

B. D. D. No 2589/1936

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GOVERNMENT OF THE PUNJAB

MINISTRY OF AGRICULTURE

E-10

PUBLIC WORKS DEPARTMENT

BUILDINGS AND ROADS BRANCH

ADMINISTRATION REPORT

INCORPORATING THE REPORT OF

THE COMMUNICATIONS BOARD,

FOR THE YEAR

1934-35.

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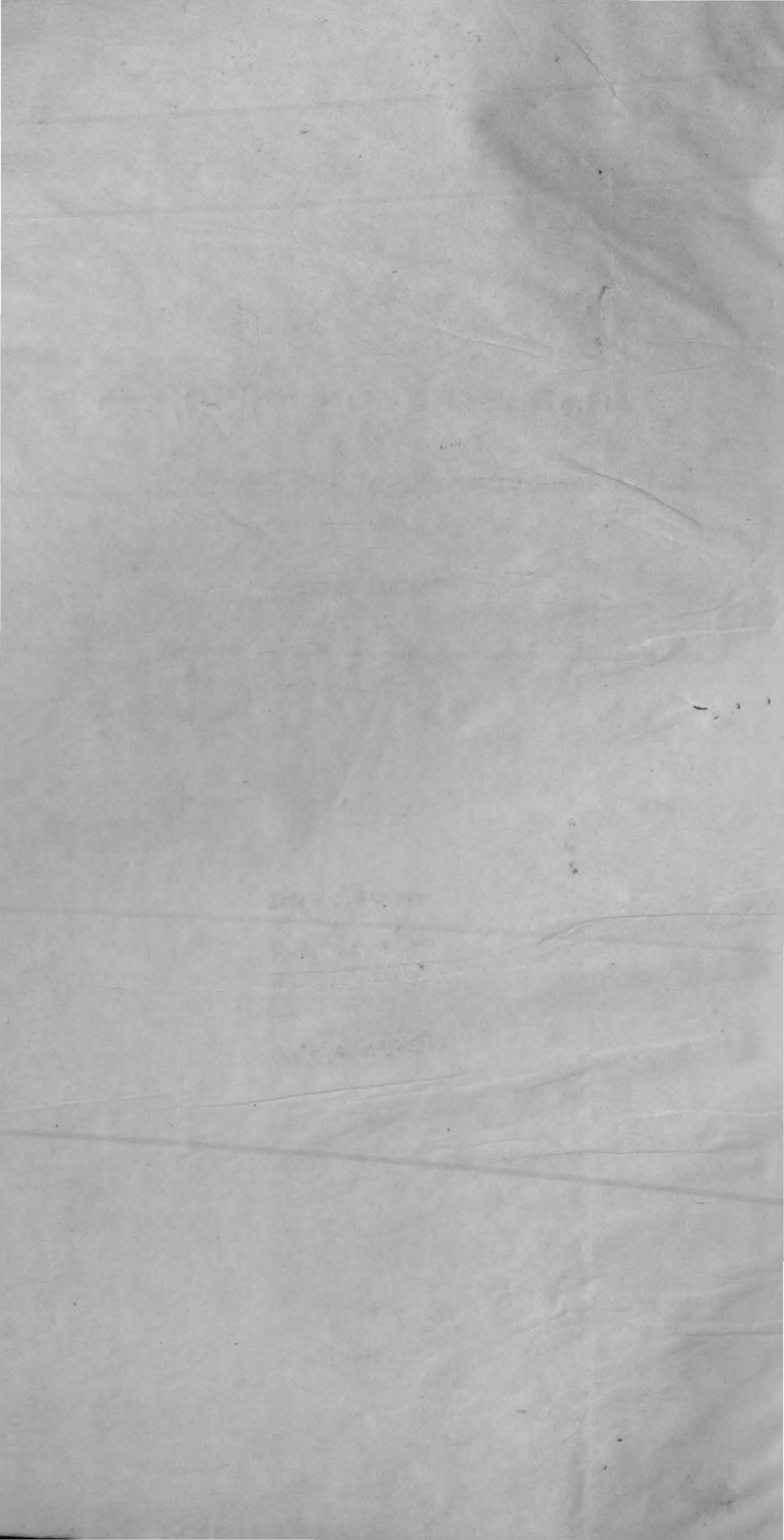
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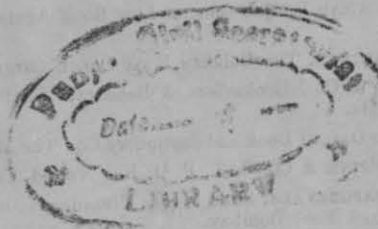
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ADMINISTRATION REPORT, 1934-35.

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STATEMENTS.

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Proceedings of the Punjab Government (Ministry of Agriculture) in the Public Works Department, Buildings and Roads Branch, No. 209-G., dated 3rd February, 1936.

READ—

THE Administration Report of the Public Works Department, Buildings and Roads Branch, for the year 1934-35.

Communications.—The road programme framed in 1926 is nearing completion. In 1925-26 there were 1,626.52 miles of metalled and 1,268.76 miles of unmetalled provincial roads, out of which only 24 miles were tarred. The maintenance cost during that year amounted to Rs. 27,69,581 for the metalled and Rs. 1,87,003 for the unmetalled roads. The total mileage of metalled roads has, to the end of the year under review, increased to 2,757.45 miles, out of which only 322 miles or 11.7 per cent. remained untarred, while the maintenance cost stood at Rs. 39,93,895. Deducting receipts from the Central Road Fund amounting to about Rs. 8 lakhs per annum and the yield from motor taxation which gives Rs. 6,38,315 (as against Rs. 1,97,585 in 1925-26) the net charge to provincial revenues comes to Rs. 25,55,583. It will be seen that while the mileage of metalled roads has increased by nearly 70 per cent., the maintenance cost has only increased by 44 per cent. Provided there is no abnormal increase in traffic, it is hoped that the maintenance cost per mile which was Rs. 1,449 in the year under review will be reduced to about Rs. 1,100 a mile within the near future.

The mileage of unmetalled roads has increased in the same period from 1,268.76 to 1,901.52 and along most of these roads a motorable service road is maintained. The maintenance cost of unmetalled roads amounted to Rs. 3,48,072, or Rs. 183 per mile.

During the year the road between the Shalamar Gardens and the Railway underbridge, at Lahore, was widened. The Bhai Pheru-Pattoki section of the Lahore-Multan Road was completed, while the Lyallpur-Sargodha Road and the Multan-Jahanian section of the Delhi-Multan Road were improved and were being metalled.

The reconstruction of spans of Chakki bridge was completed and a boat bridge was erected at Trimmu at the confluence of the Chenab and the Jhelum.

The increase in motor traffic is indicated by the register of motor figures. In 1932-33, 11,172 motor vehicles were registered; in 1933-34 the registration increased to 12,836 and in 1934-35 to 14,765.

Communications Board.—The Board held only two meetings during the year as owing to financial stringency they had no new schemes to consider. At the end of the year under review the District Boards had approximately 1,290 miles of metalled and 6,956 miles of unmetalled roads. It is to their credit that they have tarred about 300 miles. Rs. 3,45,000 only were provided for grants-in-aid which sum is quite inadequate for the carrying out of a comprehensive programme, and actually the Communications Board has not been able to meet fully its obligations of paying District Boards the accepted percentage of the previous year's expenditure on maintenance, during the past 4 years, as is illustrated by the following statement:—

Year.	Grant-in-aid earned by District Boards.	Actual grant paid.	Difference between columns 2 and 3.
	Rs.	Rs.	Rs.
1931-32	4,79,673	3,28,000	1,51,673
1932-33	4,22,376	2,77,955	1,44,421
1933-34	4,08,144	2,80,322	1,27,822
1934-35	3,44,101	2,75,854	68,247
Total	16,54,294	11,62,131	4,92,163

To encourage the extensive use of Grading outfits for road maintenance, a Grader Fund was inaugurated during the year, and Rs. 4,000 were paid to the Gurdaspur and Sialkot District Boards on the basis of the work done by them in this direction during the previous year.

The post of whole-time Secretary continued to remain in abeyance during the year on account of financial stringency, but the Ministry hopes that a permanent Secretary, Communications Board, will soon be appointed who will deal with all problems of communications and traffic, the P. W. D. district staff supervising communications which receive contributions from Provincial Revenues. At the same time it is hoped that with closer co-operation with the local bodies, the standard of District Board roads will be raised and in the course of time every village will be connected with a system of rural roads.

The 1,230 miles of metalled road represent capital expenditure of no less than 1½ crores, of which more than 50 per cent. came from Provincial Revenues. The District Boards have only been able to spend Rs. 600 a mile on maintenance against the normal cost of Rs. 900 a mile. It is estimated that the whole of this length could be reconditioned and tarred at a cost of 20 lakhs and then maintained at a cost of Rs. 700 a mile. Now that the Government of India have revised the rules governing the grant from the Road Fund, it should be possible, when the gaps in the Provincial Road programme have been completed, to provide funds for reconditioning these roads and opening out village communications.

The Ministry is inclined to the view that when funds are available, the best policy will be to provincialize all the District Board metalled roads and to set free all amounts which the District Boards now spend on them, for opening out village communications and maintaining kacha roads in good condition, thus leading to the speeding up of transport, which will break down village prejudices, monotony, stagnation and mental starvation. At the same time it is felt that district staff of the Buildings and Roads Branch should have the right to inspect and approve roads maintained by the District Boards if the latter are to claim any grant from Provincial funds. This proposal is under examination.

The total expenditure in the Department for the year was Rs. 1,05,58,413 as against Rs. 1,03,92,051 for the preceding year. The increase is due to increased activities, consistent with the slight improvement in the financial position of the Province, after a long term of continued financial stringency.

Buildings.—The total expenditure on buildings, including cost of maintenance, during the year was Rs. 22,83,087. General Administration buildings formed the largest item, closely followed by those for the Police Department and Civil Works. The expenditure under major heads on buildings (Original Works and Repairs) was—

	MAJOR HEADS.		
	41—Civil Works.	60—Civil Works Capital Expenditure.	53—Capital Industrial Development.
	Rs.	Rs.	Rs.
General Administration (Reserved) ..	92,135	..	..
General Administration (Transferred) ..	2,40,488	65,763	..
Administration of Justice	77,262	5,852	..
Jails and Convict Settlements	2,72,973	8,145	..
Police	1,86,219	1,87,328	..
Education	2,00,566	2,619	..
Medical	2,89,245	8,171	..
Agriculture	1,04,838	2,917	..
Civil Works	3,01,938	36,797	..
Other Departments	1,98,568	198	854

As in the last year, the activities of the Department under this Head were confined mostly to works costing under Rs. 30,000 each. The most important works under execution were the New Legislative Council Chamber at Charing Cross, Lahore, the New Police Station, Ferozepore Road, Lahore, and the new Police Lines at Ludhiana.

The work was completed on a Type III-A, permanent residence, on site No. 44-A, Gazetted Officers Residences Estate, Lahore. This has been built as an experiment, with hollow concrete walls and hollow roofs, and is proving cooler, during the hot dry months, than the normal type of construction.

The Public Health Circle continued its activities, and preliminary and detailed major projects, estimated to cost Rs. 4,22,450 and Rs. 12,74,147, respectively, in addition to a large number of minor projects and estimates for maintenance and repairs to water supply and sanitary installations, were prepared during the year, during which period fourteen important schemes were commenced and eight completed. The more important works carried out were:—

(i) *Montgomery Drainage Scheme*.—This work, estimated to cost Rs. 5,97,290, and comprising a complete surface drainage system for the town, including an outfall sewer, sullage disposal works, pumping station and storm drainage arrangements, progressed well during the year, the intramural drainage system being nearly completed.

(ii) *Bhiwani Drainage Scheme*.—This important scheme, estimated to cost Rs. 4,62,441, consists of a complete system of surface drainage for the town of Bhiwani, with two main outfalls, discharging into two disposal works, whence the sullage will be pumped to sewage farms. Progress on the work was good.

(iii) *Okara Drainage Scheme*.—This is a comprehensive scheme of surface drainage for the mandi town of Okara, estimated to cost Rs. 2,54,167. The work was started during the year and is in progress.

(iv) *Okara Water Supply*.—This scheme, estimated to cost Rs. 1,47,120 was also commenced during the year, and is in progress.

The demand on this Circle for assistance from local bodies, etc., is continuously growing and the way it has been met is most creditable to the Superintending Engineer and his staff.

The Public Health Circle controlled 227 installations and generating plants, producing 1,754 horse power. This Circle has successfully installed numerous individual tube-wells to meet local requirements.

Electrical Engineering.—The activities of this branch continued to increase, owing to the rapid electrical development in the Province. There are few towns with a population of 10,000 or over where electricity is not now brought into service.

There were far greater demands for electric installations during the year than in any previous year, and the Electrical Circle, in addition to undertaking the electrification of all Government buildings in four large towns, was actively engaged in the preparation of estimates for ten others. In all, 1,572 estimates for providing electric installations in Government buildings were prepared during the year, and many others, framed in previous years, were revised. The Department also ran the Renala power station, where power is generated from canal falls. The generating cost was approximately 2.84 pies per unit exclusive of depreciation, etc., and it was sold at 13.38 pies per unit for lifting water, giving a revenue of Rs. 2,47,119.

Engineering Education.—The cost of engineering education during the year was Rs. 3,87,205.

(a) *The MacLagan Engineering College, Moghalpura*.—The report for the year shows that the College continued to be popular, but apparently owing to the substitution of scholarships for stipends in B Class in October, 1933, competition for "external" vacancies fell, only 68 candidates competing for 25 vacancies. On the other hand, competition for the Railway vacancies in this class remained keen, 106 candidates competing for 15 vacancies, due on

doubt to the system of stipends, although reduced, remaining in force. It is hoped that the number of admissions will be doubled with the establishment of the workshop.

As the result of a generous donation of Rs. 30,000 by Rai Bahadur Lal Amar Nath, another class, known as the "C" Class, was created during the year. The object is to provide two years' practical training in the workshops for young men who are desirous of seeking careers as artizans and tradesmen. Provision has been made in it for 25 admissions annually, with effect from October, 1935.

The results of the final examinations in 1934 were very satisfactory. Out of 10 "A" Class students who sat for the B. Sc. examination in Engineering of the Punjab University, 9 were successful. Two "A" and six "B" Class students proved successful, 5 in part and 3 in the whole, in the external examinations of the Institution of Mechanical and Electrical Engineers; and in the examination of the City and Guilds, London, two "A" and fifteen "B" Class students were successful.

It is satisfactory to note that most of the students who completed their course at the College during the year have been successful in finding suitable employment.

The second bay of the College workshops was put in hand and nearly completed by the end of the year. Apart from this, there were no additions to the College buildings and equipment.

The general health of the staff and students was satisfactory. A contributing factor in this case was the keen interest taken in games by almost all of the students.

(b) *The Government School of Engineering, Punjab, Rasul.*—Competition for entrance to the School was the same as in the previous year, 85 candidates competing for the 58 vacancies. This would appear to indicate that the decline in the yearly competition for entrance to the School, which was brought about by the financial depression and consequent retrenchment of subordinates from the various services, has reached its limit.

The results of the final examination for Overseers were satisfactory. Of the 46 students who successfully completed the two years' course, 26 obtained the "A" certificate (6 with "Honours" and 20 with "Credit") and 20 obtained the "B" certificate. Thirty-nine of these 46 students were Punjabi candidates and the remainder came from the North-West Frontier Province and Indian States, on whom they are dependent for employment. Out of the Punjabi candidates, 13 obtained appointments under Government and there are prospects of some of the others also getting Government posts.

In the 2nd year Draftsman Class there were 7 students, all of whom qualified, 1 with "Honours," 2 with "Credit" and 4 with ordinary certificates. There was only one student in the 3rd year Draftsman Class, along with one student of the previous year, who, due to illness, was absent from that year's final examination and so was permitted to appear again. Both qualified.

Of the 7 draftsmen who qualified in the 2nd year, two were appointed in the Irrigation Branch of whom one is now undergoing the 3rd year course. It is likely that the remaining 5 draftsmen of this class will also be employed during 1935-36. One draftsman of the 3rd year class found employment in the Buildings and Roads Branch.

Although the running expenses of the School were kept as low as possible, the net cost of training per student has risen to Rs. 827 per student per annum as against Rs. 708 in the previous year. This is accounted for by the falling off in the number of students from 117 last year to 109 this year, coupled with a reduction in the amount of capitation fees from Indian States, which sent fewer students for training.

Administration.—Mr. D. Macfarlane, E.I.S., continued to perform the duties of Secretary to Government, Punjab, Public Works Department, and Chief Engineer throughout the year.

Rai Bahadur Lala Sant Ram, I.S.E., Superintending Engineer, proceeded on leave prior to retirement on superannuation in January, 1935, after 31½ years of meritorious service, of which the Punjab Government (Ministry of Agriculture) wishes to record its appreciation. It also wishes to record its profound sense of loss owing to the untimely death on the 31st January, 1935, at Lahore, of Mr. F. L. Milne, late Electrical Engineer to Government, Punjab.

The Ministry wishes to acknowledge gratefully the unstinted co-operation which Mr. Macfarlane and his staff have given in carrying out the policy of the Ministry and in securing first place for the Punjab roads in the whole of India. The Province owes more than it realises to its engineers.

By order of the Punjab Government.

JOGENDRA SINGH,
Minister for Agriculture.

D. MACFARLANE,
Secretary to Government, Punjab,
P. W. D., Buildings and Roads
Branch, Punjab.

ADMINISTRATION REPORT OF 1934-35.

CHAPTER I.—Administration.

Secretariat.—Mr. D. Macfarlane, I.S.E., continued as Chief Engineer and Secretary to Government, Punjab, Public Works Department, throughout the year.

Mr. G. H. Hunt, M.C., B.Sc., A.M.I.C.E., I.S.E., Executive Engineer, continued as Under-Secretary throughout the year.

Mr. G. E. J. Haegert, I.S.O., held the post of Assistant Secretary throughout the year, except for two periods of leave from the 9th April, 1934, to the 8th May, 1934, and from the 16th January, 1935, to the end of the year, during both of which periods Mr. J. A. Barber, Superintendent, officiated.

Circles.—The charge of the First Circle of Superintendence was held by Sardar Bahadur Sardar Gurbakhsh Singh, B.A., M.B.E., I.S.E., Superintending Engineer, throughout the year, except for a period of four months, *i.e.*, from the 6th June, 1934, to the 5th October, 1934, during which Mr. L. H. M. Heathcote, I.S.E., Executive Engineer, held officiating charge of the Circle.

Rai Sahib Lala Gurcharn Das, Mehta, B.A., I.S.E., officiating Superintending Engineer, held charge of the Second Circle of Superintendence upto the afternoon of the 13th November, 1934, when he was relieved by Mr. S. G. Stubbs, O.B.E., I.S.E., Superintending Engineer, who remained in charge of the Circle upto the afternoon of the 29th March, 1935. Mr. S. Bashiram, M.A., A.K.C., A.M.I.C.E., A.M.I.E. (Ind.), I.S.E., Executive Engineer, held officiating charge of the Circle for the remainder of the year.

Rai Bahadur Lala Sant Ram, I.S.E., Superintending Engineer, held charge of the Third Circle of Superintendence till the forenoon of the 5th January, 1935, when he proceeded on leave preparatory to retirement after rendering about thirty-one and a half years' service. He was relieved by Rai Sahib Lala Gurcharn Das, Mehta, B.A., I.S.E., officiating Superintending Engineer, who continued to hold charge of the Circle till the close of the year.

Mr. D. A. Howell, M. Inst. C.E., M. I. Mech. E., held the post of Superintending Engineer, Public Health Circle, throughout the year.

Electrical.—Mr. F. L. Milne, M.I.E.E., M.I.E. (India), continued as Electrical Engineer to Government upto the 6th April, 1934, when he proceeded on leave on relief by Mr. C. W. Stowers, who held charge of the Electrical Circle until Mr. Milne's return to duty on the 11th November, 1934. Mr. Milne died on the afternoon of the 31st January, 1935, and was succeeded by Mr. C. W. Stowers, who remained in charge of the Circle till the close of the year.

Architectural Circle.—Mr. B. M. Sullivan, F.R.I.B.A., A.M.T.P.I., O.B.E., continued as Superintending Architect, Architectural Circle, throughout the year.

Communications Board.—Rai Bahadur Lala Sant Ram, I.S.E., Superintending Engineer, held charge of the office of the Secretary to the Board, in addition to his own duties as Superintending Engineer, Third Circle, Lahore, till the forenoon of the 5th January, 1935, when he proceeded on four months' leave preparatory to retirement. He was relieved by Rai Sahib Lala Gurcharn Das, Mehta, B.A., I.S.E., officiating Superintending Engineer, who remained in charge of the combined offices till the close of the year.

Engineering Education.—Captain H. Whittaker (late R. E.), B.Sc., A. R. C. Sc., A. M. I. Mech. E., A.M. Inst. C.E., A.M.I.E.E., Mem. Soc. Ing. Cir. de France, who had been Principal of the Maclagan Engineering College, Moghalpura, since its inception in 1923, proceeded on leave preparatory to retirement on the 5th April, 1934, and was succeeded by Mr. P. R. Bence-Jones, M.C., M.A. (Cantab), M. Inst. C. E., A.M.I. Mech. E., who was appointed by the High Commissioner for India in London.

Mr. C. E. Blaker, F.G.S.L., continued as Principal of the Government School of Engineering, Punjab, Rasul, throughout the year.

Divisional charges.—In the Public Health Circle, a second Public Health Division was formed with effect from the 10th September, 1934, and the charges of the two Public Health Divisions were re-arranged on territorial bases.

Expenditure and Establishment.—The following statement shows for the year under report and the previous year, the expenditure incurred, and the percentage of establishment to total expenditure :—

Year.	Total Expenditure on works.	EXPENDITURE ON ESTABLISHMENT.			Gross percentage of figures in column 5 to those in column 2.	Net percentage after deducting 25 per cent. on account of extraneous works.
		Total Expenditure.	Deduct cost of engineering education.	Net expenditure.		
1	2	3	4	5	6	7
	Rs.	Rs.	Rs.	Rs.	%	%
1933-34 ..	77,68,945	20,09,612	3,92,920	16,16,692	20·80	15·60
1934-35 ..	86,29,398	20,43,789	3,72,505	16,71,284	19·37	14·53

The reasons for adopting the figure of 25 per cent. in the last column of the statement are explained in Chapter I of the Administration Report for 1930-31.

General.—The Department lost, during the year under report, a valuable officer in Mr. F. L. Milne, late Electrical Engineer to Government, whose untimely death on the afternoon of the 31st January, 1935, at Lahore, is much deplored.

Mr. K. G. Mitchell, A.C.G.I., M.I.C.E., C.I.E., I.S.E., remained on deputation with the Government of India, Department of Industries and Labour, Public Works Branch, as Consulting Engineer to the Government of India (Roads).

The services of Mr. L. S. Adlard, I.S.E., and Mr. Ram Lal Sondhi, I.S.E., Executive Engineers, were lent to the Government of India, Department of Industries and Labour, Public Works Branch, from the 10th November, 1934, and the 3rd January, 1935, respectively, and they remained with the Government of India till the close of the financial year.

The title of Rai Sahib was conferred on Lala Gurcharn Das, Mehta, B.A., I.S.E., officiating Superintending Engineer, on the 1st January, 1935.

CHAPTER II.—Roads.

As the result of careful investigations and experiments it has been found possible to reduce the cost of maintenance of Provincial metalled roads from Rs. 1,703 per mile in 1925-26 to Rs. 1,449 in the year under review, notwithstanding the fact that during this period 88 per cent. of the total mileage has been surfaced with tar. It is hoped that as a result of this work, it will be possible to increase the period elapsing between the application of the separate coats of surfacing, from one year to at least 18 months, if not 2 years, and thereby to reduce the maintenance cost to about Rs. 1,100 per mile. In the past it was customary to renew the ordinary waterbound macadam as it wore out, with a completely new 4½ inches coat of metal costing about Rs. 7,000 per mile of 12 feet road, but, owing to the introduction of surface treatment, it is now the standard practice, to lay about 2½ inches of metal only painted with two coats of tar, at a cost of Rs. 6,650, subsequent coats of tar costing only Rs. 950 per mile. These remarks apply particularly to the many miles of road in the south-eastern Punjab which were originally constructed with Kunkar; and without this cheap form of renewal, progress would have been very much curtailed.

The total mileage of roads, metalled and unmetalled, maintained by the Department upto the end of the year, and expenditure thereon, are given below:—

PROVINCIAL METALLED ROADS, LENGTH AND EXPENDITURE.

Year.	Metalled mileage, Provincial roads.	Tarred mileage.	EXPENDITURE ON NEW WORKS.			EXPENDITURE ON MAINTENANCE.			Maintenance cost per mile.
			Provincial Funds.	Road Fund.	Total.	Provincial Funds.	Road Fund.	Total.	
1	2	3	4	5	6	7	8	9	10
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1925-26 ..	1,626·52	24	17,51,879	..	17,51,879	27,69,581	..	27,69,581	1,703
1926-27 ..	1,780·51	50	20,39,582	..	20,39,582	30,02,536	..	30,02,536	1,686
1927-28 ..	2,043·16	103	29,30,953	..	29,30,953	32,50,550	..	32,50,550	1,591
1928-29 ..	2,389·43	257	35,08,216	..	35,08,216	37,37,721	..	37,37,721	1,564
1929-30 ..	2,614·05	407	22,26,376	..	22,26,376	39,20,426	..	39,20,426	1,500
1930-31 ..	2,669·89	727	10,44,717	2,98,883	13,43,600	41,44,854	..	41,44,854	1,553
1931-32 ..	2,698·89	1,065	2,21,718	6,28,796	8,50,514	35,56,215	4,01,590	39,57,805	1,467
1932-33 ..	2,703·34	1,660	51,713	2,39,985	2,91,698	33,63,662	6,00,000	39,63,662	1,466
1933-34 ..	2,718·96	2,123	72,383	3,12,574	3,84,957	35,07,620	4,95,000	40,02,620	1,472
1934-35 ..	2,757·45	2,435	1,02,520	5,52,453	6,54,973	39,93,898	..	39,93,898	1,449

PROVINCIAL UNMETALLED ROADS, LENGTH AND EXPENDITURE.

Year.	Unmetalled mileage, Provincial roads.	EXPENDITURE ON NEW WORKS.			EXPENDITURE ON MAINTENANCE.			Maintenance cost per mile.
		Provincial Funds.	Road Fund.	Total.	Provincial Funds.	Road Fund.	Total.	
1	2	3	4	5	6	7	8	9
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1925-26 ..	1,268·76	67,364	..	67,364	1,87,003	..	1,87,003	147
1926-27 ..	1,523·01	62,918	..	62,918	2,79,398	..	2,79,398	184
1927-28 ..	1,561·17	1,22,777	..	1,22,777	3,85,561	..	3,85,561	232
1928-29 ..	1,732·85	58,297	..	58,297	3,87,007	..	3,87,007	223
1929-30 ..	1,841·51	62,445	..	62,445	4,56,094	..	4,56,094	248
1930-31 ..	1,958·4	64,315	..	64,315	4,58,006	..	4,58,006	234
1931-32 ..	1,950·72	73,491	..	73,491	3,32,559	..	3,32,559	171
1932-33 ..	1,948·73	42,745	..	42,745	3,41,594	..	3,41,594	175
1933-34 ..	1,937·45	11,558	..	11,558	3,55,195	..	3,55,195	183
1934-35 ..	1,901·52	44,915	..	44,915	3,48,072	..	3,48,072	183

The total expenditure on maintenance including accommodation for travellers, arboriculture, boat bridges and ferries amounted to Rs. 45,47,949 against a budget provision of Rs. 46,00,000.

Rupees 7,48,331 were received from the Central Road Fund and this amount together with Rs. 55,651, the balance of the preceding year, made up a total of Rs. 8,03,982 available for road development during 1934-35, which was expended as follows:—

	Rs.
(1) Widening the road in miles 306/3 to 309/4 between the Railway under-bridge and Shalamar Gardens, Lahore	36,125
(2) Construction of Arterial No. 4, Lahore-Multan-Quetta Road, Section Bhai Pheru to Pattoki	14,513
(3) Acquiring land between Mandi Malaut and Abohar on Arterial No. 6, Delhi-Multan	555
(4) Improvement to Arterial No. 2, Lahore-Mianwali Road, Section Bundial to Mianwali	58
(5) Improving and metalling Arterial No. 17, Ferozepore-Fazilka Road, Miles 31—51	624
(6) Improving and metalling Arterial No. 23, Lyallpur-Sargodha Road ..	1,90,167
(7) Metalling Arterial No. 34, Amritsar-Sialkot Road, Section Ramdass to Basantar-Nallah	14,638
(8) Constructing and metalling Arterial No. 6, Delhi-Multan Road, Section Suleimanki to Pakpattan	61,072
(9) Constructing and metalling Arterial No. 6, Delhi-Multan Road, Section Multan to Jahanian	2,00,167
(10) Acquiring land between Mandi Malaut and Abohar on Arterial No. 6, Delhi-Multan	11,902
Total ..	5,29,821
Balance carried forward to 1935-36 ..	2,74,161
Total ..	8,03,982

In addition to this, a sum of Rs. 22,632 was used against the grant from the special reserve with the Government of India, for the experimental construction of concrete cart tracks on the Lyallpur-Jaranwala Road, and for widening the Lahore-Multan Road for the first 2 miles out of Lahore, with a series of lengths of concrete tracks of varying specification to cope with the heavily brick-laden in-coming bullock cart traffic; and the results are being watched with interest. The heavy wear on the tar macadam surfaces of the main exits from Lahore caused by this traffic is causing considerable anxiety and if these experiments prove successful (as they appear to have done so far) it is hoped to extend them elsewhere as funds permit. Consideration was given to a proposal to subsidize bullock carts fitted with rubber tyres but this has not yet been found feasible.

During the year certain proposals resulting from the inauguration of the Traffic Advisory Council were under consideration. This Council was formed with the object of making recommendations designed to evolve and give effect to a policy for the establishment of a co-ordinated transport system. These proposals concern mainly the construction of roads and railways, and as a result of discussion on this problem, it has been decided to prepare a road programme covering a period of 10 years, the main object being to improve feeder roads rather than the main arterial system of the Province. The problem of the control of traffic, in order to promote public safety and convenience, and to avoid wasteful competition, was also under consideration along with the question of administrative machinery for communications, under the new constitution. It was decided, *inter alia*, that an examination of the Motor Vehicles Act, 1914, should be undertaken and discussed at a later date to discover in what respects it requires amendments.

In response to the suggestion of the Government of India that the Punjab Government should consider borrowing money from them, interest charges in connection with which should be debited to the grant from the Central Road Fund, a loan scheme involving a capital expenditure of Rs. 50 lakhs was investigated, but after the fullest consideration it was not approved.

During the cold weather of 1934-35 a Road Congress consisting of engineers and others interested in road development was initiated and an extremely interesting visit was paid by the members to the Punjab and North-West Frontier Provinces, during which roads, bridges, plant and methods of maintenance of both metalled and unmetalled roads were inspected and discussed. The Congress terminated in a meeting at New Delhi, when a number of technical papers were read and discussed.

A statement showing the mileage of surfaced roads of various classes and of motorable earth roads in the Province as on the 31st March, 1935, is appended :—

MILEAGE OF SURFACED ROADS OF VARIOUS CLASSES AND OF MOTORABLE EARTH ROADS AS ON THE 31st MARCH, 1935.

CEMENT CONCRETE OR MACADAM.			PREMIX BITUMEN ASPHALT, TAR OR PITCH.			BITUMEN ASPHALT, TAR OR PITCH GROUTED MACADAM.			SURFACE TREATED WITH TAR, PITCH, ASPHALT OR BITUMEN.			WATER BOUND MACADAM.						OTHER LOW TYPE SURFACES (MOORUM, GRAVEL, "SAND CLAY").			FAIR WEATHER MOTORABLE EARTH ROADS.			OTHER MOTORABLE ROADS WHICH CANNOT BE CLASSIFIED UNDER PREVIOUS HEADINGS.		
												Stone metal only.			Kunkar laterite or brick metal.											
1			2			3			4			5			6			7			8			9		
Public Works Department.	Local.	Total.	Public Works Department.	Local.	Total.	Public Works Department.	Local.	Total.	Public Works Department.	Local.	Total.	Public Works Department.	Local.	Total.	Public Works Department.	Local.	Total.	Public Works Department.	Local.	Total.	Public Works Department.	Local.	Total.	Public Works Department.	Local.	Total.

NOTES.—(i) Total mileage provincial metalled roads, viz., total of columns 1 to 7
 (ii) Total mileage metalled roads under charge of District Boards, viz., total of columns 4, 5 and 6

Miles.
 .. 2,757.45
 .. 1,228.97

The number of cars, lorries, motor cycles, etc., registered in the Punjab during the past three years has been as follows:—

<i>Financial year.</i>	<i>Number of vehicles registered</i>
1932-33	11,172
1933-34	12,836
1934-35	14,765

This shows clearly how, notwithstanding decreased expenditure on communications during the past few years, the revenue derived from the taxation of motor vehicles must have been steadily increasing and there is every reason to assume that it will continue to do so.

Arterial No. 1.—The Grand Trunk Road.

This road carries a very heavy bullock cart traffic near Lahore, to reduce the intensity of which, the metalling was widened from 20 feet to 30 feet in miles 307 to 310, *i.e.*, from the Shalamar Gardens to the Railway underbridge, Lahore. In the last two miles, *viz.*, miles 309 and 310 upto the underbridge, the old 20 feet wide metalling was also renewed at the same time; and the whole of the new work and the re-metalling was tarred. It was hoped that the old surface in miles 307 and 308 with patching would continue to carry the traffic, but this has not been found to be the case and it is now proposed to re-surface miles 306, 307 and 308 during next year. The expenditure on the work upto the end of the year under report amounted to Rs. 35,959 against a sanctioned estimate of Rs. 37,269.

Expenditure amounting to Rs. 8,970 was also incurred during the year on special repairs to the protection works round the piers of the bridge over the Beas river.

Arterial No. 2.—Lahore-Sargodha-Mianwali.

No improvements were undertaken to this road during the year under report for want of funds. A sum of Rs. 30,064 was allotted for payment of land compensation to the Zemindars in connection with the acquiring of land for the section Bundial to Mianwali, but as this amount could not be disbursed by the Deputy Commissioner, Mianwali, it was allowed to lapse.

Arterial No. 3.—Lahore-Lyallpur-Bhakkar.

On the representation of the Civil Department, expressing the necessity of improving the crossing at Trimmu, near Diraj, the control of this crossing at the confluence of the rivers Chenab and Jhelum, near Diraj, was taken over by this Department from the District Board during the year under report. Spare boats were utilized from the old boat bridge at Khushab, and a boat bridge was erected at Trimmu in October, 1934, and opened to traffic in the same month. With the erection of this bridge much inconvenience to traffic has been removed.

Arterial No. 4.—Lahore-Multan-Quetta.

A concrete trackway, seven feet eight inches wide with a monolithic kerb, was laid on the in-coming side of the road from furlong $\frac{1}{2}$ to milestone 3 except for a portion opposite the Chouburji Gardens, where the road metalling had previously been widened to thirty feet. This track has been constructed to various designs and specifications, some reinforced and some plain, as an experiment, half of the cost having been met from the Road Development Account, Central Road Fund Reserve. The expenditure incurred on the work, upto the close of the year, amounted to Rs. 34,606 against a sanctioned estimate of Rs. 36,721.

This road had already been metalled as far as Montgomery with the exception of a gap 22 miles in length between Bhai Pheru and Wan Radha Ram (miles 36—58). The metalling of the gap which was started in February, 1931, was completed during the year under report, and has been greatly appreciated by the inhabitants of Renala, Okara and Montgomery who were previously cut off from road communication with Lahore during wet weather. The accounts for this section between Bhai Pheru and Pattoki will be closed as soon as the debit for the compensation of land is received from the Civil Department.

The expenditure on the remainder upto the end of the year under report amounted to Rs. 1,57,065 against a sanctioned estimate of Rs. 2,16,000.

The working of the Steamer Ferry at Ghazighat remained in the hands of this Department as before, and the working of the Boat Bridge, Steam Ferries, Motor Launches, etc., under the direct control of the Executive Engineer, Multan Provincial Division, was quite satisfactory.

Arterial No. 5.—Lahore-Ferozepore-Ludhiana.

The work of widening to thirty feet of miles 0/4 to 4/2 of this road, sanctioned for Rs. 49,795, could not be started during the year for want of funds.

Road bridge over the river Sutlej, and approaches thereto, near Ferozepore.—This work was commenced on the 31st March, 1927, and completed on the 4th April, 1929. Expanded metal was fixed, during the year, to railings out of the savings in the estimate, and the accounts were finally closed in December, 1934.

Arterial No. 6.—Delhi-Multan.

Section Badopal-Sirsa.—Although the work of metalling this section was commenced in 1928, progress in the past has been slow owing to paucity of funds. The position at the commencement of the year under report was as follows :—

Miles, metalled	.. .. .	124—126, 131/1 to 131/4 and 140—158.
Miles, soling coat-laid	.. .. .	127—131 and 133—135.
Miles, where soling coat was collected, but not laid		135—140.

During the year under review it was proposed to lay 4½ inches thick waterbound macadam from miles 127 to 131/4 and arrangements were made accordingly. Owing, however, to the scarcity of water in this part of the country and after carrying out various experiments with different specifications, it was decided to lay a 3 inches tar premix with seal coat at approximately the same cost. The expenditure during the year represents the cost of material collected for the work.

Section Sirsa-Dabwali.—The demarcation of the road boundaries together with the widening of the road between Sahuwal and Dabwali on this section had already been completed, but the accounts of this work were re-opened during the year, as certain differences in the amount of compensation for land had to be adjusted.

Section Malaut-Abohar.—Land measuring 46·03 acres required for widening this section in the vicinity of Abohar was acquired during the year under review. The expenditure incurred in this connection during the year amounted to Rs. 11,902.

Section Abohar-Fazilka.—The metalling of this section was completed in the year 1928. Only compensation amounting to Rs. 1,410 was paid during the year for acquisition of 5·15 acres of municipal land.

Section Fazilka-Suleimanki.—By the end of the year 1932-33, metalling had been completed to mile 261 and some soling coat had been laid in the first three furlongs of mile 263. Further work has, however, been postponed, as the alignment of the road in the vicinity of the Head Works of Suleimanki has not been finally settled. The expenditure of Rs. 2,980, incurred during the year under report, represents the cost of land acquired from the Municipal Committee, Fazilka.

Section Suleimanki-Pakpattan.—Earthwork was completed in miles 266 to 270 and was well advanced in miles 271 and 272, while satisfactory arrangements were made for the supply of the wearing coat brick metal, as well as tar and bajri. With the exception of the bridge over the Niki Mana Nullah, which was only recently started, all the bridges and culverts in miles 266 to 270 were completed. Material for culverts in miles 271 and 272 was collected and the work taken in hand. A coolie's hut was also constructed in mile 269. Work to the extent of Rs. 60,840 was carried out during the year against a sanctioned estimate of Rs. 4,51,008.

Section Jahanian-Multan.—Work was started on raising and metalling this section on the 21st July, 1934, and allotment for the year was fully utilised on earth-work, collection of materials for soling and wearing coats and tar.

Brick soling was laid in seven and a half miles, while bridges and culverts were constructed in seven miles at the Multan end. The expenditure incurred on this work during the year amounted to Rs. 1,99,752, against a sanctioned estimate of Rs. 2,99,305.

Arterial No. 14.—Amritsar-Pathankot-Kulu.

The work of constructing four spans, on the Pathankot side of the bridge, known as the Lyall Viaduct, over the Chakki river, commenced last year, was completed during the year under report at a cost of Rs. 52,930, against a sanctioned estimate of Rs. 53,869 and the bridge was opened to traffic on the 30th May, 1934.

Arterial No. 17.—Ferozepore-Fazilka.

No further progress was made on the widening and metalling of this road owing to scarcity of funds. An expenditure of only Rs. 624 was incurred during the year, in connection with the acquisition of land for the Jalalabad-Fazilka section.

Arterial No. 18.—Jullundur-Hoshiarpur-Dharmasala.

Work, started in February, 1934, on re-building damaged and collapsed retaining walls in the Hoshiarpur-Bharwain section of this road was completed during the year at a cost of Rs. 11,432 against a sanctioned estimate of Rs. 10,972. The accounts were closed in October, 1934.

No work was done on the section Ranital to Kangra for want of funds.

Arterial No. 20.—Ambala-Simla-Tibet.

The Ghaggar Ferry.—During the year under report the rainfall was not very heavy and the first flood in the Ghaggar river appeared as late as the 30th of June, 1934, while the heaviest, running to a depth of eleven feet, was recorded on the 2nd September, 1934. The longest continuous period during which traffic was held up, amounted to 12 hours, on the 2nd July, 1934. Six hundred and seventy-eight cars and lorries used the ferry service during the monsoon, yielding an income of Rs. 678.

Arterial No. 28.—Lyallpur-Sargodha.

Section Lyallpur to Chiniot.—An estimate amounting to Rs. 4,20,223 for improving and metalling this section was sanctioned and the work started in 1931. Miles 2, 3, 4 and half of 5 were metalled and opened to traffic, while bricks for soling coat were collected in miles 6, 7 and 8. Soling and wearing stone for mile 21 and half of mile 22, and tar for miles 2 to 5 and 21 to 22, were also collected. The total expenditure incurred so far amounts to Rs. 88,766.

Section Chiniot to Jhang-Shahpur District Boundary.—During the year under report miles 28 to 32 and 36 to 38, which remained to be metalled, were completed, and the entire section was opened to traffic.

Section Jhang-Shahpur District Boundary to Sargodha.—8.27 miles were metalled during the year at a cost of Rs. 28,137. The remaining 2.35 miles will be completed during 1935-36. The total cost of the work carried out on this section upto the end of the year amounted to Rs. 1,19,345 against a sanctioned estimate of Rs. 1,54,797.

Arterial No. 32.—Jaranwala-Okara.

An experiment was carried out in mile 2 of this road, section Jaranwala to Syedwala, consisting of the provision of two feet wide pacca trackways for bullock carts, in half mile lengths, to three different specifications, and the road was opened to traffic on completion of this work. Expenditure amounting to Rs. 4,526 was incurred on the work against a sanctioned estimate of Rs. 10,044.

Arterial No. 34.—Amritsar-Sialkot.

Work in the section Ram Das to Basantar Nullah, in progress since 1931, is being proceeded with gradually as funds are available. Miles 29 and 30 were metalled for the first time and tarred. The total expenditure incurred to the close of the year amounted to Rs. 1,71,704, against a sanctioned estimate of Rs. 3,70,600.

Other Roads.

The work of laying out roads in the Pir Mahal, Khiki and Burala extension of the Lower Chenab Canal in Lyallpur District, digging drains and daghbellling centre lines, which was commenced in December, 1934, was nearly finished during the year under report, only 10 out of 112 miles remaining to be completed. These miles were expected to be completed shortly after the close of the year.

Quarries.

Taraki Quarry.—This quarry remained closed during the year, negotiations for leasing it on a royalty basis being in progress.

Chandigarh Stone Quarry.—During the year under report the total output from this quarry was as below:—

	c.ft.
Bajri	398,943
Stone Metal and ballast	2,13,687

Tools and Plant.

Efforts to dispose of the Sentinel Tractors, lying idle with the Superintending Engineer, Second Circle, Ambala, for want of work, have not proved successful.

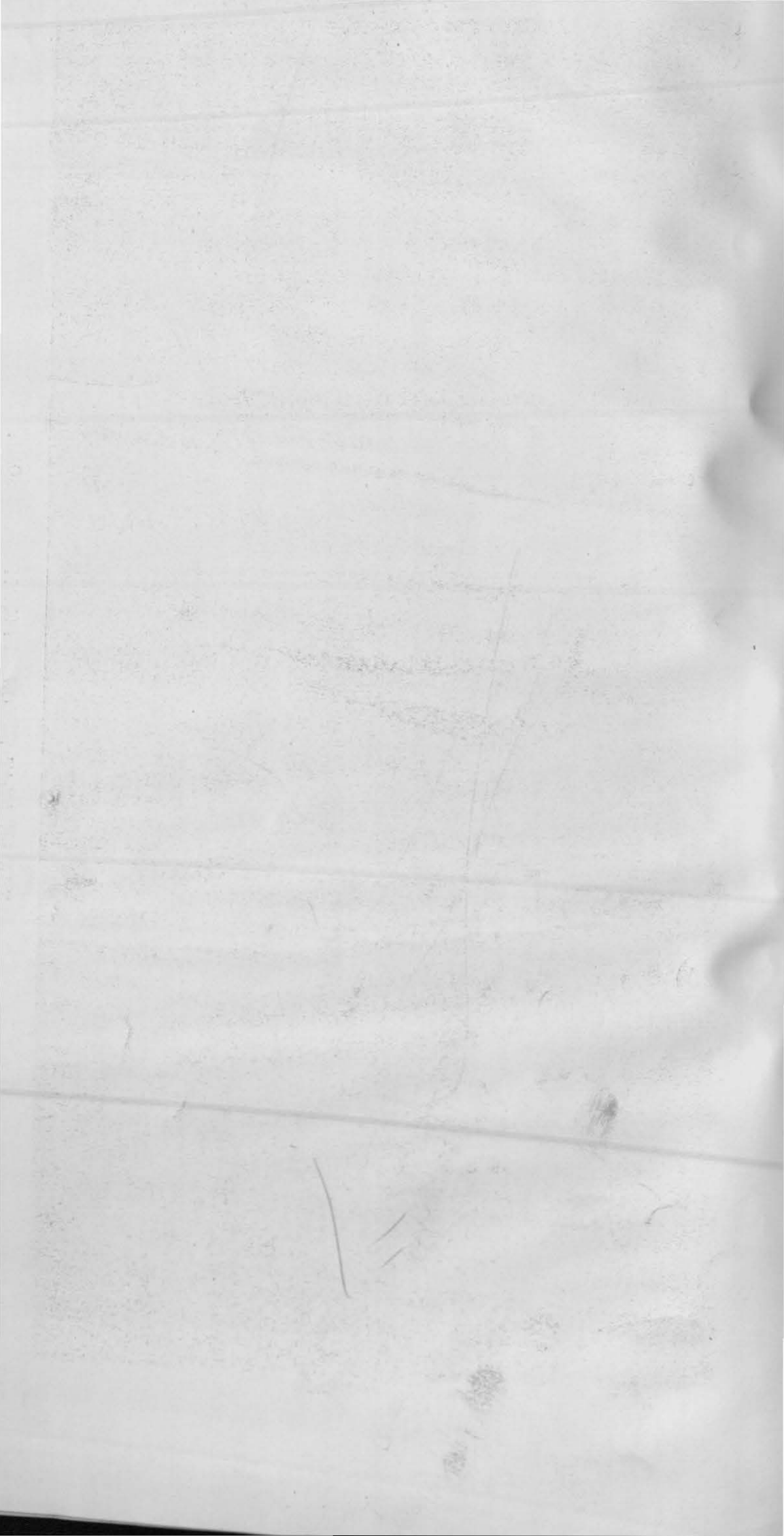


NEW LEGISLATIVE COUNCIL CHAMBER, LAHORE.

Lay out of roads in front of the site.

E-10

1934-35



F-10
1934-35



NEW LEGISLATIVE COUNCIL CHAMBER, LAHORE.

Foundation raft under construction.

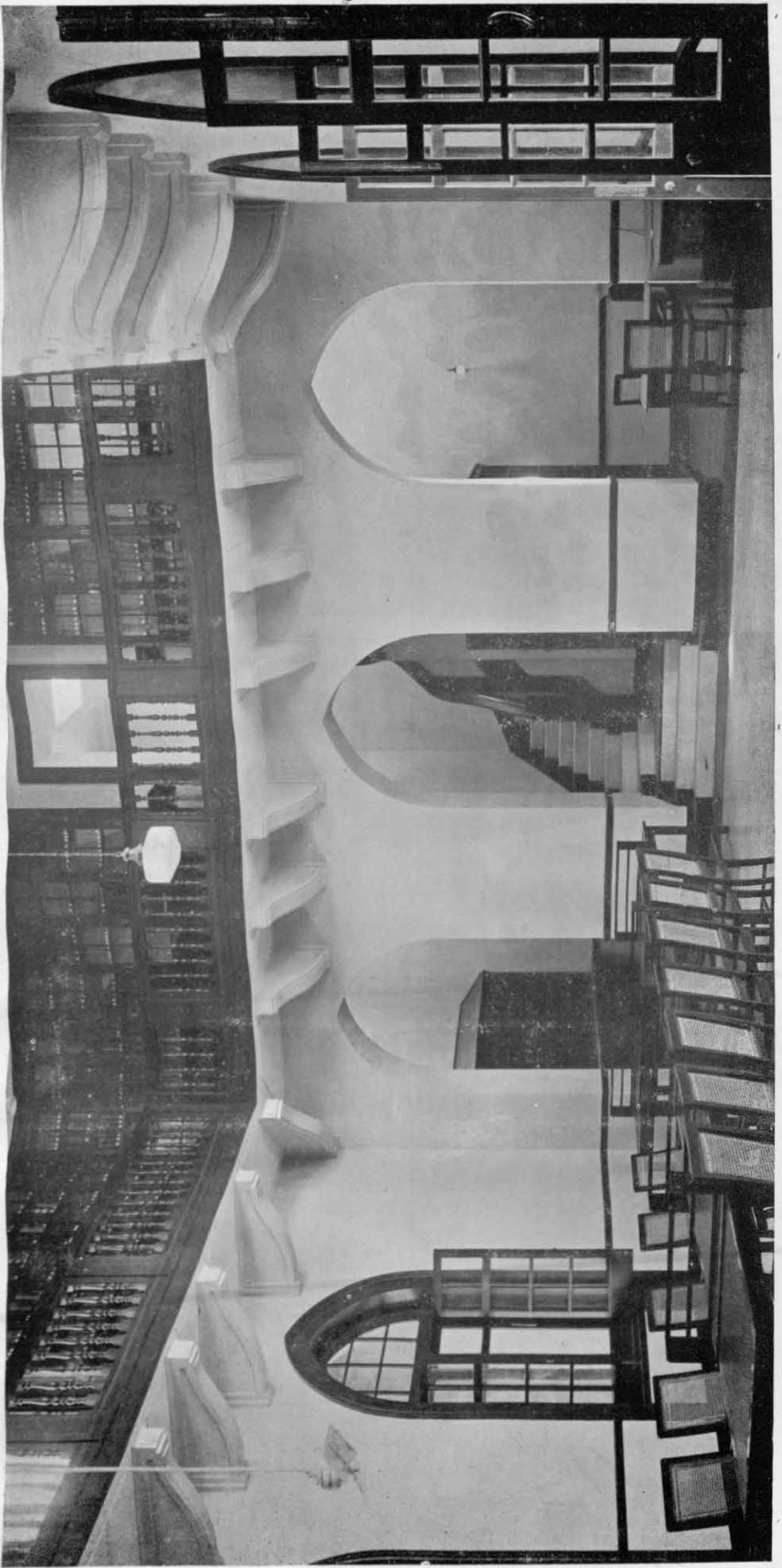




NEW LEGISLATIVE COUNCIL CHAMBER, LAHORE.

Foundation raft approaching completion.

E-10
1934-35



THE HIGH COURT, LAHORE.

Bar Association Library

E-10

1934-35

CHAPTER III.—Buildings.

A.—BUILDINGS—SUPERINTENDING ARCHITECT.

1. During the year the Superintending Architect's office was occupied with the following works :—

- (a) *New Legislative Council Chamber and offices at Charing Cross, Lahore.*—The filling of the site, the re-alignment and re-making of existing roads and the new circular road around the site of the Council Chamber were completed. The estimates and designs for the reinforced concrete foundations and for the basement upto the plinth level were completed and sanctioned and the work was taken in hand. Meanwhile, the detailed estimates and drawings of the superstructure were being pushed forward with a view to calling for tenders and starting this work in November, 1935.
- (b) *New Police Station, Ferozepore Road, Lahore.*—Particulars of this scheme were described last year. Since then the working drawings of the main block and its detailed estimate, amounting to Rs. 1,60,650, have been prepared and sanctioned, the contract has been let and the work has well advanced. The compound wall around the whole site with its wrought iron gates has been constructed. While work on the main block was going forward, the detailed drawings and estimates of the other blocks of the scheme were being made.
- (c) *Extensions to the High Court, Lahore.*—The Bar Association Block and the roads and planting around it were completed and the building was occupied. The remainder of the work required at the High Court, such as the New Office Block, for which the $\frac{1}{2}$ inch scale plans have already been completed, and on which the estimate was started, had to be put on one side owing to the staff being fully occupied on other works.
- (d) *Lady Willingdon Hospital, Lahore.*—The work on the additional storey to the Nurses' Home of the Lady Willingdon Hospital was completed during the year. Detailed drawings and estimates were prepared for a scheme to enclose the whole of the verandah openings of the Nurses' Home with wire gauze.
- (e) *Public Health Centre, Lahore.*—Administrative approval was given to the preliminary plans and estimates and the detailed plans and estimates were completed.
- (f) *New Civil Hospital at Gujranwala.*—A revised site plan and drawings of a block of twelve beds for females, with its ancillary buildings, together with drawings for family wards and quarters for chowkidars were prepared.
- (g) *Residence for the Commissioner of Lahore.*—It was decided to build this house on site No. 43 (No. 10, Aikman Road) of the Gazetted Officers' Residences' Estate, Lahore. Administrative approval having been given, the detailed plans and estimates were prepared.
- (h) *Dental School and Hospital, Lahore.*—Detailed drawings and estimates for the necessary fittings for the Dental Hospital were prepared, and the work completed.
- (i) *Residence for the Senior Superintendent of Police, Lahore.*—This house is to be built on one of the sites on the Gazetted Officers' Residences' Estate, Lahore. Administrative approval having been given, the detailed estimates and drawings were in hand.
- (j) *Irrigation Research Laboratory, Lahore.*—A design was prepared for adding a storey to this building.
- (k) *Residence for the Hon'ble Chief Justice of the High Court, Lahore.*—Preliminary interviews in connection with this house took place and rough preliminary sketches were made.

(l) *Government House, Lahore.*—A design and estimate was prepared for removing the existing fireplace in the Drawing Room and re-designing it in teak and bronze. The work, which was carried out at the Mayo School of Arts, Lahore, from the Superintending Architect's designs, was completed.

(m) *Fort Terraces, Lahore.*—The bulk of this work was completed long ago but, owing to financial restrictions, funds have not been available for the running of the fountains and provision of chowkidars and malis for patrol and maintenance. Similarly, it has not been possible to meet the cost of laying out and planting the garden at the foot of the terraces. As it was likely that funds might be found for this work, an estimate was prepared, which, if accepted, will make this spot a great amenity to the city of Lahore.

2. *Details and advice.*—Many miscellaneous details and estimates were supplied to various authorities and advice was given regarding a new hall for the Punjab Medical School for Women, Ludhiana.

3. Town Planning and Improvement Work—

(a) *District Headquarters, Sheikhpura.*—The lay-out plans of Sheikhpura were originally prepared in the Superintending Architect's office and as it becomes necessary from time to time to develop portions of the area, larger scale plans of the portion under consideration are called for by the authorities concerned. Certain such plans were issued and others were under preparation.

(b) *Minto Park Scheme, Lahore.*—This important area north of the Fort and the Badshahi Mosque and south of the Chhota Ravi, has never previously been planned. Following meetings of the Fort Lands Committee, which representatives of the sporting interests of Lahore attended, the Superintending Architect was asked to prepare a lay-out plan of the land. Various alternative plans have been supplied in which provision has been made for keeping this large area as a lung for the city, while providing accommodation for—

- (i) a sports stadium,
- (ii) unorganized games of cricket and hockey, etc.,
- (iii) organized games of cricket, hockey and tennis, etc.,
- (iv) shady walks,
- (v) malis and plant for the upkeep of the area,
- (vi) games pavilions and shops.

(c) To carry out his powers under the Punjab Municipal Act, the Commissioner of Lahore requires to be furnished with certain schemes. In the absence of technical officers to assist him the Superintending Architect was called upon to prepare the lay-out schemes, listed below :—

- (i) The area between the Mall, Mayo Road and Jail Road, etc.
- (ii) The area bounded by Ferozepore, Jail, Temple, Race Course, Mozang and Lawrence Roads.
- (iii) The area between the Canal and the Railway Overbridge.

All these schemes have been taken in hand but the work on them progresses very slowly and sometimes has to be entirely suspended when there is a rush of urgent building work.

(d) *Development of the Shahdara Area.*—This scheme though nearing completion has, like those described above, proceeded slowly due to lack of staff and it has been put on one side in favour of other urgent works.

(e) *Lahore Improvement Committee.*—At the request of the Commissioner of Lahore, the Lahore Improvement Committee examined a scheme prepared by the Lahore Municipal Committee for the roads of Lahore dealing with widths, set back lines, size of

compounds, minimum areas to be built over, etc. On examination the scheme was found unsuitable and, again at the request of the Commissioner, the Lahore Improvement Committee began the preparation of a new scheme. Thirteen meetings were held, some twenty roads were dealt with in detail and as a result a schedule was issued to the Commissioner as Part I of the Scheme. During the year eighteen building applications came before the Committee and after examination advice was given to the Lahore Municipality regarding them.

B.—BUILDINGS—SUPERINTENDING ENGINEERS.

50—MILITARY ENGINEER SERVICES.

No Military works were carried out during the year under review.

41—CIVIL WORKS—CENTRAL.

No works were carried out during the year under this head.

PROVINCIAL CIVIL WORKS.

41—CIVIL WORKS—PROVINCIAL.

A.—Land Revenue.

B.—Excise.

C.—Stamps.

D.—Forests.

E.—Registration.

No works of any importance were carried out under any of these sub-heads.

F.—(a) General Administration (Transferred).

The following major work was completed except for the water supply :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
Constructing a Court and a Bungalow for the Sub-Divisional Officer, Civil, at Toba Tek Singh, Lyallpur District	26,871	22,647

The accounts as far as building work is concerned, were closed.

F.—(b) General Administration (Reserved).

G.—Administration of Justice.

No work of any importance was carried out under these sub-heads.

H.—Jails and Convict Settlements.

The following major works were completed :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
1. Constructing extra Factory sheds in District Jail at Mianwali	13,281	10,138
2. Constructing a new Judicial Lock-up at Rojhan in Dera Ghazi Khan District	27,100	25,906
3. Constructing quarters for certain members of the staff of the old Central Jail at Multan	25,033	23,080
4. Constructing 40 cells in the old Central Jail at Multan	22,635	18,047
5. Constructing 40 cells and remodelling of Sleeping Barrack No. 13 at the old Central Jail at Multan	26,789	20,479

Items 1—3.—These works, in progress from last year, were completed and the accounts closed.

Items 4-5.—These works were commenced on the 13th December, 1934, and completed during the year under review. The accounts will be closed in 1935-36.

In progress :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
1. Constructing a separate Block for Terrorist Prisoners at the Central Jail, Lahore	22,454	9,907
2. Dismantling and rebuilding the solitary cells, Block No. 1, in the Central Jail, Lahore	12,603	11,780

Item 1.—This building is intended purely for the terrorist prisoners in the Central Jail, Lahore. Half of the work was completed during the year under report.

Item 2.—The existing solitary cells were quite unsuitable to accommodate dangerous and long-term prisoners owing to the katcha walls and weak gratings. The new cells have been constructed to standard designs with 1st class brick in cement masonry. As a result of utilizing the existing courtyard walls the size of the new cells is slightly larger than the standard design.

I.—Police.

The following major work was completed :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
Transfer of Canal Rest House at Garh in Lyallpur District to the Police Department	15,870	15,870

The rest house with subsidiary buildings was transferred to the Police Department, and the necessary debit for cost accepted during the year under review.

In progress :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
Constructing a new Police Station with married quarters at Wahndo in Gujranwala District	20,112	7,961

The work was started on the 15th November, 1934, but was held up pending a decision regarding raising the site. It was then resumed on the 22nd December, 1934, but could not be pushed through, due to heavy rains. However, the Sub-Inspectors' quarters, latrines, Head Constables' and Foot Constables' quarters were completed during the year, and the brick work of the Police Station reached a height of 10 feet above ground level.

*J.—Scientific.**K.—Education, other than European and Anglo-Indian.**L.—Education, European and Anglo-Indian.*

No work of any importance was carried out under these sub-heads.

M.—Medical.

In progress :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
Constructing Rai Bahadur Amar Nath Tuberculosis Institute in the Mayo Hospital, Lahore	34,287	17,447

The work was started in December, 1934, and good progress was made.

*N.—Public Health.**O.—Agriculture.*

No work of any importance was carried out under these sub-heads.

P.—Industries.

The following major work was completed :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
Purchasing Kali Kothi and land from the Irrigation Branch for the use of Government Industrial School, Montgomery	19,800	19,726

Q.—Civil Works.

The following major work was completed :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
Constructing a workshop in the Maclagan Engineering College, Moghalpura	26,534	18,866

This work, in progress from the year 1932-33, was completed during the year under review. The accounts will be closed in 1935-36.

*R.—Stationery and Printing.**S.—Miscellaneous Departments.*

No work of importance was carried out under these sub-heads.

U.—Miscellaneous.

The following major work was completed :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
Additions to City Kotwali, Lahore, in order to provide better accommodation for troops when called out in aid of civil power	41,182	25,325

The building portion of the work was completed at the above cost, and the accounts were closed in December, 1934. The water supply and drainage, estimated to cost Rs. 15,632, were also completed.

43.—Famine Relief.

No famine relief works were opened by the Public Works Department during the year,

60.—Civil Works (Capital Expenditure).

A.—Land Revenue.

B.—Excise.

C.—Stamps.

D.—Forests.

E.—Registration.

F.—(a) General Administration (Transferred).

F.—(b) General Administration (Reserved).

G.—Administration of Justice.

H.—Jails and Convict Settlements.

No work of any importance was carried out under these heads.

I.—Police.

The following major works were completed :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
1. Constructing married quarters for one Sub-Inspector, one Head Constable and three Foot Constables at Kotli Police Station in Rawalpindi District	10,238	8,308
2. Constructing a new Police Station with married quarters at Morinda in Ambala District ..	24,883	24,364
3. Constructing a new Police Station with married quarters for one Sub-Inspector, one Head Constable and four Foot Constables at Sukheki in Gujranwala District	20,509	20,034

Item 1.—The work was commenced on the 25th June, 1933, and completed on the 21st April, 1934.

Item 2.—The work was commenced on the 7th June, 1933, and completed on the 2nd February, 1934, and the accounts closed during March, 1935.

Item 3.—The work, in progress from the previous year, was completed, and the building handed over to the Police Department.

In progress :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
1. Constructing a new City Police Station at Jhelum	22,832	17,636
2. Construction of a new Police Station with married quarters for one Sub-Inspector, two Head Constables and eight Foot Constables in the Civil Lines at Ludhiana	25,193	24,601
3. Constructing new Police Lines at Ludhiana ..	1,80,523	68,023

Item 1.—The work was commenced on the 13th November, 1934, and was nearing completion at the close of the year.

Item 2.—The main work was started on the 29th September, 1933, and completed on the 12th March, 1934, according to the original estimate, but the Inspector-General of Police, Punjab, desired certain other works also to be executed, for which a supplementary estimate was prepared. The work according to this latter estimate has also been finished with the exception of a small length of approach road, which will be completed during 1935-36, when the accounts will be closed.

Item 3.—The work was commenced on the 10th September, 1934, with an allotment of Rs. 70,000. The following items of work were practically completed :—

- (1) Office, (2) School, (3) Motor Garage, (4) Magazine, (5) Two Barracks, each to accommodate 4 Head and 40 Foot Constables, (6) Two blocks of latrines, each containing 12 seats, (7) Two blocks of Kitchens, (8) Mess room, (9) Banya's shop, (10) One Inspector's quarter, (11) Three Sub-Inspectors' quarters, (12) Three Assistant Sub-Inspectors' quarters, (13) Drivers' quarters, (14) Menials' quarters, (15) One two-seated latrine and (16) Incinerator.

Some work was also carried out on three blocks of married Head and Foot Constables' quarters.

J.—Scientific.

K.—Education, other than European and Anglo-Indian.

L.—Education, European and Anglo-Indian.

M.—Medical.

N.—Public Health.

O.—Agriculture.

P.—Industries.

No work of any importance was carried out.

Q.—Civil Works.

The following major work was completed :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
Constructing a residence, Type III-A (Permanent) on site No. 44-A., Gazetted Officers' Residences Estate, Lahore	28,358	28,414

The work was started in the Autumn of 1933 and completed during the year under review. It is of an experimental nature, built with hollow concrete walls and hollow roofs, and is proving cooler during the hot dry months, than the normal type of construction. In September 1934, when the air was humid, very little difference in temperature was found; and similarly not much difference is expected in the monsoon months, when the air will be humid. Comparative temperature tests are still being continued. Among the amenities provided, which are not generally found in similar bungalows may be mentioned, hot and cold water supply to wash basins in the bed rooms and dressing rooms, long baths and water closets emptying into a septic tank located in the compound.

R.—Stationery and Printing.

S.—Miscellaneous Departments.

No work of any importance was carried out.

U.—Miscellaneous.

The following was completed :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
Construction of roads, platforms and gates in the new Bazar of the Mandi at Kamalia in Lyallpur District	30,309	26,562

The work was actually completed during March, 1934. Mandi gates and walls, declared to be too low, were raised, and accounts closed during March, 1935.

Deposit Works.

In progress :—

Name of work.	Estimate.	Expenditure.
	Rs.	Rs.
1. Constructing quarters for six compounders, six menials, three sweepers, three kitchens and one Infectious Ward and latrines at the new Civil Hospital, Gujranwala	29,584	19,500
2. Constructing dhobi ghat, bathing platforms, grassing and gardens, walls, paths, wire fencing at the new Civil Hospital, Gujranwala	11,798	5,749

Items 1-2.—These works relate to the scheme of the new Civil Hospital at Gujranwala, which was administratively approved for Rs. 2,55,504. Some of the sub-works, including the Main Block, had already been completed, while item No. 1 was completed during the year under report. The works mentioned in item 2 were in progress.

CHAPTER IV.—Public Health Engineering.

1. *Project Work.*—The following project work was carried out during the year:—

	<i>Total estimated cost.</i>
	Rs.
(i) Major projects, preliminary.. ..	4,22,450
(ii) Major projects, detailed	12,74,147
(iii) Maintenance and repair estimates	4,19,622
(iv) Minor works	3,81,309
(v) Projects prepared by local bodies which were scrutinised for technical sanction	3,77,513
(vi) Projects previously prepared which were revised and brought up-to-date	4,35,245

2. *Visits and Inspections.*—Over three hundred visits were made to various towns and other places in the Province in connection with water supply and sanitary schemes under investigation, design, construction and operation.

3. *Borings.*—Altogether nineteen borings for investigation of water supply and other purposes were carried out during the year.

4. *Construction Works.*—Fourteen important schemes were commenced and eight completed during the year. The progress of important works under execution during the year is briefly described below:—

(a) *Government Works*—

- (1) *Water Supply and drainage for additions to City Kotwali, Lahore to provide better accommodation for troops, etc.,—estimated cost Rs. 15,632.*—This work, consisting of an independent tube-well equipped with oil engine driven and electrically driven pumping plant, with service reservoir and distribution system for Kotwali, Lahore, and for the accommodation for troops near was finally completed, and is giving satisfactory service.
- (2) *Water Supply, sewerage and sanitary fittings for Normal School for Women and Lady MacLagan Girls' School, Lahore,—estimated cost Rs. 40,411.*—This comprehensive scheme was finished and working satisfactorily.
- (3) *Sanitary Installation at Dental Hospital, Lahore,—estimated cost Rs. 14,455.*—This work had been delayed for a considerable period pending the provision of certain furniture, without which certain sanitary fittings could not be installed. The work was finally finished during the year under report.
- (4) *Laboratory equipment, including internal drainage and sinks, Dental Hospital, Lahore,—estimated cost Rs. 10,588.*—The work of installing the remaining fittings was completed during the year.
- (5) *Providing a new tube-well at the Queen Mary's College, Lahore,—estimated cost Rs. 9,883.*—The new tube-well having been completed in 1933-34, the pumping plant and pipelines were erected. The scheme is working satisfactorily.
- (6) *Installation of Water Supply and sanitary arrangements in clerical quarters, Brockhurst Estate, Simla,—estimated cost Rs. 16,300.* This work provides for internal water flushed sanitary arrangements in all cottages for accommodation of Government clerical staff at Brockhurst, Simla. The work was carried out expeditiously in April and May, 1934, and was completed before the arrival of the tenants. The system is working satisfactorily.
- (7) *Water Supply for new Police Lines, Ludhiana,—estimated cost Rs. 15,890.*—This scheme consists of a tube-well, with electrically driven pumping plant and distribution system to supply water for domestic and irrigation purposes throughout the new Police Lines, under construction. The tube-well was

completed and the distribution system pipes and fittings were delivered. The scheme will be completed in 1935.

- (8) *Refrigeration and cold storage installation at the Vaccine Institute, Lahore,—estimated cost Rs. 9,300.*—This is an installation designed to provide cold storage for vaccines, etc., at the Vaccine Institute, Lahore. It consists of an insulated cold storage room with ante-room and a small duplicate set of SO₂ refrigerators (electrically driven) to maintain the required low temperature. The plant, which is automatically controlled by thermostats, was installed and the cold storage room was ready for use.
- (9) *Water Supply improvements of Sub-Jail, Hoshiarpur,—estimated cost Rs. 7,217.*—This scheme consists of the provision of a pumping plant over a percolation well with small service reservoir and simple distribution system. The work was practically finished.
- (10) *Installing duplicate pumping plant for Water Supply at Lawrence College, Ghoragalli,—estimated cost Rs. 13,200.*—This scheme covers the provision of a duplicate 18 B. H. P. oil engine driven pumping plant with staff quarters. The staff quarters were built, and the plant was installed. Only a few small adjustments remained.
- (11) *Water Supply. Sanitary and Air-conditioning installation for the New Legislative Council Chamber, Lahore,—estimated cost Rs. 99,423.*—This important scheme will comprise a completely independent water supply and sanitary installation and evaporative air-conditioning system for the New Council Chamber, Lahore. The water supply will be derived from a large new tube-well, sited behind the existing office of the Director of Industries, Punjab, which will yield an ample supply of water both for irrigation as well as domestic purposes. Water will be pumped by float-switch automatically operated, electrically driven pumps in duplicate, into roof tanks at the New Council Chamber; and hydrants to supply irrigation water for lawns, etc., will be connected to the rising main. Sanitary fittings on the water carriage system will be provided in the building and all sewage will be arranged to gravitate into a septic tank to be conveniently sited, while the effluent will be pumped through a rising main into a gravity sewer laid along Montgomery Road discharging into the head of an existing municipal sewer near Kila Gujar Singh.
- The water supply to the New Police Station under construction at Ferozepore Road, Lahore, will be given from the New Council Chamber tube-well by means of a 5 inches main laid from the New Council Chamber roof tanks to the New Police Station, while the sewage from the new Police Station will be lifted into the Council Chambers Septic tank system and disposed of along with the sewage discharged from the New Council Chamber. The air-conditioning plant will be on the evaporative system with a heating arrangement for winter use to keep the air of the main Council Chamber and the tea room in suitable condition, and will be installed in the basement of the New Council Chamber. Work on the construction of the tube-well, pump house and rising main was completed, and a temporary supply of water for construction of the building and to irrigate grass plots, is being given. The contract for the air-conditioning installation was being placed.
- (12) *Water Supply and sanitary installation for New Police Station, Ferozepore Road, Lahore,—First instalment—estimated cost Rs. 39,307.*—Water supply pipes and fittings, sanitary fittings, manhole covers, etc., up to the value of about Rs. 10,000 were delivered. It is anticipated that good progress will be made on this installation in 1935.

- (13) *Arafwala Mandi Drainage Scheme—Part I—Nili Bar Colony—estimated cost Rs. 71,827.*—This is a scheme comprising main sewer, main outfall, disposal works and pumping station for Arafwala Mandi, a new market town of the Nili Bar Colony. Work was started on the main outfall sewer and 2,000 feet of sewer was built, while the pumping plant for the sullage pumping station was ordered. It is anticipated that the work will be completed in 1935-36.

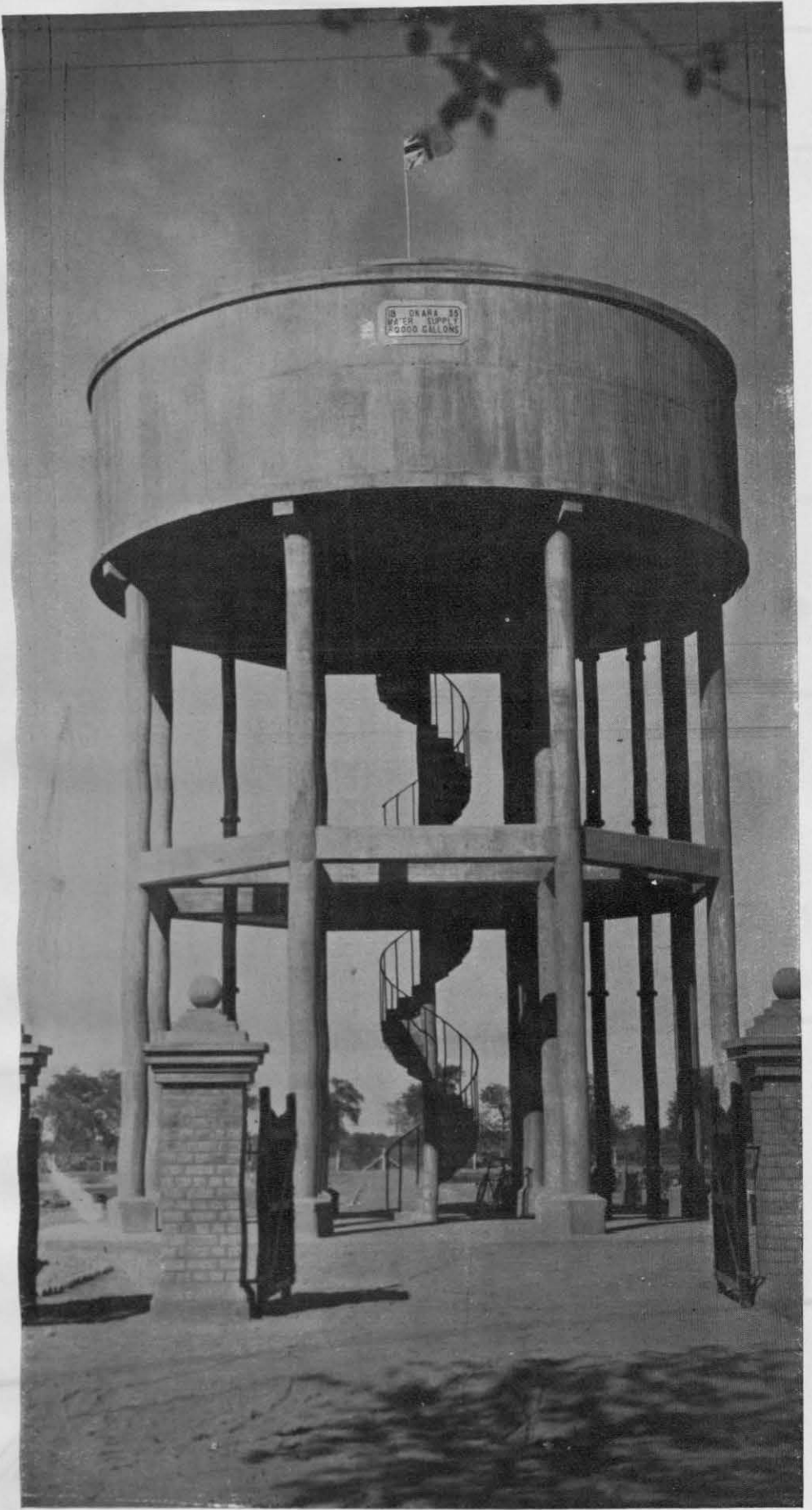
The intramural drainage system which is included in a separate estimate as a contribution work is expected to be taken in hand in 1935-36.

- (14) *Drainage of Kamalia Mandi, District Lyallpur.—estimated cost Rs. 15,212.*—This is a simple surface drainage scheme, debitible to a Colony grant. The work was started in 1933, but was subsequently held up pending completion of land acquisition proceedings for the outfall and disposal works.
- (15) *Murree Joint Water Board.—New 2 inches i/d pipeline from Tonley Reservoir to Topa.—estimated cost Rs. 12,601.*—This pipeline which was needed to enable more water to pass to the Military Cantonments at Gharial, Upper Topa and Lower Topa was completed and is giving satisfactory service.
- (16) *Government Institutions in Lahore, not provided with independent Water Supplies.*—Out of the three important Government Institutions or Estates at Lahore, viz., Rivaz Gardens Estate, the Katcheri and the Vaccine Institute, which are not provided with a good water supply system independent of the Municipal supply, funds are likely to be forthcoming in 1935-36, for an independent tube-well for the Vaccine Institute. This will leave only the Rivaz Gardens Estate and the Katcheri to be dealt with. The water supply arrangements of both of these places are in an unsatisfactory condition at present; and it has been advised that the provision of independent water supply schemes should be taken in hand as soon as funds can be made available.

(b) *Execution of Public Health Works on behalf of Local Bodies—*

- (1) *Nankana Sahib Drainage Scheme, District Sheikhupura.—estimated cost Rs. 58,380.*—This scheme consisting of a skeleton drainage system with disposal works, was completed and is ready for operation, but the local body so far has not found the funds to operate the pumping installation. The savings on the original project were utilized, with the sanction of the Sanitary Board, Punjab, in reconstructing and tarring the main bazar road.
- (2) *Shahzada Nangal and Kotli Drainage Scheme, Gurdaspur.—estimated cost Rs. 12,670.*—This is a scheme for skeleton surface drainage for a suburb of Gurdaspur. The work was finished up to the extent of funds already deposited by the local body, except for a short section of drain along the Grand Trunk Road which was held up owing to an encroachment. The local body is being pressed to deposit the balance of funds required for the work.
- (3) *Ludhiana Drainage Scheme, District Ludhiana.—estimated cost Rs. 3,45,009.*—The first item of extensions and additional works to be carried out of savings, costing about Rs. 18,690, was completed, except for two places where construction of the drains was held up on account of a dispute over the ownership of land.
- (4) *Hoshiarpur Drainage Scheme—flushing arrangements, District Hoshiarpur.—estimated cost Rs. 14,372.*—This work consists of a tube-well with pumping plant and rising main to discharge the water into the existing service reservoir. The structural work and pipe laying was finished, while the pumping plant was about to be installed.

- (5) *Khanna Drainage Scheme, District Ludhiana*,—estimated cost Rs. 18,785.—This is a simple skeleton drainage system for the small town of Khanna. Land acquisition proceedings were in hand during the year.
- (6) *Jagraon Mandi Drainage Scheme, District Ludhiana*,—estimated cost Rs. 80,251.—The construction of drains along Railway Road, out of savings on the main scheme, was in hand.
- (7) *Montgomery Drainage Scheme, District Montgomery*,—estimated cost Rs. 5,97,290.—Good progress was made with construction work on this important scheme during the year under review. The intramural drainage system was approaching completion and the boring for the flushing tube-well was sunk to 300 feet depth. Work on the sullage pumping station could not be proceeded with, as the negotiations between the Municipal Committee and the Punjab Electric Supply Company, Limited, were not complete. They were expected to be settled shortly.
- (8) *Multan Drainage Scheme, District Multan*,—estimated cost—*Part I*—Rs. 1,22,976, *Part II*—Rs. 1,34,757.—These works were completed and have been ready for operation since 1931-32, but they are still not in use, owing to a protracted dispute between the Multan Municipality and the Multan Electric Supply Company, Limited, in regard to charges for electric power supply.
- (9) *Multan Waterworks Scheme, District Multan*,—estimated cost Rs. 12,57,637—*providing an additional (fifth) Tube-well*.—The construction of a fifth tube-well was completed. The pumping plant was erected and the new installation was put into commission.
- (10) *Okara Drainage Scheme, District Montgomery*,—estimated cost Rs. 2,54,167.—This is a comprehensive scheme of surface drainage for the mandi town of Okara. The scheme consists of a system of surface drains throughout the town and mandi, discharging into egg-shaped intercepting sewers which will convey the sullage into a disposal works, whence it will be pumped on to a sewage farm and used for irrigation of crops. Contracts for the construction of disposal works and intercepting and outfall sewers were placed, and the construction work was taken in hand.
- (11) *Okara Water Supply Scheme, District Montgomery*,—estimated cost Rs. 1,47,120.—This is an important water supply scheme for the town of Okara. The source of supply will consist of two deep tube-wells, each of about 15,000 gallons per hour capacity, and the water will be pumped by borehole type deep well turbine pumps into an overhead reinforced concrete service reservoir of 50,000 gallons capacity whence it will be passed into the town by means of cast iron pipelines laid in the principal streets. The first tube-well boring was drilled to a depth of 412 feet and sweet water was proved in the lower section of the borehole between 300 and 412 feet depth although the upper subsoil strata yielded only brackish water. This tube-well was completed, and the boring for the second tube-well was taken in hand. The distribution system was also laid while the construction of the overhead reinforced concrete service reservoir and staff quarters was in progress.
- (12) *Mian Channu Drainage Scheme, District Multan*,—*Part I*—estimated cost Rs. 37,196.—This is a skeleton surface drainage system with disposal works, pumping station and sewage farm, for the small town of Mian Channu. The drains and disposal works were completed and the scheme was nearing completion.
- (13) *Khanewal Water Supply, District Multan*,—estimated cost Rs. 62,997.—This is a skeleton water supply scheme for the Mandi town of Khanewal. The scheme comprises a deep



OKARA WATERSUPPLY.

Reinforced Concrete Service Reservoir. Capacity 50,000 Gallons.

E. 10

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tube-well, equipped with oil engine driven, air lift pumping plant to discharge the water at ground level, from where it will be boosted by centrifugal pumps into a pressed steel overhead reservoir, close by. A simple system of cast iron pipelines with a few standposts will be provided to supply water in the town.

The tube-well was completed and the pumping station, staff quarters and reservoir were in hand. The air lift pumping plant was on order, while the distribution system was also laid.

- (14) *Bhiwani Water Supply Scheme, District Hissar*,—estimated cost Rs. 5,90,267.—This scheme was completed in 1933, and put into use. It has functioned satisfactorily throughout the year. Certain works were authorised to be carried out from savings this year and were completed. These include a sand washing installation and a chlorination plant.
- (15) *Bhiwani Drainage Scheme, District Hissar*,—estimated cost Rs. 4,62,441.—This important scheme consists of a complete system of surface drainage for the town, with two main outfalls discharging into two disposal works, whence the sullage will be pumped to sewage farms. The construction of the egg-shaped intercepting sewers was finished and good progress was made on the construction of the surface drainage system inside the town. Work on disposal works and pumping stations could not be started pending acquisition of land for disposal works and sewage farms which was in the hands of the local body.
- (16) *Jagadhri Drainage Extensions, District Ambala*,—estimated cost Rs. 21,827.—Certain additional works of surface drainage, pavements and road construction were taken in hand and will be completed in 1935.
- (17) *Ferozepore Town Drainage Extensions, District Ferozepore*,—estimated cost Rs. 82,944.—This scheme was completed two years ago and has functioned satisfactorily. A small amount of work was recently sanctioned to be carried out of savings. This will be completed in 1935-36.
- (18) *Rohtak Water Supply Extensions, District Rohtak*,—estimated cost Rs. 1,472.—An estimate for Rs. 1,472 for extensions of the existing distribution system in a mohalla of the town was sanctioned and the work taken in hand.
- (19) *Water Supply at Suketri, District Ambala*,—estimated cost Rs. 4,509.—This is a small rural scheme consisting of a percolation well for the village. The work was completed.
- (20) *Sheikhupura Old Town Drainage Scheme, District Sheikhupura*,—estimated cost Rs. 41,224.—The works covered by the sanctioned estimate were already completed but certain additions and extensions of drains and pavements were subsequently sanctioned by the local body and the Sanitary Board. These were under construction.
- (21) *Sialkot Drainage Scheme, District Sialkot*,—estimated cost Rs. 4,49,881.—These works have been in operation for some time. The sewer and screening chamber on the southern intercepting drain passing the Imam Sahib and intramural drains and pavements at the Bijli Garh Mohalla, were constructed during the year under review.
- (22) *Sialkot Waterworks Extensions, Rangpura Tube-well and pumping station, District Sialkot*,—estimated cost Rs. 22,595.—The yield of the second tube-well sunk last year in connection with these extensions, was tested, and proved satisfactory. An electrically driven, vertical spindle, borehole pumping set was being installed and the tube-well was about to be put into operation.

- (23) *Choa and Katas Fair Water Supply improvements, District Jhelum,—estimated cost Rs. 31,232.*—The work has been completed. Two small steam pumps for the main supply have been installed and the works are functioning in a satisfactory manner.
- (24) *Hafizabad and Garhi Awan Drainage Scheme and dewatering of ponds, District Gujranwala,—estimated cost Rs. 1,19,502.*—The possession of land for the Garhi Awan disposal works and sullage farm, and for the Hafizabad disposal works, was given by the local body. The disposal works for Garhi Awan were finished while those for Hafizabad were well advanced, and the oil engine driven pumping machinery was on order. Arrangements for acquisition of the sullage farm for Hafizabad were also in hand. The North-Western Railway were requested to complete a new culvert to pass the storm water channel under the railway but, this having not yet been attended to, the completion of the dewatering drain of the ponds in the vicinity of Garhi Awan, is held up.
- (25) *Saddar Bazar Drainage, Karnal,—estimated cost Rs. 9,297.*—The main surface drainage was completed and handed over to the local body in 1931-32. A scheme for extending the drains in the Saddar Bazar has since been sanctioned and it is anticipated this work will be completed in 1935-36.
- (26) *Tamman Water Supply, District Attock,—estimated cost Rs. 78,894.*—This important rural water supply scheme which was completed in 1932, entirely out of Government grants, is lying idle, due to failure of the District Board, Attock, to find the money for its maintenance and operation. It is expected that funds will be forthcoming to enable the scheme to be put into operation early in 1935-36.
- (27) *Reconstruction of Shishmahal Drainage pumping station, Lahore,—estimated cost Rs. 40,411.*—Work was finally completed on the reconstruction of the pumping station, the installation of two sets of electrically driven, vertical spindle, sewage pumping sets, automatically operated by float switches, and the renewal of the rising main. The serious nuisance in this area caused by the insanitary conditions into which the works had been allowed to get while under charge of the Lahore Municipal Committee, has abated. The works continue to be operated under charge of the Public Health Circle and are functioning satisfactorily.
- (28) *Reconditioning of Isakhel Water Supply Scheme, District Mianwali,—estimated cost Rs. 13,984.*—The headworks and part of the rising main of this scheme were eroded by the river Indus in 1932. The river Indus has continued to cut in towards the east bank of the Khadir, that is towards Isakhel, with the result that action has had to be taken to salve further lengths of the rising main. In the meantime an alternative source of supply was sought for and a contract for a tube-well sited near the town was placed on the basis of "no water no pay".
The tube-well was sunk but the water was of very doubtful quality. The contractors however were getting ready to instal pumping plant to test the tube-well. An earthquake occurred at Isakhel on the 4th January, 1935, and the service reservoir was slightly damaged.
- (29) *Shahpur Saddar Drainage Extensions,—estimated cost Rs. 10,914.*—Surface drains were built in most of the lanes, but owing to inability of the local body to give possession of the site of an important intercepting drain in front of the Arya Samaj Mandir, the work was held up.
- (30) *Kamoke Mandi Drainage Scheme, District Gujranwala,—estimated cost Rs. 40,470.*—This is a surface drainage scheme for the new mandi town of Kamoke. The sullage is intended to be disposed

of by broad irrigation. Land acquisition proceedings were in hand and the work on the intramural section of the works was well advanced.

(31) *Thal Ilaqa Rural Water Supply Extensions to Lilla, Dhudi and Jethal, District Jhelum*,—estimated cost Rs. 53,042.—This work consists of pipeline extensions, 4 inches, 3 inches and 2 inches i/d from the existing service reservoir three miles north of Lilla to serve the villages of Lilla, Dhudi and Jethal. The pipelines were laid and tested, the service reservoirs at each village were under construction and it was expected that the scheme would be completed by June, 1935. In the meantime water was being supplied, by temporary connections to the three villages.

(32) *Canalization of river Leh, Rawalpindi*,—estimated cost Rs. 87,376.—This scheme consists of the construction of a katcha channel, 6 miles in length along the bed of the river Leh from upstream of Rawalpindi city to a rock fall near Topi Park, and a tunnel outfall through the rock fall, so as to discharge the dry weather flow downstream of the fall, thus reducing the present pools of filthy water stagnating in the river bed. The construction of the scheme, commencing with the outfall tunnel, was put in hand and the outfall tunnel was well advanced.

5. *Maintenance and Operation of Public Health Works in connection with Government Buildings and Institutions*.—Almost all public health and other cognate works in connection with Government buildings and institutions throughout the province were maintained, repaired and operated by the Public Health Circle during the year, as usual.

There are over a hundred mechanically or electrically operated plants and these include water supplies based on shallow and deep percolation wells, tube-wells and rivers, with the distribution pipelines and reservoirs provided in connection therewith; sanitary installations of all types, with the drains, sewers, septic tanks and other treatment and sewage disposal works connected therewith, as well as a number of heating, hot water supply, steam disinfection and sterilization plants, steam boilers, air-conditioning installations, chlorination apparatus, laboratory installations and gas plants.

The three statements annexed, *viz.*, A, B and C, give particulars respectively of important drainage and sewerage works, water supply works, and certain other miscellaneous installations, maintained by the Public Health Circle.

The annual quantities of water supply, sewage and sullage dealt with as well as the total horse power of plants in direct charge of the Public Health Circle, continue to show a considerable annual increase, as will be observed from the table below:—

Description.	1932-33.	1933-34.	1934-35.
(i) Total water supply, in gallons ..	897,102,202	957,741,257	1,122,379,788
(ii) Total sewage dealt with, in gallons ..	108,446,261	134,344,610	151,174,010
(iii) Horse power of water supply pumping stations	881	1,228	1,276
(iv) Horse power of sewage pumping stations	253	278	283
(v) Horse power of other installations ..	161	161	195
(vi) Total Horse power	1,295	1,667	1,754

The three Government Estates at Lahore, with upwards of 442 residential bungalows and quarters, also the roads, lawns, drainage, water supply systems and conservancy arrangements thereof, were maintained and administered by the Executive Engineer, Lahore Public Health Division, and subsequently, after September 10, 1934, by the Executive Engineer, 2nd Lahore Public Health Division. The work done included the realization of rents and water and conservancy charges, and the making of allotments of residential buildings in the Rivaz Gardens and the Chauburji Gardens Estates. The work of assessing and following up the realization of water charges in respect of Government residential buildings throughout the province continued to be carried on throughout the year, and meant a considerable amount of extra work for the establishment of the Divisions.

6. *Maintenance and Operation of Public Health Works on behalf of Local Bodies.*—The following important water supplies were maintained and operated by the Public Health Circle during the whole of the year under review :—

- | | |
|--|---|
| (1) Murree Joint Water Board | .. Murree Water Supply. |
| (2) Bhiwani Municipal Committee | .. Bhiwani Waterworks. |
| (3) Dera Ghazi Khan Municipal Committee | .. Dera Ghazi Khan Waterworks. |
| (4) Multan Municipal Committee | .. Multan Water-works. |
| (5) Rawalpindi District Board | .. Nurpur Shahan Fair Water Supply. |
| (6) Jhelum District Board | .. Thal Ilaqa Water Supply. |
| (7) Ditto ditto | .. Choa and Katas Water Supply. |
| (8) Mianwali District Board | .. Musakhel Water Supply. |
| (9) Pathankot Municipal Committee | .. Pathankot Water Supply. |
| (10) Kangra District Board | .. Jawalamukhi Water Supply. |
| (11) Ambala Municipal Committee | .. Sarangpur Subsidiary Water Supply and Ambala Civil Station Water Supply. |
| (12) Pind Dadan Khan Municipal Committee | .. Pind Dadan Khan Water Supply. |
| (13) Karnal District | .. Thanesar Fair Water Supply. |
| (14) Ditto | .. Pehowa Fair Water Supply. |
| (15) Ditto | .. Phalgu Fair Water Supply. |
| (16) Lahore Municipal Committee | .. Shishmahal Drainage Scheme. |

Some particulars of the more important of these installations will be found in statements A and B annexed.

STATEMENT A.

STATEMENT SHOWING PARTICULARS OF IMPORTANT DRAINAGE AND SEWERAGE WORKS MAINTAINED IN THE PUBLIC HEALTH CIRCLE, PUBLIC WORKS DEPARTMENT,
PUNJAB, FOR THE YEAR ENDING MARCH 31, 1935.

Serial No.	Name of work.	Power used.	Number of pumping units.	Total horse power.	Sewage or sullage pumped during the year.	Method of disposal.	REMARKS.
1	2	3	4	5	6	7	8
1	Punjab Mental Hospital, Lahore	Electricity	4	18	Gallons. 29,777,950	Land treatment by broad irrigation	Provincial work.
2	Central and Female Jails, Lahore	Ditto	2	16	13,824,000	Ditto ditto	Ditto.
3	Borstal Institution, Lahore	Ditto	2	21	25,156,620	Ditto ditto	Ditto.
4	Government House, Lahore	Ditto	2	4	4,056,300	Septic tank and land treatment by sub-soil irrigation.	Ditto.
5	Lady Willingdon Hospital, Lahore	Ditto	2	8	2,709,420	Septic tank, effluent discharged into Municipal drainage system.	Ditto.
6	Queen Mary's College, Lahore	Ditto	2	6	3,843,000	Septic tank and land treatment ..	Ditto.
7	Maclagan Engineering College, Moghalpura	Ditto	3	9	3,736,500	Agitated sludge treatment works	Ditto.
8	Medical School, Amritsar	Oil engines	2	8	5,294,060	Land treatment and septic tank..	Ditto.
		Electric pumps	1	3			
9	Chauburji Gardens Estate, Lahore	Electricity	2	15	18,096,160	Septic tank and land treatment ..	Ditto.
10	New Central Jail, Multan	Ditto	2	9	22,957,000	Land treatment ..	Ditto.
11	Central Jail, Montgomery	Oil engine	1	3	4,473,000	Ditto ..	Ditto.
12	Shish Mahal Sewerage Scheme, Lahore	Electricity	2	14	16,550,000	Ditto ..	Contribution work.
13	Multan Drainage Scheme	Ditto	4	120	Nil.	Ditto ..	Contribution work. Funds to work the plant not provided by the Municipality.
14	Nankana Sahib Drainage Scheme	Ditto	2	10	Nil.	Ditto ..	Contribution work. Pumping operations not yet commens- ced.
15	Lady Maclagan Girls' School and Normal School for Women, Lahore.	Ditto	2	12	700,000	Septic tank, effluent discharged into Municipal drainage system.	Provincial work.
16	New Police Station, Ferozepore Road, Lahore	Ditto	2	7	Nil.	Septic tank disposal, effluent dis- charged into Municipal drainage system.	Ditto.
	Total		37	283	151,174,010		

STATEMENT B.

STATEMENT SHOWING PARTICULARS OF IMPORTANT WATER SUPPLY WORKS MAINTAINED IN THE PUBLIC HEALTH CIRCLE, PUBLIC WORKS DEPARTMENT,
PUNJAB, FOR THE YEAR ENDING MARCH 31, 1935.

Serial No.	Name of work.	Power used.	Number of pumping units.	Total horse power.	Water supplied during the year.	Source of water supply.	REMARKS.
1	2	3	4	5	6	7	8
1	Old Fort, Lahore	Electricity	2	22	Gallons. 17,917,850	1 tube-well	Central work.
2	Hazuri Bagh, Lahore	Ditto	2	11	5,228,040	1 percolation well	Ditto
3	Jahangir's Tomb, Shahdara	Electricity and steam	2	26	26,338,200	{ 1 percolation well 1 tube-well. }	Ditto.
4	Taxali Gate Cemetery, Lahore	Electricity	1	3	5,713,200	1 percolation well	Ditto.
5	Shalamar Gardens, Lahore	Oil engine	1	7	3,711,400	Ditto	Ditto.
6	High Court, Accountant-General's Office and Sessions Court, Lahore.	Electricity	2	18	13,692,720	1 Tube-well	Joint Central and Provincial work.
7	Tret water supply	Gravity .. ..	..	..	1,000,000	Springs	Ditto.
8	Old Fort Terraces, Lahore	Electricity	1	10	698,460	1 tube-well	Provincial work.
9	Dental Hospital, Lahore	Ditto	3	6	1,034,200	Ditto	Ditto.
10	Lady Willingdon Hospital, Lahore	Ditto	2	12	12,090,500	Ditto	Ditto.
11	Industrial Buildings, Shahdara	Ditto	2	17	11,744,550	Ditto	Ditto.
12	Central Training College, Lahore	Ditto	2	11	7,213,010	Ditto	Ditto.
13	Government College and Hostel, Lahore	Ditto	4	30	32,720,320	2 tube-wells	Ditto.
14	Central Model School, Lahore	Ditto	1	2	1,022,330	1 percolation well	Ditto.
15	Punjab Veterinary College, Lahore	Ditto	3	27	27,003,400	{ 1 percolation well 1 tube-well }	Ditto.
16	Council Chamber, Lahore	Ditto	2	11	17,202,200	2 tube-wells	Ditto.
17	Government Printing Press, Lahore	Ditto	1	3	3,868,330	1 percolation well	Ditto.

18	Mayo School of Arts, Boarding House, Lahore ..	Ditto	..	..	1	7	4,321,450	1 tube-well	Ditto.
19	Normal School for Women and Lady MacLagan Girls School, Lahore.	Ditto	..	..	2	10	3,604,360	Ditto	Ditto.
20	Mayo Hospital and King Edward Medical College, Lahore.	Ditto	..	..	5	37	77,228,100	3 tube-wells	Ditto.
21	Medical College Hostels, Lahore	Ditto	..	..	2	16	10,263,870	1 tube-well	Ditto.
22	Lahore College for Women, Lahore	Ditto	..	..	2	8	3,369,820	Ditto	Ditto.
23	Public Works Department Offices, McLeod Road, Lahore.	Ditto	..	..	1	1	956,740	1 percolation well	Ditto.
24	Forest Offices, Lahore	Ditto	..	..	1	2	1,545,480	Ditto	Ditto.
25	Director of Industries Office, Lahore	Ditto	..	..	1	2	2,813,340	Ditto	Ditto.
26	Zoological Gardens, Lahore	Ditto	..	..	2	7	1,892,070	1 tube-well, 1 percolation well ..	Ditto.
27	Lawrence Gardens, Lahore	Ditto	..	..	2	13	3,676,990	Ditto ditto ..	Ditto.
28	Punjab Vaccine Institute, Lahore	Ditto	..	..	1	2	1,426,040	1 percolation well	Ditto.
29	Borstal Institution, Lahore	Ditto	..	..	5	42	47,828,360	3 tube-wells	Ditto.
30	Central Jail, Lahore	Ditto	..	..	2	11	40,915,300	1 tube-well	Ditto.
31	Punjab Mental Hospital, Lahore	Ditto	..	..	6	29	40,122,590	{ 1 percolation well 2 tube-wells }	Ditto.
32	Police Lines, Qila Gujar Singh, Lahore ..	Ditto	..	..	2	9	16,213,680	1 tube-well	Ditto.
33	Government House, Lahore	Ditto	..	{	2 1	12 3	20,022,500	1 tube-well, canal water for irrigation.	Ditto.
34	Queen Mary's College, Lahore	Ditto	4	14				13,596,420	{ 2 tube-wells .. .. 1 percolation well .. .. }	Ditto.
35	Maclagan Engineering College, Moghalpura ..	Ditto	..	..	2	12	17,833,520	1 tube-well	Ditto.
36	New Sub-Jail, Kasur	Oil engines	..	..	2	7	12,446,400	Ditto	Ditto.
37	New Medical School, Amritsar	Ditto	..	..	2	20	7,834,380	Ditto	Ditto.
38	Government High School, Gurdaspur	Ditto	..	..	1	4	643,500	1 percolation well	Ditto.
Carried over					80	484	516,753,620		

STATEMENT B—CONTINUED.

STATEMENT SHOWING PARTICULARS OF IMPORTANT WATER SUPPLY WORKS MAINTAINED IN THE PUBLIC HEALTH CIRCLE, PUBLIC WORKS DEPARTMENT,
PUNJAB, FOR THE YEAR ENDING MARCH 31, 1935.

Serial No.	Name of work.	Power used.	Number of pumping units.	Total horse power.	Water supplied during the year.	Source of water supply.	REMARKS.
1	3	3	4	5	6	7	8
	Brought forward ..	..	80	484	Gallons. 516,753,620		
39	Sub-Jail, Sheikhpura	Oil Engines	2	9	1,300,715	1 percolation well	Provincial work.
40	Civil Hospital, Sheikhpura	Ditto	1	4	3,734,733	1 tube-well	Ditto.
41	District Jail, Jullundur	Electricity	3	8	5,334,300	2 tube-wells	Ditto.
42	Civil Hospital, Jullundur	Ditto	1	3	1,698,750	1 percolation well	Ditto.
43	District Court, Jullundur	Ditto	1	2	769,700	Ditto	Ditto.
44	Government High School, Jullundur	Ditto	1	5	3,570,000	1 percolation well with spring well.	Ditto.
45	Gazetted Officers' Residences Estate, Lahore	Ditto	2	12	6,622,500	1 tube-well	Ditto.
46	Chauburji Gardens Estate, Lahore	Ditto	2	13	23,870,200	2 tube-wells	Ditto.
47	District Jail, Sialkot	Oil engines	2	7	3,622,145	1 percolation well	Ditto.
48	Sub-Jail, Gujrat	Ditto	2	10	8,599,350	1 tube-well	Ditto.
49	Lawrence School, Ghora Gali	Ditto	2	36	2,397,040	Springs	Ditto.
50	Government High School, Jhelum	Ditto	1	5	*1,460,000 5,005,875	*Gravity supply from Murree 1 percolation well	
51	District Jail, Rawalpindi	Ditto	2	14	13,050,750	Ditto	Ditto.
52	District Jail, Campbellpur	Ditto	2	13	14,139,360	Ditto	Ditto.
53	District Jail, Jhelum	Ditto	2	7	3,547,395	Ditto	Ditto.

54	Attock Fort Jail	..	..	..	Steam	..	..	2	20	4,472,000	River Indus	..	..	Ditto.
55	District Jail, Hissar	..	..	..	Oil engines	..	..	3	11	3,768,615	2 percolation wells	..	..	Ditto.
56	District Jail, Rohtak	..	..	..	Ditto	..	..	2	8	1,624,800	1 percolation well	..	..	Ditto.
57	Government College, Rohtak	..	..	..	Ditto	..	..	1	4	400,000	1 percolation well and Municipal Supply.	..	..	Ditto.
58	Sarangpur Pumping Station for Ambala City Water Supply.	..	..	..	Steam	..	..	2	16	28,375,300	1 percolation well	..	..	Ditto.
59	District Jail, Ludhiana	..	..	..	Oil engines	..	..	2	7	2,701,500	Ditto	..	..	Ditto.
60	Government College, Ludhiana	..	..	..	Ditto	..	..	1	8	23,115,750	1 tube-well	..	..	Ditto.
61	New Civil Hospital, Multan	..	..	..	Electricity	..	..	1	3	4,882,000	1 percolation well	..	..	Ditto.
62	District Jail, Multan	..	..	..	Ditto	..	..	2	6	15,151,300	Ditto	..	..	Ditto.
63	New Central Jail, Multan	..	..	..	Ditto	..	..	2	26	45,244,992	2 tube-wells	..	..	Ditto.
64	Old Central Jail, Multan	..	..	..	Oil engines	..	..	3	26	36,023,500	2 percolation wells	..	..	Ditto.
65	District Jail, Jhang	..	..	..	Ditto	..	..	2	10	3,133,930	1 percolation well	..	..	Ditto.
66	Camp Jail, Shahpur	..	..	..	Ditto	..	..	2	7	2,795,833	Ditto	..	..	Ditto.
67	District Jail, Mianwali	..	..	..	Ditto	..	..	2	17	4,553,748	Ditto	..	..	Ditto.
68	Central Jail, Montgomery	..	..	..	Ditto	..	..	2	24	16,328,900	1 tube-well	..	..	Ditto.
69	Deputy Commissioner's Residence, Jhelum	..	..	..	Electricity	..	..	1	2	70,000	1 percolation well	..	..	Ditto.
70	Kotwali, Lahore	..	..	..	Oil Engine and Motor.	Electric	{	1 1	6 3	635,470	1 tube-well	..	..	Ditto.
71	Water Supply along Dera Ghazi Khan-Loralai Road between Dera Ghazi Khan and Fort Munro.	..	..	..	Gravity	..	..	..	..	1,300,000	Wells and springs	..	..	Ditto.
72	Thanesar Fair Water Supply	..	..	..	Oil engines	..	..	4	46	Nil.	4 tube-wells	..	..	Ditto.
73	Sugarcane Laboratory, Jullundur	..	..	..	Electricity	..	..	1	1	Nil	1 tube-well	..	..	Ditto.
74	District Jail, Hoshiarpur	..	..	..	Ditto	..	..	2	6	Nil	1 percolation well	..	..	Ditto.
75	New Legislative Council Chamber, Charing Cross, Lahore.	..	..	..	Ditto	..	..	2	18	Nil	1 tube-well	..	..	Ditto.
Carried over		..	..	..				147	907	810,054,071				

STATEMENT B—CONCLUDED.

STATEMENT SHOWING PARTICULARS OF IMPORTANT WATER SUPPLY WORKS MAINTAINED IN THE PUBLIC HEALTH CIRCLE, PUBLIC WORKS DEPARTMENT,
PUNJAB, FOR THE YEAR ENDING MARCH 31, 1935.

Serial No.	Name of work.	Power used.	Number of pumping units.	Total horse power.	Water supplied during the year.	Source of water supply.	REMARKS.
1	2	3	4	5	6	7	8
	Brought forward		147	907	Gallons. 810,054,071		
76	Pathankot Water Supply	Oil engines	2	33	28,252,000	1 percolation well	Contribution work.
77	Jawalamukhi Water Supply, District Kangra	Gravity	..	..	5,000,000	Springs	Ditto.
78	Murree Joint Water Board, Murree	Steam and Oil engine including gravity.	3	17	50,696,428	Springs and catchment area	Ditto.
79	Pind Dadan Khan Water Supply	Oil engines	1	8	10,938,039	River Jhelum	Ditto.
80	Bhiwani Water Supply	Ditto	2	45	34,561,780	Canal	Ditto.
81	Dera Ghazi Khan Water Supply	Ditto	3	76	62,222,570	{ 2 tube-wells 5 percolation wells }	Ditto.
82	Multan Water Supply	Electricity	4	128	72,122,900	5 tube-wells	Ditto.
83	Musakhel Water Supply	Oil engine	1	10	4,032,000	1 tube-well	Ditto.
84	Isa Khel Water Supply	Ditto	1	12	Nil	River	Ditto.
85	Choa and Katas Water Supply	Steam	2	16	500,000	Springs	Ditto.
86	Nurpur Shahan Fair Water Supply, District Rawalpindi.	Gravity	..	..	7,500,000	Springs	Ditto.
87	Tamman Water Supply, District Attock	Oil engine	2	16	Nil	2 percolation wells	Ditto.
88	Thal Ilaqa Water Supply	Gravity	..	..	36,500,000	Springs	Ditto.
89	Hoshiarpur Drainage, Flushing Water Installation	Electricity	2	8	Nil	Tube-well	Ditto.
	Total		170	1,276	1,122,379,788		

STATEMENT C.

STATEMENT SHOWING PARTICULARS OF IMPORTANT HEATING, COOLING, STERILISATION AND CHLORINATION INSTALLATIONS, &c., UNDER CONSTRUCTION, OR MAINTAINED IN THE PUBLIC HEALTH CIRCLE. PUBLIC WORKS DEPARTMENT, PUNJAB, FOR THE YEAR ENDING MARCH 31, 1935.

Serial No.	Name of work.	Particulars with source of power, if any.	Approximate horse power, if any.	REMARKS.
1	2	3	4	5
1	Vaccine Institute, Lahore	Electricity, also Chlorination apparatus ..	4	Provincial work. Refrigeration installation for vaccine and Chlorination with gaseous chlorine.
2	Lady Willingdon Hospital, Lahore	Oil fixed Steam boiler and electricity ..	112	Provincial work. Oil fixed steam boilers, disinfectors, air-conditioning, heating, hot water supply sterilisation and steam disinfection plant.
3	Civil Hospital, Multan	Steam boiler and hot water boilers ..	5	Provincial work. Hot water supply and steam disinfection plant.
4	Government House, Lahore	Hot water boilers.. .. .	..	Provincial work. Hot water supply.
5	New Legislative Council Chamber Building, Charing Cross, Lahore	Electricity and oil fixed boiler ..	30	Provincial work. Evaporative, air-conditioning (cooling and heating) installation, &c. (under construction).
6	Mayo Hospital, Lahore	Hot water boilers .. .. .	..	Provincial work. Hot water installation.
7	Queen Marry's College, Lahore	Ditto .. .. .	..	Ditto ditto .
8	Veterinary College, Lahore	Ditto .. .. .	..	Ditto ditto.
9	Lawrence College, Murree Hills	Ditto .. .. .	..	Ditto ditto.
10	Public Health Depôt, Jullundur	Chlorination Apparatus .. .. .	..	Provincial work. Chlorination with gaseous chlorine.
11	Thanesar Eclipse Fair, Kurukshetra	Ditto .. .. .	..	Ditto ditto.
12	Central Jail, Lahore	Steam boiler and Disinfectors	6	Provincial work. Steam Disinfection Plant.
13	Borstal Jail, Lahore	Ditto	6	Ditto ditto.
14	Sub-Jail, Gujrat	Ditto	6	Ditto ditto.
15	Sub-Jail, Kasur	Ditto	6	Ditto ditto.
16	District Jail, Ambala	Ditto	10	Ditto ditto.
17	Punjab Mental Hospital, Lahore	Ditto	10	Ditto ditto.
18	Rewari Water Works	Chlorination Apparatus .. .. .	..	Contribution work. Chlorination with gaseous chlorine.
19	Bhiwani Water Works	Ditto .. .. .	..	Ditto ditto.
20	Murree Water Works	Ditto .. .. .	..	Ditto ditto.
	Total .. .. .	.. .. .	195	

CHAPTER V.—Electrical Engineering.

General.—The rapid electrical development in the Province during the year under review has given rise to increased activities in the Electrical Circle of this Branch.

The considerable reductions in the cost of electrical equipment, fuel and lubricating oils, the financial results of the older supply undertakings, and the education of the public in the use of electricity, have been mainly responsible for this development and it may be generally regarded that within the next twelve months there will be few towns with population of 10,000 and over, where electricity is not in general use.

The Electrical Circle, has, in addition to undertaking the electrification of all Government buildings in four large towns, been engaged in the preparation of estimates for ten others.

In all 1,572 estimates for providing electric installations in Government buildings were prepared during the year under review and many others, framed in previous years, revised in order to bring them up-to-date.

The reduction that has taken place in the cost of material and labour for electric installations during the past few years is remarkable and it is not unusual to find contractors who are prepared to undertake work at rates 50 per cent. lower than those ruling in the year 1932-33. This is probably explained by the keen competition among the new entrants to this type of business, who have established themselves in towns where electricity has recently been introduced. With a view to stimulating their business with the public, very small margins of profit are looked for by such contractors when tendering for Government work.

While every advantage of this keen competition has been taken, other possible methods of reducing the cost of installations have not been overlooked; one, in particular, rests with the provision of ceiling fans in offices—an item which in many cases represents the major portion of the cost of an installation. Hitherto, manufacturers of this class of fittings had not made any serious endeavour to produce an efficient ceiling fan of a size below 56" sweep and in consequence it has been necessary to provide fans of a greater output than the circumstances demanded. One manufacturer has now, however, succeeded in designing an efficient 48" sweep fan to Indian Stores Department specification, and large numbers are now being purchased for use in situations where the fitting of a larger size fan cannot be justified. The total saving to Government resulting from this for the year has been considerable both from the point of view of initial and recurring costs which represent reductions of 20 per cent. and 26 per cent. respectively, per fan.

The activities of the Electrical Circle have not been confined entirely to undertaking work on behalf of the Buildings and Roads Branch only, but, following the policy of the previous year, all new installations and certain maintenance activities in the Public Works Department, Irrigation Branch, buildings have been executed through the agency of the Electrical Engineer to Government.

As in the two previous years, "bakelite" fittings have been used extensively in all new installations and maintenance works, with the result that considerable economies have been effected and the risk of electric shock eliminated. Hitherto, numerous cases of theft of brass fittings were being reported but with the introduction of a comparatively valueless moulded composition, it is seldom that fittings are now tampered with.

Renala Hydro-Electric Power House and Pumping Stations.—This undertaking which derives power from a low fall in the Lower Bari Doab Canal and serves to irrigate a large acreage of land in the Montgomery district, has, during the year under review, rendered good service. Five of the larger pumps were completely overhauled, and although not recommended by the makers, repairs were effected in preference to purchasing entirely new components at approximately 20 times the cost. All Impellers welded during the previous years were ground to size in the workshop attached to the Power House and are now running with increased efficiency. The electrical equipment has not given entire satisfaction, and, as in previous years, instances of motor coils burning out occasionally arose. In this connection, however, improvements are being made,

and with increased ventilation of the coils it is hoped that the deterioration of the insulation will not be as rapid as hitherto. There has been a small falling off in the number of units generated and sold, and as a natural corollary of this, the cost of generation per unit has slightly increased. The figures for the year are as follows:—

<i>Units generated.</i>	<i>Cost per unit.</i>	<i>Total.</i>
		Rs.
38,15,640	.. at 2·84 pies approximately (exclusive of depreciation, etc.)	56,363
<i>Units sold.</i>		
35,46,106	.. .. at 13·38 pies per unit	.. 2,47,119

Sub-station at New Central Jail, Multan.—The high tension electrical equipment installed at this sub-station has rendered satisfactory service throughout the year.

Power House, Ghoragali.—The two Vertical Crude Oil Engines, direct coupled to generators in this Power Station, have, although being subjected to overloading at various times, given satisfactory service, and as will be seen below, the cost of generation remains the same as in previous years. It is, however, hoped that with the inauguration of the Murree Electric Supply Company, it may be possible to discontinue the use of the Plant and receive a supply of energy from this public undertaking at rates considerably below the cost of generations by the Government plant. Various advantages will accrue from this scheme, the most important of which is that a continuous supply of energy will be available, whereas at present, generation is restricted to the hours between sunset and sunrise.

Units. generated.	STAFF SALARIES.		EXPENDITURE ON ACCOUNT OF FUEL OIL, LUBRICATING OIL AND PETTY STORES.		GENERATING COST.		QUANTITY OF FUEL.		QUANTITY OF LUBRICATING OIL.	
	Total.	Per unit.	Total.	Per unit.	Total.	Per unit.	Total.	Per unit.	Total.	Per unit.
	Rs.	Annas.	Rs.	Annas.	Rs.	Annas.	Gallons.	Gallons.	Gallons.	Gallons.
16,076	1,980	2·0	2,461	2·4	4,441	4·4	2,583	0·16	391	·024

Lady Willingdon Hospital, Lahore.—Various extensions to the electric installation in this building have been undertaken from time to time. In order to obtain the benefit of rates charged for power purposes, separate meters have now been provided for motors, heating plugs and electric surgical instruments.

Sheikhupura.—All Government buildings in this town were being provided with electric installations in the year under review and 90 per cent. of the work was completed by the close of the year.

Gurdaspur.—The electrification of all Government buildings in this town was taken in hand, and with the exception of those buildings on roads where the Public Works Department, Electricity Branch, had not completed the work of erecting their distribution mains, all buildings were connected. There was a slight delay in the delivery of 48" ceiling fans on the part of the manufacturers.

Phillaur.—The electrification of the Police Training School, Phillaur, and the Government buildings in this town formed one of the largest projects undertaken by the Electrical Circle during the past four years. It comprised underground and overhead wiring in addition to the usual internal installations. The work was successfully completed in time for the "Police Week" which is an annual function of the Police Department.

Ludhiana.—The provision of electric installations in all Government buildings in this town was undertaken during the year under review, but owing to slight delay in the supply of power, the occupants of various buildings were not able to reap the benefits of this amenity immediately on completion of the work.

2. *Provision of Electric Installations.*—During the year the following number of lights, fans, etc., were installed in Government buildings, which, taken generally, represents an increase of approximately 300 per cent. over the previous year :—

(1) Lights	..	..	..	..	..	3,262
(2) Fans	..	..	..	..	..	650
(3) Fan points	..	..	..	..	..	849
(4) Electrically driven Thermantidotes	..	..	..	..	..	2
(5) Motors	..	..	..	..	..	8
(6) Wall socket points other than heater points	..	..	..	..	..	669
(7) Heater points	..	..	..	..	..	34
(8) Call bells	..	..	..	..	..	21
(9) Electrolliers	..	..	..	..	..	2

The capital expenditure incurred during the year on Government electric installations in the Electrical Circle amounted to Rs. 1,37,005, thus bringing the total capital cost of all Government electric installations to the end of the year to Rs. 33,12,205.

The revenue earned by the Electrical Circle from fees, etc., recovered for work done during the year, and from other miscellaneous receipts, amounted to Rs. 2,21,913.

3. *Works.*—Two Major Works, mentioned below, debitable to 60—Civil Works, were under execution in the Electrical Circle during the year under report.

Name of work.	Estimated amount.	Expenditure during 1934-35.
	Rs.	Rs.
1. Electrification of District Court Buildings at Ludhiana	11,510	1,302
2. Electrification of Government buildings attached to Police Training School, Phillaur	19,706	10,793
Total .. ..	..	12,095

Expenditure on Major and Minor Works, Central and Provincial, by units of appropriation was as follows :—

(a) *Central Buildings -*

	Rs.
(1) Postal	Nil.
(2) Civil (Ecclesiastical)	Nil.
(3) Archæological	Nil.

(b) *Provincial Buildings—*

	Rs.
(1) General Administration, Transferred and Reserved ..	8,262
(2) Administration of Justice	13,292
(3) Jails and Convict Settlements	10,354
(4) Police	23,532
(5) Education (other than European and Anglo-Indian) ..	2,350
(6) Education (European and Anglo-Indian)	18
(7) Medical	5,963
(8) Public Health	6
(9) Agriculture	6,697
(10) Industries	1,064
(11) Civil Works	3,527
(12) Stationery and Printing	686
(13) Communications	113
(14) U.—Miscellaneous	925
Total	76,789

The total expenditure incurred on Original Works during the year was—

41—Civil Works—

				Rs.
Major Works	..	..	..	Nil.
Minor Works	..	..	..	48,822
Contribution, including Transfer Remittance Works	..			22,030
		Total	..	70,852

Tools and Plant—

				Rs.
Major Works	..	..	..	Nil.
Minor Works	..	..	..	284
		Total	..	284

60—Civil Works, Capital Expenditure—

				Rs.
Major Works	..	..	..	12,095
Minor Works	..	..	..	53,935
		Total	..	66,030

4. *Maintenance.*—The expenditure on “Maintenance” during the year was as follows :—

41—Civil Works—

				Rs.
(a) Postal	..	..	..	Nil.
Civil (Ecclesiastical)	..	..	..	Nil.
Archæological	..	..	..	Nil.
(b) Provincial Repairs, Transferred, Voted	..			1,46,388
Provincial Repairs, Reserved	..			13,584
(c) Contribution Repairs	..			506
(d) Tools and Plant Repairs	..			1,036
		Total	..	1,61,514

5. *Supply of energy.*—The cost of electricity supplied to Government Provincial buildings in (three residential estates) Lahore, Jullundur, Hoshiarpur, Ambala, Simla, Delhi, Montgomery and Multan, was met by each Department from its own funds. The Public Works Department, Buildings and Roads Branch, Electrical Division, No. 2, paid on account of energy consumed in Public Works Department non-residential buildings in Lahore, an amount of Rs. 16,478 for 90,832 units.

The cost of electric energy for Government House, Lahore, was Rs. 4,786 for 23,117 units.

CHAPTER VI.—The Maclagan Engineering College, Moghalpura, Lahore.

Number of Students.—In October 1934, at the commencement of the 12th academic year there were 248 students at the College :—

					' A ' Class.	' B ' Class.
1st Year	..	..	..	..	29	35
2nd Year	..	..	..	..	18	30
3rd Year	..	..	..	..	15	34
4th Year	..	..	..	..	11	36
5th Year	..	..	..	..	7	33
Total ..					80	168

Recruitment.—In the ' A ' Class in past years only ten vacancies were offered per annum. In 1933 the number was increased to twenty and in the year under review it was again increased to thirty. Twenty-four candidates competed for the entrance examination, of whom eighteen reached the qualifying standard and were accordingly offered admission. Twenty-six ultimately joined including eight special admissions.

The number of admissions to the ' B ' Class was—

External candidates 23 (including one special admission).

Railway candidates 15

Owing to the abolition of stipends in favour of 10 scholarships for the external candidates of each class, competition for the external vacancies has fallen off, only 68 candidates competing for 25 vacancies. Competition for Railway nominee vacancies, however, remains strong—106 candidates competing for 15 vacancies—no doubt due to stipends, although reduced, remaining in force.

External Examinations.—The College remains the examination centre for the following British Institutions :—

- (a) Institution of Mechanical Engineers, London,
- (b) Institution of Electrical Engineers, London,
- (c) Institution of Structural Engineers, London,
- (d) Institution of Automobile Engineers, London,

and many candidates from various parts of the Punjab and Northern India in addition to the students of this College, presented themselves for examinations.

Students' successes in External Examinations.—Students continue to be successful in external examinations, the year's results showing :—

<i>Examinations.</i>	<i>Successes.</i>
(1) Associate-Membership Examination, Institution of Electrical Engineers, London (part or whole)	3
(2) Associate-Membership Examination, Institution of Mechanical Engineers, London (part or whole)	5
(3) City and Guilds, London	17

It is satisfactory to note that students of ' B ' Class, in addition to those of the ' A ' Class, are successful in these external examinations.

Engineering Examinations of the Punjab University.—Ten of the ' A ' Class students sat for the final examination of the B. Sc. Degree in Engineering of the Punjab University, of whom nine were successful.

Appointments and Employment.—Every effort is being made to explore the employment market on behalf of past students, and it is satisfactory to note— from the information so far available—that, of the ' A ' Class of ten students who completed their course at the end of September, 1933, seven are in employment, and of the ' A ' Class of seven students, who completed their course at the

end of September, 1934, five are in employment, while of the 'B' Class of thirty-three students who completed their course in September, 1934, thirty-one are in employment. The appointments include one under the Government of India, one in the Military Department, eight in the Hydro-Electric Branch of the Punjab, Public Works Department, one at the Maclagan Engineering College, nineteen under the North-Western Railway, and thirteen with private concerns. Efforts for the betterment of past students of longer standing has resulted, *inter alia*, in the placing of at least two, and possibly others, whose candidature is still under consideration, in the Hydro-Electric Department of the United Provinces. Three 'A' Class students left the College during their course in order to take up salaried apprenticeships under the Government of India, Ordnance Department, Electricity Department, and the Tata Iron and Steel Works, respectively.

Changes in Staff.—Captain H. Whittaker (Late R. E.) B.Sc., A.R.C. Sc. A. M. I. Mech. E., A. M. Inst. C. E., A.M.I.E.E., Mem. Soc. Ing. Cir. de France, who had been Principal of the College since its inception (1923) proceeded on leave preparatory to retirement on the 5th April, 1934, and was succeeded by Mr. P. R. Bence-Jones, M.C., M.A. (Cantab), M. Inst. C. E., A. M. I. Mech. E., who was appointed by the High Commissioner for India, in London.

Mr. Bhagwan Dass, past 'B' student of the College, was appointed Assistant Workshop Instructor.

Workshops.—The second bay of the workshops was put in hand and was approaching completion by the end of the year under review.

Buildings and Equipment.—Except for extensions to the workshops, no additions were made during the year owing to lack of funds.

'C' Class.—As the result of a handsome gift of Rs. 30,000 from Rai Bahadur Lala Amar Nath, a new class, known as the 'C' Class, was sanctioned during the year, with 15 admissions annually. The object of this class is to provide an initial training for youngmen and boys of good education, who are desirous of seeking careers as artizans and tradesmen. The course will be of two years' duration and consists mainly of practical training in the College Workshops.

Health.—The general health of both the students and the staff has been satisfactory. Thanks are due to Dr. F. Carroll of the North-Western Railway, who continued to serve the College from the North-Western Railway, Moghalpura Dispensary, and to visit the College Hostels in cases of illness.

Recreation and Sports.—Almost all the students take an energetic part in games, and the popularity of tennis, cricket, football and hockey has undoubtedly contributed to the good health of the College.

The annual sports of the College were fixed for the last week in January, 1934, when His Excellency the Governor had kindly consented to be present and to distribute the prizes. Unfortunately heavy rains caused the sports grounds to be flooded and all arrangements for the final day had to be cancelled. The final events were eventually decided in the last week in March, when Mr. D. Macfarlane, I.S.E., Chief Engineer and Secretary to Government, Punjab, Public Works Department, Buildings and Roads Branch, gave away the prizes.

Finance.—A summary of the details of expenditure incurred and revenue realised for the period under review is given below :—

<i>Finance.</i>		<i>Income, 1934-35.</i>	
		Rs.	
Hostel, Tuition and Examination Fees	22,187
Fines	737
Rent of shops	204
Miscellaneous	172
Fees for tests and analyses	64
Recoveries of expenditure
Less Refunds	—17
Total		..	<u>23,347</u>

		<i>Expenditure.</i>
		Rs.
<i>Pay of Officers—</i>		
Pay		(2,494 Non-Voted.)
Leave salary		93,259 (Voted.)
	Total Pay of Officers	2,494 (Non-Voted.)
		93,259 (Voted.)
<i>Pay of Establishment—</i>		Rs.
Pay		42,016
Leave salary		2,881
	Total Pay of Establishment	44,897
<i>Travelling Allowance—</i>		Rs.
Other Travelling Allowance		300 (Voted.)
<i>Other Allowances and Honoraria—</i>		Rs.
Payment to 'B' Class students		49,916
Fee for marking examination papers		2,778 (Voted.)
		202 (Non-Voted.)
Compensatory allowance to clerks and peons		158
Cost of passages		400 (Non-Voted.)
	Total Other Allowances and Honoraria	52,852 (Voted.)
		602 (Non-Voted.)
<i>Supplies and Services—</i>		Rs.
Other Supplies and Services		14,414
<i>Contingencies—</i>		Rs.
Other Contingencies		8,914
<i>Stipends and Scholarships—</i>		Rs.
Scholarships to 'A' and 'B' Class students		5,680
	GRAND TOTAL	3,096 (Non-Voted.)
		2,20,316 (Voted.)
		Rs.
Net cost to Government		2,00,065
Average number of students on roll		243
Net cost per student		823·3
Average tuition fee paid by 'A' Class student per annum		180
Average tuition fee paid by 'B' Class student per annum		Nil,

CHAPTER VII.—Government School of Engineering, Rasul.

1. *Overseer and Draftsman Training*—The number of students attending the classes were as follows :—

	Beginning of the Session.	End of the Session.
1st Year Overseer Class	50	49
2nd Year Overseer Class	47	46
1st Year Draftsman Class	8	5
2nd Year Draftsman Class	7	7
3rd Year Draftsman Class	1	1
Total ..	113	108

One student left the 1st Year Overseer Class and one the 2nd Year Class, both on account of ill-health. One student in the 1st Year Draftsman Class left on account of his father's death and two left for other private reasons.

2. *Results of Examinations.*—In the examination at the end of the year, of the 46 Overseers who successfully completed the two years' course 26 obtained the "A" grade certificate, 6 with "Honours" and 20 with "Credit," and 20 obtained the "B" grade or ordinary certificate.

Of the 49 students in the 1st Year Class, 44 qualified for admission into the 2nd Year, but 5 failed to do so; three of them were from the British Punjab and two from Indian States. The former three have, however, been readmitted into the 1st Year and the latter two into the 2nd Year at the request of their nominating Durbars.

Of the 5 students in the 1st Year Draftsman Class, 4 qualified for admission to the 2nd Year, and one failed.

Of the 7 in the 2nd Year Draftsman Class, 1 qualified with "Honours," 2 with "Credit" and 4 with Ordinary certificates.

One student in the 3rd Year Draftsman Class qualified; also one of last year's students who, due to illness, was absent from last year's final examination and so was allowed to appear at the final examination this year, qualified.

3. *Quality of Work done.*—This was well up to the standard. The students showed keenness, concentration and interest especially in the practical classes, the advantages of which are now much appreciated.

The discipline and spirit of the students during the year were excellent.

4. *Outside Examiners.*—As stated last year, with the introduction of the system of examination under the "Block" system, by which the students are tested in stages, this agency has become unnecessary.

5. *Recruitment of Classes.*—The annual competitive examination for admission to the 1st Year course in the 1935 session was held in October, 1934. There were 85 candidates for admission—the same number as the previous year. Of these 48 were admitted to the Overseer Class and 10 to the Draftsman Class. Of the former, 46 were from the British Punjab, and 1 each from the Delhi and the North-West Frontier Provinces. None were sent by Indian States this year.

Three Overseer students who failed to qualify at the end of the 1st Year were readmitted to the 1935 1st Year course.

The communal proportions of British Punjab candidates for the 40 vacancies open to them were 40 per cent. Muslims, 40 per cent. Hindus and 20 per cent. Sikhs, and of them 20 (or 50 per cent.) were to be Agriculturists. As usual,

the bulk of the latter category were Muslims, but as insufficient agriculturists qualified in the first 40, it was decided that the admissions be increased to 48 to make up the 20 agriculturists required. It is fortunate that sufficient Agriculturists qualified to allow of this being done.

6. *Health.*—The health of the staff and students was very good during the year, there being no outbreak of infectious disease of any kind. Plague occurred in the neighbourhood, but not at the School. Malaria, however, was prevalent as usual in October and November and quinine was freely administered and the students were required to sleep under mosquito nets.

7. *Games and Drills.*—The majority of the students showed keenness at work, games and drill. All students attended physical drill every other morning and games or company drill every evening. They were required to play hockey and football on four days every week.

8. *Annual Prize-giving.*—This was held on the morning of the 4th February, 1935. Mr. D. Macfarlane, I.S.E., Secretary to Government, Punjab, Public Works Department, Buildings and Roads Branch, presided.

The proceedings were unfortunately marred as far as the presence of visitors was concerned, by a heavy downpour of rain the previous day with the result that the canal bank which is the only source of access to the School by road was closed to traffic and most of the visitors including Sir Jogindra Singh, the Honourable Minister for Agriculture, were prevented from attending.

9. *Survey Camp.*—The Survey Camp was pitched in November at R. D. 230,000 Upper Jhelum Canal and experience was obtained in practical surveying and simple project work. The annual visit to works succeeded the survey camp.

10. *Annual Visit to Works.*—On leaving the survey camp all Second Year students visited Mangla Headworks, Taraki quarries, the Grand Trunk Road, the North-Western Railway Workshops and the combined road and rail bridge at Jhelum.

11. *Mechanical Workshops.*—The progressive practices in the Carpenters and Blacksmiths shops and foundry continued satisfactorily and many of the students passed on to do useful productive work in one or more of these shops. It is gratifying to note that year by year there is increasing enthusiasm to become proficient in the workshop.

12. *Employment of Qualified Students.*—Out of the 46 Overseer students who qualified, 5 were North-West Frontier Province nominees, and 2 from Indian States. They are dependent for employment on their respective Governments.

Of the 39 students from the British Punjab, 10 obtained appointments on probation in the Subordinate Engineering Service. Of the remainder, 3 have obtained work in the Buildings and Roads Branch while it is hoped to find Government employment for some more during the year.

Of the 7 students who qualified in the Second Year Draftsman Class, one has been selected for appointment in the Irrigation Branch in the Rs. 110—5—160 grade less 15 per cent. and has joined the 3rd Year Class and one has been taken by the Irrigation Branch in the Rs. 60—2—100 grade less 15 per cent. The remainder are likely to be employed during the year.

There was only one student in the 3rd Year Draftsman Class. He has been appointed on two years' probation in the Montgomery Provincial Division of the Buildings and Roads Branch.

13. *Employment of Retrenched Subordinates.*—Since the last report, the Principal received the names of more retrenched subordinates for classification; of them 20 were found eligible for re-employment. The total number aggregated 184, of which 158 were from the Irrigation Branch and 26 from the Buildings and Roads.

Of these, 69 have been found re-employment, 1 died and names of 4 subordinates were struck off the list for one reason or another. This left 110 employable retrenched subordinates still available for re-employment. A large proportion of them have found temporary employment outside Government service, and the demand for retrenched men continues to be fairly steady.

14. *Concrete Department.*—The special course in reinforced concrete construction and design was held this year from the 1st of October, 1934, until the 9th of February, 1935.

Eleven Overseers and three Draftsmen were sent for this course from the Public Works Department as under :—

Irrigation Branch	..	..	..	8 Overseers and 2 Draftsmen.
Military Engineer Services	..	..	..	2 Overseers and 1 Draftsman.
North-West Frontier Province	..	..	..	1 Overseer.

One Draftsman student in the Third Year also attended the class, and one student of the last year's 3rd Year Draftsman Class who fell sick last year, was allowed to appear for the examination.

The ground covered was substantially that laid down in the syllabus.

All of these men completed the course and showed keenness. All, except one Overseer from the Military Engineer Services, qualified.

These students were taken to Bhimber and Bakrala Bridges and were shown the Cement Works at Wah.

The following statistics since the year 1922, when this course was started, show that 184 Overseers and Draftsmen have qualified in this course to date. They came from the following Departments :—

Buildings and Roads Branch	..	..	26 Overseers and 7 Draftsmen.
Irrigation Branch	..	..	71 „ „ 48 „
Military Engineer Services	..	..	18 „ „ 2 „
North-Western Railway	..	..	9 „
North-West Frontier Province	..	..	2 „
Patiala State	..	..	1 Overseer.
Private employment, etc.	..	..	5 „
Total	..	..	122 62

15. *Testing Laboratory.*—The concrete laboratory was fully occupied with testing work of concrete—making materials sent by the Public Works Department Officers of the Punjab and the North-West Frontier Province. The demand for these tests is steadily increasing. The fees earned for testing during the financial year under report amounted to Rs. 429 against Rs. 119 in the previous year.

16. *Buildings and Grounds.*—*Major Works.*—None were executed during the year.

17. *Buildings.*—All the buildings were kept in good order during the year. One of the menial lines was remodelled to accommodate pupils in the newly opened class for Bricklayer Artizans. The expenditure was Rs. 1,176 from original works and Rs. 128 from repairs allotment.

18. *Financial Working.*—The financial working of the School during 1934-35 is given in Table IV. The gross receipts were Rs. 18,262 against Rs. 23,462 in the previous year. The decrease is partly due to decreased tuition fees from the smaller number of students admitted owing to recent retrenchments, and partly to reduce capitation fees from Indian States, who owing to the large number of retrenched men in the market, are, for the time being, sending very few nominees for training. Under the head "Education" the net expenditure was Rs. 95,770 against Rs. 83,160 in the previous year, the increase being largely due to salary increments.

Including all expenses and deducting all receipts the net expenditure on the year's working was Rs. 90,124, the resulting net cost per student being Rs. 827 against Rs. 708 last year. About 50 per cent. of the increased cost per student is due to the number of students having been reduced from 117 last year to 109 and to the reduction of revenue from fees, referred to above.

19. *Changes in Staff.*—There was no change in the staff during the year. The post of Brickwork Instructor was sanctioned during the year.

TABLE I.

RESULTS OF FINAL EXAMINATIONS OF THE OVERSEER AND DRAFTSMAN CLASSES, HELD DURING THE FIVE YEARS 1930—1935.

Year.	Number appeared.	Number qualified.	Highest marks percentages.	Average marks percentages.	REMARKS.
OVERSEER CLASS.					
1930-31	74	71	84	68	44 qualified by the higher standard of whom 16 obtained "Honours," 27 qualified by the lower standard.
1931-32	58	57	80	65	24 qualified by the higher standard of whom 5 obtained "Honours," 35 qualified by the lower standard.
1932-33	75	75	84	74	42 qualified by the higher standard of whom 12 obtained "Honours," 33 qualified by the lower standard.
1933-34	51	50	84	69	33 qualified by the higher standard of whom 8 obtained "Honours," 17 qualified by the lower standard.
1934-35	46	46	82	66	26 qualified by the higher standard of whom 6 obtained "Honours," 20 qualified by the lower standard.
DRAFTSMAN CLASS.					
1930-31	9	8	75	66	5 qualified by the higher standard.
1931-32	14	14	80	67	7 qualified by the higher standard.
1932-33	11	11	77	66	7 qualified by the higher standard.
1933-34	9	9	78	68	5 qualified by the higher standard.
1934-35	7	7	77	64	3 qualified by the higher standard.

TABLE II.

PARTICULARS OF RELIGION, CASTE, ETC., OF STUDENTS IN THE GOVERNMENT SCHOOL OF ENGINEERING, PUNJAB, RASUL, DURING THE FIVE YEARS 1930—1935.

Session.	Agriculturists.	Non-agriculturist.	Total.	CASTE.					RELIGION.			NAME OF CIVIL DIVISIONS AND INDIAN STATES TO WHICH STUDENTS BELONG.															REMARKS.	
				Brahmans.	Khatris.	Non-Brahman Hindus.	Mohammadans.	Sikhs.	Hindus.	Mohammadans.	Sikhs.	Ambala Division.	Jullundur Division.	Lahore Division.	Rawalpindi Division.	Multan Division.	North-West Frontier Province.	Delhi Province.	Kashmir State.	Jaipur State.	Patiala State.	Bahawalpur State.	Nabha State.	Kapurthala State.	Mandi State.	Malerkotla State.		Simla Hill States.
1930-31 ..	53	114	167	23	21	50	44	29	94	44	29	6	45	45	17	21	3	..	3	..	5	19	1	2	..	..	..
1931-32 ..	49	116	165	19	28	44*	48	26	91*	48	26	9*	51	31	20	13	6	2	6	..	4	20	..	3	..	..	..
1932-33 ..	53	98	151	13	26	35*	51	26	74*	51	26	11*	39	36	14	17	5	3	5	1	5	13	..	1	..	1	..	
1933-34 ..	42	75	117	8	21	21	43	24	50	43	24	8	34	28	11	16	5	1	..	1	4	5	..	1	2	1	..	
1934-35 ..	35	73	108	9	15	20	45	19	44	45	19	13	30	30	15	10	5	..	1	1	1	..	2

OVERSEER AND DRAFTSMAN CLASSES.

* 1 Jain.

TABLE III

SHOWS IN WHAT PROVINCE, DEPARTMENTS, ETC., QUALIFIED STUDENTS FROM RASUL HAVE RECEIVED THEIR FIRST APPOINTMENTS DURING THE FIVE YEARS 1931-1935.

Year of qualification.	Number of students, who gained certificates.	EMPLOYED IN GOVERNMENT SERVICE.				Indian States nominees and subjects.	Employed in M. E. S., Delhi Province, Electricity Branch, District and Municipal Boards or other offices in the Punjab.	REMARKS.
		Punjab.		N.-W. F. Province.				
		Irrigation.	Buildings and Roads.	Irrigation.				
OVERSEER CLASS.								
1931	71	14	1	1	12	13	30 unemployed.	
1932	57	15	..	..	14	6	22 unemployed.
1933	75	20	1	5	15	5	29 unemployed.	
1934	50	16	2	..	11	6	15 unemployed.	
1935	46	10	3	5	2	..	26 unemployed.	
DRAFTSMAN CLASS.								
1931	8	4	..	..	..	2	2 unemployed.
1932	14	6	1	..	..	2	5 unemployed.
1933	11	3	..	..	..	1	7 unemployed.
1934	9	2	2	..	..	1	4 unemployed.
1935	7	1	..	..	..	..	1 undergoing 3rd Year's course in Practical design and 5 unemployed.

TABLE IV.

FINANCIAL STATEMENT SHOWING RECEIPTS AND EXPENDITURE AT THE GOVERNMENT SCHOOL OF ENGINEERING, PUNJAB, RASUL, FOR THE FINANCIAL YEAR 1934-35.

Serial No.	Description of expenditure or receipts.	Amount.	Total amount.	Grand total.	REMARKS.
	EDUCATION.				
	<i>Receipts.</i>	Rs.	Rs.	Rs.	
1	Admission examination fees	880			
2	Tuition and Hostel fees	12,506			
3	Capitation fees	1,040			
4	Rents	3,476			
5	Miscellaneous receipts	360			
			18,262	18,262	
	EXPENDITURE.				
	<i>Salaries.</i>				
1	Gazetted Officers (Non-voted), including Overseas pay.	26,537			
2	Gazetted Officers (Voted), Permanent ..	19,092			
3	Instructors' Establishment, Permanent ..	10,049			
4	Instructors' Establishment, Temporary ..	4,927			
5	Clerical Establishment, Permanent ..	5,767			
6	Workshop Establishment, Permanent ..	2,061			
7	Concrete Section Establishment, Permanent	6,023			
8	Workshop Establishment, Temporary ..	3,443			
9	Boarding House Establishment, Permanent..	360			
10	Menial Establishment (Peons and Daftri) ..	1,266			
11	Allowance to Draftsman	330			
			79,855		
12	Pensionary charges at 3/16th, item 1, plus 1/6th, items 2, 3, 5, 6, 7, 9 and 35 plus 1/16th, item 10.	12,362			
			12,362		
	<i>Allowances.</i>				
13	Travelling Allowance (Non-voted)	470			
14	Travelling Allowance (Voted)	1,097			
15	Other Allowances and Honoraria (Non-voted)	..			
			1,567		
	<i>Supplies and Services.</i>				
16	Books and Periodicals	394			
17	Prizes and Medals	310			
18	Materials for Workshop and Fieldworks classes	2,712			
19	Visits to Works	85			
20	Convocation charges	176			
21	Research work charges	766			
22	Demonstration	525			
			4,968		
	<i>Contingencies.</i>				
23	Pay of Menial Establishment	6,304			
24	Stationery and Printing	22			
25	Postage and Telegraph charges	459			
26	Hot weather establishment, and cold weather charges.	161			
27	Railway freight on stationery and other Government records, parcels, etc.	95			
28	Electricity charges	175			
29	Miscellaneous	671			
			7,887		
	<i>Equipment—New Supplies.</i>				
30	Machinery and Tools and Plant	1,157			
31	Mathematical Instruments	714			
32	Furniture .. ..	..		
33	Camp Equipage .. ..	..		
			1,871		
	<i>Repairs and Carriage of Tools and Plant.</i>				
34	Repairs to Machinery, furniture, etc. ..	2,743			
			2,743		
	<i>Medical.</i>				
35	Salaries (Permanent)	489			
36	Salaries (Contingent)	143			
37	Allowances	360			
38	Stores	219			
			1,211		
	<i>Suspense.</i>				
39	Suspense	1,568			
			1,568		
	<i>Less Receipts</i>				
				1,14,032	
	<i>Net Expenditure</i>			18,262	
				95,770	
	<i>Maintenance.</i>				
1	Buildings, Grounds, Establishment, Water-Supply, Approach Road and Watercourse.	3,511	3,511	3,511	

TABLE IV—CONCLUDED.

MANUFACTURE.

Item No.	RECEIPTS.		Item No.	EXPENDITURE.	
	Description of items.	Amount.		Description of items.	Amount.
		Rs.			Rs.
	<i>Workshop.</i>				
1	Value of work done and stores issued during the year.	13,628	1	Stock in hand on 1st April, 1934 ..	7,394
2	Establishment recoveries on Deposit works.	211	2	Value of stores received during the year.	11,660
3	Tools and Plant charges on Deposit works.	44	3	Wages of special establishment ..	2,700
4	Storage charges on stock sold ..	23			
5	Value of stock in hand on 31st March, 1935.	8,126			
	Total ..	22,032		Total ..	21,754
	Less Expenditure ..	21,754			
	Profit ..	278			
	<i>Electricity.</i>				
1	Outturn on account of Electricity ..	3,625	1	Diesel oil	1,434
			2	Castor oil	162
			3	Kerosene oil	462
			4	Mobil oil	203
			5	Petty stores	279
			6	Workcharged labour including repairs to Power plant and belts, etc.	85
	Total ..	3,625		Total ..	2,625
	Less Expenditure ..	2,625			
	Gross Profit ..	1,000			
	Less Depreciation ..	342			
	Net Profit ..	658			
	<i>Motor Vans.</i>				
1	Outturn on account of Motor Lorries hire.	901	1	Petrol, Mobil oil and other petty stores.	668
			2	Workcharged labour and repairs to Motor Vans and Rail Motor, etc.	53
	Total ..	901		Total ..	721
	Less Expenditure ..	721			
	Gross Profit ..	180			
	Less Depreciation ..	225			
	Net Profit ..	-45			

Net Expenditure—					
Education	Rs.	Rs.	Rs.		
Maintenance	95,770				
	3,511				
Less net Profit from—			99,281		
Manufacture—					
Workshop	Rs.				
Electricity	278				
Motor Vans	658				
	-45				
Depreciation—		891			
Power Plant	342				
Motor Vans	225				
Fees for tests made in the Concrete Laboratory ..	429	567			
		429			
			1,887		
Less Cost of training 13 members of the Reinforced Concrete class at Rs. 250 each	Net Expenditure ..		97,394	97,394	
					3,250
Less Contributions recoverable from Other Administrations ..	Total ..			94,144	
				4,020	
	Net Expenditure ..			90,124	
Number of students who completed the year's training—					
Overseer Class	95				
Draftsmen Class	14				
	109				
Net cost to Government per student for the year ..				90,124	
				109	
				= Rs. 827	

TABLE V.

STATEMENT SHOWING EXPENDITURE ON MINOR WORKS AND REPAIRS EXECUTED AT THE GOVERNMENT SCHOOL OF ENGINEERING, PUNJAB, RASUL, DURING THE FINANCIAL YEAR 1934-35.

Serial No.	Name of estimate.	Expenditure during 1934-35.
		Rs.
	MINOR WORKS.	
1	Constructing a shed and yard for storing Fieldworks equipment at Government School of Engineering, Punjab, Rasul ..	121
2	Providing additional light points and a plug in the Principal's Bungalow	39
3	Remodelling Block No. 2 in the Menial lines for the Artizan class	1,176
	Total ..	1,336
	REPAIRS.	
1	Annual Repairs to School Buildings, Grounds, etc. ..	2,967
2	Annual Repairs to Residential Buildings	416
3	Remodelling Block No. 2 in the Menial Lines for the Artizan class	128
	Total ..	3,511

CHAPTER VIII.—The Communications Board, Punjab.

Constitution.—The Honourable Minister for Agriculture continued to be the President and the Board had the following as its members :—

(a) *Official (9 members).*

1. The Financial Commissioner (Development), Punjab.
2. The Chief Engineer, Punjab, Public Works Department, Buildings and Roads Branch.
3. The Chief Engineer, Punjab, Public Works Department, Irrigation Branch.
4. The Secretary to Government, Punjab, Finance Department.
5. The Secretary to Government, Punjab, Transferred Departments.
6. The Director of Agriculture, Punjab.
7. The Chief Conservator of Forests, Punjab.
8. The Agent, North-Western Railway, Lahore.
9. The Senior Government Inspector of Railways, North-Western Railway, Lahore.

(b) *Non-Official (10 members).*

1. Lieutenant Sardar Nau Nihal Singh Man, of Mananwala, District Sheikhpura.
2. Rai Bahadur Raja Pandit Hari Kishen Kaul, C.S.I., C.I.E., Lahore.
3. Syed Mubarik Ali Shah, M.L.C., Shah Jiwana, District Jhang.
4. Lala Joti Pershad, B.A., LL.B., M.L.C., Pleader, Hissar.
5. Sardar Sahib Sardar Gurbachan Singh, M.L.C., Jagirdar of Alawalpur, District Jullundur.
6. Khan Bahadur Sardar Habib Ullah, M.L.C., Lahore.
7. Seth Maha Narain, Manager, Ganesh Flour Mills, Lyallpur.
8. P. R. Pinhorn, Esquire, Director of Messrs. Wright Pinhorn and Partners, Limited, New Delhi, representatives of the Punjab and the Northern India Chamber of Commerce.
9. P. H. Guest, Esquire, representative of the Automobile Association of Northern India, Lahore.
10. (i) The late Owen Roberts, Esquire, M.L.C., of Messrs. Owen Roberts and Co., Limited, who died in May 1934.
(ii) G. Richmond, Esquire, Honorary Secretary, The Indian Roads and Transport Development Association, Lahore, representatives of that Association.

Rai Bahadur Lala Sant Ram, I.S.E., held charge of the office of the Secretary to the Board, in addition to his own duties as Superintending Engineer, Third Circle, Lahore, till the forenoon of the 5th January, 1935, when he proceeded on four months' leave preparatory to retirement. He was relieved by Rai Sahib Lala Gurcharan Das Mehta, I.S.E., who remained in charge of the combined offices till the close of the financial year.

It may be added here that the Communications Board at its meeting held on the 4th December, 1934, passed the following resolution in appreciation of the services rendered by Rai Bahadur Lala Sant Ram, I.S.E., to the Board as its Secretary :—

“ The Board noted with regret that this was the last meeting at which its Secretary, Rai Bahadur Lala Sant Ram, I.S.E., would be present before going on leave preparatory to retirement, and recorded its appreciation of the work done by him and of the devotion with which he had discharged his duties.”

Business.—During the year the Board held two regular meetings and one meeting of the Finance Sub-Committee for distribution of grants to district boards. The Board accorded administrative approval to two road projects of the value of Rs. 1,38,573, advised Commissioners to accord administrative

approval to 60 road projects to the value of Rs. 88,986, and, through its Engineer Secretary, accorded technical sanction to 64 road projects, amounting to Rs. 1,22,964. Funds to the extent of Rs. 3,42,805 were distributed as grants-in-aid to all district boards in the Punjab except Lyallpur, which, owing to its sound financial position, receives no grant.

As in previous years, due to the continuance of financial stringency, the activities of the Board had to be confined to the distribution of grants for the maintenance and development of Class II roads in the Province. The grants actually distributed to each district board are shown in Tables II to IV.

Railways.—No new Railway lines were opened to public traffic during the year under review.

Class I (Arterial) Roads.

These are dealt with separately in Chapter II of this Report.

Class II (Main) Roads.

At the end of the year under review, there were 1,228·97 miles of metalled and 6,956·10 miles of unmetalled roads of this class under the charge of the district boards. The number of miles in each district is given in Table VI. These roads are improved and maintained with grants-in-aid from the Communications Board.

Development of Roads.—The works undertaken and completed by the district boards with a grant-in-aid from the Communications Board during the year under report are detailed in Table II. A very brief description of the more important works is given below:—

Hissar.—Kankar metal was collected in some of the miles of the Bhiwani-Hansi road some years ago, and the District Board decided to improve the sandy and difficult stretches on this road by utilizing this Kankar. An estimate amounting to Rs. 14,611 was sanctioned for the consolidation of these miles and a 50 per cent. grant promised.

Rohtak.—During the unprecedented floods of 1933, most of the district board roads in the District were considerably damaged and it was felt desirable, to raise some of the roads well above the adjoining ground level. The District Board put up proposals for such works amounting to about Rs. 76,000, but, due to the paucity of funds, works amounting to about Rs. 20,000 only were accepted for a grant-in-aid during the year under review and a 75 per cent. grant of Rs. 15,000 was earmarked to be paid to the District Board in two years, *viz.*, 1934-35 and 1935-36.

Gurgaon.—A general improvement of the Hodal-Punahana section of the Hodal-Ferozepore-Jhirka Road was undertaken with a 75 per cent. grant from the Communications Board in order to make this section fit for traffic in fair weather. The remaining portion of the road, for the improvement of which there is a great and general demand, will be taken up as funds become available. The estimate for it was under preparation.

Karnal.—*Replacement of wooden planks on Bridges on the Thanesar-Pehowa Road.*—This is a very important road, inasmuch as it carries very heavy pilgrim traffic to Pehowa. For the last three years a systematic programme has been in hand for the replacement of old decayed wooden planks on the various big bridges on this road, which were constructed about 30 years ago and were unsafe for present day heavy vehicular traffic. The year under review saw the completion of this programme.

Sialkot.—With the exception of the 10 feet wide paving in mile 1 of the Pasrur-Raya Road, all the works for which grants-in-aid were paid, were of a petty nature.

Sheikhupura.—The importance of the Mangtanwala-Nankana Sahib Road has been regularly commented on for some years past in the annual administration reports. The project was undertaken by the District Board in 1932 in the hope of getting a 50 per cent. grant

from the Communications Board. The allotment with the Communications Board was, however, far too meagre to permit of such a large percentage being granted and the work was therefore completed with a special allotment from Government of Rs. 20,000 each year for two years successively. At the end of the year under reference the road had been completely metalled and tarred except for the last four miles, the tarring of which could not be undertaken on account of the bad weather towards the close of the year. This has added 11 miles to the metalled mileage of Class II roads, out of which 4 miles were done during the year.

Mianwali.—A submersible bridge over the Khudzai Nallah on the Kalabagh-Isakhel Road was constructed with the aid of a cent. per cent. grant of Rs. 1,631 to the Mianwali District Board.

From the above it will be observed that the activities of the Communications Boards, so far as Road development is concerned, have during the year, been mostly restricted to works of a petty nature; and nothing in the nature of any definite programme was undertaken. The district boards too were unable to tide over the ill-effects of the general financial and economic depression of the previous few years, and in many cases, where, in spite of the prevailing financial stringency, the need for development was fully realized, district boards did not hesitate in sending up proposals for a major contribution from the Communications Board.

It has, however, to be observed with great regret that in spite of the demands and representations made by the Board, the funds available were very limited, and could not permit of any really useful road programme being initiated. The Board was therefore reluctantly compelled either to decline to accept such proposals or to hold them in abeyance.

Maintenance.—The total expenditure incurred by district boards on the maintenance of Class II roads during the year 1933-34 amounted to Rs. 10,69,446 and the Communications Board share, at the fixed percentages, amounted to Rs. 3,44,101 out of which only Rs. 2,75,854 could be paid, as no more funds were available. This averages to about 80 per cent. of the grant due. The amounts actually paid to each district board are detailed in Table III. The claims of poor and deserving districts were given due consideration, and a more liberal treatment was accorded to them than to others.

The activities of the district boards in the direction of surface treatment of metalled roads were continued as in previous year, and at the end of March, 1935, there were about 300 miles of tarred roads out of a total mileage of 1,228·97 metalled roads.

The year under review was marked by the inauguration of the Grader Fund which was started as an experimental measure to encourage the extensive use of Grading outfits for road maintenance. Out of a sum of Rs. 4,000 set apart for this purpose, Rs. 2,500 and Rs. 1,500 were paid to Gurdaspur and Sialkot District Boards, respectively, on the basis of the work done in this direction during the year 1933-34.

Special Repairs.—The total amount paid to district boards under this head was Rs. 18,703, as against Rs. 18,074 paid in the preceding year. Details of payments made are shown in Table IV.

Tools and Plant.—The total number of grading outfits both with the Communications Board and the district boards continued to be the same as in the previous year. Attempts at reviving the interest in the use of the machinery for road maintenance continued to be made, and it is hoped that, before long, most of the district boards will see their way to reduce maintenance costs by the employment of this method. During the year under review, about 671 miles of unmetalled roads were so maintained and it is hoped that the mileage next year may be considerably increased.

Establishment.—The Superintending Engineer, 3rd Circle, Lahore, continued to perform the duties of the Secretary to the Board, in addition to his own duties, with the same reduced staff as existed for the previous year. The expenditure during the year under this head, on account of salaries, travelling allowances of staff and members of the Communications Board, and contingencies amounted to Rs. 16,914. If this amount is computed against the total

amount of grants-in-aid distributed, the overhead charges work out to 4·9 per cent. as against 4·5 per cent. last year. If the overhead charges are computed against the total expenditure of Rs. 11,81,014 on all Class II Roads, by the district boards and the Communications Board,—*vide* column 6 of Table V, they come to a nominal figure of 1·4 per cent. as against 1·3 per cent. in the previous year.

TABLE I.

ABSTRACT OF EXPENDITURE BY COMMUNICATIONS BOARD AGAINST TOTAL ALLOTMENT DURING THE FINANCIAL YEAR 1934-35.

Head of Account.	Budget provision.	Modified Grand.	Expenditure during 1934-35.
	Rs.	Rs.	Rs.
41—CIVIL WORKS.			
I.—Minor Head X—Grants-in-aid—			
(i) Bridges and Roads	45,000	45,000	44,248
(ii) Maintenance of Class II Roads and Special Repairs.	3,00,000	3,00,000	2,98,557
II.—Tools and Plant	1,000	100	96
III.—Establishment	15,750	16,920	16,914

TABLE II.

GRANTS GIVEN BY THE COMMUNICATIONS BOARD TO DISTRICT BOARDS DURING THE FINANCIAL YEAR 1934-35 FOR DEVELOPMENT OF ROADS.

District.	Name of estimate.	Amount of estimate.	Per-centage.	Communi-cations Board share.	Grant paid in previous years.	Grant paid in 1934-35.	Total.
		Rs.		Rs.	Rs.	Rs.	Rs.
Hisar	(1) Improving Hansi-Jind Road.	1,824	100	1,824	4,700	641	5,341
	(2) Cartage and consolidation of kankar collected by famine labour on the Bhiwani-Tosham Road.	4,524	100	4,524			
	Total	6,348					
Rohtak	(3) Consolidation of miles 1, 5, 6, 7 and 8 of Hansi-Bhiwani Road.	14,611	50	7,305	..	1,350	1,350
	(1) Raising and improving miles 2 and 10 of the Rohtak-Gohana Road.	3,778	75	11,315	..	4,880	4,880
	(2) Raising and improving miles 3, 4, 8, 9, 11 and 13 of the Rohtak-Jhajjar Road.	8,580	75				
	(3) Raising and improving miles 5 and 6 of the Beri-Dighal Road.	1,834	75				
	(4) Raising and improving mile 7 of Sampla-Khar-khauda Road.	895	75				
Total	15,087						
Gurgaon	(1) Improvement of the Hodal-Punahana Road and provision of 2 culverts.	2,222	75	2,032	..	1,665	1,665
	(2) Improvement to Palwal-Hathin Road.	487	75				
	Total	2,709					
Karnal	(1) Earthwork on Dhand-Pehowa Road.	2,019	50	1,009	717	203	920
	(2) Replacing wooden planks by reinforced concrete slabs in bridge in mile 16, furlong 8, Thanesar-Pehowa Road.	6,636	} Lump sum grant of Rs. 7,000 both for original and special repairs works.	*3,500	3,142	358	3,500
	(3) Replacing wooden planks by reinforced concrete slabs in bridge in mile 16, furlong 3, Thanesar-Pehowa Road.	3,215					
	(4) Replacing wooden planks by reinforced concrete slabs in bridge in mile 15, furlong 1, Thanesar-Pehowa Road.	5,250					
	Total	15,101					
	(5) Constructing a 3 feet span culvert on Pundri Approach Road.	308	50	} 1,294	..	986	986
	(6) Addition of a 3 feet span culvert to 2 feet span on Shahabad-Ladwa Road, near Kharindwa village.	293	50				
	(7) Constructing a causeway in mile 12 of Kaithal-Gulha Road.	950	50				
	(8) Earthwork on Dhand-Pehowa Road.	637	50				
	(9) Addition of 6 feet extra span to bridge on Linda Nullah on Shahabad-Ladwa Road.	400	50				
Total	2,588						
Carried over				32,803	8,559	10,083	18,642

*Out of the lump sum grant of Rs. 7,000, half, i.e., Rs. 3,500 is debitable to head "Development" and half to "Special Repairs."

TABLE II—CONTINUED.

GRANTS GIVEN BY THE COMMUNICATIONS BOARD TO DISTRICT BOARDS DURING THE FINANCIAL YEAR 1934-35 FOR DEVELOPMENT OF ROADS—CONTD.

District.	Name of estimate.	Amount of estimate.	Percentage.	Communications Board share.	Grant paid in previous years.	Grant paid in 1934-35.	Total.
		Rs.		Rs.	Rs.	Rs.	Rs.
	Brought forward ..			32,803	8,559	10,083	18,642
Ambala ..	(1) Construction of 3.6 feet span culvert near Ferozepore village on the Sadhaura-Naraingarh Road.	1,737	..	1,310	..	1,310	1,310
Kangra ..	(2) Improving steep gradients of the Thakardwara-Bhawarna Road.	12,100	50	6,050	5,445	605	6,050
Hoshiarpur ..	(1) Construction of Hume pipe culvert in mile 10 of the Hoshiarpur-Haryana Road.	636	75	2,879	..	1,752	1,752
	(2) Cutting sharp corners of, and widening road in miles 10-13 of Hoshiarpur-Una Road.	1,043	75				
	(3) Constructing a causeway in mile 9 of Hoshiarpur-Tanda Road in Hoshiarpur Tahsil.	487	75				
	(4) Raising miles 9 and 10 and constructing a causeway on the Dasuya-Mukerian Road.	1,673	75				
	Total ..	3,839					
Gurdaspur ..	(1) Constructing a bridge No. 3/1 on the Shakargarh-Pathankot Road.	842	50	2,151	..	1,888	1,888
	(2) Constructing a bridge No. 4/1 on Shakargarh-Pathankot Road.	897	50				
	(3) Constructing a culvert over Batala-Srigobindpur Road, mile 4, near Bahadur Hussain village in Tahsil Batala.	503	50				
	(4) Raising a portion of road in mile 13 of Batala-Srigobindpur Road.	647	50				
	(5) Raising a portion of road in mile 14 of Batala-Srigobindpur Road.	909	50				
	(6) Raising a portion of road in mile 15 of Batala-Srigobindpur Road.	505	50				
	Total ..	4,303					
Sialkot ..	(1) Construction of a 2.6 feet span culvert in place of temporary wooden bridge in mile 9 of the Sialkot-Phuklian Road.	1,756	50	1,801	1,442	71	1,513
	(2) Construction of a 50 feet gap in mile 6, Narowal-Zafarwal Road, near Dhablivala.	394	50				
	(3) Constructing one 6 feet span culvert in mile 3, Badiana-Chawinda-Dugri-Zafarwal Road, near village Sodharki.	831	50				
	(4) Filling central drain of double track of Narowal-Zafarwal Road in miles 16 and 17.	621	50				
	Total ..	3,602					
	Carried over ..			46,994	15,446	15,709	31,155

TABLE II—CONCLUDED.

GRANTS GIVEN BY THE COMMUNICATIONS BOARD TO DISTRICT BOARDS DURING THE FINANCIAL YEAR 1934-35 FOR DEVELOPMENT OF ROADS—CONCLD.

District.	Name of estimate.	Amount of estimate.	Percentage.	Communications Board share.	Grant paid in previous years.	Grant paid in 1934-35.	Total.				
		Rs.		Rs.	Rs.	Rs.	Rs.				
	Brought forward ..			46,994	15,446	15,709	31,155				
Sialkot—concl.	(5) Improving and paving 10 feet width in mile 1 of the Pasrur-Raya-Ajnala Road.	3,547	50	4,056	..	3,747	3,747				
	(6) Providing one 4 feet span culvert in place of a deep gap in mile 8, near Kotli Faqir Chand, of Pasrur-Daska Road.	533	50								
	(7) Providing one 4 feet span culvert in mile No. 4, near Rawan village, of Badiana-Chawinda-Zafarwal Road.	596	50								
	(8) Raising portion of road in mile 2, Baddomalhi-Kila Subha Singh Road.	420	50								
	(9) Improving the sandy stretches with stiff clay in mile 3, Sialkot-Jalalpur-Jattan Road.	900	50								
	(10) Raising Sialkot-Maharajke-Nakhnal Road in miles 8 and 9.	1,182	50								
	(11) Raising and improving drain culvert in mile 5, Pasrur-Kalawala-Kila Subha Singh Road.	935	50								
	Total ..	8,113									
	(12) Constructing 100 feet gap in mile 8 of the Narowal-Zafarwal Road.	681	50					3,309	..	2,395	2,395
	(13) Constructing a retaining wall in mile 8 of the Mundeke-Satrah Road, along Chapper near Chianwali.	986	50								
	(14) Construction of 100 feet long causeway in mile 7 of the Sialkot-Jalalpur-Jattan Road.	741	50								
	(15) Raising miles 13 and 14 of the Narowal-Raya-Shahdara Road.	1,025	50								
	(16) Construction of a reinforced concrete slab culvert in mile 18 of the Sialkot-Chaprar-Phuklian Road.	1,736	50								
	(17) Raising lowlying portions in mile 19 and part of 18 and 20 of the Pasrur-Gujranwala Road.	1,449	50								
	Total ..	6,618									
Sheikhupura ..	Metalling 11 miles (entire length) of the Nankana Sahib-Mangtanwala Road.	1,29,085	50	64,542	39,992	19,561	59,553				
Rawalpindi ..	Improving Grand Trunk Sihala Kahuta-Panjar Road.	2,863	50	1,431	1,188	153	1,341				
Attock ..	Blasting rock in miles 17 and 18 of Hasan Abdal-Fatehjang Road.	800	100	800	791	9	800				
	Improving of—			1,025	..	843	843				
	(1) Chohan-Chakri-Dhudhambar Road.	412	75								
	(2) Galli-Majahad Road ..	639	75								
	(3) Thatta-Nara Road ..	315	75								
	Total ..	1,366									
Mianwali ..	Constructing Hume pipe culvert over Khudazai Nullah on Kalabagh-Isakhel Road.	1,875	100	1,875	..	1,631	1,631				
Muzaffargarh	Constructing 2 bridges and doing earth-work on Muzaffargarh-Rangpur Road.	2,635	Lump-sum.	2,000	1,800	200	2,000				
	Total	1,26,032	59,217	44,248	1,03,465				

TABLE III.

STATEMENT SHOWING THE EXPENDITURE INCURRED BY DISTRICT BOARDS DURING THE FINANCIAL YEAR 1933-34 ON THE MAINTENANCE OF CLASS II ROADS AND GRANTS PAID BY THE COMMUNICATIONS BOARD DURING THE FINANCIAL YEAR 1934-35.

No.	DISTRICT.	Total expenditure accepted after audit.	Communications Board share.	District Board share.	REMARKS.
		Rs.	Rs.	Rs.	
1	Hissar	10,641	2,950	7,691	
2	Rohtak	49,362	15,964	33,398	
3	Gurgaon	27,860	5,363	22,497	
4	Karnal	45,665	9,494	36,171	
5	Ambala	76,956	29,628	47,328	
6	Simla	452	452	..	
7	Kangra	23,649	4,552	19,097	
8	Hoshiarpur	46,423	10,367	36,056	
9	Jullundur	1,04,533	36,858	67,675	
10	Ludhiana	67,067	19,623	47,444	
11	Ferozepore	79,427	22,113	57,314	
12	Lahore	55,472	10,678	44,794	
13	Amritsar	58,286	13,184	45,102	
14	Gurdaspur	35,742	6,881	28,861	
15	Sialkot	18,379	3,538	14,841	
16	Gujranwala	11,147	2,146	9,001	
17	Sheikhupura	26,261	5,055	21,206	
18	Gujrat	42,004	9,379	32,625	
19	Shahpur	50,198	13,915	36,283	
20	Jhelum	30,908	5,950	24,958	
21	Rawalpindi	23,966	8,388	15,578	
22	Attock	17,765	4,441	13,324	
23	Mianwali	2,779	695	2,084	
24	Montgomery	44,842	9,322	35,520	
25	Lyallpur .. ..	..	..	..
26	Jhang	30,039	5,783	24,256	
27	Multan	65,661	13,145	52,516	
28	Muzaffargarh	11,541	2,885	8,656	
29	Dera Ghazi Khan	12,421	3,105	9,316	
	Total	1,06,9,446	2,75,854*	7,93,592	

*Besides this, Rs. 2,500 and 1,000 respectively were paid to Gurdaspur and Sialkot District Boards on account of Grant-in-aid for the extensive use of Grading outfits.

TABLE IV.

STATEMENT SHOWING PAYMENTS MADE TO DISTRICT BOARDS FOR SPECIAL REPAIRS DURING THE FINANCIAL YEAR 1934-35.

District.	Name of estimate.	Amount of estimate.	Percentage.	Communications Board share.	Grant paid in previous years.	Grant paid in 1934-35.	Total.					
		Rs.		Rs.	Rs.	Rs.	Rs.					
Hissar ..	Special repairs to a culvert on Hansi-Jind Road.	971	100	971	700	133	833					
Gurgaon ..	Special repairs to Taoru-Bahora Road.	904	75	678	..	516	516					
Karnal ..	(1) Replacing wooden planks by reinforced concrete slabs in bridge in mile 16, furlong 8, of Thanesar-Pehowa Road.	6,636	} Lump sum grant of Rs. 7,000 for original work and special repairs.	*3,500	3,141	359	3,500					
	(2) Replacing wooden planks by reinforced concrete slabs in mile 16, furlong 3, of the Thanesar-Pehowa Road.	3,215										
	(3) Replacing wooden planks by reinforced concrete slabs in mile 15, furlong 1, of the Thanesar-Pehowa Road.	5,250										
	Total ..	15,101										
	(4) Special repairs to Kaithal-Gulha Road.	1,136	} 50	3,724	2,000	1,218	3,218					
	(5) Special repairs to Kaithal-Pehowa Road.	912										
	(6) Special repairs to Bhagal-Pehowa Road.	452										
	(7) Special repairs to Shahabad-Ladwa Road.	910										
	(8) Special repairs to Kaithal-Jind Road.	452										
	(9) Special repairs to Pundri-Rajaund Road.	752										
	(10) Special repairs to Smalkha-Hathwala Road.	568										
	(11) Special repairs to Ladwa-Indri Road.	480										
	(12) Special repairs to Indri-Ramba Road.	1,046										
	(13) Earthfilling in cut of Karnal-Hansi Road.	160										
	(14) Special repairs to Ismailabad-Ambala Road.	581										
	Total ..	7,449										
	(15) Special repairs to Irish Bridges in miles 13 & 14 of Thanesar-Pehowa Road.	1,965						} 50	3,882	..	3,230	3,230
	(16) Remodelling bridge in mile 4 of Karnal-Saharanpur Road.	1,107										
	(17) Redecking with reinforced concrete slab, bridge in mile 17 of Thanesar-Pehowa Road.	1,681										
	(18) Special repairs to mile 1 of the Pundri-Rajaund Road.	1,654										
	(19) Redecking 2 feet span bridge in mile 17 of the Thanesar-Pehowa Road.	1,358										
	Total ..	7,765										
Ambala ..	(1) Special repairs to Dheen bridge on the Ambala-Jagadhri Road (unmetalled Class II).	1,309	100	1,309	..	1,356	1,356					
	(2) Special repairs to roads leading to Gopal Mochan fair area—											
	(a) Jagadhri-Bilaspur ..	} 800	100	800	..	797	797					
	(b) Bilaspur-Gopal Mochan											
	(c) Bilaspur-Chhachhrauli											
	(d) Sadhaura-Bilaspur ..											
	Carried over	14,864	5,841	7,609	13,450					

*Out of the lump sum grant of Rs. 7,000, half, viz., Rs. 3,500 is debitable to head "Special Repairs" and half to the head "Development".

TABLE IV—CONTINUED.

STATEMENT SHOWING PAYMENTS MADE TO DISTRICT BOARDS FOR SPECIAL REPAIRS DURING THE FINANCIAL YEAR 1934-35.

District.	Name of estimate.	Amount of estimate.	Percentage.	Communications Board share.	Grant paid in previous years.	Grant paid in 1934-35.	Total.
		Rs.		Rs.	Rs.	Rs.	Rs.
	Brought forward ..	..	..	14,864	5,841	7,609	13,450
Kangra	(1) Special repairs to Charan and Monani Khad bridges in miles 1 and 4 respectively of the Palampur-Dharamsala Road in Kangra Tahsil.	1,187	50	3,254	..	2,925	2,925
	(2) Special repairs to the Ranital-Jawala Mukhi-Nadaun, Class II Road.	1,531					
	(3) Special repairs to the following roads :—	1,187					
	(a) Hamirpur-Nadaun Road, miles 5, 11, 14 and 15.						
	(b) Sujampur-Hamirpur Road, miles 11 and 14.						
	(4) Special repairs to the following roads in Palampur Tahsil :—	1,092					
	(a) Miles 2 to 14 and 19 of the Dharamsala-Palampur Road.						
	(b) Mile 19 of the Bhawarna-Alampur Road.						
	(5) Special repairs to the following roads :—	1,512					
	(a) Nurpur-Sadwan-Malakwal-Badauni Road.						
	(b) Bodh-Jawali Road ..						
	Total ..	6,509					
Hoshiarpur	(1) Repairs to a bridge in miles 20-21 of Hoshiarpur-Una Road in Una Tahsil.	1,058	75	942	..	796	796
	(2) Brick pitching on slopes of the approaches and protection of its toes by wire crates, to the bridge at mile 20 of the Hoshiarpur-Una Road.	198	75				
	Total ..	1,256					
Sialkot	(1) Special repairs to bridges and gaps in miles 2-8 of Pasrur-Daska Road.	607	50	865	708	78	786
	(2) Special repairs to gap No. 1 in mile 10 of Sialkot-Jalalpur Jattan Road.	1,124	50				
	Total ..	1,731					
	(3) Remetalling gap in mile 12, Sialkot-Phuklian Road, via Chaprar.	500	50	2,285	..	1,670	1,670
	(4) Special repairs to culverts and gaps in miles 5-12 of the Sialkot-Gondal Marala Road.	631	50				
	(5) Special repairs to culverts and gaps in miles 4, 5, 6, 9, 10 and 13 of the Sialkot-Gurdaspur Road.	1,400	50				
	(6) Special repairs to gap No. 1 in mile 1 of the Sialkot-Jalalpur Jattan Road.	695	50				
	(7) Replacing breaches and re-arching one 12 feet span culvert in mile 17 of Sialkot-Gurdaspur Road.	1,345	50				
	Total ..	4,571					
	Carried over ..	..	..					22,210	6,549	13,078	19,627

TABLE IV—CONCLUDED.

STATEMENT SHOWING PAYMENTS MADE TO DISTRICT BOARDS FOR SPECIAL REPAIRS DURING THE FINANCIAL YEAR 1934-35.

District.	Name of estimate.	Amount of estimate.	Per centage.	Communi- cations Board share.	Grant paid in previous years.	Grant paid in 1934-35.	Total.
		Rs.		Rs.	Rs.	Rs.	Rs.
	Brought forward ..	..	..	22,210	6,549	13,078	19,627
Sialkot—concl'd.	(8) Special repairs to gaps and culverts in miles 11—13 of Sialkot-Jalalpur Jattan Road.	2,578	50	2,713	..	1,940	1,940
	(9) Special repairs to 3—20 feet span Bridge, Sialkot-Gondal Marala Road.	1,400	50				
	(10) Special repairs to bridges and culverts on the Pasrur-Gujranwala Road in Daska Tahsil.	1,449	50				
	Total ..	5,427					
Sheikhupura ..	(1) Special repairs to Sharakpur-Sheikhupura Road.	998	50	1,460	1,260	140	1,400
	(2) Special repairs to Amritsar-Gujranwala-Eminabad Road.	1,922	50				
	Total ..	2,920					
Gujrat ..	(1) Construction of a causeway 300 feet long in mile 3 of the Gujrat-Jalalpur Road.	2,123	50	1,061	..	729	729
Jhelum ..	(1) Special repairs to miles 47, 48 and 49 of the Jhelum-Pind Dadan Khan Road.	1,347	100	1,347	981	149	1,130
	(2) Special repairs to—			1,000	..	704	704
	(a) Dina-Sheikhupura Road	1,289	} Lump sum.				
	(b) Traki-Domeli Road ..	815					
	Total ..	2,104					
Rawalpindi ..	(1) Special repairs to Lower Topa-Charehan-Ban Road.	1,200	50	600	..	360	360
Attock ..	(1) Special repairs to Hazro-Gondal Road.	789	75	3,815	2,871	533	3,404
	(2) Special repairs to Galli-Majahad-Sihal Road.	1,106	75				
	(3) Special repairs to Pindi-gheb-Jand Road.	1,012	75				
	(4) Special repairs to Nara-Thatta Road.	997	75				
	(5) Special repairs to Rawalpindi-Talagang Road (portion from Chohan to Chakri).	1,183	75				
	Total ..	5,087					
	(6) Special repairs to Hasan Abdal-Fatehjang Road.	1,890	75	1,418	..	859	859
Dera Ghazi Khan.	(1) Raising Dera Ghazi Khan-Taunsa Road, miles 2-3, 3-4 and 7-8.	1,022	Lump sum.	1,000	773	211	984
	Total	36,624	12,434	18,703	31,137

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TABLE V.

STATEMENT SHOWING THE TOTAL EXPENDITURE ON CLASS II ROADS (WITH COMMUNICATIONS BOARD AND DISTRICT BOARDS SHARES SHOWN SEPARATELY) INCURRED DURING THE FINANCIAL YEAR 1934-35.

No.	District.	TOTAL EXPENDITURE.			Grand Total.	Communication Board share.	District Board share.
		Development.	Maintenance.	Special repairs.			
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1	Hissar	3,341	10,641	133	14,115	5,074	9,041
2	Rohtak	6,506	49,362	..	55,868	20,844	35,024
3	Gurgaon	2,220	27,860	688	30,768	7,544	23,224
4	Karnal	3,094	45,665	9,614	58,373	15,848	42,525
5	Ambala	1,310	76,956	2,153	80,419	33,091	47,328
6	Simla	..	452	..	452	452	..
7	Kangra	1,210	23,649	5,850	30,709	8,082	22,627
8	Hoshiarpur	2,336	46,423	1,061	49,820	12,915	36,905
9	Jullundur	..	1,04,533	..	1,04,533	36,858	67,675
10	Ludhiana	..	67,067	..	67,067	19,623	47,444
11	Ferozepore	..	79,427	..	79,427	22,113	57,314
12	Lahore	..	55,472	..	55,472	10,678	44,794
13	Amritsar	..	58,286	..	58,286	13,184	45,102
14	Gurdaspur	3,776	35,742	..	39,518	8,769	30,749
15	Sialkot	12,426	18,379	7,376	38,181	13,439	24,742
16	Gujranwala	..	11,147	..	11,147	2,146	9,001
17	Sheikhupura	39,122	26,261	280	65,663	24,756	40,907
18	Gujrat	..	42,004	1,458	43,462	10,108	33,354
19	Shahpur	..	50,198	..	50,198	13,915	36,283
20	Jhelum	..	30,908	1,557	32,465	6,803	25,662
21	Rawalpindi	306	23,966	720	24,992	8,901	16,091
22	Attock	1,133	17,765	1,856	20,754	6,685	14,069
23	Mianwali	1,631	2,779	..	4,410	2,326	2,084
24	Montgomery	..	44,842	..	44,842	9,322	35,520
25	Lyallpur	..	..	..	..	..	..
26	Jhang	..	30,039	..	30,039	5,783	24,256
27	Multan	..	65,661	..	65,661	13,145	52,516
28	Muzaffargarh	200	11,541	..	11,741	3,085	8,656
29	Dera Ghazi Khan	..	12,421	211	12,632	3,316	9,316
	Total	78,611	10,69,446	32,957	11,81,014	*3,38,805	8,42,209

*Besides this Rs. 2,500 and Rs. 1,500 respectively were paid to Gurdaspur and Sialkot District Boards on account of Grant-in-aid for the extensive use of Grading outfits.

TABLE VI.

STATEMENT SHOWING THE LENGTH OF CLASS II ROADS IN CHARGE OF DISTRICT BOARDS ON 31st MARCH, 1935.

No.	District.	Metalled.	Unmetalled.	Total.	REMARKS.
		Miles.	Miles.	Miles.	
1	Hissar	29	434	463	
2	Rohtak	97.32	172	269.32	
3	Gurgaon	49.50	237	286.50	
4	Karnal	31.4	322.6	354	
5	Ambala	93.25	174	267.25	
6	Simla	..	5	5	
7	Kangra	..	314	314	
8	Hoshiarpur	57	247	304	
9	Jullundur	117	108.50	225.50	
10	Ludhiana	90	38	128	
11	Ferozepore	85	209	294	
12	Lahore	47	261	308	
13	Amritsar	49	117	166	
14	Gurdaspur	35.50	197.50	233	
15	Sialkot	5	317	322	
16	Gujranwala	9	263	272	
17	Sheikhupura	23.5	269	292.50	
18	Gujrat	47	288	335	
19	Shahpur	88	371	459	
20	Jhelum	10.50	258.50	269	
21	Rawalpindi	37	265	302	
22	Attock	6	286	292	
23	Mianwali	4	82	86	
24	Montgomery	46	331	377	
25	Lyallpur	97	183	280	
26	Jhang	19	330	349	
27	Multan	56	341	397	
28	Muzaffargarh	..	374	374	
29	Dera Ghazi Khan	..	161	161	
	Total	1,228.97	6,956.10	8,185.07	

CHAPTER IX.—Miscellaneous.

Technical papers.—A paper entitled "Earthquake-Resisting Design," by Mr. A. R. Astbury, C.S.I., C.I.E., M.Inst. C.E., I.S.E. (Public Works Department Paper No. 84), was published during the year and circulated to all interested local Governments.

A paper entitled "Super-Elevation on Highway Curves" by Lala Murari Lal, B.Sc., A.M.I.E., Assistant Engineer, was read before the Punjab Engineering Congress, 1935.

A paper on the Murree Water-Works Extensions by Mr. J. A. R. Bromage, M. Inst., C.E., Executive Engineer, was published by the Institution of Civil Engineers.

Assistance rendered to local bodies.—During the year under review projects aggregating Rs. 6,43,546 were scrutinised for local bodies, and other totalling Rs. 71,47,011 were prepared for works, which in some cases were carried out by the Public Works Department, Buildings and Roads Branch. Detailed projects, previously prepared, were also revised and brought up-to-date in the Public Health Circle to the amount of Rs. 4,27,880, which figure is not included in the table below:—

YEAR.	Projects scrutinised by Public Works Department (Lakhs of rupees).	Projects prepared by Public Works Department (Lakhs of rupees).	Works done by Public Works Department (Lakhs of rupees).	Fees charged.
				Rs.
1930-31	3·19	21·13	7·50	1,37,092
1931-32	2·79	44·25	10·77	1,73,877
1932-33	1·56	55·41	6·02	1,17,748
1933-34	1·88	24·19	2·65	51,724
1934-35	6·44	71·47	6·03	1,17,242

Works of Public Utility.—Works costing over Rs. 10,000 each were constructed by private individuals during the year 1935 as under—

	Rs.
(1) Water Works at Pathiar, Kangra District, by Shrimati Ramon Devi.	12,000
(2) A pucca tank with pumps and pipes in the town of Amb, Hoshiarpur District by Rai Sahib Lala Jodha Mal.	20,000
(3) A pucca tank with a Mandir Lakhshmi Narain Ji at village Haroli, Hoshiarpur District, by Lala Balbadhar Mal.	25,000
(4) An Industrial School at Ferozepore Cantonment by Messrs. Tulsi Ram-Khoob Chand.	1,77,100

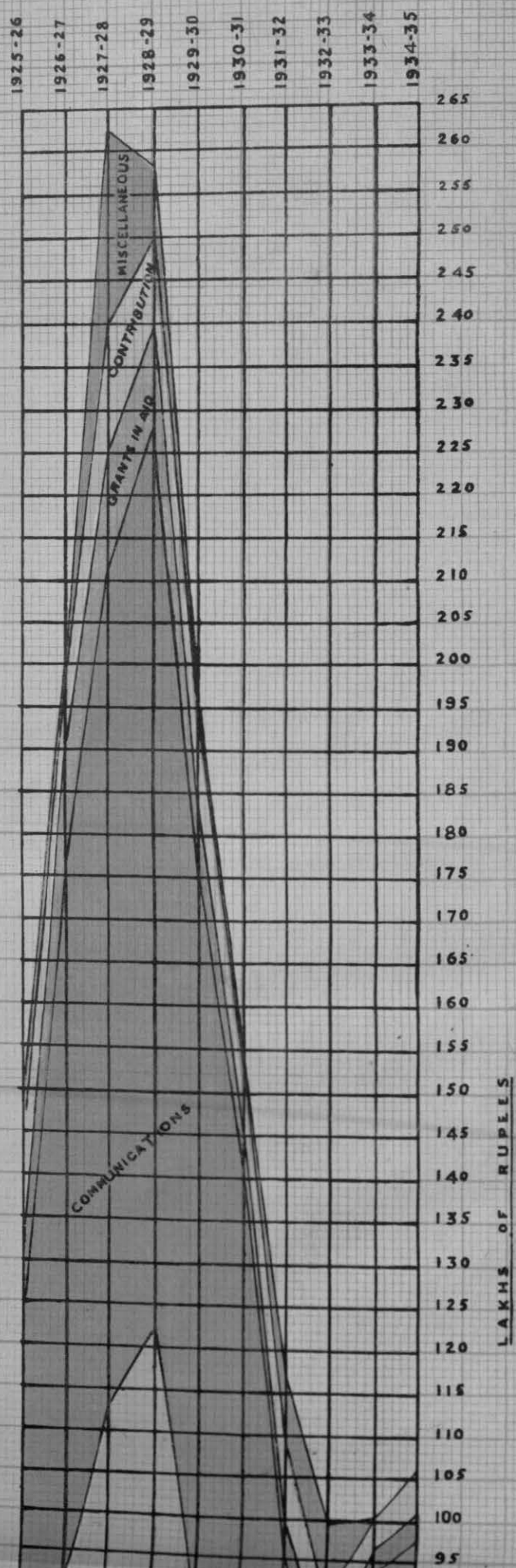
Damage done by flood, fire or other accidents.—To protect the Devi Nagar village, the Railway, and the main road from attacks by the Ghaggar river, three bunds, totalling 1,680 feet, were constructed, as an experimental measure, at a cost of Rs. 8,668, out of which Rs. 2,970 were found by the Public Works Department, Rs. 3,349 by the Railway and Rs. 2,342 by the District Board. The protective measures adopted, which were kept down to the absolute minimum for reasons of economy, did not, however, prove effective, for nearly half of the lengths of each of these bunds were washed away by the heavy flood of July, 1934. Further proposals were under consideration.

E. 10

1934-35

DIAGRAM OF EXPENDITURE IN THE PUNJAB P.W.D. B&R. BRANCH FROM 1925-26 TO 1934-35

TICAL HEIGHT OF EACH CONVENTIONAL COLOUR SHOWS THE
TURE INCURRED DURING THE FINANCIAL YEAR AGAINST EACH
PONDING HEAD OF EXPENDITURE.



Damage, due both to rain and snow, was caused to the retaining walls on the Kalka-Simla Cart Road and the Hindustan-Tibet Road. This damage as well as that caused to the buildings in the Gurgaon Provincial Division by the heavy floods of September, 1933, was made good from the maintenance grants concerned generally, supplemented by approximately Rs. 10,000 found from other sources.

Considerable damage was done by fire to the Chemical Laboratory room in the Central Model School, Lahore, which was made good at an expenditure of Rs. 995. The slight damage done by fire in the Gas-making apparatus in Government College, Lahore, was also set right at a cost of Rs. 43, out of the annual maintenance grant of the building.

Encroachments.—The vast increase in the number of encroachments on road land has been engaging the attention of the Department for many years. Measures for coping with this through departmental agency having proved inadequate in the past, it was decided in the year under review to appoint an officer on special duty from the Civil Department with the necessary staff to deal with the matter. During the year under review 1,321 encroachments were determined and action necessary for their removal was initiated. Actually 12 encroachments were removed during the year and the procedure though naturally gradual shows every sign of being a marked success.

Graph of Expenditure.—An interesting graph has been added to this report giving figures of expenditure in the department for the last ten years (*i.e.*, 1925-26 to 1934-35). The peak was reached in 1927-28 when the total expenditure amounted to Rs. 2.62 crores. After that year the figures fell at a slightly less rate than that of the increase during the two years prior to 1927-28, till they reached the low water mark of .99 crores in 1932-33. During 1933-34 there was very little variation, but there was an increase of Re. .05 crore in 1934-35.

Central works were transferred to the heads of Central Departments, with effect from the 1st April, 1928, and the bulk of expenditure incurred in this Department has been on original works and maintenance of buildings and roads. The expenditure on buildings rose from Rs. 35.75 lakhs in 1925-26 to Rs. 89.63 lakhs in 1928-29 but it fell again to Rs. 23.38 lakhs in the year under report, having reached a minimum of Rs. 14.76 lakhs in 1932-33. During this period the recurring maintenance and upkeep charges of buildings rose from Rs. 9.38 lakhs in 1925-26 to Rs. 13.41 lakhs in 1930-31. This was largely due to an increase of Rs. 2.92 crores in the capital value of the buildings, together with the increased provision of electrical installations, and the payment of rents for buildings hired by other Departments. Owing to financial stringency the standard of maintenance was lowered in 1931-32 when the expenditure was only Rs. 8.60 lakhs. It, however, rose again, and amounted to Rs. 11.94 lakhs in 1934-35, though the repairs carried out were limited to essential items only.

Under Head "Communications", the expenditure in 1925-26 was Rs. 63.60 lakhs, it rose to Rs. 105.18 lakhs in 1928-29 which was the peak year and since then began to decrease till it was only Rs. 52.56 lakhs in 1934-35. It is, however, important to note that expenditure on maintenance of roads which was only Rs. 35.58 lakhs (mileage 1,626.5 metalled, of which 24 miles were tarred and 1,268.8 unmetalled) in 1925-26, was Rs. 45.48 lakhs (mileage 2,757.45 metalled of which 2,421 miles were tarred and 1,901.52 unmetalled) in 1934-35. This is accounted for by the increased mileage. Owing to the policy of tarring roads, substantial economy in the cost of maintenance can now be expected, unless the traffic increases at an abnormal rate.

STATEMENT A-1.

LENGTH OF AND EXPENDITURE (BY CIRCLES AND DIVISIONS) ON MAINTENANCE OF ROADS IN CHARGE OF THE PUBLIC WORKS DEPARTMENT, BUILDINGS AND ROADS BRANCH FOR THE YEAR ENDED 31st MARCH, 1935.

CIRCLE AND DIVISION.	LENGTH.				EXPENDITURE.				REMARKS.
	Arterial.		Other.		Arterial.		Other.		
	Metalled.	Un-Metalled.	Metalled.	Un-metalled.	Metalled.	Un-metalled.	Metalled.	Un-metalled.	
1	2	3	4	5	6	7	8	9	10
	Miles.	Miles.	Miles.	Miles.	Rs.	Rs.	Rs.	Rs.	
Rawalpindi ..	335.69	154.63	9.02	9.67	6,07,396	24,279	10,773	6,330	The lengths are as on 31st March, 1935.
Gyallpur ..	276.68	356.63	4.34	..	3,32,198	64,531	5,231	..	
Multan ..	154.25	205.99	42.51	69.12	2,91,654	58,298	11,734	2,775	
Total 1st Circle ..	766.62	717.25	55.87	78.79	12,31,248	1,47,099	27,738	9,105	
Sialkot ..	233.35	..	6.82	35.27	2,84,165	..	16,890	7,253	
Bhagpur ..	355.29	68.87	9.19	..	5,68,475	7,079	12,791	..	
Jalandhar ..	277.04	104.74	0.85	..	3,76,002	19,858	2,999	..	
Simla ..	55.25	195.13	1.07	141.68	92,903	31,611	450	24,338	
Total 2nd Circle ..	920.93	368.74	17.93	176.95	13,21,545	58,548	33,130	31,591	
West Lahore ..	282.85	55.71	1.44	..	3,70,603	17,587	931	..	
East Lahore ..	269.08	15.34	17.16	23.61	4,39,727	..	34,484	9,482	
Langra ..	95.18	85.43	3.04	280.37	1,24,684	15,828	3,974	35,033	
Montgomery ..	240.60	83.97	86.75	15.36	2,81,807	19,970	1,24,027	3,829	
Total 3rd Circle ..	887.71	240.45	108.39	319.34	12,16,821	53,385	1,63,416	48,344	
GRAND TOTAL ..	2,575.26	1,326.44	182.19	575.08	37,69,614	2,59,032	2,24,284	89,040	

STATEMENT A-2.

LENGTH OF AND EXPENDITURE (BY ROADS) ON MAINTENANCE OF ROADS IN CHARGE OF THE PUBLIC WORKS DEPARTMENT, BUILDINGS AND ROADS BRANCH, FOR THE YEAR ENDED 31st MARCH, 1935.

Name of Road.	LENGTH.			EXPENDITURE.			RATE PER MILE.		REMARKS.
	Metalled.	Un-metalled.	Total.	Metalled.	Un-Metalled.	Total.	Metalled.	Un-Metalled.	
1	2	3	4	5	6	7	8	9	10
	Miles.	Miles.	Miles.	Rs.	Rs.	Rs.	Rs.	Rs.	
<i>Arterial Roads.</i>									
1. Grand Tunk Road.	562·83	..	562·83	7,27,410	..	7,27,410	1,292	..	The lengths are as on 31st March, 1935. The lengths include links connecting the parent roads with railway stations and towns.
2. Lahore-Sargodha-Mianwali.	131·91	59·62	191·53	1,79,234	6,738	1,85,972	1,358	113	
3. Lahore-Lyallpur-Bhakkar.	82·36	133·38	215·74	88,881	21,140	1,10,021	1,068	157	
4. Lahore-Multan-Quetta.	217·58	108·29	325·87	3,45,080	35,938	3,81,018	1,586	239	
5. Lahore-Ferozepore-Ludhiana.	136·61	..	136·61	2,49,872	..	2,49,872	1,829	..	
6. Delhi-Multan ..	290·69	119·55	410·24	3,81,725	15,255	3,96,980	1,313	..	
7. Delhi-Alwar ..	67·33	..	67·33	49,636	..	49,636	737	..	
8. Hatti-Campbellpur-Dhok Pathan.	31·77	38·88	70·65	69,439	6,403	75,842	2,123	165	
9. Rawalpindi (Tarnaul-Khushalgarh-Kohat).	37·50	29·65	67·15	65,954	5,499	71,453	1,759	186	
10. Fatehjang-Talagang-Mianwali.	42·92	17·00	59·92	67,739	2,163	69,902	1,578	127	
11. Rawalpindi-Murree-Kashmir.	66·64	..	66·64	1,72,194	..	1,72,194	2,584	..	
12. Jhelum (Sohawa)-Talagang.	0·40	69·10	69·50	204	10,214	10,418	510	148	
13. Wazirabad-Sialkot-Kashmir.	36·20	..	36·20	37,980	..	37,980	1,049	..	
14. Amritsar-Pathankot-Kulu.	162·96	43·99	206·95	1,80,423	6,396	1,86,819	2,584	..	
15. Pathankot (Chakki)-Dalhousie.	39·54	..	39·54	1,24,749	..	1,24,749	3,155	..	
16. Blank ..	..	..	..	..	..	..	..	..
17. Ferozepore-Fazilka.	10·87	42·08	52·95	11,794	5,821	17,615	1,085	138	
18. Jullundur-Hoshiarpur-Dhamsala.	42·48	67·01	109·49	60,720	20,377	81,097	1,429	304	
19. Delhi-Muttra ..	48·85	..	48·85	77,824	..	77,824	1,593	..	
20. Ambala-Simla-Tibet.	90·18	195·13	285·31	1,30,511	31,611	1,62,122	1,447	162	
21. Saharanpur-Kurukshetra.	32·70	..	32·70	49,528	..	49,528	1,514	..	
22. Rohtak-Bhiwani	27·84	..	27·84	91,045	..	91,045	3,270	..	
23. Sohna-Rewari ..	11·19	17·52	28·71	18,062	2,350	20,412	1,614	134	
24. Muzaffargarh-Alipur.	27·00	24·62	51·62	68,408	4,676	73,084	2,534	190	
25. Dera Ghazi-Khan-Mithankot.	10·36	66·82	77·18	27,481	17,400	44,881	2,652	259	
26. Montgomery-Arafwala-Kabulah.	34·54	..	34·54	23,001	..	23,001	666	..	
Carried over ..	2,243·25	1,022·64	3,265·89	32,98,894	1,91,981	34,90,875	

STATEMENT A-2—CONTINUED.

LENGTH OF AND EXPENDITURE (BY ROADS) ON MAINTENANCE OF ROADS IN CHARGE OF THE PUBLIC WORKS DEPARTMENT, BUILDINGS AND ROADS BRANCH, FOR THE YEAR ENDED 31st MARCH, 1935—CONTINUED.

Name of Road.	LENGTH.			EXPENDITURE.			RATE PER MILE.		REMARKS.
	Metalled.	Un-metalled.	Total.	Metalled.	Un-metalled.	Total.	Metalled.	Un-metalled.	
	Miles.	Miles.	Miles.	Rs.	Rs.	Rs.	Rs.	Rs.	
Brought forward ..	2,243·25	1,022·64	3,265·89	32,98,894	1,91,931	34,90,875	..	..
<i>Arterial Roads— conold.</i>									
77. Montgomery-Pakpattan.	26·59	..	26·59	36,082	..	36,082	1,357	..	
78. Lyallpur-Sargodha.	34·06	19·39	53·45	21,603	8,231	29,834	634	424	
79. Sambrial-Gujranwala-Pindi-Bhattian-Jhang.	56·03	52·26	108·29	73,161	15,218	88,379	1,306	291	
Blank ..	..	..	..	..	..	..	..	..
80. Lahore-Moga ..	51·40	21·38	72·78	59,981	1,375	61,356	1,167	64	
81. Jaranwala-Okara	10·87	22·13	33·00	13,492	6,246	19,738	1,241	282	
Blank ..	..	..	..	..	..	..	..	..
82. Amritsar-Sialkot.	46·50	35·11	81·61	82,145	8,405	90,550	1,767	239	
83. Gojra-Shorkot..	11·14	34·63	45·77	19,100	4,262	23,362	1,714	123	
84. Sonepat-Rohtak	29·94	..	29·94	65,648	..	65,648	2,193	..	
85. Karnal Kaithal	38·45	..	38·45	56,045	..	56,045	1,458	..	
Blank ..	..	..	..	..	..	..	..	..
86. Toba Tek Singh-Chichawati-Burewala.	18·06	44·42	62·48	32,025	11,387	43,412	1,771	256	
Blank ..	..	..	..	..	..	..	..	..
87. Kabirwala-Jhang.	..	61·50	61·50	..	11,478	11,478	..	187	
88. Meerut-Sonepat	8·97	2·98	11·95	11,438	449	11,887	1,275	151	
Total Arterial Roads	2,575·26	1,326·44	3,901·70	37,69,614	2,59,032	40,28,646	1,464	195	
<i>Other Roads.</i>									
1. Taxila-Jaulian..	6·00	..	6·00	7,561	..	7,561	1,260	..	The lengths are as on 31st March, 1935.
2. Murree-Barian..	1·50	4·92	6·42	1,940	5,049	6,989	1,293	1,026	
3. Civil Station Roads Rawalpindi.	1·52	..	1·52	1,272	..	1,272	837	..	
4. Gujrat-Shadiwal	..	4·75	4·75	..	1,281	1,281	..	270	
5. Dunyapur-Lal Sago.	21·46	..	21·46	6,604	..	6,604	307	..	
6. Mailsi-Tyba Sulatanpur.	21·05	..	21·05	5,130	..	5,130	244	..	
Blank ..	..	..	..	..	..	..	..	..
Carried over ..	51·53	9·67	61·20	12,507	6,330	28,837	..	..

STATEMENT A-2—CONTINUED.

LENGTH OF AND EXPENDITURE (BY ROADS) ON MAINTENANCE OF ROADS IN CHARGE OF THE PUBLIC WORKS DEPARTMENT, BUILDINGS AND ROADS BRANCH, FOR THE YEAR ENDED 31ST MARCH, 1935—CONTINUED.

Name of Road.	LENGTH.			EXPENDITURE.			RATE PER MILE.		REMARKS.
	Metalled.	Un-metalled.	Total.	Metalled.	Un-metalled.	Total.	Metalled.	Un-metalled.	
1	2	3	4	5	6	7	8	9	10
	Miles.	Miles.	Miles.	Rs.	Rs.	Rs.	Rs.	Rs.	
Brought forward ..	51·53	9·67	61·20	22,507	6,330	28,837	..	..
<i>Other Roads— contd.</i>									
7. Duniyapur-Basti Maluk.	..	11·98	11·98	..	516	516	..	43	
8. Duniyapur-Kahror.	..	15·15	15·15	..	600	600	..	40	
9. Lodhran-Duniyapur.	..	10·25	10·25	..	398	398	..	39	
10. Lodhran-Jalalpur Pirwala.	..	26·04	26·04	..	1,029	1,029	..	40	
11. Lodhran-Sutlej River.	..	5·70	5·70	..	232	232	..	41	
12. Civil Station Roads (Sheikhupura).	4·34	..	4·34	5,231	..	5,231	1,205	..	
13. Dhampur-Kasauli.	6·82	..	6·82	16,890	..	17,890	2,476	..	
14. Kalka-Kasauli..	..	8·67							
15. Dak Bungalow Road (Kasauli).	..	0·27							
16. Garkhal-Sanawar	..	3·12							
17. Garkhal-Sabathu	..	7·89	35·27	..	7,253*	7,253	..	206	*Expenditure for individual roads not available.
18. Sabathu-Haripur	..	4·32							
19. Sabathu-Solan..	..	2·00							
20. Sabathu-Kaithli-ghat.	..	9·00							
21. Dhalli-Mashobra Sunni.	..	22·31	22·31	..	4,640	4,640	..	208	
22. Narkanda-Luri	..	13·38							
23. Luri-Bera ..	..	7·37							
24. Sidhpur-Deo ..	..	64·00							
25. Gaura-Mashnu	..	7·50							
26. Mashobra-Charabra.	..	1·37							
27. Kotgarh-Thandar.	..	2·00	118·57	..	19,342†	19,342	..	162	†Expenditure for individual roads not available.
28. Kotgarh-Berari	..	2·00							
29. Mule Link Roads	..	16·38							
30. Approaches to Poo Rest House.	..	2·67							
31. Shiassu Bridge to Shiassu Rest House.	..	1·90							
32. Boileuganj-Jutogh.	1·07	..	1·07	450	..	450	421	..	
33. Prospect Hill Road.	..	0·80	0·80	..	356	356	..	445	
34. Agricultural Farm Road (Hansi).	2·31	..	2·31	1,456	..	1,456	630	..	
35. Sirsa Station Road.	1·92	..	1·92	2,270	..	2,270	1,182	..	
36. Hissar Station Roads.	4·96	..	4·96	9,065	..	9,065	1,828	..	
Carried over ..	72·95	255·74	328·69	57,869	40,696	98,565	..	..

STATEMENT A-2—CONCLUDED.

LENGTH OF AND EXPENDITURE (BY ROADS) ON MAINTENANCE OF ROADS IN CHARGE OF THE PUBLIC WORKS DEPARTMENT, BUILDINGS AND ROADS BRANCH, FOR THE YEAR ENDED 31st MARCH, 1935—CONCLUDED.

Name of Road.	LENGTH.			EXPENDITURE.			RATE PER MILE.		REMARKS.
	Metalled.	Un-metalled.	Total.	Metalled.	Un-metalled.	Total.	Metalled.	Un-metalled.	
1	2	3	4	5	6	7	8	9	10
	Miles.	Miles.	Miles.	Rs.	Rs.	Rs.	Rs.	Rs.	
Brought forward ..	72.95	255.74	328.69	57,869	40,696	98,565	..	..
<i>Other Roads— concl'd.</i>									
37. Approach Road to Baradari Estate, Jullundur City.	0.85	..	0.85	2,999	..	2,999	3,528	..	
38. Civil Station Roads (Gujranwala).	1.44	..	1.44	931	..	931	646	..	
39. D u n e r a-Dalhousie.	..	23.61	23.61	..	9,482	9,482	..	402	
40. Lahore Mall ..	3.61	..	17.16	34,484	..	34,484*	2,010	..	*Expenditure for individual roads not available.
41. „ Mayo ..	3.05	..							
42. „ Infantry	0.40	..							
43. „ Ravi Park	1.19	..							
44. „ Lawrence Gardens.	4.40	..							
45. „ Jail Road	2.17	..	84.7	..	12,578	12,578*	..	149	*Ditto.
46. „ F o r t L a n d Roads.	2.34	..							
47. Luri-Oot ..	..	51.4							
48. Banjar-Rampur	..	33.3	184.57	..	21,131	21,131*	..	..	*Ditto.
49. Kulu-Lingti ..	..	131.46							
50. Kulu-M a n a l i (left bank road).	..	23.86							
51. Kandi-Bajaura	..	9.75							
52. Kulu-Silbadwani	..	19.50							
53. Civil Station Roads (Dharm-sala).	3.04	11.10	14.14	3,974	1,324	5,298	1,307	119	
54. Civil Station Roads (Pak-pattan).	1.83	..	1.83	1,742	..	1,742	952	..	
55. Burewala-Ludan	14.84	..	14.84	14,287	..	14,287	963	..	
56. B u r e w a l a - K a m a n d.	10.78	..	10.78	9,075	..	9,075	842	..	
57. Vehari-Katcha Khu.	12.33	..	12.33	12,374	..	12,374	1,003	..	
58. Vehari-Ludan ..	16.80	..	16.80	26,217	..	26,217	1,561	..	
59. Kasamsar-Pakhi Mian.	..	7.39	7.39	..	2,101	2,101	..	284	
60. A r a f w a l a - T r i k h n i.	7.57	..	7.57	25,113	..	25,113	3,318	..	
61. Harrappa Railway Station to Protected Area Harrappa.	..	4.25	4.25	..	1,394	1,394	..	375	
62. Fitna Jamlera Mana.	22.60	3.72	26.32	35,219	334	35,553	1,556	90	
Total other roads ..	182.19	575.08	757.27	2,24,284	89,040	3,13,324	1,231	154	

STATEMENT B.

STATEMENT OF PROVINCIAL EXPENDITURE ON PROVINCIAL WORKS DURING 1934-35.

Heads.	Original Works.	Repairs.	Total.
	Rs.	Rs.	Rs.
PART I.—PROVINCIAL WORKS.			
<i>41—Civil Works—Provincial (Non-voted)—Reserved—Communications.</i>			
Unmetalled Roads .. ..	..	6,963	6,963
Accommodation for travellers ..	112	926	1,038
<i>Buildings—</i>			
General Administration, Commissioners and District Officers. ..	..	211	211
Total ..	112	8,100	8,212
<i>41—Civil Works—Provincial Civil Buildings—Reserved (Voted).</i>			
General Administration	10,048	82,087	92,135
Total ..	10,048	82,087	92,135
<i>41—Civil Works—Civil Buildings—Transferred (Voted).</i>			
Land Revenue .. ..	..	..	..
Excise .. ..	..	..	..
Forest .. ..	..	..	..
<i>General Administration—</i>			
A.—Residences for Members and Ministers. ..	..	2,232	2,232
B.—Legislative Bodies	1,217	815	2,032
C.—Secretariat Headquarters Establishment. ..	11,649	24,002	35,651
D.—Commissioners and District Officers	50,974	1,49,599	2,00,573
Administration of Justice	77,262	..	77,262
Jails and Convict Settlements	1,34,134	1,38,839	2,72,973
Police	1,15,557	70,662	1,86,219
Education other than European and Anglo-Indian. ..	32,021	1,57,643	1,89,664
Education European and Anglo-Indian ..	10,902	..	10,902
Medical	65,039	2,24,206	2,89,245
Public Health	8,143	..	8,143
Agriculture	23,988	80,850	1,04,838
Industries	29,638	..	29,638
Civil Works	1,14,505	1,87,433	3,01,938
Stationery and Printing	2,437	..	2,437
Miscellaneous Departments .. ..	..	..	..
Other Departments	85	1,58,265	1,58,350
Total Civil Buildings ..	6,77,551	11,94,546	18,72,097
Carried over ..	10,160	90,187	1,00,347

STATEMENT B—CONTINUED.

STATEMENT OF PROVINCIAL EXPENDITURE ON PROVINCIAL WORKS
DURING 1934-35—CONTINUED.

Heads.	Original Works.	Repairs.	Total.
Brought forward..	Rs. 10,160	Rs. 90,187	Rs. 1,00,347
PART I.—PROVINCIAL WORKS—			
CONTD.			
<i>Communications (Transferred).</i>			
Metalled Roads—			
A.—Bridged and drained throughout ..	97,729	41,34,511	42,32,240
B.—Partially bridged and drained throughout.	..	..	..
Unmetalled Roads—			
A.—Bridged and drained throughout ..	44,915	2,78,371	3,23,286
B.—Partially bridged and drained throughout.	..	..	..
Central Road Development Fund ..	5,52,453	..	5,52,453
Boat Bridges and Ferries	2,979	1,25,372	1,28,351
Arboriculture .. ..	..	..	..
Accommodation for travellers ..	1,808	9,416	11,224
Miscellaneous .. ..	..	279	279
Total Communications ..	6,99,884	45,47,949	52,47,833
Miscellaneous	15,571	88,916	99,487
Grants-in-aid	3,42,938	..	3,42,938
Total Original Works Repairs ..	17,35,944	58,26,411	75,62,355
Establishment (<i>pro rata</i> distribution) ..	..	..	19,69,597
Establishment suspense .. ..	..	..	112
Tool and plant (<i>pro-rata</i> distribution) ..	..	..	88,019
Suspense .. ..	..	..	-1,41,474
Total Transferred and (Reserved) ..	17,46,104	59,16,598	95,78,956
<i>Deduct</i> —Expenditure in England—			
Par value .. ..	..	..	-1,43,648
Loss and gain by Exchange ..	..	..	-334
GRAND TOTAL 41—CIVIL WORKS—	17,46,104	59,16,598	94,34,974
RESERVED AND TRANSFERRED.			
60—Civil Works—Capital Expenditure—			
Original Works.			
Buildings—			
Civil Works	36,797	..	36,797
Administration of Justice	5,852	..	5,852
Industries	198	..	198
General Administration (Commissioners and District Officers).	15,688	..	15,688
Legislative Council	50,075	..	50,075
Medical	8,171	..	8,171
Forest .. ..	..	..	..
Education	2,619	..	2,619
Jail and Convict Settlements ..	8,145	..	8,145
Agriculture	2,917	..	2,917
Police	1,87,328	..	1,87,328
Total ..	3,17,790	..	3,17,790
Carried over ..	17,46,104	59,16,598	94,34,974

STATEMENT B—CONCLUDED.

STATEMENT OF PROVINCIAL EXPENDITURE ON PROVINCIAL WORKS
DURING 1934-35.—CONCLUDED.

Heads.	Original Works.	Repairs.	Total.
	Rs.	Rs.	Rs.
Brought forward ..	17,46,104	59,16,598	94,84,974
PART I.—PROVINCIAL WORKS— CONCLD.			
60— <i>Civil Works—Capital Expenditure— Original Works—concl.</i>			
Communications	11,293	..	11,293
Miscellaneous	44,384	..	44,384
Total Original Works and Repairs ..	3,73,467	..	3,73,467
Establishment (<i>pro-rata</i> distribution) ..	..	..	74,011
Tools and Plant (<i>pro-rata</i> distribution) ..	..	..	3,307
Suspense .. .. .	..	..	..
Total ..	..	..	4,50,785
Deduct—Recoveries on Capital Account..	..	..	3,10,000
Deduct—Expenditure in England—			
(1) Par value .. .. .	..	..	..
(2) Loss and gain by exchange ..	..	..	..
GRAND TOTAL 60—CIVIL WORKS ..	..	..	1,40,785
Deduct—Amount transferred to 41-A— Capital Expenditure—Civil Works.	..	..	1,40,785
Net charged to 60—Civil Works ..	..	..	..
56-C—Capital on Industrial Development Works.	854	..	854
Total Original Works and Repairs ..	..	..	854
Establishment (<i>pro-rata</i> distribution) ..	..	..	181
Tools and Plant (<i>pro-rata</i> distribution)	..	..	8
Suspense .. .. .	..	..	..
Total 56-C ..	..	..	1,043
Deduct—Recoveries on Capital Account..	..	..	..
Deduct—Expenditure in England ..	..	..	..
Add net loss by exchange .. .. .	..	..	..
Total 56-C ..	..	..	1,043
Deduct—Amount transferred to 35-A—In- dustrial Capital Outlay to be met from Revenue.	..	..	..
Net Total 56-C. ..	..	..	1,043
35-A—Industrial Capital Outlay to be met from Revenue.	..	..	..
41-A—Capital Expenditure on Civil Works met out of Extraordinary Receipts. } ..	..	..	1,40,785
Amount transferred from 60—Civil Works	..	..	..
GRAND TOTAL ..	21,20,425	59,16,598	95,76,802

STATEMENT C.

STATEMENT OF EXPENDITURE ON PUBLIC WORKS OTHER THAN PROVINCIAL
DURING 1934-35.

Heads.	Original Works.	Repairs.	Total.
	Rs.	Rs.	Rs.
WORKS DONE FOR CENTRAL GOVERNMENT AND LOCAL BODIES.			
<i>Central Military Works.</i>			
Works .. .. .	..	..	..
Suspense .. .. .	..	..	..
Expenditure in England .. .. .	..	..	..
Total Military Works .. .. .	..	..	..
<i>41—Civil Works—Central.</i>			
Civil Build-ings. { Voted .. .. .	..	..	..
{ Non-voted .. .. .	..	..	..
Communications .. .. .	..	..	..
Total .. .. .	..	..	..
Suspense .. .. .	..	..	..
Expenditure in England .. .. .	..	..	..
GRAND TOTAL .. .. .	..	..	..
Post and Telegraph Works .. .. .	..	..	..
Archæological Works .. .. .	..	..	..
Monuments and Antiquities .. .. .	..	..	..
Miscellaneous .. .. .	..	..	..
Total .. .. .	..	..	..
Municipal and Local Loans	4,78,122	65,159	5,43,281
Private and other funds	6,706	3,212	9,918
Civil and other Departments	39,176	..	39,176
Total Deposits	5,24,004	68,371	5,92,375
<i>Departmental Charges.</i>			
Military Works (<i>pro-rata</i> distribution) .. .. .	..	..	..
Central Works—			
Voted (<i>pro-rata</i> distribution) .. .. .	..	..	..
Non-voted (<i>pro-rata</i> distribution) .. .. .	..	..	..
Post and Telegraphs .. .. .	..	..	..
Archæological Works .. .. .	..	..	19,352
Deposit Works and Works for Local Bodies (Percentage charges) .. .. .	..	..	19,352
Total Departmental Charges .. .. .	..	..	19,352
GRAND TOTAL	5,24,004	68,371	6,11,727

STATEMENT D.

STATEMENT OF EXPENDITURE ON PUBLIC WORKS BY PUBLIC WORKS DEPARTMENT,
BUILDINGS AND ROADS BRANCH DURING 1934-35.

Heads.	ORIGINAL WORKS.			Deposits.	Repairs.	Total.	
	Revenue.	Capital.	Extra-ordinary Receipts.				
1	2	3	4	5	6	7	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
<i>I.—Works done by Regular Buildings and Roads Divisions.</i>							
1.—Provincial (Reserved)—							
Civil Buildings ..	7,928	..	..	..	71,185	79,113
Communications ..	112	..	..	..	7,889	8,001
Total ..	8,040	..	..	..	79,074	87,114
Civil Buildings (Transferred) ..	5,94,194	(b) 2,79,507	..	..	8,36,112	17,09,813
Communications.	Metalled	97,269	(b) 11,293	..	41,29,663	42,38,225	
	Unmetalled	44,914	..	..	2,78,371	3,23,285
	Central Road Development Fund.	5,52,453	..	..	..	5,52,453
	Other Sub-heads ..	4,788	1,35,067	1,39,855
	Miscellaneous	8,613	(b) 19,072	80,806	1,08,491
Industrial Development ..	..	(a) 854	..	..	..	854
Total ..	13,02,231	3,10,726	..	..	54,60,019	70,72,976
2. Central Works .. ..	..	..	..	..	..	..
3. Deposit and other works—							
(1) Municipal and local loans.	..	..	..	23,032	8,535	31,567
(2) Private and other funds.	..	..	..	739	3,212	3,951
(3) Civil and other Departments.	..	..	..	..	..	..
Total Deposit and other works ..	..	..	..	23,771	11,747	35,518
Total Buildings and Roads Branch	13,10,271	3,10,726	..	23,771	55,50,840	71,95,608	
<i>II.—Works done by Public Health Circle.</i>							
(1) Provincial Civil Works—							
(a) Reserved Civil Buildings.	2,120	..	..	..	11,113	13,233
(b) Transferred	90,775	(b) 63,595	..	..	3,66,392	5,20,762
(2) Central Works .. ..	..	..	..	..	..	..
(3) Deposit Works .. ..	..	..	..	5,00,233	56,624	5,56,857
(4) Industrial Development ..	..	..	..	..	..	..
Total ..	92,895	63,595	..	5,00,233	4,34,129	10,90,852	
Grants-in-aid	3,42,938	..	..	..	..	3,42,938
GRAND TOTAL ..	17,46,104	3,74,321	..	5,24,004	59,84,969	86,29,398	

(a) Expenditure transferred to 35-A—Industrial Capital Outlay to be met from Revenue (*vide* statement B).
(b) Expenditure transferred to 41-A—Civil Works (*vide* statement B).

STATEMENT D.—CONCLUDED.

Heads.	WORKS OUTLAY.		Deduct charges on which percentages are not permissible.	Balance on which percentage is charged.	Amount of establishment charges.	Percentage.
	Original Works	Repairs.				
1	2	3	4	5	6	7
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
<i>I.—Expenditure on Establishment employed on works and repairs of Regular Buildings and Roads Divns.</i>						
41—Civil Works—Provincial—						
(1) Reserved ..	8,040	79,074	..	87,114	18,506	21·24
(2) Transferred ..	13,02,231	54,60,019	5,607	67,56,643	(a) 15,12,731	22·38
(3) Engineering Establishment.	..	..	..	..	..	..
60—Civil Works—Capital Expenditure.	3,09,872	..	..	3,09,872	(c) 63,708	20·55
56—Civil Industries ..	854	..	..	854	(b) 181	21·19
41—Civil Works—Central—						
(1) Voted ..	..	..	..	..	..	..
(2) Non-voted ..	..	..	..	..	..	..
50—Military Engineering Service	..	..	..	..	..	..
Accounts between Civil and Post and Telegraph.	..	..	..	..	..	..
Account between Civil and Accountant General, Central Revenue	..	..	..	..	..	..
Archæological Works ..	..	..	..	..	..	..
Contribution Works ..	23,771	11,747	21,091	14,427	2,646	18·34
Suspense for debit to Military Engineering Service during 1935-36.	..	..	..	..	..	..
Total ..	16,44,768	55,50,840	26,698	71,68,910	15,97,772	..
<i>II.—Expenditure on Establishment employed on works and repairs of Public Health Circle.</i>						
Urban Sanitary Establishment	6,56,723	4,34,129	..	10,90,852	92,864	8·51
GRAND TOTAL	23,01,491	59,84,969	26,698	82,59,762	16,90,636	..
Deduct—Deposit Works ..	5,24,004	68,371	21,091	5,71,284	19,352	3·21
GRAND TOTAL EXCLUDING CONTRIBUTION WORKS.	17,77,487	59,16,598	5,607	76,88,478	16,71,284	..

(a) Excludes Rs. 3,69,884 on account of expenditure on Engineering education.

(b) Transferred to 35-A—Industrial Capital outlay to be met from Revenue.

(c) Transferred to 41-A—Capital Expenditure on Civil Works met out of Extraordinary Receipts.

STATEMENT E.

STATEMENT SHOWING EXPENDITURE INCURRED ON ENGINEERING EDUCATION
AND COMMUNICATIONS BOARD DURING 1934-35.

Heads.	OUTLAY ON		Total.	Establishment.	Total.
	Works.	Repairs.			
1	2	3	4	5	6
	Rs.	Rs.	Rs.	Rs.	Rs.
Maclagan Engineering College ..	5,290	6,677	11,967	2,23,038	2,35,005
Government School of Engineering, Rasul.	1,336	4,018	5,354	88,063	93,417
Share of cost of training Punjab students at Rookree College.	..	..	..	58,783	58,783
Total Engineering Education ..	6,626	10,695	17,321	3,69,884	3,87,205
Communications Board ..	..	..	..	16,967	16,967
GRAND TOTAL ..	6,626	10,695	17,321	3,86,851	4,04,172

STATEMENT F.

STATEMENT SHOWING ESTABLISHMENT CHARGES EARNED BY THE PUNJAB PUBLIC WORKS DEPARTMENT, BUILDINGS AND ROADS BRANCH BY ESTABLISHMENT EMPLOYED ON ORIGINAL WORKS AND REPAIRS DURING 1934-35.

Serial No.	Heads.	Total fee charged.	REMARKS.
1	2	3	4
	<i>I.—Establishment charges on works done by regular Building and Road Divisions.</i>		
		Rs.	
1	50—M. E. S.	5,171	
2	41—Civil Works—Central (Voted) .. .. .	..
3	41—Civil Works—Central (Non-voted) .. .. .	..
4	Contribution Works (executed by Building and Road Divisions).	2,092	
5	Contribution Works executed by Public Health Divisions (Buildings and Roads share).	8,353	
6	56-C—Capital Expenditure on Industrial Works..	181	
7	Works of other Departments done by B. and R. Divisions.	175	
8	Works of other Departments done by Public Health Divisions (Buildings and Roads share).	..	
9	Accounts between C. and M.	18	
10	State Railways	152	
11	Accounts between Civil and Civil A.-G., Central Revenues.	3,775	
12	Other adjustments	2,528	
	Total	22,440	
	<i>II.—Establishment charges by Public Health Circle.</i>		
1	Work done for local bodies	77,945	
2	Work done for other Governments	5,763	
3	Work done for other Departments of Punjab Government.	8	
	Total	83,716	
	GRAND TOTAL	1,06,156	

