..	Bridge and regulator combined at Trinivadar offtake ..	870	No. 10 of 1896-97 ..	1,224	409	
Channambore offtake.							
370	Do. ..	Head sluice Channambore offtake ..	860	No. 113 of 1894-95 ..	600	260	
500 to 511	Falls and weirs ..	No. 1 fall at 500 feet ..	530	No. 39 of 1896-96 ..	..	530	
..	Do. ..	" 2 " 4 furlongs 460 feet ..	440	No. 40 of 1895-96 ..	..	440	
..	Do. ..	" 3 fall and road bridge at 2 miles 4 furlongs 620 feet ..	630	No. 30 of 1895-96 ..	..	630	
..	Do. ..	" 4 fall at 3 miles 1 furlong 600 feet ..	440	No. 41 of 1895-96 ..	..	440	
..	Do. ..	" 5 " 4 " 2 " 60 " ..	480	No. 42 of 1895-96 ..	..	480	
..	Do. ..	" 6 " 6 " 2 " 240 " ..	520	No. 43 of 1895-96 ..	..	520	
..	Do. ..	" 7 " 6 " 8 " 240 " ..	730	No. 44 of 1895-96 ..	..	730	
..	Do. ..	Full No. 5-a at 6 miles 1 furlong 440 feet ..	440	No. 88 of 1895-96 ..	319	121	
XI. Branch Channel.							
343	Land ..	Compensation for land ..	3,150	G.O., No. 97 I., dated 3rd February 1894.	2,379	771	
..	Regulators ..	Bridge and regulator combined at the head of XI and XII branch channels.	3,040	No. 9 of 1896-97 ..	1	3,039	
573	Earthwork ..	Excavation of XI branch channel ..	24,630	G.O., No. 406 I., dated 25th April 1897.	914	23,716	
574	Earthwork ..	Excavation of XII branch channel ..	70,500	G.O., No. 318 I., dated 26th March 1897.	9,563	60,937	
..	Do. ..	No. 1 distributary at 4,700 feet ..	2,080	No. 118 of 1896-97 ..	..	2,080	
..	Do. ..	" 2 " at 1 mile 1,620 feet ..	280	No. 119 of 1896-97 ..	..	280	
Total (3) Distributary ..							
Unremunerative.							
11	Do. ..	Improvements to sluices at Thekady ..	400	No. 89 of 1895-96 ..	776	26	
..	Do. ..	Repairs to basar's shed at Ramarajapuram ..	60	No. 5 of 1895-96 ..	13	47	
..	Do. ..	Repairing the inspection shed at Peranal ..	100	No. 97 of 1896-96 ..	..	100	
..	Do. ..	Repairing rest-house at Peranal ..	61	No. 104 of 1895-96 ..	..	61	
..	Do. ..	Repairs to the basar's shed at regulator II Reach ..	470	No. 86 of 1894-95 ..	319	151	
..	Do. ..	Constructing basar's shed at Kalladry ..	450	No. 120 of 1896-97 ..	..	450	
..	Do. ..	Repairing Kalladry rest-house ..	41	No. 93 of 1896-97 ..	..	41	
..	Do. ..	Out-house to rest-houses at Pallipatty ..	700	No. 145 of 1893-94 ..	740	..	
..	Do. ..	Rest-house at Chittampatty ..	3,150	No. 97 of 1895-96 ..	1,950	2,988	
..	Bridges ..	Bridge across Periyar main channel near Thuthampatty ..	1,510	No. 88 of 1895-97 ..	..	1,090	
..	Land ..	Acquiring lands for Chittampatty rest-house ..	450	No. 35 of 1896-97 ..	..	450	
..	Miscellaneous ..	Planting Athalai along Periyar main channel ..	917	No. 116 of 1896-97 ..	556	361	
..	Do. ..	Athalai plantations for demarcating Periyar ..	1,250	No. 117 of 1896-97 ..	364	886	
..	Do. ..	Purchase of bull-eye lantern for Ramarajapuram surplus sluice ..	10	No. 36 of 1896-97 ..	..	10	
..	Do. ..	Digging left bank trenches around building at Thekady ..	1,250	No. 79 of 1895-96 ..	684	566	
..	Do. ..	Inspection shed at Kunyavathi ..	130	No. 84 of 1896-97 ..	10	120	
..	Do. ..	Repairs to Peranal ancient ..	1,600	No. 50 of 1895-96 ..	..	1,600	
Grand Total for Works ..							
Establishment ..							
Tools and Plant ..							
Total ..							
Includes Rupees ..							
22,739 ..							
17,768 for land ..							
Added Rs. 87 to make the total a round sum.							
2,71,000 ..							

Since completed.

PERIYAR PROJECT.

C.—STATEMENT showing the estimates sanctioned under Open Capital Account.

Sanctioning authority.	Names of works.	Sanctioned estimate including establishment and tools and plant charges.			Date of expiry of sanction.
		Class I (unremunerative).	Class II (remunerative).	Total.	
1	2	3	4	5	6
	<i>I. Reach.</i>	RS.	RS.	RS.	
G.Os., No. 836 I., dated 28th Oct. 1898 and No. 829 I., dated 2nd Oct. 1900.	Constructing a bridge at 5 miles 1 furlong, main channel.	2,860	..	2,860	Rs. 1,515, 31st March 1901.
G.O., No. 797 I., dated 23rd Aug. 1900.	Improving and fitting falling shutters to the Perambicut.	..	13,450	13,450	31st March 1901.
	<i>VI. Reach.</i>	..	3,600	3,600	Rs. 3,772, 31st March 1900.
G.Os., No. 1913 I., dated 13th Nov. 1897 and No. 873 I., dated 17th Oct. 1899.	Excavating distributary taking off the sluices on the right bank of the main channel at 22 miles.	..	..	..	..
	<i>XI. Reach.</i>	..	7,000	7,000	31st March 1901.
G.Os., No. 1104 I., dated 9th Dec. 1897; No. 873 I., dated 17th Oct. 1899 and No. 829 I., dated 2nd Oct. 1900.	Constructing a sluice and distributary channel at 30 miles 6 furlongs and 100 feet.	..	..	..	..
	<i>1st Branch Channel.</i>	..	2,160	2,160	31st March 1901.
G.Os., No. 876 I., dated 10th Nov. 1898 and No. 829 I., dated 12th Oct. 1900.	Excavating distributary and field channel from Thodaneri tank.	..	..	..	..
G.O., No. 255 I., dated 12th March 1901.	Regrading the first branch channel below drop No. 3 supplying Vadagarai tank.	3,150	..	3,150	31st March 1902.
	<i>3rd Branch Channel.</i>	3,000	..	3,000	Rs. 3,121, 31st March 1901.
G.Os., No. 842 I., dated 24th Sept. 1897 and No. 829 I., dated 2nd Oct. 1900.	Constructing cross drainage works.	..	1,200	1,200	Rs. 1,237, 31st March 1901.
G.Os., No. 713 I., dated 17th Sept. 1898 and No. 829 I., dated 2nd Oct. 1900.	Excavating field channel from the proposed sluice in Velangudi tank.	..	1,450	1,450	Rs. 1,556, 31st March 1901.
G.Os., No. 539 I., dated 26th June 1899 and No. 829 I., dated 2nd Oct. 1900.	Excavating a distributary and field channel from head sluice in Athalai tank.	2,700	..	2,700	Rs. 2,659, 31st March 1900.
G.Os., No. 69 I., dated 11th Jan. 1899 and No. 873 I., dated 17th Oct. 1899.	Constructing a surplus weir at left bank of Athalai tank.	..	7,250	7,250	Rs. 7,210, 31st March 1901.
G.O., No. 573 I., dated 2nd July 1900.	Banking the Tandalai offtake through the Thandalai tank.	..	2,920	2,920	Rs. 3,511, 31st March 1901.
G.Os., No. 207 I., dated 28th Feb. 1899 and No. 829 I., dated 2nd Oct. 1900.	Excavating tail end ..	..	5,420	5,420	Rs. 5,519, 31st March 1901.
G.Os., No. 284 I., dated 18th March 1899 and No. 829 I., dated 2nd Oct. 1900.	Excavating the extension of Thirupalai offtake	..	2,975	2,975	Rs. 4,052, 31st March 1901.
G.Os., No. 501 I., dated 30th Jan. 1899; No. 207 I., dated 28th March 1899 and No. 829 I., dated 2nd Oct. 1900.	Excavating distributary channel from the tail end of the 4th Branch channel to Kovilpappudi tank.	..	1,300	1,300	Rs. 1,621, 31st March 1901.
G.Os., No. 630 I., dated 24th July 1899 and No. 829 I., dated 2nd Oct. 1900.	Regulating the 4th Branch channel and Thandalai offtake.	..	1,520	1,520	31st March 1901.
G.Os., No. 946 I., dated 3rd Nov. 1899 and No. 829 I., dated 2nd Oct. 1900.	Excavating field channel from sluice No. 2 in Boothagudi tank, Thandalai offtake.	..	7,750	7,750	Rs. 8,113, 31st March 1900.
	<i>5th Branch Channel.</i>	..	..	..	..
G.Os., No. 385 I., dated 10th May 1898 and No. 873 I., dated 17th Oct. 1899.	Regrading 5th Branch channel and constructing cross drainage works in the same.	..	..	..	..

C.—Statement showing the estimates sanctioned under Open Capital Account—cont.

Sanctioning authority.	Names of works.	Sanctioned estimate including establishment and tools and plant charges.			Date of expiry of sanction.
		Class I (unremunerative).	Class II (remunerative).	Total.	
1	2	3	4	5	6
	<i>8th Branch Channel.</i>	RS.	RS.	RS.	
G.Os., No. 533 I., dated 26th June 1899 and No. 829 I., dated 2nd Oct. 1900.	Regrading 8th branch channel and constructing cross drainage works in the same.	..	7,130	7,130	Rs. 7,117, 31st March 1901.
	<i>9th Branch Channel.</i>	..	2,020	2,020	Rs. 2,206, 31st March 1900.
G.Os., No. 296 I., dated 6th April 1898 and No. 873 I., dated 17th Oct. 1899.	Excavating distributary and field channel from the right sluice of drop No. 14.	..	2,538	2,538	Rs. 2,532, 31st March 1900.
G.Os., No. 910 I., dated 24th Oct. 1897; No. 873 I., dated 17th Oct. 1899 and No. 914 I., dated 31st Oct. 1900.	Excavating distributary channel from the left sluice of drop No. 8, Kunnathur offtake.	..	1,930	1,930	Rs. 1,823, 31st March 1900.
G.Os., No. 942 I., dated 21st Oct. 1897 and No. 873 I., dated 17th Oct. 1899.	Constructing an irrigation sluice at 3 miles 3 furlongs and excavating distributary and field channels from the same.	..	1,735	1,735	Rs. 1,761, 31st March 1900.
G.Os., No. 994 I., dated 10th Nov. 1897; No. 873 I., dated 17th Oct. 1899 and No. 395 I., dated 26th April 1900.	Excavating field channels from the proposed pipe and masonry sluices in the Kunnathur offtake.	..	2,950	2,950	Rs. 2,971, 31st March 1901.
G.O., No. 26 I., dated 16th Jan. 1900.	Excavating field channels and constructing pipe sluices in the 9th branch channel and Chittampatti offtake.	..	1,949	1,949	Rs. 1,942, 31st March 1901.
G.Os., No. 129 I., dated 24th Feb. 1899; No. 873 I., dated 17th Oct. 1899 and No. 8 I., dated 7th Jan. 1901.	Excavating distributary at 1 mile 6 furlongs and 500 feet, Kunnathur offtake.	..	2,940	2,940	Rs. 2,562, 31st March 1901.
G.O., No. 721 I., dated 16th Aug. 1899.	Constructing a two-foot drop at 3 miles 1 furlong and raising banks above the same.	..	6,019	6,019	Rs. 5,971, 31st March 1900.
G.Os., No. 586 I., dated 29th July 1898; No. 389 I., dated 20th April 1900 and No. 914 I., dated 31st Oct. 1900.	Excavating distributary and field channels from left sluice of drop No. 14.	..	1,300	1,300	Rs. 1,476, 31st March 1900.
G.O., No. 389 I., dated 11th May 1898.	Excavating tail end of Chittampatti offtake and field channel.	..	10,630	10,630	31st March 1901.
G.Os., No. 583 I., dated 29th July 1898 and No. 829 I., dated 2nd Oct. 1900.	Excavating the tail end channel of Pappandi offtake and constructing masonry works.	..	1,550	1,550	Do.
G.Os., No. 561 I., dated 22nd July 1898 and No. 829 I., dated 2nd Oct. 1900.	Improvements to Tirukkani tank..	..	7,450	7,450	31st March 1902.
G.O., No. 117 I., dated 5th Feb. 1901.	Improving Kunnathur tank and channel.	..	3,380	3,380	Do.
G.O., No. 309 I., dated 26th March 1901.	Improving Chittampatti offtake which takes off from the 9th branch channel.	..	..	..	..
	<i>10th Branch Channel.</i>	..	8,650	8,650	Rs. 8,923, 31st March 1901.
G.Os., No. 188 I., dated 22nd Feb. 1899 and No. 829 I., dated 2nd Oct. 1900.	Distributary channel from 5 miles 4 furlongs and 80 feet in Chunnambur offtake to Keeranur tank.	..	2,730	2,730	Rs. 2,525, 31st March 1901.
G.Os., No. 563 I., dated 22nd July 1898 and No. 829 I., dated 2nd Oct. 1900.	Excavating a distributary channel from the left bank of the 10th branch channel to Aruttaputy tank.	..	1,760	1,760	Rs. 1,531, 31st March 1900.
G.Os., No. 636 I., dated 22nd Aug. 1898 and No. 873 I., dated 17th Oct. 1899.	Distributary channel from 5 miles 7 furlongs in the left side of the Chunnambur offtake.	..	2,150	2,150	Rs. 1,980, 31st March 1900.
G.Os., No. 878 I., dated 16th Oct. 1898 and No. 873 I., dated 17th Oct. 1899.	Constructing cross drainage works in the Chunnambur offtake taking off the 10th branch channel.	..	..	..	..
G.O., No. 917 I., dated 25th Oct. 1899.	Improving the Chunnambur offtake from drop No. 2 to drop No. 3.	3,450	..	3,450	31st March 1901.

C.—Statement showing the estimates sanctioned under Open Capital Account—cont.

Sanctioning authority.	Names of works.	Sanctioned estimate including establishment and tools and plant charges.			Date of expiry of sanction.
		Class I (unremunerative).	Class II (remunerative).	Total.	
1	2	3	4	5	6
	<i>10th Branch Channel—cont.</i>	Rs.	Rs.	Rs.	
G.O., No. 615 I., dated 27th Aug. 1900.	Constructing sluices and excavating field channels in Chinnambur off-take.	..	3,440	3,440	31st March 1901.
	<i>11th Branch Channel.</i>				
G.O., No. 921 I., dated 26th Oct. 1899.	Excavating field channels ..	..	3,500	3,500	31st March 1901
	<i>12th Branch Channel.</i>				
G.Os., No. 788 I., dated 26th Aug. 1897 and No. 873 I., dated 17th Oct. 1899.	Excavating No. 3 distributary from the left sluice of drop No. 5.	..	3,500	3,500	Rs. 3,215, 31st March 1900.
G.Os., No. 796 I., dated 1st Sept. 1897 and No. 873 I., dated 17th Oct. 1899.	Excavating No. 8 distributary taking off at 7 miles 3,440 feet on the left bank of the 12th branch channel.	..	9,300	9,300	Rs. 8,455, 31st March 1900.
G.Os., No. 887 I., dated 7th Oct. 1897, and No. 873 I., dated 17th Oct. 1899.	Excavating 10th distributary channel at 8 miles 5,160 feet of the 12th branch channel.	..	5,700	5,700	Rs. 5,088, 31st March 1900.
G.Os., No. 787 I., dated 13th Oct. 1898 and No. 873 I., dated 17th Oct. 1899.	Excavating No. 5 distributary ..	..	3,650	3,650	Rs. 3,650, 31st March 1900.
G.Os., No. 367 I., dated 20th April 1899 and No. 829 I., dated 2nd Oct. 1900.	Excavating minor distributaries and field channels in the first 9 miles of the 12th branch channel.	..	4,300	4,300	31st March 1901.
G.Os., No. 361 I., dated 13th April 1897; No. 798 I., dated 27th Aug. 1900, and No. 829 I., dated 2nd Oct. 1900.	No. 7 distributary from proposed head sluice at 2 miles 4,100 feet.	..	4,714	4,714	Rs. 4,562, 31st March 1901.
G.Os., No. 361 I., dated 13th April 1897 and No. 829 I., dated 2nd Oct. 1900.	No. 4 distributary from right sluice of drop No. 6 at 2 miles 140 feet.	..	6,200	6,200	Rs. 5,804, 31st March 1901.
Government of India, No. 1238 C.W.L., dated 5th Dec. 1899; P.M.G., No. 9 I., dated 10th Jan. 1900 and No. 316 I., dated 10th Mar. 1902.	Excavating 6th distributary of the 12th branch channel and its five distributary channels.	..	33,300	33,300	Rs. 30,375, 31st March 1901.
G.Os., No. 299 I., dated 24th Mar. 1899 and No. 829 I., dated 2nd Oct. 1900.	Excavating a sub-distributary from the 9th distributary.	..	4,250	4,250	31st March 1901
G.Os., No. 900 I., dated 9th Oct. 1897 and No. 829 I., dated 2nd Oct. 1900.	Excavating 9th distributary taking off at the 8th mile on the right bank of the 12th branch channel and constructing its masonry works.	..	24,300	24,300	Rs. 22,168, 31st March 1901.
G.Os., No. 586 I., dated 29th July 1898 and No. 829 I., dated 2nd Oct. 1900.	Excavating No. 11 and 11 (a) distributary from 10th mile.	..	10,650	10,650	Rs. 9,510, 31st March 1901
G.O., No. 362 I., dated 26th March 1900.	Excavating field channels and constructing pipe and masonry sluices, etc., in the 12th branch channel below the 9th mile.	..	4,090	4,090	31st March 1901.
G.O., No. 539 I., dated 10th June 1900.	Constructing the South Indian volunteer rifle range at Pasmalai Hill, Madurai district.	6,650	..	6,500	31st March 1904.
G.O., No. 281 I., dated 19th March 1901.	Improvements to Vadagarai tank.	5,830	..	5,830	Do.

C.—Statement showing the estimates sanctioned under Open Capital Account—cont.

Sanctioning authority.	Names of works.	Sanctioned estimate including establishment and tools and plant charges.			Date of expiry of sanction.
		Class I (unremunerative).	Class II (remunerative).	Total.	
1	2	3	4	5	6
		Rs.	Rs.	Rs.	
O., No. 439 I., dated 29th May 1901.	Constructing a drainage culvert and forming the left bank of main canal near the 35th mile.	1,560	..	1,560	31st March 1902.
O., No. 568 I., dated 18th July 1901.	Regrading the 5th distributary of the 12th Branch channel.	..	1,610	1,610	Do.
Os., No. 705 I., dated 16th Sept. 1901, and No. 367 I., dated 29th April 1899.	Excavating minor distributaries and field channels in the 12th Branch channel (1 to 9 miles).	..	6,900	6,900	Do.
O., No. 767 I., dated 9th Oct. 1901.	Improvements to Padupatty tank.	1,570	..	1,570	31st March 1903.
O., No. 769 I., dated 9th Oct. 1901.	Abandoning tanks in the Velichinatham village in the 6th reach of the main canal.	1,780	..	1,780	31st March 1902.
O., No. 960 I., dated 13th Dec. 1901.	Improvements to Thinnur Periyar Kammoyi.	2,250	..	2,250	Do.
O., No. 998 I., dated 20th Dec. 1901.	Improvements to Kattakulam tank.	4,000	..	4,000	Do.
O., No. 70 I., dated 18th Jan. 1902.	Enlarging the sluices in the 6th distributary of the 12th Branch channel and excavating the necessary field channels.	..	2,900	2,900	Do.
O., No. 74 I., dated 18th Jan. 1902.	Abandoning tanks between 4th and 6th distributaries, 12th Branch channel.	2,390	..	2,390	Do.
O., No. 87 I., dated 20th Jan. 1902.	Improving the Vadagarai channel, Periyar Project.	12,000	..	12,000	31st March 1903.
O., No. 176 I., dated 4th March 1902.	Constructing a shipway for the launches at Periyar.	4,060	..	4,060	Do.
O., No. 315 I., dated 10th March 1902.	Excess outlay incurred over the estimate of Rs. 11,400 for excavating the 6th distributary of the 12th Branch channel, Periyar Project, sanctioned in G.O., No. 1141 I., dated 22nd December 1897.	..	966	966	
O., No. 337 I., dated 14th March 1902.	Constructing masonry sluices in the Vellary tank, Periyar Project.	1,520	..	1,520	31st March 1903.
O., No. 337 I., dated 14th March 1902.	Investigating a site for a storage reservoir in connection with the Periyar Project in the plains.	6,770	..	6,770	Do.
O., No. 337 I., dated 14th March 1902.	Excavating the Devimangalam drainage channel, XI reach of the main canal.	1,490	..	1,490	Do.
O., No. 570 I., dated 20th May 1902.	Improvements to the tail end of the 5th Branch channel.	1,323	..	1,323	Do.
O., No. 628 I., dated 4th June 1902.	Excavating Sunderanallur distributary, Chittampatti off-take, 9th Branch channel.	..	2,603	2,603	Do.
O., No. 651 I., dated 10th June 1902.	Excavating the Tirukkrani distributary, 9th Branch channel.	..	2,388	2,388	Do.
O., No. 651 I., dated 10th June 1902.	Improvements to No. 204, Alathur tank, 9th Branch channel.	1,660	..	1,660	Do.
Do.	Improvements to Vilathur tank, Kunnathur off-take, 9th Branch channel.	1,993	..	1,993	Do.
Do.	Improvements to No. 197, Vari-chiyur tank, Kunnathur and Chinnambur off-takes, 9th Branch channel.	7,761	..	7,761	Do.
Do.	Improvements to No. 192, Achun-gulam tank, Kunnathur off-take, 9th Branch channel.	7,443	..	7,443	Do.
Do.	Improvements to No. 231, Varaghaneri and No. 230, Semmalipuliyankulam tanks, Chittampatti off-take, 9th Branch channel.	1,601	..	1,601	Do.
Do.	Improvements to No. 198, Thala-thamarai tank, Kunnathur off-take, 9th Branch channel.	4,121	..	4,121	Do.
Do.	Improvements to Nos. 208 and 212, Kolikudi and Pottapansiyur tanks, 9th Branch channel.	2,030	..	2,030	Do.

C.—Statement showing the estimates sanctioned under Open Capital Account—cont.

Sanctioning authority.	Names of works.	Sanctioned estimate including establishment and tools and plant charges.			Date of expiry of sanction.
		Class I (unremunerative).	Class II (remunerative).	Total.	
1	2	3	4	5	6
G.O., No. 681 I., dated 16th June 1902.	Improvements to No. 174, Mochivetty and No. 175, Periyakudumbangudi tanks, Kunathur off-take, 9th Branch channel.	Rs. 4,147	Rs. ..	Rs. 4,147	31st March 1903.
G.O., No. 690 I., dated 18th June 1902.	Abandoning the beds of certain minor tanks above Pidarondal and excavating two drainage channels therefrom Chittampatti off-take, 9th Branch channel.	..	3,980	3,980	Do.
Do. do.	Abandoning Rajakkur and Kollavattan tank by excavating a drainage channel through them to terminate in the Vellankulam tank, Chittampatti off-take, 9th Branch channel.	..	2,952	2,952	Do.
G.O., No. 772 I., dated 12th July 1902.	Improvements to No. 51, Anaiyur tank of the Periyar Project.	2,688	..	2,688	Do.
G.O., No. 898 I., dated 22nd Aug. 1902.	Improvements to the Velangudy Periya Kammay tank.	2,730	..	2,730	Do.
G.O., No. 1042 I., dated 24th Sept. 1902.	Improvements to Pothumboo west tank.	2,903	..	2,903	Do.
G.O., No. 1067 I., dated 13th Sept. 1902.	Improvements to No. 35, Silayaneri tank.	2,780	..	2,780	Do.
G.O., No. 1079 I., dated 17th Sept. 1902.	Enlarging the sluices in the distributary taking off from the Periyar main channel in the XI reach and continuing the field channel from the Padukulam tank.	1,579	..	1,579	Do.
G.O., No. 1088 I., dated 19th Sept. 1902.	Extending the tailend of the Kovil Pappagudy off-take, 4th Branch channel, and excavating two minor distributaries and field channels.	..	2,330	2,330	Do.
	Total. ..	1,11,639	2,74,499	3,86,038	

PERIYAR PROJECT.
Statement D comparing expenditure by main and sub-heads with provision in estimates sanctioned by Secretary of State or Government of India.

Sub-head.	Provision in estimate sanctioned by Secretary of State in G.O., No. 1087 I., dated 21st December 1891.	Expenditure to end of 31st March 1907.						Probable further outlay classified.			Probable total outlay.	Difference between probable total outlay and provision sanctioned by Secretary of State or Government of India.		
		On completed works.		On works in progress.		Total.		Unremunerative.	Remunerative.	Total.		More.	Less.	
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1. Head Works.														
1. Preliminary expenses	..	89,355	81,086	..	81,086	81,086	..	..	..	..	81,086	..	..	..
2. Works	..	35,80,000	11,65,514	24,18,298	35,83,842	35,83,842	..	..	..	..	86,26,644	..	..	..
3. Buildings	..	3,54,000	..	2,82,081	2,82,081	2,82,081	..	..	..	..	..	..	..	..
4. Miscellaneous	..	1,80,000	..	1,76,547	1,76,547	1,76,547	..	..	..	..	..	..	..	..
5. Maintenance during construction	..	..	74,859	..	74,859	74,859	..	..	..	..	..	..	..	..
6. Maintenance	..	..	27,835	..	27,835	27,835	..	..	..	..	..	..	..	..
Unforeseen works	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total, 1. Head Works	..	45,47,900	13,48,874	28,77,826	42,26,700	42,26,700	..	..	..	..	..	..	..	..
2. Main Canals and Branches.														
1. Preliminary expenses	..	24,706	24,680	..	24,680	24,680	..	..	..	..	..	..	..	..
Miscellaneous	..	8,706	..	9,046	9,046	9,046	..	..	..	..	..	..	..	..
Maintenance	..	17,998	..	3,880	3,880	3,880	..	..	..	..	..	..	..	..
Total	..	50,892	24,680	12,426	37,076	37,076	..	..	..	..	..	..	..	..
1. Reach.														
Land	..	16,191	18,373	..	18,373	18,373	..	..	..	..	..	..	..	..
Works	..	50,884	49,998	..	49,998	49,998	..	..	..	..	..	..	..	..
Falls and weirs	..	6,625	4,569	..	4,569	4,569	..	..	..	..	..	..	..	..
Cross drainage works	..	74,102	..	75,923	75,923	75,923	..	..	..	..	..	..	..	..
Brillings	..	26,133	26,138	..	26,138	26,138	..	..	..	..	..	..	..	..
Bedding	..	6,138	..	6,453	6,453	6,453	..	..	..	..	..	..	..	..
Earthwork	..	1,50,758	..	1,31,151	1,31,151	1,31,151	..	..	..	..	..	..	..	..
Maintenance	..	6,993	30,256	..	30,256	30,256	..	..	..	..	..	..	..	..
Miscellaneous	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	..	8,38,779	1,29,235	2,53,627	3,92,652	3,92,652	..	..	..	..	..	..	..	..
II. Reach.														
Land	..	6,948	7,421	..	7,421	7,421	..	..	..	..	..	..	..	..
Works	..	13,190	11,225	..	11,225	11,225	..	..	..	..	..	..	..	..
Falls and weirs	..	2,075	2,075	..	2,075	2,075	..	..	..	..	..	..	..	..
River and hill torrent works	..	17,485	17,485	..	17,485	17,485	..	..	..	..	..	..	..	..
Cross drainage works	..	28,384	28,384	..	28,384	28,384	..	..	..	..	..	..	..	..
Brillings	..	5,803	5,803	..	5,803	5,803	..	..	..	..	..	..	..	..
Earthwork	..	53,541	53,541	..	53,541	53,541	..	..	..	..	..	..	..	..
Bedding	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maintenance	..	5,334	9,215	..	9,215	9,215	..	..	..	..	..	..	..	..
Total	..	1,31,600	75,806	59,754	1,35,550	1,35,550	..	..	..	..	..	..	..	..

Head.	Sub-head.	Provision in estimate sanctioned by Secretary of State in G. O., No. 1067 I., dated 22nd December 1894	Expenditure to end of 31st March 1897.				Probable further outlay disallowed.				Probable total outlay	Difference between probable total outlay and provision suc- tioned by Secretary of State or Govern- ment of India.
			On completed works.	On works in progress.	Total.	Unrecovered. Rs.	Remunera- tion. Rs.	Total.				
1	2	3	4	5	6	7	8	9	10	11	12	
	III. Reach.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.				
Land ..	..	19,386	..	19,349	12,549	..	73	73	..	..	..	
Works ..	..	5,496	..	5,071	7,971	..	183	183	..	..	..	
Cross drainage works	..	1,0512	1,10,733	..	1,10,733	..	..	..	..	..	..	
Bridges ..	..	10,682	10,632	..	10,632	..	..	..	..	..	..	
Buildings ..	..	244	1,963	..	1,963	..	..	..	..	..	..	
Earthwork ..	..	1,03,228	..	1,03,614	1,03,614	..	3,375	3,375	..	..	..	
Maintenance ..	..	8,990	11,439	..	11,439	..	..	..	..	..	..	
Total ..	..	2,68,498	1,84,817	1,31,164	2,95,981	..	3,684	3,684	..	..	..	
	IV. Reach.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.				
Land ..	..	3,584	5,610	..	5,610	..	..	..	..	..	..	
Works ..	..	1,388	1,388	..	1,388	..	..	..	..	..	..	
Falls and weirs ..	..	750	750	..	750	..	..	..	..	..	..	
Cross drainage works	..	8,972	8,978	..	8,978	..	..	..	..	..	..	
Bridges ..	..	3,150	3,071	..	3,071	..	..	..	..	..	..	
Earthwork ..	..	21,992	24,992	..	24,992	..	32	32	..	..	..	
Maintenance ..	..	1,834	3,108	..	3,108	..	..	..	..	..	..	
Total ..	..	46,820	22,905	24,992	47,897	..	32	32	..	..	..	
	V. Reach.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.				
Land ..	..	9,501	..	9,463	9,463	..	309	309	..	..	..	
Works ..	..	65,373	56,374	..	56,374	..	..	..	..	..	..	
Cross drainage works	..	7,361	7,361	..	7,361	..	..	..	..	..	..	
Bridges ..	..	4,800	4,627	..	4,627	..	..	..	..	..	..	
Buildings ..	..	30,300	30,300	..	30,300	..	..	..	..	..	..	
Earthwork ..	..	4,656	6,624	..	6,624	..	..	..	..	..	..	
Maintenance ..	..	..	..	..	..	..	..	..	..	..	..	
Total ..	..	1,11,191	1,01,979	9,463	1,11,442	..	309	309	..	..	..	
	VI. Reach.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.				
Land ..	..	3,837	4,171	..	4,171	..	..	..	..	..	..	
Falls and weirs ..	..	3,929	3,929	..	3,929	..	..	..	..	..	..	
Cross drainage works	..	22,837	22,835	..	22,835	..	..	..	..	..	..	
Bridges ..	..	8,094	7,875	..	7,875	..	..	..	..	..	..	
Earthwork ..	..	49,300	51,335	..	51,335	..	135	135	..	..	..	
Miscellaneous ..	..	2,112	3,498	..	3,498	..	..	..	..	..	..	
Maintenance ..	..	..	..	..	..	..	..	..	..	..	..	
Total ..	..	90,109	93,333	..	93,333	..	195	195	..	..	..	

VII. Road.		VIII. Road.		IX. Road.		X. Road.		XI. Road.	
Land ..	2,309	2,499	..	2,499	..	..	..	..	..
Works ..	543	543	..	543	..	..	..	..	..
Cross drainage works ..	20,402	20,402	..	20,402	..	..	..	..	..
Bridges ..	4,611	4,611	..	4,611	..	..	..	..	..
Earthwork ..	32,405	32,405	..	32,405	..	..	..	..	..
Miscellaneous ..	..	..	..	..	..	..	..	..	..
Maintenance ..	2,734	3,768	..	..	..	..	..	..	..
Total ..	55,121	33,843	..	22,405	..	..	..	..	..
Land ..	1,038	1,296	..	..	..	..	..	..	..
Works ..	8,150	7,941	..	..	..	..	..	..	..
Falls and weirs ..	2,440	2,440	..	..	..	..	..	..	..
Cross drainage works ..	1,000	1,064	..	..	..	..	..	..	..
Buildings ..	2,232	..	..	2,930	194	..	..	..	..
Earthwork ..	14,500	14,932	..	..	..	..	..	..	..
Maintenance ..	539	1,007	..	..	..	..	..	..	..
Total ..	29,899	28,655	..	2,930	494	..	..	..	..
Land ..	725	725	..	..	..	..	..	..	..
Works ..	650	653	..	..	..	..	..	..	..
Cross drainage works ..	12,639	12,640	..	..	..	..	..	..	..
Buildings ..	14,438	..	..	..	..	..	..	..	..
Earthwork ..	10,009	10,108	..	..	..	..	..	..	..
Maintenance ..	1,045	1,897	..	..	..	..	..	..	..
Total ..	38,596	26,003	..	..	..	..	..	..	..
Land ..	361	367	..	..	..	..	..	..	..
Works ..	660	..	..	..	..	..	..	..	..
Cross drainage works ..	9,176	9,177	..	..	..	..	..	..	..
Bridges ..	2,000	1,998	..	..	..	..	..	..	..
Earthwork ..	4,800	4,305	..	..	..	..	..	..	..
Buildings ..	..	98	..	..	..	..	..	..	..
Maintenance ..	1,422	2,826	..	..	..	..	..	..	..
Total ..	27,909	11,465	..	4,305	58	..	..	..	..
Land ..	5,854	..	..	..	..	..	..	..	..
Works ..	1,150	..	..	..	..	..	..	..	..
Falls and weirs ..	7,460	5,961	..	4,050	..	..	..	..	..
Cross drainage works ..	22,770	28,769	..	..	..	..	..	..	..
Bridges ..	7,110	4,231	..	..	..	..	..	..	..
Earthwork ..	39,512	65,398	..	..	..	..	..	..	..
Buildings ..	..	7,221	..	..	..	..	..	..	..
Maintenance ..	397	2,181	..	..	..	..	..	..	..
Miscellaneous ..	..	..	..	..	..	..	..	..	..
Total ..	84,183	19,594	..	98,217	..	..	..	..	..

Statement D comparing expenditure by main and sub-heads with provision in estimates sanctioned by Secretary of State or Government of India—cont.

Statement D comparing expenditure by main and sub-heads

Head.	Sub-head.	Provision in estimate sanctioned by Secretary of State in G.O. No. 1057 I, dated 23rd December 1894.	Expenditure to end of 31st March 1897.					Probable further outlay classified.				Probable total outlay.	Difference between probable total outlay and provision sanc- tioned by Secretary of State or Govern- ment of India.		
			On works in progress.					Total.							
			3	4	5	6	7	8	9	10	11	12			
		RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.	RS.
	XII. Recl.														
	Land ..	500						500	500						
	Falls and weirs ..	1,000													
	Cross drainage works ..	6,000	6,532			6,532									
	Earthwork ..														
	Total ..	8,500	6,532			6,532		500	500						
	Total 2. Main Canals and Branches ..	12,500	7,14,745	6,532	13,44,028	4,102	16,776	20,878							
	3. Distributaries.														
	Preliminary expenses ..	10,490		10,490				388	388						
	Buildings ..	1,500													
	Maintenance ..	37,735	13,722		13,722			1,450	2,308						
	Miscellaneous ..						858								
	Unforeseen works ..	3,844	4,855		4,855										
	Total ..	53,569	18,577	10,346	28,923	858	1,838	2,696							
	I. Branch Channel.														
	Land ..	15,554	9,204		9,204										
	Works ..	938		938											
	Cross drainage works ..	3,920		2,643				282	282						
	Bridges ..	400	385												
	Earthwork ..	6,038	5,808		6,038										
	Falls and weirs ..	6,106	478		5,808			1,645	1,645						
	Miscellaneous ..														
	Total ..	32,744	21,888	3,579	25,467		3,887	3,887							
	II. Branch Channel.														
	Land ..	810	426		426										
	Works ..	1,114	3,374		3,374										
	Falls and weirs ..	2,646	2,005		2,005										
	Cross drainage works ..	952	646		646										
	Bridges ..	646													
	Earthwork ..	4,433			4,435										
	Miscellaneous ..														
	Maintenance ..	75	75		75										
	Total ..	10,876	7,941	4,435	13,376		1,125	1,125							

III. Branch Channel.

Land ..	3,150	2,714	2,714	436	436							
Works ..	3,884	1,621	1,621									
Falls and weirs ..	9,809	9,461	9,461									
Cross drainage works ..	1,003	1,889	1,889									
Bridges ..	615	615	615									
Earthwork ..	3,355	8,345	8,345									
Miscellaneous ..	3,490											
Maintenance ..	912	1,072	1,072									
Total ..												
	31,198	28,006	27,114	25,720	436	436						

IV. Branch Channel.

Land ..	8,100	6,053	6,053	2,047	2,047							
Works ..	3,986	5,304	5,304									
Falls and weirs ..	19,911	17,104	17,104									
Bridges ..	4,817	3,446	3,446									
Earthwork ..	37,750	39,500	39,500									
Miscellaneous ..	11,057	7,260	7,260									
Maintenance ..	1,182	2,029	2,029									
Total ..												
	85,935	28,003	49,613	77,679	11,522	11,522						

V. Branch Channel.

Land ..	2,325	906	906	1,618	1,618							
Works ..	1,551	1,071	1,071									
Falls and weirs ..	9,441	5,289	5,289									
Bridges ..	350	389	389									
Earthwork ..	10,565	8,479	8,479									
Miscellaneous ..	3,250	720	720									
Maintenance ..	85	103	103									
Cross drainage works ..		561	561									
Total ..												
	27,837	2,324	15,394	17,718	5,072	5,072						

VI. Branch Channel.

Land ..	1,221	971	971	250	250							
Works ..	1,100	733	733									
Falls and weirs ..	4,650	2,465	2,465									
Bridges ..	280	283	283									
Earthwork ..	6,745	6,874	6,874									
Miscellaneous ..	1,930	1,040	1,040									
Total ..												
	15,926	4,521	7,845	12,302	3,552	3,552						

VII. Branch Channel.

Land ..	1,000	44	44									
Works ..	1,100	914	914									
Falls and weirs ..	4,690											
Earthwork ..	1,460	345	345									
Miscellaneous ..	1,280											
Total ..												
	9,430	1,303	1,303									

Statement D comparing expenditure by main and sub-heads with provision in estimates sanctioned by Secretary of State or Government of India—*cont.*

Head.	Sub-head.	Provision in estimate sanctioned by Secretary of State in G.O. No. 1067 L. dated 22nd December 1894		On completed works.		On works in progress.		Total.		Unremunerative.		Probable further outlay classified		Probable total outlay		Difference between probable total outlay and provision sanctioned by Secretary of State or Government of India.	
		Rs.	P.	Rs.	P.	Rs.	P.	Rs.	P.	Rs.	P.	Rs.	P.	Rs.	P.	More.	Less.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>VIII. Branch channel.</i>																	
Land ..	..	2,240	770	..	770	..	..	2,240	770	..	..	..	..	2,240	770	..	..
Works ..	..	2,000	1,200	..	1,200	..	..	2,000	1,200	..	..	..	..	2,000	1,200	..	..
Falls and weirs ..	..	7,750	2,687	..	2,687	..	..	7,750	2,687	..	..	..	..	7,750	2,687	..	..
Earthwork ..	..	7,000	..	6,050	..	..	..	7,000	..	6,050	..	..	..	7,000	..	6,050	..
Miscellaneous ..	..	1,930	130	..	130	..	..	1,930	130	..	..	..	..	1,930	130	..	..
Total ..	..	21,740	4,792	6,050	10,842	..	..	21,740	4,792	6,050	10,842	..	..	21,740	4,792	6,050	10,842
<i>IX. Branch channel.</i>																	
Land ..	..	12,850	..	4,270	4,270	..	..	12,850	..	4,270	4,270	..	..	12,850	..	4,270	4,270
Works ..	..	5,400	3,500	..	3,500	..	..	5,400	3,500	..	..	..	..	5,400	3,500	..	..
Falls and weirs ..	..	47,330	20,304	..	20,304	..	..	47,330	20,304	..	..	..	..	47,330	20,304	..	..
Cross drainage works ..	..	5,000	..	6,500	..	..	..	5,000	..	6,500	..	..	..	5,000	..	6,500	..
Bridges ..	..	3,140	6,500	..	6,500	..	..	3,140	6,500	..	..	..	..	3,140	6,500	..	..
Buildings ..	..	3,140	..	1,050	..	..	..	3,140	..	1,050	..	..	..	3,140	..	1,050	..
Earthwork ..	..	50,648	..	76,698	..	..	..	50,648	..	76,698	..	..	..	50,648	..	76,698	..
Miscellaneous ..	..	13,440	..	5,764	..	..	..	13,440	..	5,764	..	..	..	13,440	..	5,764	..
Total ..	..	147,300	30,134	94,237	124,431	..	..	147,300	30,134	94,237	124,431	..	..	147,300	30,134	94,237	124,431
<i>X. Branch channel.</i>																	
Land ..	..	12,075	..	8,014	8,014	..	..	12,075	..	8,014	8,014	..	..	12,075	..	8,014	8,014
Works ..	..	18,910	..	3,622	3,622	..	..	18,910	..	3,622	3,622	..	..	18,910	..	3,622	3,622
Falls and weirs ..	..	22,060	..	17,582	17,582	..	..	22,060	..	17,582	17,582	..	..	22,060	..	17,582	17,582
Cross drainage works ..	..	1,270	..	..	..	..	..	1,270	..	..	..	..	..	1,270	..	..	..
Bridges ..	..	66,225	..	87,265	87,265	..	..	66,225	..	87,265	87,265	..	..	66,225	..	87,265	87,265
Earthwork ..	..	11,580	..	3,216	3,216	..	..	11,580	..	3,216	3,216	..	..	11,580	..	3,216	3,216
Miscellaneous ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total ..	..	156,080	30,32	140,764	143,786	..	..	156,080	30,32	140,764	143,786	..	..	156,080	30,32	140,764	143,786

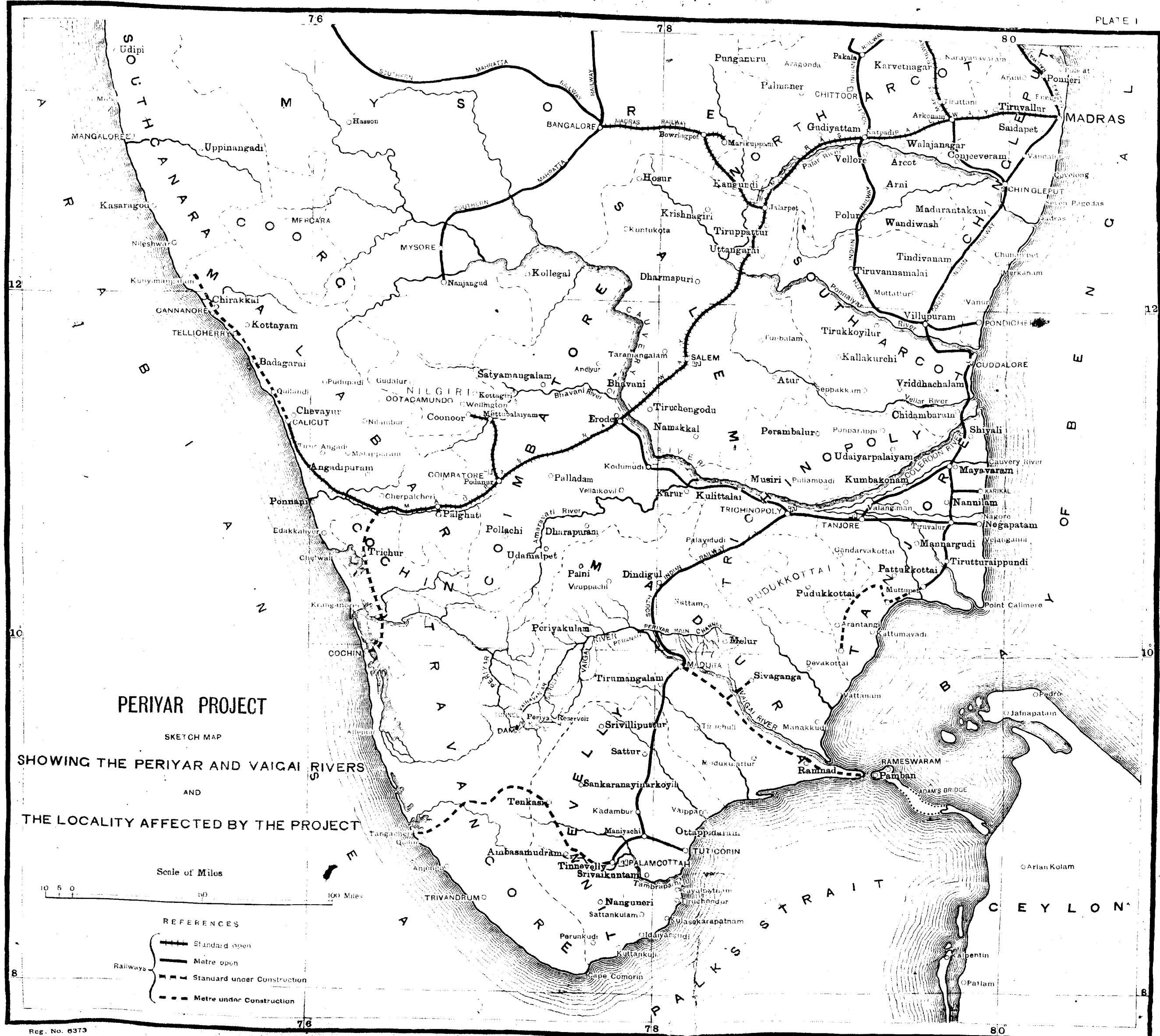
<i>XI. Branch channel.</i>																	
Land ..	..	3,150	..	2,379	2,379	..	..	3,150	..	2,379	2,379	..	..	3,150	..	2,379	2,379
Works ..	..	1,680	..	..	..	..	..	1,680	..	..	..	..	..	1,680	..	..	..
Falls and weirs ..	..	7,680	..	..	..	..	..	7,680	..	..	..	..	..	7,680	..	..	..
Bridges ..	..	960	..	..	..	..	..	960	..	..	..	..	..	960	..	..	..
Earthwork ..	..	13,150	..	914	914	..	..	13,150	..	914	914	..	..	13,150	..	914	914
Miscellaneous ..	..	3,810	..	..	..	..	..	3,810	..	..	..	..	..	3,810	..	..	..
Total ..	..	30,280	..	3,293	3,293	..	..	30,280	..	3,293	3,293	..	..	30,280	..	3,293	3,293
<i>XII. Branch channel.</i>																	
Land ..	..	5,850	5,567	..	5,567	..	..	5,850	5,567	..	..	..	..	5,850	5,567	..	..
Works ..	..	3,940	..	..	..	..	..	3,940	..	..	..	..	..	3,940	..	..	..
Falls and weirs ..	..	5,240	..	..	..	..	..	5,240	..	..	..	..	..	5,240	..	..	..
Bridges ..	..	3,020	..	..	..	..	..	3,020	..	..	..	..	..	3,020	..	..	..
Earthwork ..	..	54,220	..	9,563	9,563	..	..	54,220	..	9,563	9,563	..	..	54,220	..	9,563	9,563
Miscellaneous ..	..	9,980	..	..	..	..	..	9,980	..	..	..	..	..	9,980	..	..	..
Total ..	..	82,200	5,567	9,563	15,130	..	..	82,200	5,567	9,563	15,130	..	..	82,200	5,567	9,563	15,130
<i>Total, 3. Distributaries ..</i>																	
Total ..	..	7,15,000	1,51,141	3,47,883	4,99,024	..	..	7,15,000	1,51,141	3,47,883	4,99,024	..	..	7,15,000	1,51,141	3,47,883	4,99,024
<i>Grand Total ..</i>																	
Grand Total ..	..	93,26,000	22,14,760	38,54,962	60,69,762	..	..	93,26,000	22,14,760	38,54,962	60,69,762	..	..	93,26,000	22,14,760	38,54,962	60,69,762

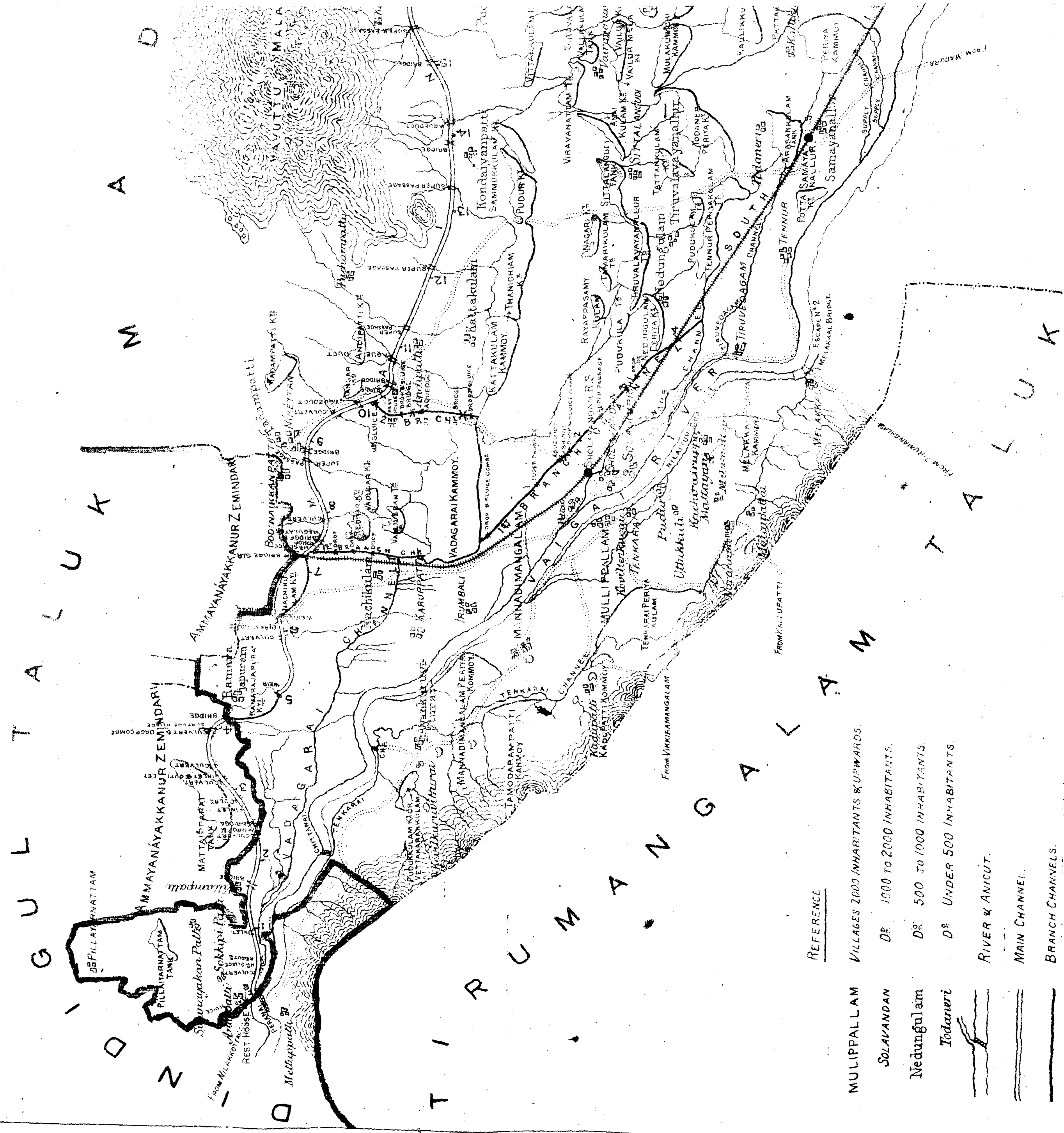
(Signed) A. T. MACKENZIE,
for Chief Engineer for Irrigation.

The figures of outlay have been verified in this office.

27th October 1902

(Signed) S. TOMKINS,
for Exr., P.W. Accts., Madras.

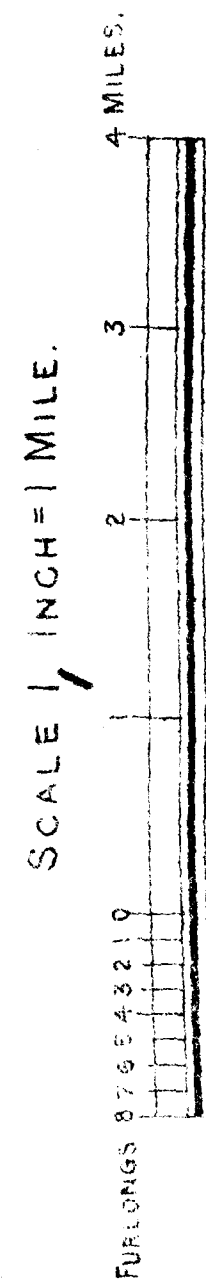




REFERENCE

- MULIPPALLAM VILLAGES 2000 INHABITANTS & UPWARDS.
- SOLAVANDAN DO 1000 TO 2000 INHABITANTS.
- Nedungulam DO 500 TO 1000 INHABITANTS.
- Todaneri DO UNDER 500 INHABITANTS.
- RIVER & ANICUT.
- MAIN CHANNEL.
- BRANCH CHANNELS.
- OFFTAKES.
- MAIN & SUB-DISTRIBUTARY.
- GOVT TANKS TO BE MAINTAINED.
- DO DO TO BE LEFT AS THEY ARE.
- PRIVATE TANKS.
- RAILWAY LINE.
- DISTRICT ROADS.
- TALUK BOUNDARIES.
- ZEMINDARY BOUNDARY.

MAP SHOWING
THE MAIN AND BRANCH CHANNELS & CANALS
OF THE
PERIYAR PROJECT
MADURAI DISTRICT

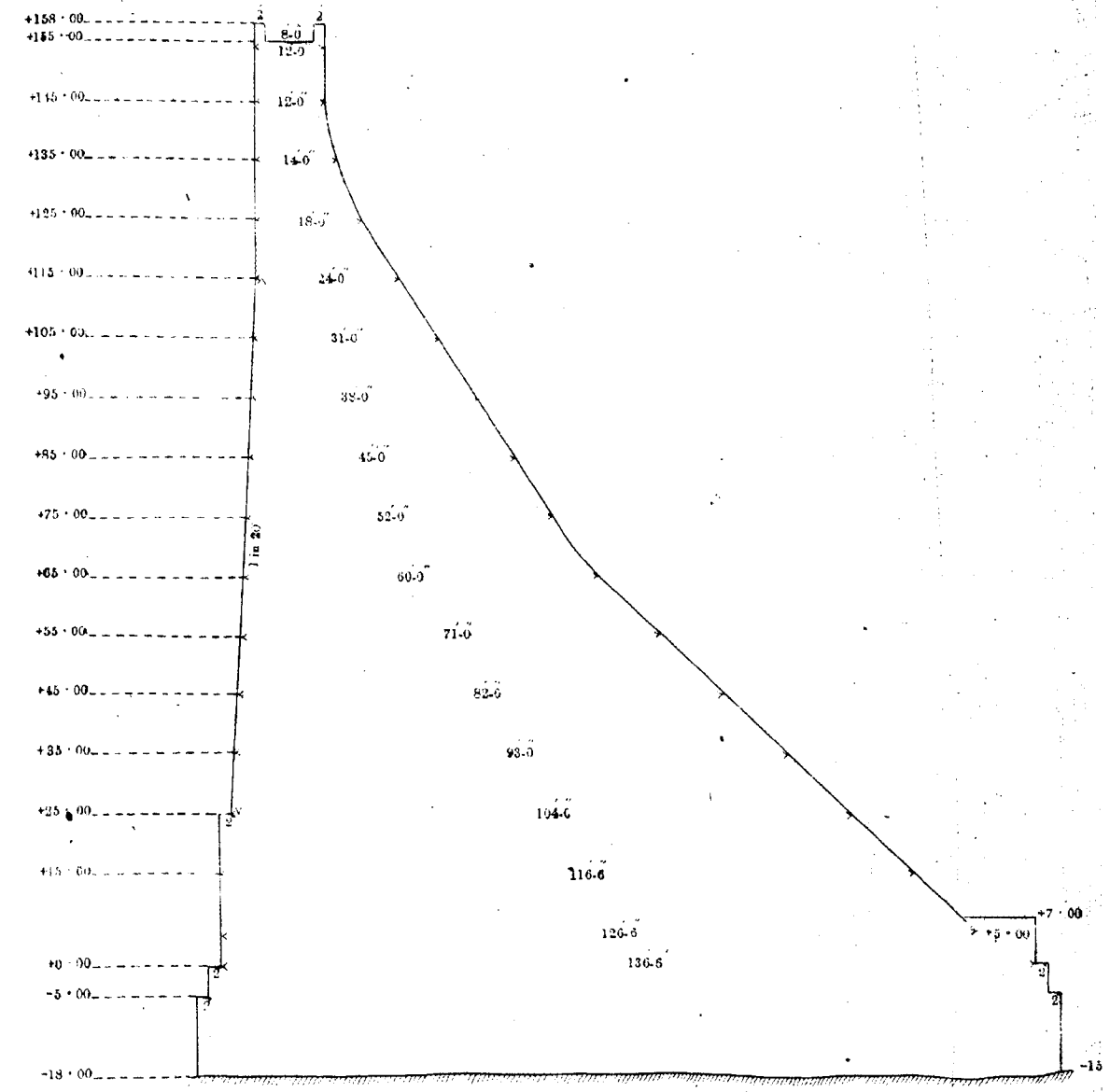
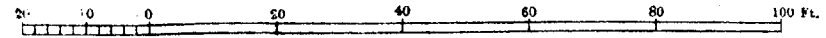


OFFICE OF THE CHIEF ENGINEER FOR IRRIGATION
CHENNAI JUNE 1899.

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PERIYAR PROJECT
CROSS SECTION OF THE MAIN DAM

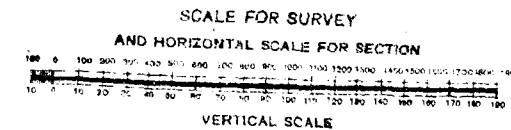
Scale 30 Feet to 1 Inch



Reg: No. 6385
Copies 210

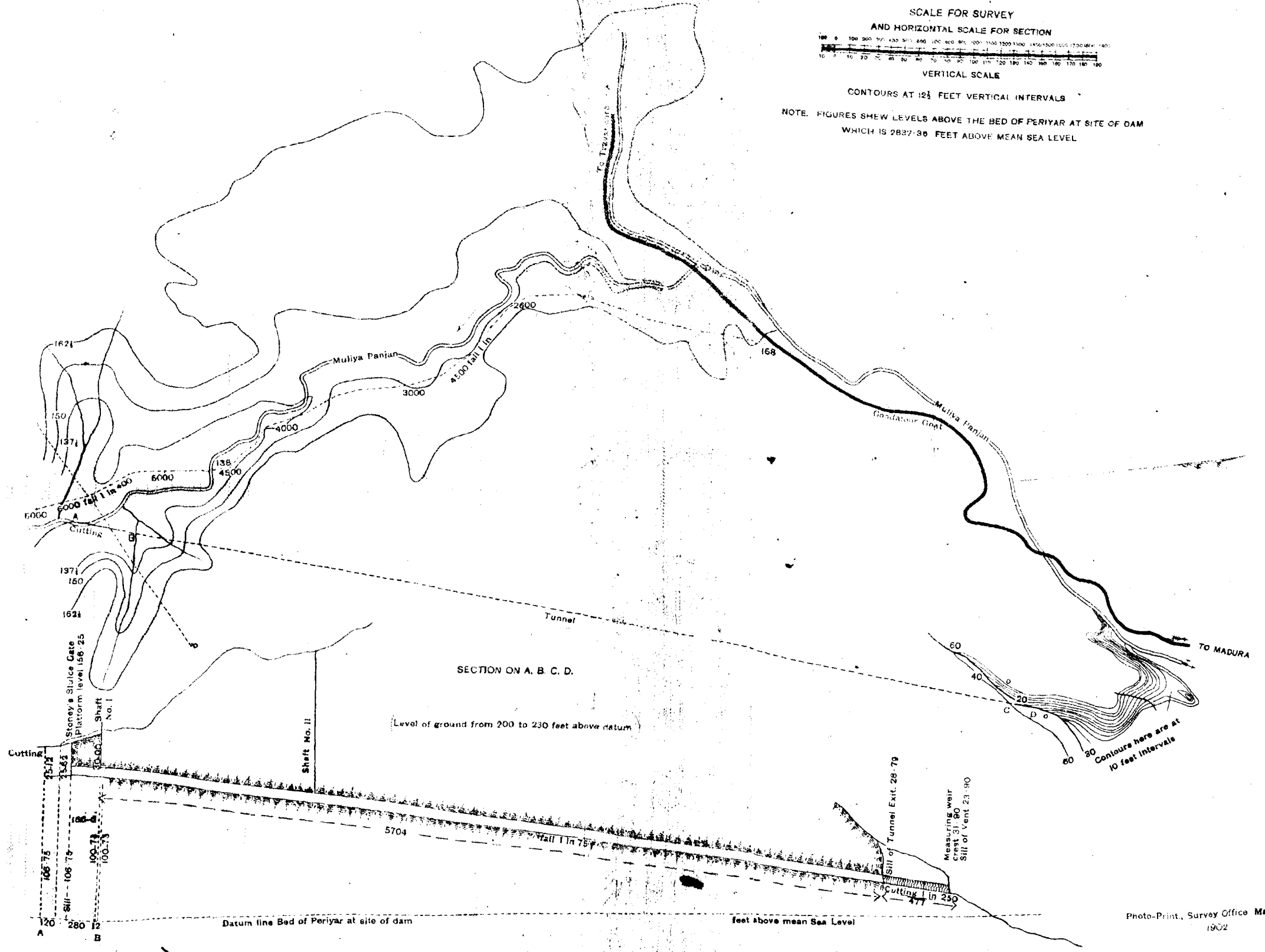
Photo-Print, Survey Office, Madras
1901.

PLAN AND SECTION OF WATERSHED TUNNEL



CONTOURS AT 12½ FEET VERTICAL INTERVALS

NOTE. FIGURES SHew LEVELS ABOVE THE BED OF PERIYAR AT SITE OF DAM
WHICH IS 2837.96 FEET ABOVE MEAN SEA LEVEL



Reg. No. 6916
Cottees 210

Photo-Print, Survey Office Madras.
1902



which it has been decided to abandon in accordance
No. 710 I, dated 19th August 1896, and 176 I,
February 1897, have not been shown in this map.



Johnson