No 5702, dy 6 July 1896.

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No. 570 I, dt 6 - July 1896.

To

The Secy. to the Govt. of India
Public Works Dept.

Sir,

I have the honour to request that you will be so good as to furnish this office with 6 spare copies of the Review by the Govt. of India of the Revenue Report of Irrigation works in the Punjab for 1894-95, No. 105 I dated 29th May 1896, for communication to officers concerned.

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No. 109 I.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

CIVIL WORKS.

Irrigation.

Simla, the 26th April 1895.

Revenue Report of Irrigation Works in the Punjab for 1893-94.

READ—

Letter No. 47 A. I., dated 9th January 1895, from the Government of the Punjab, forwarding the Revenue Report of Irrigation Works in the Punjab for 1893-94, and Resolution by that Government reviewing the Report.

OBSERVATIONS.—The Capital outlay (exclusive of contributions) incurred during and up to the end of the year is shown in the following table under the financial heads of account :—

	Number of works.	During the year 1893-94.							
		Works.	Establishment.	Tools and Plant.	Suspense Account.	Total direct charges.	Indirect charges.	Total direct and indirect charges.	Total direct and indirect to end of 1893-94.
	1	2	3	4	5	6	7	8	9
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Major Works.									
Protective Irrigation Works (Account head 35).	1	16,298	3,738	250	580	20,866	523	21,389	36,34,177
Irrigation works not charged against Revenue (Account head 49).	7	29,09,020	5,55,648	37,119	85,750	35,87,537	88,701	36,76,238	6,98,66,436
Minor Works and Navigation.									
Works of which Capital and Revenue Accounts are kept (Account head 43).	4	31,609	6,855	19	—1,057	37,426	1,380	38,806	20,58,798*
TOTAL . .	12	29,56,927	5,66,241	37,388	85,273	36,45,829	90,604	37,36,433	7,55,59,411

* Includes Capital outlay on Madhopur workshops.

2. The total outlay during 1893-94 was Rs. 37,36,433, being more by Rs. 9,59,037 than that incurred during the previous year. The increase occurred principally on the Chenab and Bari Doab Canals.

On the Chenab Canal, the Capital outlay during the year was Rs. 23,52,013. This was incurred principally on strengthening the weir and left bank protection works at Khanki, in widening the main line channel and its masonry works, and in the construction of the first 60 miles of the Jhang Branch and its distributary system.

On the Bari Doab Canal, the Capital outlay during the year was Rs. 5,23,301, and was incurred principally on the construction and remodelling of distributaries, and on the collection of materials for certain rapids on the Lahore Branch and Main Branch Lower.

On the Western Jumna Canal, excluding the Sirsa Branch, there was a Capital outlay of Rs. 1,18,429 incurred on buildings, mills, distributaries, and drains.

On the Sirsa Branch of the Western Jumna Canal, Rs. 4,55,518 from Imperial Funds, and Rs. 1,89,678 contributed by the Patiala State, were expended on the Capital Account. The work remaining to be done at the close of the year consisted principally of the distributaries on the 3rd section, and it is anticipated that the Branch will be practically completed by the end of 1894-95.

On the Sirhind Canal, Rs. 2,12,090 from Imperial Funds were expended on the Capital Account, principally on land compensation, on escapes and on the construction of a divide wall in the river at the head-works, more than half of which was built during the year. The Captial expenditure under contributions amounted to Rs. 75,635, and consisted partly of the share of the cost of the work carried out at the head works and on the main canal, and partly of charges incurred on the distributaries of the Patiala Branch.

3. The following statement shows the mileage of main canal and distributaries in operation in British territory at the close of the year under review:

	Completed.	
	Miles of Canals.	Miles of Distributaries.
Major Works.		
Protective Irrigation works	22	143
Irrigation works not charged against Revenue	1,346	5,820
Minor Works.		
Of which Capital and Revenue Accounts are kept	1,863	240
Of which only Revenue Accounts are kept	824	453
Total	4,055	6,656

The length of navigable channels was 386 miles. In addition to the figures given in the above table, there were in Native States 258 miles of completed canal, of which 46 are navigable, and 2,109 miles of completed distributaries.

The mileage of open canal in British territory shows an increase over last year's figures of 69 miles, due almost wholly to the inclusion of the Sirsa Branch, and for the same reason there is an increase of 35 miles in the length of canal in the Native States. The mileage of completed distributaries in British territory is greater by 437 miles than last year, of which 280 miles were on the Sirsa Branch.

In Native States, there is an increase in length of completed distributaries of 169 miles, due to the addition of the Sirsa Branch Channels.

4. The financial results of the canals in operation are shown in the following statement:—

Canal.	Total direct and indirect Capital outlay to end of 1893-94.	Gross revenue collected.			Working Expenses.			Net Revenue.	Percentage of net Revenue on Capital outlay.
		Irrigation Revenue.*	Miscellaneous receipts.	Total.	Direct.	Indirect.	Total.		
1	2	3	4	5	6	7	8	9	10
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
Major Works.									
35—Protective Irrigation Works in operation—									
Swat River Canal	36,34,177	2,49,599	6,322	2,55,921	88,082	7,131	95,213	1,60,708	4·42
49—Irrigation Works in operation not charged against Revenue—									
Western Jumna, including Sirsa Branch	1,37,76,754	9,33,328	1,02,589	10,35,917	5,94,658	38,441	6,33,099	4,02,818	2·92
Bari Doab	1,72,22,755	20,74,761	1,50,670	22,25,431	5,53,881	39,954	5,93,835	16,31,596	9·47
Sirhind	2,40,04,328	10,11,839	73,398	10,85,237	5,81,009	39,409	6,20,418	4,64,819	1·94
Chenab	1,31,70,513	3,77,681	6,327	3,84,008	3,08,124	22,601	3,30,725	53,283	0·40
Lower Sohag and Para	6,99,729	96,030	1,185	97,215	85,749	6,232	91,981	5,234	0·75
Sidhnai	9,81,620	2,65,644	1,534	2,67,178	74,693	5,096	79,789	1,87,389	19·09
Total Major Works, 1893-94	7,34,89,876	50,08,882	3,42,025	53,50,907	22,86,196	1,58,864	24,45,060	29,05,847	3·95
Total for 1892-93	6,79,34,171	64,49,776	3,59,373	68,09,149	23,02,086	1,49,545	24,51,631	43,57,518	6·41
Minor Works.									
43—Works in operation, of which Capital and Revenue Accounts are kept—									
Upper Sutlej	6,54,130	2,77,137	31,792	3,09,109	91,912	6,134	98,046	2,11,063	32·27
Lower Sutlej and Chenab	1,10,102	3,61,287	2,47,704	6,08,991	3,71,752	13,966	3,85,718	2,23,273	202·79
Indus Inundation	7,07,635	3,53,171	—87,800	2,65,371	2,01,156	9,865	2,11,021	54,350	7·68
Shahpur Inundation	1,62,783	60,370	1,165	61,535	43,301	502	43,803	17,732	10·89
Total of Minor Works, 1893-94	16,34,650	10,51,965	1,93,041	12,45,006	7,08,121	30,467	7,38,588	5,06,418	30·98
Total for 1892-93	15,95,844	7,61,769	2,91,232	10,53,001	6,57,041	30,229	6,87,270	3,65,731	22·92
Works in operation, of which only Revenue Accounts are kept—									
Muzaffargarh, 1893-94	...	2,64,944	1,44,689	4,09,633	2,18,565	7,720	2,26,285	1,83,348	...
Muzaffargarh, 1892-93	...	2,62,360	1,31,753	3,94,119	2,05,855	7,594	2,13,449	1,80,670	...
GRAND TOTAL, 1893-94	7,51,24,526	63,25,791	6,79,755	70,05,546	32,12,882	1,97,051	34,09,933	35,95,613	4·54†
GRAND TOTAL, 1892-93	6,95,30,015	74,73,911	7,82,358	82,56,269	31,64,982	1,87,368	33,52,350	49,03,919	6·79†

* Refunds deducted from Revenue.
† These percentages of net Revenue on Capital outlay do not include Muzaffargarh Canal, for which only Revenue Accounts are kept.

5. The net revenue for the works in operation, for which Capital and Revenue Accounts are kept, is lower by Rs. 13,10,984 than it was in the previous year, and the percentage of net revenue on Capital outlay has fallen from 6·79 to 4·54.

Under Major Works, the return on the Capital outlay was 3·95 per cent., against 6·41 per cent. in the previous year. This is due to a falling off in net revenue on all the canals except the Chenab, Lower Sohag and Para, and the Sidhnai. The most marked decrease is on the Sirhind Canal, where the net revenue was less by Rs. 12,65,868 than that of the previous year. The falling off is attributed partly to the special closure of the canal for three months in the Kharif season, necessitated by large accumulations of silt in the Main Line, but more especially to the heavy rainfall in the Rabi of 1892-93 and in the Kharif of 1893-94, which enabled crops to be brought to maturity without using canal water. The falling off in the net revenue of the Swat River, Western Jumna, and Bari Doab Canals, is also attributed to this heavy rainfall.

On the Lower Sohag and Para and the Sidhnai, which are inundation canals, the rainfall ensured a good supply in the channels rather than affected the demand, and so caused an increase in net revenue on these canals.

On the Chenab Canal, the increase in net revenue is due to the extension of cultivation and to collections being made for the first time in the new Colonies.

On all the Major Works the working expenses were more than covered by the revenue realized.

Under Minor Works there is an increase in net revenue as compared with the previous year on all systems with the exception of the Shahpur Canals.

The Minor Works are all inundation canals, and the general rainfall during the Rabi season of 1892-93 and the following Kharif season, which unfavourably affected the collections of 1893-94 on the perennial canals, had generally the opposite effect on the inundation canals owing to the better supplies available.

On the Shahpur Canals, the decrease in net revenue is due to the damage caused to the Kharif crop by an extraordinarily heavy and disastrous flood in the Jhelum in July 1893, which also caused a considerable increase in the working expenses.

6. The net revenue of the Major Works in operation exceeded the interest charges by Rs. 1,55,982, and at the close of the year the balance of net revenue over interest charges amounted to nearly 243½ lakhs of rupees.

7. The area irrigated during the year, and the revenue credited to irrigation assessed thereon, are shown in the following statement:—

Canal.	Area irrigated.		Assessment, 1893-94.							Rate per acre irrigated.	
	1893-94.	1892-93.	Occupier's rate.	Owners' rate.	Share of land revenue.	Sale-proceeds of waste or other lands benefited.	Water advantage rate.	Gross assessed revenue, excluding miscellaneous.	Assessment, 1892-93.	1893-94.	1892-93.
1	2	3	4	5	6	7	8	9	10	11	12
	Acres.	Acres.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Swat River	110,819	104,723	2,76,923	...	...	...	...	2,76,923	2,62,371	2·50	2·50
Western Jumna, including Sirsa Branch.	339,807	256,298	8,13,457	3,33,892	...	...	...	11,47,349	9,78,956	3·47	3·82
Bari Doab	540,057	567,896	19,40,361	1,82,478	...	...	...	21,22,839	21,21,396	3·93	3·73
Sirhind	275,897	412,791	9,35,095	...	...	...	...	9,35,095	13,36,367	3·39	3·24
Chenab	270,405	157,197	4,65,076	35,958	...	22,823	...	5,23,957	3,49,807	1·93	2·22
Lower Sohag and Para	71,179	70,129	94,763	...	...	...	...	94,763	90,224	1·33	1·28
Sidhnai	*151,427	*138,286	3,46,206	...	...	...	...	3,46,206	3,09,740	2·28	2·24
Upper Sutlej	174,743	210,048	34,199	...	1,75,375	...	30,160	2,39,734	2,45,193	1·37	1·17
Lower Sutlej and Chenab	*329,163	*341,376	†22,066	...	3,27,127	...	...	3,49,133	3,24,483	1·06	0·95
Indus	177,922	206,576	1,91,521	...	1,61,670	...	...	3,53,191	1,87,597	1·98	0·91
Shahpur	11,766	29,577	24,698	...	10,474	...	...	35,172	71,810	3·07	2·43
Muzaffargarh	313,035	311,225	...	...	2,64,944	...	...	2,64,944	2,62,428	0·84	0·84
Total	2,757,220	2,806,122	51,44,305	5,51,428	9,39,590	22,823	30,160	66,88,306	65,40,372	2·42	2·33

* These figures are exclusive of kharaba (crops which did not fully come to maturity or were subsequently destroyed by hail, locusts, etc.)
† Includes Rs. 21,832 on account of the Hajiwah canal.

8. The areas under inundation canals exclude *Kharába** areas. In former reports these areas were, as a rule, included; but it has been decided that in the present and future reports the area reported as irrigated shall be that which has been held liable to assessment, and therefore shall not include *Kharába** areas.

The total area irrigated was less by 48,902 acres than that of the previous year.

The rate per acre for the whole Province was Rs. 2·42, as against Rs. 2·33 in the previous year, *Kharába** areas being excluded in both cases.

9. The irrigated areas under Kharif and Rabi crops were as follows:—

	Kharif. Acres.	Rabi. Acres.
Perennial Canals	587,328	940,657
Inundation Canals	543,726	685,509
	1,131,054	1,626,166

10. The following table shows the irrigated areas of the principal crops for the last two years:—

	1893-94. Acres.	1892-93. Acres.
Sugarcane	64,481	72,902
Rice	188,155	170,282
Jowár	105,856	177,758
Maize	132,189	122,235
Wheat	1,096,748	957,635
Cotton	269,934	216,599

The decrease under sugarcane is attributed to low prices, while that under Jowár is attributed to the favourable rainfall which checked the demand for water for this crop.

The increase under the other crops is chiefly due to the extension of irrigation on the Chenab Canal.

As explained in paragraph 15 of the Resolution by the Local Government a new system for estimating the value of the irrigated crops has been adopted for the first time in the report under review. Under the old system the estimates of crop values were based on reports submitted from time to time by the Superintending Engineers of the outturn rates for different crops, and of the market prices ruling during the year. This system involved much labour, and was open to the objection that the values were referred to no fixed standard.

Under the new system a distinction is made in the procedure adopted for perennial and for inundation canals. On the perennial canals, the outturn rates of irrigated crops are nearly independent of the season, and are therefore fixed once for all for each canal. On the inundation canals, where the quality of the Rabi depends to a greater extent on the character of the season, the outturn rates fixed as for the perennial canals are regarded as normal and are subject to an addition or reduction not exceeding one-third according to the character of the season.

The crop values for all canals are fixed at the average of the market prices ruling at harvest time for the past five years, subject to a reduction for cost of carriage to market, and to certain additions for the value of secondary produce.

The value of the irrigated crops in British territory estimated under the new system was 747½ lakhs of rupees.

* *Kharába* areas are those on which crops have from any cause failed to come to maturity.

11. Details of the discharges and water duty of the perennial canals, together with minimum discharge of the year of the rivers from which their supplies are drawn, are given in the following table:—

Canals.	Minimum discharge of river during 1893-94.	Maximum discharge of canal as designed.	Maximum discharge of canal during year.	Average discharge at head during year.		Acres irrigated per cubic foot of average discharge.	
				Kharif.	Rabi.		
	Cubic feet per second.	Cubic feet per second.	Cubic feet per second.	Cubic feet per second.		Kharif.	Rabi.
1	2	3	4	5	6	7	8
Swat River	2,212	700	675	495	441	63	181
Western Jumna (including Sirsa Branch).	4,105	4,000	4,050	2,601	2,623	70	67
Bari Doab	2,342	3,000	4,143	3,196	2,784	63	121
Sirhind	3,817	6,000	6,060	*2,864	3,117	21	69
Chenab	5,271	8,000	2,100	1,700	1,529	72	99

* Excluding Native States Branches.

The duties attained on the Swat River Canal are considerably higher than those of last year.

The low duties for both Kharif and Rabi on the Sirhind Canal, and for the Rabi on the Western Jumna and Bari Doab Canals, are attributed to the character of the seasons and consequent slackness of demand.

12. The decrease in the area irrigated from the Native States branches of the Sirhind Canal is much less marked than that on the British branches. The Native States irrigated 80 per cent. of the area that would have been irrigated, had the States worked up to the British standard, against 58 per cent. in each of the two previous years.

As explained in paragraph 112 of the Chief Engineer's report, this result is attributable more to the decrease in area irrigated from the British branches, than to an improved duty on the Native States branches.

13. The following table shows the working of the Native States branches of the Sirhind Canal:—

State.	Captial outlay.	Gross Revenue less refunds.	Working Expenses.	Net Revenue.	Percentage on Capital outlay.	Water-rates assessed.	Area irrigated.	Water-rates assessed per acre.	Working expenses per acre.
	Rs.	Rs.	Rs.	Rs.		Rs.	Acres.	Rs.	Rs.
Patiala	1,14,97,837	3,26,989	3,03,160	23,829	0·21	3,52,327	102,073	3·45	2·97
Nabha	12,49,655	*51,331	42,018	9,319	0·74	43,554	13,197	3·30	3·18
Jhind	10,92,990	*33,447	37,385	—3,938	...	30,290	8,657	3·49	4·32
Total, 1893-94.	1,38,40,482	4,11,767	3,82,563	29,210	0·21	4,26,171	123,927	3·44	...
Total, 1892-93.	1,37,64,847	7,65,629	4,34,069	3,31,560	2·41	4,42,547	134,273	3·29	3·23

* These figures represent total assessments; the figures of gross revenue collected have not been furnished.

The returns for the Patiala State are based on the collections of the year, while those for Nabha and Jhind are based on assessments, these States not having furnished particulars of the amounts collected. The returns for the year are very low, and follow the reduction already noticed on the British branches.

The value of the crops irrigated during the year from the Native States branches is estimated at Rs. 31,56,192, calculated as already explained in paragraph 10 above.

14. The working expenses of the different Canals are shown in the following table:—

	Canals.	1893-94. Works.	Establishment.	Tools and Plant.	Indirect charges.	Total.	1892-93. Total.
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
	Major Works						
Perennial.	35—Protective Irrigation Works—						
	Swat River Canal	36,534	50,581	967	7,131	95,213	1,01,252
	49—Irrigation Works not charged against Revenue—						
	Western Jumna Canal, including Sirsa Branch	3,02,747	2,74,395	17,516	38,441	6,33,099	5,06,514
	Bari Doab Canal	2,67,400	2,85,384	1,097	39,954	5,93,835	7,14,596
	Sirhind Canal (British portion)	3,02,115	2,79,030	—136	39,409	6,20,418	6,98,975
	Chenab Canal	1,42,268	1,61,436	4,420	22,601	3,30,725	2,69,774
	Lower Sohag and Para Canal	41,171	44,516	62	6,232	91,981	93,513
	Sidhnai Canal	33,574	36,401	4,718	5,096	79,789	67,007
	Total Major Works	11,25,809	11,31,743	28,644	1,58,864	24,45,060	24,51,631
	Per acre Irrigated	...	...	...	...	1·40	1·42
	Minor Works.						
Inundation.	43—Works for which Capital and Revenue Accounts are kept—						
	Upper Sutlej Canals	48,249	42,877	786	6,134	98,046	1,31,325
	Lower Sutlej and Chenab Canals	2,73,399	96,921	1,432	13,966	3,85,718	3,04,034
	Indus Canals	1,30,216	69,316	1,624	9,865	2,11,021	2,23,387
	Shahpur Canals	39,701	3,587	13	502	43,803	28,524
	Works for which only Revenue Accounts are kept—						
	Muzaffargarh Canals	1,61,772	56,124	669	7,720	2,26,285	2,13,449
	Total Minor Works	6,53,337	2,68,825	4,524	38,187	9,64,873	9,00,719
	Per acre Irrigated	...	...	...	...	0·95	0·79

Under Major Works, the working expenses on the Western Jumna, Chenab, and Sidhnai Canals are greater than during the previous year. The increase on the two former is due to the extension of irrigation, and on the latter, to heavy repairs on the Headworks. The total working expenses on the Major Works was slightly less than in the previous year.

Under Minor Works, the working expenses were greater by Rs. 64,154 than during the previous year.

The working expenses on Major and Minor Works together, amounted to 48·6 per cent. of the gross revenue realized.

15. The following are the details of the Establishment Charges:—

	Revenue management.	Maintenance.	Total.	Percentage.
	Rs.	Rs.	Rs.	
Direction	88,490	92,549	1,81,039	12·93
Executive	7,33,472	3,13,386	10,46,858	74·75
Medical	...	14,191	14,191	1·01
Collection	1,57,109	...	1,57,109	11·22
Navigation	1,371	...	1,371	0·09
TOTAL	9,80,442	4,20,126	14,00,568	100·00

16. The cost of Revenue Managment amounted to 13·9 per cent. of the gross revenue realized.

17. The following are some of the principal works charged against the Revenue Account:—

Swat River Canal—Construction of five new drainage syphons.

Western Jumna Canal—Suspension Bridge at Kandeh Ghât, improvement to certain buildings.

Bari Doab Canal—Construction of six telegraph stations and signallers' quarters, two cart bridges on Sobraon Branch, and various foot-bridges on distributaries.

Sirhind Canal—Alterations for facilitating navigation at five falls on Abohar Branch, alteration to chokis on main line and Abohar and Bhatinda Branches, gates and gearing for Minor heads on Abohar Branch rajbahas.

Chenab Canal—Remodelling three chokis on Rakh and Mian Ali Branches.

Indus Inundation Canals—Constructing Gajani Branch and Western Distributary of Fazalwah Canal, Head Regulator of the Baja Branch of Manka Canal, additions to Shoria Regulator.

	Receipts. Rs.	Charges. Rs.
Western Jumna Canal	50,798	8,157
Sirhind Canal (including Native States Branches)	9,839	12,858
TOTAL	60,637	21,014

18. The navigation receipts and charges are shown in the margin. Both Canals show better returns than those of the previous year. The increased receipts on the Western Jumna Canal are principally due to increased rafting dues. The net profit on navigation operations amounted to Rs. 39,622.

19. The receipts on account of water-power amounted to Rs. 1,44,948, as against Rs. 1,51,101 in 1892-93. The receipts were unfavourably affected by canal closures and low supplies due to slackness of demand for water for irrigation.

20. On the Lower Sutlej and Chenab Canals, and on the Muzaffargarh Canals, the value of Statute labour and the sums contributed from the Fine Funds are included in Miscellaneous Receipts.

On the Lower Sutlej and Chenab Canals, 682,147 labourers were called out, and of these 420,617 were actually present. After allowing for 26,596, whose absence was sanctioned, the actual absentees numbered 234,934, or a percentage of 34·50 as against 26·37 last year. Fines amounting to Rs. 1,17,467 were inflicted. The value of the Statute labour was Rs. 1,67,705, and contributions from the Fine Fund amounted to Rs. 79,950.

On the Muzaffargarh Canals the Statute labour figures were—

Called out	445,539
Present	390,353
Absent with sanction	12,582
Absent without sanction	42,736

Fines for absences amounted to Rs. 24,991.

The value of the Statute labour was Rs. 1,00,701, and Rs. 43,713 were contributed from the Fine Fund.

The large increase in expenditure chargeable to the Fine Fund was on account of the Chenab River protection embankments and works connected therewith. The Fine Funds on the Lower Sutlej and Chenab Canals, and on the Muzaffargarh Canals, show credit balances of Rs. 1,27,508 and Rs. 43,835, respectively.

21. The year opened with an unrealized balance of demands of Rs. 89,232, and closed with an unrealized balance of Rs. 1,17,182. The demands during the year were Rs. 51,82,792, and the collections amounted to Rs. 48,29,728.

22. Details of the check measurements on perennial canals are given in Appendix II of the Chief Engineer's report. The errors detected amounted to less than 1 per cent. of the whole area on the Bari Doab and Western Jumna Canals, whilst in almost all Divisions the percentage of error was less than in the previous year, a very distinct improvement being shown on the Swat River, the Sirhind, and Chenab Canals.

23. The number of days spent on tour by all Officers is given in Appendix I of the Chief Engineer's report.

24. The report was received by the Government of India on the 12th January 1895. It has been carefully prepared, and is illustrated by a series of useful maps and diagrams. The financial results of the Punjab Canals in full operation may be summarized as follows:—

Major Works (excluding the Sirsa Branch and the Chenab Canal which are still under construction) gave a return of 4·97 per cent.; *Minor Works* for which Capital and Revenue accounts are kept gave a return of 30·98 per cent., and the above *Major and Minor Works* taken together gave a return of nearly 5·7 per cent. whilst even if the Sirsa Branch and Chenab figures be included, the net return was equal to 4·54 per cent. on the total Capital outlay incurred on them.

The report shows that the operations of the year under review were considerably affected by the unfavourable character of the seasons, and that the returns were consequently much below those that may fairly be anticipated in years of a more normal character, whilst there is every reason to hope that the returns will also improve considerably as the Chenab and Sirsa Branch Canals come into full operation.

25. The Government of India observe with satisfaction the marked expression of the approval of the Local Government contained in paragraph 25 of the Resolution by the Honourable the Lieutenant-Governor of the Punjab as regards the conduct of their duties by Colonel Ottley and Mr. Higham, the late and present Chief Engineers of the Punjab Irrigation Department.

Order.—Ordered, that copies of this Review and of the Report, and the Resolution by the Punjab Government, be forwarded to the Revenue and Agricultural Department for information.

Ordered also, that copies of the Review be forwarded to the Government of the Punjab for information and guidance, and that copies of this Review and of the Report and Resolution by the Punjab Government be forwarded to the Local Governments and Administrations in the Public Works Department noted in the margin for information.

The Governments of Madras, Bombay, Bengal, and the North-Western Provinces and Oudh, in the Public Works Department.
The Chief Commissioners of the Central Provinces, Burma, and Coorg.
The Residents at Hyderabad and Mysore.
The Agents to the Governor-General in Central India, Rajputana, and Baluchistan.

Ordered further, that this Review be published in the *Gazette of India*, and that copies of this Review and of the Report and Resolution by the Punjab Government be forwarded to Her Majesty's Secretary of State for India.

W. W. Bisset

Lieut.-Colonel, R.E.,
Secretary to the Govt. of India.

G. C. Press, Simla.—No. 1692 P. W. D.—29-4-95—215.

To—The Secy to the Govt of Madras.
6 copies of Resolu hereunth
1 copy of Report & Resolution, Punjab
P.W. Dept.

P.W. No. 3747

6 S.C

Recd: 15.5.95

B/ List

Order – dated 20th May 1895. No 427 I. Pr.

Communicated to the Chief Engineer for Irrigation.

Recd 10/5 I

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To
The Chief Engineer for Irrign.

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