

Administration
Report of the Public Works
Department in the Bombay
Presidency for the year,
1930-1931

Government

1932



Administration Report of the
Public Works Department in the
Bombay Presidency for the Year
1930-31

With a detailed review of the Civil and Military
Works

[Price—Rs. 2 As. 3 or 4s.]

Digitized by M. H. Panhwar Institute of Sindh Studies, Jamshoro.

پاران ایم ایچ پنهور انسٹیٹیوٹ آف سنڌ اسٽڊيز، ڄامشورو.

BOMBAY

PRINTED AT THE GOVERNMENT CENTRAL PRESS

1932

Obtainable from the Superintendent, Government Printing and Stationery,
Bombay, or through the High Commissioner for India, India House,
Aldwych, London, W.C.2, or through any recognized Bookseller

CONTENTS

	PAGES
I.—DIRECTION	1
II.—ADMINISTRATIVE MEASURES	1
III.—TERRITORIAL CHANGES	2-5
IV.—DETAILED REVIEW	6
Important works carried out under the following heads :—	
A.—CIVIL BUILDINGS.	
Central Services—Customs, Salt, Opium, Police, Ecclesiastical, Political, Scientific Department, Educational, Medical, Public Health, Mint, Currency, Civil Works, Miscellaneous, Post Offices, Telegraphs and Archaeological	6-8
Military Works	8
Provincial Services—Land Revenue, Excise, Forests, Registration, General Administration, Residences for Heads of Provinces, Provincial Legislative Councils, Secretariat and Head Quarters Establishment including Local Fund Audit Establishment, Commissioners and District Officers, Administration of Justice, Miscellaneous, Jails and Convict Settlements, Police, Scientific Departments, Educational, Medical Civil Works, Public Health, Agriculture, Stationery and Printing, Miscellaneous Departments and Industries	8-11
Central Workshops at Dapuri	12
B.—ARCHITECTURAL	
C.—ELECTRICAL	
D.—COMMUNICATIONS	
Arboriculture	16
E.—MISCELLANEOUS	
Public Health, Water Supply, Drainage and Boring	17
F.—TECHNICAL PAPERS	
G.—RAILWAYS	
H.—DEVELOPMENT SCHEMES	
APPENDICES.	
I—Statement showing expenditure on Civil and Military Works	23
II—Statement of roads not within Municipal boundaries maintained by the Public Works and Local Authorities	25
III—Statement showing the expenditure on Provincial Buildings and Roads in the Presidency proper and Sind from 1921-22 to 1930-31	32
IV—Statement showing the expenditure on District Local Board Roads in the Presidency proper and Sind (Original works and repairs) from the year 1921-22 to 1930-31	36
V—Statement showing expenditure on establishment in the Roads and Buildings and the Irrigation Branches of the Public Works Department from the year 1921-22 to 1930-31 and percentage on the total outlay on works and repairs during the period in both the branches	38
VI—Members of the Standing Advisory Committee for the Back Bay Reclamation Scheme for the year 1930-31	40
VII—Statement showing figures of consumption of water, number of connections, etc., in connection with the Salsette and Ambernath Water Supply schemes of the late Housing and Suburban Division during 1930-31	41

LIST OF ILLUSTRATIONS

	FACING PAGE
Two diagrams showing Public Works expenditure during the period from 1889-90 to 1930-31	1
Diagram showing expenditure on Irrigation works in the Public Works Department from Loan funds, Revenue and Contribution during the period from 1922-23 to 1930-31 ..	1
Diagram showing expenditure on Provincial Buildings and Roads in the Presidency proper and Sind during the period from 1921-22 to 1930-31	1
Diagram showing the expenditure on District Local Board roads in the Presidency proper and Sind (Original works and repairs) during the period from 1921-22 to 1930-31	1
Diagram showing expenditure on Establishment in the Roads and Buildings and Irrigation Branches of the Public Works Department and Percentages to the total outlay on Works and Repairs during the period from 1921-22 to 1930-31 ..	1
Diagram showing the progress of Electrical Development in terms of Kilowatts installed from 1905 to date by various supply companies in the Bombay Presidency ..	1
Photographs—	
Masonry Bridge over the Saptalingi River in mile No. 10 of Hatkhamba-Poladpur Road	14
Masonry Bridge over the Kajvi River near Anjanari in mile No. 5 of Pali-Phonda Road	14
Vented Causeway over the Kharera River in mile No. 11 of Bulsar-Chikhli Road	14
Jacobabad Water Works, Central Pumping Station Tank (General View)	16
Improvements to Hyderabad Water Supply—(View of new 24" water-main)	16
Improvements to Hyderabad Water Supply—(View of vertical connection to High Service Reservoir)	16
Nandurbar Water Supply—(Service Reservoir on Mortuary Hill)	16
Tando Adam Surface Drainage (Western Catchment) ..	16
Improvements to Kirkee Water Supply—(15" Dia. Hume Pipe Gravitative Main)	16
Public Works Department Division Map.	

LAKHS

DIAGRAM SHOWING PUBLIC WORKS EXPENDITURE.

*EXPENDITURE ON THE DIFFERENT HEADS OF ACCOUNT
IS REPRESENTED ON THE DIAGRAM BY THE BREADTHS
OF THE SPACES BETWEEN ADJACENT LINES.*

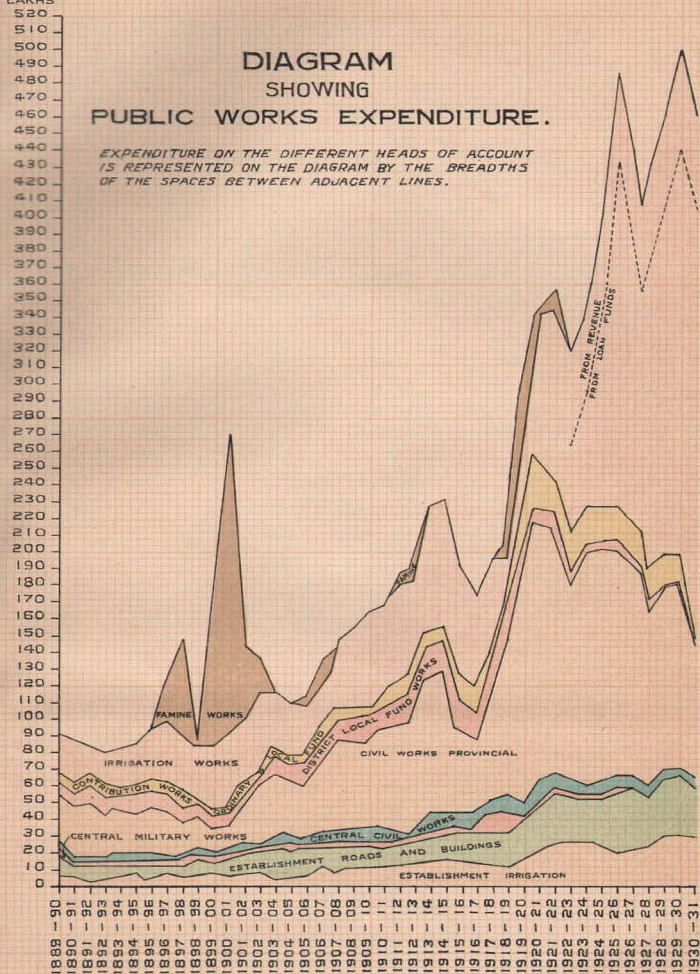


DIAGRAM
 SHOWING
 EXPENDITURE ON IRRIGATION WORKS
 IN THE PUBLIC WORKS DEPARTMENT
 FROM
 LOAN FUNDS, REVENUE & CONTRIBUTION

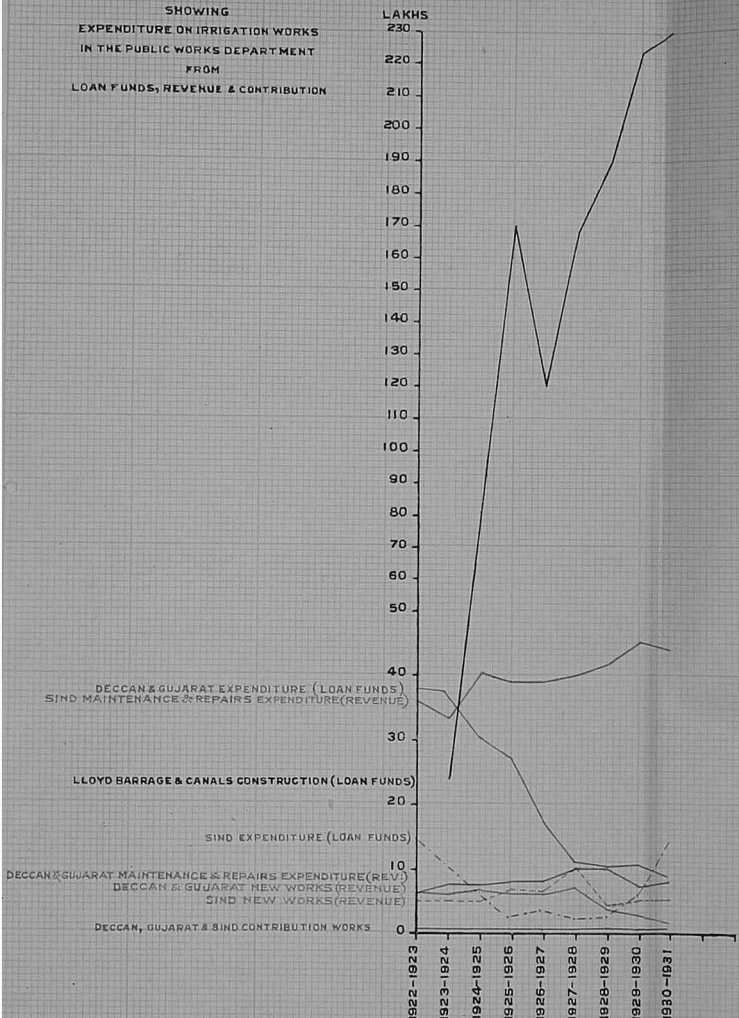
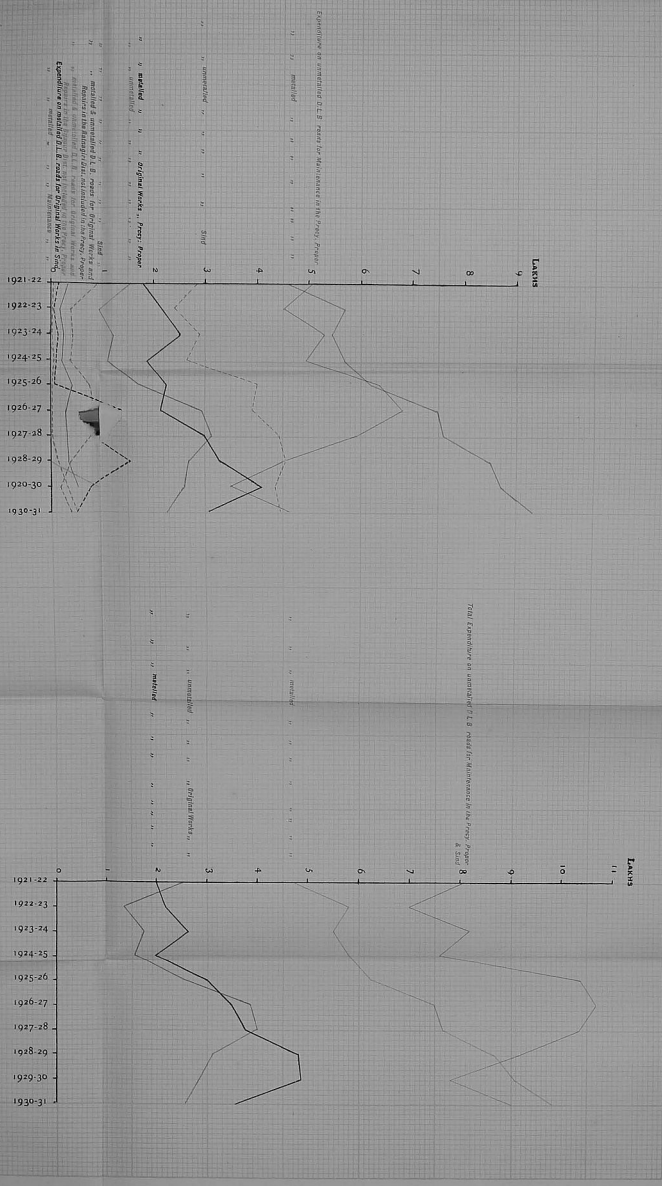
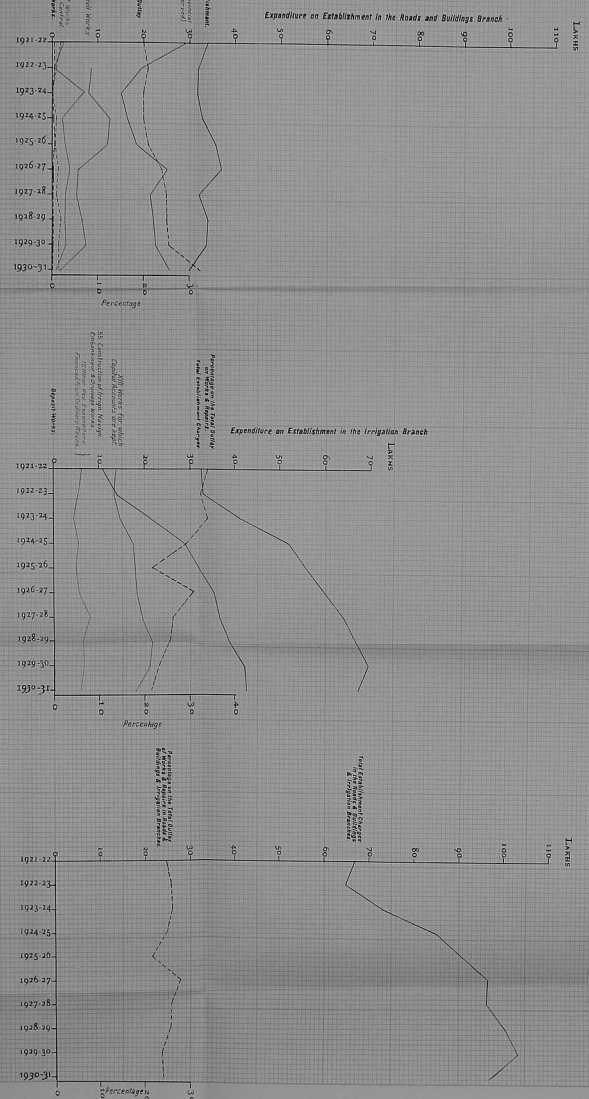


DIAGRAM SHOWING THE EXPENDITURE ON D.L.B. ROADS IN THE PRESIDENCY PROPER AND SIND. (ORIGINAL WORKS AND REPAIRS)



**DIAGRAM SHOWING EXPENDITURE
ON ESTABLISHMENT
IN THE
ROADS & BUILDINGS & IRRIGATION BRANCHES
OF THE
PUBLIC WORKS DEPARTMENT
AND
PERCENTAGES TO THE TOTAL OUTLAY ON WORKS AND REPAIRS.**



GRAPH

SHOWING THE PROGRESS OF ELECTRICAL DEVELOPMENT IN TERMS OF
KILOWATTS INSTALLED FROM 1905 TO DATE BY VARIOUS SUPPLY COMPANIES
IN THE BOMBAY PRESIDENCY.

NOTE:—Dotted line shows Tata Groups Bulk Power Supply.

Full line shows total of Ordinary Supply.

Figures in brackets, thus (4) show the number of Companies, excluding the Tata Groups in operation at the end of each year.

K.W. K.W.
(Bulk Supply (Ordinary
by Tata Groups) Supply)

300,000 86,000

280,000 86,000

260,000 86,000

240,000 86,000

220,000 86,000

200,000 86,000

180,000 86,000

160,000 86,000

140,000 86,000

120,000 86,000

100,000 86,000

80,000 86,000

60,000 86,000

40,000 86,000

20,000 86,000

10,000 86,000

Year 1905 1906 1907 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934 1935 1936 1937 1938 1939 1940

10,000 2,000

20,000 4,000

40,000 8,000

60,000 12,000

80,000 16,000

100,000 20,000

120,000 24,000

140,000 28,000

160,000 32,000

180,000 36,000

200,000 40,000

220,000 44,000

240,000 48,000

260,000 52,000

280,000 56,000

300,000 60,000

INCREASE DUE TO		
Ref. No.	Increase of load old Supply Co.	Start of New Supply Co.
1.		Bombay E.I.S.T.
2.	Bombay E.I.S.T.	
3.	Bombay E.I.S.T.	
4.	Bombay E.I.S.T.	
5.		Ahmedabad Karachi
6.	Bombay E.I.S.T.	
7.	Ahmedabad Ahmedabad	Poona
8.	Karachi Poona	
9.	Karachi	
10.	Bombay E.I.S.T. Poona	Surat
11.	Bombay E.I.S.T. Poona	Godhra Hyderabad Sukkur
12.	Ahmedabad Karachi Poona Hyderabad Sukkur	Broach Gadag & Betigiri Shikarpur
13.	Bombay E.I.S.T. Ahmedabad Poona Hyderabad	Sholapur
14.	Poona Sukkur Broach	Rander Aden
15.	Bombay E.I.S.T. Poona Surat Hyderabad Sukkur	Bhiwandi Hubli
16.	Karachi Surat	Bombay Suburn. Thana
17.	Bombay E.I.S.T. Surat Hyderabad Broach Shikarpur Bombay Suburn.	Lonavala Khandala Kalyan Bijapur
18.	Poona Rander Bombay Suburn.	Panvel Dharwar

J. P. Rao
6-10-31

Electrical Engineer to Government,
P. W. D. Bombay.

PUBLIC WORKS DEPARTMENT.

BOMBAY PRESIDENCY.

ADMINISTRATION REPORT WITH A DETAILED REVIEW OF THE CIVIL AND MILITARY WORKS FOR 1930-31.

I.—DIRECTION.

During the year under report Mr. D. R. H. Browne, O.B.E., A.K.C., M.I.E. (Ind.), I.S.E., Chief Engineer, Roads and Buildings, and Secretary to Government proceeded on leave for 8 months from the 5th April 1930. In consequence of this, Mr. C. M. Lane, I.S.E., Chief Engineer for Irrigation, was appointed Secretary to Government and Mr. A. X. Moraes, L.C.E., M.I.E. (Ind.), I.S.E., acted as Chief Engineer, Roads and Buildings, and Joint Secretary to Government. On return from leave on the 5th December 1930 Mr. Browne was reappointed Chief Engineer, Roads and Buildings, and Secretary to Government and Mr. Lane, Joint Secretary to Government and Mr. Moraes on relief, proceeded on leave preparatory to retirement. Mr. Lane proceeded on leave from the 23rd March 1931 and Mr. P. L. Bowers, C.I.E., M.C., A.M.Inst.C.E., I.S.E., was appointed to act as Chief Engineer for Irrigation and Joint Secretary to Government in his place.

II.—ADMINISTRATIVE MEASURES.

ESTABLISHMENT.

On the retirement of Mr. A. F. Thorpe, I.S.E., Superintending Engineer, from the 27th July 1930, Mr. A. H. Whyte, I.S.E., was made Superintending Engineer, permanent, and Mr. P. L. Bowers, I.S.E., was made Superintending Engineer provisionally permanent. Later on, in the vacancy caused by the retirement of Mr. A. X. Moraes, I.S.E., Superintending Engineer, from the 20th March 1931, Mr. P. L. Bowers, I.S.E., was made Superintending Engineer, permanent, and Mr. C. O. Lowsley, I.S.E., was made Superintending Engineer provisionally permanent.

Three appointments were made to the India-recruited Branch of the Indian Service of Engineers—two on the results of the competitive examination held by the Public Service Commission and one in the promoted section. No appointment was made to the Europe-recruited Branch of the service, during the year.

Eight graduates from the College of Engineering, Poona, and the N. E. D. Civil Engineering College, Karachi, were appointed as candidates to the Bombay Service of Engineers and one promotion was ordered from the Bombay Subordinate Engineering Service to that service.

III.—TERRITORIAL CHANGES.

The continuance of the following Divisions was sanctioned by the Government of India up to the dates mentioned against each :—

Central Designs Division ..	..	30th September 1930.
Mutha Canals Division ..	..	30th September 1930.
Head Quarters Works Division ..	..	31st December 1930.
Pravara Canals Division ..	..	31st March 1931.

The following Divisions were continued by this Government up to the dates mentioned against each :—

Indus River Gauging Division 31st October 1931 or till such time as that Division is amalgamated with some other charge in Sind.

Mutha Canals Division 31st March 1932.

A new Research Division was opened on the Lloyd Barrage and Canals Construction Scheme (in succession to the Central Designs Division) with effect from the 1st October 1930 for a period of one year.

The Secretary of State for India sanctioned the holding in abeyance of the 15 permanent superior posts, which had been sanctioned by him as an addition to the cadre of the Indian Service of Engineers in Bombay on account of the Lloyd Barrage and Canals Construction Project, and the Government of India sanctioned 15 temporary posts in their place for the period from the 1st July 1925 to the 30th June 1930.

The Government of India also sanctioned the continuance of the temporary post of the Chief Engineer for the Lloyd Barrage and Canals Construction Scheme for a further period of two years and the continuance of the following temporary posts of Superintending and Executive Engineers on that scheme :—

- 5 Superintending Engineers.
- 23 Executive Engineers
from the 1st July 1930 to the 30th September 1930 and
- 5 Superintending Engineers.
- 25 Executive Engineers (including the Executive Engineer, Research Division and an additional personal assistant)
from the 1st October 1930 to the 30th June 1932.

As a measure of retrenchment the following Divisional charges in the Presidency proper were abolished and the works therein distributed among the adjoining Divisions with effect from the dates mentioned against each, subject to the sanction of the Secretary of State being obtained in the case of the permanent charges concerned :—

NORTHERN CIRCLE.

The Back Bay Reclamation Division (temporary) ..	..	1st October 1930.
The Housing and Suburban Division (temporary) ..	..	1st October 1930.

CENTRAL CIRCLE.

The Head Quarters Works Division (temporary).	}	1st November 1930.
The East Khandesh Division (permanent).		

SOUTHERN CIRCLE.

The Dharwar Irrigation Division (permanent)	..	1st November 1930.
--	----	--------------------

DECCAN IRRIGATION CIRCLE.

The Pravara Canals Division (temporary).	}	1st November 1930.
The Lake Whiting Division (temporary).		

PUBLIC HEALTH CIRCLE.

The Sanitary Project Office (temporary).	}	1st March 1931.
The Boring Works Division (temporary).		

The amalgamated East and West Khandesh Divisions were renamed the Khandesh Division and the head-quarters of the Division were retained at Dhulia.

The Ahmednagar Division which absorbed a major portion of the Pravara Canals Division was transferred from the Central Circle to the Deccan Irrigation Circle.

On the abolition of the Sanitary Project Office, the work done therein was transferred to the Poona Drainage Construction Division, which was thereafter renamed the Public Health Works Division.

Under the scheme of post-barrage reorganisation of the Sind Public Works Department, the following permanent Divisions were amalgamated with the Lloyd Barrage charges with effect from the dates mentioned, subject to the approval of the Secretary of State :—

INDUS LEFT BANK CIRCLE.

Eastern Nara Division	..	5th April 1930.
-----------------------	----	-----------------

INDUS RIGHT BANK CIRCLE.

Ghar Canals Division	..	7th December 1930.
----------------------	----	--------------------

SUB-DIVISIONS.

The continuance of the following Sub-divisions was sanctioned up to the dates mentioned against each :—

PRAVARA CANALS DIVISION.

Pravara Canals.

Pravara Left Bank Canal Sub-division.	} 31st March 1931.
Pravara Right Bank Canal Sub-division.	
Pravara Head Sub-division ..	

Godavari Canals.

Rahata Sub-division ..	} 31st March 1931.
Mahalkhedra Sub-division ..	
Kopargaon Sub-division ..	

Mutha Canals Division.

Mutha Canals Sub-division ..	} 31st March 1931.
Mutha Tank Sub-division ..	
Mutha Project Sub-division ..	

The Sind and Kalyan Sanitary Sub-divisions were transferred from the direct control of the Superintending Engineer, Public Health, Bombay, to that of the Executive Engineer, Public Health Works Division, under the Superintending Engineer, with effect from the 1st April 1930, and the latter Sub-division was designated the Thana Sanitary Sub-division. The remaining four Sub-divisions were also transferred from the control of the Superintending Engineer, Public Health, to that of the Executive Engineer, Public Health Works Division.

Consequent on the abolition of the Back Bay Reclamation Division of the Northern Circle from the 1st October 1930, a new temporary Sub-division called the Back Bay Reclamation Sub-division was created in the Presidency Division with effect from the same date.

The Head Remodelling Sub-division of the Nira Left Bank Canal was closed from the 1st August 1930, and its work under the head "55" and all repair works executed by it were taken over by the Vir Sub-division.

The continuance of the Tail Survey and Remodelling Sub-division was sanctioned for a further period of two years ending 31st July 1932.

Baramati-Sangvi Road (8 miles) was transferred from the Vir Sub-division to the Tail Survey and Remodelling Sub-division.

The Special Project Sub-division in the Karachi Canals Division was continued up to the 31st March 1931.

The continuance of the Tapti Bridge Sub-division in the Khandesh Division was sanctioned up to the 31st March 1932.

Twenty-three Sub-divisions were abolished by amalgamation as a measure of retrenchment.

On the Lloyd Barrage and Canal Constructions Scheme 98 Sub-divisions were created up to the 31st March 1931.

The formation of a temporary Sub-division for constructing Revenue and Police buildings at Dadu for the proposed new District on the Right Bank of the Indus was sanctioned up to the 31st March 1931.

The shifting of the Headquarters of the Rajapur Sub-division to Kankavli was sanctioned.

The continuance of the temporary Sub-division for the Desert Buildings in Sind was sanctioned for a further period up to the 31st March 1931. Sanction was also accorded to the continuance of the Nasik Road Central Prison Sub-division for a further period of six months up to the end of September 1930.

MISCELLANEOUS.

The following arrangements were made in the Public Works Department for the administration of the works noted below* transferred to this Department from the Development Department on the abolition of the latter with effect from the 1st March 1930 :—

- *Salsette water supply.
- Ambernath water supply.
- Ambernath Electric Supply.
- Central Salsette Tramway.
- Back Bay Reclamation Scheme.
- Works in connection with Industrial Lands Schemes.
- Engineering matters generally.

The two Divisions (since abolished), viz. the Back Bay Reclamation Division for the management of all engineering works in connection with the Back Bay Reclamation Scheme and the Housing and Suburban Division for all other works specified above, were placed under the administrative control of the Superintending Engineer, Northern Circle. These Divisions were to be continued for six months from the 1st March 1930 or till the dry filling operations then in progress in certain blocks of the Back Bay Reclamation were completed, whichever was earlier.

One post of Superintending Engineer on Special Duty was created for a period of about nine and a half months for the purpose of conducting joint investigation with the Punjab Government into the probable effects of the Bhakra Dam Scheme on the Sind Inundation Canals and Mr. W. L. C. Trench, B.A.I. (Dub.), M.Inst.C.E., I.S.E., was appointed to hold it.

A temporary post of Special Officer, Road Development Schemes, Bombay Presidency, and Joint Secretary, Bombay Road Board, was created for a period of one year from the 1st October 1930 in connection with road development.

In view of the acute financial stringency, the rates of permanent travelling allowance granted to Public Works Department officers were reduced and the scheme of appointing Bombay Engineers passing out of the College of Engineering, Poona, and the N. E. D. Civil Engineering College, Karachi, as stipendiaries, was discontinued.

IV.—DETAILED REVIEW.

A.—CIVIL BUILDINGS.

During the year under review the Roads and Buildings Branch of the Public Works Department of the Presidency executed works involving a total expenditure of Rs. 1,39,49,059. The more important details of expenditure are given under the various heads below :—

Central Services.

<i>Customs—</i>					Rs.
On works	..	..	..	..	17,146
On repairs	..	..	..	..	52,197
				Total ..	69,343

The new bungalow for the Coast-guard Inspector at Surat was completed.

<i>Salt—</i>					Rs.
On works	..	..	..	..	16,118
On repairs	..	..	..	..	1,24,242
				Total ..	1,40,360

Opium—

Under this head an expenditure of Rs. 126 was incurred on repairs.

Police—

Under this head an expenditure of Rs. 481 was incurred on repairs.

<i>Ecclesiastical—</i>					Rs.
On works	..	..	..	..	6,103
On repairs	..	..	..	..	40,908
				Total ..	47,011

Political—

					Rs.
On works	..	..	..	..	8,390
On repairs	..	..	..	..	26,994
				Total ..	35,384

Scientific Department : Meteorological—

					Rs.
On works	..	..	..	..	1,296
On repairs	..	..	..	..	5,220
				Total ..	6,516

Education—European and Anglo-Indian Education, Primary—

					Rs.
On works	..	..	..	..	3,330
On repairs	..	..	..	..	150
Total					3,480
					Rs.
<i>Medical—</i>					
On works	..	..	..	..	41,295
On repairs	..	..	..	..	3,203
Total					44,498
					Rs.
<i>Public Health—</i>					
On works	..	..	..	..	50,004
On repairs	..	..	..	..	714
Total					50,718

Improvements to the Pilgrim Camp at Karachi were carried out during the year.

					Rs.
<i>Mint—</i>					
On works	..	..	..	..	3,416
On repairs	..	..	..	..	8,499
					Rs.
<i>Currency—</i>					
On works	..	..	..	..	618
On repairs	..	..	..	..	5,770
					Rs.
<i>Civil Works—</i>					
On repairs	..	..	..	..	90
					Rs.
<i>Miscellaneous Departments—</i>					
On repairs	..	..	..	..	50
					Rs.
<i>Miscellaneous—</i>					
On repairs	..	..	..	..	10,783
					Rs.
<i>*Post Offices—</i>					
On works	..	..	..	..	2,25,676
On repairs	..	..	..	..	98,792
Total					3,24,468
					Rs.
<i>Telegraphs—</i>					
On works	..	..	..	..	44,797
On repairs	..	..	..	..	1,469
Total					46,266

* From the year 1921-22 expenditure on Post and Telegraph buildings has been transferred to the Auditor General, Posts and Telegraphs.

Quarters for certain officials in the compound of the Telegraph Office building at Bhusawal were in progress.

**Archæological—		Rs.
On repairs	.. .. .	1,00,048
Military Works—		Rs.
On works	.. .. .	.....
On repairs	.. .. .	6,773
Total		6,773

Provincial Services.

Land Revenue—		Rs.
On works	.. .. .	2,244
On repairs	.. .. .	5,756
Total		8,000
Excise—		Rs.
On works	.. .. .	57,273
On repairs	.. .. .	33,492
Total		90,765

A liquor warehouse at Mahad was practically completed.

Stamps—		Rs.
On repairs	.. .. .	1,989
Forests—		Rs.
On works	.. .. .	4,603
On repairs	.. .. .	7,193
Total		11,796
Registration—		Rs.
On works	.. .. .	261
On repairs	.. .. .	192
Total		453
General Administration—		
(1) Residences for Heads of Provinces—		Rs.
On works	.. .. .	46,869
On repairs	.. .. .	2,42,859
Total		2,89,728

**From the year 1921-22 the expenditure on Archæological works has been transferred to the Auditor General, Central Revenues.

(2) Provincial Legislative Councils—					Rs.
On works	..	..	..	..	2,194
On repairs	..	..	..	..	19,078
				Total ..	21,272
(3) Secretariat and Head Quarters Establishment including Local Fund Audit Establishment—					Rs.
On works	..	..	..	..	734
On repairs	..	..	..	..	4,887
				Total ..	5,621
(4) Commissioners and District Officers—					Rs.
On works	..	..	..	..	1,22,498
On repairs	..	..	..	..	2,61,980
				Total ..	3,84,478

Revenue buildings at Dadu and at Khairo Garhi were in progress.

<i>Administration of Justice—</i>					Rs.
On works	..	..	..	..	41,794
On repairs	..	..	..	..	1,27,515
				Total ..	1,69,309
<i>Miscellaneous—</i>					
On repairs	..	..	..	..	101
<i>Jails and Convict Settlements—</i>					Rs.
On works	..	..	..	..	2,50,458
On repairs	..	..	..	..	47,906
				Total ..	2,98,364

The temporary Jail at Yeravda was completed during the year.

Several sub-works in connection with the project for the Nasik Central Jail and additions and alterations to the Jail buildings at Visapur were carried out.

<i>Police—</i>					Rs.
On works	..	..	..	..	2,96,580
On repairs	..	..	..	..	3,63,871
				Total ..	6,60,451

Police Buildings at Dadu and at Khairo Garhi were in progress.

Quarters for additional Police at the Head Quarters Police Lines, Shahibag, Ahmedabad, were in progress.

<i>Scientific Departments—Museums—</i>					Rs.
On repairs	..	..	..	..	3,413
<i>Educational—University—</i>					Rs.
On works	..	..	..	..	3,106
On repairs	..	..	..	..	54,522
Total					57,628

The Ismail College building at Andheri was handed over to the Principal. The opening ceremony of the College was performed by the unveiling of a tablet by His Excellency the Right Honourable Sir Frederick Hugh Sykes, P.C., G.C.I.E., G.B.E., K.C.B., C.M.G., Governor of Bombay, on Tuesday the 19th August 1930.

<i>Secondary—</i>					Rs.
On works	..	..	..	..	11,104
On repairs	..	..	..	..	26,513
Total					37,617

Primary—

An expenditure of Rs. 77 was incurred on works and Rs. 5,405 on repairs.

Special—

					Rs.
On works	..	..	..	..	953
On repairs	..	..	..	..	18,399
Total					19,352

A new building for the Textile Department in the compound of the V. J. Technical Institute at Matunga was in progress.

Miscellaneous—

					Rs.
On works	..	..	..	..	144
On repairs	..	..	..	..	16,836
Total					16,980

Medical—

					Rs.
On works	..	..	..	..	67,291
On repairs	..	..	..	..	2,34,260
Total					3,01,551

Quarters for Nurses and Probationers at the Sassoon Hospital, Poona, were completed.

The Sir C. J. Ophthalmic Hospital in the compound of the Sir J. J. Hospital and Quarters for Medical Staff and servants at the Sir J. J. Hospital, Bombay, were completed during the year.

Additional quarters for the Nursing staff of the Central Mental Hospital, Yeravda, were completed during the year.

<i>Miscellaneous—</i>					Rs.
On Works	..	..	..	..	650
On repairs	..	..	..	..	23,484
Total					24,134
<i>Civil Works—</i>					Rs.
On works	..	..	..	..	55,832
On repairs	..	..	..	..	2,53,455
Total					3,19,287
<i>Public Health—</i>					Rs.
On works	..	..	..	..	5,799
On repairs	..	..	..	..	29,635
Total					35,434
<i>Agriculture—</i>					Rs.
On works	..	..	..	..	9,637
On repairs	..	..	..	..	31,700
Total					41,337
<i>Industries—</i>					Rs.
On works	..	..	..	..	721
<i>Stationery and Printing—</i>					Rs.
On works	..	..	..	..	45
On repairs	..	..	..	..	10,848
Total					10,893
<i>Miscellaneous Departments—</i>					Rs.
On works	..	..	..	..	7,126
On repairs	..	..	..	..	20,170
Total					27,296

Several works in connection with the Artillery Maidan, Karachi, were carried out.

CENTRAL WORKSHOPS, DAPURI.

During the year under report the total value of work done at the Workshops was Rs. 1,67,066 which showed a slight increase over the last year's figure of Rs. 1,51,150. With all indirect charges debited the loss on the year's working was Rs. 8,938. If depreciation at the usual rates is fully provided for, the loss becomes Rs. 27,301.

Eleven sets of Corrugated Iron sluice gates for the Mutha Canal, 174 observation tubes for the special Irrigation Division, 14 sets of iron racks for Nasik Road Central Prison, 3 cast iron rollers (bullock) for the Officer Commanding, Royal Engineers, Mhow, 15 Corrugated Iron water stand posts for the Indian Stores Department, pipe specials and roof trusses for the Poona Water Works Division, pipe specials for Sholapur and Jacobabad Water Supply and Corrugated Iron circular penstock gates were made during the year.

Repairs were carried out to the engines of the Karad, Pandharpur and Poona Water Works, to the hay presses of the Military Grass Farms, Kirkee, and to the boring tools of the Agricultural Department. Repairs to steam rollers and renewals of parts were carried out to the value of Rs. 32,261. Work for private firms, Municipalities and Local Boards was done to the value of Rs. 2,500.

During the year 33 apprentices and 3 graduates were under training, 7 Apprentices finished their period of training, 6 remained in the shops as tradesmen and one secured a job outside Dapuri. The works were visited by the Honourable Member, General Department, the Honourable Minister, Local Self Government, the Secretary and the Joint Secretary to Government, Public Works Department.

B--ARCHITECTURAL.

During the year under review the activity in design noted in the previous year's Administration Report was maintained.

Designs and sketch plans were made for several buildings in connection with the additional blocks of quarters for three Inspectors and six Preventive Officers at Matunga, Bombay; the new Mercantile Marine Office, Bombay; extension of and alterations to the High Court Building, Bombay; the New Byculla Post Office, Bombay; the Central Offices at Ahmedabad; extension to the Central Offices, Poona; the Court buildings at Sholapur, Jalgaon and Larkana; the Revenue Buildings at Dadu; the District Local Board Offices, Nawabshah and Broach, and the District and Subordinate Courts, Dharwar.

In regard to public and institutional buildings designs were prepared for several buildings in connection with the Sir J. J. Hospital Reconstruction scheme, Bombay; the Principal's Bungalow, Ismail College, Andheri; Anglo-Urdu High School, Poona, and the Civil Hospital, Hyderabad.

Type plans were prepared for quarters suitable for Bombay Medical Service Officers in the mofussil, a block of three flats with servants quarters and garages suitable for construction on the Back Bay Reclamation, Bombay, and Second Class Subordinate Judge's Court in the Presidency and Sind.

C—ELECTRICAL.

(1) *Electric Licenses.*

Electricity has continued to attract the attention of the public in an increasing degree. This great public amenity has come to be looked upon as a necessity and not as a luxury and its development in the Bombay Presidency is on a far larger scale than in the case of any other province in India. Two new licenses were granted in the year under report for the supply of Electricity to (1) Nasik-Deolali and (2) Ahmednagar, and several more applications were under the consideration of Government. The number of licenses, including permissions under section 28 of the Indian Electricity Act, in operation at the beginning of the year under report was 38, while at the end of the year the number operating or under consideration was 46.

(2) *Electric Works.*

Under this head the expenditure incurred was as follows :—

	Rs.
On works	1,39,368
On repairs	2,18,257
	<hr/>
Total ..	3,57,625

The following important works were either in progress or completed during the year :—

Electric installations were provided at the office of the Inspector of Excise and the cells behind the Times of India buildings, Bombay; the New Temporary Jail at Yeravda; the Infectious Diseases Hospital, Poona; the Haffkine Institute, Parel, Bombay; the New First Class Court, Poona; the Sir C. J. Ophthalmic Hospital in the compound of the Sir J. J. Hospital, Bombay; the Ismail College at Andheri; the Civil Aerodrome, Karachi; the New Post Office buildings at Ahmedabad and the residential quarters attached to it.

D—COMMUNICATIONS.

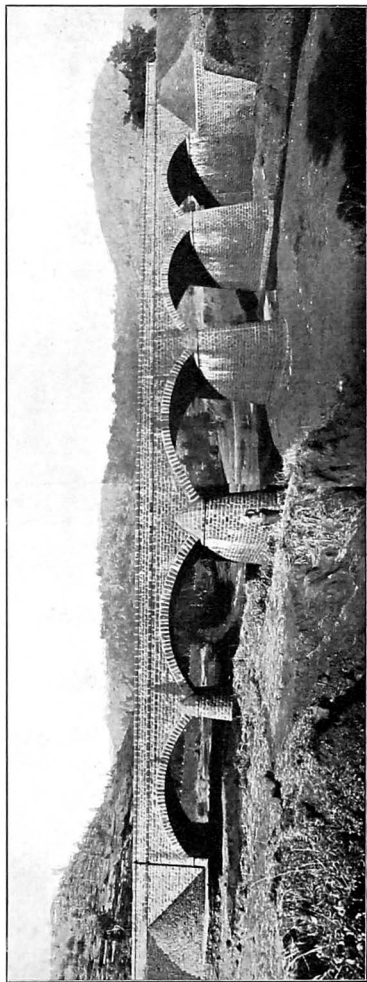
	Rs.
On works	6,98,279
On repairs	34,73,293
	<hr/>
Total ..	41,71,572

The principal works completed or nearly completed during the year were :—

Low level masonry bridge over the Kamvari river in mile No. 0/4 of the Bhiwandi-Wada Road.	} Thana Division.
Metalling and improving the road from Ahmedabad to Barwalla, Section I (from Sarkhej to Bavla).	
Bridges over the river Bav, Saptalingi and Jagbudi on the Hatkhamba-Poladpur Road.	} Ratnagiri Division.
Bridges over the rivers Kajvi at Anjanari and Muchkundi at Waded on the Pali-Phonda Road.	
Constructing a culvert over nalla No. 78 in mile 81 and making experiments with Mexico road oil over newly metalled surface in mile 71 of the Mahad-Pandharpur Road.	} Mutha Canals Division.
Remetalling the Poona-Sholapur and Poona-Khadakwasla Roads.	

The principal works in progress during the year were :—

Improvements to the roads Bombay-Poona, Poona-Ahmednagar and Indapur-Sarati via Bawda.	} Poona Division.
Improvements to and diversion of Kennedy Road, Poona.	
Providing asphalt surface on certain roads at Mahableshwar.	} Nasik Division.
Improvements to Khandesh Nizam's Frontier road and to the road from Nasik to Nasik Railway Station.	
Extension of the Dhulia-Bhusawal Road to Nimar and Berar Frontiers.	} Khandesh Division.
Construction of the roads Warsa Borzar, Section I, Chalisgaon to Malegaon and Dhadgaon-Shahada, Section IV.	
Improvements to the Taloda-Shahada, Sections I and II and miles 215 and 219 to 224 of the Bombay-Agra Roads.	} Kanara Division.
Bridge over the Tapti river at Gidhad site on the Bombay-Agra Road.	
Improvements to the roads Khanapur-Yellapur, Sadashivgad-Kadra and Sirsi-Kodkani.	} Ratnagiri Division.
Bridge over the Gad river at Aravli on the Hatkhamba-Poladpur Road, Bridge over the Savitri river and Reinforced Cement Concrete Hume pipe drains on 43 nallas on the Dharamantar-Mahableshwar Road.	



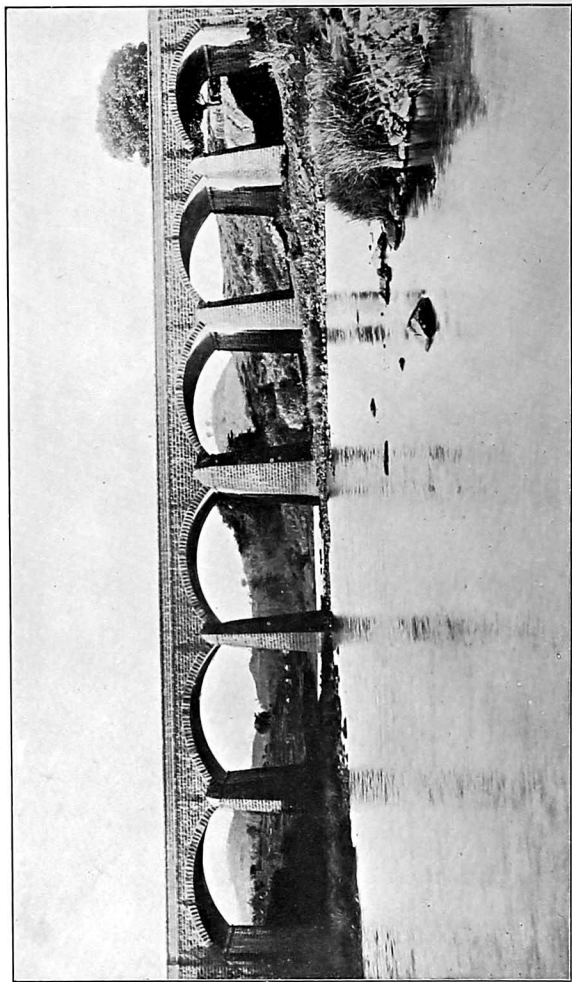
G. P. Z. P. 1931

RATNAGIRI DIVISION.

Masonry Bridge over the Saptalingi River in mile No. 10 of Hatkhamba-Poladpur Road.

Bridge of 5 spans of 30 ft. each
Up-stream view showing the protection works.
... 15th May, 1931.

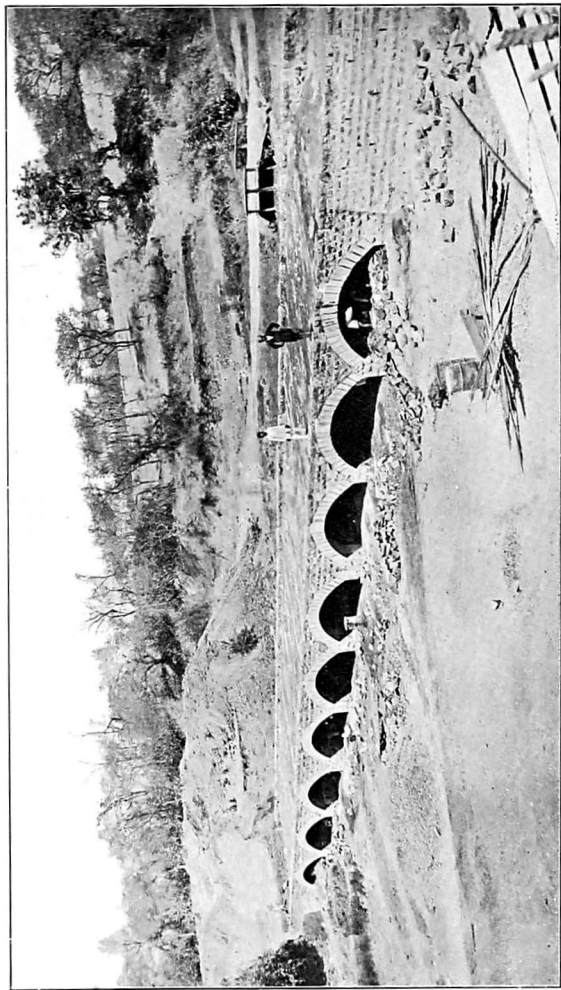
Date of photograph
Estimated cost ... Rs. 98,437.
Expenditure up to June 1931 ... Rs. 1,02,860.
Date at commencement of work ... January, 1928.
Completed May, 1931.



G. P. Z. P. 1931

RATNAGIRI DIVISION.
Masonry Bridge over the Kujvi River near Anjanari in mile No. 5 of Pali-Phonda Road.

Down-stream view.	...	May, 1931.
Date of photograph	...	October, 1928.
Date of commencement of work	...	Rs. 1,61,445.
Estimated cost	...	Rs. 1,58,337.
Expenditure to end of March, 1931	...	Work in progress.



VENTED CAUSEWAY OVER THE KHARERA RIVER IN MILE No. 11 OF BULSAR CHIKHLI ROAD.

Date of photograph ... 29th April, 1931.

Date of commencement of work ... December, 1930.

Estimated cost ... Rs. 28,633.

Expenditure during the year 1930-31. ... Rs. 14,960.

Work in progress.

Metalling the Sukkur-Shikarpur Road ... Shikarpur Canals
Division.

The following works were financed from the Petrol Tax Fund and expenditure incurred on them during the year :—

- | | | | |
|---|------------|-------------------|---------------------|
| (1) Widening the existing bridge over Dandela nalla in mile No. 21/5 of the Bhiwandi-Wada Road and converting it into a bridge of 4 spans each 15' wide | Rs. 2,376 | } Thana Division. | |
| (2) Constructing Talasari-Vapi section of through road from Bombay to Ahmedabad | Rs. 1,738 | | |
| (3) Improvements to the Manor-Varoti Road | Rs. 35,293 | | |
| (4) Improving the section of the Bombay-Agra Road between miles 28/3 to 32/5 (providing culverts in place of existing dips) | Rs. 6,244 | | |
| (5) Providing cross-drainage works and easing gradients on the Bombay-Agra Road, mile 40 to 58 | Rs. 16,352 | | |
| (6) Constructing a diversion road outside the Thana town from miles 22/2 to 23/4 of the Bombay-Agra Road | Rs. 203 | | |
| (7) Providing masonry cross-drainage works in place of existing paved and metalled dips in mile No. 39 of the Kurla-Vihigaon Road | Rs. 3,941 | | |
| (8) Improvements to the Surat-Sabargaon Road | Rs. 39,368 | | |
| (9) Drains and culverts in place of existing dips on the Surat-Sahol Road | Rs. 7,872 | | |
| (10) A vented causeway over the Kolak river in mile No. 15 of the Bulsar-Vapi Road | Rs. 14,959 | | |
| (11) A vented causeway over the Kharera river in mile No. 11 of Bulsar-Chikhli Road | Rs. 14,960 | | } Surat and Broach. |
| (12) Diverting a portion of Bulsar-Vapi Road passing through Pardi Town. Rs. 216 | | | |
| (13) Proposed road from Talasari in the Thana District to Vapi in the Surat District (portion from Damanganga river to Vapi link) | Rs. 258 | | |
| (14) Improvements to miles 4 to 9/6 of the Navsari-Matwad Road | Rs. 19,685 | | |

(15) Improving the Nadiad-Wasna Road including Matar Branch ..	Rs. 23,730	} Kaira and Panch Mahals Division.
(16) Metalling and improving the road from Virangaum to Mandal ..	Rs. 20,059	
(17) Improvements to the Karwar-Bellary Road, miles 1 to 60 ..	Rs. 6,286	} Kanara Division.
(18) Improvements to miles Nos. 61 to 75 of the Karwar-Bellary Road ..	Rs. 3,920	} Dharwar Division.
(19) Reconstructing mile No. 103 of the Karwar-Bellary Road ..	Rs. 11,558	
(20) Constructing a bridge over the Kapsi Nalla in mile No. 40 of the Hatkhamba-Poladpur Road ..	Rs. 14,567	} Ratnagiri Division.
(21) Constructing 1 culvert and 15 slab drains of the Malwan-Kolhapur Road ..	Rs. 13,389	
(22) Constructing masonry culverts in miles Nos. 35/8 and 36/2 of the Pali-Phonda Road, Section II ..	Rs. 7,888	
(23) Improvements to low-lying portion (miles 75 to 84) of the Bombay-Poona Road ..	Rs. 11,810	} Poona Division.
(24) Bridges, etc. between Bhusawal and Warangaon ..	Rs. 15,675	} Khandesh Division.
(25) Constructing link road connecting Warangaon-Edlabad and Edlabad-Chikhli Roads ..	Rs. 7,728	

Famine.

During the year under report three works, viz. (1) constructing a causeway over the Don Nalla, (2) collecting metal for Kolhar-Talikot Road and (3) improving miles 20 to 26 of the Bijapur-Shindgi Road, were started to alleviate distress in the famine stricken parts of the Bijapur District.

Arboriculture.

Nurseries were maintained at various places and planting, watering and protection of road side trees continued to receive careful attention.

About 46,758 trees were planted during the year along the Provincial and Local Fund roads in charge of this Department.

E—MISCELLANEOUS.

Under this head the expenditure incurred was as follows :—

				Rs.
On works	..	..	..	20,76,543
On repairs	..	..	..	2,99,395
			Total	23,75,938



JACOBABAD WATER WORKS.

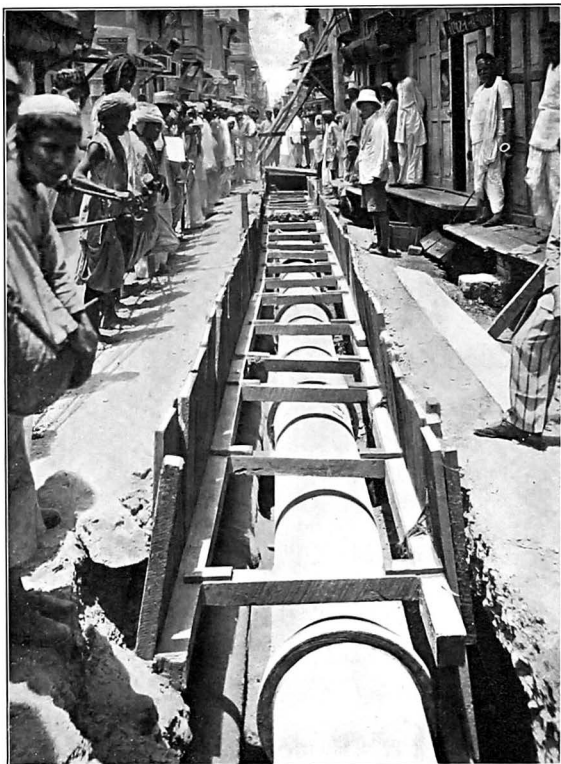
Central Pumping Station Tank, (General view).

Date of photograph ... 30th November, 1930.

Date of commencement of work ... 12th July, 1930.

Estimated cost ... Rs. 16,700.

● Work completed.

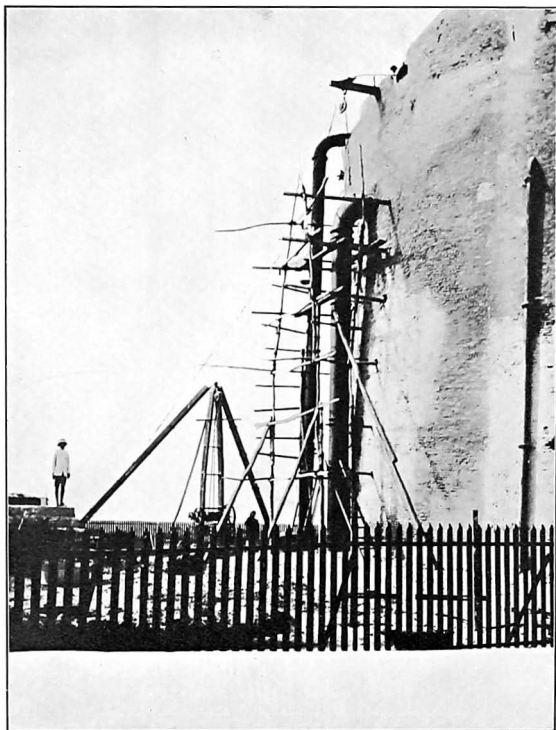


IMPROVEMENTS TO HYDERABAD WATER SUPPLY.

View of new 24" water main.

Date of photograph	... 27th July, 1930.
Date of commencement of work	... 1st January, 1930.
Estimated cost	... Rs. 1,21,000.
Expenditure to end of 1930-31	... Rs. 69,637.

Work in progress.



IMPROVEMENTS TO HYDERABAD WATER SUPPLY.

View of vertical connection to High Service Reservoir

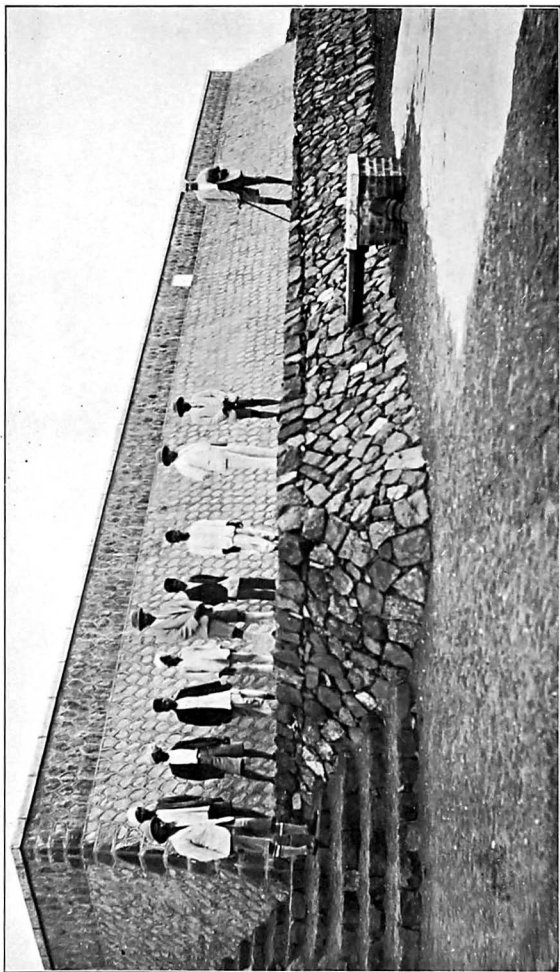
Date of photograph ... 22nd August, 1930.

Date of commencement of work ... 1st January, 1930.

Estimated cost ... Rs. 1.21,000.

Expenditure to end of 1930-31 ... Rs. 69,637.

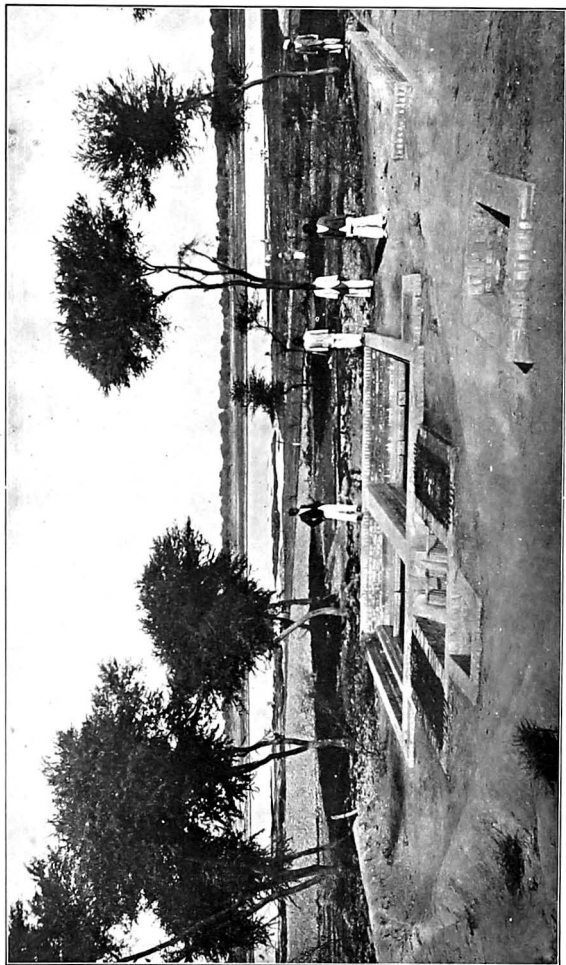
Work in progress.



G. P. Z. P. 1931

NANDURBAR WATER SUPPLY.

Service Reservoir on Mortuary Hill.
Date of photograph ... 19th February, 1931.
Date of commencement of work ... February, 1928.
Estimated cost ... Rs. 44,000.
Expenditure to end of 1930-31 ... Rs. 32,150.



G. P. Z. P. 1931.

TANDO ADAM SURFACE DRAINAGE—(Western Catchment.)

Settling Tank of 10,000 gallons capacity
Date of photograph 14th November, 1930.
Date of commencement of work ... 30th April, 1930.
Estimated cost ... Rs 3,660.
Work completed.



IMPROVEMENTS TO KIRKEE WATER SUPPLY.

15" Dia. Hume Pipe Gravitation Main.

Date of photograph ... 4th March, 1931.

Estimated cost ... Rs. 1,84,576.

Expenditure to end of March, 1931. ... Rs. 1,18,695.

Work in progress.

Public Health, Water Supply, Drainage and Boring Works.

During the year designs and specifications were prepared for pumping plants at Hyderabad, Poona and Kirkee. Detailed working drawings of the lay out of pumping machinery—including suction and delivery connection, were prepared for the pumping stations at Jacobabad, Shingnapur, Sholapur, Hyderabad, Alandi and Poona Cantonment. The erection of pumping machinery at Jacobabad, Shingnapur and Alandi was carried out departmentally. The water-works pumping machinery at Karad, Matheran, Uran, Dharwar Head Quarters Police Lines, Kapadwanj, Pandharpur, Jalgaon, Surat, Ahmedabad and Hyderabad were inspected and tests carried out in the first seven cases. Periodical records of the fuel consumption and of the work done by the Municipal pumping machinery at several towns, were called for and scrutinized with a view to economy. About 35 road rollers were inspected at various places and reports made as to the necessary repairs to them.

Improvements to water supplies at Alandi, Poona Cantonment, Kirkee, Nasik Road Central Prison, Jacobabad, Hyderabad, Ahmedabad, Surat, Nandurbar and Sholapur, were in progress and those at Gidu, Transfuleli, Kapadwanj, Jalgaon, Shingnapur and Nipani were nearly completed.

The water works at Jacobabad were opened by His Excellency the Governor of Bombay on the 21st November 1930.

Maintenance and repair works of Uran, Matheran, Jalgaon and Kapadwanj Water Works were carried out during the year.

Drainage works at Poona, Tando Adam, Shikarpur, Kapadwanj, Dhulia, Sholapur, Gadag-Bettigeri and Belgaum were in progress.

A number of shallow borings were made at several places with a view to augmenting the yield of existing wells.

F—TECHNICAL PAPERS.

The following two Public Works Department Technical Papers were issued during the year :—

No. 33.—Report on experiments carried out in the Central Designs Division, Lloyd Barrage and Canals Construction, in the Karachi Testing Station on a model of syphon proposed to be constructed on the North-Western Railway by C. G. Hawes, M.C., B.Sc. (Lon.), A.C.G.I., A.M.Inst.C.E., Executive Engineer, Central Designs Division, and H. S. Kahai, Assistant Engineer.

No. 34.—Report on experiments carried out on a model of the Makhi Right Distributary ex-Mithrao Canal, Eastern Nara Division (Sind), by C. G. Hawes, M.C., B.Sc. (Lon.), A.C.G.I., M.Inst.C.E., Executive Engineer, Central Designs Division, and H. S. Kahai, Assistant Engineer.

G—RAILWAYS.

The Railway lines in the Bombay Presidency are not administered by the Bombay Government but are under the direct control of the Railway Board. The Railway Board has also control of the Railway lines in the Indian States within the Presidency.

2. Owing to general trade depression and financial stringency the expenditure on new railway lines has been reduced and the activities of the several Administrations have been greatly curtailed. The policy adopted by the Railway Board this year, is the continuation of that adopted during the previous year, viz. of concentrating entirely on pushing schemes already in hand to completion.

3. The total length of the Railways open for traffic during the year under report in the Bombay Presidency including Sind was 5,807·142 miles, including the length of 71·25 miles newly opened for traffic, viz.—

the Vasad-Kathana Railway, broad gauge, 26·62 miles in length, and

the Pad Idan-Mehrabpur section of the Sind Left Bank Feeder Railways, broad gauge, 44·63 miles in length.

4. The Vasad-Kathana Railway was under construction during the year and it was opened for traffic on the 1st September 1930.

Work on the Tando-Adam-Nawabshah Section (south loop) 54·31 miles in length, of the Sind Left Bank Feeder Railways was started in March 1930 and it is expected to be completed and opened for traffic in December 1931.

Work on the Tharushah-Sakrand (chord line) section, 65·73 miles in length, is in progress and the section is expected to be ready for opening in December 1931.

5. Surveys on the following lines were completed or in progress :—

(i) Engineering survey of the Bulsar-Dharampur Railway.

(ii) Pandharpur-Lonand Extension.

H—DEVELOPMENT SCHEMES.

Back Bay Reclamation Scheme.

1. The Back Bay Reclamation Division was abolished with effect from the 1st October 1930 and a new Sub-Division called the Back Bay Reclamation Sub-Division was formed under the Presidency Division, with effect from that date.

The total expenditure incurred during the year was Rs. 9,35,845 and the following works were carried out.

(1) *Dry Filling.*—During the year 468,874 tons of dry filling materials were brought in by train at a cost of Rs. 5,50,977, or at an average rate of Rs. 1-2-9 per ton. In addition a quantity of about 2,000 tons of building debris was brought by motor lorries free of cost and deposited in block 2.

The quantities of dry filling and the cost per ton in previous years were :—

Year.	Quantity. Tons.	Cost per ton. Rs. a. p.
1924-25	1,39,000	1 4 9
1925-26	4,24,000	1 3 7
1926-27	8,71,000	1 8 1
1927-28	10,42,000	1 3 1
1928-29	12,28,000	1 2 2
1929-30	11,37,000	1 1 7
1930-31	4,68,874	1 2 9

The rate in 1930-31 is somewhat higher than that in 1929-30. This is accounted for by (1) 22,705 tons of selected black soil having been obtained for the recreation ground in block No. 1 for Rs. 46,703 and (2) the total quantity required for completion being less than half of that supplied in the previous year. Excluding the selected black soil the rate works out at Re. 1-2-0 only which is satisfactory in view of the limited quantity supplied.

The total quantity of dry filling material brought by train, viz. 4,68,874 tons, was deposited as under :—

	Tons.
Block No. 1	26,860
Block No. 2	1,87,639
Block No. 6	9,518
Block No. 7	2,44,003
Block No. 8	854
Total	4,68,874

(2) *Block No. 1.*—The reclamation of this block was completed last year. During the year under report 26,860 tons of dry filling material were deposited. Of this, 22,705 tons consisted of selected black soil required for the recreation ground, and the balance of 4,155 tons was used for filling hollows formed during the monsoon of 1930, due to unequal settlement.

(3) *Block No. 2.*—The total quantity of dry filling material supplied during the year, was 1,87,639 tons. Of this, 89,511 tons were deposited and spread during April, May and June 1930. A large portion of the area was not ready to receive dry filling as the dredged material had not dried sufficiently. It was therefore decided to stack the dry filling material along the edges of this wet area, so that it would be conveniently available for spreading later. 98,128 tons were stacked during October 1930 to January 1931. The spreading of this stacked material was commenced in January 1931.

(4) *Block No. 6.*—During the year 9,518 tons of dry filling material were deposited over the triangular portion of the South-east corner of block No. 6. This was done to facilitate access to block No. 7.

(5) *Block No. 7.*—The area to be covered in this block with dry filling material as sanctioned was about 28 acres out of the total area of 135 acres. A quantity of 2,44,003 tons of dry filling material was deposited and the actual area covered was 31·2 acres.

(6) *Block No. 8.*—This block was completed in May 1929. The small quantity of dry filling, viz. 854 tons, brought in by train was used for making a temporary railway siding. The whole of this block, excepting a 100 feet strip along the sea wall reserved for the Marina, was handed over to the Military authorities during November 1930.

(7) *R. C. C. Parapet wall along the Sea Wall.*—The construction of this parapet wall as per revised design was continued in blocks Nos. 1 and 2. During the year the length of the parapet wall constructed was 4,644 R.ft. The balance to be carried out next year is 1,164 R.ft.

(8) *Sub-Marine Cables.*—The work of constructing a new cable house and the laying of new cables across the reclamation area was completed during the year.

(9) *Grassing the Recreation Ground in Block No. 1.*—An area of about 30 acres has been reserved in block 1 for recreation purposes. Work was commenced during October 1930 and 18·48 acres were ploughed, harrowed and partly grassed. Pipe lines with hydrants were laid in the area for watering the grass. The work is in progress.

(10) *Sanitation and Anti-Malarial Measures.*—These were carried out during the year at a total cost of Rs. 6,907 as against Rs. 10,000 last year. The reduction is due to large areas in blocks Nos. 1, 2 and 7 having been completed, thereby reducing the area of exposed dredged filling over which anti-malarial operations were necessary.

(11) *Kandivli Quarries.*—The buildings, machinery and plant, were maintained at a cost of Rs. 7,993 only as against Rs. 11,000 in the previous year.

(12) *Repairs and Maintenance to Buildings at Marine Lines and Colaba.*—The expenditure incurred on the above was Rs. 4,806 as against the estimated figure of Rs. 7,000.

(13) *Repairs and Maintenance to the New Sea Wall and Rubble Mound.*—A sum of Rs. 17,672 was expended in the year on maintenance of the new Sea Wall and Rubble Mound. With the exception of the displacement of a portion 100' \times 5' \times 2½' between chainages 1,800 and 1,900 of the rubble mound, in June 1930, no material damage was caused. The damaged portion was immediately renewed.

In January 1931, 52 damaged concrete blocks originally cast for storm water drains were conveyed to Marine Lines from Kandivli and were deposited on the rubble mound between chainages 600 and 2,075.

(14) *Maintenance of Surplus Plant.*—An expenditure of Rs. 5,935 was incurred on the maintenance of surplus plant and machinery, against the estimated amount of Rs. 8,000 during the year under report.

(15) *Dredgers and Dredging Craft.*—All the dredgers and most of the dredging craft were sold during the last quarter of the year. The cost

of maintenance was therefore reduced to Rs. 45,228 as against the estimated amount of Rs. 65,000.

(16) *Sale of surplus stores and plant.*—The realisations of the year amounted to Rs. 2,25,493, the previous total being Rs. 4,57,730.

(17) *Lascar Lines Cooly Camp, Colaba.*—Seven cooly sheds were sold and demolished and the site together with the remaining two sheds was handed over to the Military authorities on the 2nd January 1931.

Suburban Development Schemes.

The Housing and Suburban Division was abolished with effect from 1st October 1930 and a new Sub-Division called the "Salsette Water Supply Sub-Division" was created in the Thana Division.

Railway Schemes.

2. *Suburban Scheme No. 17 (Central Salsette Tramway).*—The Central Salsette Tramway line taken over from the G. I. P. Railway in April 1930 was not worked during the year.

The portion of the Tramway beyond Wadauli was released and the materials obtained therefrom were sold.

3. *Suburban Scheme No. 22 (Kurla-Trombay Railway).*—This is in charge of the G. I. P. Railway.

Water Supply Schemes.

4. *Suburban Scheme No. 19 (Salsette Water Supply).*—The following extensions for water supply were completed during the year :—

(1) <i>Water Supply to Andheri—</i>	Cost.
	Rs.
Laying 2" G. I. Pipe line for water supply to Ram Baug area at Andheri	860
(2) <i>Water Supply to Vile Parle—</i>	
Laying 2" G. I. Pipe line along the 5th road in Town Planning Scheme No. I and Roads R/3 and R/4 in Town Planning Scheme No. II, Vile Parle ..	700
(3) <i>Water Supply to Suburban Scheme No. 7, Khar—</i>	
Laying 3" pipe line along the 30 feet road between the 14th and 15th Roads in Sector C (This work was completed during 1929-30, but the cost of pipes only was paid during this year)	280
5. <i>Suburban Scheme No. 21 (Ambernath Water Supply).</i> —The work put in hand and completed during the year was :—	
	Cost.
	Rs.
Laying 1½" and 1" mains for water supply to Kulgaon Village near Badlapur	1,500

The water pressure in the above schemes was satisfactory during the year:-

A statement showing the figures of consumption of water, number of connections etc. in each sub-scheme is appended to this report.

All the water supply schemes were maintained in proper order throughout the year.

Electric Supply Scheme.

7. *Suburban Scheme No. 23 (Ambernath Electric Supply).*—The electric plant in this scheme and electric motor, pump, etc. at Badlapur under Suburban Scheme No. 21, Ambernath Water Supply, were maintained in good order and the supply of electricity was managed as usual till the end of September 1930, after which they were transferred to the Electrical Engineer to Government, Public Works Department, for maintenance etc. as per orders contained in Government Resolution (Public Works Department) No. 4450/27, dated the 25th August 1930.

36—Civil Aviation.

8. *Civil aviation.*—The work of preparing a landing ground at Juhu was commenced during the year on behalf of the Government of India at an estimated cost of Rs. 8,57,446. The work is in progress. The total expenditure to the end of March 1931 was about Rs. 2,04,226, including percentage charges.

APPENDIX I.

Statement showing the expenditure on Civil and Military Works during the year 1930-31.

Service Head. 1	Original Works.		Repairs.		Total.	
	Grant. 2	Outlay. 3	Grant. 4	Outlay. 5	Grant. 6	Outlay. 7
<i>50—Military Works.</i>	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Works .. ..	..	..	7,280	6,773	7,280	6,773
Establishment—Non-voted.	..	..	..	..	..	502
Do. Voted .. ..	..	..	..	..	1,816	1,913
Tools and Plant .. ..	..	..	..	..	109	274
Suspense .. ..	..	..	..	..	..	..
Total, Military Works .. ..	..	..	7,280	6,773	9,205	9,462
<i>41—Civil Works—Central.</i>						
Buildings { Non-voted ..	73,060	52,523	45,839	45,762	1,18,899	98,280
{ Voted ..	1,13,645	95,183	2,27,877	2,22,892	3,41,522	3,18,080
Miscellaneous—Voted .. ..	..	..	10,890	10,783	10,890	10,783
Establishment Do. .. ..	..	..	..	..	85,469	95,043
Do. Non-voted .. ..	..	..	..	..	26,000	33,495
Tools and Plant—Voted .. ..	..	..	..	..	10,648	5,280
Do. Non-voted .. ..	..	..	..	..	3,207	718
Grant-in-aid—Non-voted .. ..	..	..	..	..	3,458	3,416
Total, 41—Civil Works—Central.	..	1,47,716	..	2,79,427	6,00,163	5,65,095
<i>41—Civil Works—Provincial.</i>						
Buildings—Reserved	48,585	46,869	2,43,522	2,42,859	2,92,107	2,89,728
Do. Transferred	10,41,025	9,40,474		15,79,015		25,19,489
Communications	14,35,896	6,98,279	51,04,187	34,73,293	75,81,599	41,71,572
Miscellaneous	491	650		23,484		24,134
Establishment—Reserved						
Non-voted .. ..	..	..	..	..	..	24,309
Voted .. ..	..	..	..	..	..	80,064
Do. Transferred—Non-voted.	..	..	..	..	13,39,336	5,12,683
Voted .. ..	..	..	..	..	42,65,607	19,34,365
Tools and Plant—Reserved.	..	..	..	..	..	12,734
Do. Transferred.	..	..	..	..	3,13,258	2,12,170
Grant-in-aid .. ..	..	..	..	..	16,54,728	16,53,417
Suspense .. ..	..	..	..	..	66,144	55,781
Carried over						

Service Head. 1	Original Works.		Repairs.		Total.	
	Grant. 2	Outlay. 3	Grant. 4	Outlay. 5	Grant. 6	Outlay. 7
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Brought forward ..						
41—Civil Works—Provincial—contd.						
Deduct—English cost of stores and Establishment.						
Stores—Transferred—Voted	..	..	..	..	— 45,000	— 16,883
Establishment—Non-voted.	..	..	..	..	— 2,37,000	— 2,76,866
Do. Voted ..	..	..	..	..	— 33,000	— 43,808
Loss or gain by Exchange—Stores—Voted ..	..	..	..	..	..	200
Do. Establishment—Non-voted ..	..	..	..	..	..	3,499
Do. do. Voted ..	..	..	..	..	..	547
Expenditure in England—Stores ..	..	..	..	..	45,000	16,680
Do. Establishment—Non-voted ..	..	..	..	..	..	2,73,367
Do. do. Voted ..	..	..	..	..	..	43,351
Total, 41—Civil Works—Provincial ..	..	16,86,272	..	63,18,651	1,52,42,779	1,14,90,739
60—Civil Works.						
Buildings	5,65,980	5,54,250	..	..	5,65,980	5,54,250
Communications ..	5,12,510	5,08,700	..	..	5,12,510	5,08,700
Miscellaneous ..	..	..	..	..	..	..
Establishment—Non-voted.	..	..	..	..	..	37,748
Do. Voted ..	..	..	..	..	80	1,42,391
Tools and Plant ..	..	..	..	..	..	15,024
Total, 60—Civil Works ..	..	10,60,950	..	..	10,78,570	12,57,013
District Local Fund ..	..	..	..	..	..	10,387
Deposit Contribution ..	..	..	..	..	..	6,16,303
Total ..	..	28,94,938	..	56,04,851	1,69,80,713	1,39,40,059

R. V. TRIVEDI,
Deputy Accountant General.

APPENDIX II

*Statement of Roads not within Municipal boundaries, giving lengths of
the Public Works and Local Authorities,*

Name of Circle.	Name of Division.	Length of metalled roads maintained by the Public Works Department.	Length of unmetalled roads maintained by the Public Works Department.
1	2	3	4
<i>Presidency Proper.</i>		Miles.	Miles.
Northern Circle	Thana	(a) 445·96	8·12
	Surat	(c) 170·11	(c) 21·14
	Broach	53·98	...
	Kaira	180·70	9·13
	Panch Mahals	156·29	17·50
	Ahmedabad	(f) 142·88	(f) 60·31
Total, Northern Circle ..		1,149·92	110·20
Central Circle	Poona	(j) 163·31	(k) 1·37
	Satara	(m) 434·71	53·81
	Sholapur	(g) 397·01	(g) 68·74
	Nasik	(e) 474·14	9·20
	Khandesh	(e) 604·83	13·75
Total, Central Circle ..		2,184·00	131·87

NOTE.—The lengths of Provincial roads included in columns 3 and 4 of the above statement are Presidency are not now required to contribute towards the maintenance of Provincial

- (a) The increases in columns 3 and 9 are due to the addition of certain lengths of roads taken over the Thana Division.
- (b) The increase in column 3 and the decrease in column 4 is due to certain unmetalled lengths of
- (c) The decrease in column 3 and the increase in column 4 is due to certain length of Surat-Sabangon
- (d) The increase in column 3 is due partly to the conversion of certain unmetalled lengths into
- (e) The increase in column 3 is due to the construction of certain new unmetalled roads and addition
- (f) The increase in column 3 and the decrease in column 4 is due to certain unmetalled lengths of roads metalled.
- (g) The increase in column 3 is due to certain unmetalled roads having been metalled during the year.
- (h) The increase in column 3 is due to the addition of certain unmetalled lengths by the Board.
- (i) The increase in column 3 and the decrease in column 4 is due to certain unmetalled lengths of roads
- (j) The decrease in column 3 is due to the transfer of certain roads to the Satara, Sholapur and Mutha
- (k) The increase in column 4 is due to the "Shindola Ride (mile 1 and feet 1,980)" transferred from
- (l) The increases in columns 3 and 4 are due to the road from Narayanpur to Kapurval having been (Provincial) which was hitherto omitted. The increase in column 3 is due to the transfer of certain
- (m) The increase in column 3 is due to the transfer of certain roads from the Poona Division and also
- (n) The decrease in column 3 is due to the Provincialization of a portion of the Miraj-Pandharpur
- (o) The increase is due to the extension of the Board's limit, etc.
- (p) The net decrease in column 3 is due to certain roads having been transferred to the Poona Division
- (q) The increases in columns 3, 4 and 9 are due to the transfer of certain works from Poona and
- (r) The increases in columns 3 and 4 are due to certain lengths of roads having been metalled and also
- (s) The decrease in column 3 is due to certain roads having been transferred to Nasik Irrigation
- (t) The increase in column 3 is due to the transfer of certain Provincial roads to the District Local
- (u) The increase in column 3 is due to the adoption of correct lengths.
- (v) The increase in column 3 is due to the addition of a portion of Taloda-Shahada road completed
- (w) The increase in column 3 and the decrease in column 4 is due to the lengths of unmetalled roads

II.

metalled and unmetalled roads maintained by respectively, during the year 1930-31.

Length of metalled roads maintained by the local authorities.	Length of unmetalled roads maintained by the local authorities.	Total length of metalled roads.	Total length of unmetalled roads.	Remarks:	
				Metalled roads maintained by the Public Works Department in Municipal limits.	Unmetalled roads maintained by the Public Works Department in Municipal limits.
5	6	7	8	9	10
Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
(b) 360.33	(b) 87.76	806.28	95.88	(a) 24.76	....
(d) 132.46	(e) 287.50	302.58	308.64	....	....
34.34	165.06	88.32	165.06	1.38	....
(f) 53.51	(f) 13.72	234.21	22.85	10.61	....
(p) 21.02	(h) 23.87	177.31	41.37	1.37	....
50.14	268.06	202.02	328.37	....	....
690.80	845.97	1,810.72	962.17	38.10	....
(i) 222.86	(i) 1,400.14	386.17	1,401.61	(i) 47.82	....
(n) 326.81	(o) 1,196.31	811.52	1,235.11	(p) 5.50	....
(r) 154.80	(r) 482.84	561.81	551.50	(q) 23.63	....
(t) 150.57	842.40	633.71	851.60	(u) 14.24	.30
(w) 282.19	(w) 299.70	947.02	313.45	27.04	.75
1,146.23	4,221.39	3,330.23	4,353.26	118.23	1.05

exclusive of portions passing through Municipal limits. The Municipalities in the Bombay roads passing through their limits and the lengths of these are shown in the "remarks" column.

from the Development Department on amalgamation of the late Housing and Suburban Division with roads having been metalled during the year.

road having been converted into gravelled length during the year.

metalled ones and partly to the addition of certain lengths by the Board on fresh survey during the year.

of certain unmetalled lengths newly maintained by the Board during the year.

having been metalled and partly to the addition of certain lengths by the Board on actual measure-

having been metalled during the year.

Canals Divisions on account of amalgamation of the Poona with the Head-Quarters Works Division.

the Head-Quarters Works Division now amalgamated with the Poona Division.

retransferred to the District Local Board and to the inclusion of Otur-Brahmanwada road;

roads from the Head-Quarters Works and Satara Divisions to Poona Division.

to the Provincialization of a portion of the Miraj-Pandharpur road.

road in the Satara Collectorate.

and vice versa.

Malisra Divisions.

to the adoption of correct lengths.

Division and also to the adoption of correct lengths.

Board for maintenance.

during the year.

having been metalled during the year.

Name of Circle:	Name of Division.	Length of metalled roads maintained by the Public Works Department.	Length of unmetalled roads maintained by the Public Works Department.
1	2	3	4
<i>Presidency Proper—contd.</i>			
		Miles.	Mfcs.
Southern Circle	Belgaum	(x) 620·03	(y) 87·15
	Dharwar	(a1) 594·76	(a2) 90·06
	Ratnagiri	(b2) 467·76	....
	Kanara	(c3) 341·13	194·08
	Total, Southern Circle ..	2,032·73	380·29
Deccan Irrigation Circle ..	Mutha Canals	104·59	....
	Ahmednagar	298·77	57·57
	Nasik Irrigation	47·00	....
	Total, Deccan Irrigation Circle ..	450·36	57·57
Irrigation Development and Research Circle.	Nira Left Bank Canal	65·96	....
	Total, Irrigation Development and Research Circle	65·96	....
	Total for Presidency Proper ..	5,882·97	686·93
<i>Sind.</i>			
Indus Left Bank Circle ..	Nasrat Canal	4·60	97·00
	Hyderabad Canal	8·00	119·00
	Fulcni Canals	4·00	56·00
	Northern Jamrao Canal .. ..	....	(i2)....
	Southern Jamrao Canal .. ..	....	....
	Total, Indus Left Bank Circle ..	16·00	272·00

- (x) The net decrease in column 3 is due to certain lengths of roads having been transferred to and
(y) The decrease in column 4 is due to certain lengths of roads having been transferred to other
(z) The difference in column 9 is due to the incorrect figures shown in the previous year's statement.
(a1) The net increase is due to certain lengths of roads having been transferred to and from this
(a2) The increase in column 4 is due to certain length of road transferred to this Division consequent
(a3) The net decrease in column 5 is partly due to certain unmetalled lengths having been metalled
Dharwar Irrigation Division.
(a4) The net decrease in column 6 is partly due to a certain length of newly constructed road as also
(b1) The increases in columns 3 and 6 are partly due to certain lengths of roads having been trans-
ferred because of certain adjustments having been made which were found necessary after actual measurements.
(b2) The increase in column 3 is due to the length of Malwan-Phonda road transferred from the
(b3) The increase in column 5 is due to certain length of road transferred to this Division consequent
(c1) The increase in column 6 is due to certain length of road transferred to this Division consequent
(c2) The increase in column 9 is due to certain length of road transferred to this Division consequent
(c3) The decrease in column 3 is due to certain lengths of roads having been transferred from this
(d1) The increase in column 5 is due to certain additional lengths having been metalled during the
on the abolition of the Dharwar Irrigation Division.
(d2) The decrease in column 6 is due to certain unmetalled lengths having been metalled during the
on the abolition of the Dharwar Irrigation Division.
(i1) The increase in column 5 and decrease in column 6 is due to certain lengths of unmetalled roads
(i2) The service roads shown in column 4 of the last year's statement have been omitted this year as

II—contd.

Length of metalled roads maintained by the local authorities.	Length of unmetalled roads maintained by the local authorities.	Total length of metalled roads.	Total length of unmetalled roads.	Remarks.	
				Metalled roads maintained by the Public Works Department in Municipal limits.	Unmetalled roads maintained by the Public Works Department in Municipal limits.
5	6	7	8	9	10
Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
(a3) 280·86	(a4) 428·47	918·89	515·02	(z) 19·06	....
(b1) 602·44	(b1) 340·95	1,197·10	440·01	10·95	4·49
(b3) 337·13	(c1) 807·52	804·80	897·52	(c2) 14·01	....
(d1) 81·50	(d2) 447·77	422·68	641·85	10·76	3·83
1,310·93	2,114·71	3,343·65	2,495·00	72·78	8·32
....	....	104·59	....	....	....
405·09	335·75	703·86	393·32	6·32	....
....	....	47·00	....	....	....
405·09	335·75	855·45	393·32	6·32	....
·78	....	66·74	....	....	....
·78	....	66·74	....	....	....
3,523·83	7,517·82	9,406·79	8,203·75	235·43	9·37
1·00	910·00	5·00	1,007·00	....	....
11·00	608·00	19·00	727·00	....	....
5·00	760·00	9·00	816·00	....	....
(i1) 9·00	(i1) 218·00	9·00	218·00	....	....
....	235·00	....	235·00	....	....
26·00	2,731·00	42·00	3,003·00	....	....

from this Division consequent on the abolition of the Dharwar Irrigation Division.

Divisions consequent on the abolition of the Dharwar Irrigation Division.

The correct figures are now shown in the statement.

Division consequent on the abolition of the Dharwar Irrigation Division.

on the abolition of the Dharwar Irrigation Division.

during the year and partly on account of certain territorial changes consequent on the abolition of the

on account of certain unmetalled lengths having been metalled during the year.

ferred to this Division consequent on the abolition of the Dharwar Irrigation Division and partly

Belgaum Division consequent on the abolition of the Dharwar Irrigation Division.

on the abolition of the Dharwar Irrigation Division.

on the abolition of the Dharwar Irrigation Division.

on the abolition of the Dharwar Irrigation Division.

Division to the Dharwar Division consequent on the abolition of the Dharwar Irrigation Division.

year as also because of certain lengths having been transferred to the Dharwar Division consequent

year as also because of certain lengths having been transferred to the Dharwar Division consequent

metalled during the year.

they are not ordinary roads but are meant purely for canal purposes.

APPENDIX

Name of Circle.	Name of Division.	Length of metalled roads maintained by the Public Works Department.	Length of unmetalled roads maintained by the Public Works Department.
1	2	3	4
<i>Sind—contd.</i>			
Indus Right Bank Circle	Karschi Buildings	Miles. 29·50	Miles. 88·50
	Karschi Canals	18·50	4·87
	Western Nara	12·81	16·62
	Shikarpur Canals	(g1) 21·10	(g4) 2·51
	Begari Canals .. ..	....	30·50
	Ghar Canals .. ..	....	....
	Total, Indus Right Bank Circle ..		82·00	143·00
Total for Sind ..		98·00	415·00
Grand Total ..		5,980·97	1,100·93

(g1) The decreases in lengths in columns 5 and 6 are due to remeasuring the lengths of roads.

(g2) The increase in column 5 is due to portion of Gharo-Dabeji road metalled this year.

(g3) The increase in column 6 is due to new unmetalled roads constructed during the year by Local

(g4) The increase in column 3 and decrease in column 4 is due to certain lengths of unmetalled roads

II--concl'd.

Length of metalled roads maintained by the local authorities.	Length of unmetalled roads main- tained by the local authorities.	Total length of metalled roads.	* Total length of unmetalled roads.	Remarks.	
				Metalled roads maintained by the Public Works Department in Municipal limits.	Unmetalled roads maintained by the Public Works Department in Municipal limits.
5	6	7	8	9	10
Miles.	Miles.	Miles.	Miles.	Miles.	Miles.
(p1) 9-37	(p1) 176-50	38-87	265-00	....	....
(p2) 6-50	(p2) 984-62	25-00	989-50	....	....
2-75	1,515-89	15-66	1,532-52	....	....
10-54	1,027-20	31-73	1,029-71	....	....
....	1,118-75	....	1,149-25	....	....
68	759-55	68	759-55	....	....
29-84	5,582-51	111-84	5,725-53	....	....
65-84	8,313-51	153-84	8,728-53	....	....
3,579-67	15,331-33	9,560-63	16,932-28	235-43	9-37

Boards.
metalled during the year.

APPENDIX

Statement showing the expenditure on Provincial Buildings and

1	1921-22		1922-
	41-C. W. Provincial 2	60-C. W. 3	41-C. W. Provincial 4
	Rs.	Rs.	Rs.
(f) Expenditure on buildings for original works in the Presidency proper	70,17,408	....	18,40,250
(ii) Do. do. Sind ..	12,90,750	....	2,77,527
	88,08,218		21,17,777
(iii) Expenditure on buildings for maintenance in the Presidency proper	11,03,937	....	13,79,087
(iv) Do. do. Sind ..	1,64,210	....	1,51,421
	12,68,147		15,30,508
(e) Expenditure on metalled Provincial roads for original works in the Presidency proper	10,39,046	....	15,22,468
(vi) Do. do. Sind ..	42,695	....	93,468
	10,81,741		16,20,954
(vii) Expenditure on unmetalled Provincial roads for original works in the Presidency proper	5,00,155	....	97,110
(viii) Do. do. Sind ..	....	....	....
	5,00,155		97,110
(ix) Expenditure on metalled Provincial roads for maintenance in the Presidency proper	19,85,510	....	24,27,684
(x) Do. do. Sind ..	32,825	....	17,889
	20,18,335		24,46,573
(xi) Expenditure on unmetalled Provincial roads for maintenance in the Presidency proper	2,53,711	....	2,36,632
(xii) Do. do. Sind ..	95,939	....	1,27,690
	3,49,650		3,63,322

III.

Roads in the Presidency Proper and in Sind from 1921-22 to 1930-31.

23	1923-24		1924-25		1925-26		
	60-C. W. 6	41-C. W. Provincial 6	60-C. W. 7	41-C. W. Provincial 8	60-C. W. 9	41-C. W. Provincial 10	60-C. W. 11
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
	21,30,237	12,74,148	46,74,102	11,72,871	30,00,799	12,24,807	39,38,192
	7,11,895	1,70,426	5,52,140	3,18,186	8,82,055	4,53,035	13,10,549
	28,48,132	14,44,574	52,26,242	14,91,057	44,91,854	16,77,842	52,48,741
....	15,99,041	14,60,217	15,22,903
....	1,78,426	1,91,990	1,74,310
	17,77,467		16,61,207		16,97,213		
6,94,035	10,92,068	4,54,014	5,36,719	24,18,810	8,30,136	11,41,309	
....	73,471	....	26,685	1,89,015	—102	30,035
6,94,035	11,65,539	4,54,014	5,63,404	25,57,825	8,30,034	11,71,344	
20,903	72,046	20,943	63,591	1,14,266	1,36,210	33,048	
....	170	....	....	....	13,043	20,788
20,903	72,216	20,943	63,591	1,14,266	1,49,253	53,836	
....	26,69,367	....	27,73,938	....	28,80,514	....
....	16,291	....	19,990	....	24,444	....
	26,85,678		27,87,934		29,04,958		
....	2,83,378	....	2,81,022	....	2,53,438	....
....	1,36,482	....	1,30,644	....	1,31,892	....
	4,19,860		4,11,666		3,85,330		

APPENDIX

1	1926-27		1927-28	
	41-C. W. Provincial	60-C. W	41-C. W. Provincial	60-C. W.
	12	13	14	16
	Rs.	Rs.	Rs.	Rs.
(d) Expenditure on buildings for original works in the Presidency proper	22,22,421	17,71,845	9,72,027	13,90,972
(if) Do. do. Sind ..	7,27,916	7,15,071	3,47,891	3,70,005
	29,50,337	24,86,716	13,19,918	17,60,977
(iii) Expenditure on buildings for maintenance in the Presidency proper	16,95,217	....	17,04,033	....
Do. do. Sind ..	2,06,962	....	2,46,822	....
	18,02,179		19,50,855	
(v) Expenditure on metalled Provincial roads for original works in the Presidency proper ..	11,19,552	4,09,201	7,95,102	5,26,052
(et) Do. do. Sind ..	11,759	99,541	81,725	1,74,905
	11,31,311	5,08,742	8,76,827	7,01,047
(vii) Expenditure on unmetalled Provincial roads for original works in the Presidency proper ..	2,50,893	....	1,65,007	....
(vii) Do. do. Sind ..	661	....	12,313	....
	2,51,554		1,77,320	
(ix) Expenditure on metalled Provincial roads for maintenance in the Presidency proper ..	30,98,562	....	32,12,327	....
(z) Do. do. Sind ..	78,629	....	57,076	....
	31,77,181		32,69,403	
(xi) Expenditure on unmetalled Provincial roads for maintenance in the Presidency proper ..	2,55,920	....	2,82,958	....
(xi) Do. do. Sind ..	89,724	....	1,52,444	....
	3,45,644		4,35,402	
(xiii) Expenditure from Road Development Fund in connection with Provincial roads for original works in the Presidency proper ..	....	....	....	....
(xiii) Do. do. Sind ..	....	....	....	....

III—contd.

1928-29		1929-30		1930-31	
41-C. W. Provincial 16	60-C. W. 17	41-C.W. Provincial 18	60-C. W. 19	41-C. W. Provincial 20	60-C. W. 21
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
9,61,174	19,07,442	8,88,023	28,48,681	7,15,423	4,32,192
2,44,881	3,69,562	3,44,517	1,40,968	2,16,733	1,22,058
12,06,055	22,77,004	12,33,440	29,89,644	9,32,156	5,54,250
16,43,248	....	15,91,742	....	15,54,193	....
2,07,847	....	2,88,022	....	2,47,047	....
18,51,095		18,79,764		18,01,240	
7,40,088	5,52,195	5,81,922	5,41,636	3,07,467	4,85,007
98,454	1,75,326	7,919	94,001	-2	21,693
8,38,522	7,17,521	5,89,841	6,35,636	3,07,465	5,06,700
1,05,960	....	1,11,174	....	81,815	....
9,172	....	1,400	....	8,023	....
1,15,132		1,12,574		90,738	
30,09,797	....	30,95,981	....	29,37,136	....
65,883	....	90,560	....	55,688	....
31,65,680		31,92,541		29,92,824	
2,07,776	....	2,54,990	....	2,68,630	....
1,26,654	..	1,67,022	....	1,42,386	....
3,94,430		4,12,012		4,41,216	
....	....	....	....	3,00,076	....
....

APPENDIX

Statement showing the expenditure on District Local Board Roads in the year 1921-22

— 1	1921-22.* 2	1922-23. 3	1923-24. 4	1924-25. 5
	Rs.	Rs.	Rs.	Rs.
(1) Expenditure on metalled District Local Board roads for original works in the Presidency proper ..	1,80,641	2,11,788	2,45,635	1,85,618
(2) Expenditure on metalled District Local Board roads for original works in Sind	16,103	5,039	14,611	10,279
	1,96,744	2,16,827	2,60,246	1,95,897
(3) Expenditure on unmetalled District Local Board roads for original works in the Presidency proper ..	1,60,724†	94,250	1,28,734	1,17,701
(4) Expenditure on unmetalled District Local Board roads for original works in Sind	98,877	42,321	49,660	40,897
	2,59,601	1,36,571	1,78,394	1,58,688
(5) Expenditure on metalled District Local Board roads for maintenance in the Presidency proper ..	4,51,946	5,08,794	5,44,584	5,08,349
(6) Expenditure on metalled District Local Board roads for maintenance in Sind	7,455	4,924	2,901	8,951
	4,59,401	5,73,718	5,47,485	5,77,300
(7) Expenditure on unmetalled District Local Board roads for maintenance in the Presidency proper ..	5,18,795	4,55,687	5,30,217	4,92,900
(8) Expenditure on unmetalled District Local Board roads for maintenance in Sind	2,85,820	2,41,091	2,89,435	2,64,811
	8,04,615	6,96,778	8,19,652	7,57,711
(9) Expenditure on metalled and unmetalled District Local Board roads (original works and repairs) in the Ratnagiri District not included above	37,924	22,043	30,365	30,598
(10) Expenditure on metalled and unmetalled District Local Board roads (original works and repairs) in the Bijapur District not included above .. ..	..	..	..	..

*The figures in column 2 against items (1), (3), (6) and (7) do not include those

†This figure does not include the expenditure in the West Khandesh District as

IV.

Presidency proper and Sind (original works and repairs) from the to 1930-31.

1925-26. 6	1926-27. 7	1927-28. 8	1928-29. 9	1929-30. 10	1930-31. 11
Rs. 2,22,685	Rs. 2,14,017	Rs. 2,08,423	Rs. 3,29,532	Rs. 4,11,234	Rs. 3,07,573
78,201	1,33,542	77,301	1,54,304	76,837	40,194
2,05,880	3,47,550	3,75,814	4,83,886	4,68,071	3,56,707
1,78,703	2,07,054	3,18,374	2,72,401	2,62,250	2,28,050
78,637	92,034	85,337	40,052	21,352	30,817
2,57,340	3,89,686	4,03,711	3,13,443	2,83,612	2,08,773
6,21,726	7,46,300	7,50,703	8,51,468	8,73,140	9,31,651
3,295	2,073	5,405	12,652	36,856	50,441
6,25,021	7,50,433	7,05,108	8,64,120	9,00,996	9,82,092
6,36,110	6,79,365	5,01,524	4,57,202	3,51,071	4,68,352
4,00,788	3,88,108	4,41,126	4,57,168	4,34,781	4,44,130
10,36,696	10,67,563	10,32,650	9,14,370	7,85,652	9,00,401
46,983	36,010	38,370	41,785	57,504	....
....	....	....	....	52,233	....

for the Shotapur District as the Commissioner reports that they are not available.
the Commissioner reports that the information is not available.

APPENDIX

Statement showing expenditure on establishment in the Roads and Buildings and percentage on the total outlay on works and

Year	Expenditure on Establishment in the Roads and Buildings Branch						Percentage on the total outlay on works and repairs in the Roads and Buildings Branch
	41—Civil Works—Provincial (Transferred and Reserved)	60—Civil Works	41—Civil Works—Central	50—Military Works	Deposit works	Total	
	2	3	4	5	6	7	
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	
1921-22 ..	29,06,955	..	1,98,893	45,258	2,84,992	34,35,888	19.26
1922-23 ..	20,14,640	8,34,450	1,78,163	71,481	77,143	31,75,877	20.79
1923-24 ..	15,84,488	8,10,645	67,892	38,560	6,88,354	31,89,030	19.88
1924-25 ..	16,89,892	12,25,632	1,19,721	27,862	2,52,556	33,15,663	19.67
1925-26 ..	16,89,417	12,05,078	1,01,876	69,049	2,58,535	35,23,955	20.66
1926-27 ..	25,30,286	5,97,486	1,08,896	5,882	3,94,389	36,96,939	23.76
1927-28 ..	21,99,448	5,59,107	1,49,132	5,042	2,97,270	32,09,999	24.96
1928-29 ..	22,40,393	6,56,713	2,29,540	2,240	2,56,180	33,85,066	25.03
1929-30 ..	22,45,450	7,83,867	1,56,773	3,638	2,34,897	33,74,625	25.26
1930-31 ..	25,51,711	1,80,139	1,72,163	2,415	85,444	29,01,872	32.35

NOTE.—The percentage of the establishment charges on the cost of works and repairs in the Irrigation Branch is largely that the establishment charges in the Irrigation Branch include the cost of Special Sind and the Decan which has no connection with the execution of works and repairs, and that these ment including the control and distribution of water, which is debited in the accounts to "revenue in the accounts to "revenue management" are deducted from the total cost of establishment in the in the rate per cent. In the R. & B. Branch in 1930-31 as compared with that for 1929-30 is mainly due same ratio in which expenditure on works is reduced. A mere overall percentage on expenditure on is under consideration.

V.

the Irrigation Branches of the P. W. D. from the year 1921-22 to 1930-31 and repairs during that period in both the Branches.

Expenditure on Establishment in the Irrigation Branch						Total Establishment charges in the Roads and Buildings and Irrigation Branches	Percentage on the total outlay of works and repairs in Roads and Buildings and Irrigation Branches.
55—Construction of Irrigation Navigation Embankment and Drainage Works	XIII—Works for which capital accounts are kept	15—Other Revenue Expenditure financed from Ordinary Revenues	Deposit Works	Total establishment charges	Percentage on the total outlay on works and repairs in the Irrigation Branch		
9	10	11	12	13	14	15	16
Rs.	Rs.	Rs.	Rs.	Rs.		Rs.	
11,53,734	13,65,960	6,63,651	2,770	32,11,115	33·59	66,47,003	24·26
14,20,751	13,44,901	5,34,327	1,993	33,01,972	32·22	64,77,349	25·38
21,37,793	14,43,222	4,32,013	2,050	40,65,084	33·89	72,55,023	25·87
29,10,785	17,37,724	5,26,361	492	51,75,362	28·73	84,91,025	24·35
32,21,647	17,99,343	5,19,228	2,681	55,42,899	21·62	90,60,854	21·23
35,56,950	18,08,385	5,94,989	3,207	59,63,540	30·56	96,60,479	27·54
36,98,956	19,20,773	7,80,312	3,847	64,03,888	26·00	96,13,837	25·64
39,04,970	21,35,939	6,16,601	2,750	66,59,960	25·51	1,00,45,023	25·35
42,26,873	21,08,302	6,18,312	1,012	69,54,499	23·26	1,03,20,124	23·83
42,38,966	18,31,149	5,90,621	1,734	67,21,470	21·60	97,13,342	24·06

Branch (column 14) is generally higher than that in the Roads and Buildings Branch (column 8). The Revenue Establishment employed entirely on "revenue management" work on certain canal systems in charges also include cost of part of the time of Irrigation establishment spent on revenue management and not to execution of works and repairs. If these establishment charges debited Irrigation Branch the percentage on the cost of works and repairs will not be so divergent. The increase to decrease in outlay on "works" and "repairs". Establishment charges cannot be reduced in the works is inaccurate. The question of devising a more accurate formula to measure establishment charges

APPENDIX VI.

List of members of the Standing Advisory Committee for the Back Bay Reclamation Scheme for the year 1930-31.

Name of Member.	Constituency.
1. Sir Joseph Kay, Kt. (<i>Chairman</i>).	The Bombay Chamber of Commerce.
2. Mr. Manu Subedar	.. Indian Merchants' Chamber.
3. Mr. J. B. Petit, M.L.C.	.. M llowners' Association, Bombay.
4. Mr. Hooseinbhoj A. Laljee	.. The Bombay Municipal Corporation.
5. Mr. G. E. Bennett, M.Sc., M.Inst.C.E., Chief Engineer, Bombay Port Trust.	} Nominated by Government.
6. Mr. T. K. Roddan, City Engineer, Bombay Municipality.	
7. Mr. F.H. Taylor, F.S.I., M.R.S.I., Manager, Land and Bunders, Bombay Port Trust.	
8. Mr. K. S. Framji, C.I.E.	

APPENDIX VII

APPENDIX

Statement showing the figures of consumption of Water, number of Supply Scheme during

Serial No.	Name of Scheme.	No. of connection in the Scheme on		Average daily consumption.	
		31st March 1930.	31st March 1931.	1929-30.	1930-31.
1	2	3	4	5	6
	<i>Suburban Scheme 19, Satellite Water Supply.</i>			Gallons.	Gallons.
1	Andheri including Marol, Versova, Amboli and Jogeshwri and KoliKalyan.	389	419	1,19,400	1,40,280
2	Vile Parle	222	275	42,100	61,000
3	Santacruz, Juhu and Khar ..	308	438	2,54,200	3,32,000
		273	315		
4	Bandra (including supply to "B" class drivers' quarters B. B. and C. I. Railway).	..	..	4,493,000	5,10,700
5	Kurla .. .. .	..	..	6,22,000	5,95,000
6	Ghatkoper (including supply to Jivadaya Khata, etc.).	94	104	26,700	30,160
				9,000	5,890
7	Trombay Suburban Schemes II and III including supply at Mulund.	66	81	4,30,200	17,000
				40,000	42,700
	Total for Suburban Scheme 19.	1,442	1,682	16,30,600	17,34,730
	<i>Suburban Scheme 21, Ambarnath Water Supply.</i>				
8	Ambarnath water supply including Badlapur.	28	58	*2,22,000	1,22,000

Note.—Columns 8 and 9 cost of maintenance does not include interest on capital, depreciation Columns 11 and 12, Receipts do not include premium and connection fees.

*This includes the consumption of Badlapur village, G. I. P. Railway, Kalyan, etc.

†This expenditure is incurred by the Executive Electrical Engineer under Suburban Scheme No. 21.

VII.

connections, etc., in connection with the Salsette and Ambernath Water the year 1930-31.

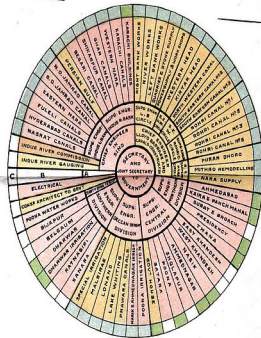
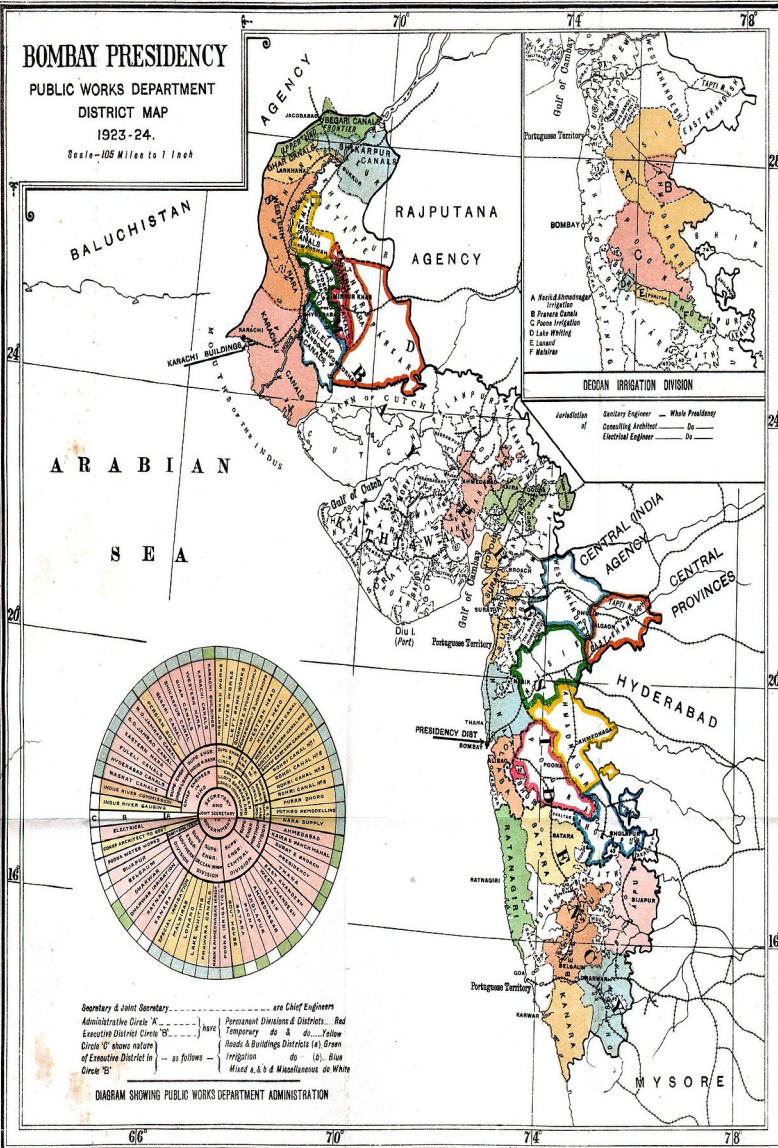
Cost of maintenance including that for purchase of water.			Receipts from sales of water and rent of meter, etc.,			Remarks.
1929-30.		1930-31.	1929-30.		1930-31.	
Approximate.	Actual.	Approximate.	Approximate.	Actual.	Approximate.	
7	8	9	10	11	12	
Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	13
18,722	18,916	20,343	43,325	48,694	50,785	
5,376	5,372	8,199	15,859	15,912	18,065	
41,744	41,903	41,392	92,959	93,126	98,245	A.—These are the revised figures of average consumption.
56,553	56,553	56,328	79,130	79,130	B 38,220	B.—Balance of about Rs. 40,700 due from Bandra Municipality on 31st March 1931 will appear in accounts for 1931-32.
73,461	73,461	68,367	1,02,427	1,02,427	92,836	
4,925	4,925	5,826	9,720	13,495	12,470	
6,735	6,735	6,356	12,544	12,544	7,000	
4,652	4,652	4,908	•••••	7,386	7,215	
2,12,105	2,12,516	2,11,719	3,55,064	3,67,714	3,24,785	
35,824	35,824	{ 8,355 15,683 }	46,524	52,825	41,160	

over head, establishment and General Charges.

BOMBAY PRESIDENCY

PUBLIC WORKS DEPARTMENT
DISTRICT MAP
1923-24.

Scale—105 Miles to 1 Inch



Secretary & Joint Secretary are Chief Engineers
 Administrative Circle 'A' have Permanent Divisions & Districts. Red
 Executive District Circle 'B' have Temporary do & do. Yellow
 Circle 'C' shows nature Roads & Buildings Districts (a) Green
 of Executive District in as follows Irrigation do (b) Blue
 Circle 'D' Mixed a, b & Miscellaneous do White

DIAGRAM SHOWING PUBLIC WORKS DEPARTMENT ADMINISTRATION

DECCAN IRRIGATION DIVISION

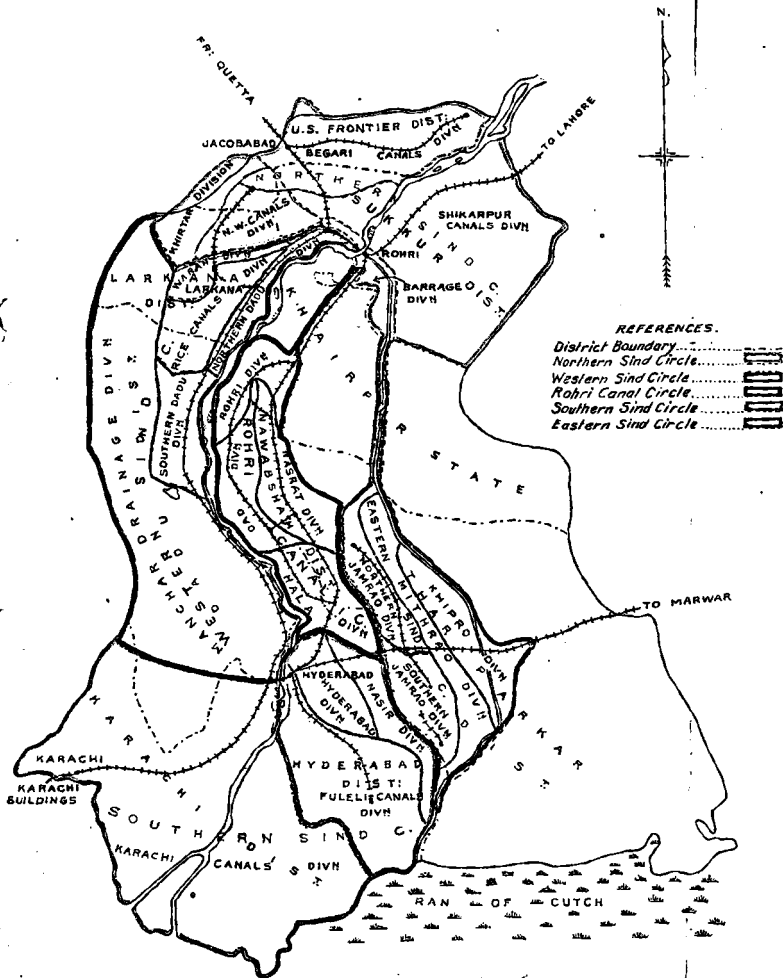
Jurisdiction of	Secretary Engineer	Whole Presidency
	Consulting Architect	Do
	Electrical Engineer	Do

Jurisdiction of
 Secretary Engineer — Whole Presidency
 Consulting Architect — Do
 Electrical Engineer — Do

MAP OF SIND
SHOWING
PUBLIC WORKS DEPARTMENT DIVISIONS.

1934-35

Scale 50 Miles = 1 Inch.



R 11452 ✓
5

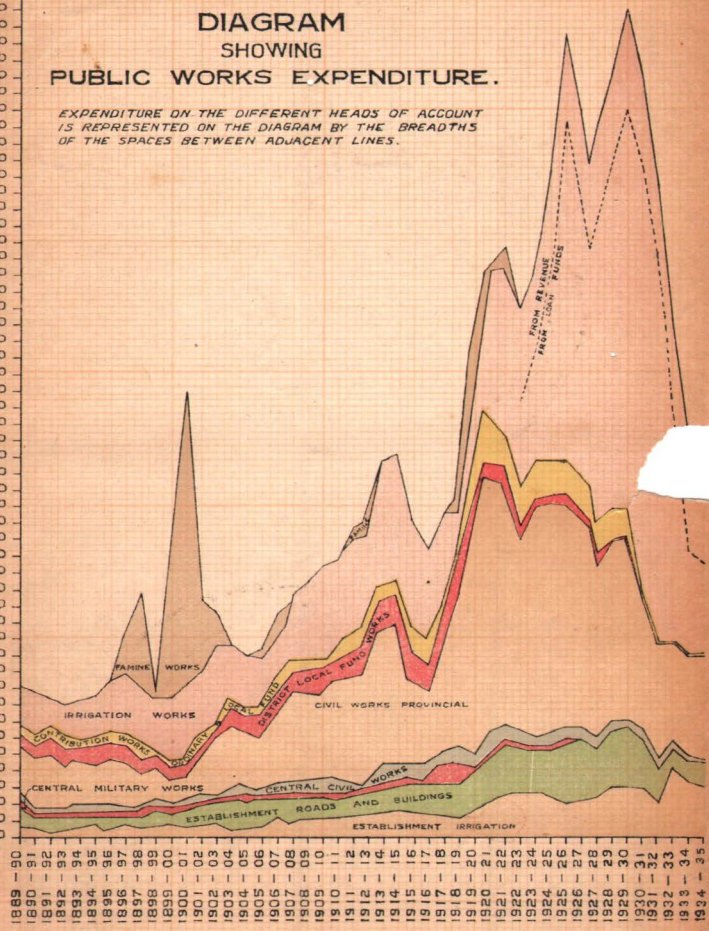
283

LAKHS

520
510
500
490
480
470
460
450
440
430
420
410
400
390
380
370
360
350
340
330
320
310
300
290
280
270
260
250
240
230
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0

DIAGRAM SHOWING PUBLIC WORKS EXPENDITURE.

EXPENDITURE ON THE DIFFERENT HEADS OF ACCOUNT IS REPRESENTED ON THE DIAGRAM BY THE BREADTHS OF THE SPACES BETWEEN ADJACENT LINES.



DIAGRAM

SHOWING

EXPENDITURE ON IRRIGATION WORKS
IN THE PUBLIC WORKS DEPARTMENT
FROM
LOAN FUNDS, REVENUE & CONTRIBUTION

LAKHS

230

220

210

200

190

180

170

160

150

140

130

120

110

100

90

80

70

60

50

40

30

20

10

0

DECCAN & GUJARAT
EXPENDITURE (LOAN FUNDS)
SIND MAINTENANCE & REPAIRS
EXPENDITURE (REVENUE)
LLOYD BARRAGE & CANALS
CONSTRUCTION (LOAN FUNDS)
SIND EXPENDITURE (LOAN FUNDS)
DECCAN & GUJARAT MAINTENANCE &
REPAIRS EXPENDITURE (REVENUE)
DECCAN & GUJARAT NEW WORKS (REVENUE)
SIND NEW WORKS (REVENUE)
DECCAN, GUJARAT & SIND
CONTRIBUTION WORKS 0

1922 - 1923

1923 - 1924

1924 - 1925

1925 - 1926

1926 - 1927

1927 - 1928

1928 - 1929

1929 - 1930

1930 - 1931

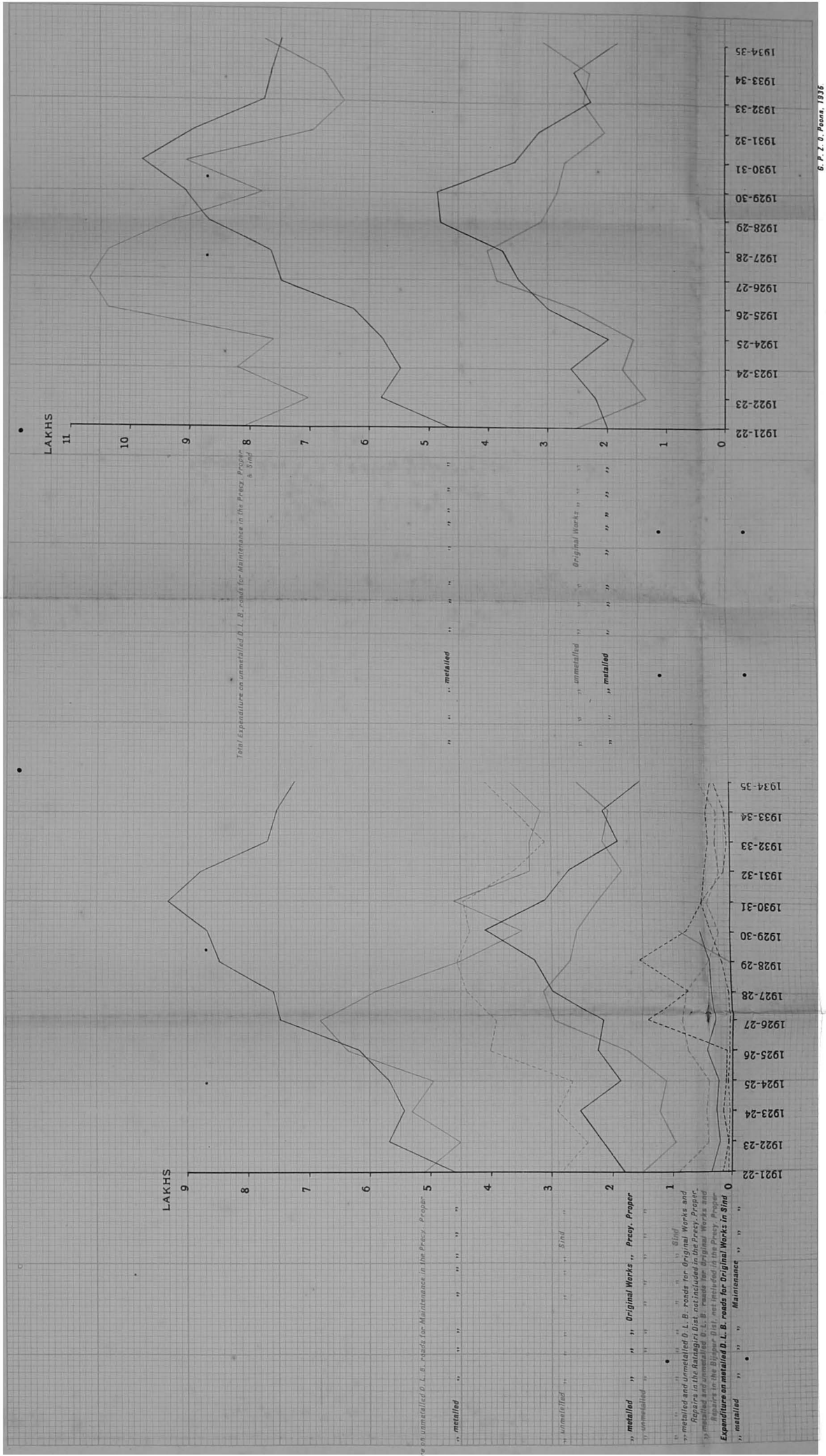
1931 - 1932

1932 - 1933

1933 - 1934

1934 - 1935

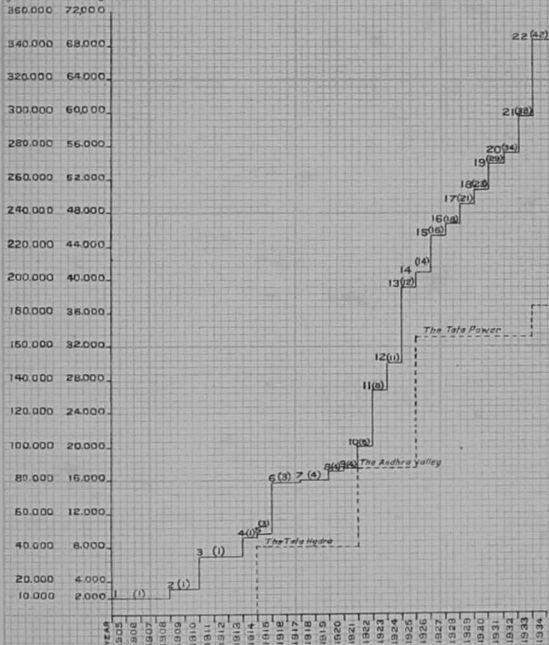
DIAGRAM SHOWING THE EXPENDITURE ON D. L. B. ROADS IN THE PRESIDENCY PROPER AND SIND. (ORIGINAL WORKS AND REPAIRS)



GRAPH
SHOWING THE PROGRESS OF ELECTRICAL DEVELOPMENT
IN TERMS OF KILOWATTS INSTALLED FROM 1905 TO DATE
BY VARIOUS SUPPLY COMPANIES
IN THE BOMBAY PRESIDENCY

NOTE ~ Dotted line shows Tata Groups Bulk Power Supply.
 Full line shows total of ordinary Supply.
 Figures in Brackets, thus (4) show the number of Companies,
 excluding the Tata Groups in operation at the end of each year.

K.W. K.W.
 Bulk Supply (Ordinary
 by Tata Groups Supply)



J.M.P.
 23-7-35
 Electrical Engineer to Government
 P.W.D. Bombay.

Ref. No.	Increase, or decrease, of lead old Supply Co.	Start of new Supply Co.
1		Bombay E.I. ST.
2	Bombay E.I. ST.	
3	Bombay E.I. ST.	
4	Bombay E.I. ST.	
5		Ahmedabad Karachi
6	Bombay E.I. ST.	
7	Ahmedabad Poona	
8	Ahmedabad Karachi Poona	
9	Karachi	
10	Bombay E.I. ST. Poona	Surat
11	Bombay E.I. ST. Ahmedabad Poona	Godhra Hyderabad Sukkur
12	Ahmedabad Karachi Poona Hyderabad Sukkur	Broach Gadach and Bejigen Shikarpur
13	Bombay E.I. ST. Ahmedabad Poona Hyderabad	Sholapur
14	Poona Sukkur Broach	Rander Aden (transferred to Govt. on 1-4-33)
15	Bombay E.I. ST. Poona Surat Hyderabad Sukkur	Bhiwandi Hubli
16	Karachi Surat	B'bay Suburn Thana
17	Bombay E.I. ST. Surat Hyderabad Broach Shikarpur B'bay Suburn	Lonavla - Khandala Kalyan Bijapur
18	Poona Sukkur Rander B'bay Suburn	Panvel Dharwar
19	Bombay E.I. ST. B'bay Suburn Ahmedabad Panvel	Pandharpur Panchgani Matheran Larkhana Jalgaon Nasik-Desjali
20	B'bay Suburn Kalyan Rander Pandharpur Bijapur Matheran Sukkur (Reduct)	Dhulia Ahmednagar Amalner Nadiad Betgaum
21	B'bay Suburn Bhiwandi Kalyan (Reduct) Ahmedabad Surat Sholapur Pandharpur (Reduct)	B'bay E.I. ST. B'bay Suburn Thana Bhiwandi Surat Lonavla Dhulia
22	Panchgani Bijapur Dharwar Matheran Panvel (Reduct) Larkhana Belgaum Bulsar	B'bay E.I. ST. B'bay Suburn Thana Bhiwandi Surat Lonavla Dhulia Ahmednagar Hubli Bijapur Matheran Karachi Hyderabad
23		B'bay E.I. ST. B'bay Suburn Thana Bhiwandi Surat Lonavla Dhulia Ahmednagar Hubli Bijapur Matheran Karachi Hyderabad