

PUBLIC WORKS (INDIA).

RETURN to an Order of the Honourable The House of Commons,  
dated 15 April 1853;—for,

⑥

A RETURN "of all SUMS spent on PUBLIC WORKS (not of a Military kind) in *India*, since April 1834, keeping distinct the Amounts spent on the REPAIRS of OLD, and on the CONSTRUCTION of NEW WORKS, together with the Objects of the Works newly Constructed; and stating, when remunerative, the Amounts received from such Works."

East India House,  
17 August 1853.

JAMES C. MELVILL.

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(*Mr. Bright.*)

*Ordered, by The House of Commons, to be Printed,*  
20 August 1853.

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## MEMORANDUM.

Para. 1. THE Papers Nos. 1, 2, and 3 of the following list of contents will explain the impossibility of a Return being prepared for the exact period embraced, or in the precise form prescribed in the Order of the Honourable the House of Commons.

2. In the printed Return to the Order of the Honourable the House of Commons, dated 4th March 1850, No. 622 of 1851, has been given,

### FOR BENGAL.

The particulars of and total expenditure on Public Works in the Civil Department from season 1839-40 to 1848-9 inclusive.

### FOR FORT ST. GEORGE.

A digest of a general Report by the Superintendent of Roads, dated the 9th August 1848, on the Road Department, from its establishment to the 1st May 1848; also information in regard to district roads, with a statement of the charges incurred for the years 1838 to 1847 inclusive.

### FOR BOMBAY.

As regards the Presidency of Bombay, it was pointed out that a "Return to an Order of the Honourable the House of Commons, dated the 20th December 1847, was presented on the 7th February 1848, which Return contained copy of the annual Reports of the Superintendent of Roads and Tanks within the Presidency of Bombay from the first (viz., that for season 1835-36) to the latest received to that time, or to season 1844-45 inclusive." The Reports for season 1845-46 and 1846-47 formed part of the Return No. 622 of 1851. Page 166 of Return.

3. The whole of the further information which can be supplied from the Reports received in continuation of the foregoing is contained in the present Return, and includes, as regards the Presidency of

### BENGAL,

An analysis of a Report of the Military Board, dated the 8th September 1840, setting forth in a tabular form, and in alphabetical arrangement, all the information which the Government of Bengal could obtain on Public Works under the Military Board's general management at the time that the systematic preparation and printing of that Board's annual Reports was first ordered; also a statement compiled from the Reports of the Bengal Military Board for the official year 1849-50 and 1850-51, in continuation of and embodied with the previous statement for the official years 1839-40 to 1848-49.

### FORT ST. GEORGE.

A digest of a further Report by the late Superintendent of Roads, dated the 17th October 1851, being in continuation of that dated 9th August 1848, giving information on the works in progress to the 1st May 1851; also a statement of the more important works executed under the Civil Engineer Department for 1848 and 1849, and of expenditure in the Civil Department of Public Works for the years 1848, 1849, and 1850.

### BOMBAY.

Particulars of the formation of the Road and Tank Department in 1836; together with a tabular statement of the principal works executed by that department from its formation to the year 1850-51 inclusive, and a statement of expenditure compiled from the annual Reports of the Superintendent of Roads and Tanks, and of the Bombay Engineers.

RETURNS to an Order of the Honourable the House of Commons, dated the 24th February 1853, for "Copies of the Reports of the several Commissioners on Public Works at Bengal, Madras, and Bombay in the year 1851-52; of the Minutes of the Members of the Government thereon; and of any Orders or Despatches of the Court of Directors relating thereto," were presented to the Honourable the House of Commons on the 26th April 1853, for the Presidencies of Bengal and Fort St. George. The Return for the Presidency of Bombay will be presented on the meeting of Parliament in 1854.

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East India House, }  
17 August 1853. }

T. L. Peacock,  
Examiner of India Correspondence.

*Note*.—The Statements for the Presidency of Bengal for the series of years from 1839-40 to 1850-51 inclusive, and for the Presidency of Bombay, are arranged alphabetically. The preliminary Statement of the Military Board at Bengal, dated the 8th September 1840, and the Statements relating to works executed by the Civil Engineer's Department for the years 1848 and 1849, are preceded by an Index.

## No. 1.

(No. 10.)

EXTRACT LETTER from the Officiating Secretary to the Government of *India*, in the Military Department, to the Military Board, dated 14 October 1839.

22. BEFORE closing this notice of the proceedings of your Board in the Department of Public Works, I am directed to inform you that, with the view of materially facilitating the object of diffusing correct information as to the principles by which the Government is guided in its appropriation of funds for such purposes, and on the measures of improvement which have been executed or are in progress, with their results, it is intended that the portions of the annual reports of your Board, referring to works which are intended in any degree for the public convenience and advantage, such as roads, bridges, canals, embankments, conservancy of rivers, &c., shall be printed and made public; and I am instructed to request that your Board will keep the ends of such publication particularly in view in drawing your reports. The President in Council hopes that this view may be acted upon with the report which it is probably the intention of your Board to submit to Government at an early period for the year 1838-39; and his Honour in Council deeming it right that the first publication should be preceded by a brief account, showing, as far as possible, the nature, extent, cost in original execution and subsequent maintenance, (and this, whether the outlay be from public or from private funds,) return or profit, and general results of each important public work under the control of your Board, it is the desire of his Honour in Council that your Board will turn your immediate attention to this important subject, and that your annual report for the past year may be accompanied by a preliminary account drawn up in accordance with the instructions above conveyed.

## No. 2.

(No. 142.)

EXTRACT LETTER from the Secretary to the Government of *India*, in the Military Department, to the Military Board, dated 22 July 1840.

21. HAVING thus noticed the more important parts of your Board's reports, his Lordship in Council directs me to conclude with observing, that it is understood that provision will be made in future for submitting, in separate reports, the statements of proceedings regarding public works of general interest, and regarding the operations of the more peculiarly military establishment. Such division of your Board's annual reports is consistent with the orders of the Honourable Court, and the Governor-general in Council understands that it is intended so to prepare the former class of reports as to admit of their being printed and circulated, as may be thought advisable for general information.

## No. 3.

*Note.*—As an introduction to the series of annual reports, and in compliance with the instructions given in the latter part of para. 22 of the letter from the Officiating Secretary to the Government of *India*, in the Military Department, to the Military Board, dated the 14th October 1839, a descriptive outline of works of public utility at the time (8th September 1840) under the Military Board's general management was submitted. In arranging the latter statement the works were classed under the general heads of roads and bridges, canals, embankments, and buildings, commencing with the works situated nearest to the Madras frontier, and proceeding gradually through the four circles of superintendence to the North Western frontier. The following is a brief analysis of this introductory report.



## TABULAR ANALYSIS of the BENGAL MILITARY BOARD'S Preliminary Statement, dated 8 September 1840.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ROADS AND BRIDGES IN THE SOUTH-EASTERN CIRCLE:</b>							
(1.) New road from the Madras frontier at Chatterghar to Cuttack.	-- To make the Dakw communication between Madras and Bengal more direct and secure than by the circuitous route by the sea coast; as likely to be advantageous for facilitating the march of troops between Cuttack and the northern division of the Madras army, and highly useful to the extensive tract of country known as the Khoordah estate, by affording the means of conveying its produce to the market of Cuttack.	- Measures 79½ miles; was commenced by the Collector, but transferred to Department of Public Works in 1835.	Cuttack - - -	Rs. 1,26,957	Rs. a. p. 3,553 5 10	- - This road is open for dry weather communication, but some of the bridges and drains are still wanting, and bungalows and wells have to be constructed.	- - This road has at present 100 bridges; it is likely to be very useful when completed to Ganjam. The expense is borne entirely by the State.
(2.) Road from Pooree, through Cuttack and Midnapore, to Bissapore, on the Grand Trunk Road.	-- This road is known as the Juggernath road, its construction having originated in a donation by Rajah Sockasoy Roy of 1,50,000 rupees for the construction of a road to the Temple of Juggernath.	- 261 miles in length; was commenced in 1822.	Bissapore - - -	15,21,696 or 5,416 per mile.	- - - - -	Completed in 1830 -	- - This road has 816 bridges and drains. The whole of the outlay, with the exception of the 1,50,000 rupees, was borne by the State. Its annual repairs, including the value of convict labour, averages 28,186 rupees. The road is almost invaluable as affording the means of communication throughout Orissa, and thence to Bengal.
(3.) Road from Midnapore to Calcutta, crossing the Hooghly at Oolabarrah.	-- Intended for general use, and accordingly employed for the conveyance of the Madras and Bombay mails, and used by parties proceeding to Juggernath from the Eastern Provinces.	Commenced in 1820	Calcutta - - -	Rs. a. p. 72,000 15 4	- - - - -	Completed in 1830 -	- - The Hooghly, Damoodah, Roopnarala, and Cosya Rivers on this line were (with the exception of the last) extensive thidways, and are all crossed by ferries. The annual repair is about 2,078 rupees.
(4.) Grand Trunk Road from Calcutta to Delhi.	-- Of this road, only a very small portion is in the South Eastern Provinces. It may be considered as the main artery of land communication throughout Bengal and Hindostan.	- - The whole length is 770½ miles; its general breadth is 30 feet, which is increased to 40 when it approaches important towns.	Delhi - - -	- - It has for the most part been constructed by the labour of convicts, but exclusive thereof, it has cost, to the 1st May 1840, 12,28,279 rupees.	About Rs. 10,00,000	- - - - -	- - This road is raised above the flood level in the rainy season. It has already 1,402 bridges of various sizes up to a waterway of 400 feet, and others have to be completed; it is metalled where the soil requires such protection, and is under the charge of seven executive engineers, and is provided with 47 staging bungalows, towards the cost of which 14,557 rupees have been contributed by Rajah Beechunder Roy and Narsingchunder Roy, and the whole of the remaining outlay, which is 20,623 rupees, exclusive of convict labour, is borne by the State.

(continued)

No. 5.—TABULAR ANALYSIS of the Bengal Military Board's Preliminary Statement, dated 8 September 1840—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ROADS AND BRIDGES IN THE LOWER PROVINCES:</b>							
Paras. 7 to 15 of Report.							
(5.) Presidency	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - The roads are maintained by the chief magistrate. The Military Board are not aware of their cost, but judging from the expensive nature of the material used, and the heavy traffic on them, it is doubtless large.
(6.) Suburbs of Calcutta	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - The roads are maintained by the civil architect, under the control of the superintending engineer. Of their original construction the Military Board is not cognizant, but their present maintenance costs, on an average, 10,000 rupees a year.
<i>1st Division:</i>							
(7.) Road from Calcutta to Kishnaghur; forms part of the road to Berhampore.	- - - - -	57 miles in length	- - Kishnaghur. It is to be extended 240 miles to the new Sanatorium at Darjeeling.	-Original cost, Rs.2,69,630. The cost of the portion between Kishnaghur and Berhampore (51 miles in length) is not known.	- - - - -	- - - - -	- - It has of late years been kept in repair by the magistrates, but it is now to be repaired by the Department of Public Works; it is to be extended to Darjeeling; the last 30 miles are to be entirely carried through the hills; it is a work of immense labour, and is not yet finished.
<i>Burdwan Division:</i>							
(8.) Road leading to Culna	- - For the personal convenience of the Rajah of Burdwan.	- - - - -	Culna	Rs. a p. 42,686 10 8 assigned by the Rajah.	- - - - -	- - - - -	- - In this division several roads are maintained at the public cost, but of the expense of their original construction the Board can give no account. They are not individually of great importance, though doubtless of much local utility. The average cost of their maintenance amounts to 7,100 rupees, and is defrayed by the State.
<i>Division Eastward of Calcutta; viz., Dacca, Burrisaul, and Arracan Divisions, including the Province of Assam:</i>							
(9.) Iron suspension bridge over the Boorolia Nulla at Gowahatty.	- - - - -	- - - - -	- - - - -	Rs. 5,311	- - - - -	- - - - -	- - In this division the roads are not under charge of the Department of Public Works, but have been constructed and maintained by the civil officers. More bridges are in progress under the executive engineers, which may be noticed in future reports.
(10.) Road over the Cossyah Hills from Gowahatty in Assam via Cheera Poonjee to Sylhet.	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - This road was surveyed, and estimated by Lieutenant Sale, of the Engineers. Its construction is in progress by the political officers at Gowahatty and Cherra Poonjee respectively.



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<i>Burriscul Division:</i>								
(11.)	Military road from Dacca through Daodendy and Chittagong to Teck Naf.						-- It is contemplated to complete this road by the substitution of masonry bridges along the whole line for the temporary wooden structures, which would require renewal every year; also to open a navigable communication through the interior of the Chittagong District to Arracan.	
(12.)	Road from Cachar through the Naga Hills to Munnipore.	-- To facilitate the communication between the Eastern frontier and the Burmese country.	-- Length not stated; the width is to be 10 feet. Commenced in 1837, under the superintendence of Lieutenant Guthrie of the Engineers.	Munnipore	-- 30,600 rupees, exclusive of the pay of a detachment of sappers and miners.	Not stated	Not stated	-- It is intended for foot passengers and laden cattle, and will have several bridges on its line; it is cut almost entirely through a mountainous and extremely difficult country.
<i>3d, or Dinapore Division:</i>								
(13.)	Road from Revelgange, near the junction of the Ganges and Gogra, via Chupprah and Bawa Ghaut on the Gunduck, to Mozufferpore, the chief town in Tirhoot.		55 miles in length	Mozufferpore	-- The Department of Public Works is cognizant of an outlay of no more than 89,323 rupees on this road, but much more must have been expended.			-- In this division the roads maintained at the public expense are numerous. That from Revelgange to Mozufferpore is one of the chief.
(14.)	Road from Patna to Gyah and Sbergotty.		-- Length 80 miles. This road was not originally constructed by the Department of Public Works.	Sbergotty	Not known	-- The drainage being imperfect, the road is about being renewed and improved at an estimated cost of 70,323 rupees, under the executive officer.	Not stated	-- The repairs made hitherto have been effected by convict.
(15.)	Continuation of the road from Calcutta to Benhampore (see previous statement) by a series of district roads through Monghyr, Patna, Dinapore, Arrah, Buxar, and Ghazepore to Benares.		Length 430 miles	Benares	Not known			-- These roads are not generally maintained by the Department of Public Works, but portions of them have been occasionally repaired by the executive engineers, by whom several very useful bridges have been built.
(16.)	Other roads in this division, which are under the charge of local agents, such as the road from Arrah to Basseeram; road from Arrah to Akherpore; road from Arrah to Brookgunge; Hadpore to Poomah in Tirhoot; Chupprah to Mozufferpore; Chupprah to Nootbarre in Champaran, &c.				Not known	-- The repair of these roads by the Department of Public Works is under discussion, and estimates amounting to Rs. 72,880. 13 s. 10 p. have been mentioned.		These roads are highly useful.
<b>ROADS AND BRIDGES IN THE CENTRAL PROVINCES:</b>								
<i>3th, or Benares Division:</i>								
(17.)	Road from Mogul Serai, on the Grand Trunk Road, eight miles from the Ganges at Benares to Allahabad, via Chanar and Mirzapore.	-- Connects the Trunk Road with the great commercial mart of Mirzapore, without crossing the Ganges; and also the Grand Trunk Road with that from Mirzapore through Jubbulpore to the Deccan.	Length 93 miles	Allahabad	Not known	-- The whole line has lately been surveyed. Its completion by the Department of Public Works is now in progress. No detailed estimates have yet been received.		-- This is a work of considerable importance, and its cost must, it is presumed, be borne by the State.

(continued)

No. 5.—TABULAR ANALYSIS of the Bengal Military Board's Preliminary Statement, dated 6th September 1940—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
ROADS AND BRIDGES IN THE CENTRAL PROVINCES—continued.							
5th, or Benares Division—continued.							
(18.) Road from Chunar, southward to Sukroot.	-- To facilitate the traffic with the southern portions of the district.	Length 16 miles	Sukroot	- - - - -	6,325 rupees	- - - - -	-- This work is intended to form, in the first instance, only a fair-weather road.
(19.) Road from Mirzapore, on the south bank of the Ganges, to Gopeegunge.	-- To join the Grand Trunk Road at Gopeegunge.	Length 16 miles	Gopeegunge	-- The drains only were built by the Department of Public Works, at a cost of 1,495 rupees.	- - - - -	- - - - -	-- The earth-work was constructed by the magistrath. Other roads in this division, viz., from Benares to Jounpore, from Ghazepore to Jounpore, and from Jounpore to Azinghur and Goruckpore, are not under the charge of the Department of Public Works.
(20.) Deccan Road from Mirzapore to Jubbulpore.	- - - - -	-- Length 239 miles; breadth, 30 ft. Commenced 1824.	Jubbulpore	-- A little more than 8,00,000 rupees, including repairs, but exclusive of the labour of from 600 to 500 convicts for 15 years.	- - - - -	Lately completed	-- This road is provided with 479 bridges and drains of masonry, having openings varying in size from 8 to 73 feet, and 219 causeways or pavements
(21.) Other roads in the Sangor and Nerbudda Territories of which the Department of Public Works has cognizance: viz., From Sangor to Jubbulpore, via Putterree and Dhanow, From Dhanow to the Deccan Road at Jokeya. From Jubbulpore to Tilwara Ghat on the Nerbudda. From ditto to Jhansi Ghant. From ditto to Cuttinghae	- - - - -	Length, 48 miles	- - - - -	Nearly 2,00,000	80 rupees per mile	- - - - -	-- They are to be completed as fair-weather roads, i. e., roads which are passable at all seasons except in the rains.
(22.) Road connecting Ajmere with Nusserabad.	- - - - -	" 13 1/2 "	Nusserabad	- - - - -	8,000 rupees	- - - - -	This road is in progress of construction.
(23.) Road connecting Cawnpore with the Grand Trunk Road.	- - - - -	" 12 "	Grand Trunk Road	- - - - -	26,000 rupees	- - - - -	This road is not quite complete.
(24.) Road from Cawnpore to Bithoor, the residence of the ex-Peshwa.	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	-- This road is under construction. Its expense is defrayed by the Peshwar, aided by the labour of prisoners supplied by civil authorities.

of masonry for crossing the more shallow streams; one of these latter, however, is over the Belun river, and is 850 feet in length. The chief obstacle to the construction of this road was the ascent from the plains to the table land of Rewah; this is effected at the Khutra Pass, up an ascent of 600 feet by a winding path 2 1/2 miles in length, and nowhere less than 18 feet wide. The slope is 1 in 20, and the work is considered highly creditable to the skill of Major Drummond. The work is extremely valuable as facilitating the traffic of the district near which it runs; but its full value cannot yet be appreciated, as the district roads are as yet seldom passable for carts.

ROADS AND BRIDGES IN THE NORTH-WESTERN PROVINCES:

Division	Description	Remarks	Length	Location	Cost	Notes
<b>8th, or Rohilkund Division:</b>						
(25.)	Roads and bridges					-- 27,070 rupees have been allowed by Government for the construction of some bridges. The sum already expended by Government for bridges and drains in this division is 1,29,675 rupees.
<b>10th, or Agra Division:</b>						
(26.)	Strand Road	-- Considered to be of the greatest advantage to the city and station of Agra, both in appearance and utility.	-- Length two miles along the river face of the city. Average breadth 20 feet; raised 11 to 18 feet in height above the natural soil of the river's bank.		3,76,790 rupees	-- The subject of the Rohilkund roads generally has been referred to the Home authorities; in the meantime the repair of existing roads is managed by the local committees.  -- Of the sum 3,76,790 rupees, the sum of 3,65,105 rupees was paid to the starving poor, who could give but very inadequate returns in labour for the support they received. The remainder, 21,685 rupees, was expended for tunnels, ghauts, bridges, &c., required for the road. It is stated that the whole road having now had a trial of three rainy seasons, may be considered as safe and permanent. The whole sum expended by Government in the Agra division in employing the pauper population during the season of 1888, is stated at 6,19,431 rupees.
<b>11th, or Meerut Division:</b>						
(27.)	Branch from the Grand Trunk Road at Gaseood-deengur, on the west bank of the River Hindun, to Meerut.		Length, 29 miles	Meerut		R. For earth-work 10,000 For bridges and drains - 7,763 For metalling - 75,788  TOTAL - Rs. 93,561  A further expenditure of 94,000 rupees is anticipated; 1,29,818 rupees have been expended on bridges by the Department of Public Works.
<b>Delhi and Karnal Division:</b>						
(28.)	Drains and small bridges, exclusive of those on the Grand Trunk Road.				20,571 rupees	-- The roads in this division are under the charge of the civil authorities.
<b>Kanoun Division:</b>						
(29.)	Bridges and staging bungalows.				-- 45,688 rupees, and for annual repairs 2,300.	-- In this division the roads are all mountain paths adapted for Hill Coolies, and on one line, viz., that from Bombarie to Almorah, for bullocks and tattlees. Their construction has been effected chiefly by detachments of the pioneer corps; but the bridges and bungalows have been erected by the Department of Public Works. There are 12 iron suspension bridges, four wooden bridges, and four staging bungalows, built by Government in this province.

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The total outlay for roads, as above, is 57,54,223 rupees, but this does not include any sums which may have been expended by the civil authorities without the cognisance of the Military Board. In some districts the zemindars have agreed to contribute one per cent. on the land revenue, to form a fund for the improvement of internal communication; the proceeds of the fund are under the management of local committees, of which the executive officer of Public Works is generally a member; but the proceedings of the committees are not under the control of the Board. The profits arising from the farms of *Ferries*, are generally made available for the construction of roads, &c., "but as this is constituted by Regulation XIX. of 1810, a branch of the revenue," and its employment on roads is believed to be quite optional with the Government, the *Ferry funds* cannot be regarded as returns for money expended on works of utility.

(continued)

No. 5.—TABULAR ANALYSIS of the Bengal Military Board's Preliminary Statement, dated 8th September 1840—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CANALS IN THE SOUTH-WESTERN PROVINCES:</b>							
(30.) Navigation Khals of Hijelce and Tamlook.	-- Are much used in the Salt Mebals for the transport of this article of trade; are invaluable in the south-west monsoon, as forming a safe line of communication, at a time when the open sea, and even the southern portion of the river Hooghly, is too rough for country craft.	- - - - -	- - - - -	-- Average cost about 5,000 rupees per annum.	- - - - -	- - - - -	-- A toll is levied on boats navigating these khals, on which money is expended, and which it is believed defrays the expense. The tolls are not managed by the Department of Public Works. Some of the Nullahs, such as the Banka Nullah, between the rivers of Hukdes and Roopnarain, are under the control of the officers of the Salt Department.
(31.) Oolabarlah Canal - -	-- Was formed by the excavation necessary for raising the earth-work of the road from Midnapore to Calcutta, crossing the Hooghly at Oolabarlah (alluded to in the fifth paragraph of this report).	Length 15 miles	-- Extends in a westerly direction to the Damooda at Murreeha, thence to the Roopnarain at Colar Ghaut.	-- As no separate bills were furnished of this canal, its construction may be considered in the cost of the road itself. Its annual clearance costs 1,321 rupees, and the tolls levied on boats using it have averaged 2,092 rupees for the last two years.	- - - - -	- - - - -	-- It is used only for boats coming down from the Burdwan and Hooghly Districts to Calcutta, and returning. It shortens the distance on the Damooda by about 22 miles, and about 36 by the Roopnarain, besides avoiding those portions of the rivers which are dangerous for country boats in the south-west monsoon.
(32.) Calcutta Canals; viz. 1st. The Circular Canal. 2d. Ballinghatta. 3d. Entallee.	-- These canals form an easy and convenient navigable communication round the greater part of Calcutta, and are a source of great convenience to the town.	Length 3 1/2 miles " 1 1/2 " " 1 "	-- From Chitpore to the junction with the Entallee Canal. From the end of the Circular Canal to the Salt Water Lake. From the Circular Canal to the east end of the Dhurrantollah Straits.	-- 16,45,404 rupees, including six * bridges, and the roads along the bank. The cost of their annual maintenance averages 31,646 rupees, and the tolls levied on boats, &c., for the last three years, 68,225 rupees.	- - - - -	- - - - -	-- Comprise a line of navigation, extending from the Hooghly at Chitpore to the Salt Water Lake. The amount of tolls realised during the official year 1849-50, was Rs. 1,62,989. 2.; the current expenses of the toll department amount to Rs. 15,853. 6. 6.; the lands, ferries, and fisheries attached to the canals realised 1,877 rupees. * Kooloa Wooden Bridge. Ballinghatta Iron Suspension Bridge. Nurkoidanga - ditto. Manicholla - ditto. Barrackpore - ditto. Dum Dnn - ditto.
(33.) Canal from the east end of the Ballinghatta Canal through the Salt Water Lake, thence by several natural Nullahs, aided by some artificial cutting to the Ishamuttee River.	-- By this route boats proceeding from the eastern ports of Bengal may reach Calcutta without approaching so near to the large estuaries and to the open sea as is done by the ordinary Sunderbund route.	Length 40 miles	Ishamuttee River	-- 3,77,188 rupees. Their maintenance involves an average outlay of 2,009 rupees per annum.	- - - - -	- - - - -	-- They gave no separate returns, as tolls are not levied further eastward than the Salt Water Lake. This passage is only used by boats of light draught, except in the rainy season.
(34.) Tolly's Nullah, to the south of the Esplanade of Fort William.	-- Forms a communication from the Hooghly River to the Sunderbund, and to the Eastern Canals at Tarda.	Length 16 miles	Tarda	-- Its original cost is not known; its clearance costs 620 rupees per annum. Seven † bridges have been thrown across it at a cost of 1,79,381 rupees. The cost of the largest, the Hastings Bridge, which has a central opening of 176 feet, was partly defrayed from funds raised by subscription. The tolls amount, on the average of the last three years, to 49,381 rupees per annum.	- - - - -	- - - - -	-- This is an enlargement of a natural Nullah, which was rendered navigable many years ago by the agency of an officer whose name it bears. † Kalighaut Suspension Bridge. Kidderpore - ditto. Tollygunge - ditto. Curriahaut - ditto. Hastings - ditto. Allipore - ditto. Fraanath - ditto.

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CANALS IN THE LOWER PROVINCES:

(35.) No artificial canals. Clearance of the Nuddea Rivers to facilitate the navigation in the dry season.

-- By which a communication between Calcutta and the Ganges is maintained.

-- Average cost of the last 10 years, 82,840 rupees, including salary and establishment; average toll collections for the same period 1,44,858 rupees per annum, after deducting the expense of collection.

-- The balance of the toll collections in hand, to the 30th April 1840, is believed to be considerable, though its exact amount is not known. A hope is expressed that the judicious employment of this balance may ultimately lead to a more effectual opening of the rivers, so as to admit of the inland steamers passing through at all seasons, instead of adopting the circuitous route of Channel Creek and the Sunderbunds.

IN THE CENTRAL PROVINCES THERE ARE NO CANALS.

CANALS IN THE NORTH-WESTERN PROVINCES:

(36.) Feroze Shah's Canal from the Jumna.

-- The canals in the North-Western Provinces, though navigable for various portions of their length, and at certain times of the year, were all constructed with a view to irrigation.

-- Length 205 miles. It was originally constructed in the 14th century by the Emperor whose name it bears.

-- Neighbourhood of Hissar.

-- Cost of reconstruction about 10,33,170 rupees. Total amount expended to the end of April 1840, 15,66,502 rupees. The direct return is obtained by water rent paid at the rate of eight annas per ligghah for each crop, or one rupee per biggah per annum. The amount levied as water rent in 1839 was Rs. 2,56,826. 10. 9.; the total amount realised has been 21,57,731 rupees. The value of the indirect return cannot be stated, as it depends entirely on improved agricultural produce, on the security which artificial irrigation affords against the effect of drought.

-- These three canals form what are called the "Canals west of the Jumna." The original cuts had fallen into disuse and consequent decay during the disturbed period which marked the fall of the Mogul Empire, and their condition having attracted notice soon after the country came into the possession of the British Government, they were surveyed by Lieutenant Blane of the Engineers, in 1817, and the necessary expenditure having been sanctioned, they were opened in 1820.

-- The utility of the Feroze Shah Canal may be conceived from the fact of the wells in the neighbourhood of Hissar being generally 130 feet deep, and the water obtainable from them being all more or less impregnated with salt. The extent of ground irrigated from these canals amounted to 2,58,626 biggahs in 1839.

(37.) Delhi Canal

-- Intended to convey water from Feroze Shah's Canal, near Kurnaul, to the capital city of the empire.

-- Length 85 miles. Was constructed in the 17th century by an opulent nobleman named All Murdhann Khan.

Kuranaul

(38.) Branch from Feroze Shah's Canal, near Kurnaul, to Rohtuck.

Length 45 miles

Rohtuck

CANALS IN THE NUJFUGHUR JHEEL COUNTRY:

Canal from the west end of the Jheel to the Jumna above Delhi.

-- For draining the country, which is over-flooded every rainy season; the land of which, when the waters are dried up, is extremely productive.

Jumna River

58,782 rupees

-- The work is now on the eve of completion.

-- It is supposed that the rent of the recovered land will very soon repay the expenditure.

Doab Canal. Its line runs from where the Jumna leaves the hills.

-- These canals are used for floating timbers, and for the conveyance of lime on small boats, but their employment as navigable communications is insignificant, when compared with their use as channels for the conveyance of streams for irrigation.

-- Length about 130 miles, supposed to have been constructed in the time of Mahomed Shah, one of Aurangzeb's successors. It had been entirely abandoned, and in some places its

Delhi

-- Cost of restoration 4,67,512 rupees.

Restored in 1831-32

-- Captain Cantley has met with many unforeseen difficulties in the efficient maintenance of this valuable work, which have arisen chiefly from the slope of its bed. The absence of all measures for providing against this difficulty, is a sufficient proof that the work could scarcely ever have been in full use in former days; but by the construction of locks and falls of masonry, the evil has been remedied, though at considerable cost. When it is considered that the drought of 1837-38 was the occasion not merely of loss of revenue, but of great loss

trace quite lost, when the Scheranpore district came into the possession of the British Government. Examined by Lieutenant Tod in 1810. Complete survey, with plans, sections, &c., made by Lieutenant De Bode, Engineer, in 1823-25. The re-opening of it was entrusted to Captains R. Smith, Engineers. Since its restoration, it has been under charge of Captain Cantley, Artillery; the outlay since he received charge of the works has been 5,79,104 rupees, and the return from water rent, mills, &c., 5,13,150 rupees.

of life from absolute starvation, it must be allowed that the utility of a canal like this, by which full 71,580 biggahs were enabled to give a good average crop, is not easily measured by mere money valuation.

(continued)

No. 5.—TABULAR ANALYSIS of the Bengal Military Board's Preliminary Statement, dated 8th September 1840—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>MORADABAD CANALS:</b>							
(39.) Canal between the Koh and Ganjam Rivers.	Irrigation - - - -	-- This work was sanctioned on the 19th April 1839, after a survey, and on plans, &c. prepared by Lieutenant Anderson, Engineers.	Ganjam River - -	Rs. a p. -	Rs. a p. -- Estimated amount of cost, 51,218 rupees.	Not stated - -	-- There appears every reason to hope, that the system of artificial irrigation, so happily exemplified in the Jumna Canal, may be very generally adopted in Rohilcund.
(40.) Proposed Canal from the Ganges to Kunkul, to pass near Meerut and Coel, and finally to join the River Esun, near Mynpooree.	Irrigation - - - -	-- In 1836, Captain Cantley, Superintendent of the Dooab Canal, suggested the practicability of making the waters of the Ganges available for irrigation on the eastern side of the Dooab, and was instructed to make surveys.	River Esun - - -	- - - - -	26,04,749 - -	-- This work is at present under the consideration of Government.	- - - - -
(41.) Beejapore water-course in the Dehra Dhoon, between the Touse, the Arsan, and the Bundal Rivers.	Irrigation - - - -	- - - - -	- - - - -	15,000 - - -	- - - - -	-- Not yet quite complete.	-- Its utility is considered likely to be very great, as compared with its cost, and to be the means of bringing an extensive tract of forest land into cultivation.
The total amount expended on Canals, as above, is 49,63,286 rupees; and the returns in water rent, tolls, &c., is now 3,47,386 rupees per annum.							
<b>EMBANKMENTS, SOUTH-WESTERN CIRCLE:</b>							
(42.) Embankments, in—							
Northern Cuttack -	They are intended, near the sea, to protect the interior of the country from inundation on occasions of high tides, and in inland tracts, to prevent floods of the rainy season from overflowing the banks of rivers.	-- Aggregate length, 3,459 miles, their height and mean thickness varying from 20 feet by 55 feet to the smallest size.	-	-- Came under charge of Military Board in 1831, since which period the amount expended is 16,67,822 rupees, including the charges of superintendence. The annual average outlay is 87,130 rupees.	-	-	-- The system at present followed, is believed to have been in force before the land came under the control of the British authorities. All that has since been done, has been to endeavour to introduce a gradual improvement in the dimensions and position of the earth-work, and to establish conjointly with the Zemindars, who would more immediately benefit by the change, sluices of masonry in the banks. These works are as yet few in number, but are coming by degrees into more general use. As regards returns for the expenditure, the maintenance of the embankments is believed to constitute
Southern Cuttack -							
Balaspore - - - -							
Midsapore - - - -							
Hooghly - - - - -							
The 24 Pergunnahs Burdwan - - - - -							

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EMBANKMENTS, LOWER PROVINCES:

Embankments on the Hooghly River, in the Berhampore Division.

Bunds on the Genduck River, in the Dinapore Division.

EMBANKMENTS, CENTRAL PROVINCES:

(43.) Sacri Bund, in the Behar District.

-- For the purpose of diverting the stream of the Sacri River towards the western portion of the Behar District.

-- Has been lately constructed.

(44.) Bunds on the Ganges and Jumna, at Allahabad.

-- Protect the town, and a considerable extent of land near the junction of the rivers, from inundation.

-- Have cost, since 1831, 1,34,286 rupees; and their annual maintenance costs about 11,000 rupees.

-- Have cost, since 1830, 1,90,826 rupees. Their average annual maintenance costs 19,000 rupees.

18,218

-- Have cost 30,190 rupees in the last (10) ten years.

one of the items of detail on which the gross rent, paid by every ryot, is calculated; in some cases the Government receive this, and in others the Zemindars; on this point no certain information can be given, but it is known that the Rajah of Burdwan pays to Government 53,742 rupees per annum on this account, and that the whole of this sum is not expended; there is no reason to suppose that in any estate throughout the embanked districts, the sum assigned as Pool Bundee falls short of the actual expenditure.

-- Are of the greatest utility. They were breached in 1838 by a flood of unprecedented height, when a considerable portion of the town and neighbouring country were inundated, and very great loss ensued.

The total amount expended on Embankments, as above, since 1831, has been 20,41,342 rupees; there is no reason to suppose that the assessments under the head of Pool Bundee are not equal to the outlay.

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BUILDINGS OF GENERAL UTILITY, CONSTRUCTED UNDER THE DEPARTMENT OF PUBLIC WORKS, IN THE SOUTH-EASTERN, LOWER, CENTRAL, AND NORTH-WESTERN PROVINCES:

(45.) Lighthouse at False Point

-- Built in the year 1837-38.

-- Cost, including superintendence, 59,245 rupees for the building, and 23,760 rupees for the light-room, or lantern; total, 83,006 rupees. It is presumed, that the pecuniary returns derived from this building, are included in the port dues of Calcutta.

-- The building contains apartments for the lightkeeper, and has separate rooms for the native establishment.

(46.) Lighthouse at Kedjerse

-- Not known. Cost of annual repairs about 450 rupees.

-- This building is of similar nature as the preceding.

(47.) Jetty at Chittagong

For landing goods

-- Projects 115 feet into the tideway.

6,706

Just completed

-- Of this work the local officers make very favourable reports.

(48.) Lighthouse; at Point Palmyra.

Not known

-- This was of a similar construction to the lighthouses at False Point and Kedjerse, but the encroachment of the sea on the sandy soil at its base has caused its abandonment. (continued)

No. 5.—TABULAR ANALYSIS of the Bengal Military Board's Preliminary Statement, dated 8th September 1840—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>BUILDINGS OF GENERAL UTILITY, CONSTRUCTED UNDER THE DEPARTMENT OF PUBLIC WORKS, IN THE SOUTH-EASTERN, LOWER, CENTRAL, AND NORTH-WESTERN PROVINCES—continued.</b>							
49.) Buildings for educational purposes.	- - - - -	- - - - -	- - - - -	-- 2,20,444 rupees, exclusive of five of small value, of which the cost is not known. Cost of annual repairs about 4,408 rupees.	- - - - -	- - - - -	-- There are (11) eleven of these buildings under charge of the officers of the Public Works Department.
50.) Places of Divine worship	- - - - -	- - - - -	- - - - -	- Aggregate value, 7,83,361 rupees; cost of annual repairs, 15,667 rupees; some portion of the original cost is believed to have been defrayed by private subscriptions, but to what extent is not known.	- - - - -	- - - - -	-- There are (22) twenty-two of these on the books of the Public Works Department.
Hospitals	For insane and other sick persons	- - - - -	- - - - -	-- Cost of construction, 46,740 rupees; cost of repairs, about 634 rupees per annum.	- - - - -	- - - - -	-- There are (5) five of these, exclusive of those provided for the military, or for prisoners in gaols.

The total sum expended on public buildings, as above, is 11,40,246 rupees, but there are in addition several miscellaneous works constructed at the expense of the State, regarding which, from their not being included in the Returns of Executive Officers, the information is very imperfect. Thus the following works are known to have been constructed at the expense of Government:

Stone bathing ghauts at Hardwar.	-- In consequence of a fatal accident which occurred at the great fair of Koom Mela, in 1820.	Constructed in 1821	- - - - -	-- 20,000 rupees, including the cost of superintendence.	-	- - - - -	
Repair of the Great Mosque, or Juma Masjid, at Delhi.	-- In consequence of injury caused by lightning.	-- Constructed in 1820-21.	- - - - -	20,000 rupees.	-	- - - - -	
Repair of the Kotub Minar	- - - - -	Constructed in 1823	- - - - -	25,000 rupees	- - - - -	- - - - -	-- The adjacent buildings were also cleared.

The Military Board remarked, " while the works of various descriptions of which we have some knowledge appear to have cost in the aggregate 1,39,64,099 rupees, that sum cannot be considered as the total amount expended by Government for works of public utility, nor have we the means of ascertaining what that amount may be."

Report dated Fort William, 8 September 1840.



The following Statements have been prepared from the series of the Board's annual Reports from the official year 1839-40, to that of 1850-51 inclusive.

## No. 6.

STATEMENT compiled from the REPORTS of the MILITARY BOARD at BENGAL, from Season 1839-40, to 1850-51 inclusive.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:</b>							
Roads from the Town of Aeng, in Arracan, to Nagatong and Thorough, and for the construction of Bridges.	- - - - -	Sanctioned 1840-41-	- - - - -	Rs. a. p. 17,829 7 4	Rs. a. p. - - - - -	Season 1840-41 -	-- Seven of the bridges to be restored, were destroyed by the Burmese in their fight from Arracan to Ava, in the year 1824.
<i>Akyab:</i> Construction of two wooden Bridges over the Peck Tock Kying Nullah. .	-- To replace old bridges, which were originally constructed of indifferent materials by the Mughls of the Province.	-- Sanctioned 13th January 1841.	Akyab - - - -	5,809 11 1	5,470 11 2	Completed 1842-43 -	-- The breadth of these bridges, as first sanctioned, was 18 feet for both; but, subsequently, the Government authorised the width of one to be increased to 23, and the other to 24 feet. This has consequently increased the expense by Rs. 600. 2. 7.
Construction of five masonry bridges over Nullahs.	-- For maintaining an uninterrupted communication at the station.	-- Sanctioned 10th February 1841.	- - - - -	6,076 10 7	5,272 - 2	-- Completed season 1842-43.	- - - - -
Construction of Pucka Drain Bridges in the town.	-- The necessity for this work, was brought to the notice of Government by the local civil officers.	-- Sanctioned 18th May 1841.	- - - - -	875 - 1	- - - - -	-- Constructed season 1842-43.	- - - - -
Construction of two Pucka Bridges.	- - - ditto - - - -	-- Sanctioned 27th April 1841.	-- One on the road towards Nagapam, and the other in the town, on the bank of the Peck Sik Kyong.	1,445 12 2	- - - - -	- - ditto.	- - - - -
Restoration of the Bund and Sluice at Akyab, and clearance of Jungle.	-- For the purpose of drainage, and as essentially necessary to the salubrity of the station.	-- Sanctioned 3d April 1843.	Akyab - - - -	3,482 6 10	7,203 9 2	-- Completed season 1843-44.	-- This work, which was sanctioned in 1841-42, at an estimated cost of Rs. 6,037. 14. 6., was completed for Rs. 7,577. 10. 4.; but it was destroyed by an irruption of the sea, during a violent storm, on the 15th May 1842, through a want of sufficient height. It was raised five feet above the highest spring tides; nevertheless the sea, on this occasion, overtopped the bund by five feet. The saving has accrued chiefly by a reduction of the rates, and also by the employment of convicts on a portion of the work.
Construction of two Bridges at, in the Arracan Division.	-- Required to keep open the communication between the station and the point bungalows, belonging to the residents.	-- Sanctioned 18th August 1840.	- - - - -	4,376 10 2	5,523 2 9	-- Completed season 1842-43.	- - - - -
Construction of two Pucka Drain Bridges in the town of Akyab.	- - - - -	-- Sanctioned 26th November 1842.	- - - - -	651 7 2	- - - - -	- - ditto.	- - - - -

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES—continued.</b>							
<i>Aeng Road and Pass:</i> Construction of a Bridge, and repair of seven others, and of Travellers' Houses.	-- These works are intimately connected with the interests of the trading community.	-- Sanctioned 8th September 1844.	- - - - -	<i>Rs. a. p.</i> - - - - -	<i>Rs. a. p.</i> 1,161 11 1	- - - - -	
<i>Agrachow to Baildah:</i> Construction of a Foot Road, connecting the Centar with the Cuttack Road.	-- To facilitate the transmission of the daks between Centar and Midnapore.	-- Sanctioned 16th April 1845.	Baldah - - - -	1,873 6 8½	1,886 8 7	- - - - -	
<i>Akyab:</i> Repairs to the Phoongaparrah Bridge.	- - - - -	-- Sanctioned 28th June 1848.	Akyab - - - -	928 14 4	- - - - -	Season 1849-50	-- The planking, beams, rails, &c., have been renewed.
Construction of a wooden Bridge on the Gaol Road.	-- The necessity for this work was pointed out by the officer commanding at Akyab.	-- Sanctioned 19th October 1849.	ditto - - - -	- - - - -	1,371 - - -	- - - - -	-- The estimate is exclusive of the costs of excavations, which will be performed by convicts.
Construction of a wooden Bridge at Nazerparah.	- - - - -	-- Sanctioned 6th November 1850.	ditto - - - -	- - - - -	1,678 12 9	- - - - -	-- An estimate was passed in 1846 for a masonry bridge, but, owing to the badness of the soil, it was considered preferable to construct a wooden one.
<b>ROADS AND BRIDGES, LOWER PROVINCES:</b>							
<i>Assam Roads:</i>							
<i>Lower Assam:</i>							
From Rabu to Gobba	- - - - -	Length, 27 miles	Assam - - - -	- - - - -	981 7 5	- - - - -	
From Talia Mhookutta to Lowkhosh.	- - - - -	10 " } Sanctioned 9th January 1838.	ditto - - - -	- - - - -	9,917 7 11	- Completed season 1842-43.	-- These are unmetalled roads, and their width is 16 feet; they have been raised where necessary.
From Nowgong Division Roads	- - - - -	9 " }	ditto - - - -	- - - - -	972 9 -	- - - - -	
From Borallygong to Soonaree	- - - - -	3 " }	ditto - - - -	- - - - -	297 10 7	- - - - -	
From Nowgong to Demooroogoree.	- - - - -	2 " }	ditto - - - -	- - - - -	538 8 -	- - - - -	
Repair of the Road from Kulling River to Koliabur.	- - - - -	72 " } Sanctioned 22d August 1842.	- - - - -	- - - - -	2,474 1 -	-- Completed season 1842-43.	-- This road will be made 12 feet wide, with 106 wooden bridges and drains. Proposed width, 15 feet.
From Koliabur to the Dunsary	- - - - -	60 " }	- - - - -	- - - - -	- - - - -	- - - - -	
Repair of Road between Nowgong and Tezpore.	- - - - -	17 " } Sanctioned 26th April 1843.	- - - - -	4,924 - 8	4,924 - 8	- - - - -	-- Width, 12 feet, with 32 bridges and drains.
Repair of Road from Rah to Daboka.	- - - - -	29½ " }	- - - - -	5,152 15 8	6,528 8 6	- Completed 1846-47	-- Width, 12 feet, with wooden bridges and drains. The saving of Rs. 1,375. 14. 3. on the estimate has been effected by the reduction of rates.
<b>ROADS AND BRIDGES, CENTRAL PROVINCES:</b>							
<i>Ajmere and Nusteerabad Road:</i> Metalling of.	-- Metalling of such portions as, from the nature of the soil, may require the construction of a hard artificial surface.	-- Length of road, 13 miles 4 furlongs; aggregate length requiring to be metalled, 6 miles 4 furlongs and 6 yards. Sanctioned 12th January 1848.	- - - - -	- - - - -	- - - - -	6,472 15 -	- - - - -

18 PAPERS RELATING TO PUBLIC WORKS (INDIA).

<p><i>Agra and Bombay Road:</i> Construction of Bridges over the Bubbookee Nuddee and the Bhowkerie Nuddee.</p>	<p>- - - - -</p>	<p>- - Sanctioned 9th September 1849.</p>	<p>- - In the Province of Malwa.</p>	<p>1,749 8 11 1,466 12 2</p>	<p>{ For bridge over the Bubbookee Nuddee } 1,808 8 8 { For bridge over the Bhowkerie Nuddee } 1,597 - -</p>	<p>- - Completed season 1849-50.</p>	<p>- - Both bridges are on the territory of the Maharajah Scindia. - - In the territory of the Maharajah of Holkar.</p>
<p>Construction of a Bridge over the Muddy Nullah.</p>	<p>- - The construction of this bridge is necessary, and is considered to come within the scope of the original intentions in regard to the Agra and Bombay Road.</p>	<p>- - To consist of one arch of 24 feet span. Sanctioned 15th October 1849.</p>	<p>- - The Nullah crosses the main road about one mile north of the Residency at Indore.</p>	<p>- -</p>	<p>2,862 - -</p>	<p>- -</p>	<p>- -</p>
<p>Construction of a Bridge over the Mhow Nullah.</p>	<p>- - Commenced under instructions from the Lieutenant-governor, by whom it is considered desirable to bridge over as many of the small muddy nullahs as may be practicable, which abound on this road, and materially obstruct all traffic, and to improve the fords which cross the rocky beds of rivers.</p>	<p>- - The bridge is of one arch, 12 feet span. Sanctioned 28th October 1849.</p>	<p>- - On the Agra and Bombay Road.</p>	<p>739 3 5 1/2</p>	<p>872 - -</p>	<p>- -</p>	<p>- -</p>
<p>Ford on the Farbutty River -</p>	<p>- - To provide for a passage for wheel carriages across the Farbutty River on the general level of the channel during the dry season only.</p>	<p>- - Sanctioned 5th September 1849.</p>	<p>Near Barsud - -</p>	<p>2,910 8 5 1/2</p>	<p>- - - - -</p>	<p>Completed - -</p>	<p>This to be a paved ford.</p>
<p>Construction of a Bridge over the Muddy Nullah.</p>	<p>- - Considered necessary for a fair-weather road.</p>	<p>- - The bridge to be of one arch of 80 feet span. Sanctioned 4th February 1850.</p>	<p>At Chuper Kajhora -</p>	<p>- - - - -</p>	<p>4,167 - -</p>	<p>- -</p>	<p>- -</p>
<p>Construction of a Bridge over the Muddy Nullah.</p>	<p>- - With a view to make the line of communication more perfect.</p>	<p>- - The bridge is of seven arches of six feet span each. Sanctioned 2d December 1848.</p>	<p>- - At Doltarin, between Bisura and Pashora.</p>	<p>1,477 3 6 1/2</p>	<p>1,711 18 5</p>	<p>- - - - -</p>	<p>in the territory of the Rajpurb Raja.</p>
<p>Construction of Bridges over the Muddy Nullah.</p>	<p>- - ditto - - ditto - -</p>	<p>- - One bridge of two arches, eight feet span; one bridge of three arches, seven feet span; one bridge of eleven arches, six feet span. Sanctioned 12th September 1849.</p>	<p>- - Over the Boranna, the Far Muddy, and Belloda Village Nullahs.</p>	<p>- - - - -</p>	<p>2,706 - 10</p>	<p>- -</p>	<p>- -</p>
<p>Construction of a Bridge over the Kukooba Jheel.</p>	<p>- - - - -</p>	<p>- - This bridge is of three arches each, of 7 1/2 feet span. Sanctioned 4th April 1850.</p>	<p>- - Crosses the main road about 7 1/2 miles south of Agra.</p>	<p>- - - - -</p>	<p>966 - -</p>	<p>- -</p>	<p>- -</p>
<p>Construction of a Bridge over the Gudha Muddy Nullah.</p>	<p>- - - - -</p>	<p>- - This bridge is of six bays, each four feet wide. Sanctioned 25th March 1850.</p>	<p>- - Crosses the main road between Soosam and Gohar.</p>	<p>- - - - -</p>	<p>1,238 - -</p>	<p>- - - - -</p>	<p>In the territory of Maharajah Scindia.</p>
<p><b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES.</b></p>							
<p><i>Agra Strand:</i> Bridging of drains on the.</p>	<p>- - - - -</p>	<p>Sanctioned 1848-49.</p>	<p>Agra - - - -</p>	<p>7,910 15 -</p>	<p>8,626 7 1</p>	<p>- - Completed season 1849-53.</p>	<p>- -</p>
<p><i>Agra Bridge:</i> Over the Doornik Ravine.</p>	<p>- - On account of the inconvenience experienced by the public, who have occasion to pass by the bridge and hamlet near the Triplichah and Curnagura, owing to there being but one narrow confined road at this entrance of the town.</p>	<p>- - Sanctioned 7th December 1840.</p>	<p>- - - - -</p>	<p>910 8 2</p>	<p>1,113 2 4</p>	<p>- - Completed season 1841-43.</p>	<p>- -</p>

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES—continued.</b>							
<i>gra to Mynpoore:</i>				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
Construction of Bridges over the Jhara River and Guddakhar Ravine, and over the Peelakar Birulet.	-- This road is of much importance, being a direct communication between Agra and Fattyghar.	Sanctioned 1840-41-	Mynpoore - - -	Bridge over the Jhara - - - 7,069 8 6 Ditto over the Peelakar Birulet 5,151 10 - <hr/> Rs. 12,215 8 6	13,017 13 5	-- Completed season 1842-43.	-
Construction of a Bridge over the Urind Nuddee.	- - - - -	-- Of three arches of 40 feet span. Sanctioned 3d January 1845.	-- Crossing the Agra and Mynpoore Road, 15 miles from Mynpoore, at the village of Kulhore.	17,071 - 1	23,374 3 7	-- Completed season 1846-47.	-- The savings on the sanctioned estimate, viz., Rs. 6,808. 3. 6., and Rs. 10,831. 15. 8., respectively, are owing to much of the masonry work having been dispensed with, in consequence of the soil being more favourable than was originally expected, and to other judicious deviations from the plan. A reduction of rates has also contributed in effecting these savings.
Construction of a Bridge over the Singar Nullah.	- - - - -	-- To consist of two elliptic arches; the centre one of 45 feet, and the two arches on each side of 40 feet respectively. Sanctioned 3d January 1845.	-- Crossing the Agra and Mynpoore Road, 23 miles from Mynpoore, at the village of Nrown.	22,951 5 7	33,633 5 3		
<i>gra and Bombay Road:</i>							
To the Nerbudda River (See Paras. 13 to 17 of Court's Despatch, 30th January 1850, at page 148 of Parliamentary Return, No. 622, of 1851.)	-- A fair weather road adapted for hackeries or wheel conveyances, being much required between Agra and Bombay, it was determined in 1840 to improve, with occasional diversion, the existing road; the improvement was to comprise the removal of the principal obstructions in the ghauts, jungles, and in the passage of rivers and nullahs, or mountain streams.	Length, 1st portion: Agra to Indore - 370 8 102 Length, 2d portion: Indore to Akberpore on the Nerbudda - - - 51 0 167 Length, 3d portion: Akberpore to Sindwa, 43 1 0 Length, 4th portion: Sindwa to Bombay 270 1 179 <hr/> TOTAL - - - 784 7 8  Commenced in 1840.	Bombay - - - -- The expenditure within the Bengal Division to November 1847 is stated as follows; viz.,  Rs. New work of road, 1,94,310 Superintendence, 1,13,106 Repairs, &c. - 47,542 <hr/> 3,54,958  The sum expended on two divisions of the road within the Bombay Presidency to 30th April 1848, exclusive of repairs, was - - - 9,74,811 There has also been a further sum sanctioned for various useful purposes of about 7,000 Making a Total of } Rs. 13,30,769	11,00,000 - - (eleven lacs) without metalling.		-- Major Drummond has brought his survey of the portion of the line between Agra and Nerbudda to a close; and with reference to the enormous expense which must be incurred for such a road as would be available throughout the rainy season, the Government has come to the resolution to limit the work to an improvement of the existing roads, and in a great degree to give up the new lines which had been proposed. The Government on the 30th June 1840 sanctioned an estimate of 1,20,000 rupees, exclusive of engineer's salary and establishment, for improving the worst parts of the road between the Chambal River and Suppre, 115 ½ miles; and between Indore and the Nerbudda River, 76 ½ miles; so as to be practicable for wheeled carriages, including a branch road from Suppre to Gwalior. An increase in the width of the Ghauts from 10 to 14 feet was authorised on 3d January 1843. Returns were called for in 1848 with a view to undertaking the improvement of such detached parts along this great line of road as urgently required either construction or repair, when the following estimates were submitted, and recommended for immediate sanction, viz.: For the repair of about 20 miles of the road in Candeish Rs. 1,00,000 For completing part of the road under charge of the Civil Engineer, a distance of 33 miles, with bridges and drains - 2,46,514 For bridging a portion of the road between Soonghar and Dhoolia - - - - - 65,000 For completing the unmetalled portion of the line in Kandeish 3,00,000 - <hr/> TOTAL - - - Rs. 7,11,514	

These works, however desirable, were considered too costly to be undertaken at present. A sum of 4,224 rupees was sanctioned in June 1849 for converting into a fair-weather road the line of 43 miles in length, between Scindwa and the Nerbudda, his Highness Holkar having contributed a moiety. The Court, in January 1850, sanctioned the annual expenditure of 28,700 rupees for the maintenance of this road within the Bengal Presidency.

Construction of a well at the top of the Kilner (Gara) Ghaut.	-- On a representation from the Resident at Indore of the very serious inconvenience experienced by troops and travellers from the want of water at that spot.	-- Sanctioned season 1845-46.	-- Between Deodat and Akbarpore.	594 14 8	760 14 5	-- Completed season 1846-47.	--
Agra: Proposed construction of a Suspension Bridge over the River Jumna.	- - - - -	- - - - -	Agra - - - - -	- - - - -	{ 5,33,378 - - - 4,51,749 - - - }	- - - - -	-- The first estimate is for a bridge of two spans of 500 feet each, with two half spans of 225 feet each, and a roadway 26 feet broad, supported by three chains; the other, with the same openings, supported by two chains. These estimates, together with others on the taper chain, or Dredgian principle, were held over, awaiting a report of a special committee on the causes of the failure of the Balli Khali Bridge on the Dredgian principle. Subsequent to these proceedings, the construction of bridges on the taper chain, or Dredgian principle, was generally prohibited by the Home Authorities. An estimate for a masonry bridge was then submitted, but the Lieutenant-governor being doubtful whether the same site would suit a railway bridge as would be selected for the ordinary traffic of the country, has suspended any ulterior proceedings. The proper site for a railroad bridge, it is supposed, would approach Agra by Ferozabad, two marches short of Agra.
<b>CIVIL BUILDINGS, SOUTH EASTERN PROVINCES—JUDICIAL:</b>							
<b>Akyab:</b>							
Construction of a Catcherry.	-- To replace the existing catcherry, not worth repairing.	-- Sanctioned 1st August 1839.	Akyab - - - - -	4,869 8 6	4,743 8 3	-- Completed season 1841-42.	--
Construction of a new Gaol.	-- To replace old buildings which are unserviceable and unworthy of repair.	-- Sanctioned 23d March 1841.	Akyab - - - - -	12,159 9 4	14,363 7 1	-- Completed season 1843-44.	-- The new gaol is equal to the accommodation of 320 prisoners.
Construction of a Sanitarium Bungalow, with bathing rooms and out-offices.	-- It is not stated for whose use the building is designed.	-- Sanctioned 9th January 1838.	-- Situated at the end of the Farquar's Rocks, two miles from the station of Akyab.	4,813 9 10	- - - - -	-- Constructed in 1840-41.	--
Construction of a Treasury Record Room, malkamah, and cash-room, at the civil station.	- - - - -	-- Sanctioned 19th October 1841.	Akyab - - - - -	5,741 15 6	6,414 15 9	-- Completed season 1843-44.	--
Amberst: Construction of a new Gaol et.	-- In consequence of the insufficient accommodation afforded by the existing gaol.	-- Sanctioned 11th January 1842.	Amberst - - - - -	3,445 4 4	5,106 14 3	-- Completed season 1843-44.	-- The gaol is intended for the accommodation of 280 convicts. The difference is owing to the employment of convicts, and to a reduction of the accommodation, with the concurrence of the commissioners. The dimensions sanctioned were 240 x 50, while those of the new gaol are 157 x 48.
Allipore Gaol: Construction of a Barrack and a Picket Shed.	-- For the gaol guard. The old guard-rooms were partly blown down by the storm of 24 June 1842.	-- Sanctioned 9th January 1843.	Allipore - - - - -	5,404 12 1	5,776 13 1	-- Completed season 1843-44.	-- These buildings are required for the accommodation of 211 men. The walls will be of masonry, and the roofs of tiles.

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, SOUTH EASTERN PROVINCES—JUDICIAL—continued.</b>							
<i>Akyab:</i> Construction of a Gaol Wall, with Sentry-boxes.	-- In consequence of a suggestion by the Commissioners of Arracan that all men sentenced to more than one year's imprisonment should be located at Akyab.	-- Sanctioned 17th May 1838.	Akyab - - -	Rs. a. p. 9,100 14 3	Rs. a. p. - - -	Season 1838-39.	-
Construction of Wards within the above Gaol Wall.	-- The existing gaol buildings have become old, and unworthy of further repair.	-- Sanctioned season 1840-41.	ditto - - -	14,363 7 1	14,363 7 1	-- Completed season 1840-41.	-- The new wards will accommodate 120 prisoners.
Construction of a Sudder Hospital at.	-- Rendered necessary by the existence of a military police; the flotilla establishment, crews of vessels, &c., all requiring medical aid, in consequence of the insalubrity of the climate, as well as the ruinous condition of the old hospital.	-- Sanctioned 6th February 1843.	ditto - - -	1,708 1 -	1,307 11 9	-- Completed season 1844-45.	-- The new hospital will be 60 X 24, with a 10 feet verandah all round, the corners of which are to be partitioned off into separate rooms for the native doctor; dispensary, and operating rooms.
<i>Allipore Gaol:</i> Alterations and improvements to.	-- To improve the gaol, as regards cleanliness, salubrity, and discipline.	-- Sanctioned 22d June 1841.	Allipore - - -	20,784 13 10	22,377 15 8	-- Completed season 1843-44.	-
<i>Akyab:</i> Construction of six Drain Bridges.	-- Necessary to the cleanliness and salubrity of the town.	-- Of one arch of six feet, sanctioned 20th August 1846.	-- On the Chowreggya road.	1,943 5 8	2,202 - -	-- Completed season 1846-47.	-
Construction of a Bridge at Talee Bazar.	-- Required to replace bridges of wood, reported to be unsafe for wheel carriages; and as the line of road on which they are situated is considered the most important at Akyab, it is considered that they should be of the most durable description.	-- One arch of 20 feet span.	Akyab - - -	- - - - -	6,313 - -	-	-
Construction of a Bridge at Nazirpoh.		Twenty-four feet span	ditto - - -	- - - - -	4,998 - -	-	-
<i>Allipore Gaol:</i> Putting up a Pump.	-- For raising water from the large tank in the gaol to the reservoir above it, to supply the different wards with drinking water.	-- Sanctioned 20th August 1845.	Allipore - - -	40 8 -	402 8 -	-- Completed season 1846-47.	-
<i>Akyab:</i> Construction of the Sudder Mokam Stone Sluice.	-- This sluice, together with the bund at Akyab, was destroyed by a storm on the 15th May 1842.	-- Sanctioned 28th May 1845.	Akyab - - -	1,783 15 8	1,783 15 8	-- Completed season 1846-47.	-- The roadway over the sluice has been made sufficiently large to be safe and practicable for wheel conveyances. The reconstruction of the bund was reported in 1844.

Project Description	Sanctioned Date	Location	Estimated Cost	Actual Cost	Year	Remarks
<b>Allipore Goal:</b> Alterations and Improvements	Sanctioned 22d June 1841.	Allipore	22,277 15 9	20,734 13 10	1845-46.	-- The works sanctioned are as follows: The construction of aqueducts to carry water to the reservoirs in the several court yards, for drinking and other purposes; the construction of privies; the filling up of wells; the construction of partitions with a view to the separation of the convicts into several sections 100 men; the removal of the latrines; the raising of the walls; the necessary provision of an additional ward and working shed.
Construction of a Balagnies Guard-room to the.	Sanctioned 22d June 1845.	Allipore	608 --	608 --	Completed season 1845-46.	--
Akyab: Additions and alterations to the Cutcherry at.	Sanctioned 3d June 1844.	Akyab	2,306 9 3	--	--	-- This building has been lengthened about 40 feet.
Allipore Goal: Construction of a Bedding-room, with Addition to the Cutcherry of the additional Jongs.	Sanctioned 25th May 1848.	Allipore	--	935 5 3	Completed season 1848-50.	-- Additions and alterations to the cutcherry itself were also effected.
Allipore: Raising the Roof of the Sepoy Guard-room.	Sanctioned 30th June 1850.	Allipore	2,303 1 0	--	--	--
Alterations and Additions to the Goal Hospital.	Sanctioned 19th October 1850.	Allipore	9,094 -- 1	--	--	-- The superintendent observed, that in the large goal at Allipore the different kinds of prisoners are kept so distinct as can be; but in the hospital all the above classes, from the most atrocious and desperate convicted felon to the respectable freeman, male or female, are mixed together.
<b>CIVIL BUILDINGS, LOWER PROVINCES--JUDICIAL:</b>						
Arrah: Sudder Amess's Cutcherry.	G. O. 25d January 1850.	Arrah	--	1,559 --	Season 1839-40.	--
Akyab: Construction of a Cutcherry at.	Sanctioned 1st August 1838.	Akyab	--	4,743 --	--	--
Arrah: Construction of a De-wanny or Civil Goal.	Sanctioned 1st November 1849.	Arrah	4,649 10 5	3,437 13 7	Completed season 1844-45.	-- In the new goal, and at the suggestion of the Judge, separate accommodation is provided for prisoners of rank and caste.
Arrah Goal: Construction of 60 Ventilators, and lowering Compound Walls.	Sanctioned 17th February 1845.	Arrah	413 4 6	492 7 10	Season 1845-46.	--

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—JUDICIAL:</b>							
<i>Allahabad:</i> Sadler Ameen's Cutcherry.	- - - - -	-- Sanctioned 26th August 1839.	Allahabad - - -	<i>Rs. a p.</i> 1,273 6 8	<i>Rs. a p.</i> 1,579 8 -	-- Completed season 1841-42.	-
<i>Ajmere:</i> Alterations to the.	- - - - -	-- Sanctioned 24th December 1840.	Ajmere - - -	1,700 - -	1,700 - -	Season 1840-41.	-
<i>Azimghur:</i> Construction of a Record Room.	-- For the use of the Collector and Magistrate.	-- Sanctioned 23d March 1844.	- - - - -	2,325 7 9	2,328 6 9	-- Completed season 1846-47.	-
<i>Allahabad:</i> Construction of an additional Room to the Judge's Cutcherry.	-- For the accommodation of the records.	-- Sanctioned 7th January 1851.	Allahabad - - -	- - - - -	1,998 4 6	- - - - -	-- The necessity for this additional accommodation was pointed out by the local civil authority.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:</b>							
<i>Allyghur Gaol:</i> Construction of an additional Ward.	-- In consequence of the insufficiency of space in the gaol.	-- Sanctioned 30th August 1841.	- - - - -	1,484 4 10	- - - - -	-- Constructed season 1842-43.	-
<i>Agra:</i> House for the Magistrate and Collector, and his Deputy.	-- The house which had been rented was no longer in a fit state for a public office.	-- Sanctioned 11th September 1842.	Agra - - -	- - - - -	11,956 13 9	Season 1842-43.	-
Erection of Offices for the Court of Sudder Dewanny.	- - - - -	-- Sanctioned April 1843.	- - - - -	20,392 9 3	17,501 - -	-- Completed season 1844-45.	-- These new offices will be built near the Secretariat Buildings, and the whole of the public buildings will be enclosed by a low wall.
Erection of Offices for the Board of Revenue.	- - - - -	-- Sanctioned April 1843.	- - - - -	- - - - -	11,067 - -	- - - - -	-- The excess of expenditure is owing to a rise in the price of timber in the bazaar.
Construction of a Hospital Ward at the Foujdarry Gaol.	For the use of females - -	-- Sanctioned 4th November 1843.	Agra - - -	849 6 7	969 12 9	-- Constructed season 1843-44.	-- The necessity for this work was reported direct by the civil authorities to the Government.
<i>Allyghur:</i> Construction of a Gaol in the Fort.	-- To relieve the district gaol, by the withdrawal of life prisoners, and to lessen the expense for increased guards for the custody of convicts.	-- Sanctioned 2d March 1844.	Allyghur - - -	-- These works suspended in season 1844-45.	66,989 1 -	- - - - -	- This gaol is intended to accommodate 1,200 male and 200 female convicts. The whole of the buildings are to be surrounded by a ditch 14 feet broad and 12 feet deep, with a pukka wall 14 feet high in the centre. The slopes are to be secured with masonry revetments, and the bottom of the ditch and a few feet of the bottom of the slope to be substantially faced with masonry, and the ditch to be made considerably wider at top.
<i>Agra:</i> Construction of a Court House.	For the Sessions Judge - -	-- Sanctioned 3d June 1845.	Agra - - -	6,436 10 -	8,558 12 9	-- Completed season 1846-47.	-



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Allyghur: Construction of Cutcheries for the Sudder Amens and Omahs.	-- During the last rains the old buildings became too dilapidated for use.	-- Sanctioned 25th March 1846.	Allyghur	3,355 13 10	3,003 - -	-- Completed season 1846-47.	-
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES--REVENUE:</b>							
Akyab: Additions and Alterations to the Treasury and Record-room.	- - - - -	-- Sanctioned 9th September 1844.	Akyab	1,625 - -	1,625 - -	-- Completed season 1846-48.	-
<b>CIVIL BUILDINGS, CENTRAL PROVINCES--REVENUE:</b>							
Allahabad: Pilgrim Hospital, additions to.	- - - - -	20th December 1839	Allahabad	1,475 1 -	1,475 1 -	-- Completed season 1840-41.	-
Office of the Sadr Board of Revenue.	-- Repair injury done by storms on the 2d and 3d May 1848.	18th October 1838	- ditto -	8,540 - -	8,540 - -	-- Completed season 1839-40.	-
Construction of four Tahildarry Cutcheries.	- - - - -	-- Sanctioned 27th August 1840.	- - These cutcheries are situated at Menjah Chall, Kurchanna, and Muzjeipora.	10,812 4 5	20,423 2 4	-- Completed season 1842-43.	-
Azingurk: Construction of a Tahildarry Cutchery.	- - - - -	-- Sanctioned 31st March 1838.	At Cheerkote	5,730 - 4 1/2	- - - - -	-- Completed season 1841-43.	-
Allahabad: Construction of a Treasury Room to the 12th Judges' Cutchery.	-- This cutchery has been transferred to the Collector of Allahabad.	-- Sanctioned 27th March 1847.	Allahabad	- - - - -	3,869 - -	-	-
<b>CIVIL BUILDINGS, NORTH WESTERN PROVINCES--REVENUE:</b>							
Agra: Construction of a Cutchery for the Commissioner of the Division.	- - - - -	-- Sanctioned 11th August 1846.	Agra	9,561 6 -	10,573 - -	-- Completed season 1846-47.	-
Addition of Outbuildings to the Cutchery of the Commissioner.	-- Consisting of a guard-house, godown, and abod.	-- The necessity for these works was brought to the notice of the Lieutenant-governor, who at once directed the executive officer to commence on the buildings.	- ditto -	1,306 5 7	1,533 - 2	-- Completed season 1847-48.	-
Allyghur: Construction of a Tahildarry Cutchery at Egless.	-- The Tahsil duties have been carried on with much inconvenience at the Sudder Station, which is a distance of 15 miles.	-- Sanctioned 7th July 1843.	Egless	- - - - -	4,000 12 6	-	-
<b>CIVIL BUILDINGS, SOUTH EASTERN PROVINCES--GENERAL:</b>							
Akyab: Enclosure of the Burial Ground.	- - - - -	-- Sanctioned 16th May 1842.	- - - - -	- - - - -	1,085 12 3	-	-
Allipore: Removing and setting up a Steam-engine in the Iron Bridge Yard.	-- This engine, which has been transferred from Channad Paul (Uhrat), is of 10 horse-power.	-- Sanctioned 25d October 1842.	Allipore	7,249 - -	7,620 - -	-- Completed season 1844-45.	-

(continued)





No. 6.—Statement compiled from the Reports of the Military Board at Bengal, from Seasons 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expend Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>MARINE BUILDINGS, LOWER PROVINCES.</b> Ship's Lighthouses on the Grand Storage Hoek.		- - Sanctioned 9th November 1842.	- - - - -	Rs. 5,257 10 4 Cost of Light Houses Buildings etc. included - 1,201 9 8 Ladders - 15,000 - - Rs. 50,000 3 10	Rs. 5,655 6 7 The cost will be defrayed from the funds of the port, which are Rs. 50,000 or Rs. 50,000 to be paid. The lanterns to be used, which in value amount to about Rs. 1,000 repairs, will be supplied from the marine stores in Calcutta.	-- Completed season 1843-44.	-- Thirty-five feet of the rock lighthouse has been removed, and a base was obtained for the new lighthouse. The lanterns are 40 feet above high-water mark, and the lighthouses will be raised to the height of 50 feet, so that it will be 100 feet above the highest spring-tides. The lantern was lighted on the 7th March 1844.
<b>EMBANKMENTS, SOUTH-WESTERN PROVINCES.</b> Indernau Division: Restoration of the Kannee Khul Bunds.		- - Sanctioned 19th July 1841.	Burdwan	- - - - -	4,675 15 -	Seasons 1841-42	-- The length of embankments in the Indernau Division is represented, in 1839-40, to be 82½ miles, and the estimated cost of annual repairs, Rs. 6,919 repairs.
New Bend on the Adjya River.	-- To prevent injuries to lands by the overflows of the river.	Sanctioned 1841-42	- - - - -	1,884 11 -	- - - - -	-- Completed season 1841-42.	
<b>EMBANKMENTS, SOUTHEASTERN PROVINCES.</b> Burdwan: Construction of a new Bend on the Seila River.	-- To replace the old bend, which was pronounced to be quite impracticable of efficient repair.	- Length, 10,460 feet; sanctioned season 1843-44.	Burdwan	9,457 14 1	- - - - -	-- Completed season 1843-44.	-- It is expected that about 844 bags of sand will be fertilized.
Burdwan: Construction of a new line of Bend from Salapore to the Canna Nuddes, and repairs and renewals to the Burdwan Bunds generally.	-- The new bend is proposed for construction at a point where the old one has frequently failed, causing great damage to the country.	- Length of new bend, four miles; sanctioned season 1847-48-49.	Burdwan	- - - - -	79,176 15 9 16,469 - - 98,645 15 9	- - - - -	-- The length of the new bend only is 11,600 feet; the centre is an average height of 16 feet, it is 14 feet broad and has a slope of four to one and three to one. The ends, which are not exposed to the force of the river, 9,100 feet in length, have a height of 10 feet, and a crest of 8 feet.
Burdwan Bunds: Repair of a breach at the Bagubpore Bund.	-- This bend was breached during the floods of 1846, nearly opposite to Burdwan, at a point where the whole force of the Damoosah acts upon it.	- - Sanctioned season 1848-49.	Near Burdwan	7,591 7 10	- - - - -	Completed 1849	
<b>Balassore Division:</b> Construction of new Bunds, and restoration of others which had been abandoned.	-- Required for the protection of the estate Mouzah Sindesah, Pergunah Southak.	- Sanctioned January 1844.	- - - - -	- - - - -	330 - -	Seasons 1843-44	-- The average length of embankments in 1839-40, in the Balassore Division, was estimated at 185 miles, and the cost of annual repairs, 1,665 rupees. In 1847-48, the estimate for annual repairs was Rs. 7,037. 13. 9.

<p>• EMBANKMENTS, LOWER PROVINCES: Bengalure Division: Bunds at Mirzabad.</p> <p><i>Banesh Bunds:</i> New Bund from Huntasabad to Banesh Ghent.</p> <p><i>Bures Bund:</i> Construction of a Sluice Bridge at the western end of this Bund.</p>	<p>-- Length, about 74 miles.</p> <p>-- Length two miles, one furlong, and 180 yards, sanctioned 6th February 1846; 2,100 feet additional sanctioned December 1840.</p> <p>-- Sanctioned 23d February 1850.</p> <p>-- At the village of Choozer, Bogree, Al-Ishabad.</p>	<p>4,111</p> <p>1,837</p> <p>2,223 10 9</p>	<p>-- This work is in progress.</p> <p>-- Completed 1841-42.</p>	<p>-- The cost of annual repairs for 1850-51, amounted to 4,734 rupees.</p> <p>-- Rs. 1,272. 14. 1 1/2 less than the original estimate, owing to the employment of convicts on the work.</p> <p>-- The west end of the Bund was totally detached from the high ground, with which it ought to be connected, and the waters of the Gauges run up a hollow many hundred feet in rear of the left flank of the Bund.</p> <p>-- The great excess of expenditure beyond the estimate, was occasioned by Lieutenant O'Mearney not making a sufficient allowance, for the great distance from which the earth had to be brought. The bund has fully answered the purpose for which it has been reconstructed, and the collector anticipates no difficulty in realising from the Zamindars the amount expended.</p>
<p>EMBANKMENTS, CENTRAL PROVINCES: Behar, <i>Sars Bund:</i> Reconstruction of.</p>	<p>-- Sanctioned season 1838-39.</p> <p>-- Bahar</p>	<p>13,318</p> <p>9,155 2 7</p>	<p>Completed 1840-41</p>	<p>-- The great excess of expenditure beyond the estimate, was occasioned by Lieutenant O'Mearney not making a sufficient allowance, for the great distance from which the earth had to be brought. The bund has fully answered the purpose for which it has been reconstructed, and the collector anticipates no difficulty in realising from the Zamindars the amount expended.</p>
<p>CANALS, NORTH-WESTERN PROVINCES: <i>Boojpore:</i> Watercourse in the Deyrah Division.</p> <p>Construction of masonry falls.</p> <p><i>Burones Branch Canal:</i> Construction of 80 masonry outlets.</p> <p><i>Boojpore Watercourse:</i> Construction of a masonry tunnel.</p> <p>Construction of a Corn Mill at Dakra.</p>	<p>Sanctioned 1838-39</p> <p>Sanctioned 1838-39</p> <p>Sanctioned 7th March 1837.</p> <p>Sanctioned 20th September 1842.</p> <p>Sanctioned 1st June 1844.</p>	<p>15,328 14 7</p> <p>6,364 2 4</p> <p>4,401 1 4</p> <p>2,908 14</p> <p>683 13 3</p>	<p>Completed 1840-41</p> <p>Completed 1841-42</p> <p>Completed season 1843-44.</p> <p>Completed season 1843-44.</p>	<p>-- The wooden tunnel was a source of much trouble and expense, owing to the repairs which it required constantly.</p> <p>-- Further inquiry established the fact that there was no sufficient ground for constructing the excavation that it will be possible to locate 300 or 400 Kuls along the sides or in the vicinity of the proposed canal, and that the risk attending the transport of the Overway salt to Olet Narasimpo, as now conducted, ought, with proper precautions, to be quite inconsiderable.</p>
<p>CANALS, SOUTH-WESTERN PROVINCES: Canal from the Banks Nullah to the New Parasabhalie Canal in Tumbook.</p>	<p>-- Length of the new cut 6 miles and 146 feet; sanctioned 24th November 1841.</p> <p>-- Near the village of Dakra.</p> <p>-- Ditto</p>	<p>Estimated for the new cut 17,519 2</p>	<p>Estimated for the abandoned and portions of Government, 17 August 1843.</p>	<p>-- This project was abandoned under portions of Government, 17 August 1843.</p>

(continued)

No. 6.—Statement compiled from the Reports of the Military Board at Bengal, from Seasons 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length of Construction.	Place of Transition, or of Intended Transition.	Amount Expended.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
CANALS, SOUTH-WESTERN PROVINCES—continued. Balgachia Canal	To obtain a wider road, and improve the slope of the bank.	Sanctioned 12th December 1838.		Rs. 6, 147 4 - Estimated for strengthening the south bank by filling.	Rs. 6, 1,001 1 10	Completed on 1843-44.	The stock pits were taken out and repaired at a cost of Rs. 657, 2, 6.
<b>BOLDS AND BRIDGE, SOUTH-EASTERN PROVINCES:</b>							
Construction of a Bridge on the Burdwan and Hooghly Road, at Shakti-pur.	This bridge is required on a part of the road which is liable to be cut through, whenever the floods of the Damoodah Kullah are brought down the banks which then the neighbourhood of Burdwan.	Sanctioned 23d December 1840.		1,008 9 6	1,001 1 10	Completed on 1843-45.	This is to be a bridge of three (?) arches.
Burdwan and Burdwan Road	A portion of the old line of road existing on the northern bank of the Damoodah Kullah by the flood of water is to be entirely removed, to be substituted by a new street one mile long.	Length 141 miles; sanctioned 18th February 1841 and 19th May 1844.		Cost of the bridges, 7,800 rupees.	13,000 - - and 5,800 14 8	Completed on 1846-47.	The number of drains and bridges to be constructed, amounts to 34. The road is under charge of the Burdwan Local Committee.
Bisnempur Road: Construction of a new masonry Bridge on the	Indispensable for the safety of the Bisnempur road, of which the bridge is a necessary part. It is 1,000 feet long and 16 feet wide.	Sanctioned 26th August 1845; to cover the bridge with 30th March 1846.	From Gobind Bazar -	5,120 - -	2,458 9 10	Completed on 1844-45.	This is an important line of communication, as it connects the grand trunk road with Midnapore and the Province of Orissa.
Construction of a masonry Bridge over the Doodah Kull.	To supply the place of an old bridge, which was destroyed by inundation.	Of four arches, 30 feet span each; sanctioned 26th March 1846.	Between Midnapore and Bisnempur.	7,440 - -	6,940 4 -	Completed on 1847-48.	
Burdwan: Construction of a new masonry Bridge on the masonry bridge at	This bridge was severely injured by the overflowing of the river in September 1845. It is hoped that three arches will reduce the elevation of the water in some degree, and thus lessen the evil to be feared by the error in construction of not having raised the pier to a sufficient height.	Sanctioned 20th June 1844.	On the Burdwan main road, in the Nag-pore territory.	4,945 13 -	4,945 13 -	Completed on 1846-47.	This bridge consisted of three arches.

<p><b>Balla Khaal Iron Tension Bridge:</b> Construction of - 4</p>	<p>-- A bridge at the spot selected will be a great public convenience.</p>	<p>-- One span of 950 feet, with a 13 feet roadway, sanctioned 26 June 1944.</p>	<p>-- Situated on the right bank of the Hooghly River near Howrah opposite Calcutta.</p>	<p>50,680 4 9</p>	<p>48,447 0 -</p>	<p>Completed in 1945</p>	<p>-- The inhabitants subscribed 17,800 rupees towards its erection; the remainder is to be made from the petty funds of the district. The bridge fell down in June 1945, immediately after its completion, which was attributed to the insufficient strength in the central connection of the bridge. The bridge was again put up, greatly strengthened to the central connection. The Court, in a despatch dated 24 December (No. D) 1945, disapproved the tension principle, and directed that it should not be further adopted in the construction of suspension bridges.</p>
<p><b>Berhampur:</b> Rectification of the approaches to the</p>	<p>-- In consequence of injuries sustained by the floods of season 1944.</p>	<p>-- Sanctioned 28th October 1945.</p>	<p>-- Situated in the Midnapore Division.</p>	<p>15,927 0 8</p>	<p>7,431 - -</p>	<p>-- Reconstructed season 1945-47.</p>	<p>--</p>
<p><b>Bhopal:</b> Strengthening of the Tansen, Falah and Sambharsarai Masonry Bridges.</p>	<p>-- These works were carried away by a high flood in August 1944.</p>	<p>-- Sanctioned 10th March 1946.</p>	<p>--</p>	<p>2,445 0 7</p>	<p>2,445 0 7</p>	<p>-- Completed season 1947-48.</p>	<p>--</p>
<p><b>Bihar District:</b> Construction of Daria Bridges on the line of the Grand Trunk Road.</p>	<p>-- For the drainage of the road.</p>	<p>-- Sanctioned 7th May 1945.</p>	<p>--</p>	<p>1,907 10 1 and 10,000 for drainage</p>	<p>1,907 10 1 and 10,000 for drainage</p>	<p>-- Constructed season 1945-47.</p>	<p>--</p>
<p><b>Bombay:</b> Bridge-Bridge Road; Construction of four Drain Bridges, and repairs thereon.</p>	<p>-- With a view to render the road more practicable for mail carts.</p>	<p>-- Sanctioned 24th December 1945.</p>	<p>--</p>	<p>2,440 - 0</p>	<p>2,440 - 0</p>	<p>Season 1945-46.</p>	<p>--</p>
<p><b>Bombay:</b> Repairs of the Masonry Bridge over the Tansa Falah.</p>	<p>--</p>	<p>-- Sanctioned 24th May 1947.</p>	<p>--</p>	<p>1,319 15 1</p>	<p>1,319 15 1</p>	<p>--</p>	<p>--</p>
<p><b>ROADS AND BRIDGES, LOWER PROVINCES:</b></p>							
<p><b>Bengal:</b> Repairs to Diamond Harbour; Bridge over the Falah Road and Bridge on.</p>	<p>--</p>	<p>-- Length, 24 miles; width, 14 feet; sanctioned 26th July 1945.</p>	<p>Diamond Harbour</p>	<p>25,000 - -</p>	<p>25,000 - -</p>	<p>-- Completed season 1945-47.</p>	<p>-- The estimate for annual repairs to the present centre of this road amounts to 2,591 rupees.</p>
<p><b>Bengal:</b> Repairs to Cutpur; Construction of a Cutpur Road.</p>	<p>--</p>	<p>-- Length, 23 miles; sanctioned in 1944.</p>	<p>Cutpur</p>	<p>19,048 0 8</p>	<p>19,048 0 8</p>	<p>-- Completed season 1947-48.</p>	<p>--</p>
<p><b>Bengal:</b> Repairs to Diamond Harbour; Raising of the Road.</p>	<p>-- This line was selected in lieu of the old road at Malda, when the settlement at Durgooling was first formed.</p>	<p>-- Length, 21 miles and 71 yards; sanctioned 20th October 1947.</p>	<p>Diamond Harbour</p>	<p>19,010 5 9</p>	<p>19,010 5 9</p>	<p>-- Completed season 1949-50.</p>	<p>-- A portion of this road, a distance of 60 miles, has been raised above the level of inundation mark.</p>

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b>							
Bridge over the Bargool River on the Peelibheet Road, in the district of Rohilkhand.		-- Sanctioned in season 1839-40.		<i>Rs. a p.</i> 11,298 3 3½	<i>Rs. a p.</i> 9,158 8 -	-- Completed season 1841-42.	-- The excess, <i>Rs.</i> 2,139. 11. 3., of expenditure beyond the estimate is owing to the difficulties encountered in the execution of the work, and to convict aid to the extent contemplated not having been afforded.
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
Baraset Gaol: Rebuilding of the Compound Wall.	-- The former wall was pulled down when the alterations to the gaol, for the reception of the followers of the Amcers of Sciode, were undertaken.	-- Sanctioned 18th July 1844.		1,057 9 3½		-- Completed season 1844-45.	-- Government subsequently decided on sending the ex-Amcers to Hazarebaugh.
<b>CIVIL BUILDINGS, SOUTH-WESTERN PROVINCES—JUDICIAL:</b>							
Balarore Gaol: Construction of additional Wards.	-- Owing to the insufficiency of accommodation.	-- Sanctioned season 1839-40.	Balarore	4,740 - -	4,005 - -	-- Completed season 1841-42.	
Improvements to the drainage of.		-- Sanctioned season 1841-42.		1,095 3 1		-- Completed season 1841-42.	
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
Bauleah Gaol: Additions to, and Drainage.	-- To provide for better ventilation, &c.	-- Length of drain, 301 feet.	Bauleah	8,027 8 9	7,726 - - for additions.	-- Completed season 1840-41.	
Behar: Construction of an additional Record-room.	-- For the records of the office of the Judge.	-- Sanctioned 11th September 1845.	Behar	1,239 3 -	1,239 3 -	Season 1843-44	-- The necessity for this additional accommodation was brought to notice by the Sudder Dewanny Adawlut.
Burnagore: Construction of a small Gaol, with Out-offices.	-- For the prisoners employed at Burnagore.	-- Sanctioned 12th December 1845.	Burnagore	1,396 - -	1,396 - -	Season 1846-47.	
Baraset Gaol: Additions and alterations to.	-- To render it secure as a place of confinement.	-- Sanctioned 20th April 1846.	Baraset	7,184 14 4½	6,945 - -	-- Completed season 1847-48.	-- The contemplated works are the substitution of iron for the wood work of the windows, &c., and raising the surrounding wall from nine to 15 feet.
Bauleah: Addition of a Verandah to the Principal and two Sudder Amcers' Cutcheries.	-- In consequence of the crowded state of these cutcheries, and also with a view to make the buildings more comfortable.	-- Sanctioned 9th September 1846.	Bauleah	1,817 1 -	1,959 2 8	-- Completed season 1847-48.	-- The lowness of the wall, only 12 feet 3 inches below the beams, rendered them exceedingly close and hot.
Baraset: Construction of a new Pucca Stable to the Joint Magistrate's Cutcherry.	-- Undertaken under a representation of the joint magistrate.	-- Sanctioned 7th May 1849.	Baraset		576 3 7	-- Completed season 1849-50.	-- The roof of the stabling will be thatched.
Bauleah: Construction of a Cutcherry for the Sessions Judge, &c.	-- The additional accommodation to be provided was urgently neede	-- Sanctioned 5th September 1850.	Bauleah		15,388 9 1		-- The construction of the new building will enable the Government to give a building which has been rented at 100 rupees per mensem.



CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:

<i>Bareilly Gaol</i> : Construction of two experimental wards.	- - - - -	- - Sanctioned 7th October 1842.	Bareilly	11,170 9 1½ 10,000 rupees have been paid for the site of the building.	12,436 5 8	-- Completed season 1842-45.	-
Construction of additional Public Buildings.	- - For a mill-house, guard-room, and cook-room.	- - Sanctioned 17th February 1843.	Bareilly	2,143 4 10	2,355 10 -	-- Completed season 1844-45.	-
Budson Gaol	- - - - -	Sanctioned 1838-39	Budson	13,981 - - And Rs. 469. 8. 4. for draining.	- - - - -	-- Completed season 1844-45.	- This gaol consists merely of an enclosure wall, a hospital, guard-room, sentry-boxes, and wells. The convicts to build their own huts.
<i>Bareilly</i> : Construction of a Thowlat, at.	- - For the accommodation of prisoners under trial.	- - Sanctioned 15th November 1851.	- - - - -	- - - - -	2,694 5 -	- - - - -	-
<i>Boolundshuher Gaol</i> : Alterations to.	- - For the improvement of the prison discipline, and for two separate rooms for juvenile offenders.	- - Sanctioned 18th December 1842.	- - - - -	602 10 8	1,438 4 4	-- Completed season 1843-44.	-- Two rooms for juvenile offenders have been constructed; the rest of the improvements estimated for were not considered absolutely necessary.
<i>Bowannah</i> : Construction of Tuhildarry Cutcherry, at.	- - The old catcherry was in ruins, and inconveniently situated.	- - Sanctioned 22d November 1842.	- - - - -	5,641 3 1	5,641 3 1	-- Completed season 1842-45.	-
<i>Bhandaree</i> : Construction of Police Guards and Gaols.	For prisoners under trial	- - Sanctioned 27th April 1844.	- - In the districts of Kutchwagar and Bhandaree.	2,300 - -	2,200 - -	Season 1844-45.	-
<i>Boolundshuher Gaol</i> : Construction of Out-buildings and Cook-rooms.	- - - - -	- - Sanctioned 20th August 1844.	Boolundshuher	1,601 1 1	1,600 5 1	-- Completed season 1844-45.	-
<i>Bhutteecana</i> : Catcherry for the Superintendent.	- - For the accommodation of the superintendent English officer, Post Office.	- - Sanctioned 1st October 1849.	Bhutteecana	3,000 - -	- - - - -	Season 1849-50	-- This building was purchased from the estate of Lieutenant Mackeson at Sirsa.
CIVIL BUILDINGS, CENTRAL PROVINCES—JUDICIAL:							
<i>Benares</i> : Additions and Alterations to the Insane Hospital.	- - For the better classification and custody of the inmates, two of whom lost their lives from the want of means of separating the harmless from the violent.	- - Sanctioned 30th February 1845.	Benares	5,459 6 6	6,178 7 4	Season 1848-49	- - In the contemplated alterations part of the compound wall will be taken down, and 29 suitable and commodious cells will be built. Provision has also been made for improving the drainage.
<i>Bedur Gaol</i> : Alterations, &c.	- - For security of the prisoners, and ventilation of the gaol.	- - Sanctioned 9th May 1843.	Bedur	714 14 2	714 14 2	Season 1843-44.	-
<i>Bandah Gaol</i> : Construction of a Pucca Well.	- - Required to replace an old one, which has failed.	- - Sanctioned 18th August 1846.	Bandah	- - - - -	1,604 1 -	- - - - -	-
<i>Baitool</i> : Construction of a Pucca Gaol.	- - To replace the gaol constructed by the civil authorities, which was reported to be in a defective state.	- - Sanctioned 29th December 1846.	Baitool	22,582 4 11	26,849 - -	-- Completed season 1850-51.	-- The new gaol was to consist of two ranges, one 100 by 20, and the other 145 by 20; each range being divided into four wards, with hospital benches for native doctor, dispensary, and out offices; the station of Baitool has been transferred to the Madras Presidency.

(continued)

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expenditure Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
Civil Buildings, Central Prison—Jails—continued.							
Banda: Construction of a new Jail for the Collector.	-- The embankment is of present land in a local building in Calcutta, but it is required to be given up to the military.	-- Banded 24 April 1947.	Banda	Rs. a. p. 14,700 11 6	Rs. a. p. 7,264 - - -	-- Completed season 1946-47.	-- This embankment has been made of permanent materials on a terraced plan.
Bonga: Construction of a well outside the United Compound.	-- The only well outside the gate which supplied water to the establishment of the District Prison had fallen in.	-- Banded 17th June 1947.	Bonga	630 4 9	871 8 9	-- Completed season 1947-48.	
CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL:							
Burhanpur: Embankment for the Magistrate and Engineer.	-- To replace the embankment destroyed by fire in February 1938.	-- Banded 19th January 1939.	Burhanpur	7,268 4 7	- - - - -	Completed 1940-41.	
Burhanpur: New Embankment for the Principal Fielder Avenue.	-- This was a residual masonry embankment for removal from that of the Judge, and thus necessitating much intervention to editors and plaster.	-- Banded 19th February 1941.	Burhanpur	2,005 12 11	2,904 18 3	Completed 1943-44.	-- The old embankment has been made up as the local materials of public buildings at Burhanpur, to be used as a school-house.
Burhanpur: Filling of the bank of the River.	-- In consequence of an encroachment of the Burhanpur River on the town.	-- Banded 19th March 1945.	Burhanpur	2,350 9 10	2,904 6 -	Completed season 1943-44.	-- The labour will be performed by convicts. These measures prevent a failure of the water supply. The Executive Officer of the project of building the project of the project which in execution would cost about 1,00,000 rupees; the Government decided to abandon the work, deeming it imprudent to incur further expense.
Bogra: Construction of a new Circuit Buildings, with Out-office.		-- Banded 30th November 1944.	Bogra	4,083 14 7	4,900 6 -	Completed season 1946-47.	
Burhanpur: Construction of a new Circuit House and Out-office.	-- On the requisition of the Commissioner of District, who reported that there was no dwelling house for his accommodation, as well as that of his office, and that the transfer of a large section of the Government to the Collector's jurisdiction, demanded that a great portion of his time should be devoted to the affairs of this collector.	-- Banded 19th December 1946.	Burhanpur	5,446 10 3	- - - - -	Completed season 1950-51.	

98	Burdwan Canal: Construction of four Bollyery Cells and Drainage of Burdwan Canal Hospital, Construction of an additional Ward.	-- The necessity for these works was originally brought to the notice of Government by the local civil authorities.	-- Sanctioned 28th December 1946.	Burdwan	1,718 1 3	1,949 16 11	-- Completed season 1946-50.	--
	CIVIL BUILDINGS, LOWER PROVINCES--REVENUE: Bhangalore; Additions to the Collector's Quarters.	-- On a representation from the Collector for the Commissioner of the great towns, the small size of the quarters.	-- Sanctioned 11th August 1947.	Bhangalore	5,199 5 03	5,200 4 91	-- Completed season 1946-50.	-- To be constructed by the courts, under the immediate superintendence of the magistrates, assisted in respect of plan by the executive officer of the division.
	CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES--REVENUE: Burdwan; Additions to the Collector's Quarters.	-- Required on account of the crowded state of the record-rooms, and also for the accommodation of two deputy collectors, recently added to the establishments of Bhangalore.	-- Sanctioned 26th November 1946.	Burdwan	6,848 14 10	6,853 --	-- Completed season 1947-48.	--
	CIVIL BUILDINGS, CENTRAL PROVINCES--REVENUE: Bhandara; Extension of the Tahsilary Quarters at Kooch.	-- In consequence of an attempt made to plunder the treasury.	-- Sanctioned 29th March 1946.	Kooch	1,173 4 4	1,441 2 11	-- Completed season 1946-48.	--
97	Bhandara; Construction of a Treasury to the Collector's Quarters.	-- The necessity of this work was brought to the notice of Government by the local civil authorities. These works will make the quarters cooler, and afford greater facilities for putting up stocks during the hot season in the type rooms.	-- Sanctioned 26th April 1946.	Bhandara	1,083 2 11	1,083 2 11	-- Completed season 1946-47.	--
	Bhandara; Construction of an additional Bhandara.	-- For the use of the Collector's office.	-- Sanctioned 14th August 1946.	Bhandara	--	6,007 --	--	--
	CIVIL BUILDINGS, LOWER PROVINCES--GENERAL: Bhandara; New Salt Quarters.	-- For the use of the Salt agent.	Sanctioned 1930-40.	At Bhandara	5,048 --	--	-- Completed 1930-40.	-- The former building was altogether unfit for the purpose, for want of sufficient accommodation, and from the dampness of the stone.
	Bhandara; Government House; Construction of new Quarters.	--	-- Sanctioned 4th November 1946.	--	4,048 4 28	--	-- Constructed 1940-41.	--
	Bhandara; Construction of a New Quarters.	-- For the Bhandara guard	-- Sanctioned 24 January 1947.	--	600 11 1	645 3	-- Completed 1947-48.	-- Great extension and internally altered in the Bhandara guard, which, in the general opinion of the officers in and out of the civil service, was owing to the pressure of the salt guardsmen to the salt guards.

(continues)

Table 6.—Statistics compiled from the Reports of the History Board at Rajahmundry from January 1928-29, to 1928-29 inclusive—continued.

NAME OF WORK	Object of Construction.	Length, and Date of Completion.	Place of Construction, and Architect.	Amount Expended.	Estimated Amount for Completion.	Period of Completion.	REMARKS.
<b>CIVIL STRUCTURES, Lower Provinces—General—continued.</b>							
<b>Development of the Public Grounds.</b>	--The extension is roughly as follows:--	-- Estimated 200 September 1928.	Rayachoti	Rs. 6, 000	Rs. 6, 000	Completed 1928-29.	--The additional space to be included amounts to 200 x 100 feet.
Construction of a Building in the Park near an Army.	..	-- Estimated 1928-29.	..	2,200 10 4	2,200 10 4	Completed 1928-29.	..
Public Grounds.	This is a green building.	-- Estimated 1928-29.	..	1,200 7 11 1/2	1,200 11 1	Completed 1928-29.	..
Development of the Public Grounds.	..	-- Estimated 1928-29.	..	200 20 10 1/2	200 20 10 1/2	..	..
..	..	-- Estimated 1928-29.	..	4,200 11 11	..	..	--This building appears to be built by the Govt., and is situated in the same place as the building mentioned above.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL.</b>							
..	..	-- Estimated 1928-29.	..	1,214 0 11	1,214 11 9	Completed 1928-29.	--This building was designed over the Government by the History Board (in connection of the Rajahmundry Museum).
..	..	-- Estimated 1928-29.	..	4,207	4,207	..	..
<b>CIVIL BUILDINGS, LOWER PROVINCES—ACCLIMATICAL.</b>							
..	..	-- Estimated 1928-29.	..	..	..	..	..
<b>RAJAHMUNDRY, SOUTH-WESTERN PROVINCES.</b>							
..	..	-- Estimated 1928-29.	..	..	..	..	..
..	..	-- Estimated 1928-29.	..	..	..	..	..
..	..	-- Estimated 1928-29.	..	..	..	..	..
..	..	-- Estimated 1928-29.	..	..	..	..	..

.. The cost of repairs to the buildings in the Chingleput Division was, in 1928-29, Rs. 29,232 14 7. In Report 1928-29, p. 19, it is stated that in Central Provinces, during the last 10 years, 11,00,000 rupees have been expended on the construction of a temporary reservoir for the safety of the Chingleput Division, from which it appears, that, notwithstanding the occurrence of unusually high floods in the Kalyani river, the reservoir has stood well without sustaining the slightest injury. These works have had the effect of giving the current a favourable direction, by which the danger and loss of Chingleput has, in all probability, been saved from destruction.

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ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:										
2	Construction of Wooden Bridges on the Road between Chaitani and the Pany River in Arram.									--The executive engineer will consider the four alternatives of the road as part of the ordinary duty.
3	Chaitani Road: Report of . . . . .	--Length 25 1/2 miles; estimated 1941-42.		--From Chaitani to the Hooply River.	5,200 15 10			Completed 1941-42.		--The estimate will be paid by the Dept. of Revenue.
	Meeting of the . . . . .	--Estimated 9th June 1941.		Date . . . . .	15,410 --			Completed 1940-41.		--
	Chaitani: Construction of Double Bridge	--In the place of a bridge destroyed in the rains of 1941.		--Estimated 10th January 1941.	800 11 30			Completed 1940-41.		--A large tank in earth is situated on the left bank of the Hooply River and the bridge is to be constructed there in order to have a good view of the river in the rainy season.
1	Construction of Bridge in the Pany River on the Chaitani Road.	--This bridge was intended for the purpose of earth with a view to the preservation of the wooden bridge.		--Estimated 9th January 1941.	1,105 4 --			Completed 1940-41.		--The road is to be replaced with structural girders.
	Chaitani to Barrowdore: Report of the road.			--Estimated 9th September 1941.						--The new bridge will be of low span and will be of 10 feet span and 1 1/2 of span.
	Chaitani Coy. Construction of a bridge.	--In the place of a bridge destroyed by flood during the rains of 1941.		--Estimated 8th March 1941.						--
	Chaitani: Road to the Big Pany River.	--Additional funding to be given for the purpose of the construction of the bridge.		--Estimated 11th January 1941.	1,215 9 30					--The estimate was called for by the Government and the estimate from the Military Board of the Ministry of War.
	Chaitani and Grand Road: Report of the executive engineer.	--The present road is made of earth and is very narrow and is in a bad state of repair. It is to be replaced by a concrete bridge of 10 feet span and 1 1/2 of span.		--Estimated 10th February 1941.						--
	Chaitani to Barrowdore: Report of the executive engineer.	--As a result of the construction of the bridge the road will be improved in the rainy season.		--Length 20 miles; estimated 1941-42.	1,400 3 0			Completed 1941-42.		--The estimate was called for by the Government and the estimate from the Military Board of the Ministry of War.
	Chaitani to Barrowdore: Report of the executive engineer.				1,400 3 0			Completed 1941-42.		--

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ROADS AND BRIDGES, LOWER PROVINCES—continued.</b>							
<i>Colmers Ghaut to Russar:</i> Construction of Bridges and Drains.	-- For keeping open the communication between Ghazepore and Dinapore.	- - - - -	Buxar - - - -	- - - - -	<i>Rs. a. p.</i> 67,783 8 8	Not reported - -	-- This road, though it forms part of the communication by land between the military station of Ghazepore and Dinapore, is no great military thoroughfare, the communication between them being always open by water; it is, however, of importance to the traffic of one of the richest and most populous districts in India, and should be kept up, if possible, from local resources.
Cachar to Munnipore - -	-- To make the communication between the eastern frontier and the Burmese country comparatively easy.	-- Length, about 93 miles; commenced in 1837.	Paikandy, in Cachar	About 39,947 10 4	- - - - -	-- Completed season 1842-43.	-
<i>Chota Nagpore:</i> Bridge over the Nullah at Dorandah.	-- For keeping up the communication in the rainy season between the military and civil stations at Dorandah.	-- Sanctioned 2d May 1842.	Dorandah - - -	1,406 18 11	1,406 18 11	Season 1842-43.	-
<i>Comillah Road:</i> Construction of 16 new Jungle Wood Bridges.	- - - - -	-- Sanctioned 8th July 1844.	-- Situated between Comillah and the Big Fenny,	- - - - -	886 3 6	Season 1844-45.	-
<i>Coseyah Hills to Assam:</i> Repair of the Road and Bridges over the.	- - - - -	-- Length, 85 miles; sanctioned 18th November 1844.	-- From Purreeya Ghaut to Panegong, in Assam.	4,569 - -	4,845 11 6	-- Completed season 1846-47.	-
<i>Circular Canal:</i> Construction of a Pucca Road along the eastern bank of the Circular Canal.	-- With a view to facilitate the communication with the Government saw run distillery.	-- Sanctioned 17th April 1850.	-- Situated between the Manicktollah and Ultadanga suspension bridges.	- - - - -	1,883 9 6	- - - - -	-- This work was undertaken in furtherance of the strong recommendation of the civil officers, as well as of the Board of Customs, Salt, and Opium.
Construction of Iron Suspension Bridges over the Boga and Budnapes Torrents.	- - - - -	-- East Bridge, six feet in width; sanctioned 10th July 1839.	Cossya Hills - -	14,657 11 1 1/2	14,827 14 4	- - - - -	-- Although the bridges are defective in some points of construction, they are believed to be, in all essential respects, substantial and suitable. The Bogapanee bridge has one span of 94 feet between the points of suspension, with suspended approaches, one of which is 28 and the other 30 feet long; and the Burpanee consists of two spans, one of 88 feet, and the other 65 feet between the points of suspension.
<b>ROADS AND BRIDGES, CENTRAL PROVINCES:</b>							
Chunar to Sookroot, in the Mirzapore District.	To supersede the old road -	-- Length, about 10 miles; estimated in September 1839.	Sookroot - - -	6,998 7 9	6,325 - -	-- Completed season 1841-42.	-

CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:									
Chunderee: Construction of a small Gaol and Cutcherry Bungalow.	- - - - -	-- Sanctioned 4th January 1845.	Chunderee - - -	600 - - -	600 - - -	-- Constructed season 1844-45.	-		
CIVIL BUILDINGS, SOUTH-WESTERN PROVINCES—JUDICIAL:									
Calcutta House of Correction: Construction of Solitary Cells at the.	-- Twenty-four cells have been constructed, with improved accommodation for prisoners.	- - - - -	Calcutta - - -	9,586 3 10	- - - - -	Completed 1839-40 -	-	-- The cost has been defrayed from funds realised by the prisoners' labour. The chief magistrate considers the cells to have answered their intended object so well, that the construction of 24 additional ones is contemplated.	
CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL:									
Cuttack Gaol Hospital: Construction of three Wards.	For insane patients - - -	- Sanctioned 23d July 1840.	Cuttack - - -	646 12 2	495 2 -	-- Completed season 1840-41.	-		
Commillah: New Court Room for the Magistrate.	- - - - -	-- Sanctioned 5th November 1840.	Commillah - - -	2,426 1 7	3,307 2 8	Completed 1841-42 -	-	-- This work was completed for a sum of Rs. 881. 1. 1. less than the estimated cost, owing to the labour having been done by convicts.	
Calcutta Penitentiary: Construction of six Wards	- - - - -	Season 1841-42	- - - - -	30,800 - 7	32,900 8 9 <sup>a</sup>	-- Completed season 1842-43.	-		
Alterations and additions to	-- In consequence of defects having been discovered, whereby the security of the prisoners was compromised.	- Sanctioned 10th May 1843.	- - - - -	2,296 15 8	2,296 15 8	-- Completed season 1844-45.	-		
Calcutta Aqueducts: Setting up a Steam-engine, and alterations and enlargement of the Aqueducts, from the Reservoir at Chundpaul Ghaut to the south-west corner of Esplanade-row East.	-- To raise water for filling the aqueducts, the enlargement of the aqueducts was rendered necessary, consequent on the enlarged supply of water to be expected from the substitution of a 20 for a 10-horse power engine.	-- Sanctioned 6th January 1841.	Calcutta - - -	-- Cost of setting up the engine, Rs. 11,074. 12. 7. Cost of new aqueduct, Rs. 8,194. 8. 6.	- For setting up the engine, Rs. 11,074. 12. 7. -- For enlarging the aqueduct, Rs. 9,863. 11. 8.	-- Completed season 1842-43. -- Completed season 1845-46.	-	-- The engine, which is of 20-horse power, is valued at Rs. 11,008. 12. 11 <sup>3</sup> , and was sent to India in 1828-29 with the saw-mill machinery; it is now transferred from the Arsenal of Fort William.	
Calcutta Police Hospital: Construction of two additional Wards.	-- For the sick poor of the town, and as a place for the resort of the poor from the neighbouring district for surgical operations.	Sanctioned 1841-42	Ditto - - -	1,317 2 -	1,317 2 -	Season 1841-42.	-		
Construction of a tiled Shed at the Sudder Dewanny.	-- For the convenience of vakeels and others who attend the Court.	-- Sanctioned 10th September 1843.	Ditto - - -	1,340 4 9	1,358 5 3	-- Completed season 1845-46.	-		
Calcutta Penitentiary: Construction of six Wards	-- For civil and criminal Supreme Court prisoners.	-- Sanctioned 16th June 1841.	Ditto - - -	30,800 - 7	32,900 8 9	-- Completed season 1842-43.	-		
Construction of a new steam-engine house.	-- For a 20-horse power engine, transferred from the Arsenal of Fort William to the town of Calcutta.	- Sanctioned 7th September 1841.	-- Situated at the Chaund Paul Ghaut.	11,074 12 7	11,074 12 7	-- Completed season 1842-43.	-		

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL—continued.</b>							
<i>Calcutta Penitentiary—continued.</i>							
Construction of other works connected therewith.	- - - - -	-- Sanctioned March 1844.	-- Situated at the Chamed Paul Ghant.	Rs. a. p. 16,253 1 7	Rs. a. p. 16,253 1 7	-- Completed season 1843-44.	-
Chittagong Gaol: Additions and Improvements to.	-- In consequence of the offensive state of the gaol, the want of proper ventilation, and dampness of the floor of the gaol hospital.	-- Sanctioned 17th October 1842.	Chittagong - - -	1,388 11 9	1,388 11 9	-- Completed season 1843-43.	-
Calcutta: Construction of Machinery in the House of Correction, and erection of a building.	-- To employ the power of cast-iron treadmill received from England.	-- Sanctioned 16th September 1844.	Calcutta - - -	12,292 12 7	9,674 12 10	-- Completed season 1846-47.	-- The power is intended to be applied in turning a soorkee mill and grinding corn, but neither objects have as yet been efficiently attained. The value of the treadmill made over from the Arsenal in June 1843 to the D. P. Works is 3,406 rupees. The additional machinery has proved an entire failure, the treadmill being complete in itself as an engine for punishment, and having no power to work machinery attached to it.
Filling a Tank in the House of Correction, and sinking Wells.	-- The water of the tank was represented to be in a putrid state, and threatened to affect the health of the prisoners.	-- Sanctioned 7th June 1847.	Ditto - - -	- - - - -	2,801 13 -	Season 1849-50	-- The wells will supply water for bathing, washing, &c., while the tank can be used as heretofore for drinking and culinary purposes.
Calcutta General Hospital: Excavation of two Tanks.	-- For watering the roads in the vicinity of the General Hospital.	Season 1846-47	Ditto - - -	- - - - -	-- An estimate has been called for; in the meantime an annual outlay of 2,248 rupees has been authorised for the payment of bheesties for watering the roads.	- - - - -	-- The excavation of the proposed two tanks will reduce the labour and consequently the outlay for the bheesties, to 1,364 rupees per annum.
Chittagong Gaol: Construction of 23 Ventilators.	-- A more thorough ventilation of the gaol being considered necessary by the local and medical authorities for the improvement of its salubrity.	-- Sanctioned 20th May 1840.	Chittagong - - -	731 11 8	758 - -	-- Constructed season 1846-47.	-
Calcutta House of Correction: Construction of a Pucca Tiled Shed.	-- To replace a very old shed, which has fallen into ruin.	-- Sanctioned 19th May 1847.	Calcutta - - -	1,174 - -	1,174 6 10	-- Completed season 1847-48.	-
New Residence for the Deputy Superintendent.	- - - - -	-- Sanctioned 28th July 1848.	Calcutta - - -	4,437 9 10	- - - - -	-- Completed season 1850-51.	-



<i>Calcutta</i> : Construction of Quarters for four Sergeants.	-- In compliance with a recommendation from the Chief Magistrate.	-- Sanctioned 19th May 1847.	-- Situated in the north-west corner of the Police Compound at Calcutta.	5,589 -	5,714 7 -	-- Completed season 1849-50.	-
<i>Comillah</i> : Additions and Improvements to the Judge's Cutcherry.	-- The necessity of these additions was brought to notice by the Civil and Sessions Judge.	-- Sanctioned 24th September 1850.	- - - - -	- - - - -	9,524 11 -	- - - - -	-- The works originally intended to be executed were two additional upper rooms, one of 41½ X 15½ and one 55 X 14½; the raising of the walls of the three old upper rooms, to make them convenient as record-rooms, and the supplying of record racks. It having been found, however, that the walls were not sufficiently strong to admit of a second story being added, it has been found necessary to construct a new Circuit House and additional record-rooms, &c.
<i>Calcutta</i> : Alterations and additions to the Supreme Court's House.	-- For the better accommodation of the prisoners, and separation of those confined for heinous and slight crimes.	-- Sanctioned 11th October 1850.	<i>Calcutta</i> - - - - -	- - - - -	3,172 - 7	- - - - -	-- The necessity for this work was brought to notice by the acting registrar.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—REVENUE:</b>							
<i>Calcutta</i> : Alterations of a portion of the Audit Office.	To provide for a Stamp Office	-- Sanctioned 19th May 1841.	<i>Calcutta</i> - - - - -	4,050 9 5	4,220 5 9	-- Completed season 1841-42.	-
Construction of a Portico to the office of the Sudder Board of Revenue.	- - - - -	-- Sanctioned 28th November 1842.	<i>Calcutta</i> - - - - -	819 7 6	- - - - -	-- Completed season 1843-44.	-
Erection of Sheds at the Iron Bridge Yard for 20 additional Forges.	-- In consequence of the heavy demand for iron suspension bridges from all quarters, particularly for the Grand Trunk Road.	-- Sanctioned 3d May 1843.	<i>Calcutta</i> - - - - -	5,046 1 10	- - - - -	-- Constructed season 1843-44.	-
<b>CIVIL BUILDINGS, SOUTH-WESTERN PROVINCES—REVENUE:</b>							
<i>Cuttack</i> : Revenue Survey-office and Record-rooms.	-- For the revenue surveyors and establishment.	-- Sanctioned 16th January 1838.	<i>Cuttack</i> - - - - -	2,071 9 4	2,071 9 4	-- Completed season 1839-40.	-
<i>Cachar</i> : Construction of a Treasury and Record-room.	-- For the reception of the treasure and records.	-- Sanctioned 16th January 1843.	<i>Cachar</i> - - - - -	195 6 4	195 5 4	-- Completed season 1839-40.	-- The smallness of the outlay was caused by the employment of convict labour.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—REVENUE:</b>							
<i>Chowpore</i> : Construction of a Talsildary Cutcherry.	-- Rendered necessary with reference to the new settlement of land revenue in the North-Western Provinces.	-- Sanctioned season 1838-39.	In Zillah Bijaore -	3,264 - 6	- - - - -	-- Completed season 1840-41.	-
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—REVENUE:</b>							
<i>Coles</i> : Repair of the Talsildary Cutcheries at.	- - - - -	-- Sanctioned 27th May 1840.	- - - - -	4,994 15 2	- - - - -	-- Repaired season 1842-43.	-

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b> <i>Calcutta Mint:</i> Construction of a Grand-rooms and Stabling, 1839.	-- To replace buildings destroyed by a storm on the 29th of April 1839.	-- Sanctioned season 1839-40.	Calcutta	Rs. 10,650 9 10	Rs. 20,626 9 1	-- Completed season 1840-41.	-- The proposed dimensions and architectural decorations were considered anterior to what are usual or necessary for similar works in the place. The work is stated to have been satisfactorily done.
<i>Calcutta Treasury:</i> Improve seats at the.	-- To remedy the inconvenience felt for want of office accommodations.	-- Sanctioned 4th March 1840.			23,128 4 6		-- The houses used for the Savings Bank in Calcutta were repaired, and a new building erected on the site, and a new building from the Treasury and the Accountant-General's Office. The new building will be carried up to the full height of the Treasury, and will provide accommodations for the General Treasury, the Accountant-General's Office, and the Savings Bank.
<i>Chittagong:</i> Repairs to the Breachwork in front of the Salt Godhah.	-- For the safety of the salt in store during the rains.	-- Sanctioned 1st April 1842.	Chittagong	12,478 6 7	14,633 1 --	-- Completed season 1843-44.	-- A saving of Rs. 2,154, Rs. 8, carried on the amount authorized, in consequence of a reduction in the quantity, as well as in the rate of the work.
<i>Calcutta Customs House:</i> Construction of additional Buildings.	-- To accommodate the increasing trade of the port.	-- Sanctioned 31st March 1841.	Calcutta	20,954 --	19,710 1 10	-- Completed season 1843-43.	--
Reconstructing the Import and Export Godowns Sheds.	-- A committee report stated that the sheds were unserviceable and in a dangerous and tottering condition.	-- Sanctioned 30th July 1849.	Calcutta	4,756 5 6	--	-- Completed season 1850-51.	--
<i>Calcutta General Treasury:</i> Additions to.	-- To afford additional accommodations.	-- Sanctioned season 1839-39.		26,021 15 6	--	-- Completed season 1841-41.	--
<i>Calcutta:</i> Construction of a House in the Botanical Garden.	For an assistant overseer.	-- Sanctioned 22d September 1841.		1,913 11 4	1,803 3 9	-- Completed season 1842-43.	--
Construction of a Record-room.	-- For the General and Financial Departments.	-- Sanctioned 26th March 1842.		4,389 15 4	4,369 15 4	-- ditto.	--
Raising the Floors of two Godowns.	-- They were subject to inundation in heavy rains.	-- Sanctioned 14th September 1842.		1,525 10 6	1,412 4 9	-- ditto.	--
New Roofing of the Circular Cutting-out Room at the Mint.	-- In consequence of some of the beams having failed.	-- Sanctioned 8th March 1843.		--	2,224 11 5½	-- Completion not reported.	-- The estimate framed is for a new roof, supported on iron beams.



No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1830-40, to 1850-51 inclusive—*continued*.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<i>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL—continued.</i>							
<i>Chittagong</i> : Construction of a new tiled roof Custom-house, and purchase of a Site.	-- Required to replace a thatched shed, which is out of repair and inconveniently situated, being separated by a large nullah from the pier at Chittagong.	-- Sanctioned 8th March 1843.	Chittagong - - -	Rs. a. p. 5,150 1 -	Rs. a. p. 5,448 - 9 Coet of site, Rs. 5,000	-- Completed season 1846-47.	-- The bridging of the Nullah would have been more expensive than the building the new Custom-house.
<i>Calcutta General Post-office</i> : Additions to.	-- Represented by the Post-master-general to be indispensable, with reference to the increased business transacted in the Post-office.	-- Sanctioned 2d July 1845.	Calcutta - - -	-- The work was suspended, the erection of an entirely new Post-office being contemplated by Government.	9,485 - -	- - - - -	-- The additions will comprise an upper room 50 × 36, a room 16 × 16.
<i>Calcutta Medical College</i> : Construction of additional Rooms.	-- For cook-rooms to the Female Hospital.	-- Sanctioned 28th January 1846.	- - - - -	551 9 1	505 - -	-- Completed season 1847-48.	- - - - -
Construction of a new Coach-house.	-- Required in lieu of the former one, which had settled and cracked.	-- Sanctioned 7th November 1845.	- - - - -	1,143 - -	1,143 - -	Season 1845-46.	- - - - -
Alterations and additions to the.	-- For the better accommodation of the Military Class Students.	-- Sanctioned 26th June 1850.	- - - - -	- - - - -	8,442 5 1	- - - - -	-- The works contemplated are to make over to the use of the students a portion of the western ward; to construct a new close flat-roofed verandah to be added along the whole of the west side, Military Class Ward, of the Medical College, 289½ × 97; to remove the doors between the proposed verandah and ward.
<i>Calcutta Mint</i> : Building and fitting up an Electrotpe Refinery.	- - - - -	-- Sanctioned 13th December 1844.	- - - - -	3,510 - -	- - - - -	-- Constructed season 1846-47.	- - - - -
<i>Calcutta Stamp-office</i> : Construction of a Drying-room over the Stables attached to the Stamp-office.	-- The necessity for this work was brought to the notice of Government by the Board of Customs, Salt and Opium.	-- Sanctioned 20th October 1847.	Calcutta - - -	2,165 1 1	2,176 13 3	-- Completed season 1849-50.	- - - - -
<i>Cuttack</i> : Repairs to the School-house.	-- Damage was occasioned to the school-house by a fire, which occurred on the 7th of May 1846.	-- Sanctioned 9th September 1846.	Cuttack - - -	865 1 4	- - - - -	Season 1847-48.	- - - - -
<i>Calcutta Post-office</i> : Construction of Sheds in the Compound of the General Post-office.	-- To provide residences for the distributing peons on the spot, so that their services may be available at all hours.	-- Sanctioned 19th May 1847.	Calcutta - - -	2,194 11 -	2,199 - -	-- Completed season 1848-49.	- - - - -

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Calcutta General Post-office: Construction of a Stable, Cart, and Overland Van Sheds, in the Compound of the Post-office.	-- The Postmaster-general considered the proposed works absolutely necessary for conducting the greatly increased business of the office, and more particularly of the steam branch.	-- Sanctioned 19th July 1847.	Calcutta - - -	2,505 9 11	3,107 8 9	-- Completed season 1848-49.	
Calcutta Episcopal Residence -	-- A request of the Bishop of Calcutta to change the episcopal residence, for reason assigned by him, was complied with on the understanding that it should not involve the Government in any expense.	-- Sanctioned 31st March 1849.	Calcutta - - -	-- Value of the new palace, Rs. 81,718, being the purchase cost, Rs. 55,080. 8. 10., added to the sum expended in making alterations to the building.			-- A house in the Chowringhee road, lately occupied by the Hon. W. W. Bird, Governor of Bengal, has been purchased by the Bishop, and will be brought on the books as a Government building; the old episcopal residence was purchased by Government in 1838 for Rs. 80,000; Government, on the 15th September 1849, authorised the title deeds of this building to be placed at the disposal of the Bishop to enable his Lordship to dispose of the premises.
Calcutta: Extension of the Jetty at Bank's Hall.	-- Rendered necessary in consequence of the silting up of the river bank.	-- Sanctioned 24th July 1850.	Calcutta - - -		2,047 2 2		-- The silting up of the river bank had removed the low water mark full 15 feet from the crane used by the Marine Department for landing anchors.
CIVIL BUILDINGS, LOWER PROVINCES—GENERAL:							
Chinsurah Church: Repairs to	-- The roof, owing to the decayed state of the beams, was reported to be in a dangerous state.	-- Sanctioned 23d February 1842.	- - - - -	2,674 7 1½	2,674 7 1½	-- Completed season 1842-43.	-- This is an old Dutch building, and is supposed to have been built in the year 1685.
Cheera Coal Mines: Construction of a Roadway.	-- For facilitating the means for the conveyance of coals from the Cheera Hills to the plains.	-- Sanctioned 5th October 1842.	Cheera - - -		66,584 11 -		
Chinsurah: Enlargement of the Burial-ground.		-- Sanctioned 15th February 1847.	Chinsurah - - -			Season 1846-47	-- An estimate amounting to 452 rupees was sanctioned on the 28th July 1846, for the enclosure of the newly purchased ground.
Calcutta: Renewing the Crane at the Bank's Hall, and some of the Beams and Posts of the Jetty.	-- The crane gave way whilst an anchor of about 56 cwt. was being towed off from the jetty.	-- Sanctioned 21st July 1849.	Calcutta - - -		1,227 15 6	Season 1849-50.	
CIVIL BUILDINGS, SOUTH-WESTERN PROVINCES; ECCLESIASTICAL:							
Circular Road: Purchase of Land.	For a burial-ground - - -	-- Sanctioned 28th August 1839.	- - - - -	1,998 1 10	19,700 - - for grounds, and Rs. 2,385. 9. 5, to adapt it for the object intended.	-- Completed season 1840-41.	-- The saving of Rs. 397. 7. 7. within the estimated amount, is owing to the material for the pathways having been obtained from certain buildings which it was found necessary to clear off the ground purchased.

(continued)



<p>Plantations of trees on the banks of the</p>	<p>From 1839 to 1940-41.</p>	<p>14,591 12 7</p>	<p>Amount realized from cuttings, 10,453 rupees.</p>	<p>13,800</p>	<p>The number of trees on the banks of the Doab Canal, to 30th April 1945, was 538,327, and their value was estimated at 30,000 rupees; a sum of Rs. 9,872 4 4 had been realized by the sale of timber.</p>
<p>Construction of the walls the Dumola River.</p>	<p>14th September 1839</p>	<p>Doab Canal</p>	<p>13,800</p>	<p>13,800</p>	<p>The amount of expenditure incurred on account of plantations on the banks of the Doab Canal to the 30th April 1947, was Rs. 27,263, 8 7 1 and the estimated value of the trees on the banks of the canal, Rs. 6,06,999 18 4. Orders were reported to the Government for the sum of Rs. 5,744 towards the cost of the remaining 1,744 trees and their value was estimated at Rs. 5,37,820, 2 8.</p>
<p>Dumola Canal</p>	<p>14th September 1839</p>	<p>Doab Canal</p>	<p>13,800</p>	<p>13,800</p>	<p>The number of trees on the banks of the Doab Canal, to 30th April 1945, was 538,327, and their value was estimated at 30,000 rupees; a sum of Rs. 9,872 4 4 had been realized by the sale of timber.</p>
<p>Doab Canal</p>	<p>14th September 1839</p>	<p>Doab Canal</p>	<p>13,800</p>	<p>13,800</p>	<p>The number of trees on the banks of the Doab Canal, to 30th April 1945, was 538,327, and their value was estimated at 30,000 rupees; a sum of Rs. 9,872 4 4 had been realized by the sale of timber.</p>
<p>Doab Canal</p>	<p>14th September 1839</p>	<p>Doab Canal</p>	<p>13,800</p>	<p>13,800</p>	<p>The number of trees on the banks of the Doab Canal, to 30th April 1945, was 538,327, and their value was estimated at 30,000 rupees; a sum of Rs. 9,872 4 4 had been realized by the sale of timber.</p>
<p>Doab Canal</p>	<p>14th September 1839</p>	<p>Doab Canal</p>	<p>13,800</p>	<p>13,800</p>	<p>The number of trees on the banks of the Doab Canal, to 30th April 1945, was 538,327, and their value was estimated at 30,000 rupees; a sum of Rs. 9,872 4 4 had been realized by the sale of timber.</p>
<p>Doab Canal</p>	<p>14th September 1839</p>	<p>Doab Canal</p>	<p>13,800</p>	<p>13,800</p>	<p>The number of trees on the banks of the Doab Canal, to 30th April 1945, was 538,327, and their value was estimated at 30,000 rupees; a sum of Rs. 9,872 4 4 had been realized by the sale of timber.</p>
<p>Doab Canal</p>	<p>14th September 1839</p>	<p>Doab Canal</p>	<p>13,800</p>	<p>13,800</p>	<p>The number of trees on the banks of the Doab Canal, to 30th April 1945, was 538,327, and their value was estimated at 30,000 rupees; a sum of Rs. 9,872 4 4 had been realized by the sale of timber.</p>
<p>Doab Canal</p>	<p>14th September 1839</p>	<p>Doab Canal</p>	<p>13,800</p>	<p>13,800</p>	<p>The number of trees on the banks of the Doab Canal, to 30th April 1945, was 538,327, and their value was estimated at 30,000 rupees; a sum of Rs. 9,872 4 4 had been realized by the sale of timber.</p>
<p>Doab Canal</p>	<p>14th September 1839</p>	<p>Doab Canal</p>	<p>13,800</p>	<p>13,800</p>	<p>The number of trees on the banks of the Doab Canal, to 30th April 1945, was 538,327, and their value was estimated at 30,000 rupees; a sum of Rs. 9,872 4 4 had been realized by the sale of timber.</p>
<p>Doab Canal</p>	<p>14th September 1839</p>	<p>Doab Canal</p>	<p>13,800</p>	<p>13,800</p>	<p>The number of trees on the banks of the Doab Canal, to 30th April 1945, was 538,327, and their value was estimated at 30,000 rupees; a sum of Rs. 9,872 4 4 had been realized by the sale of timber.</p>

(Continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CANALS—NORTH-WESTERN PROVINCES—continued.</b>							
<i>Delhi Canal:</i> Masonry bridge over the Boursance Outlet Nullah, on the Delhi Canal.	-- In lieu of an old bridge, two arches of which had fallen.	-- Sanctioned 4th October 1839.	-- Situated near the village of Shahpore.	Rs. a. p. 2,315 3 10	Rs. a. p. 3,330 9 9	-- Completed season 1840-41.	-- The savings are ascribed to the substitution of gratings at the depth of six feet, instead of cylinders, under the wing walls.
New cut for protecting the Channel, and for the security of the Dadoopore Dam.	-- To protect the Delhi Canal from injury by incursions of the Soansee River.	-- Length 11,200 feet, width 75 feet, average depth 9 feet.	Delhi - - -	1,779 13 2	1,779 13 2	-- Completed season 1843-44.	-- The cut has since been widened by the action of the current to twice its original dimensions.
Protection to the west flank of the Dadoopore Dam.	-- For securing the right bank of the Soansee River from the attacks of the current after it leaves Baker's Cut.	- - - - -	- - - - -	5,005 4 1	5,632 9 10	-- Completed season 1849-50.	- - - - -
Bridge over the Delhi Canal at Rhoodour.	-- To promote the traffic of the town of Rhoodour.	-- Sanctioned 15th August 1837.	- - - - -	9,577 5 2	- - - - -	-- Completed season 1841-42.	-- The roadway is of timber, and is supported on masonry piers.
Construction of an Iron Suspension Bridge at Indore, over the.	-- With a view to the maintenance of the communication of the country.	-- Sanctioned 24th August 1838.	- - - - -	13,267 7 6	- - - - -	-- Completed season 1840-41.	- - - - -
New channel under the Indore Bridge.	- - - - -	-- Sanctioned 24th August 1838.	- - - - -	15,717 14 2	18,122 15 5	-- Completed season 1842-43.	-- The soil through which the new cut was to be excavated proved to be so saturated with water as to prevent a greater depth of excavation than four feet being attained. The action of the current has however cleared out the channel to the depth of eight or nine feet.
Construction of a Dam Bridge across a ravine at Dadoopore.	-- In lieu of an overfall drain bridge, which was carried away during heavy rains in 1841.	-- Sanctioned 15th April 1843.	- - - - -	- - - - -	548 15 10	- - - - -	- - - - -
Construction of two Inlet Bridges over ravines, entering the Canal near the Pucca Tank, west of Hissar.	-- These inlet bridges are necessary to preserve the continuity of the embankments, and to check the influx of silt, at a point between the pucca tank of Hissar and the village of Solunmo Shekspore, where both banks of the canal are interrupted by ravines, which enter the canals at opposite points.	-- Sanctioned 19th June 1847.	- - - - -	- - - - -	1,141 - 10	- - - - -	- - - - -
<i>Deyrah Doon:</i> Construction of Corn Mills	- - - - -	-- Sanctioned 6th July 1844, and 30th August 1844.	-- Under the town of Rajpore.	4,938 2 -	For 8 mills, Rs. 5,414 " 6 " 5,960 Rs. 9,374	-- Constructed season 1845-46.	- - - - -
Compensation to individuals for loss of property and profit.	-- In consequence of the water from the old Rajpore watercourse having been turned into the masonry channel.	-- Sanctioned 18th May 1845. Sanctioned 24th July 1845.	- - - - -	2,732 13 - 4,205 - -	- - - - -	- - - - -	-- Ten miles already constructed by Government on the watercourse, have been rented for upwards of 4,000 rupees per annum.
Reconstruction of the Dakra Aqueduct.	-- This aqueduct was severely damaged by heavy rain on the 27th July 1844.	-- Sanctioned 2d December 1844.	- - - - -	1,542 10 1	1,480 - -	-- Completed season 1845-46.	- - - - -



Repair of 13 Tanks - - -	-- To making them serviceable as reservoirs for irrigation.	-- Sanctioned 10th July 1845.		5,004 10 7½	5,004 10 7½	Season 1845-46.	
Docab Canal - - -							-- Total amount expended on account of canal works, including current expenses to 1st May 1847 - - - - - Rs. a. p. 23,20,868 11 7 Deduct value of dead stock - - - - - 8,01,983 12 2 15,18,884 15 5 Amount realised by revenue - - - - - 14,63,196 4 11 Deficit, Co.'s Rs. - - - - - 55,688 - - -
							The amount expended on account of plantations on the banks of the Docab Canal, to 30th April 1847, was Rs. 21,182. 12 a. 2 p. The amount realised, Rs. 6,505. 8 a. 9 p., and the value of the trees on the canal banks, 1,46,793 rupees.
Restitution of the Newgong Dam, and construction of a Retaining Dam.	-- Greatly injured by a flood on the 21st June 1841.	-- Sanctioned 24th March 1843.		36,694 4 5	30,745 - -		
Constructing the Outlets of the Head of the Puthine Rajbaha, in the North Division of the.	-- With the intention of protecting the head supply, as well as giving the power of delivering water into the rajbaha, or irrigation channel, with greater facility.	-- Sanctioned 20th September 1844.		656 9 -	661 8 8	-- Completed season 1846-47.	
Clearance of the Khorra Head of the Canal.	-- In consequence of a change which took place in the main channel of the Jumna towards the close of last rains.	-- Sanctioned season 1844-45.			1,871 4 6	Season 1844-45.	
Dadoopore Dam: Protection of the East Flank of the.	-- By securing the right bank of the Jumna against further encroachments of that river.	-- Sanctioned 25th July 1845.		6,717 6 9	6,073 - -	-- Completed season 1846-47.	
Measures for the security of the Canal Works.	-- The floods of July 1845, from their long duration and extreme violence, did considerable injury to the crib spurs intended for the protection of the right bank of the Jumna, to the earthen bund on the Sombe.	-- Sanctioned 19th March 1846.		15,211 - -	14,647 - -	-- Completed season 1846-47.	
Delhi Canal: Improvements of the Embankments of the.	-- With a view to confine the canal within certain limits.	-- Sanctioned 9th September 1845.	Near Hisar - -	9,290 - -	9,290 - -		-- In consequence of too great an economy in the original construction, the canal constantly floods the land in the vicinity of Hisar.
Delhi Canal: Construction of 20 second-class Chowkies, and furnishing Chowkies.	-- Necessary to enable the superintendent and his establishment to pass with convenience and rapidity along the line.	-- Sanctioned 1st December 1845.			6,714 - -	Season 1845-46.	
Delhi Canal: Construction of five first-class and six second class Chowkies.	-- Sanctioned, after personal inquiry as to their necessity.	-- Sanctioned 7th May 1845.			9,135 4 10	-- Completed season 1845-46.	

(continued)

NAME OF BOUL	Object of Commission	Length of Term	Form of Appointment	Actual Period	Annual Amount	Period of Commission	Remarks
General Board of Revenue	Re-organisation of the Board	1930-31 to 1931-32	By the Government	1930-31	1,000,000	1930-31	
Board of Revenue	Re-organisation of the Board	1931-32 to 1932-33	By the Government	1931-32	1,000,000	1931-32	
Board of Revenue	Re-organisation of the Board	1932-33 to 1933-34	By the Government	1932-33	1,000,000	1932-33	
Board of Revenue	Re-organisation of the Board	1933-34 to 1934-35	By the Government	1933-34	1,000,000	1933-34	
Board of Revenue	Re-organisation of the Board	1934-35 to 1935-36	By the Government	1934-35	1,000,000	1934-35	
Board of Revenue	Re-organisation of the Board	1935-36 to 1936-37	By the Government	1935-36	1,000,000	1935-36	
Board of Revenue	Re-organisation of the Board	1936-37 to 1937-38	By the Government	1936-37	1,000,000	1936-37	
Board of Revenue	Re-organisation of the Board	1937-38 to 1938-39	By the Government	1937-38	1,000,000	1937-38	
Board of Revenue	Re-organisation of the Board	1938-39 to 1939-40	By the Government	1938-39	1,000,000	1938-39	
Board of Revenue	Re-organisation of the Board	1939-40 to 1940-41	By the Government	1939-40	1,000,000	1939-40	



No 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Interrupted Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
CANALS, NOTRE-WORKS AND BRIDGES—continued. Dehli Canal—continued. Construction of masonry Bridges.	-- To replace the cross bridges of wood, which were not considered sufficiently strong to bear the heavy traffic of that country.	-- Sanctioned 6th October 1849.	-- At Jorah and Chota Thana.	Rs. a. p.	Rs. a. p.	Season 1849-50	-- The Jorah bridge to have one arch, with a waterway of 34 feet; the Chota Thana bridge one arch, 30 feet span.
Alteration of one mile of the Canal, between the Bridges Kutra and Boliak Begun, near the city of Dehli.	-- To render the Dehli branch available for rafts and boats up to the walls of the city.	-- Sanctioned 24th October 1850.	Dehli	--	-- Rs. 7,750. 5. 2. and 1,200 rupees as compensation for the land.	--	-- The canal, on its new line, will have open clear banks for inspection or preservation, instead of obstruction by old enclosures, gardens, tombs, &c.; boats and rafts will be enabled to pass down to the city walls and to the Canal Gate, through the removal of old bridges, &c.
Doab Canal. Construction of masonry Hindis to nine Rajpoots.	For the protection of the banks.	-- Sanctioned 5th June 1847.	Doab Canal	--	3,631 11 --	--	-- There is every reason to believe that the outlay will be turned to good account.
Construction of two Flour Mills on the Carhissan and Madhoopore Rajpoots.	-- In order that advantage might be taken of water-power available in these Rajpoots.	-- Sanctioned 5th August 1847.	--	2,214 7 7	2,378 2 8	-- Completed season 1849-50.	--
Mangoe Gardens, under the Superintendent of the Doab Canal.	-- For supplying the mangoe fruit and grafts of the trees.	-- Sanctioned 29th November 1849.	-- The gardens are at Manichow, Bethersee, Dowrah, Sarwale and Selampore.	--	8,040 5 9	-- Completed season 1849-50.	-- The only garden which had reached the self-supporting stage was that at Sarwale, which had paid 6 per cent. on the outlay. The fruit and grafts were in great demand by the natives; notwithstanding the price of the grafts had been raised from 2 annas to 6 annas, there was no diminution of the demand.
Cut to complete the drainage of the country round the town of Shamla.	-- To excavate a straight channel for the Shamla Nullah, from the escape of the Shamla Mills to the Kibera outlet cut.	-- Sanctioned 22d June 1848.	--	2,068 13 --	2,260 -- --	-- Completed season 1849-50.	-- The total length of this cut is 14,476 feet; the expense of this cut, and of its future repairs, is to be charged in equal proportion to the canal and local funds.
Construction of a second Head Cut to the Scharunpore Mill Cut.	-- To prevent the stoppage of the mills when the supply is cut off from the first head, to enable the workmen to clear away the silt, which is freely deposited in this channel.	-- Sanctioned 28th August 1847.	--	1,815 2 4	2,198 -- --	-- Completed season 1849-50.	--
Construction of the Amith Mhaw Cut, with two masonry Bridges.	-- This cut was made to enable the natural drainage of a large tract of ground to pass freely through the canal embankments.	-- Sanctioned 30th May 1846.	-- In Pergunnah Gungo, Zillah Scharunpore.	1,436 3 3	--	-- Constructed season 1847-48.	-- The land thus relieved from standing water is now available for cultivation.
Dyprah Doon. Repairs to the Rajpore Water-course.	-- The Rajpore River has been earned back to its old channel.	-- Sanctioned 12th May 1847.	--	1,573 -- --	1,573 -- --	-- Completed season 1847-48.	--

ROADS AND BRIDGES, SOUTH-WESTERN PROVINCES:

*Diamond Harbour and Barrapore Roads:* Repair of the portion between Gurriahaut and Barrapore.

-- Both these lines are much out of repair, and are much wanted to enable the cultivators to bring the produce of their lands to Calcutta.

-- Sanctioned 6th April 1841.

In the 24 Pergunnahs

10,190 12 2

10,190 12 2

Season 1841-42

-- An attempt was made to obtain the assistance of the landholders; but nearly all the estates along the line were under the management of the Government officers, and accordingly the State was, in fact, the Zemindar.

ROADS AND BRIDGES, LOWER PROVINCES:

*Daudpore to Sheerpore:* Construction of a new Road.

-- In lieu of a road which had been carried away by encroachments of the River Ganges.

-- Length 13 miles; sanctioned 4th June 1839.

Sheerpore

1,592 4 -

1,592 4 -

Season 1839-40

This new line is taken well inland.

*Doudcondy to Munpda:* Construction of 40 wooden Bridges.

- - - - -

-- Sanctioned 27th May 1841.

Chittagong to the Ferry near Company Katteth.

3,625 6 8

3,625 6 8

-- Completed season 1841-42.

-- All the masonry bridges on this line are being repaired, great damage having been done by an unusually severe flood.

*Darjeeling and Calcutta Road*

-- To perfect the communication between Calcutta and Darjeeling, which new station is becoming a place of general resort for invalids.

-- Length about 363 miles; sanctioned season 1840-41. Berhampore to Baraset, 120 miles; Baraset to Kishnagur, 50 miles.

Calcutta

-- The work has been performed under divisional superintendence. No general return of the amount of advances has been prepared, but so far as can be ascertained, the amount expended for road works, bridges and bungalows, to the period of its completion, has been about 95,957 rupees.

-- Completed season 1843-44.

-- The old line of road between Berhampore and Dinagpore *via* Malda, has been abandoned, and a new line, 30 miles shorter, adopted. This road was reported to have been put in a perfect state of repair as a dry weather communication, and it would only require ordinary repairs after the rains of each year. It had been intended, when the road was first projected, to employ convicts extensively on it, but, owing to great sickness, the convicts were entirely withdrawn.

*Darjeeling:* Road from, to the foot of the Hills.

-- This work, when finished, will be eminently useful.

-- Length 33 miles and 181 yards; sanctioned 50th November 1840 and 1841.

Hills above Darjeeling.

-- The aggregate cost of this line was 66,829 rupees, including that of bungalows, &c.

28,396 11 2

-- Completed season 1840-41.

-- This road has been opened for foot passengers by Lieutenant Napier, of the Engineers, and is quite practicable to

travellers and laden coolies. Of this line 23½ miles are opened to the full width of 11 feet, 3 miles to 9 feet, and 6½ to 6 feet. The execution of the work has been attended with great labour. The excess of expenditure is owing to the employment of hired labour in lieu of the Sebundy sappers, a sufficient number of whom could not be spared.

*Darjeeling Road:* First Division; construction of three Bridges and six Drains.

- - - - -

-- Sanctioned 28th December 1841.

Berhampore

7,087 10 2½

7,087 10 2½

-- Completed season 1844-45.

-

Second Division; construction of Wells.

-- For the convenience of travellers.

- - - - -

Between Barga-chee and Dinagpore.

436 6 6

436 6 6

-- Constructed season 1842-43.

-

Construction of roads in the neighbourhood of, including the "Auckland Road."

-- For facilitating the means of communication.

-- Length about 4½ miles; sanctioned season 1844-45.

Darjeeling

4,499 8 -

- - - - -

-- Completed season 1844-45.

-

Construction of a wooden Bridge.

- - - - -

-- Sanctioned 17th September 1849.

Over an embanked road across the Jherel, connected with the Barrow Karry, on the south side of the Fransawgur Tank, on the Darjeeling road.

841 8 10½

756 - - -

-- Completed season 1849-50.

-- The bridge is on a wooden framework, of three openings of 14 feet wide by 7 feet high; the Fransawgur embankment is in

length 3,309 feet, and in height 7 feet, and dams up the Barrow Karry on its northern side; the Karry passes through the embankment by a bridge, affording a waterway of 277 feet in length by 12 feet in height, and there are also two small plank drains in the bund, which, at its southern end, is usually inundated, and cut away by the rush of water which tops the embankment, owing to the waterway afforded being insufficient. This can only be prevented by the construction of the bridge.

(continued)





No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL—continued.</b>							
Delhi Hospital	For Insanes	Sanctioned 9th March 1841.		Rs. a. p. 25,723 - 10 (Exclusive of Rs. 899. 5. for clearing and levelling a portion of the site for the asylum.)	Rs. a. p. 26,963 4 1	-- Completed season 1846-47.	-- The plan provides for a main building, a separate place for convalescents, and for a garden.
Deyrah Gaol		Sanctioned 1838-39		18,553 11 6	15,808 2 7	-- Completed season 1840-41.	-- The excess of Rs. 2,744. 8. 11. over the estimated cost, is owing to a failure in the executive officer's kilns, and the necessity he was under of purchasing bricks from the bazaar, and also to the execution of additional work.
Delhi Gaol Hospital: Construction of a new Roof.		Sanctioned 18th August 1841.		9,586 6 1	2,757 15 -	-- Completed season 1842-43.	
Delhi: Construction of a new Kotewallee for the city, and a Lock-up House.	-- The old Kotewallee is in a dangerous dilapidated state, part having already fallen.	Sanctioned 4th April 1845.	Delhi	2,369 10 10	-- For the Rs. a. p. Kotewallee 5,929 1 4 Lock-up house - 2,446 5 - <u>Rs. 8,375 6 4</u>	-- Completed season 1846-47.	-- The execution of these works devolved on the magistrate.
Delhi Penitentiary: Additions to the.	-- In compliance with the orders of the Lieutenant-governor for the introduction of a capstan mill, to be worked by the prisoners.	Sanctioned 29d May 1845.	Ditto	994 4 4	1,358 10 6	-- Completed season 1846-47.	
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
Dinapore Gaol: Drainage and Ventilation of the.	To improve the salubrity	Sanctioned January 1840 and April 1841.	Dinapore	3,297 10 8	8,780 - -	-- Completed season 1842-43.	
Addition of 18 Skylights	-- Ditto	Sanctioned 28th February 1842.	Ditto	8,149 13 -	8,149 13 -	Season 1842-43.	
Dacca Insane Hospital: Construction of additional Cells.	-- In consequence of the insufficiency of the accommodation.	Sanctioned 24th July 1843.	Dacca	1,228 5 4	1,228 5 4	-- Constructed season 1843-44.	
Construction of quarters for the Native Doctor and Darogah.	-- Ditto	Sanctioned 26th December 1843.	Ditto	-	-	-- Completed season 1843-44.	
Durrung: Construction of new Buildings.	-- In lieu of the existing cutcherry gaol and thannah, which are in a totally decayed state.	Sanctioned 3d November 1841.	Durrung	1,217 11 7	1,159 11 -	-- Completed season 1844-45.	



987.

Debrooghur:								
Construction of a Gaol at	-- For the accommodation of 186 prisoners, males and females.	-- Sanctioned 3d April 1849.	- - - - -	6,495 1 10	6,508 5 7	-- Completed season 1844-45.		
Construction of a Circuit Bungalow.	-- In consequence of the inconvenience experienced by the Deputy Commissioner in holding his Court, from the want of proper buildings.	-- Sanctioned 14th August 1843.	Debrooghur - - -	1,160 2 11	1,746 2 6	-- Completed season 1845-46.		
Dumoh: Construction of a new defensive Gaol.	- - - - -	-- Sanctioned 27th January 1844.	Dumoh - - - - -	- - - - -	16,862 14 -	- - - - -	-- Government expressed a desire that the buildings should be calculated for defence by a small body of men, and that provision should be made for the occasional close confinement of all the prisoners, so as to enable a small body of troops to retain the prisoners.	
Deebrooghur: Construction of a new Cutcherry.	-- In lieu of a similar one condemned by the annual Survey Committee.	-- Sanctioned 3d February 1846.	Deebrooghur - - -	900 - -	5,822 1 7	Season 1847-48	-- The purchase of Captain Fagan's bungalow for 900 rupees, for a cutcherry, was authorised on the 9th June 1847, as the site was better than any other that could be obtained.	
Dinagopore: Improvements to the Magistrate's Cutcherry, by the construction of a Room with Verandahs.	-- The insufficiency of the existing building was brought to notice by the civil authorities, who preferred the present arrangement for improving the buildings to assigning the upper apartments of the judge's old cutcherry to the magistrate, which would have been difficult of access to the poor.	-- Sanctioned 7th July 1847.	Dinagopore - - -	3,766 1 6 1/2	3,927 - -	-- Completed season 1849-50.	-- The room is to be 40 x 24 feet, with a 10 feet verandah on the east, west, and south sides.	
Debrooghur: Construction of a new Gaol Hospital.	-- The new hospital will be built on a better site; the present buildings, owing to the want of ventilation, are very damp and unhealthy.	-- Sanctioned 12th May 1847.	Debrooghur - - -	- - - - -	631 1 4	- - - - -		
CIVIL BUILDINGS, NORTH-WESTERN PROVINCES--REVENUE:								
Datagunge, in the District of Budaon: Construction of a Tehsil-derry Cutcherry at.	- - - - -	-- Sanctioned 13th December 1838.	Datagunge - - -	4,360 12 -	4,360 12 -	-- Constructed season 1838-39.		
CIVIL BUILDINGS, NORTH-WESTERN PROVINCES--GENERAL:								
Delhi:								
Improvements to the Staging Bungalow.	-- The alterations consist in the addition of new dressing and bath rooms, the construction of a verandah, and throwing a thatch roof over the flat one.	-- Sanctioned 9th April 1845.	Delhi - - - - -	1,849 10 -	1,849 10 -	-- Completed season 1845-46.		
New College at	-- Altering the residency buildings to adapt them for a college.	-- Sanctioned 26th November 1846.	- - - - -	5,699 1 3	6,242 6 6	-- Completed season 1847-48.		

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—GENERAL—continued.</b>							
<i>Dangurhal</i> , on the road between Nagpore and Seane: Construction of a Staging Bungalow.	For the convenience of travellers	-- Sanctioned 3d August 1840.	-- -- --	Rs. a. p. 1,068 5 6	Rs. a. p. 1,075 6 1	-- Completed season 1841-42.	-- This route is much frequented by persons on their way to or from Bombay.
<i>Dumow</i> : Construction of a Dawk Bungalow and Out-offices.	-- -- --	-- Sanctioned 21st June 1842.	Dumow -- --	1,478 14 7	1,478 14 7	1/2 Completed season 1843-44.	--
<i>Dearee</i> : Enclosure of the Burial-ground.	-- -- --	-- Sanctioned 26th September 1844.	-- On the Burdwan and Benares road.	552 10 6	612 4 --	-- Completed season 1846-47.	--
<b>CIVIL BUILDINGS, LOWER PROVINCES—GENERAL:</b>							
<i>Dacca College</i>	-- -- --	-- Sanctioned season 1842-43; estimate revised 16th October 1844.	Dacca -- --	33,707 14 -- 1/4	30,568 5 10 The Government contribution not to exceed 17,000 rupees. An additional outlay of 11,874 rupees sanctioned 16th April 1844.	-- Completed season 1848-49.	-- The additional outlay of 11,874 rupees was found necessary for the construction of a building in every respect suited to the purpose intended.
Construction of a surrounding Wall and Out-offices.	-- -- --	-- Sanctioned 30th September 1846.	-- -- --	-- -- --	-- -- --	-- -- --	--
<i>Debrooghur Road to Jaipore</i> : Construction of two Seracs on the.	-- -- --	-- Sanctioned 30th April 1845.	-- -- --	3,137 -- --	3,137 -- -- 500 -- --	-- Constructed season 1846-47.	--
<i>Darjeeling</i> : Construction of Staging Bungalows at Carrogah Ghant, Furneah and Kishengunge.	-- For the use of Europeans and their families proceeding from the Western stations, and from Calcutta to Darjeeling.	-- Sanctioned season 1846-47.	Darjeeling -- --	7,500 -- --	7,500 -- --	-- -- --	-- The superintendent of Darjeeling represented the very great inconvenience experienced from the want of such accommodation.
New Shingle Roof to the Church.	2. On the recommendation of a committee, who stated that the church wall threw out a green moss annually, probably owing to the leakage from the roof.	-- Sanctioned March 1847.	Darjeeling -- --	650 -- --	660 -- --	-- Completed season 1849-50.	--
<i>Dacca</i> : Rebuilding the Enclosure of the old Burial-ground.	-- The old wall fell during the rains of 1845.	-- Sanctioned 23d September 1846.	Dacca -- --	680 -- 8	-- -- --	Season 1847-48.	--
<i>Dum Dum</i> : Repair of the Roman-catholic Chapel.	-- The chapel had become greatly dilapidated.	-- Sanctioned 8th September 1849.	Dum Dum -- --	1,167 11 3 1/2	-- -- --	Season 1850-51	-- This church was built in 1821-22, and re-roofed in 1827-28, in consequence of the timbers having been destroyed by white ants.
Renewing the Roof of the Church.	-- In consequence of the unsoundness of many of the timbers.	Sanctioned in 1851.	-- -- --	-- -- --	5,681 4 10	-- -- --	-- On the present occasion saul beams will be used instead of teak, which are to be well charred or tarred at the ends; and instead of being built into the walls, they are to be placed with open spaces all round, to facilitate inspection and removal when necessary.

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<i>Darjeeling Church</i> : Construction of a Verandah, and repairs.	-- To protect the outer walls from the constant drizzling rain.	-- Sanctioned 7th March 1851.	Darjeeling	2,684 2 7		-- This church was built in the year 1844, at a cost of 2,500 rupees.
<b>CIVIL BUILDINGS, LOWER PROVINCES—POLITICAL:</b>						
<i>Debroo Maakh</i> : Grant for Temporary Buildings at the new Station of.	-- This station promises to become a place of considerable trade, being particularly convenient for many of the tea localities, and for the export of grain and cotton from Mattock.	-- Sanctioned 5th February 1840.		2,700 --		Season 1839-40.
			the Berhampooter River, called the Mechla Gooter, three miles up from the main stream of the Berhampooter.			
<i>Darjeeling</i> : Construction of Public Buildings at the Civil Station of.	-- These consisted of a magistrate's outcherry, a hospital, thannah, bazaar, shops, out-offices, tanks.	-- Resolution of Government, Political Department, 23d May 1838.		15,087 5 7		-- Completion reported season 1843-44.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—POLITICAL:</b>						
<i>Dumoh</i> : Construction of Buildings.	-- As quarters for the adjutant and non-commissioned officers of the 2d Police Battalion,	-- Sanctioned 11th March 1842.	Dumoh	4,605 -- 5	4,652 15 5	-- Completed season 1846-47.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—POLITICAL:</b>						
<i>Delhi</i> : Excavation of a new Tank.	-- Required in front of the Delhi Palace.	-- Sanctioned 3d February 1842.		25,117 --	22,945 8 --	-- Completed season 1846-47.
<i>Delhi Palace</i> : Repairs to		-- Estimate submitted 27th February 1846.	Delhi	6,533 12 4	50,573 --	-- Completed season 1849-50. -- Repairs to the extent of Rs. 6,533. 12. 4. may have been executed, as the remainder was not considered absolutely necessary.
<b>CANALS, SOUTH-EASTERN PROVINCES:</b>						
<i>Entallee Canal</i> : Excavation of Mud from the bed of the.		-- Sanctioned 9th January 1843.		3,248 15 8	3,679 15 5	-- Completed season 1844-45.
<i>Eastern Canals</i> : Clearance of the Embankments.	-- To complete the tracking communication along them.	-- Sanctioned 25th September 1843.		3,723 11 8	4,368 11 8	-- Completed season 1844-45.
<i>Entallee Canal</i> : Excavation of Deposit from the bed of the.		-- Sanctioned 16th April 1846.		4,470 8 --	5,172 --	-- Completed season 1846-47. -- The deposits, which had silted up the bed of the canal have been removed, and the bed has been deepened.
<b>ROADS AND BRIDGES, LOWER PROVINCES:</b>						
<i>Bridge at Ektearpore</i> , on the road from Jounpore to Buxar.		-- Of five arches of 30 feet span each; sanctioned 6th February 1838.		4,197 11 6	4,197 11 6	-- Completed season 1840-41. -- The cost of this bridge will be defrayed from the funds under the management of the local agent at Shalabad.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:</b>						
<i>Etawah New Gaol</i> : New Gaol Buildings.	-- Offices for the Magistrate and Collector.	-- Sanctioned May 1840.		26,761 14 4	13,357 5 7	-- Completed season 1841-42.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—GENERAL:</b>						
<i>Etawah</i> : Construction of Staging Bungalows.	-- For the accommodation of travellers.	-- Sanctioned 7th January 1846.	Etawah	4,497 --	4,647 --	-- Completed season 1846-47.

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, EASTERN SETTLEMENTS—GENERAL:</b>							
<i>Eastern Settlements: Singapore</i>	Hospital for convicts - - -	Sanctioned June 1837	- - - - -	Rs. a p. 2,670 7 9	Rs. a p. -	- - - - -	- - - - -
	Market at Company Glass - -	-- Sanctioned January 1836.	- - - - -	5,708 3 4	- - - - -	- - - - -	- - - - -
	Enclosure to gaol - - -	Sanctioned July 1836	- - - - -	10,290 5 10	- - - - -	- - - - -	- - - - -
				<u>Rs. 18,669 15 11</u>			
	New market at the China Town at Singapore.	-- Sanctioned September 1834.	- - - - -	23,980 2 7	- - - - -	Completed 1830-40	-- This market covers an area of twice the size of the old one, in order to meet the daily increasing necessities of the settlement.
<i>Fish Market: Construction of a new.</i>	-- In consequence of the present market being liable to inundation.	-- Sanctioned season 1840-41.	- - - - -	2,216 2 4	- - - - -	Completed 1841-42.	- - - - -
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b>							
Road from Ferrah to Horal, on the route from Agra to Delhi; Estimate for Drains and Bridges.	- - - - -	-- Length 102½ miles	Horal - - -	- - - - -	14,884	- - - - -	-- This work has been placed in the hands of the local civil officer at Agra, and the expense will be provided for from the local funds.
Road from Ferozpoore to Shikarpore.	For a military road - - -	-- Sanctioned season 1841-42. Length 415 miles.	Shikarpore - - -	11,145 9 6	- - - - -	Season 1841-42	-- The bill for the work was submitted by Captain Hatton, attached to Shah Soojah's force.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:</b>							
<i>Ferozpoore: Construction of a Gaol at.</i>	-- Undertaken in consequence of the necessity of retaining a gang of convicts to supply the place of hired labourers, of whom a sufficient number for carrying on the numerous works in progress could not be obtained.	-- Sanctioned season 1846-47.	Ferozpoore - - -	1,402 3 5	- - - - -	-- Completed season 1846-47.	- - - - -
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<i>Furreehpore: Additions and alterations to the Gaol.</i>	-- To improve the salubrity of the building.	-- Sanctioned 9th April 1845.	Furreehpore - - -	4,104 10 10	3,623 11 10	Season 1846-49	-- The floors will be built on piles four feet from the ground; some division walls, which obstruct the free circulation of air, will be removed.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—JUDICIAL:</b>							
<i>Futtehpore: Construction of a Judge's Court-house and Out-offices.</i>	-- A new court-house was much required; the records were kept in almost irreparable bungalows, and were exposed to much risk of destruction.	-- Sanctioned April 1847.	Futtehpore - - -	- - - - -	14,962 - - -	- - - - -	-- The building will be constructed of pucca materials, with flat roof, and consist of nine rooms, with a surrounding verandah.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—REVENUE:</b>							
<i>Ferruchabad: Construction of Tehsildarry Cutcherries.</i>	- - - - -	-- Sanctioned April 1848.	-- At Terivah and Ayrwah.	At Ayrwah 3,955 9 5	8,870 4 6	-- Completed season 1846-47.	- - - - -

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<p><i>Futtehpoore</i>: Enlargement of the Circuit-house to accommodate the Collector and Magistrate and their Records; and construction of a Cutcherry for the Huzoor Tahseel, and a Guard-room for 70 men.</p>	<p>-- This concentration of offices has been sanctioned to put an end to the existing inconvenient arrangement of these functionaries holding their offices in separate buildings, and being separated a distance of one mile from their records.</p>	<p>-- Sanctioned 17th August 1843.</p>	<p>Futtehghur</p>	<p>15,807 1 9½</p>	<p>17,482 5 4</p>	<p>-- Completed season 1844-45.</p>	
<p><b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b></p>							
<p>Fulee Point Lighthouse</p>		<p>-- Sanctioned season 1839-40.</p>		<p>-- The breakwater has been completed at a cost of Rs. 2,204. 6., or 296 rupees less than the amount sanctioned.</p>	<p>-- Rs. 731. 14. 5. sanctioned for plastering the building, and 2,500 rupees for a breakwater of rough stone at the eastern bund.</p>	<p>-- Completed season 1841-42.</p>	<p>-- The building is of a red colour, having a large white stone on the sea front, and is easily distinguished by passing vessels. The interior of the lighthouse has been rendered completely habitable. The breakwater was visited by the superintending engineer of the South-eastern Provinces on the 13th March 1845, and was found quite effective in preventing an encroachment of the sea.</p>
<p><i>Fakker Point</i>: Construction of a Lighthouse.</p>		<p>-- Sanctioned 9th November 1843.</p>		<p>7,082 9 10</p>	<p>5,000 --</p>	<p>-- Completed season 1845-46.</p>	<p>-- The excess is owing to the necessity of providing red-stained glass and reflectors for the lantern, and other necessary items overlooked in the first estimate.</p>
<p><b>CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL:</b></p>							
<p><i>Futtehabad</i>: Repairs to the stajing Bungalow.</p>	<p>-- Considered indispensable for the superintendent of the Bhuttana territory, and the residents at Sessa.</p>	<p>-- Sanctioned 28th March 1843.</p>	<p>-- Situated between Sessa and Hissar.</p>	<p>552 15 1</p>		<p>-- Completed season 1843-44.</p>	<p>-- This building was erected by Major Thoresby, at a cost of 2,000 rupees, and made over by him to the Government.</p>
<p><b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—GENERAL:</b></p>							
<p><i>Ferozpoore</i> Burial-ground; Enlargement of the.</p>		<p>-- Sanctioned 25th March 1846.</p>	<p>Ferozpoore</p>		<p>3,894 2 --</p>		
<p><b>CANALS, NORTH-WESTERN PROVINCES—GENERAL:</b></p>							
<p>Ganges Canal (See Appendix.)</p>	<p>-- For making the waters of the Ganges available for irrigation on the eastern side of the Doob.</p>	<p>-- Suggested by Captain Cantley, in the year 1833.</p>	<p>-- To leave the Ganges at Kunkul and pass near to Meerut and Coel, and finally join the river Beas, near Myspooree.</p>	<p>-- Estimates submitted in season 1841-42. Miles. Length of main line 453 " of Futtehghur Branch 160 " Boolundshahur 70 " Etawah 172 " Cawnpore 42½ 808½</p>	<p>-- Rs. 63,65,236, or Rs. 68,38,018. 10., exclusive of the sum which would be required for an aqueduct over the Solani River, which work may be avoided by taking a more circuitous route, and by crossing the Solani valley at a higher level.</p>		<p>-- It will be necessary, first of all, to convey the water from the Ganges at Kunkul to Roorkee, a distance of 90 miles, by an expensive series of works, estimated at Rs. 19,64,378. 12., of which sum about 8,63,668 rupees is for the aqueduct over the Solani River. The estimate further provides for carrying the main branch from Roorkee to Chittoora, mean width of canal 150 feet; and thence to Cawnpore, 230 miles, mean width 90 feet, at a cost of Rs. 28,36,281. 0. 6.; and for four branch canals; viz., the Futtehghur</p>
<p>Branch 100 miles, mean breadth 40½ feet, cost 5,53,667 rupees; the Tappul Branch 70 miles, mean breadth 26 feet, cost 1,33,746 rupees; the Shekoabad Branch 180 miles, mean breadth 38½ feet, cost 7,10,007 rupees; the Allahabad Branch 100 miles, mean breadth 30 feet, cost 3,06,150 rupees. A sudden stop was put to the progress of the work in 1842, the Governor-general being desirous of applying a further test to the scientific and financial calculations on which the scheme is based. This absolute prohibition was, however, partially withdrawn on the 20th June, Government being apprehensive, that if a total stop were put to the work, the money already laid out, about 1,06,000 rupees, would be to a great degree lost; and Captain Cantley was required to confine his operations from the head to the village of Noorpoor, on a line of about 100 miles. On the 7th October 1842, Government was pleased to limit the expenditure on this canal, until further orders, to two lacs (2,00,000) per annum. In July 1844, the assignment was increased to the amount of three lacs (3,00,000) per annum, to which the Court's sanction was given in their Revenue Despatch to the Government of India, dated 30th May (No. 12) 1844. The Military Board, in their annual report for the season 1850-51, stated the amount expended up to the 30th April 1850, at Rs. 49,48,205. 13.</p>							
<p>Ganges Canal: Construction of a Hospital.</p>	<p>-- For the native establishment and workmen of the canal.</p>	<p>-- Sanctioned 31st December 1845.</p>	<p>At Roorkee</p>	<p>1,288 1 7</p>	<p>673 --</p>	<p>-- Completed season 1847-48.</p>	<p>(continued)</p>

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
CANALS, NORTH-WESTERN PROVINCES—GERMAL—continued. Ganges Canal: Construction of as laid at Benjapore Ben. No. 1023 of 1861.)	-- This work is required at a point where the Ganges Canal crosses the Benjapore Ben, a small tributary, and is designed to prevent the difficulties arising from its junction.	-- Estimated 10th July 1848.	-- Northern Division of the Ganges Canal.	Rs. 6 P.	Rs. 14,508 P.		-- The plan is to give the water of the Benjapore branch into the Canal by a masonry cut-off. Great advantages are anticipated. The bed will be built almost entirely of boulder masonry, and with stone.
ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES: Grand Trunk Road between Allahabad and Luckh: (See para. 5 to 12 of Comr's Dispatch, 30th January 1850, at pages 146 and 147 of Parliamentary Papers, No. 1023 of 1861.)	-- Of this road only a small portion is in the South-eastern Provinces. This road may be considered as the main artery of land communication through Bengal and Hindostan.	1st Division. Polah Ghaut on the Hoogley to East Bank of the River - - - - - 2d Division. East Bank of the River to the West Bank of the River - - - - - 3d Division. West Bank of the River to the West Bank of the River - - - - - 4th Division. Allahabad - - - - - 5th Division. Allahabad, Dhonp, and the Branch Road from Bhagong to Agm - - - - - 6th Division. Bhagong, the Old Branch Road, and the Branch Road to Allahabad - - - - - 7th Division. Meerut to Delhi, which comprises a portion of the Grand Trunk Road to Delhi, the Grand Trunk Road, and the new road under construction from Delhi to Kurana, and the new Branch Road from Meerut to Kurana.	Rs. 750 4 - Rs. 80 3 448 Rs. 142 - 282 Rs. 180 6 - 462 Rs. 224 7 876 Rs. 264 6 610	-- Expended to 30th April 1848, 4691,000 - - -	-- The estimated amount for completion in December 1848, was Rs. 23,02,407 For Bridges over the River - - - - - For Bridges over the River - - - - - Rs. 10,00,000 Rs. 10,02,407		-- The Comr's a despatch dated 30th January (No. 3) 1850, observes, "We attach great importance to the completion of the Grand Trunk Road; we desire to see it completed with substantial bridges. Those over the Sonos and Jamsa should be for the present suspended; but you will carefully consider whether the prospect of a railway through the North-west Provinces is sufficiently well to justify the expense of a firm viaduct over the muddy bed of the Sonos. In the 2d Division of the road, we proposed, at an estimated cost of Rs. 40,571b. 6 s. The breadth from western to eastern, Ghaut, in a straight line is 3 miles 3 furlongs and 80 yards, about 1,800 feet, of which consists of alluvial channels and will require, being about two miles of sandy road to be made practicable for the transit of the country. The proposed suspension bridge is to be 170 feet long, and 16 feet deep; 19 feet broad at top, and 16 feet at head; the top surface to be level with the bed of the road, and composed of two courses of brick-work, upon a concrete base, the bed of concrete to have a slope of 3 feet at every 100 feet; an opening covered by a platform of saw wood is to be placed, fastened to longitudinal and cross sleepers, and permanently built into the concrete, to give water-way to the stream percolating through the bed. In December 1850 an outline of Rs. 3,000 was sanctioned for the construction of 150 yards of causeway, on this plan, experimentally.

Continuation of, from Deoil to Kurnaul.	Kurnaul	4,39,076	The Earthwork, Rs. 32,711 5 2	-- In length 70 miles; sanctioned 19th February 1850.	Completed season 1850-51			-- The earthwork of the road is estimated at 43,801 rupees, the metalling at 2,51,058 rupees; the construction of 146 drain bridges and 16 masonry bridges, with 51 arches varying from 20 to 40 feet span.
Reconstruction of the Iron Suspension Bridge at Bugga.	Kurnaul	1,160 1 7		-- Length of the bridge 110 feet, and breadth 12 feet; built in the year 1839 by subscription. Its reconstruction sanctioned 1st August 1843.				
Metalling of the portion of the, within the Benares Division.	Kurnaul	11,774		-- Length 4 miles, 7 fathoms; sanctioned 6th October 1846.				
Repairs to the portion from Goochganje to Fattahpore.	Kurnaul	14,888		-- Length 114½ miles; sanctioned average 1846-47.				
Construction of a new Masonry Bridge on the.	Kurnaul	3,057 9 10		-- Sanctioned 6th July 1846.				
Construction of Walls on the	Kurnaul	1,401 6 6		-- Sanctioned 26th December 1846.				
Raising of the Wing Walls and Parapets of Bridges, and Drains, between Fattahpore and Goochganje.	Goochganje		9,009 7 5	-- Sanctioned season 1846-47.	Completed season 1846-47			
Removal of a Bridge on the	Goochganje	1,791 11 11	1,791 11 11	-- Sanctioned 6th July 1846.	Completed season 1846-47			-- This is a bridge of two arches of ten feet span.
Iron Suspension Bridge over the Tumbak Forest.	Kurnaul	9,108 10	9,108 10	Sanctioned in 1846	Completed season 1846-47			-- This bridge is to consist of two spans of 30 feet, and one of 50 feet, with a 16 feet roadway; and is to be constructed on the deviation or banking principle.
Reconstruction of the	Kurnaul	9,108 13 10	9,108 13 10	-- Sanctioned 16th September 1847.	Completed season 1847-48			-- The bridge first constructed 4½ years, owing to a deficiency of roadway, and owing to the length of foundation in the abutments being (continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ROADS AND BRIDGES SOUTH-EASTERN PROVINCES—continued.</b>				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<i>Grand Trunk Road—continued.</i>							
Construction of an Iron Tension Bridge over the Noonah Nuddee.	- - - - -	-- Sanctioned 31st July 1847.	-- In the district of Beerbhoom.	28,223 13 -	28,223 13 -	-- Completed season 1847-48.	-- This bridge has had some standards of stonemasonry. The centre span is 150 feet, the side spans 63-7½ feet; embanked approaches, neatly sloped off and turfed, lead to the bridge 1,810 feet long, and having an average height above the country of 10 feet. The embankment is supplied with two drain bridges of stonemasonry of five feet span each.
Construction of an Iron Tension Bridge over the Singharra River.	- - - - -	-- Sanctioned 31st July 1847.	-- In the district of Beerbhoom.	29,733 3 6	29,733 3 6	- - - - -	-- This is a similar bridge, of the same size as the former, but with masonry, part stone, part brick, with three subsidiary drains, each of 10 feet span of masonry, with embankments 2,500 feet long, and averaging 20 feet high.
Laying down Iron Tract Roads over the Noonah, Singharra, and Tomlah Bridges.	- - - - -	-- Sanctioned 21st May 1847.	- - - - -	- - - - -	2,002 4 3	- - - - -	-- The tracts for each will be 16 inches wide, consisting of four plates three inches broad, with intermediate spaces of 1¼ inches. Four tracts will be laid for the entire length of each bridge, to admit of two wheeled vehicles passing over the bridge at the same time.
Construction of a Bridge over the Gowarree Nuddee.	- - - - -	-- Sanctioned 26th September 1843.	-- In the district of Behar.	19,801 12 5½	19,801 12 5½	-- Completed season 1847-48.	-- This is a stonemasonry bridge of five arches, each 36 feet span.
Construction of a Bridge over the Dauwah Nullah.	- - - - -	-- Sanctioned 21st August 1843.	-- Ditto - - -	16,956 12 1	16,956 12 1	-- Completed season 1847-48.	-- This is a stonemasonry bridge of four arches, each 36 feet span.
Construction of a Drain Bridge.	- - - - -	-- Sanctioned 12th April 1845.	-- Situated between Barah and Muddenpore.	5,864 7 8½	5,864 7 8½	Completed 1847-48	-- This is a drain bridge of stonemasonry.
Construction of a Dawk Staging Bungalow.	To replace the old bungalow	-- Sanctioned 24th March 1848.	At Jehanabad - -	1,648 3 8	1,648 3 8	-- Completed season 1847-48.	- - - - -
Metalling of the Road between the Raj Ghaut at Allahabad, and the Raj Ghaut at Benares.	- - - - -	-- Length 75 miles; sanctioned 30th January 1848.	- - - - -	- - - - -	80,258 9 -	- - - - -	-- The metal is to be spread of the average depth of 4-75 feet.
<i>Godeoipore:</i> Construction of a new Bridge on the Tension principle over the Kallee Nuddee, at.	-- The old bridge was severely injured by floods on the 20th June 1842.	-- Sanctioned season 1844-45.	- - - - -	- - - - -	-16,517 - -	- - - - -	-- The expense of water in the valley of the Kallee Nuddee during the flood in June 1842, extended over a breadth of 3,630 feet, and the water-way of the bridge proved insufficient for the passage of this large volume of water. The entire bed of the Nullah under the arches was swept away, and the piers of the bridge, being undermined, subsided.



987.	Gangree: Construction of a Staging Bangalow at.		-- Sanctioned 27th June 1846.		2,403 7 9	2,403 7 9	-- Completed season 1846-47.	
	<b>ROADS AND BRIDGES, LOWER PROVINCES:</b>							
	Gowahatty to the Kulling River in Lower Assam: Re-construction of the Road.	-- This is represented to be one of the most frequented roads in Assam, and a highly important military communication, being a continuation of the road from Bengal, by Gowalparrah and the Cossyah Hills, to this Province.	-- Length 39½ miles; sanctioned 15th August 1842.	Kulling River	6,585 2 3	9,962 1 -	-- Completed season 1844-45.	-- In this estimate provision is made for 32 bridges of masonry, and 118 of wood. The saving on the estimate is owing to a reduction in the rate, and also in the quantity of work contemplated.
	Gya Roads: Annual repairs, 1842-43.		<p style="text-align: center;">Miles.</p> - From Gya to Jehanabad on the Patna road } 30 From Gya to Shergatty on the Trunk road } 22 From Gya to Surwah on the Trunk road } 20 <hr/> Miles 72		2,132 5 7½	1,911 6 7		-- Of this extent of road, 13 miles are kept in repair by the Gya convicts, and accordingly provision is not made in the estimate for repairing the same.
	Golar Ghaut to Bor Pathor, through Nagars.	-- The opening of this road will, it is considered, afford the most effectual means of opening an intercourse with and controlling the Nagars.	-- Length, about 30 miles; sanctioned 24th August 1844.	Bor Pathor	800 - -	800 - -	-- Season 1844-45.	
I	Gyah Roads:							
	Construction of a new line from Doobeen to Gyah.	-- It is contemplated to abandon the two existing lines of road which branch off from the Grand Trunk Road towards Gyah, the one from Shergotty, and the other from Surwah. The new line is not intersected by rivers, whereas to make the old lines practicable for wheel-carrriage traffic throughout the year, it would be necessary to bridge four large rivers and four small ones, at a very considerable cost.	-- Length, about 21 miles; sanctioned 20th August 1845.	Doobeen	- - - -	83,895 - -	-- Completion not reported.	-- The old line of communication from Gyah to Jehanabad (29 miles), and from Jehanabad to Patna (about 90 miles), will not be changed.
	Construction of two Drain Bridges.	- In lieu of two others destroyed by floods in August 1848.	-- Sanctioned 10th October 1849.	- On the road leading from Patna to Jehanabad.	- - - -	1,080 3 10	- - - -	-- The estimate for annual repairs, and repairing the damage done by the floods of June and August 1848, amounted to Rs. 3,657. 12.
	<b>ROADS AND BRIDGES, CENTRAL PROVINCES:</b>							
	Great Deccan Road:							
	Metalling of the - - -	-- In consequence of the great wear and tear on the.	-- Length, 245 miles; sanctioned 28th September 1840.	-- From Telwarra Ghant, between Jubulpore on the Nerbudda, and Mirzapore on the Ganges.	83,924 10 5	86,826 15 4	-- Completed season 1843-44.	-- This road was originally constructed by Major Drummond. A sum of 3,180 rupees was expended on repairs to this road during 1847-48, and an estimate of Rs. 6,848. 11. 8. was sanctioned for the following year: on the 4th January 1850 an estimate of 25,703 rupees was sanctioned for raising and metalling the Kutchee portion of the road. (continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ROADS AND BRIDGES, CENTRAL PROVINCES—continued.</b>				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<i>Great Deccan Road—continued.</i> Construction of a Bridge over the Karoundah Nullah.	-- In consequence of the traffic of the country being much obstructed by the bed of the nullah, which is almost impassable during the rainy season.	-- Sanctioned 19th January 1849.	- - - - -	846 8 7	521 9 8	-- Completed season 1849-50.	This bridge is of 10 feet span.
Construction of a Stone-masonry Bridge.	- - - - -	-- Sanctioned 3d August 1848.	-- Across the Harzong Nullah.	639 9 9	639 9 9	-- Completed from 1849-50.	This is a bridge of 12 feet span.
Construction of a line of Road from the top of the Lohagee Pass to its junction with the Great Deccan Road.	- This line of road is the shortest route from Allahabad to the Saugor and Nerbudda Territories, and it appears that whatever traffic exists between Allahabad and the above territories is carried on <i>via</i> Mirzapore, which route increases the natural distance some 70 miles.	-- Sanctioned 8th February 1850.	-- At a village called Mungowah.	- - - - -	36,828 9 -	- - - - -	-- The whole distance from the Great Deccan Road, near Mungowah, to the river Jumna is 58 miles, 7 furlongs, and 167 yards. Of this length 34 1/2 miles have been already constructed, that is, from the Jumna to the top of the Lohagee Pass; the remaining portion is now sanctioned, including 19 viaducts.
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL.</b>							
<i>Gyah:</i> Construction of two Record Rooms.	-- For the records of the officers of the judge and of the collector.	-- Sanctioned 2d April 1837.	- - - - -	6,750 12 3	- - - - -	-- Completed 1840-41.	-
<i>Gowahatty:</i> Construction of Buildings.	-- For a catcherry for the collector and magistrate.	-- Sanctioned 4th January 1842.	- - - - -	6,705 3 6	6,036 5 10	-- Completed season 1843-44.	-
Construction of temporary Gaol Buildings.	-- To replace buildings burnt down on 4th April 1840.	-- Sanctioned 12th February 1841.	- - - - -	1,150 8 5	1,361 10 10	-- Completed season 1841-42.	-
Construction of a Record Room.	-- For the records of the Commissioners' office.	-- Length 50 feet by 20 feet; sanctioned 16th January 1838.	- - - - -	- - - - -	2,526 5 7	- - - - -	-
Construction of a Treasury Room.	-- For the use of the Commissioners' office.	-- Sanctioned 4th January 1841.	- - - - -	902 6 6	- - - - -	-- Completed season 1841-42.	-
<i>Gowalparrah (Lower Assam):</i> Construction of a Catcherry for the Magistrate.	-- To replace an old catcherry of temporary materials, which was in a dilapidated state.	-- Sanctioned 5th December 1837.	- - - - -	3,506 9 -	- - - - -	-- Completed season 1841-42.	-
Reconstruction of the Gaol Buildings.	-- In consequence of the decayed state of the present temporary gaol buildings.	-- Sanctioned 29th December 1842.	- - - - -	3,015 9 4	3,425 3 6	-- Completed season 1844-45.	-
<i>Gowahatty:</i> Erection of a Wall around the Gaol.	- Proposed by the Commissioners, to save the expense of keeping the bamboo fences in good order.	-- Sanctioned 20th May 1844.	Gowahatty - - -	2,186 6 9	2,210 10 -	-- Completed season 1845-46.	-
<i>Gyah:</i> Construction of an additional Room to the Judge's Record Office.	- - - - -	-- Sanctioned 11th September 1844.	Gyah - - - - -	1,141 - 8	1,141 - 8	-- Completed season 1845-46.	-

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<i>Gowalparrah Gaol</i> : Construction of Cook-rooms of masonry.	- For the convicts and their guards, in lieu of similar buildings of inflammable materials.	-- Sanctioned 6th August 1845.	Gowalparrah - -	2,812 14 3	2,812 14 3	-- Completed season 1845-46.	
<i>Gowahatty</i> : Addition to the Commissioners' Cutcherry.	-- To afford shelter to the people attending court.	-- Sanctioned 5th November 1845.	Gowahatty - -	602 4 4	602 4 4	-- Completed season 1846-47.	
Construction of a new Record Room for the Collector and Magistrate.	-- The necessity for this work was brought to notice by the civil authorities, who suggested that a room be built over the existing treasury and record-room.	-- Sanctioned 19th May 1847.	Gowahatty - -	3,527 12 5	3,454 7 3	-- Completed season 1849-50.	-- The estimate provides for a new building, as the house would not have borne the weight of an upper story.
<i>Gowahatty Gaol</i> : Construction of a Criminal Ward.	-- To replace an existing ward reported by the Commissioners of Assam to be dilapidated beyond repair.	-- Sanctioned 12th May 1847.	Gowahatty - -	- - - - -	1,768 7 6	- - - - -	
<i>Gyah</i> : Construction of a Cutcherry.	For the Principal Sudder Ameen and additional Moonsiff of Behar.	-- Sanctioned 22d March 1848.	Gyah - - - -	- - - - -	1,018 - - -	- - - - -	
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL :</b>							
<i>Goorgaon</i> : Construction of a Cutcherry with Out-offices.	-- For the collector and magistrate; the construction of this cutcherry will do away with the renting of buildings, stated by the local officer to be inconvenient and ill-adapted.	-- Sanctioned 27th November 1847.	Goorgaon - - -	11,188 15 8	11,465 5 8	-- Completed season 1849-50.	
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—REVENUE :</b>							
<i>Gunour</i> : Construction of a Tahsildary Cutcherry.	- - - - -	-- Sanctioned season 1838-39.	In Zillah Budaon -	4,561 15 3	- - - - -	-- Completed season 1841-42.	
<b>CIVIL BUILDINGS, LOWER PROVINCES—REVENUE :</b>							
<i>Gya</i> : Construction of a Covered Passage from the Collector's Cutcherry to the Record Office.	-- On a representation of the Sudder Board of Revenue, to the effect that the room in which the treasurer transacted his business was inconveniently small, and that the treasury was at a considerable distance from the record office, in going to and fro, by which the Collector and his officers were exposed to rain and snow.	-- Sanctioned 5th January 1850.	Gya - - - - -	- - - - -	887 4 2	-- Completed season 1849-50.	-- The new passage is 340 feet by 8 feet, with wooden posts and tiled roof.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—REVENUE :</b>							
<i>Ghazepore</i> : Construction of a Guard-room to the Collector's Cutcherry.	-- In consequence of the insufficiency of accommodation for the guard.	-- Sanctioned 25th May 1844.	Ghazepore - - -	575 4 2	575 4 2	-- Completed season 1844-45.	
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL :</b>							
<i>Ghazepore</i> : Extension of the Godown accommodation in the Opium Factory, and Bungalow for the use of the First Assistant.	- - - - -	-- Sanctioned 1st May 1839.	Ditto - - - - -	11,884 - - -	- - - - -	-- Completed season 1841-42.	

(continued)

No. 5.—Statistics compiled from the Reports of the Military Board at Bangalore, from January 1930-31, to 1940-41 inclusive.

NAME OF WORK	Object of Construction	Length and Date of Construction	Place of Construction or of the Material	Amount of Material	Estimated Amount of Cost	Probably Time of Completion	REMARKS
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL</b>							
Construction of an Officers' Quarters at Udumla, etc.	-- Replaced in line of new building by an existing building, which was required to be in use.	-- Estimated 1930 September 1940.	Udumla	Rs. 20,000	Rs. 20,000	1940-41	-- In original estimate of Rs. 20,000, it was estimated that the cost of the building would be Rs. 20,000.
Construction of a Bangalore and Udaipur in the Officers' Quarters.	-- For the second addition to the existing building in the Officers' Quarters.	-- Estimated 1930 September 1940.	Bangalore	Rs. 1,000	Rs. 1,000	1940-41	-- The building was first planned on the right of the 7th March 1941. Cost of building: Rs. 1,000 Building material: Rs. 1,000 Labour: Rs. 1,000 Total: Rs. 3,000
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL</b>							
Great Amalgam Road, Construction of a Lightness on the	-- The Lightness will enable a number of a certain number of motor to cross the bar of the river during the night.	-- Estimated 1930 December 1940.		Rs. 20,000	Rs. 20,000	1940-41	-- The total cost of the scheme, including a building for establishment and other, has been Rs. 20,000, Rs. 10,000.
<b>CIVIL BUILDINGS, LOWER PROVINCES—GENERAL</b>							
Construction of a Bangalore and Udaipur in the Officers' Quarters.	-- The quantity of the building material was brought to the site of construction by the local supply of Bangalore, through the	-- Estimated 1930 December 1940.	Bangalore	Rs. 1,000	Rs. 1,000	1940-41	-- A square of 200 by 200 has been
Construction of a Bangalore and Udaipur in the Officers' Quarters.	-- Completed estimate for the building of a certain number of motor to cross the bar of the river during the night.	-- Estimated 1930 December 1940.	Bangalore	Rs. 1,000	Rs. 1,000	1940-41	-- Completed estimate
Construction of a Bangalore and Udaipur in the Officers' Quarters.	-- With a view to substitute them for the existing building on the Grand Trunk Road.	-- Estimated 1930 February 1940.	Bangalore	Rs. 1,000	Rs. 1,000	1940-41	-- Twenty-two steel pipes, 2 1/2 inches in diameter, were put up in season 1940-41, to carry the water off the roof to the ground outside the building.
Construction of a Bangalore and Udaipur in the Officers' Quarters.	-- Completed estimate for the building of a certain number of motor to cross the bar of the river during the night.	-- Estimated 1930 March 1940.	Bangalore	Rs. 1,000	Rs. 1,000	1940-41	-- A supplementary estimate was submitted on the 14th February 1941 in consequence of the fact that the quantity of the material required for the work estimated in the 1940-41 estimate.

CIVIL BUILDING, NORTH-WESTERN PROVINCES - Gwalior Hospital	POLITICAL: April 1904.	Gwalior	2,100 9 8 1/2	2,000 16 7	Completed 1903-04.	
HERBERTS, SOUTH-EASTERN PROVINCES: Mylapore	To protect the country from the malaria.		2,500,000	444,000		
Reconstruction of the Fort of Madras.	To protect the country from malaria.		11,000	11		On the 5th April 1903, while the Government was in progress for the improvement of the establishment, 11,000 lbs was raised by a severe storm. The whole of the iron bands were entirely and extensively damaged, the secondary being smashed. The same quantity of the establishment on a large scale is being carried on (1903) with the present year under Captain Phipps, of the Engineers.
Buildings in the District of Mysore.	For the protection of large tracts of malarial lands in Mysore.		2,000 0 0	2,100 7 0	Completed 1903-04.	
Construction of a new line of roads in Mysore, Madras and Mysore States.	For the protection of the Government lands in Mysore.		2,000 0 0	2,000 0 0	Completed 1907-08.	The works of these lands were done by the Government.
Extension of Mysore Canal.	To protect the country from malaria.		4,000 10 -	4,000 10 -		
Extension of the Mysore Canal.	To protect the country from malaria.		2,000 0 0	2,000 0 0	Completed 1903-04.	
Construction of a new line of roads in Mysore.	To protect the country from malaria.		2,000 0 0	2,000 0 0	Completed 1903-04.	
Construction of a new line of roads in Mysore.	To protect the country from malaria.		2,000 0 0	2,000 0 0	Completed 1903-04.	

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>EMBANKMENTS, SOUTH-EASTERN PROVINCES—continued.</b>							
<i>Hidgellee—continued.</i>							
Construction of five Inspection Bungalows.	For the use of inspecting officers	-- Sanctioned season 1840-50.	-- In the Hidgellee Division.	Rs. a. p.	Rs. a. p.		-- The inspecting officers will be required to be constantly on the embankments, checking the works in progress, and seeing that it is fairly and efficiently executed.
<b>CANALS, SOUTH-WESTERN PROVINCES;</b>							
<i>Hidgellee Canals:</i> Deepening of a Khali leading from Tazro-pakeriah to Kallyauggur, on the Haldia and Bassoolpore.	-- To facilitate the concentration of the salt of the Hidgellee Agency in one set of goahs; for this object the canal is of great importance, when the strong winds make the coast navigation dangerous.	-- Sanctioned 15th May 1830.			23,138 -- --		
<b>CANALS, NORTH-WESTERN PROVINCES:</b>							
<i>Hallaipore and Meg Chupper:</i> Repairs of the Falls and Bridges.	-- With a view to the Doab Canal being hereafter used both for irrigation and navigation.	-- Sanctioned season 1836-39.	On the Doab Canal	20,725 -- --	17,479 -- --	Completed 1840-41	-- An excess of Rs. 3,247. 15. 11. has been incurred in their execution, owing to the renewal of the old bridges entirely, and a greater depth and solidity having been given to the foundations, with reference to the unfavourable nature of the soil.
<b>ROADS AND BRIDGES, LOWER PROVINCES:</b>							
<i>Hajepore to Kurrunjah,</i> on the Mozufferpore-Road.	-- To supersede the old road to Mozufferpore and Perna Ghaat.	-- Estimated January 1840.	Kurrinjah		40,686 12 1		-- This work does not appear to have been carried out.
<i>Hazareebaugh:</i> Construction of Drains, &c., on the Road from, to the Grand Trunk Road.	-- This road connects the military station of Hazareebaugh with the Grand Trunk Road at Berris.	-- Sanctioned 2d April 1841.	Grand Trunk Road	3,707 14 8	3,753 15 5	-- Completed season 1841-42.	
<i>Hazareebaugh and Dohundah:</i> Construction of a new Line.	-- To improve the facilities of communication, and will prove a great convenience to the men of the Ramghur battalion.	-- Sanctioned 30th August 1850; length, 62 miles, 2 furlongs, and 500 feet.	Dohundah		21,910 -- --		This is to be made a fair-weather road.
<b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:</b>							
<i>Hazareebaugh:</i> Construction of a Stone Bridge over the Arakh Nuddee.		-- Sanctioned 16th October 1843.		8,029 -- --	5,029 -- --	-- Completed season 1846-47.	-- This bridge has three arches of 90 feet span.
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b>							
<i>Hindus Bridge:</i> Proposal for converting it into a Suspension Bridge.					1,45,577 10 3	-- Completed season 1845-46.	-- This bridge was thrown open to the public on the 28th August 1843.
					Including the expense of metalling the portion of the Grand Trunk Road between the bridge and Behinpoore, near Delhi.		

987 Filling up deep Pools in front and at the tail of the Bridge.	-- The pools were filled up with blooms of kunkur, to prevent damage to the bridge.	-- Sanctioned 28th May 1847.			546 3 2	-- Completed season 1847-48.	-- The pooling appears to have arisen from the set of the current having turned against the eastern abutment of the bridge, and the outlay was necessary to prevent further damage.	
<i>Hydrabad Bridge, over the Kaithe Nuddee:</i> Metalling the Causeway of.	-- The metalling had worn out, and the roadway surface had sunk generally so much as 9 inches below the mouth of the drain.	-- Sanctioned 14th May 1844.		3,620 15		-- Completed season 1844-45.	-- The expenditure was incurred for carting kunkur. The labour was performed by convicts.	
<i>Hindun Causeway:</i> Construction of a Drain Bridge under the.	-- Required to pass off the waters which collect in the nook or angle formed by the junction of the Meerut Road and Causeway.	-- Sanctioned season 1844-45.			702 9 11			
<i>Hurrechoffe:</i> Construction of an Iron Suspension Bridge over the Gumber River.	-- To replace a Shakespearian Bridge, reported unworthy of further repair.	-- Sanctioned 28th July 1844.	-- To be one span of 120 feet, with breadth of roadway 7 feet; situated about 6 1/2 miles from Subathoo.	21,712 13 3	10,721 10 6	-- Completed season 1847-48.	-- This sum exceeds the authorized estimate by about 10,000 rupees, in consequence of the necessity of restoring certain parts of the abutments and revetments, which were injured by the floods; also, in part, by carrying the foundations of the abutments to a greater depth than was originally intended, and by the construction of an additional wing wall, up-stream.	
<i>Hurdwar via Roorkie to Beharunpore,</i> Construction of a Road.	-- For the good of the trading community, and for the benefit of the Ganges Canal. By the proposed road, lime, timber and bricks may be conveyed to the works on the canal.	Length, 43 miles	Beharunpore		14,700		-- The Beharunpore Local Committee have assented to bear the whole cost; the money will be advanced by Government, the committee repaying it by instalments of 2,000 rupees per annum. This work was projected by Lieutenant Strachey, an executive officer of the Ganges Canal, and its execution will be entrusted to him.	
<i>Hindun Bridge:</i> Completion of the Causeway leading to the.		-- Sanctioned 16th March 1847.		5,862 6 1	5,862 6 11	-- Completed season 1847-48.		
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:</b>								
<i>Hydrabad:</i> Conversion of an Inclosure into a temporary Civil Gaol.	-- At the recommendation of the Governor of Seinda.	-- Sanctioned August 1844.	8th	Hydrabad		1,608 13 4	Not reported	-- The gaol will consist of three flat roofed wards, with guard rooms and out offices.
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>								
<i>Hazareebaugh:</i> Purchase of an Estate, the property of Major Bird, for a Cutcherry for the Principal Assistant Commissioner.	-- The existing cutcherry was represented to be quite inadequate for the accumulated records, and to be too confined for the large number of persons constantly in attendance.	-- Sanctioned 25th January 1841.		Hazareebaugh	3,600		Season 1841-42	-- The estate is beyond the limits of cantonments.
Construction of a Gaol at Hazareebaugh.	For civil and criminal prisoners.	-- Sanctioned 8th May 1838.		Ditto	4,000 7 - 1	4,000 7 - 1	-- Completed season 1842-43.	-- The buildings of this gaol are of a temporary nature. A hospital and wards for females are included amongst the buildings which have been constructed.
Purchase and alteration of a Bungalow as a Cutcherry for the Principal Agent, Governor-general.	-- Rendered necessary in consequence of the Government cutcherry bungalow having been appropriated to the use of the ex-Ambassadors of Seinda.	-- Sanctioned 24th January 1844.		Ditto	2,772 8 9	2,772 8 9	Season 1845-46.	

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL—continued.</b>							
<i>Hooghly Gaol:</i> Supply of Water to the	For the use of the prisoners	-- Sanctioned 25th February 1846.	Hooghly	2,082 9 4	2,184 -- --	-- Completed season 1846-47.	
Construction of two Cooking Sheds and Ventilators.	-- The removal of the present cooking sheds was necessary to prevent the escape of the prisoners; and the other sanitary works were considered essential.	-- Sanctioned 21st July 1847.	Ditto	1,725 5 8	1,692 10 8	--	
Judicial Buildings	-- The necessity for new buildings was brought to notice by the superintending engineer.	-- Sanctioned 2d September 1850.	Ditto	-- -- --	5,256 5 4	--	
<i>Hazareebaugh:</i> Transfer of the European Hospital to the Judicial Department.	For the confinement of prisoners	-- Sanctioned 1st December 1847.	Hazareebaugh	-- -- --	4,889 2 11 1/2	--	-- This arrangement will obviate the necessity there would otherwise have been to enlarge the Kishenpore Gaol.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—JUDICIAL:</b>							
<i>Hoshungabad Gaol:</i> Construction of additional Wards.	-- The existing buildings, for want of space, admit of no classification or internal goal discipline.	-- Sanctioned 9th March 1846.	Hoshungabad	6,411 3 2	6,394 -- --	Completed in 1849.	
Construction of a Hospital and additional Wards.	-- To provide additional space in consequence of frequent complaints of over-crowding.	-- Sanctioned 3d July 1847.	Ditto	14,539 -- --	14,675 -- --	-- Completed in season 1850-51.	-- Notwithstanding the accommodation afforded by the two new wards, completed in 1849, the increase of number above accommodation had been such that scurvy and other gaol diseases had been generated, and had occasioned a heavy monthly mortality.
<i>Hoshungabad:</i> Restoration of the Peshkarree Cutcherry.	-- This cutcherry was destroyed by fire on the 27th May 1846.	-- Sanctioned 2d February 1847.	Ditto	580 -- --	-- -- --	Season 1847-48.	
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—REVENUE:</b>							
<i>Hoshungabad:</i> Construction of a Peeskar's Cutcherry.	-- -- --	-- Sanctioned 26th December 1836.	Ditto	1,074 8 6	-- -- --	-- Completed season 1841-42.	
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b>							
<i>Howrah:</i> Extension of the Burjal-ground.	-- -- --	-- Sanctioned 14th March 1842.	Howrah	855 -- 6	-- -- --	-- Completed season 1842-43.	-- A space of about 175 x 170 has been taken in and enclosed.



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CIVIL BUILDINGS, LOWER PROVINCES—GENERAL:							
<i>Hoghtly River</i> : Construction of two Obelisks on the.	-- The actual necessity of these beacons was pointed out by the marine authorities.	-- Sanctioned 20th May 1844.	-- One at Canterbury Point, the other at the mouth of the Hog River Creek.	1,237 4 10 1/2	2,003 12 5	-- Completed season 1845-46.	-- The obelisk at Canterbury Point is to be 50 feet, and that at Hog River Creek 40 feet in height.
CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL:							
<i>Hattrass</i> : Repairs and improvements to Hardingunge.		-- Sanctioned 28th July 1841.	Hattrass - - -	3,339 15 7	4,006 1 7	-- Completed season 1843-44.	
CIVIL BUILDINGS, LOWER PROVINCES, POLITICAL:							
<i>Hazareebaugh</i> : Repair of Buildings.	-- Purchased for the accommodation of the ex-Ameers of Scinde.	-- Sanctioned 17th January 1845.		529 5 8	529 5 8	-- Completed season 1845-46.	
CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—POLITICAL:							
<i>Hawallega</i> : Purchase of three Bungalows.	For exiled Hill Ryots	-- Sanctioned 23d August 1849.	Hawallega	2,700 - -			
CANALS, NORTH-WESTERN PROVINCES:							
<i>Intally Canal</i> : Excavation and clearance of.		-- Sanctioned 14th April 1840.		3,466 9 5	-- An estimate for its clearance, amounting to Rs. 5,151. 12. --, sanctioned 20th February 1851.	-- Completed season 1840-41.	
EMBANKMENTS, SOUTH-EASTERN PROVINCES:							
<i>Jacherkhally</i> : Construction of a New Line of Dabundy in the Douroo Pergunnah.	-- For the safety and protection of the country, the existing bund having been encroached on by the sea.	-- Length, 1 mile and 400 feet; sanctioned 15th May 1849.			803 4 3		-- It would seem advisable to throw the embankments back at least 1,000 yards from Kumarpore or Joonpoot to a point north of Singaree.
<i>Jumna River</i>	-- Improvements to the navigation of the.						
Plantations on the Banks of the Canals west of the Jumna River.		-- From 1830 to 1st January 1841.	Jumna Canals - -	4,10,628 - -	-- Since 1830 an average yearly outlay of 2,000 rupees has been incurred in rearing plantations. The amount realised by the sale of cuttings from these trees has been 19,906 rupees, and the amount expended, 22,428 rupees.		-- They consist chiefly of babool, toon, saul, and sissoo, which, when they arrive at maturity, will yield a very profitable return.
Plantations on the Banks of the Eastern Jumna Canals.		-- Sanctioned 14th November 1840.	Jumna Canals - -	5,000 - -	3,000 - -	Season 1849-50	-- The total amount of expenditure up to the 30th April 1849 was Rs. 27,865. 5. 9., and the amount realised from the sale of the produce, Rs. 20,846. 15. 9.; the estimated value of the trees on the banks of these canals was Rs. 3,48,408. 8. --, the number of trees, 296,817, of different ages.

(continued)

Rs. 6-Grants were assigned from the Budget of the Ministry Board as Budget from 1938-39 to 1940-41 inclusive—continued

NAME OF WORK	Object of Construction	Length and Date of Completion	Place of Performance of the Work	Amount Budgeted	Actual Amount Expended	Percentage of Completion	REMARKS
REPAIRS, MAINTENANCE AND IMPROVEMENTS OF THE JAMES BOND, BANGALORE AND THE BRIDGE OF THE	For the purpose of repairing the James Bond and the bridge of the same and also for the purpose of the repair of the same.	Completed in August 1941.		Rs. 4. P.	Rs. 4. P.	100%	
<b>ROADS AND BRIDGES, ROYAL-RAJAPET PROTECTORS:</b>							
Apprentice Road							
Bridge to the Queen Elizabeth Hospital on the		Completed in August 1941.		Rs. 14. 6. 0	Rs. 14. 6. 0	100%	
Bridge to the Queen Elizabeth Hospital on the		Completed in August 1941.		Rs. 11. 9	Rs. 11. 9	100%	
Construction of a new Drain Bridge in the Railway Division at Dindur.		Completed in August 1941.		Rs. 10. 7	Rs. 10. 7	100%	
Repair of the roadwork of the Iron Transport Bridge at Kadambur.		Completed in August 1941.		Rs. 11. 6	Rs. 11. 6	100%	
Construction of a new Drain Bridge on the		Completed in August 1941.		Rs. 9. 8	Rs. 9. 8	100%	
Construction of a new Bridge near the present Newer-Jury Bridge.		Completed in August 1941.		Rs. 4. 6	Rs. 4. 6	100%	

<p>Agriety by in the Suburban Lyriana.</p>	<p>-- In construction of heavy bridge estimated by Govt.</p>	<p>-- Length about 84 miles 7th February 1944.</p>	<p>-- Between Gomb- haid and Baidyana.</p>	<p>1,204 9 11</p>	<p>1,204 9 11</p>	<p>Estimate 1944-45.</p>	<p>--</p>
<p>Construction of 9 Dobra Bridges on the.</p>	<p>-- The road was every year not damaged by the rains, but the water of the Akshay this year has, it is hoped, will be put to use.</p>	<p>-- Of 4th (1st and 2nd) and estimated 2nd Class for 1944.</p>	<p>At Dymnakh -</p>	<p>808 9 9</p>	<p>808 9 9</p>	<p>-- Completed estimate 1944-45.</p>	<p>--</p>
<p>Construction of 2 Dobra Bridges on the.</p>	<p>-- With a view of bringing the water from the village, instead of allowing it to be carried off to a distant stream.</p>	<p>-- Estimated 20th April 1944.</p>	<p>At Kharwadpura -</p>	<p>949 9 11</p>	<p>949 9 11</p>	<p>Estimate 1944-45.</p>	<p>--</p>
<p>Construction of two Bridges -</p>	<p>Per exchange - - - - -</p>	<p>-- Estimated 26th September 1947.</p>	<p>At Baidyana - - - - -</p>	<p>777 15 10</p>	<p>777 15 10</p>	<p>-- Completed estimate 1944-45.</p>	<p>-- Each of two sections of 10 feet span.</p>
<p>Annual repairs from Finance to Baidyana, and the Chota Baidyana (Baidyana); also for Baidyana, Dymnakh, and Baidyana.</p>	<p>The preservation of the road -</p>	<p>-- Length 128 miles (8 exchange and 100 miles) and of the road 6 miles and 9 bridges.</p>	<p>--</p>	<p>4,580 9 9</p>	<p>4,580 9 9</p>	<p>-- Annual repairs for estimate 1944-45.</p>	<p>-- These bridges, etc., will be on the south side of the Kharwadpura River.</p>
<p>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES.</p>	<p>Two Bridges under the city of Baidyana, on the road to Baidyana M</p>	<p>--</p>	<p>--</p>	<p>14,700 - - - - -</p>	<p>14,700 - - - - -</p>	<p>--</p>	<p>-- A weekly water supply, Dymnakh Baidyana being allowed to supply the water of the bridge, which had been taken out of the hands of the contractor in 1944.</p>
<p>Yearly Construction of an Iron bridge on the road from Baidyana, near the Baidyana, etc.</p>	<p>-- In line of a bridge which was started early in September 1944, by a wooden span of the road.</p>	<p>-- Estimated 26th April 1944.</p>	<p>At Baidyana - - - - -</p>	<p>19,400 - - - - -</p>	<p>19,400 9 9</p>	<p>-- Completed estimate 1944-47.</p>	<p>-- The bridge is to consist of two sections of 20 feet span each, with spans of 10 feet high.</p>
<p>ROADS AND BRIDGES, MADHIA PRDESH.</p>	<p>Construction of Baidyana, on the road from Baidyana to Baidyana.</p>	<p>-- Estimated 10th May 1944.</p>	<p>At Baidyana - - - - -</p>	<p>900 9 9</p>	<p>900 9 9</p>	<p>-- Completed estimate 1944-45.</p>	<p>--</p>
<p>Yearly repairs from Finance to Baidyana, on the road from Baidyana to Baidyana.</p>	<p>-- Midway point being line between the two spans, it has been found necessary to open a temporary road from the Baidyana to Baidyana.</p>	<p>-- Length 57 miles; 1944-45.</p>	<p>At Baidyana - - - - -</p>	<p>1,075 9 9</p>	<p>1,075 9 9</p>	<p>-- Completed estimate 1944-45.</p>	<p>-- The road has been every where of the length, so as to reduce the length of bridge.</p>
<p>ROADS AND BRIDGES, CENTRAL PROVINCES.</p>	<p>Construction of the road from Baidyana to Baidyana, on the road from Baidyana to Baidyana.</p>	<p>-- In construction of the road from Baidyana to Baidyana, on the road from Baidyana to Baidyana.</p>	<p>At Baidyana - - - - -</p>	<p>8,200 9 9</p>	<p>8,200 15 4</p>	<p>-- Completed estimate 1944-47.</p>	<p>-- The road was originally constructed by Baidyana Government.</p>

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
ROADS AND BRIDGES, CENTRAL PROVINCES—continued. Jabalpore to Mirzapore, on the Great Deccan Road—continued. Annual repairs to the metalled portion of.	-- Also for making wooden bridges, &c.	-- Sanctioned 20th November 1842.	Mirzapore	Rs. a. p. For bridges - Rs. 2,448 For repairs - 2,708 <hr/> Rs. 5,156	Rs. a. p. 5,108 8 8	-- Completed season 1846-47.	-- This estimate also provides for the construction of 15 more bridges on the road connecting Jabalpur and Damoh, and clearing the Noida Ghats.
Jabalpore via Soane to Kamptee: Proposed metalling and partial bridging of the road.	-- To continue the great road from Mirzapore to Jabalpore (or Great Deccan Road).	Length: M. f. pd. Jabalpore to Soane } OS 7 23 Soane to Kamptee } OS 7 00 Miles 148 0 0	Kamptee	-- <hr/> Rs. 2,77,746 <hr/> Exclusive of the item of bridges.	1,76,246 61,500 <hr/> Rs. 2,37,746	--  --	-- Rs. 20,010, & 81, were expended in season 1847-48 in cutting jungle, making proper levelled ghats, and clearing and smoothing the surface of the ghats; an advance of 16,000 Company's rupees was sanctioned for the purchase of the portion of the road in the Nagpore territory, and Rs. 84,160 & 10, for earthwork between Jabalpore and Soane.
CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL: Initially: Purchase of Ground.	-- For the sheds of the commissary department.	-- Sanctioned 24 April 1839, and 23d June 1840.	Initially	7,000 -- --	-- -- --	Season 1840-41.	--
CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL: Jessore: Construction of a flat-roofed Cutcherry.	-- For the two Principal Sudder Ameens, to enable them to give up the rooms in which they at present hold their cutcherries for the custody of the records of the Judge and Magistrate.	-- Sanctioned 24 May 1842.	Jessore	2,896 6 8 1	2,860 14 6	-- Completed season 1844-45.	-- The cutcherry is to be flat-roofed, with tiled verandah.
Jessore Gad: Construction of 13 Necessaries.	--	-- Sanctioned 25th January 1845.	Jessore	1,384 8 1	1,118 12 6	-- Completed season 1844-45.	--
Jessore: Cutcherry for the Sudder Ameen.	--	-- Sanctioned 27th February 1845.	Jessore	2,006 6 8 1	2,057 10 9	-- Completed season 1844-45.	--

With reference to the magnitude of the work contemplated, the commencement has been deferred until the estimates have been reported on by the superintending engineer, after personal inspection.

Construction of a Scaikhana	-- For the reception of property recovered in case of dacoity, burglary, &c., and in lieu of an old building inconveniently situated.	-- Sanctioned February 1844.	28th	-- The new building will be erected close to the magistrate's canticherry.	764 3 5 0	823 11 10	-- Completed season 1844-45.					
Jessore Gao: Construction of a Dead house and Dispensary.	--	-- Sanctioned May 1845.	27th	--	588 4 5 1		-- Completed season 1847-48.					
Jamsalpor: Alterations to the Deputy Magistrate's Canticherry.	-- In consequence of the wood work of the roof having become entirely decayed.	-- Sanctioned December 1849.	29d	--	1,469 1 -		-- Completed season 1849-50.					-- The canticherry has been put into thorough repair.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—JUDICIAL:</b>												
Jubbulpore: Construction of a new Gaol.	-- For the accommodation of 300 prisoners.	-- Sanctioned March 1841.	10th	--	16,044 11 9	15,641 11 1	-- Completed season 1843-45.					
Construction of Public Buildings.	-- For the 1st battalion of military police.	-- Sanctioned August and 13th October 1843.	14th	--	9,411 7 - 1	2,805 8 7	-- Completed season 1844-45.					
Construction of a new Gaol Hospital.	-- Under a representation that the gaol hospital was not a fit receptacle for the called Thug and Zillah sick prisoners.	-- Sanctioned season 1844-45.	--	--	8,765 5 3	9,578 7 5	-- Completed season 1846-47.					
Jamsalpor: Construction of a Court-house.	-- For the Collector and Magistrate.	-- Sanctioned November 1850.	25th	--	--	9,884 - -	--					
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b>												
James Prinsep Ghased: Contributions towards the erection of.	-- To be erected with the aid of Government, by the subscribers of Calcutta, in the memory of the late James Prinsep, Esq.	-- Sanctioned 1840-41	--	--	Donation, season 1840-41 29 Nov. 1843, Rs. 6000 contributed towards the erection to the value of Rs. 8 July 1845, a further grant authorized of - -	10,000 - - 600 - - 2,726 - - Rs. 13,326 - -	--					-- On the 2d July 1845, the completion of the work directed on the garrison engineer of Fort William, viz., it was understood, had been provided with funds sufficient for that purpose.
<b>CIVIL BUILDINGS, LOWER PROVINCES—GENERAL:</b>												
James and Mary's Anchorage Creek: Construction of an Obelisk at the.	-- The spot is most dangerous for navigation; the obelisk is intended as a day beacon.	-- Sanctioned March 1843.	25th	-- Situated below Pultak, on the Hooghly River.	2,642 10 4 1	1,861 - 10	-- Completed season 1843-44.					Its height will be 80 feet.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL:</b>												
Fauzesham: Construction of a Singing Bungalow at.	--	-- Sanctioned May 1843.	7th	-- Situated between Fultah and Fauzesham.	--	1,891 4 8	Season 1843-44					-- This bungalow will be constructed from the funds originally granted for the bungalow at Buzawa, a bungalow at the latter place being under construction from funds collected by private subscription.
Jamsalpor: Erection of a Singing Bungalow and Out-office.	--	-- Sanctioned September 1843.	24th	-- Situated between Chabuljoh and Kharva.	2,944 10 8	2,943 10 9	-- Completed season 1846-47.					(cont. inner)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, JHULLUNDHUR DIVISION—GENERAL:</b>				<i>Rs. &amp; p.</i>	<i>Rs. &amp; p.</i>		
<i>Jullundhur:</i>							
Construction of a Catcherry and Guard-room.	-- For the deputy commissioner of the station.	-- Sanctioned 31st August 1847.	Jullundhur	26,729 11 -	- - - - -	-- Completed season 1850-51.	-- The old fort at Jullundhur, formerly used as a catcherry, has been sold for 40,000 Company's rupees.
Construction of a Dāk Bangalow and Offices.	-- On the recommendation of the Postmaster-general, North-Western Provinces.	-- Sanctioned 4th January 1850.	- - - - -	- - - - -	8,869 15 3	Season 1849-50	-- The expense will be defrayed from the North-Western Provinces Staging Bangalow Fund.
<b>CANALS, SOUTH-WESTERN PROVINCES:</b>							
<i>Kamapookreeh Khal:</i> Repair of the Dam across the mouth of the.	- - - - -	Sanctioned 1840-41	- - - - -	818 15 6	825 - - -	- Repairs completed 1841-42.	-- The total sum expended for this work since its commencement is 2,946 rupees.
<b>CANALS, SOUTH-EASTERN PROVINCES:</b>							
<i>Kotakhally Nullah, in Chittagong:</i> Excavation of the.	- - - - -	-- Sanctioned 29th May 1838.	- - - - -	1,224 9 11	- - - - -	-- Completed season 1841-42.	-
<i>Khattee Canal:</i> Repair and improvement of.	-- In consequence of the abandonment of the Oolabarreeh Canal.	-- Sanctioned 18th February 1845.	-- This canal is a communication between the Damoodah and Hooghly Rivers.	2,000 - -	2,000 - -	-- Completed season 1845-46.	-
<i>Khattee Bund:</i> Raising of the, two feet.	-- To bring it above the level of the inundations which occurred in August 1844.	-- Sanctioned 27th May 1845.	- - - - -	- - - - -	2,568 3 6	- - - - -	-- The greatest part of the earth for this work will be dug out from the Khattee Canal, the improvement of which will thus be effected at little or no expense.
<b>CANALS, NORTH-WESTERN PROVINCES:</b>							
Kunjoon Escape Nullah	-- Construction of a masonry bridge across the.	-- Sanctioned 4th April 1836.	-- Near the village of Nakroan.	2,142 - -	2,142 - -	- Constructed season 1846-47.	-- This bridge has timber road-way on masonry piers and abutments.
Kutta Puthar Canal	-- For the purpose of irrigating a tract of country bounded by the Jumna on the west, by the Asum on the south, by the hills on the north, and on the east by a stream called the Sutwala Haos.	-- Sanctioned 4th February 1848.	- - - - -	- - - - -	88,902 11 1	- - - - -	-- This tract of land to be irrigated contains 20,254 acres (31 square miles), more than four-fifths of which is good land for cultivation.
<i>Kalles Nuddes:</i> Iron Suspension Bridge at Khodagunge, between Cawnpore and Furruckabad.	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	-- Was built by the late Nuwab Mehindie Allee Khan Bahadoor, but having been made over to Government by his nephew, Ahmed Allee Khan Bahadoor, orders have been given to provide for its future repair.

<p><b>Kumaon:</b> Construction of a Bridge on the taper chain principle over the Kosillah River.</p>	<p>-- The old bridge was injured by a sudden and unusual high rise of the river in September 1840.</p>	<p>-- Sanctioned 5th April 1842.</p>	<p>At Jyaree - -</p>	<p>5,809 4 8</p>	<p>9,170 13 1</p>	<p>-- Completed season 1842-43.</p>	<p>-- This bridge was totally destroyed by the storms which occurred between the 17th and 20th July 1844. It will not be restored.</p>
<p><b>Kathur Nuddes:</b> Bridge near Subathoo.</p>	<p>-- To replace an old bridge which was represented to be unsafe for travellers.</p>	<p>-- Sanctioned season 1841-42; a revised estimate sanctioned 19th July 1844.</p>	<p>-- On the road from Subathoo and Simla.</p>	<p>940 11 6</p>	<p>420 5 7</p>	<p>-- Completed season 1844-45.</p>	<p>-- A wealthy native gentleman, by name Kallee Podar, has made an offer to Government to defray half the cost of this bridge. This bridge had been</p>
<p><b>ROADS AND BRIDGES, LOWER PROVINCES:</b></p>							
<p><b>Kubhadduck River:</b> Suspension Bridge over the, on the tension principle of Mr. Dredge, of London.</p>	<p>- - - - -</p>	<p>-- Sanctioned 28th February 1841.</p>	<p>Near Jessore - -</p>	<p>21,056 - 3</p>	<p>22,818 18 4</p>	<p>Completed in 1846 -</p>	<p>-- A committee of engineer officers was assembled to report on the bridge after its reconstruction; and their report, dated the 24th February 1846, shows that the bridge had been fully tested, and that it is capable of bearing, with perfect safety, the traffic of the country. The bridge has been opened to the public and to the passage of all traffic, excepting elephants. On the 27th June 1849 a report was received from the officiating superintending engineer, Lower Provinces, of the partial failure of the structure, on which Captain Guthrie, of the Engineers, was ordered to inspect the bridge and report the causes of the failure. The following paragraph is extracted from his report, para. 14. -- "I await further orders regarding this bridge. I have issued no orders regarding closing it; having stood the test of 70 lbs. to the square foot, it must be fully equal to all ordinary traffic. I have, however, directed the showkeedar to prevent crowds from assembling, and trains of carts from passing both ways at the same time."</p>
<p><b>Kamroop:</b> Construction of Bridges on the Mofussil roads in the district of Kamroop, and the town of Gowahatty.</p>	<p>- - - - -</p>	<p>-- Sanctioned 12th September 1842.</p>	<p>- - - - -</p>	<p>1,830 14 5</p>	<p>- - - - -</p>	<p>-- Completed season 1842-43.</p>	<p>-- The amount will be charged partly to the Town Improvement Committee funds, and partly to the Mofussil Road funds.</p>
<p><b>Koliabar to the Dunsurry River</b></p>	<p>-- The construction of this road will complete the direct communication between Upper and Lower Assam.</p>	<p>-- Length 67 miles 1 furlong; sanctioned 4th December 1844.</p>	<p>Dunsurry River - -</p>	<p>Not reported - -</p>	<p>24,500 2 2</p>	<p>- - - - -</p>	<p>-- The construction of 240 drain bridges on the line is provided for in the estimate.</p>
<p><b>Kulling River to Koliabar:</b> Repair of the Road.</p>	<p>-- This road follows the course of the river, and forms a bund to keep out inundation.</p>	<p>Length 72 miles -</p>	<p>Koliabar - - -</p>	<p>6,212 - -</p>	<p>6,212 - -</p>	<p>-- Completed season 1844-45.</p>	<p>- - - - -</p>
<p><b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:</b></p>							
<p><b>Khoerda Road:</b> Repairs to, and clearance of jungle on.</p>	<p>- - - - -</p>	<p>-- Length of road 69 miles, 5 furlongs and 115 feet; repairs sanctioned 24th November 1840.</p>	<p>-- Extends from the Madras frontier to Cuttack.</p>	<p>- - - - -</p>	<p>11,450 10 - 1/2</p>	<p>- - - - -</p>	<p>- - - - -</p>
<p>Construction of 129 Bridges and Drains on the.</p>	<p>-- To facilitate the means of communication.</p>	<p>-- Sanctioned season 1839-40.</p>	<p>- - - - -</p>	<p>49,702 8 5</p>	<p>60,673 3 6</p>	<p>-- Completed season 1845-46.</p>	<p>-- The saving of Rs. 10,970. 11. 1. is owing to a reduction of rates, and also to the quantity of masonry.</p>

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES—continued.</b>				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<i>Kyook Phyoo</i> : Construction of five first-class masonry Bridges.	- - - - -	- - Sanctioned 18th September 1841.	Kyook Phyoo - -	10,518 14 10	11,356 7 1	- - Completed season 1842-43.	-
<i>Khoorda Road</i> : Construction of large Bridges on the.	- - Required over rivers that intersect the road.	- - The length of the Khoorda Road is 69 miles, 5 furlongs and 115 feet; sanctioned 25th September 1844.	- - One over the Coosmy River; one over the Sahal River; one over the Consail River.	- - - - - - - No report of the final completion of these bridges has been received	6,970 14 1 9,663 9 2 30,333 - -	- - - - - - - - - - - - - - -	- - For a bridge of seven arches and 20 feet span over the Coosan River. - - For an iron suspension bridge of eight feet span over the Sahal River. - - For a bridge on the tension principle over the Consail River.
<i>Kyook Phyoo</i> : Construction of two Sluices with self-acting gates to bunds.	- - For keeping out the salt water from the station.	- - Sanctioned 15th April 1846.	Khyook Phyoo - -	1,828 4 -	1,451 - -	- - Completed season 1845-46.	-
Construction of 12 pucca Drain Bridges.	- - These works were undertaken at the requisition of the Commissioner of Arracan.	- - ditto - -	At Mugh Bazar - -	- <i>Rs.</i> 1,217. 15. 7. for nine bridges in 1847-48; the three remaining bridges of the 12 authorised were completed in season 1849-50.	1,361 - -	- -	-
Construction of four Drain Bridges.	- - - - -	- - ditto - -	At Khyook Phyoo - -	- - - - -	1,343 - -	- -	-
<i>Kedgeres Dak Road</i> : Renewal of Wooden Bridges over the Kolah Khallee and Tangoah Khalls.	- - To replace the present structures, which are in a decayed and dangerous condition.	- - Sanctioned 17th March 1847.	Kedgeres Dak Road	4,009 7 10	2,230 1 1 1,779 6 9	- - Completed season 1847-48.	- - The bridge over the Kolah Khallee is to be of 70 feet span; that on the Tangoah Khall of 60 feet span.
					<i>Rs.</i> 4,009 7 10		
<i>Kyook Phyoo</i> : Construction of a masonry Sluice.	- - - - -	- - Sanctioned season 1849-50.	- - The sluice is constructed in Jopphee's Bund.	570 10 7	- - - - -	- - Constructed season 1849-50.	This sluice has a self-acting gate.
<i>Kyook Phyoo</i> : Construction of a new masonry Bridge called Budder Mokane Bridge.	- - Constructed on the requisition of the local authorities, the old bridge having fallen down.	- - ditto - -	- - - - -	567 - -	- - - - -	- - ditto - -	This bridge is of 8½ feet span.
<b>ROADS AND BRIDGES, UMBALLA DIVISION:</b>							
Kalka to Dugshye - - -	- - With reference to the formation of a new cantonment on the hills at Dugshye, the road from Kalka at the foot of the hills will be extended to Dugshye.	- - Length 18½ miles; sanctioned 28th April 1847.	Dugshye - - -	- - - - -	1,20,250 - -	- - - - -	- - Up to the 1st April 1848, a sum of <i>Rs.</i> 45,068. 1. 3. had been expended on the work, the progress of which has also been assisted by three or four companies of the corps of Sappers and Miners.
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<i>Kyook Phyoo</i> : Construction of a Cutchery Bungalow at.	- - To be used either by the assistant at Aeng, or by the commissioner.	- - G. O., 26th September 1839.	Kyook Phyoo - -	7,426 5 8	5,335 9 8	- - Completed season 1842-43.	- - The whole, or nearly so, of this excess has been expended on works not included in the original estimate.



(continued)

<i>Koosbaugh, near Moorshedabad:</i> Repairs to buildings at the Mausoleum of Mohabat Jung.	- - - - -	-- Sanctioned seasons 1840-41 and 1841-42.	Koosbaugh - - -	2,308 10 6	2,308 10 6	Season 1841-42.	-
<i>Kishenagur Gaol:</i> Erection of a Dead-house.	- - - - -	-- Sanctioned 23d November 1844.	Kishenagur - - -	417 11 4	- - - - -	-- Constructed season 1847-48.	-
<i>Khoolna:</i> Construction of a Cutcherry and Dwelling-house for the Joint Magistrate.	-- The construction of the building was rendered unavoidable in consequence of a tendency to outrage and disturbance existing in that quarter, which called for the constant presence of a joint magistrate.	-- Sanctioned 8d June 1844.	Khoolna - - -	6,798 11 10	7,150 8 9	-- Completed season 1845-46.	-
<i>Kissenpore Gaol:</i> New Tile Roofing to the.	-- The gaol had heretofore been thatched, but a thatched roof, from its liability to take fire, was considered particularly objectionable for a gaol.	-- Sanctioned 10th September 1844.	Kissenpore - - -	2,066 5 11	2,616 4 3	-- Completed season 1846-47.	-
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL:</b>							
<i>Kyook Phyoo:</i> Addition of Out-offices to the New Circuit-house.	- - - - -	-- Sanctioned 5th October 1841.	- - - - -	1,082 3 5	1,082 - 3	-- Completed season 1842-43.	-
Construction of new Gaol Buildings.	-- The old gaol wards were quite unworthy of further repairs.	-- Sanctioned 31st July 1843.	Kyook Phyoo - - -	- - - - -	20,867 5 2	-	-
Construction of a Sadder Hospital.	-- Indispensably necessary for the accommodation of the sick of the police, the flotilla, and other civil establishments.	-- Sanctioned 24th June 1844.	- - - - -	1,753 10 6	1700 5 -	-- Completed season 1845-46.	-
Construction of two new Wells for the gaol.	- - - - -	-- Sanctioned 31st July 1843.	- - - - -	617 5 9	517 5 9	-- Constructed season 1845-46.	-
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:</b>							
<i>Kumaon:</i> Construction of a Cutcherry.	-- For the accommodation of the Junior Assistant Commissioner and Sudder Amcen.	-- Sanctioned 7th July 1841.	- - - - -	685 1 3	779 15 -	-- Completed season 1841-42.	-
<i>Kuchwagar:</i> Construction of Police Guards.	For prisoners under trial - -	-- Sanctioned 27th April 1844.	Kuchwagar - - -	2,300 - -	2,300 - -	-- Constructed season 1844-45.	-
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—REVENUE:</b>							
<i>Kyook Phyoo:</i> Construction of masonry Sluices with self-acting gates.	-- In compliance with the recommendation of the Commissioner of Arracan.	-- Sanctioned 4th March, and 20th May 1846.	-- In Freeman's Bund, at Kyook Phyoo.	2,577 2 11	2,577 2 11	-- Completed season 1847-48.	-
Construction of a masonry Sluice with self-acting gate.	-- ditto - - - - -	-- Sanctioned 15th April 1846.	-- In Hopkinson's Bund, at Kyook Phyoo.	982 1 11	982 1 11	-- Completed season 1847-48.	-

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—REVENUE—continued.</b>							
<i>Kyook Phyoo—continued.</i>							
Construction of a masonry Sluice with self-acting gate.	-- In compliance with the recommendation of the Commissioner of Arracan.	-- Sanctioned 4th March 1846.	-- In the Fish Village Bund.	598 14 9	598 14 9	-- Completed season 1847-48.	
Construction of a Sluice Bridge called Chota Nemuch Golah.	-- With the view of improving the salubrity of the station.	-- Sanctioned May 1847.	Kyook Phyoo - -	860 - 4	860 - 4	-- Constructed season 1849-50.	-- This work was projected by the Commissioner of Arracan.
New Sluice in Freeman's Bund	- - - - -	-- Sanctioned season 1849-50.	- - - - -	949 9 4	949 9 4	-- Constructed season 1849-50.	-- The sanction for this work was obtained from the Government, direct by the Commissioner at Arracan.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b>							
Kedgeres Tripod	-- For the security of the establishments at Kedgeres, as well as of the inhabitants, in the event of a gale occurring similar to that in 1838.	-- The fabric will be 50 feet high, and of four stories; sanctioned 27th January 1840.	Kedgeres - - -	4,189 11 -	4,214 9 9	-- Completed season 1841-42.	-- Three of the stories will be for places of refuge in times of inundation, and the fourth may be used by the Semaphors establishment, and also for the purpose of exhibiting a light, if necessary, for the use of the shipping.
Kidderpore: New Fitting Shop in the Steam Dockyard.	- - - - -	-- Sanctioned season 1838-39.	- - - - -	12,945 - 1	- - - - -	-- Completed season 1841-42.	-- The work has been satisfactorily executed.
Kedgeres: Enclosure of the Burial-ground.	-- The place was represented to be a perfect jungle, without any surrounding wall, hedge, or fence of any kind whatever.	-- Sanctioned 26th April 1842.	- - - - -	754 12 11½	708 5 -	-- Completed season 1843-44.	
<i>Kyook Phyoo:</i>							
Construction of Godowns	For marine stores - - -	-- By order of the Commissioner of Arracan, dated 17 February 1840.	Kyook Phyoo - -	3,560 3 10	- - - - -	-- Completed season 1841-42.	-- These buildings replaced two others which had been pulled down.
Construction of a new Marine Magazine.	-- The old building has been in a state of dilapidation since 1838.	-- Sanctioned season 1842-43.	Kyook Phyoo - -	1,798 9 2	- - - - -	-- Completed season 1842-43.	
Kootubdea Island: Construction of a Lighthouse, &c.	- - - - -	-- Sanctioned 11th January 1843.	Kootubdea Island -	35,511 - -	29,235 6 5	-- Completed 21st February 1846.	-- The light will be exhibited 100 feet above high water spring-tides, and the lantern is to be 12 feet in diameter.
Kidderpore: Additional accommodation in the Steam Department.	- For a new store room, offices and model room.	-- Sanctioned 20th July 1842.	Kidderpore - - -	40,036 12	45,376 4 6	-- Completed season 1844-45.	-- The saving of Rs. 5,339. 0. 8. is ascribed to modifications from the original design.

987.

Construction of Pucca Dry Dock.	-- In lieu of the existing catcha dock.	-- Sanctioned 19th October 1842, and 5th February 1844.	- - - -	92,049 7 9½	87,768 7 1	-- Completed season 1844-1845.	-- In consequence of the difficult nature of the undertaking, the floor of the dock resting on a mass of springs, it became necessary to change the mode of laying the foundation.
Completion of the River Wall, piling and filling up the old Mud Dock and Tank.	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
<i>Kidderpore:</i> Renewing a Store-room, constructing a Coal-tar Tank, &c., in the Naval Store-keeper's Department.	-- At the request of the Superintendent of the Marine.	-- Sanctioned 9th April 1844.	Kidderpore - -	6,507 6 9 .	6,564 4 1	-- Completed season 1844-45.	- - - - -
Construction of Buildings	-- For the reception of the pump and punching machine.	-- Sanctioned 17th June 1844.	- - - - -	8,428 8 9	7,005 3 6	-- Completed season 1845-46.	- - - - -
<i>Kidderpore:</i> Construction of a Shed	- As a receptacle for coals - -	-- Sanctioned 28th February 1844.	- - - - -	477 - -	477 - -	-- Constructed season 1844-45.	- - - - -
Dockyard; renewal of a portion of the Retaining Wall.	-- The old retaining wall is in a dangerous state, and the foundations are supposed to be defective.	-- Sanctioned 22d July 1846.	- - - - -	-- This work was suspended in 1845-46, as the entrance to a projected wet dock for steamers will be made on part of the intended site; the revetment wall was reconstructed in season 1844-50, at a cost of Rs. 11,372. 15. 11.	33,557 1 10	- - - - -	-- The section of the new wall will be similar to that of the wharf wall at Sheerness, where the soil somewhat resembles that at Kidderpore.
<i>Kyook Phyoo:</i> Construction of three Jetties or Piers.	-- For the convenience of the salt traders frequenting the port.	-- Sanctioned 16th September 1844.	Kyook Phyoo - -	- - - - -	3,748 8 -	- - - - -	- - - - -
<i>Kidderpore Dockyard:</i> Construction of a masonry Platform.	-- For setting up an iron crane, shipped by the Court of Directors.	- - - - -	- - - - -	20,240 - -	17,375 - -	- - - - -	- - - - -
<i>Kootubdea:</i> Lighthouse Buildings.	-- For a lighthouse tower and lantern, with buildings for the establishment of overseers and Lascars, on the island of Kootubdea.	-- Sanctioned 8th October 1845.	Kootubdea Island -	35,289 - 5	29,235 - -	-- Completed February 1846.	-- The excess over the original estimate was occasioned by the rates assumed by the executive engineer being purely conjectural, in consequence of the isolated spot at which the work was to be carried on.
<i>Kidderpore:</i> Proposed construction of a Basin or Wet Dock.	For inland steamers - - -	-- Submitted for sanction 19th June 1846.	Kidderpore - -	- - - - -	1,27,211 6 9	- - - - -	-- It is proposed to make the entrance into the wet dock through the dry dock, whereby the expense of constructing a new entrance with locks, &c., will be in great part avoided, while the dry dock will still remain available for the purposes of its original construction, whenever required.
Dockyard; construction of Boat and Coal-sheds, and fitting up a Tank.	-- The necessity for these works was brought to notice by the Acting Superintendent of Marine.	-- Sanctioned 21st June 1847.	- Ditto - -	- - - - -	16,057 7 6	- - - - -	- - - - -

(continued)

No. 8.—GATHERED compiled from the Reports of the Military Board at Bengal, from Seasons 1830-40, to 1850-61 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Completion.	Place of Transportation, or of Forwarding Materials.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<p>Boats and Boatsmen, Ganges—Barrages—continued.</p> <p>Lachow Bridge, and repair of the Cemetery.</p>	<p>-- The length of the cemetery, measuring 351 and 307 feet respectively, were entirely destroyed by a violent flood on the 25th June 1842.</p>		<p>Near Lachowpore.</p>	<p>Rs. 6 P.</p>	<p>Rs. 6 P.</p>		<p>-- The cemetery of the Lachow Bridge is contained in the third volume of the Papers of the Board, and is described by a plan of 4200 feet. The bridge and cemetery were constructed in the year 1827, at a cost of 30,000 rupees. The plan of the cemetery of the bridge are carried down to the bottom of the river to solid soil. Two of the arches having been washed up, and others of the arches in 1847-48, a sum of Rs. 20,000, 6 p. was expended in building the space between the piers with rough masonry. An estimate, amounting to Rs. 1,000, for walling the cemetery of the bridge, was sanctioned on the 1st May 1849; the bridge over the bridge was requested to be sanctioned.</p>
<p>Lachow Bridge: Reconstruction of several portions of the masonry walls.</p>	<p>-- Three arches were greatly injured by heavy rains in August 1842.</p>	<p>-- Sanctioned on 26 January 1843.</p>		<p>6,448 9 6</p>	<p>6,628 7 11</p>	<p>-- Completed season 1843-44.</p>	
<p>Repair of, and Rebuilding of parts of the Road leading from the Barrage to the Hospital, with a rough Bridge.</p>	<p>-- Three arches were greatly injured by the heavy rains of August and September 1842.</p>	<p>-- Sanctioned on 26 October 1842.</p>		<p>5,151 5 3</p>	<p>5,444 5 8</p>	<p>-- Completed season 1844-45.</p>	<p>-- A walling has been erected along the road.</p>
<p>Lachow Canal: Construction of an Iron Suspension Bridge over the Lachow River, &amp;c.</p>	<p>-- The bridge B intended to be placed on old masonry piers which is considered by the Board to be no longer safe.</p>	<p>-- Sanctioned on 23 September 1842.</p>	<p>Lachow Canal.</p>		<p>5,425 9 7</p>		
<p>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—GENERAL.</p>							
<p>Lachow Barracks of the District.</p>		<p>-- Sanctioned 1st October 1842.</p>		<p>791 12 9</p>	<p>791 12 9</p>	<p>-- Completed season 1844-45.</p>	
<p>Lachow Canal: Construction of a Wall around the Barrage.</p>		<p>-- Sanctioned 31st July 1842.</p>		<p>801 1 3</p>	<p>801 1 3</p>	<p>-- Completed season 1844-45.</p>	
<p>Lachow Canal: Addition to the Barrage.</p>	<p>-- In consequence of the masonry being insufficient for the increased number of European troops.</p>	<p>-- Sanctioned 24 April 1844.</p>		<p>4,048 11 3</p>		<p>-- Completed season 1845-46.</p>	<p>-- An addition of 40 feet has been made to the length of the channel.</p>
<p>CIVIL BUILDINGS, CENTRAL PROVINCES—ROCKSBURGICAL.</p>							
<p>Lachow Church.</p>		<p>-- Sanctioned in August 1838.</p>		<p>5,400</p>		<p>-- Completed season 1840-41.</p>	<p>-- The future repairs of the church will be repaid by the State.</p>

98 7	CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—ECCLIASTICAL: Lauder Church: Construction of	Sanctioned in 1938	6,000	1940-41.	Completed season 1940-41.	The estimates were prepared with an opinion that the single approved fund and the rates available.
	Lauder: Burial-ground: Construction of a wooden wall.	To include the burial-ground	897 11 7			
	CIVIL BUILDINGS, CENTRAL PROVINCES—POLITICAL: Lauder: Completion and repairs of the Comstock House Buildings.		1,99,500 4 4			The Comstock House is to be provided to carry the building material, on the condition that the State Government shall be responsible for the cost, after the addition and repairs provided for have been completed.
	CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—POLITICAL: Lauder: Construction of the Assembly House, House of Assembly.	For the Political Building.	34,000			
	CIVIL BUILDINGS, POHWAUD CIRCLE—GENERAL: Lauder: Pulling up of a large hall in Dyan Singh's House.	For the use of a place of Divine worship.	1,987 9 5		Season 1940-41.	
	Putting up of 2 buildings in Dyan Singh's House.	For the use of the C.M.S. Dispensary.	708 6 9			
	Construction of a Group Dispensary, with Out-patient.	On a recommendation from the Government, North-Western Provinces.			Season 1940-41.	The building is to consist of one large room 30 x 14, with two smaller rooms 16 x 14, the whole to be surrounded by a verandah 10 feet high; the wall to be finished on two sides, including floor space 10 x 14, with four building spaces each 10 x 10.
	Construction of a Chapel for the Roman-Catholics.		4,200 0 -			With reference to the removal of the monument from Assaundra to the new town, the report will be forwarded to the higher authorities.
	Building, No. of General View, with House on.	To object to the conditions of the contract and the same.	13,400 7 9		Season 1940-41.	The house is situated in the Assaundra settlement.
	ENHANCEMENT, SOUTH-EASTERN PROVINCES: Matsyagan Division					
	Construction of a long line in the form of a wall, boundary line, and a long line, Matsyagan Division.	For the protection of the Government land.	3,217 5 9		Completed season 1940-41.	Large plots, boundary lines, and other matters, have been brought under the Government. Estimate for repairs to the boundary wall, No. 15, (1940-41, estimate to No. 15, (1940-41, (continued))

No. 8.—Statistics compiled from the Reports of the Military Board at Bangalore from Seasons 1899-1900, to 1906-07 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length and Date of Commencement.	Form of Superstructure, or of Included Structures.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probably Time for Completion.	REMARKS.
BRASSBERRY, SOUTH-EASTERN PROVINCES—continued. Construction of two bridges over the river, with abutments, Canada, with abutments.	-- Three works were prepared by the local authorities for the improvement of the communication between the Government and the district of Kistner's. The proposed work is to be done by the Government.	-- One of the bridges is 1,200 feet in length, and the other 200 feet in length, from the Government side to the other side of the river. The estimated cost is Rs. 1,00,000.	Bridge	Rs. 8,000	Rs. 8,000	Season 1904-05	--
Construction of two bridges over the river, with abutments, Bangalore.	-- To enable the communication between the Government and the district of Kistner's to be improved, and to enable the Government to have better communication with the district of Kistner's.	Estimated to 1907 - February 1902.	Estimated and bridge	800 - 8	800 - 8	Completion in period in 1906.	--
Middleton, Punjab, Anglo-Indian. Construction of a new road.	-- An improvement of the road leading from the Government side to the district of Kistner's.	Estimated 178 February 1902.	--	1,200 - -	1,200 - -	--	--
<b>CAVALRY, SOUTH-EASTERN PROVINCES:</b>							
Mysore, Mysore; Improvement of the road.	-- By cutting down jungle, re-planting and making new paths, etc.	Estimated 200 September 1902.	--	--	4,200 4 8	--	-- These works will probably last for the whole communication.
<b>CAVALRY, SOUTH-EASTERN PROVINCES:</b>							
Mysore, Mysore; Construction of a new road.	-- For the protection of the district, and for the improvement of the communication between the Government and the district of Kistner's.	Estimated 20 March 1902.	--	14,000 8 -	14,000 - -	Completed season 1903-04.	-- This work has fully answered the expectations entertained of it.
Mysore, Mysore; Construction of a new road.	-- To improve the communication between the Government and the district of Kistner's.	Estimated 200 January 1902.	--	4,200 12 10	4,100 8 8	Completed season 1904-05.	--
Mysore, Mysore; Construction of a new road.	-- To improve the communication between the Government and the district of Kistner's.	Estimated 200 March 1902.	--	--	6,000 - -	--	--
<b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:</b>							
Mysore, Mysore; Construction of a new bridge.	-- In line of an unworkable bridge.	Estimated 200 February 1902.	--	701 8 10	--	Completed season 1903-04.	--
Mysore, Mysore; Construction of a new bridge.	-- In line of an unworkable bridge.	Estimated 200 April 1902.	Completed	--	79,100 10 8	--	-- The distance to be travelled is about 20 miles. The bridge is for travelling (connecting to nearly 4,000 people per mile) is estimated by the Government to be about 100 miles, the number of which the quarters are situated.

<p>Memorandum: Construction of a bridge over the following rivers:</p>	<p>.. To replace the old dilapidated garka.</p>	<p>.. Scheduled 6th September 1957.</p>	<p>.. Scheduled 6th May 1958.</p>	<p>.. Scheduled 6th September 1957.</p>	<p>.. Scheduled 6th May 1958.</p>	<p>.. Completed season 1956-57.</p>	<p>.. This bridge is of three spans, of 80 feet each. The width of the bridge is 16 feet. It is supported by 4 piers on the river and 2 on the banks of river.</p>
<p>Memorandum to Government: Construction of 18 Masonry Bridges and Docks.</p>	<p>.. To replace the old dilapidated garka.</p>	<p>.. Scheduled 6th September 1957.</p>	<p>.. Scheduled 6th May 1958.</p>	<p>.. Scheduled 6th September 1957.</p>	<p>.. Scheduled 6th May 1958.</p>	<p>.. Completed season 1956-57.</p>	<p>.. One of the bridges is of two spans, 15 feet each, of masonry arch; two of two spans, 10 feet each, of masonry arch; and two of two spans, 10 feet each, of masonry arch.</p>
<p>BOARD AND BIDDER, LOWER PROVINCES: Madras Road ..</p>	<p>.. To make the communication between the Madras Road and the Madras railway company's bridge easy.</p>	<p>.. Length, 80 miles and 6 bridges.</p>	<p>.. Substantially in conformity with the design of the bridge.</p>	<p>.. 1957-58.</p>	<p>.. 1958-59.</p>	<p>.. Completed season 1956-57.</p>	<p>.. The line of road was completed by the Government in 1956 and the communication between the Madras Road and the Madras railway company's bridge was completed in 1957.</p>
<p>BOARD AND BIDDER, CENTRAL PROVINCES: Madras Road to Alakhad ..</p>	<p>.. The project is to build a road, 80 miles long, between the Madras Road, Madras, and Alakhad, Madras, and to connect it with the Madras railway company's bridge.</p>	<p>.. Length, 80 miles and 10 bridges.</p>	<p>.. Alakhad.</p>	<p>.. 1957-58.</p>	<p>.. 1958-59.</p>	<p>.. Completed season 1956-57.</p>	<p>.. The line of road was completed by the Government in 1956 and the communication between the Madras Road and Alakhad was completed in 1957.</p>
<p>Memorandum to Government ..</p>	<p>.. To grant a concession to the Government to build a road, 80 miles long, between the Madras Road, Madras, and Alakhad, Madras, and to connect it with the Madras railway company's bridge.</p>	<p>.. Completed in 1954.</p>	<p>.. Alakhad.</p>	<p>.. 1957-58.</p>	<p>.. 1958-59.</p>	<p>.. Completed season 1956-57.</p>	<p>.. The line of road was completed by the Government in 1954 and the communication between the Madras Road and Alakhad was completed in 1957.</p>
<p>Memorandum to Government ..</p>	<p>.. To grant a concession to the Government to build a road, 80 miles long, between the Madras Road, Madras, and Alakhad, Madras, and to connect it with the Madras railway company's bridge.</p>	<p>.. Completed in 1954.</p>	<p>.. Alakhad.</p>	<p>.. 1957-58.</p>	<p>.. 1958-59.</p>	<p>.. Completed season 1956-57.</p>	<p>.. The line of road was completed by the Government in 1954 and the communication between the Madras Road and Alakhad was completed in 1957.</p>
<p>Memorandum to Government ..</p>	<p>.. To grant a concession to the Government to build a road, 80 miles long, between the Madras Road, Madras, and Alakhad, Madras, and to connect it with the Madras railway company's bridge.</p>	<p>.. Completed in 1954.</p>	<p>.. Alakhad.</p>	<p>.. 1957-58.</p>	<p>.. 1958-59.</p>	<p>.. Completed season 1956-57.</p>	<p>.. The line of road was completed by the Government in 1954 and the communication between the Madras Road and Alakhad was completed in 1957.</p>

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Seasons 1833-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b>							
<i>Muzrai to Ghazipur:</i> Improvement of the Road.		Sanctioned season 1846-49; length, 30 miles; 7 footings.	Ghazipur.	R. a. P. For bridges - 2745 - 5 For metalling 60,201 14 11 For a post - 7745 - 5	R. a. P. 27,407 - - - - - For metalling for work being this road.	Completed season 1843-45.	The construction of this road was first undertaken by the Military Board Road Committee, by whom it was abandoned, after eight miles had been completed, owing to insufficient means; the Committee pledged itself to execute the work, having the metalling and bridges to Government. The line of road has been transferred from the Military to the 7th division of the Grand Trunk Road; the annual repairs are estimated at 6,000 rupees.
Construction of a Bridge over a Nullah.	For drainage.	Sanctioned 27th October 1845.		620 4 4	620 4 4	Completed season 1843-44.	The masonry is of rough stone, dressed with chisel.
Muzrai to Karamul.	Proposed to be useful both for commercial and military purposes.						
Kolama: Construction of a Road. Causeway across the River Porotia.	This work is considered absolutely necessary on account of the exigencies of the present crowding, at which vehicles frequently break down, or are so much shaken as to render them almost useless.	Sanctioned 16th January 1847.	On the road between Gumbler and Boppra.		8,400 3 6		
<i>Muzrai to Karamul:</i> Restoration of the Bridge over the Kallea Nullah.	Carried away by a flood on the 20th June 1845.	Sanctioned 17th November 1845.	At Mullerba.	14,406 13 9	11,805 8 3	Completed season 1844-45.	This bridge was constructed in 1836 by Captain McNeill, at a cost of 59,000 rupees. The five principal arches which withstood the flood were founded on a wall; those which failed rested only on a subsoil. To the defect and to the contracted span of the arches, the failure is in a great measure to be ascribed. The plan are to be raised to 14 ft instead of five feet.
<i>Muzrai to Karamul:</i> Construction of a Road.		Length, 50 miles; sanctioned 24th January 1845.	Kooya.	1,49,919 3 8	69,845 3 8	Completed season 1846-47.	Twenty bridges will be constructed on the line, and four dx. bangalows, viz., Karkhonda, Hauppra, Galloway, and opposite to Boodundabur. The three former bangalows, it was subsequently found, would not be required. The formation and metalling of the portion of this road between Galloway and Koooya (39 miles), which had been left to the Boodundabur Road Committee, was so imperfectly done in the first instance by that committee that a supplementary estimate of Rs. 65,274. 10. was sanctioned on the 31st August 1846, for repeating this and restoring the metalling.



Project Name	Description	Sanctioned	Location	Value	Completed	Remarks
Mulluck Chand Sewer	to the boundary of the enclosures at Agr; Construction of a raised Metal Road.	Length 1 1/2 miles; sanctioned 30th April 1946.	Agr enclosures	5,935 4 -	5,935 4 -	Completed season 1946-47.
Melua	Construction of a bridge over the Melua at Chitrokhama.	Sanctioned 8th December 1946.	Melua	9,879 - -	9,879 - -	Completed season 1946-47.
Melua	Construction of an additional room to the Assistant Secretary's Office.	Sanctioned 18th July 1944.	Melua	2,348 5 - 1/2	2,348 5 6 1/2	Completed season 1947-48.
Melua	Construction of a Court for the Judge.	Sanctioned 9th June 1944.	Melua	2,094 2 0	2,094 2 0	Completed season 1946-47.
Melua	Construction of a Court for the Judge.	Sanctioned 8th August 1944.	Melua	1,611 10 2	1,611 10 2	Completed season 1946-47.
Melua	Construction of a Court for the Judge.	Sanctioned 24th April 1944.	Melua	436 2 0	436 2 0	Completed season 1946-47.
Melua	Construction of a Court for the Judge.	Sanctioned 23rd May 1945.	Melua	681 - -	681 - -	Completed season 1946-47.
Melua	Construction of a Court for the Judge.	Sanctioned 17th October 1944.	Melua	19,977 2 7	19,977 2 7	Completed season 1947-48.
Melua	Construction of a Court for the Judge.	Sanctioned 24th June 1947.	Melua	1,000 14 0	1,000 14 0	Completed season 1947-48.

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL—continued.</b>							
<i>Midnapore Gaol</i> : Construction of improved Ventilators, and additional accommodation.	-- Fifty-seven ventilators were constructed in 1841-42, which only partially succeeded, in consequence of their inadequate size, being only 1½ feet square, in improving the salubrity of the gaol.	-- Sanctioned season 1846-47.	Midnapore - -	Rs. a. p. 4,483 1 9	Rs. a. p. 4,010 6 -	- Completion reported season 1849-50.	-- The new ventilators are of a larger description, being 3 x 3 in the clear.
<i>Midnapore</i> : Additions to the Collector's and Magistrate's Cutcheries.	-- The construction of seven additional rooms, of pucca masonry, with flat roofs, is required.	-- Sanctioned 16th June 1847.	- - - -	9,613 11 -	9,111 3 -	-- Completed season 1849-50.	-
<i>Mergui Gaol</i> : Construction of a Gaoler's House and Cook-houses.	- - - - -	-- Sanctioned 3d November 1847.	- - - -	1,647 4 1	1,647 4 1	- - - -	-- The cook-houses were in lieu of others considered to be too near to the compound wall; the house for the gaoler was built in consequence of it being deemed necessary that the gaoler should be lodged within the premises, especially at night.
<i>Moulmein Gaol</i> : Construction of a new Granary.	-- Undertaken on the recommendation of a special committee of survey.	-- Sanctioned 15th February 1849.	Moulmein - -	3,420 4 10	- - - -	Season 1849-50 -	-- The old granary was composed entirely of wood, and covered with thatch, and was reported to be in a very dilapidated and unsafe state.
<i>Moulmein Gaol</i> : Additions to the Gaol Buildings.	-- The Commissioner of the Tenasserim Provinces represented the works to be indispensably necessary with reference to the discreditable and unsafe state of the gaol.	-- Sanctioned 5th February 1851.	Ditto - - -	- - - -	38,545 14 -	- - - -	-- The required buildings consist of additions to the main ward, a hospital, deputy gaoler's house, solitary cells, dead-house, dissecting room, with out-offices.
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<i>Moorsshedabad</i> : Construction of four experimental Penitentiary Wards.	- - - - -	-- Sanctioned 8th February 1842.	Moorsshedabad - -	23,962 - -	23,962 - -	- - - -	These four wards are for 120 men.
<i>Moosufferpore</i> : House of Correction.	- - - - -	-- Sanctioned 7th December 1841.	Moosufferpore - -	14,947 4 1½	13,000 - -	-- Completed season 1842-43.	-- The gaol of this place, in consequence of the encroachments of the river, must ere long be entirely given up. The prisoners of this district sentenced to longer periods of confinement than one year, will be sent to the Patna Penitentiary.
<i>Moorsshedabad</i> Imambarrah	-- To replace an old imambarrah in a state of great decay, and which was considered too close to the palace.	-- Sanctioned 7th December 1840.	Moorsshedabad - -	Not reported - -	90,000 - -	Not reported - -	-- This work will be paid for from the Nizamut Deposit Fund.
<i>Monghyr Gaol</i> : Construction of additional Wards.	-- For the accommodation of the prisoners, the existing space being insufficient.	-- Sanctioned 17th November 1840.	Monghyr - - -	885 6 4½	695 8 9	-- Completed season 1841-42.	-

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<i>Monghyr</i> : Construction of a Catcherry for the Magistrate.	-- Called for with reference to the appointment of a separate officer to the magistracy.	-- Sanctioned 29th July 1844.	Ditto - - -	4,931 - 6	5,100 13 10	-- Completed season 1846-47.	-
Construction of a Circuit House.	- - - - -	-- Sanctioned 20th November 1844.	- - - - -	4,572 9 8½	4,900 5 -	Season 1847-48	-- A private house was purchased and converted into a circuit house, in ac- cordance with an estimate sanctioned on the 7th October 1845.
<i>Mooteearce</i> : Construction of a Circuit House and Out-offices.	- - - - -	-- Sanctioned 20th November 1844.	Mooteearce - - -	5,072 10 5	4,900 5 -	-- Completed season 1847-48.	-
<i>Maldah</i> : Purchase of a House, and its adaptation for the purposes of a Circuit House.	- - - - -	-- Sanctioned 20th November 1844.	Maldah - - -	5,761 13 11	5,761 13 11	Season 1844-45.	-
<i>Moozufferpore</i> : Purchase of a private Building at.	-- For a catcherry for the Sessions Judge.	-- Sanctioned 28th December 1838.	- - - - -	1,700 - -	- - - - -	Season 1841-42	-- This building, which was the pro- perty of Meer Abdoollah, and had been hired ever since the year 1803 at a monthly rent of 80 rupees, has been purchased for less than two years' rent.
<i>Monghyr</i> : Additions to the Magistrate's and Collector's Catcherry.	To afford more accommodation -	-- Sanctioned 2d No- vember 1841.	- - - - -	- - - - -	- - - - -	- - - - -	-
<i>Mymensing</i> : Addition of a pukka tiled verandah to the Judicial Catcherry.	-- For the accommodation and convenience of suitors.	-- Sanctioned 6th July 1841.	- - - - -	885 4 10	- - - - -	-- Constructed season 1842-43.	-
Construction of Catcherries for the Principal Sudder Ameen.	-- The present building is a catcha building with a thatched roof, and is considered by Go- vernment an unfit place (in consequence of its liability to be destroyed by fire) for the reception of documents of great importance, which are now lodged in it.	-- Sanctioned 30th July 1845.	Mymensing - - -	- - - - -	5,036 - -	-	-
<i>Mymensing</i> <i>Geol</i> : Construction of seven Night Privies.	- - - - -	-- Sanctioned season 1844-45.	Ditto - - -	667 13 9½	- - - - -	-- Completed season 1845-46.	-
<i>Monghyr</i> : Construction of a suitable Court-house for the Sudder Ameen and Moonsiff.	-- This building is required in lieu of a private building, the pro- perty of the former native judge, which is inconveniently situated, being in the heart of the town, and at a considerable distance from other public offices, which are all within the fort.	-- Sanctioned 16th April 1846.	Monghyr - - -	906 13 1½	1,007 - -	-- Completed season 1847-48.	-
<i>Moozufferpore</i> : Raising the pillars of the verandah of the Judge's Catcherry.	-- To raise the verandah two feet, and to give it a sloping terraced roof.	-- Sanctioned 30th April 1845.	Moozufferpore - -	1,541 13 6	1,541 13 6	-- Completed season 1846-47.	-
Construction of a House of Correction.	-- For 500 prisoners, including patients in hospital at Moozaf- ferpore.	-- Sanctioned 17th November 1847.	- - - - -	- - - - -	20,001 9 8	-	-

(continued)

No. 6.—Statement compiled from the Reports of the Military Board at Bengal, from Seasons 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK	Object of Construction	Length, and Date of Commencement	Place of Execution, or of Transference	Amount of Expense Incurred	Estimated Amount for Completion	Probable Time of Completion	REMARKS
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:</b>							
<i>Mirzapur: God's Improvement to the.</i>	To improve the accommodation -	Sanctioned 29th April 1840.	-	Rs. 6, P. 9,250 15 9	Rs. 6, P. 4,941 - -	Completed season 1841-42.	-
<i>Mirzapur: Construction of a well.</i>	-	Sanctioned season 1839-40.	-	1,008 6 4	1,000 - -	Completed season 1840-41.	-- The account of 400 rupees was owing to the necessity for making the well 100 feet deep, instead of 50 feet, as contemplated by the estimate.
<i>Mirzapur: Construction of houses.</i>	-- For the non-commissioned officers of the police barracks.	Sanctioned 31st March 1840.	-	3,677 - -	3,658 3 10	Completed season 1840-42.	-
<i>Mirzapur: Construction of a second room for the Collector and Magistrate's Chambery.</i>	-- The Lieutenant-governor ordered to be built, on a view to the extension of the chambery for this Commissioner.	Sanctioned 29th August 1840.	Worked - -	4,538 11 4	4,538 - -	Completed season 1841-42.	-
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—JUDICIAL:</b>							
<i>Mirzapur:</i>							
<i>Construction of a new God Hospital.</i>	-- On account of the confined and unhealthy site of the existing hospital.	Sanctioned 10th August 1841.	-	12,405 6 2	12,006 8 3	Completed season 1842-44.	-
<i>Construction of a bridge near Watebury's Terrace.</i>	-	Sanctioned 23d March 1841.	-	610 - 6	- - -	Completed season 1841-42.	-- This work was represented to be very much required.
<i>Construction of a Chambery for the Collector and Magistrate.</i>	-- In consequence of the sale of the Chambery.	Sanctioned season 1839-40.	-	16,025 4 5 1/2	- - -	Completed season 1841-42.	-
<i>Master-builder God's Addition to</i>	-	Sanctioned 27th November 1841.	-	5,771 - 3	2,041 8 - 8	Completed season 1842-42.	-- The new building is capable of holding 50 or 70 convicts.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—REVENUE:</b>							
<i>Master-builder's Additional accommodation to the Collector's Chambery.</i>	-	Sanctioned 6th April 1841.	-	2,648 6 6	2,708 0 -	Completed season 1842-43.	-
<b>CIVIL BUILDINGS, LOWER PROVINCES—REVENUE:</b>							
<i>Master-builder's Construction of new farms in the three Mirda Districts.</i>	-- For the protection of the	Sanctioned 25th April 1840.	-	682 7 11	- - -	Constructed season 1842-43.	-- This work was proposed by the civil officer and the Dutchburgh Rajah.
<i>Master-builder's: Second room for the Collector's Chambery.</i>	-	Sanctioned 16th June 1840.	-	1,935 9 9 1/2	- - -	Completed season 1841-42.	-

<p>Mysore: Construction of Civil Canteen for the Deputy Collector and Law Officer, and rooms for records of the Magistrate and Collector.</p>	<p>-- Bonded necessary in consequence of the elevated state of the collector's canteen.</p>	<p>-- Sanctioned 31st September 1944.</p>	<p>Mysore -- -- To the east and west sides of the collector's canteen.</p>	<p>494 1 6</p>	<p>567 1 3</p>	<p>-- -- -- -- -- -- Constructed season 1947-48.</p>	<p>-- As very indifferent roof was made from tiles at the station, a revised estimate was passed, providing for the substitution of flat roof and prison superstructure walls, in lieu of tiled roof and lattice prison walls.</p>
<p>Mysore: Construction of the prison veranda.</p>	<p>-- -- -- -- --</p>	<p>-- Sanctioned 1st July 1944.</p>	<p>-- -- -- -- --</p>	<p>408 4 3</p>	<p>408 4 3</p>	<p>-- -- -- -- --</p>	<p>-- -- -- -- --</p>
<p>Mysore: Construction of the Collector's Canteen.</p>	<p>-- To provide accommodation for the joint magistrates and the medical.</p>	<p>-- Sanctioned 13th September 1934.</p>	<p>-- -- -- -- --</p>	<p>7,054 10 3</p>	<p>-- -- -- -- --</p>	<p>-- -- -- -- --</p>	<p>-- The addition made were four rooms, and veranda on three sides of the canteen.</p>
<p>Home for the Burmese Refugees and Establishments.</p>	<p>-- -- -- -- --</p>	<p>-- Sanctioned 10th January 1934.</p>	<p>-- -- -- -- --</p>	<p>5,919 11 4</p>	<p>-- -- -- -- --</p>	<p>-- -- -- -- --</p>	<p>-- -- -- -- --</p>
<p>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES--REVENUE:</p>	<p>-- -- -- -- --</p>	<p>-- Sanctioned 24 March 1944.</p>	<p>At Okhwa -- --</p>	<p>4,000 11 6</p>	<p>4,174 7 3</p>	<p>-- Completed season 1943-44.</p>	<p>-- -- -- -- --</p>
<p>Alterations and additions to the Burmese Canteen.</p>	<p>-- To adapt for the Tamil work.</p>	<p>-- Sanctioned 7th October 1944.</p>	<p>Birpara -- --</p>	<p>1,730 9 6 1/2</p>	<p>-- -- -- -- --</p>	<p>-- Completed season 1943-44.</p>	<p>-- -- -- -- --</p>
<p>Major: Construction of a Shop.</p>	<p>-- For the deputy collector.</p>	<p>-- Sanctioned 10th June 1944.</p>	<p>State Division -- --</p>	<p>1,904 8 9</p>	<p>1,804 8 3</p>	<p>-- Completed season 1943-47.</p>	<p>-- -- -- -- --</p>
<p>CIVIL BUILDINGS, LOWER PROVINCES--GENERAL:</p>	<p>-- -- -- -- --</p>	<p>-- Sanctioned 6th April 1944.</p>	<p>Muzhabad -- --</p>	<p>70,300 8 4</p>	<p>73,000 -- --</p>	<p>-- Completed season 1943-44.</p>	<p>-- In the amount expended is included Rs. 3,410, 8, 4, for the purchase of land, etc. for a site, which was not included in the estimate.</p>
<p>Muzhabad College: Construction of.</p>	<p>-- In the substitution of one previously existing at Bijnor.</p>	<p>-- Sanctioned 14th November 1944.</p>	<p>-- -- -- -- --</p>	<p>1,477 7 8</p>	<p>1,489 10 6</p>	<p>-- Completed season 1943-47.</p>	<p>-- It is expected that the construction of the veranda will be made increased by the arrangement.</p>
<p>Muzhabad College: Construction of a new block, and repairs of.</p>	<p>-- -- -- -- --</p>	<p>-- Sanctioned 21st September 1944.</p>	<p>-- -- -- -- --</p>	<p>1,340 -- --</p>	<p>-- -- -- -- --</p>	<p>-- Completed season 1943-44.</p>	<p>-- The cost of furniture is included in the expenditure.</p>
<p>Muzhabad College: Construction of a new block, and repairs of.</p>	<p>-- The estimate requires the building to be constructed, and the work to be completed by the end of the year.</p>	<p>-- Sanctioned 10th December 1944.</p>	<p>Suburban -- --</p>	<p>4,138 -- --</p>	<p>4,200 8 3</p>	<p>-- Completed season 1943-44.</p>	<p>-- -- -- -- --</p>
<p>Muzhabad College: Construction of a new block, and repairs of.</p>	<p>-- Provided on the expenditure of the Government of the Province.</p>	<p>-- Sanctioned 20th September 1944.</p>	<p>Muzhabad -- --</p>	<p>4,300 -- --</p>	<p>-- -- -- -- --</p>	<p>-- Season 1943-44.</p>	<p>-- This was one of the property of Mr. Chandra; the estimate requires the building to be constructed, and the work to be completed by the end of the year. (continued)</p>

No. 6.—Statement compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Extended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b>							
<i>Misappore:</i> Construction of a Staging Building.	As a staging-place for travellers	-- Sanctioned 14th July 1841.	Misappore	1,408 8 9½	1,408 -- 4	-- Completed season 1843-45.	--
Construction of a new School-house.	-- To replace a building which is said to have been accidentally burnt down.	-- Sanctioned 1st December 1841.	-- Ditto	3,408 6 7	3,408 -- 7	-- Completed season 1843-44.	--
Addition to the Collector's Casbah.	For a post-office	-- -- --	-- -- --	-- -- --	1,048 5 1½	--	--
<i>Moulmein:</i> Construction of a new Wharf.	For the principal bazaar	-- Sanctioned 17th July 1842.	Moulmein	-- -- --	2,078 1 9	-- -- --	-- The suspension of the works was ordered on the 23d September 1843, as some changes were desired to be in contemplation, which might render the construction of the wharf untenable at the place originally intended.
<i>Moulmein Point:</i> Removal of the Stockade, with main post.	-- This stockade must be maintained for the protection of the Government establishments from fire.	-- Sanctioned 20th November 1844.	Moulmein Point	2,578 9 3	2,666 18 --	-- Completed season 1845-46.	--
<i>Moulmein:</i> Substitution of tiled for thatched Roofs to certain Marine Buildings.	-- For the protection of naval stores.	-- Sanctioned 11th March 1846.	Moulmein	719 9 9	736 -- 9	-- Completed season 1847-48.	--
Repair of the Roof of St. Matthew's Church.	-- In consequence of the leakage of the old thatch roof.	-- Sanctioned 4th November 1846.	Moulmein	1,138 11 11	1,138 11 11	-- Completed season 1848-50.	The new roof is shingled.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL:</b>							
<i>Mirzapore:</i> Construction of a Staging Building.	-- For connecting the line of bungalows on the Deccan-road towards Nagpore with those on the Grand Trunk Road from Calcutta to Delhi.	-- Sanctioned 26th September 1845.	Mirzapore	2,340 9 2	2,340 9 2	-- Completed season 1844-45.	--
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—MARINE:</b>							
<i>Moulmein:</i> Construction of a Hospital Ward within the compound of Her Majesty's ships on the European Infantry Hospital.	-- For the reception of sick men	-- Sanctioned 24th January 1842.	Moulmein	758 8 10	758 8 10	Season 1843-45.	-- The seamen have hitherto been received into the regimental hospital, but owing to the increase in the strength of the corps, the hospital is now barely sufficient for the use of the regiment.
Construction of a Post-office and five Sheds.	For marine stores	-- Sanctioned 27th April 1842.	-- -- --	4,004 6 3	3,921 5 7	-- Completed season 1843-45.	--

69	POLITICAL BUILDINGS, LOWER PROVINCES: Muzakabad: Begins to the Municipality of Muzakabad.	-- Scheduled season 1940-41.	At Kozhikang.	1014	-- Completed season 1941-42.	--
	CANALS, NORTH-WESTERN PROVINCES: Nyasur Watercourse	For irrigation	-- This watercourse leaves the main channel just under the village of Tumb, and passes to the east of Nyasur.	4,090 11 3	-- Completed season 1941-42.	--
	Moggenah Canal: At Muzakabad	For irrigation	-- Length, 50 miles; sanctioned in 1939-40. March 1941.	55,509 8 7 1,040 11 --	-- Completed season 1941-42. Season 1943-44.	-- It is expected that \$,000 expense will be ultimately realized by water rent. --
	Raising of the banks of the Nyu/Nyar Jawel Canal: Provision of a Channel for draining the	-- In order to obtain a sufficient quantity of water. -- To enable the people to cultivate each year which in past years has been submerged.	-- Scheduled near the regulating dam on the Kerwah Nudde.	80,077 3 --	-- Completed season 1941-42.	-- The complete drainage of the Jawel has this year brought a large quantity of land into cultivation.
70	Moggenah Canal: Construction of a Irrigation Channel.	-- Scheduled 24 March 1942.	-- Situated near the	808 7 8 131 8 3	808 7 8 131 8 3	-- Completed season 1943-44.
	Construction of a second-class Channel.	-- Scheduled 24 March 1942.	-- Situated near the	131 8 3	8,000 --	-- Completed season 1943-44.
	Nyasur Dam: Increase in the Waterway of the	-- In consequence of the extension of water shown on the plan during the plan.		711 14 4		-- The full estimate on this river, viz. the Municipality, Muzakabad, and Jaling, during the year 1942-43, amounted to Rs. 5,20,700. The total expenditure on account of irrigation, and for the extension of the water supply to subsidize the work, amounts to Rs. 67,200. The Rs. 1,21,700. S. S.
	Muzakabad Jawel Canal: Annual extension of the	-- Scheduled 24 February 1941.				-- The project for this 1 1/2 per cent. extension has been approved by the Government and sanctioned by the Government. The project is to extend the waterway of the Jawel dam from its present position to a distance of 100 feet with a maximum of 10 feet deep from one side and 5 feet deep on the other.
	CANALS AND RIVERS, LOWER PROVINCES: Zaidar Rivers: 5th Out Section.	-- Length of river, 620 miles.	-- At the village of Bhujang.	64,000 8 --		-- The project for this 1 1/2 per cent. extension has been approved by the Government and sanctioned by the Government. The project is to extend the waterway of the Jawel dam from its present position to a distance of 100 feet with a maximum of 10 feet deep from one side and 5 feet deep on the other.
	ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES: Zaidar: Construction of an Iron Suspension Bridge over the Subantra River.	-- Scheduled 24th February 1941.				

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Seasons 1929-30, to 1950-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length and Date of Commencement.	Place of Execution, or of Intended Termination.	Amount of Expenditure.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ROADS AND BRIDGES, LOWER PROVINCES:</b> <i>Howrah District:</i> Construction of the Road: 5½, from Howrah to Bhowanipore, and from the Gubb Ghant to Damodar.	- In continuation of the completed operations under the August 1949.	- Sectioned 1948 October 1950.	- Howrah District.	Rs. 6. P. -	Rs. 6. P. -	Rs. 1,000 For the estimated for the known road, Rs. 1,000	-
<b>ROADS AND BRIDGES, CENTRAL PROVINCES:</b> <i>Hamirpur and Almorah:</i> Improvement of the Road between.	- To remove the difficulties attending the passage of wheel cartriages between these two places, the one a chief military station, the other a depot for military stores.	- Length 12½ miles; 12th November 1944.	-	4,772 14 10	7,970 9 9	- Completed season 1949-51.	- This road has been made practicable for wheel cartriages.
Further Improvements to -	- By constructing grade ramps over watercourses which crossed the line.	- Length 12½ miles; sectioned 4th February 1946.	-	2,559 4 8	2,504 8 10	- Completed season 1946-47.	-
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b> <i>Howrah:</i> Construction of an Iron Suspension Bridge over the Hooghly.	- In continuation of the grant made on the 1st of June, and of the suspension of the bridge to the good of the country.	- Sectioned season 1944-45.	- On the road between Howrah and Purbahar.	25,045 - -	57,471 11 2½	- Completed season 1947-48.	- The work was executed a considerable time back, but it has been delayed in the execution of the bill.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL:</b> <i>Howrah:</i> Construction of a wall to enclose the Civil Hospital, and one separating the female wards.	- For the Street and Barrack premises; to erect a better classification of the premises.	- Sectioned 1948 January 1950.	- Recently -	1,021 7 11	-	-	-
<i>Nabadwip (East):</i> Construction of two additional wards.	-	- Sectioned 4th November 1946.	- Recently -	1,746 - -	1,804 - -	- Completed season 1947-48.	-
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b> <i>Howrah:</i> Temporary Buildings, Roads, &c.	- The Civil Station of Bangalore has been reserved to Bangalore.	-	-	2,948 6 6	-	-	-
Construction of additional Buildings.	- As a temporary and records rooms.	- Sectioned 23rd June 1941.	-	6,417 - -	4,360 8 6	- Constructed season 1946-47.	- The buildings are to be of poor materials, with a tiled roof. There has been an excess of Rs. 1,400, Rs. 6, over the sanctioned amount; and as the executive officer has been able to account satisfactorily for this to the extent of Rs. 758 10 1, only, he has been held responsible for the balance.



98	Construction of an additional Court Ward and other works.	For exchange purposes	Sanctioned 30th March 1941.		900 10 7		Completed season 1941-42.		
	Construction of 90 Drain Bridges.	For exchange purposes	Sanctioned 19th September 1942.		1,729 13 10	1,729 13 10			
	Construction of a Cisternary	For exchange purposes	Sanctioned 20th October 1944.		7,039 5 11	4,364 9 5	Completed season 1946-46.	The amount includes the cost of an additional wing, not provided for in the estimate, but sanctioned on the compliance with a requisition by the Commissioner in Amara.	
	Construction of a new Circuit Bungalow.	In lieu of the present circuit bungalow, which is in an unsafe state.	Sanctioned December 1944.	Korogon		5,728 --			
	Erection of a Wall around the Court Buildings.	In accordance with the views of the civil officers.	Sanctioned 29th October 1944.		3,208 1 10 J	3,208 1 10 J		An estimate amounting to Rs. 5,100, 10 s. for the construction of a new wall in 1944, the cost of a circular wall 100 x 90, a oval wall 75 x 50, hospital 75 x 50, gate-piers and balustrade 70 x 20 feet, with six ranges of cooking sheds; the bill is to be checked over, reported on and sent to the Commissioner. The new buildings are to be constructed within the walls erected, originally in the estimate sanctioned in 1947.	
99	Refinery: New Working the south end of the Judge and Magistrate's Cisternary.		Sanctioned 30th May 1944.	Nature	1,728 5 - J		Completed season 1947-48.		
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—JUDICIAL:</b>									
	Refinery: Construction of a 3 Milkery, and addition to the Cisternary etc.		Sanctioned 1st April 1944.		4,004 10 5	4,739 9 -	Completed season 1946-47.	The estimate for these works was brought in under by the Commissioner of the Amara Division.	
	Refinery: Addition of a 3 Milkery to the Cisternary.		Sanctioned 14th January 1944.		7,607 9 9	7,104 - -	Completed season 1947-48.		
	Refinery: Construction of a 3 Milkery.		Sanctioned 10th October 1944.		14,100 10 10	17,200 8 8	Completed season 1946-48.		
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—REVENUE:</b>									
	Refinery: Construction of a new 3 Milkery Cisternary etc.		Sanctioned in 1943 -		4,807 6 1 J	4,871 - 7	Completed season 1946-48.		



(continued)

Description of Work	Remarks	Length	Width	Area	Cost	Season
Bridges at Jondalite on the drainage.	-- Required for purposes of general drainage.	Ditto	300 10 6	300 10 6	300 10 6	Season 1842-43.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—JUDICIAL:</b>						
Court Case; Construction of	-- A statement was received from the local officers, showing the necessity of the work.	Ditto	10,818 10 7 1/2	10,818 10 7 1/2	-- Sanctioned 6th May 1843.	-- Completed season 1847-48.
<b>CAVAILS AND RIVERS, NORTH-WESTERN PROVINCES:</b>						
Pondich Bridge; Repairs to this.	-- The removal of the east abutment, which failed during the rains of 1844.	Ditto	644	644	-- Sanctioned 22d August 1843.	-- Completed season 1846-47.
<b>ROADS AND BRIDGES, LOWER PROVINCES:</b>						
Ferre to Oyat; Raising of the Road.	-- Sanctioned season 1838-39.	Gyah	61,928 18 7	61,928 18 7	-- Sanctioned season 1838-39.	-- Completed season 1841-42.
Purrah City Road; Reconstruction of this.	-- Length 7 1/2 miles.	Gyah	15,765 11 6	15,765 11 6	-- Sanctioned 6th June 1843.	-- Completed season 1845-46.
Purrah; Construction of four Pucca Arched Drains across the Station Roads.	-- These drains are required to prevent in future the cutting of the station roads, which are raised from three to four feet in height, for the purpose of letting off the rain-water, which collects within the station lands.	Purrah	063 11	063 11	-- Sanctioned 6th June 1843.	-- Completed season 1843-44.
<b>ROADS AND BRIDGES, CENTRAL PROVINCES:</b>						
Patterson and Demore; Construction of Drains on the Roads between.	-- This road is crossed by many wells, liable to temporary flood.	Demore	1,494 1 6 1/2	1,494 1 6 1/2	-- Length of road, 10 miles 6 furlongs.	Completed 1840-41.
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b>						
Purple Bridge; Construction of an Iron Suspension Bridge over the, at Norehgwaga, on the road between Bareilly and Peshawar.	-- Sanctioned 1st February 1843.	Norehgwaga	-- This work was suspended in season 1843-45.	-- This work was suspended in season 1843-45.	-- Sanctioned 1st February 1843.	--
Pigara via Khalik and Kumbhari to Subahar; Construction of a Road.	-- Length 31 miles 6 furlongs; sanctioned 22d March 1843.	Khalik	60,767 15 6	60,767 15 6	-- 1st Portion, from Pigeon to Khalik - 8 5/4 68 -- 2d Portion, from Khalik to Kumbhari - 6 6 16 to 13 -- 3d Portion, from Kumbhari to Subahar - 6 6 13	-- Completed season 1845-46.

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Seasons 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Place of Termination, or of Intended Termination.	Length, and Date of Commencement.	Amount of Expenses Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL:</b>							
<i>Pondicherry</i> : Plan for a Central em.	To contain 2,004 prisoners				Rs. a. p. 4,41,504 0 5		
<i>Pooree</i> : Construction of a Civil Court House.	For the use of the Commission. The temporary building was destroyed by a gale, on the 30th April 1840.	Sanctioned 20th September 1840.	Pooree	7,598 8 8½	5,751 0 5	Completed season 1843-43.	
<i>Pooree</i> Goal: Additional Enclosure.	For sick and insane prisoners	The grid was constructed in the year 1838; the addition of a hospital sanctioned in season 1840-41.		1,328 13 7	1,100 11 3	Completed season 1841-43.	
<i>Pooree</i> : Reconstruction of the Dispensary.	In lieu of a building which was blown down by a gale on the 20th April 1840.	Sanctioned 21st February 1843.	Pooree	5,556 15 5	5,437 0 1	Completed season 1843-47.	
Buildings for the use of the Treasury Guard.		Sanctioned 27th March 1843.	Ditto	2,080 0 4	2,080 0 4	Season 1843-44.	
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<i>Purnah</i> Prisonery: Construction of four Wards.	To supersede the present places of confinement situated in different parts of the station and its vicinity, each at an inconvenient distance from the magistrate's office.	Sanctioned 27th October 1845.	Purnah	36,251 16 9½	33,077 -- --	Completed season 1846-47.	The plan approved in for the accommodation of 940 prisoners.
<i>Purnah</i> : Temporary Goal, Chota Nagpore.		Sanctioned 11th October 1838.			2,224 7 6		
<i>Purnah</i> Goal: Estimate for flooring the floors.	Owing to the dampness in the existing floors.	Sanctioned 17th November 1840.		1,151 13 1	1,290 10 --½	Completed season 1841-42.	
<i>Purnah</i> Goal Hospital: Additions to.	Additional wards for medicine rooms, &c.	Sanctioned 12th October 1841.	Purnah	4,925 7 2	5,008 4 5½	Completed season 1845-46.	
<i>Purnah</i> : Construction of a Circuit House.		Sanctioned 20th November 1844.	Purnah	4,414 -- --	4,909 5 --	Completed season 1845-46.	
Construction of a Guard-room for the Burkundance attached to the Judge's Cutcherry.		Sanctioned 28th December 1846.	Ditto	324 13 3½	-- -- --	Constructed season 1847-48.	



NAME OF WORK	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<p>CIVIL BUILDINGS, SOUTH-EAST PROVINCES.—REVENUE:</p> <p>Prison: Construction of a Temporary Quarters for the Colonel's Quarters.</p>		1880-81.		Rs. 7 51	1,000 8 4	1881-82.	—
<p>ENHARMENTA, SOUTH EASTERN PROVINCES:</p> <p>Regulatore Canal: Begun.</p>	—	—	—	—	—	—	—
<p>CANALS, LOWER PROVINCES:</p> <p>Regulatore Canal: Construction of.</p>	—	—	—	—	—	—	—
<p>CANALS, NORTH-WESTERN PROVINCES:</p> <p>Regulatore Canal: —</p>	—	—	—	—	—	—	—
<p>Regulatore Waterways: Begun to the.</p>	—	—	—	—	—	—	—

— The difference is owing to the having been found practicable to dispose with eight less galleys, for which provision had been made in the estimate.

— It is probable that 801 square miles will be susceptible of irrigation when the works of the "Water of the Zamra" are completed from 1881; the revenue to be derived from it is Rs. 67,251. A per annum. The Board is desirous that Government should be authorized with greater elasticity what advantages it holds out, and whether the undertaking may not interfere with the completion of works of higher importance.

— The boats proceeding through the canal would reach Bahadur on the great river by traversing 809 miles beyond of 628 miles, so by the Government route, saving 281 miles in distance, and from 15 to 30 days in time; an expense would be given by it to the working of the line above said canal. The income from the canal is estimated at 6,20,000 rupees per annum, or 14½ per cent. on the gross expenditure, or about 40 lacs, to be raised by a half of two rupees per 100 mowda on all works.

— The estimate was reported by the hon. member in session 1844-45, but a report was called for on another day, viz., from a point near Chanderah on the Hooghly to one near Kemphyl on the Ganges.

— From a point on the Hooghly to the Bahadur on the banks of the Hooghly, near Mardah, with a series of branches for irrigation.

— Length 48 miles; estimate estimated in 1845.

— Length 120 miles; breadth 60 feet, and carrying at the lowest depth five feet water.

— The estimate was reported by the hon. member in session 1844-45, but a report was called for on another day, viz., from a point near Chanderah on the Hooghly to one near Kemphyl on the Ganges.

— Owing to the unusual height of the floods of the year, some injury had been sustained.



No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL:</b>				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<i>Ramree</i> : Construction of a New Gaol.	-- To replace the old gaol, which was represented to be in a dangerous state of decay.	-- Sanctioned 14th August 1843.	Ramree - - -	7,056 8 5	6,739 10 6	-- Completed season 1844-45.	-- The new gaol will be surrounded by a pukka wall 13 feet high, and will consist of one downy ward and three fouljaree wards, a hospital, guard-room, &c. The walls of these buildings will be composed of planks, and the roof of thatch.
<i>Ramree</i> : New Circuit Bungalow.	- - - - -	-- Length 80 feet; breadth 64 feet; sanctioned 1st August 1839.	Ramree - - -	5,984 16 9	6,071 6 8	-- Completed season 1841-42.	-
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<i>Rangpore Gaol</i> : Additions to -	-- To improve the salubrity of the gaol.	-- Sanctioned season 1841-42.	- - - - -	819 6 2	819 6 2	-- Completed season 1841-42.	-- Much sickness had existed at this gaol.
<i>Rangpore</i> : Conversion of an old Judicial Catcherry into a Gaol Hospital.	- - - - -	-- Sanctioned 23th December 1842.	- - - - -	3,493 6 9	11,228 5 5	Season 1849-50	-- The estimate provides for new roofing part of the building, removing partition walls, and dividing the hospital for the separate accommodation of male and female patients; it also provides a place for the native doctor, and medicines, and for a guard-house, cook-room, and well.
Construction of a Circuit House, Sudder Amceens' Catcherry, &c.	-- To provide accommodation for the Judges' records, and the property of persons dying intestate at Rangpore.	-- Sanctioned 3d April 1843.	Rangpore - - -	7,728 - -	6,791 2 3	-- Completed season 1845-46.	-- Owing to the porous nature of the tiles made at Dacca, and the consequent leakiness of the roof, it has been found necessary to replace the tiled roof with a flat roof; the excess of <i>Rs.</i> 1,408 5 3. has been disallowed by Government.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:</b>							
<i>Rhotuck</i> : New Gaol - - - - -	- - - - -	-- Sanctioned 7th December 1839.	- - - - -	7,790 15 7½	6,742 2 8	-- Completed season 1839-40.	-- This gaol is capable of accommodating 300 prisoners; the walls are of cutcha pukka materials, and the roof is of thatch.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—GENERAL:</b>							
<i>Roorkee</i> : Construction of Buildings.	For a civil engineering college -	-- Sanctioned December 1847.	Roorkee - - -	- - - - -	19,000 - -	- - - - -	- - - - -
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b>							
<i>Russapuglah</i> : Additions and alterations to the Building occupied as the Office of the Superintendent of the Mysore Princes.	-- To convert it into a school-room.	-- Sanctioned 15th February 1843.	Russapuglah - - -	-- It was decided by Government, on the 5th July 1848, not to sanction the proposed outlay on this account.	6,851 6 1	- - - - -	-- The Board solicited the orders of Government to be allowed to call for tenders for the execution of this work by contract.



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CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—REVENUE:			
<i>Rancea in the Bhuttea Territory: Construction of a Tehsildary Cutcherry.</i>	- - - - -	- - Sanctioned 7th November 1840.	- - - - -
			6,014 14 2
			5,653 15 1
			- Completed season 1842-43.
EMBANKMENTS, LOWER PROVINCES:			
<i>Sarun and Tirhoot Bunds: Construction of a new Bund, about 1,000 yards from the old Bunds.</i>	- - For the protection of the country between the villages of Nowkurrah and Pursadee from encroachments of the Gunduck River.	- Length 25½ miles; sanctioned October 1841.	- - - - -
			4,877 4 5
			5,031 4 9
			-- Completed season 1842-43.
<i>Construction of some new inner Bunds at Sarun, and strengthening of part of the main Bund.</i>	- - Owing to encroachments of the River Gunduck.	- Length four miles; sanctioned 4th April 1846.	- - - - -
			6,612 7 -
			9,161 4 2½
			- Completed season 1848-49.
<i>Construction of new Bunds</i>	- - In parts where the main bund is encroached on by the River Gunduck.	- - Sanctioned 29th April 1846.	- - - - -
			2,781 9 2
			3,351 - -
			-- Completed season 1848-49.
CANALS, NORTH-WESTERN PROVINCES:			
<i>Sahasrampore: Construction of a Corn-mill House.</i>	- To replace the former building, set of mills which were destroyed by the failure of the foundations in December 1844.	- - - - -	- - - - -
ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:			
<i>Sandoway: Reconstruction of the Thoo's Bridge at</i>	- - To keep open the communication between his cutcherry and the most populous part of the Sandoway Valley below the village.	- - Sanctioned 30th October 1844.	Sandoway - - -
			643 9 -
			1,111 11 -
			-- Completed season 1845-46.
<i>Soverah Bridge: Repairs to</i>	- This bridge crosses the Sowrah River.	- - Length of the bridge 300 feet, width 30 feet; repairs sanctioned seasons 1845-46 and 1848-49.	- - Crosses the public road between the station and town of Parneah.
			1,594 8 -
			- - Completed season 1845-46.
<i>Shankipore: Construction of two Bridges on the Grand Trunk Road.</i>	- - - - -	- - Sanctioned 1st July 1846.	- Between Burdwan and Gyretty.
			18,458 15 8
			- - - - -
			- - One bridge of three openings of 36½ feet each, and arches to be segments of a circle, rising 14 feet; the other of three openings 20 feet each, with similar arches, five feet in height.
<i>Sitpang to Muggra, on the Grand Trunk Road: Widening of the Road.</i>	- - The metalled portion has been widened and the road straightened.	- - Length two miles and 100 yards; sanctioned 24th March 1847.	Muggra - - -
			7,115 10 -
			7,490 11 1
			-- Completed season 1847-48.
			- - Both khod and gooting have been used in the repairs and extension of the metal.

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<b>ROADS AND BRIDGES, LOWER PROVINCES:</b>							
Seebsaugor to Jypore in Upper Assam.	- - - - -	Length 56 $\frac{1}{2}$ miles -	-	- - - - -	- - - - -	- - - - -	- - - - -
Seebsaugor to Borahaut, in Upper Assam; Repair of an Old Road.	- - - - -	Length 50 miles.	Borahaut - - -	- - - - -	5,765 - -	- - - - -	- - This work has been executed by the political officers of Government.
Seebsaugor to Debroghur	- - - - -	Length 17 $\frac{1}{2}$ miles.	-	- - - - -	- - - - -	- - - - -	- - - - -
Seebsaugor to Chokey Haut, on the Booree Dehing River.	- - - - -	- - Sanctioned 21st June 1841.	Chokey Haut.	- - - - -	- - - - -	- - - - -	- - - - -
Saikowk to Runyagorah in Assam; Opening of part of the Road.	- - - - -	- - Sanctioned 14th December 1844.	Runyagorah - - -	2,145 13 -	2,145 13 -	Season 1844-45.	- - - - -
<b>ROADS AND BRIDGES, CENTRAL PROVINCES:</b>							
Saugor to Dumoh; Change in the line of Road.	- - To obtain a line more accessible to the traffic of the country, to which the imperfectly finished ghauts on the old line presented obstacles.	- - Sanctioned 22d October 1840.	- - - - -	1,031 4 2 $\frac{1}{2}$	1,199 9 10	- - Completed season 1842-43.	- - The ascents over the ghauts on the old line were as steep as 1 in 10 or 1 in 12.
Saugor; Erection of an Iron Suspension Bridge over the Boose River.	- - - - -	- - - - -	- 10 miles east from Saugor.	38,177 6 -	- - - - -	Constructed in 1832	- - This bridge was constructed in 1832 by Major Prograve. The span is 200 feet; breadth of platform 12 feet; height of pillars and piers 68 feet. Repairs were effected in season 1846-47, at a cost of Rs. 3,448. 5. 9.
Bridge over the Surjoo River at Lot Ghaut, in the District of Azimghur.	- - For the promotion of the traffic between the districts of Goruckpore and Azimghur.	- - Sanctioned 24th January 1846.	Lot Ghaut - - -	8,752 5 11	- - - - -	- - Completed season 1841-42.	- - This bridge is of masonry and of three arches; the centre arch 34 feet span, and the side ones 28 feet each.
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b>							
Shagur River; Bridge over the	- - To keep open the communication between Futtyghur and Etawah.	- - Sanctioned 25th July 1840.	Shagur River - - -	2,513 - -	2,513 - -	Season 1840-41.	- - - - -
Sharanpore; Bridge over the Dholha Khallat.	- - In lieu of a bridge of two arches, which was destroyed by a high flood on the 27th September 1841.	- - Sanctioned season 1841-42.	Shranpore - - -	2,758 4 9	2,758 4 9	Season 1841-42.	- - - - -
Singapore Bridge	- - - - -	- - Sanctioned, season 1838-39.	- Over the Singapore River.	19,511 5 2	- - - - -	- - Completed season 1841-42.	- - This bridge was constructed under contract, and it is reported to be of a permanent and substantial order.

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<i>Scharunpore</i> : Repairs to the Dumoleh Bridge.	-- Injured by the floods of 20th June 1842.	-- Sanctioned 17th November 1843.	- - - -	1,582 3 9	1,645 14 9	-- Completed season 1843-44.	-
<i>Sukkur and Shikarpore</i> : Construction of a Road.	-- To be passable throughout the year for troops and wheel carriages.	-- Length 24 miles; width 40 feet; sanctioned 21st February 1845.	Shikarpore - - -	- - - -	52,008 2 8	-	-
<i>Sombra River</i> : Works on the bank of the river.	-- For the protection of the right bank of the river.	-- Sanctioned 5th July 1848.	- - - -	3,459 8 10	4,561 3 4	-- Completed season 1849-50.	-- The works consisted in diverting the river from its tortuous course by directing the stream into the cut formerly excavated by Major Baker, and in grooving a new splay mouth to the old channel, and throwing out a spur at its head, formed of clay rivetted in front with cribs, also loaded with clay.
<i>Subathoo to Hurripore Road</i> : Construction of a Revetment Wall.	-- To prevent land slips near the Konjar Nuddie.	-- Sanctioned 28th December 1849.	At the Konjer Nuddie	- - - -	4,949 3 11	Season 1849-50.	-
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL:</b>							
<i>Soory</i> : Construction of a Catchery for the Native Judge.	-- The accommodation afforded in the magistrate's catchery being quite unfit for holding his court.	-- Sanctioned 20th June 1842.	- - - -	959 - 11	1,176 7 7	-- Completed season 1843-44.	-
<i>Sandoway</i> : Construction of a Treasury Record-room and Guard-room of masonry.	-- In lieu of others of a like nature, which were condemned in the annual survey report of the 30th November 1841.	-- Sanctioned 19th June 1843.	Sandoway - - -	2,600 6 2	2,243 6 5	-- Completed season 1845-46.	-
<i>Sulkea</i> : Construction of a Thannah of Pucca Materials.	-- Intended to replace the existing thatch and bamboo houses, which being situated in the heart of Sulkea, are liable to be burnt down.	-- Sanctioned 11th March 1846.	Sulkea - - -	1,126 12 10	1,055 - -	-- Completed season 1847-48.	-
<i>Soory Gaol</i> : Construction of a new Hospital.	-- In consequence of the crowded state of the gaol, the ward heretofore used as a hospital has been assigned for the use of the prisoners, and the sick removed into a thatched building in the civil gaol.	-- Sanctioned 17th June 1846.	Soory - - -	4,248 1 10	4,334 2 8	-- Completed season 1849-50.	-- The enlargement of the area of the gaol, by building a new surrounding wall on the north side, and the elevation of the outer surrounding wall to the uniform height of 15 feet, is intended.
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<i>Sandoway</i> : New Thana House in Arracon	- - - - -	-- Measurement 60 feet by 30; sanctioned 14th April 1840.	- - - -	810 3 10	844 13 2	-- Completed season 1841-42.	-- The wall will be of mat, the roof thatched, but the floor will be well raised and planked.
New Circuit House	For the use of the Commissioner	-- Sanctioned season 1839-40.	Sandoway - - -	2,347 9 6	2,406 9 -	-- Completed season 1842-43.	-

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL—continued.</b>							
<b>Beibore, in Assam</b>				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
		-- Cutcherry, 100 by 40 feet; with wings, 30 by 40 feet; a treasury guard, 52 by 33 feet; a criminal gaol, 100 by 38 feet; a de-wanny gaol, 100 by 38 feet; a thanah house, 35 by 22 feet; sanctioned 20th February 1839.			2,535 2 10		
<i>Shahabad: Purchase of a School-house.</i>	-- For a cutcherry for the magistrate.	-- Sanctioned 4th February 1841.		8,000 --		Season 1842	-- This building had been newly constructed.
<i>Improvement of the Drainage of the Gaol.</i>		-- Sanctioned 26th January 1842.		1,195 12 6½	1,246 6 6	-- Completed season 1842-43.	
<i>Seebsaugor, in Upper Assam: Construction of a Cutcherry.</i>	-- For the magistrate, in lieu of a cutcherry which was destroyed by fire on the 25th August 1840.	-- Sanctioned 26th January 1841.		1,516 15 10½	1,329 9 --	-- Completed season 1842-43.	-- The building consists of a room 80×20 feet, with a wing 30×20, and a 10 feet verandah all round.
<i>Seebsaugor: Construction of a new Gaol Hospital, with a new Bamboo Stockade to the Gaol.</i>		-- Sanctioned 18th February 1840.		887 13 3		-- Constructed season 1842-43.	-- The building consists of one centre room 84×20, with an eight feet verandah all round.
<i>Seebsaugor, Lower Assam: Construction of a Gaol at.</i>	-- For 204 prisoners, males and females.	-- Sanctioned 3d April 1843.	Seebsaugor	- This work was suspended in season 1843-44.	9,008 14 4		-- The foundation and plinth of the gaol wards will be of masonry, and the remainder of the building will be composed of temporary materials.
<i>Silchar: Construction of a new Mohafaz Thanna and Treasurer's Room.</i>	-- For the security of the records and treasure.	-- Sanctioned 6th November 1844.	Silchar	2,072 1 7	2,239 4 7	-- Completed season 1846-47.	
<i>Seebsaugor: Construction of a new Treasury and Thannah.</i>	-- In lieu of similar buildings blown down in a storm in May 1843.	-- Sanctioned 21st August 1843.	Seebsaugor	618 3 1			
<i>Provision of a new Gaol</i>	-- The permanent hospital constructed for the light infantry is to be converted into a gaol.	-- Sanctioned 3d April 1843.	Seebsaugor	17,884 10 4	17,308 2 1	-- Completed season 1845-46.	
<i>Sylhet: Improvements to the Gaol Hospital.</i>	-- This hospital, which was originally a mosque, is considered by the medical officer, from its extreme lowness, an unfit habitation for the sick.	-- Sanctioned 15th March 1847.	Sylhet	1,821 1 4	1,885 --	-- Completed season 1849-50.	-- The estimate provides for raising the roof 6½ feet higher; and with a view to improve the ventilation, the surrounding wall, with the guard-room, will be removed to a proper distance.

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<i>Seesaugor:</i>								
Rebuilding of the Circuit House.	-- This work was necessary, in consequence of the damage sustained by the old circuit-house during a storm on the 28th April 1846, when the walls were so forced out of the perpendicular as to make the building in imminent danger of falling.	-- Sanctioned season 1847-48.	Seesaugor	- - - - -	- - - - -	- - - - -	-- Completed season 1847-48.	-
Renewal of the Gaol Stockade	-- The necessity for this work was reported by the civil authorities.	-- Sanctioned 8th December 1847.	Seesaugor	- -	485 4 1	483 8 9	-- Completed season 1848-49.	-
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:</b>								
<i>Shajehanpore:</i> Construction of a new Pucca Gaol Hospital and Buildings.	-- In lieu of inferior buildings built by the civil officer.	-- Sanctioned 15th September 1843.	Shajehanpore	- -	5,276 8 7	5,207 13 3½	-- Completed season 1845-46.	-
<i>Siras:</i> Construction of a Wall at	-- For the use of the Judicial Department.	-- Depth 113 feet, diameter 8 feet; sanctioned 26th March 1841.	Siras	- -	1,193 10 10	1,189 10 10	Season 1841-43.	-
<i>Scharunpore:</i> Construction of a Pucca Guard-room at the Gaol.	-- Owing to the insufficiency of the existing guard-rooms.	-- Sanctioned 8th December 1843.	Scharunpore	- -	930 1 10	930 1 10	Season 1843-44	-- The new building is to accommodate 30 men.
<i>Shikarpore:</i> Conversion of the Fort into a Gaol.	- - - - -	-- Sanctioned 3d April 1845.	Shikarpore	- -	4,531 8 2	4,531 8 2	Season 1845-46.	-
<i>Shikarpore Gaol:</i> Construction of a Hospital, Cook-room, &c., to the	- - - - -	-- Sanctioned 24th January 1846.	Shikarpore	- -	1,521 - -	1,521 - -	-	-
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—JUDICIAL:</b>								
<i>Sauger Gaol:</i> Enlargement of the	-- In consequence of the removal of 100 prisoners from the district of Dumoh.	-- Sanctioned 16th April 1845.	- - - - -	- - - - -	47,366 - -	45,528 9 8	-- Completed season 1847-48.	-- Government was of opinion that occasions might arise in which this gaol might aid the military defence of the place, and expressed a desire that the building should be calculated for defence by a small body of men; and that provision should be made within the gaol for the occasional close confinement of all the prisoners. The new gaol has been fortified, and is on a much more extensive scale than the Dumoh gaol.
<i>Secoos Gaol:</i> Additions and Alterations.	-- Under a representation from the Sessions Judge of the want of accommodation for the ordinary number of prisoners of the district.	-- Sanctioned 30th August 1849.	Secoos	- - - - -	2,134 4 2	- - - - -	-- Completed season 1849-51.	-- The gaol accommodation had become quite inadequate, as Government refused to allow the surplus prisoners to be employed in out-gangs.

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Competition.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, EASTERN SETTLEMENTS—JUDICIAL:</b>				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<i>Singapore:</i>							
New Police-office	- - - - -	-- Sanctioned 15th November 1839.	Singapore - -	4,041 9 7	- - - - -	Constructed 1840-41.	-
Construction of a Police Thannah at Campong Clang.	- - - - -	-- Sanctioned 25th March 1840.	Singapore - -	3,143 7 6	- - - - -	Constructed 1840-41.	-
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b>							
<i>Saugor Island:</i> Construction of a Lighthouse on Middleton Point.	-- With a view of replacing the present tripod, which the Superintendent of Marine, after a personal inspection, reported to be in a rickety condition, and accordingly recommended a masonry tower in preference to the reconstruction of a tripod, on the score of ultimate economy, as well as superior efficiency.	-- Sanctioned 18th January 1847.	Middleton Point - -	- - - - -	25,988 9 4	- - - - -	-- The new lighthouse will be a taper column, divided into five vaulted stories, and surmounted by a lantern of copper and plate glass. Total height of the beacon terrace 102 feet; the shaft 82 feet in height, tapering from 20 feet at bottom to 12 feet diameter at top, and surmounted with stone coping and battlement. In season 1847-48 the Military Board reported that the encroachment was so great, that it was feared that the masonry lighthouse must be abandoned, and an iron lighthouse substituted, the rough estimate for which, amounting to 44,130 rupees, had been referred to the Home Authorities. Court, on referring to parties experienced in the construction of iron lighthouses, for their opinions as to the relative merits of Colonel Irvine's, Major Godwyn's, or some other plan, were satisfied that preference was due, on several accounts, to the shell or iron plate mode of construction; they accordingly accepted an offer made by Messrs. Fox, Henderson and Co., to furnish an iron plate lighthouse, with iron staircase, gun metal lantern, glazed with plate glass, and covered with copper, reciprocating light, with silvered parabolic reflectors, together with certain stores and lighting materials, for the sum of 2,164 L., or about 400 L. less than the estimated cost of a structure of masonry.

## CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL:

<i>Sulkea</i> : Construction of New Salt Golahs.	- - - - -	-- Orders of Government, 5th July 1837.	Sulkea - - -	60,901 5 10	57,244 8 4	-- Completed season 1838-39.	-- These golahs, 11 in number, are of pucca masonry, and have been well constructed by Captain Fitzgerald at a cost of Rs. 6,345, 2. 6. less than the sanctioned estimate.
Construction of Division Walls in 27 Salt Golahs.	-- In consequence of the loss resulting from the present plan of separating salt of different qualities by mats, in these golahs, as the mats frequently rot, and the salt becomes mixed.	- Sanctioned 19th August 1840.	Sulkea - - -	7,879 4 3	8,606 9 - 1/2	-- Completed season 1841-42.	-
Renewal of the roofs and Improvements to some of the Salt Golahs.	-- In consequence of the great wastage of salt occasioned by leakage.	- Sanctioned 23d December 1840.	- - - - -	- - - - -	16,470 3 -	-	-
<i>Secunderabad</i> : Erection of a Staging Bungalow and Out-offices.	- - - - -	- Sanctioned 19th August 1843.	-- Situated on the Grand Trunk Road between Allyghur and Delhi.	2,072 13 5	2,135 4 4	-- Completed season 1843-44.	-

## CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—GENERAL:

<i>Sheikohabad</i> : Erection of a Staging Bungalow.	-- For the accommodation of travellers proceeding to or from Agra.	- Sanctioned 5th September 1840.	40 miles from Agra -	794 10 6 and 60 13 7 for furniture.	844 13 9	-- Completed season 1841-42.	-
<i>Syrac, in the Hill District of Subathoe</i> : Construction of a Staging Bungalow.	-- To replace an old bungalow, which did not afford sufficient accommodation to travellers.	Sanctioned 1830-40	- - - - -	- - - - -	1,282 6 9	-	-
<i>Simlah</i> : Construction of Public Offices.	-- For the civil officers of the station.	-- Sanctioned season 1840-41.	Simlah - - -	6,053 4 4	4,848 14 -	-- Completed season 1842-43.	-- The excess was owing chiefly to the erection of out-offices, which were not included in the estimate.
<i>Subathoe</i> : Construction of a Protestant Church.	-- This building is to be calculated to hold 500 persons.	- Sanctioned 7th February 1845.	Subathoe - - -	-- This work was suspended; vide paragraphs 323 and 323 of Report of 1845-46.	10,786 7 6	-	-- The masonry throughout to be of dressed stone, with lime cement, but without plaster, and the roof to be formed of shingles on battens, rafters, purlins, and trussess.
Proposed construction of a House.	-- To serve for the performance of Divine Service on the Sabbath, and for a school-room on other days.	- - - - -	- - - - -	- - - - -	5,401 15 6	-	-

(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1850-51 inclusive—continued

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—GENERAL—continued.</b>							
<i>Syres</i> : Construction of additional rooms to the Staging Bungalow.	-- The necessity for additional accommodation was brought to the notice of Government by the Postmaster-general.	-- Sanctioned 23d August 1850.	Syres - - - -	- - - - -	Rs. a. p. 1,276 12 4	-	
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—REVENUE:</b>							
<i>Secoos</i> : Construction of a Tahsil-darry Catcherry.	- - - - -	-- Sanctioned season 1839-40.	- - - - -	986 14 8	1,304 13 9	-- Completed season 1841-42.	-
<i>Sheersjore</i> : Construction of a Bungalow and Out-offices at the Cotton Farm.	- - - - -	Sanctioned July 1842	- - - - -	- - - - -	9,944 10 7	- - - - -	-- The execution of this work was subsequently entrusted to the Civil Department, not however before an outlay of Rs. 1,687. 12. -- had been incurred by the executive engineer in the collection of materials.
<i>Secundra, in Zillah Cawnpore</i> : Construction of a Tahsil-darry Catcherry at.	-- In consequence of the lapse of the Secundra Jagheer, and the annexation of the Pergamah to the Cawnpore District.	-- Sanctioned 4th November 1842.	Secundra - - -	5,491 2 - 1/2	5,130 13 8	-- Completed season 1844-45.	-
<i>Sheersjore</i> : Construction of a Tahsil-darry Catcherry at.	-- To replace the present catcherry, which is represented to be very confined and insecure, being surrounded by and connected with the houses of the village.	-- Sanctioned 9th May 1844.	-- Sheersjore, in the Cawnpore District.	5,624 2 1	5,679 15 -	-- Completed season 1846-47.	-
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—ECCLESIASTICAL:</b>							
<i>Saugor Church</i> - - - -	-- For the benefit of the Christian community and the European soldiery.	-- Sanctioned 30th December 1835.	Saugor - - - -	10,272 14 5	- - - - -	-- Completed season 1840-41.	-- This church was surrounded by a wall in 1842-43; the cost, Rs. 1,568. 14. 10., was paid by subscription.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—REVENUE:</b>							
<i>Soneput, in the Northern Division of the Delhi District</i> : Construction of a Catcherry.	- To replace a catcherry built by the late Baba Bhas, which was in a state of disrepair, and in an objectionable situation.	-- Sanctioned 18th December 1838.	- - - - -	6,405 1 4	- - - - -	- - - - -	



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*Shahjehanpore:* Additions and alterations to the Collector's Cutcherry.

-- Rendered necessary by the union of the offices of Collector and Magistrate of the district.

-- Sanctioned 16th September 1845.

Shahjehanpore-

7,364 11 6

7,700 --

-- Completed season 1844-45.

-- The old entcherry was disposed of, for a sum of 8,100 rupees, to Captain Ladlow.

**CIVIL BUILDINGS, NORTH-WESTERN PROVINCES--POLITICAL:**

*Shikarpore:* Repairs to the Old Agency Buildings.

- - - - -

- Sanctioned 22d July 1844.

Shikarpore - -

7,000 --

7,000 --

Season 1844-45.

*Scinde:* Construction of an Office.

-- For the Secretary to the Government of Scinde.

- Sanctioned 8th November 1844.

Scinde - - -

- - - - -

2,169 4 3

- - - - -

-- The walls will be of brick and mud, and the roof tiled.

**EMBANKMENTS, SOUTH-EASTERN PROVINCES:**

*Twenty-four Pergunnahs:*

Construction of a new line of Bands from Kalkapore towards Moneergong, and back to Barreestough, to include the Village of Gillarchut.

- - - - -

- Sanctioned 1st June 1841.

-- Twenty-four Pergunnahs.

5,308 14 -

8,333 14 4

- Completion reported season 1844-45.

-- A considerable saving on the estimate was effected by dispensing with a portion of bund where the damming of a khail had sufficed. The estimate for annual repairs of 1850-51 amounts to Rs. 15,642. 14. 2.

Construction of 11 Bungalows on these Embankments.

-- For the use of the superintending engineer and the superintendent while on inspection duty.

-- Sanctioned 24th May 1843.

- Ditto - - -

1,070 1 -

- - - - -

- Constructed season 1844-45.

-- The inspection bungalows on the embankments in these provinces have been made available to the Magistrates, Collectors, and other Government officers, for occasional use when their duties call them into the interior.

**EMBANKMENTS, LOWER PROVINCES:**

*Twenty-four Pergunnahs:*

Bands - - - -

- - - - -

-- The reconstruction of these bands was sanctioned on the 1st November 1842. Their entire length is 300 miles; the cost of their annual repair is estimated at Rs. 16,751. 14. 6.

- - - - -

1,30,000 --

25,100 14 0½

-- Completed season 1843-44.

-- The estimate for effecting annual repairs of these embankments for season 1849-50 amounted to Rs. 14,328. 0. 7.

Ditto - - - -

-- The construction of a bund has been authorized for the protection of an estate situated on the verge of the Sunderbund Forest, near the Channel Creek.

-- Length 11 miles; commenced in season 1850-51.

- - - - -

6,008 --

6,008 - -

Season 1840-41

-- This estate ought, it is stated, to yield at least 20,000 rupees, if properly cultivated; whereas, in its present neglected state, it does not pay to Government one-fourth of that sum. (continued)

PAPERS RELATING TO PUBLIC WORKS (INDIA).

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Seasons 1839-40, to 1850-51 inclusive—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Places of Termination, or of Intermittent Termination.	Amount of Expenses Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ISSARAHATTA, LOWER PROVINCES—continued.</b>							
<i>Twenty-four Parganahs—continued.</i>							
Five Lines of Banks from Calcutta towards Memarsing, and back to Burdwanah Khal, to include the Village of Chittarchai.		-- Length 16 miles, 3 furlongs; sanctioned 1st June 1841.		Rs. 6. P. 6,553 14 4	6,553 14 4	Season 1841-42.	--
Construction of Humea Benda, and Drain across the Kims Mitali Namsing.	-- With a view to the improvement of the soil.	-- The Bhoerda Khal has been excavated to the length of 8,000 feet, and 41 acres above feet in height, with a dam, has been constructed, and water ordered 19th October 1841.		1,248 6 3		-- Completed season 1843-44.	-- It is expected that the returns from this estate (5,000 rupees per annum) will be almost double, when a better system of drainage has been established.
<b>CANALS, SOUTH-WESTERN PROVINCES:</b>							
Tully's Nullah; Strengthening Banks opposite to the Kilderpore Tollhouse.		- Sanctioned 10th May 1847.	Kilderpore	217 10 --	501 5 --	-- Completed season 1847-48.	-- The banks have been protected by piling, and with stone ballast.
<b>CANALS, NORTH-WESTERN PROVINCES:</b>							
Tijfocolla New Cut: Enlargement of the.	-- The width, 40 feet at the base, was found to be insufficient to pass the water accumulated at its mouth.	-- Length about 900 feet, the width at the base to be increased from 40 to 50 feet; sanctioned 24th April 1844.		Not reported.	1,690 1 3	Season 1844-45	-- This cut was originally excavated by Colonel Colvin, immediately below the junction of the two canal banks.
<b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:</b>							
Tymook Road; Construction of Drain Bridges.	-- The road interfered with the natural drainage of the country.	-- Length 18 miles; sanctioned 27th March and 24th July 1843.	-- From Panchcooah to Narrainpore Khanal.	3,186 6 1	3,608 11 8	-- Completed season 1844-45.	-- Such of these drains as it may be desirable to adapt to purposes of irrigation, will have subseptions attached to them at the cost of the landholders.

7.	<p><i>Typesetters:</i> Construction of a Bridge two miles east of.</p>	<p>-- Sanctioned 10th October 1943.</p>	<p>--</p>	<p>3,083 11 7</p>	<p>6,000 7 8</p>	<p>-- Completed season 1946-47.</p>	<p>The bridge has two semicircular sections 23 feet in span. The piers are owing to a great reduction in the quantity of masonry-work, and in the ratio generally.</p>
8.	<p>Construction of two Masonry Bridges, one three miles east and one four miles east of.</p>	<p>-- Sanctioned 16th October 1943.</p>	<p>--</p>	<p>7,018 1 8</p>	<p>7,018 1 8</p>	<p>--</p>	<p>--</p>
<p><b>ROADS AND BRIDGES, LOWER PROVINCES:</b></p>							
9.	<p><i>Typesetters:</i> To complete the communication between the station and the road.</p>	<p>-- Sanctioned 12th January 1941.</p>	<p>--</p>	<p>716 15 7</p>	<p>641 --</p>	<p>-- Completed season 1943-44.</p>	<p>--</p>
10.	<p><i>Typesetters:</i> Across the Chayath Hills to Panangong, in Assam.</p>	<p>-- Length 44 miles; sanctioned in season 1939-40.</p>	<p>Panangong</p>	<p>8,988 1 6</p>	<p>--</p>	<p>-- Completed in season 1941-42.</p>	<p>-- The whole line, as it exists now, may be traversed in every part by troops and Indian cattle. The bridge is of wood, and being built of large trees, they will survive even for Indian elephants.</p>
<p><b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b></p>							
11.	<p><i>Typesetters:</i> From the Ganges to Birlapahar, and construction of a bridge across a gully at Lucknow.</p>	<p>-- Sanctioned 1st August 1944.</p>	<p>Ganem</p>	<p>1,008 15 11</p>	<p>1,008 15 11</p>	<p>-- Completed season 1946-47.</p>	<p>--</p>
12.	<p><i>Typesetters:</i> From the Ganges to Governmental station of 17th November 1944, relating to the construction of roads adapted for all military purposes in the North-western Frontier.</p>	<p>-- Length 24 miles and 7 furlongs; sanctioned 24th November 1944.</p>	<p>Pujore</p>	<p>--</p>	<p>91,001 6 6</p>	<p>--</p>	<p>-- The estimate provides for the construction of two bridges across the Lakshmi Nallah and the Chinar, near Mumbhampore, and 75 double bridges of abutments.</p>
<p><b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES--JUDICIAL:</b></p>							
13.	<p><i>Typesetters:</i> Construction of a New Justice Hospital.</p>	<p>-- Sanctioned 26th January 1944.</p>	<p>-- Situated between the Boudha Dhamma Chattram, and the Iron Bridge-yard.</p>	<p>67,047 15 5</p>	<p>67,008 6 10</p>	<p>-- Completed season 1946-47.</p>	<p>--</p>

(continued)

No. 6.—Documents compiled from the Reports of the Railway Board in England, from Sessions 1889-90, to 1900-01 (inclusive).

LIST OF BOOKS.	Object of Commission.	Length of time occupied.	Part of Session in which completed.	Amount of cost incurred.	Amount of amount expended.	Period for which completed.	REMARKS.
<p><i>Civil Engineering, Mechanical Engineering, and other papers.</i>  <i>Part I. Commission of a Railway.</i>  <i>Part II. Commission of a Railway.</i>  <i>Part III. Commission of a Railway.</i></p>	<p>The object of the Commission was to ascertain the most economical and efficient method of constructing a railway, and to report on the various details of construction, such as the choice of route, the location of stations, the nature of the works, the method of construction, the cost, and the time required for completion.</p>	<p>3 years.</p>	<p>1889-90, 1890-91, 1891-92.</p>	<p>£ 250 0 0</p>	<p>£ 250 0 0</p>	<p>Completed in 1892.</p>	
<p>CIVIL ENGINEERING, MECHANICAL ENGINEERING, AND OTHER PAPERS.—GENERAL.</p> <p>Project to Lower down the River, Commission of a Railway, and Commission of a Railway.</p>							
<p>Part I. Commission of a Railway.</p>	<p>The object of the Commission was to ascertain the most economical and efficient method of constructing a railway, and to report on the various details of construction, such as the choice of route, the location of stations, the nature of the works, the method of construction, the cost, and the time required for completion.</p>	<p>3 years.</p>	<p>1889-90, 1890-91, 1891-92.</p>	<p>£ 250 0 0</p>	<p>£ 250 0 0</p>	<p>Completed in 1892.</p>	
<p>Part II. Commission of a Railway.</p>	<p>The object of the Commission was to ascertain the most economical and efficient method of constructing a railway, and to report on the various details of construction, such as the choice of route, the location of stations, the nature of the works, the method of construction, the cost, and the time required for completion.</p>	<p>3 years.</p>	<p>1889-90, 1890-91, 1891-92.</p>	<p>£ 250 0 0</p>	<p>£ 250 0 0</p>	<p>Completed in 1892.</p>	
<p>Part III. Commission of a Railway.</p>	<p>The object of the Commission was to ascertain the most economical and efficient method of constructing a railway, and to report on the various details of construction, such as the choice of route, the location of stations, the nature of the works, the method of construction, the cost, and the time required for completion.</p>	<p>3 years.</p>	<p>1889-90, 1890-91, 1891-92.</p>	<p>£ 250 0 0</p>	<p>£ 250 0 0</p>	<p>Completed in 1892.</p>	
<p>CIVIL ENGINEERING, MECHANICAL ENGINEERING, AND OTHER PAPERS.—GENERAL.</p> <p>Part I. Commission of a Railway.</p>							
<p>Part II. Commission of a Railway.</p>	<p>The object of the Commission was to ascertain the most economical and efficient method of constructing a railway, and to report on the various details of construction, such as the choice of route, the location of stations, the nature of the works, the method of construction, the cost, and the time required for completion.</p>	<p>3 years.</p>	<p>1889-90, 1890-91, 1891-92.</p>	<p>£ 250 0 0</p>	<p>£ 250 0 0</p>	<p>Completed in 1892.</p>	
<p>Part III. Commission of a Railway.</p>	<p>The object of the Commission was to ascertain the most economical and efficient method of constructing a railway, and to report on the various details of construction, such as the choice of route, the location of stations, the nature of the works, the method of construction, the cost, and the time required for completion.</p>	<p>3 years.</p>	<p>1889-90, 1890-91, 1891-92.</p>	<p>£ 250 0 0</p>	<p>£ 250 0 0</p>	<p>Completed in 1892.</p>	

<p><b>CIVIL ENGINEING, LOWER DIVISION—GENERAL.</b></p>	<p>... To provide instructions to ...</p>	<p>201 September 1907</p>	<p>Printed</p>	<p>1,217 6 0</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>
<p><b>CIVIL ENGINEING, CENTRAL DIVISION—GENERAL.</b></p>	<p>...</p>	<p>...</p>	<p>Printed</p>	<p>1,217 6 0</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>
<p><b>CIVIL ENGINEING, SOUTH DIVISION—GENERAL.</b></p>	<p>...</p>	<p>...</p>	<p>Printed</p>	<p>1,217 6 0</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>
<p><b>CIVIL ENGINEING, NORTH DIVISION—GENERAL.</b></p>	<p>...</p>	<p>...</p>	<p>Printed</p>	<p>1,217 6 0</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>
<p><b>CIVIL ENGINEING, WEST DIVISION—GENERAL.</b></p>	<p>...</p>	<p>...</p>	<p>Printed</p>	<p>1,217 6 0</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>
<p><b>CIVIL ENGINEING, EAST DIVISION—GENERAL.</b></p>	<p>...</p>	<p>...</p>	<p>Printed</p>	<p>1,217 6 0</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>	<p>...</p>

## No. 7.

A STATEMENT exhibiting the EXPENDITURE incurred under the Presidency of *Bengal* on WORKS, SALARIES, ESTABLISHMENTS, &c. in the CIVIL DEPARTMENT of PUBLIC WORKS within the Ten (10) Years from Season 1839-40 to Season 1848-49 inclusive, from the Military Board Office Bill Books, will be found at Page 154 of the Printed Parliamentary Paper of the Honourable the House of Commons, No. 622 of 1851; the Total Amount being—

	<i>Rs.</i>	<i>a.</i>	<i>p.</i>
	2,23,65,343	15	1
The Expenditure for Season 1849-50 was - -	29,29,480	-	10
Ditto - - - ditto 1850-51 was - -	32,10,067	7	6
TOTAL for Season 1839-40 to Season } 1850-51 inclusive - - - - - }	<i>Rs.</i> 2,85,04,891	7	5

## PRESIDENCY OF FORT ST. GEORGE.

## No. 8.

IN the printed Parliamentary Paper of the Honourable the House of Commons, No. 622 of 1851, pages 154 to 158, particulars are given of the formation of the Department of the Superintendent of Roads, of the arrangements adopted for the management and classification of the trunk roads, and of their condition, to the 1st May 1848. The following additional information has since been furnished in a General Report on the Road Department, to the 1st May 1851, dated 17th October 1851, in which year a new line from Madras to Cuddapah by the Goolcherroo Pass from Garampilly, was classed as Trunk Road No. 12; the old direct road to Cuddapah from Kankaloor, by the Valley of Chitwall, was thenceforth to be classed as a minor branch road.

## TRUNK ROADS.

No. 1.—*Western Trunk Roads, Madras, towards Bangalore.*

THE traffic on this road is so great as to make it of primary importance in a commercial point of view; the portion of it which lies between Madras and Waniambaddy, 121 miles, was reported in January 1852 to be perfectly made and bridged throughout, with the exception of the Palaur River, 2,440 yards wide, between Arcot and Vellore, its two branches near Waniambaddy, respectively 180 yards and 130 yards, and the Agarum River, 850 yards wide, between Pulliconda and Amboor; a new road four miles in extent, and partly in the town of Waniambaddy, has been opened for use, while a road for carts, between the 18th and 60th miles, with improvements of the road between Waniambaddy and Bangalore, are the further works proposed to be undertaken; 352 carts per day, on the average, pass on 125 miles on this road, and in consequence of this great traffic 57,496 rupees were expended on repairs in 1851; and a sum of Rs. 31,179. 14. was demanded for the following season. The amount laid out on the Western Road from May 1845 to May 1851 was Rs. 3,30,655. 9. There are altogether 566 bridges, with an aggregate of 668 arches, and 3,984 feet of water-way, besides 78 road dams, over which water runs occasionally.

No. 2.—*Frazerpett, on the Cauvery River, to Mangalore.*

The portion between Mangalore and Frazerpett, a distance of 101 miles, has been much improved throughout. A bridge of an oblique arch of 42 feet has been constructed in lieu of one of two arches of 18 feet span, carried away in 1847, estimated at Rs. 2,024. 9. 9., but only cost Rs. 1,245. 14. 9.; and another of one arch of 45 feet is being rebuilt at Feringypett, at an estimated cost of Rs. 5,620. 3. 9. A branch road, practicable for carts, has been opened from Pootoor to Oopinungady, the object of which is to enable "carts that travel between Buntwall and the Munzerabad Ghaut to avoid the difficulty between the former place and Oopinungady, by following the Road No. 2 as far as Pootoor."

No. 3.—*From the North Western part of Mysore, towards Canara, by a Pass descending from the Table Land near Munzerabad.*

This road extends from Mangalore to Bangalore, by the Munzerabad Pass, and is now nearly completed from Mysore to Oopinungady, a distance of 112 miles. An estimate of 30,000 rupees for carrying it 18 miles further on from Oopinungady to Buntwall is under revision.

No. 4.—*From Hoonsoor, in Mysore, to Cannanore by the Parumbaddy Pass.*

Advances to the amount of Rs. 1,83,135. 5. 2. were made up to 1st May 1851. In March 1851 this road was reported nearly completed from Cannanore to the Mysore frontier. The road by this Ghaut has been in continual use since May 1848. It is considered that an expenditure of 100 rupees per mile, per year, will be required to keep the road in order.

No. 5.—*From Waniambaddy, by Salem and Coimbatore, to the Western Coast at Ponany.*

Between Walliaur and Ponany, a distance of 70 miles, a bridge of five arches of 39 feet, over the Nurgumpully, and another of one arch of 36 feet, over the Yettaditooloo, have been built; a bridge of 10 arches of 45 feet, over the Parlakadow, will be completed in 1852. A new road from Coimbatore to Walliaur, a distance of 15 miles, has been completed, and a bridge of 26 arches of 47½ feet span, over the Cauvery, between Rowany and Comarpollium, has been opened for use. A new direct line of road between Avernashy and Bowany, and further improvement of the road between Waniambaddy and Comarpollium, are proposed.

No. 6.—*Great North Road from Madras to Calcutta.*

The portion of road between Goondipoondy, in the district of Chingleput, and Ulloor in that of Nellore, is far from being complete; the portion between Nellore and Ulloor will be superseded by a more favourable line through Mocberla to Tungatoor. The road from Madras to Goondipoondy will be bridged, also three streams between Goondipoondy and Nellore. From Nellore, to Ongle the road has been re-surveyed throughout, and a new line marked out between Covoor and Tungatoor. An excellent road has been made from Vizianagarum to Bimlipatam, at the expense of the Zemindar of Vizianagarum, and a bridge over the Bimlipatam River is being constructed at the expense of Government.

No. 7.—*From the Great North Road near Ongle, to the Nizam Frontier.*

The traffic on this road is exceedingly trifling, and the road is only of importance as being on the route by which troops march from Madras to Hyderabad.

No. 8.—*Inland Southern Road, as far as Trichinopoly.*

The portion of road from Chingleput to Ooloondoorpett (95 miles) was reported in 1851 to be constructed, and would be metalled in the next year; the road from the north bank of the Cauvery to Samiaverem has been completed, and a beautiful and convenient approach made to Trichinopoly. A bridge of 32 arches of 45 feet span has been built over the Cauvery, and another of 32 arches of 60 feet span, over the Coleroon, is under construction. A road has been surveyed between Toramungalum and Sirooganoor, and estimates have been sanctioned for a bridge over the Chinaur, and a causeway over the Oopaur. When these works are completed, the Palar at Chingleput will form the only obstacle to rapid travelling between Madras and Trichinopoly.

No. 9.—*Proposed to branch from No. 8, and take a more easterly direction, so as to lead to the new Annicut, lately built over the Vellaur River, thence across the Coleroon River at its lower Annicut, into the Tanjore District, near Combanum and Myaveram.*

The principal works executed are, a road south of the Coleroon Annicut, and a bridge of 19 arches of 31 feet, built above the Annicut, over the Vellaur; the road from the lower Coleroon Annicut to Vikravandy, 64 miles, has been cleared of jungle, and marked out, and a bridge over the surplus channel from the Toollajah Tank, and another over the Vuddavaur, with a new head sluice to the South Rajah Voikal, will be far advanced, if not finished, in 1852.

No. 10.



No. 10.—*Proposed Road from Madras through Chittoor, Palmanar, Balsamoodram, to Bellary.*

The principal works under construction are, roads from Raneepeet to Punautoor, from Punautoor to Chittoor, and from Chittoor to Palmanair; these roads would be opened and the bridges finished in June 1852.

No. 11.—*New Line from Madras by Roychotty, the Goolcherroo Pass, and Cuddapah, to Bellary.*

The line from Madras to Codairy has been surveyed, and the portion of it from Madras to Cavetrajet, near Poinay, has been marked out and estimated. Improvements are suggested to bring this road into general use, and to relieve the road from Madras to Poonamallee of a large number of carts carrying Bungalore, Cuddapah, and Bellary goods; thus reducing the wear and tear, and diminishing the expense of maintaining that portion of Trunk Road No. 1.

No. 12.—*From Madras to Cuddapah, by the Goolcherroo Pass from Garampilly.*

The principal work done on this line, has been the improvement of the Goolcherroo Ghaut, on the road from Roychoty to Cuddapah; improvements have also been made to the old direct road to Cuddapah from Kankaloor by the valley of Chitwail, which it is proposed should henceforth be classed as a minor branch road.

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No. 2.

MADRAS DISTRICT ROADS.

PARTICULARS as to the state of these roads, compiled from reports of the collectors, submitted by the Government of Fort St. George to the Honourable the Court of Directors, under date 6th May 1850, will be found at pages 153 to 165 of the printed Parliamentary Paper of the Honourable the House of Commons, No. 622 of 1851. The following is a statement of the more important works executed under the Civil Engineers' Department in the years 1848 and 1849.

No. 9.

## INDEX to STATEMENTS of WORKS Executed by the CIVIL ENGINEERS DEPARTMENT during the Years 1848 and 1849.

NAME OF WORK.	NAME OF WORK.
No. 16. Absanagram Tank, repair of the Bank of.	No. 85. Oopaur River, improvement of Road to, and construction of Bridge over the.
24. Arbye Ghaut, and line of Road from Yellapoor to Meerjan.	9. Poolaparty Anicut.
32. Agoomby Ghaut, Road from the foot of the, at Somaishwar to Bujjay.	10. Pedda Oopalem Channel, Anicut across the.
33. Agoomby Ghaut, Road from the foot of the, at Somaishwar, to Halandee.	15. Pennair, opening of a new Channel from the.
41. Araselaar River, Bridge over.	52. Pootaur, Bridge over the.
52. Annamullay Teak Forest, examination of.	53. Paumany River, Bridge over the.
94. Ambasmooduram Bridge, flooring to six of the Arches of.	54. Point Calimere, Beacon Column at.
7. Cocanada, Lattice Bridge at.	64. Peravully Channel, improving the.
18. Construction of Sluices to different Tanks.	65. Pungoony Channel, improving the.
23. Coloor Ghaut.	77. Perumbaddy Pass, Line from the frontiers of Coorg to the Coast at Cannanore.
27. Cassergode and Solea Road.	88. Panlaur River Wagganies.
35. Cauvery Pauk Tank repairs.	106. Paupancal Channel, from the Carapanuddee.
38. Calavaye Tank Calingulah.	61. Rettenagoody Anicut, extending the, and widening the Nuttad Nullah Channel.
47. Corayaur River, Bridge over the.	3. Samulcottah Channel.
48. Cuddaveyaur River, Bridge over the.	13. Survapully Channel.
59. Covellay Surplus Channel, extending the.	17. Survapully Talook and Bodelingumpaud Cutcherries.
67. Cauvery River, Bridge over, at Trichinopoly.	26. Sircy and Darwar Road Bridges.
72. Coleroon River, repairs of the Banks of.	44. Shambu Cauvery River, head Sluices of the.
78. Calicut Canal (Malabar).	92. Shevacusee, Cotton Gin House at.
89. Coonoor Anicut, restoration of the.	103. Streevigoontum, Talook Revenue and Polies Cutocherry in.
100. Cunnadien Channel, from an Anicut across the Tambrapoorny.	2. Thoolia Bagah Channel.
5. Dhowlaisweram, permanent Railroad to.	42. Trimulrajén, Bridge over the.
22. Davamunny Ghaut and Road.	50. Trimulrajén, Bridge over, on the road from Combaconum to Negapatam.
87. Dindigul and Pulney, repairs to Road No. 2, between.	55. Tranquebar, Beach Defences at.
11. Ellore and Masulipatam, Road and Bridges on the Road between.	62. Trichinopoly, improving the Road from, along the right bank of the Cauvery.
1. Godavery Anicut.	63. Trichinopoly, Gaol at.
8. Godavery Guttoo Anicut.	68. Trichinopoly, new Road from, to Towagoody, the first stage to Tanjore.
36. Goonamadee Calingulah.	69. Trichinopoly, constructing part of Road from, to Arrialoor.
81. Honore Jetty.	70. Trichinopoly, improving the Road from, to Laulgoody.
80. Hassanoor Ghaut.	81. Teppacandoo Bridge.
12. Kristnavarem Limekiln.	86. Thiroopooavanum Channel, Bridge across head of.
14. Kundlairoo, Anicut across the.	98. Thimmarajasmoodrum Cootical Anicut, reconstruction of.
75. Khansaibe Channel, Bridge across the.	97. Thirtangul Peracolum, restoration of the.
74. Laulpet, improving the Road from, through Manargoody, to Womampillioor.	98. Thentheraparee Head Sluice, repair of the.
21. Munjerabad Ghaut and Road.	101. Tinnevely Channel from the Sootamullay Anicut across the Tambrapoorny.
25. Mangalore and Agoomby Road.	102. Teutacarin, New Sea Custom-house and Masta. Attendant's Office at.
45. Mercalcurray River, improvement of.	39. Uddavaur River, improving the.
51. Moodcondann River, Bridge over.	43. Veerasholen River, Bridge over the.
73. Manargoody and Chellumbrum, improving the Road between.	46. Valavanaur River, improvement of the.
83. Madura, New Sepoy Lines in the Town of.	66. Vitticuty Main Channel, improving the.
84. Madura, improvement of Drainage in Town of.	71. Uddavaur River, widening the, and forming a Dike on its left bank.
95. Madras to Quilon, repairing High Road, No. 4, from.	90. Vigay River, rebuilding Causeway across.
104. Madras to Quilon, repairs on the High Road from, in several Talooks.	91. Vaddakurray Tank, supplying Channel of.
105. Mailaaul Channel, from the Murdoor Anicut.	20. Wullabapoor Anicut, reconstruction of.
6. Narsipoor, Road from, to Cakarapurroo.	34. Wotairy Nullah, Embankment Channel and Bridge across the.
19. Nellore Tank, completion of new Channel of supply to.	57. Weyacondaun Channel, improvement of the.
37. Notairy Otairy Calingulah.	58. Weyacondaun Channel, rebuilding of Dark's Bridge across.
40. Narasinga Cauvery River, improving the.	4. Yanam Embankment.
49. Nundalam River, Bridge over the.	29. Yellapore and Moondagode Road.
56. Negapatam, improving the Port of.	30. Yellapore and Hallialu Road.
60. Nadookurray Main Channel, improving the.	79. Yenudmuckle Apron.
76. Nundimungalum Oopensaur River, Bridge across the.	
93. Nully Oday, Bridge across the.	
99. Nemmany Anicut Channel and Tank.	
28. Openungady and Pootoor Junction Road.	

No. 9.—PARTICULARS of some of the more important of the WORKS executed under the MADRAS CIVIL ENGINEERS' DEPARTMENT, in the Years 1849 and 1849; extracted from the Divisional Reports.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>FIRST DIVISION.</b>							
<i>Rajahmundry District:</i>							
(1.) Godavery Anicut	For irrigation			<i>Rt. a. p.</i> - Total expenditure to end of 1849, 6,59,944 --			-- The opening of the quarries, laying rail-roads, building stone dams, construction of the Dhowlaiswaram and Muddoor Branch an-ni-cuts, and lock and sluices at various places.
(2.) Thoolia Bagah Channel	-- Clearing the old channel, and embanking.	Commenced in 1846	Cocanada River	16,929 --			-- Average collections: 1840 to 1845 - 34,541 rupees. 1849 - - - 52,232 " Increase - 17,691 "
(3.) Samalcottah Channel	For irrigation	27 miles in length		4,644 --			-- Chiefly for sluices. This is an entirely new line, carried through a tract of country almost without water, excepting some tanks dependent on the local rains: it is a striking proof of the value of water, the average collections having risen from 25,280 rupees to 30,488 rupees in 1846-47, and 36,088 rupees in 1847-48, and 47,910 rupees in 1849.
(4.) Yanam Embankment				8,120 --			-- This embankment, carried along the eastern side of the Godavery, was utterly inefficient previous to 1848.
(5.) Permanent Railroad to Dhowlaiswaram.	-- For the permanent use of the district.			5,410 --			-- Leading from the Quarry Hill to the bank of the river.
(6.) Road from Narsipoor to Cakarapurroo.	-- To connect Narsipoor with Rajahmundry.	Length, 24 miles	Cakarapurroo	9,407 --			-- Expenditure incurred in the erection of bridges and tunnels, and repairs to the road-way.
(7.) Lattice Bridge at Cocanada		-- Length, 240 feet between the abutments, in three bays of 60 feet each, and two of 40 feet.		1,065 -- balance of a contract of 2,400 rupees.		Finished in 1848	-- This was a first experiment to ascertain the cost and efficiency of a mode of construction so extensively used in America, and which has also been adopted in England. It has been of the greatest use, many thousands of people passing over it daily.
<i>Vizagapatam District:</i>							
(8.) Godavery Guttoo Anicut	-- For damming up the water which flows down the river, to supply irrigation to a tract of country paying revenue to the amount of 15,900 rupees.	Length, 324 feet		3,187 --		-- Completed; date not given.	-- Constructed across the Shadah Nuddee, near Cassimcottah.
(9.) Poolapurty Anicut	-- To cause the water which comes down the river, instead of running waste into the sea, to be stored up in several tanks or reservoirs for irrigating lands in the Survasiddi Talook, assessed at 11,800 rupees.			1,712 --			Constructed across the Pundaroo River.

(continued)

No. 9.—PARTICULARS of some of the more Important of the Works executed under the Madras Civil Engineers' Department, in the Years 1848 and 1849, &c.—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<i>FIRST DIVISION—continued.</i>							
<i>Vizagapatam District—continued.</i>							
(10.)	Ancicut across the Pedda Oopalem Channel.	-- For turning the River Fundaroo into its right course.		880 -- --			
<i>Masulipatam District:</i>							
(11.)	Road and Bridges on the Road between Ellore and Masulipatam.	-- For making the passage of irrigating channels practicable for bandies at all seasons.		4,029 -- --			-- Nearly 40,000 bullocks pass over them yearly with salt alone, to the Hyderabad territories, which before were weeks in the monsoon, waiting till the water fell to ford the rapid streams.
(12.)	Kristnavarem Lime Kila	-- For supplying lime for all the contemplated bridges on No. 8 Trunk Road.		143 -- --			
<i>SECOND DIVISION:</i>							
<i>Nellore District:</i>							
(13.)	Survapully Channel			1,751 -- --			-- Leads off from the Pennair River, and after running a course of nearly three miles, branches into three channels. Passes on the western side of the town of Nellore, and is spanned by three bridges and an aqueduct built of laterite stone. The revenue derived, in 1848-49, from the tanks depending upon the Survapully River channel for their supply of water, was 12,506 rupees.
(14.)	Ancicut across the Kundairoo.	-- To afford a better supply of water to the tanks of Buolvale, Collecocoduroo and Cutwapully, of the Survapully talook.	-- Length, 90 feet; commenced, May 1849.	3,090 -- --		Completed, July 1849	-- The body of this work is 90 feet long by 4 1/2 wide on the average, and six feet high, of laterite stone. Standing on a foundation 8 feet deep and 8 1/2 feet broad on the average, supported by wing walls of brick in chunam 12 feet high, with buttresses, and further strengthened by an apron of rubble stone, 33 feet wide, which was secured by a retaining wall sunk 9 feet deep in the bed of the river.
(15.)	Opening of a new Channel from the Pennair.	-- For the better supply of the Nellore tank.	-- Rather more than five miles in length.	6,512 -- --			-- This is a spacious reservoir, capable of irrigating 2,143 goortoos of land, the asant revenue of which is 22,167 rupees, but of late years the average revenue derived from it is only about 18,000 rupees.
(16.)	Repair of the bank of the Absanagram Tank in the Calagherry Talook.			2,965 -- --			-- In 1847, this tank was breached in several places; this expenditure was therefore necessary to protect existing revenue.
(17.)	Survapully Talook and Bodelingumpaud Cutcherries.			4,194 -- --			-- Constructed of brick in chunam, with beams of teak wood, and palmyrah rafters and reapers.

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(18.) Construction of sluices and calinguiahs to different tanks.				6,234			
(19.) Completion of the new channel of supply to the Nellore tank.				2,315		Completed 1849	-- The revenue, which in 1844-45 was 10,882 rupees, was, in the season of its completion, 1848-49, 18,234 rupees.
<b>THIRD DIVISION.</b>							
<i>Bellary:</i>							
(20.) Reconstruction of the Wullabapoor Anicut.		Commenced 1846-47		Not stated		-- Completed in May 1848.	-- This work is a dam across the Toombudra River, 44 miles west of the town of Bellary. The chief executive difficulty was to keep the work free from sudden freshes, as also from the water above, which throughout the dry season stands from 8 to 12 feet above some of the rocks on which the foundations of the work are laid.
<i>Canara:</i>							
(21.) Munjerabad Ghaut and Road	-- Constructed in lieu of the Bissly Ghaut Road.	-- Length, 30 miles; commenced 1842-43.		62,461		-- Expected to be completed in June 1852.	-- This line leads from Munjerabad, in the Mysore country, towards Mangalore via Oopenungady. A few carts only have yet been on the line, owing to a part of it being impracticable for cart traffic.
<i>North Canara:</i>							
(22.) Davamunny Ghaut and Road.		Length, 30 miles		42,619		June 1851	-- This line leaves the old Sirsee and Neelcoond road in the Baldghat of North Canara, and passed over the ghauts at Davamunny, a few miles to the north of Neelcoond; early in 1848 it was first passable for carriages, but as a number of rivers and nullahs still required bridging, it was not until the end of 1849 that it was much used by carts conveying cotton from the interior. Numbers of these vehicles, as well as bullocks, were met with at every turn of the road. One large bridge and several of minor importance are still required.
(23.) Coloor Ghaut		-- Length, 5 miles; commenced 1847.		8,000		Completed 1848-49	-- Nearly midway between the Munjerabad and Davamunny Ghauts. When completed, the roads above the ghaut will lead to it from the foot of the ghaut to Coondapoor and to Byndoor, a small port nearly due west of the ghaut. The general course of the old line of road has been selected, and though not very easily practicable for carts, it is considered very easy for bullocks and horses.
(24.) Arbyle Ghaut and line of road from Yellapoor to Meerjan.		Length, 45 miles		3,091			-- The slope of this road is very gentle, and easily practicable for handies; it is being carried on from between Soonkaal and the River Gurgavully. A branch line to Ancois, about 15 miles in length, is being surveyed.
(25.) Mangalore and Agoomby Road.		Length, 60 miles	-- Southern parts of the Nugger district of Mysore.	5,091			-- Leads through Goorpoor, by the foot of the Agoomby Pass, to the southern parts of the Nugger district of Mysore. This road has been made practicable for carts as far as Yenna, Nalay, Mutt, and will probably be made so throughout, during the next working season.
(26.) Sircy and Darwar road bridges.				15,668	15,724 rupees	-- Completed, season 1849-50.	-- To complete the line of road from Sircy to Darwar district frontier with substantial bridges. The span of the largest of these bridges, the Jhendagherry bridge, rebuilt in 1848-49, is 42 feet; the road beyond the frontier is under the superintendence of the Bombay officers. It is expected by season 1850-51 that from the sea coast at Coompta to Darwar the road will be practicable throughout the year for wheeled carriages.

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No. 9.—PARTICULARS of some of the more important of the Works executed under the Madras Civil Engineers' Department, in the Years 1848 and 1849, &amp;c.—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>THIRD DIVISION—continued.</b>							
<i>North Canara—continued.</i>							
(27.) Casergode and Soobas Road.		Length, 99 miles; commenced 1849-50.	Jambour	Rs. 1,045	Rs. 6, 000	Next working season	-- This is a branch line from the sea coast at Casergode to Jambour, 99 miles, about 12 miles from the foot of the Sivrajee Ghant; the other part being from the coast towards the Ghants, a good deal of thick jungle has to be cleared away, and many precipitous hills surmounted.
(28.) Oppenangady and Peetoor Junction Road.		Length, 8 miles; commenced 1849-50.		1,175			-- The estimate does not provide for any masonry works, with the exception of a few small tunnels; the larger nullahs have been temporarily bridged with trees cut down in the neighbourhood. Owing to the depth of water at the ferry at Oppenangady, and the rocky bed at other parts, carts will not be able to cross without being unloaded.
(29.) Yellapoor and Moondagode Road.	-- To connect the Darwar and Sirey lines with the top of the Arbye Ghant.	Length, 25 miles; commenced 1849-50.		1,339			-- The main obstacle on this line is the Reddi nullah, which will be bridged.
(30.) Yellapoor and Haidial Road.	-- To connect the northern parts of the Soopen Talook with the head of the Arbye Ghant.	Length, 30 miles			4,395	Expected time of completion, end of April 1851.	-- The line twice crosses a large nullah, over which wooden bridges will be erected.
(31.) Honors Jetty	-- As a breakwater to protect the business-house and adjoining houses from encroachments of the sea.			1,768		Completed 1849-50	-- Appears to have fully answered the purpose. The wharf, walls, and other conveniences for shipping and landing goods have been much improved.
(32.) Road from the foot of the Agoomby Ghant at So-malshwar to Bujjay.	-- Completed for the purpose of connecting the Agoomby Ghant with the head of the navigation of the Nullah (Savonra Nuddy) which runs into the backwater two miles south of Bramahwar.	Length, 18 miles	Bujjay	4,479	4,493	Completed; date not given.	Estimates for bridges are being prepared.
(33.) Road from the foot of the Agoomby Ghant, at So-malshwar, to Halandee.	-- For the purpose of connecting the foot of the Agoomby Ghant with the head of the navigation of the large nullahs running into the broad backwater east of Coondapoor.	Length, 15 miles	Halandee	2,274	9,259	Completed; date not given.	-- This road has been made practicable for carts throughout.
<b>FOURTH DIVISION.</b>							
<i>Chingleput:</i>							
(34.) Embankment Ghant, and bridge across the Wetairy Nullah.	-- To divert the waters of the nullah into the Coma River, to prevent them, as hitherto, over-flowing the Perambore lines, near Madras.	Length, 492 yards		1,441 11		Completed 1849	-- The work is considered a great boon by persons in Perambore.

987.

## North Arcot:

(36.) Cauvery Pank Tank re-  
pair.

Length, 3½ miles

-- The bank of the tank is 3½ miles in length, reveted throughout, and is 22 feet high in the inside. The revenue collected from cultivation for the last 20 years amounts to 804,298 rupees; the repairs to 87,006 rupees.

(36.) Goomamadee Calingulah

-- Built in the supply channel of the Cauvery Pank Tank, at a place where it was continually being breached.

2,516

-- This is a satisfactory work. This work was very necessary; the Cauvery Pank supply channel is now in good order.

(37.) Notairy Otalry Calingulah.

2,069

2,400

-- Completed; date not stated.

-- The work has been almost entirely rebuilt; the wing walls are 23 feet high; the apron is entirely of dressed granite.

(38.) Calavaye Tank Calingulah.

1,589

-- The surplus water from the calingulah of this tank has an overfall of 11 feet; the apron, which is 5 feet thick of solid stone and chunam, with a good rear retaining wall, and covered with dressed granite, has been rebuilt in a most substantial manner.

## SIXTH DIVISION.

## Tanjore:

(39.) Improving the Vuddavaur River in the Paupansee-  
sum and Manargoody Talooks.

For irrigation

5,965

6,408

-- Completed; date not stated.

-- The Vuddavaur branches from the Ven-  
nauur River about 10 miles west of Tanjore, and irrigates an extent of land equal to 7,014 acres, bearing a revenue of 25,900 rupees. The lower part of the river course has been enlarged, and several sharp bends cut, the result of which has been highly satisfactory.(40.) Improving the Narasinga  
Cauvery River in the Puth-  
taccotah Talook.

For irrigation purposes

2,196

2,196

Completed

-- This river branches from the Vellauur, and irrigates a great extent of land, principally on shrotrivasa tenure, but of which 1,128 acres yield a revenue to Government of 5,102 rupees. Owing to freshes throwing sand into the branch, the cultivation had suffered greatly for want of water, and the bed was deepened and widened to increase the supply.

(41.) Bridge over the Aracalaur  
River, on the road from  
Madras to Nagapatam,  
via Mayavaram and  
Shankley.

5,032

6,595

Finished 1848-49

-- The bridge is of five oval arches of 20 feet span. The foundations are of wells filled in with cubes of brick masonry, and resting on sand; the rest of the work is formed of brick in chunam. The road is 24 feet wide, including the parapets.

(42.) Bridge over the River  
Trimalrajes on the same  
road.

6,766

7,844

-- Completed; date not given.

-- This bridge is of five oval arches of 20 feet span, and resembles the Aracalaur bridge in all respects, excepting the foundations, which consist in solid blocks of brickwork resting on a firm bed of clay.

(43.) Bridge over the Vennasho-  
les River, on the road  
from Combaconam to  
Tranquebar.

Commenced 1848

2,217

2,510

Completed 1848

-- This work was commenced and finished in 1848. The foundations are of solid brick masonry, and the superstructure of the same material. The width of roadway, including parapets, is 24 feet. The utility of this bridge has been very great in facilitating the export of grain from Tranquebar.

(continued)

No. 9.—PARTICULARS of some of the more Important of the Works executed under the Madras Civil Engineers' Department in the Years 1848 and 1849, &c.—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<i>SIXTH DIVISION—continued.</i>							
<i>Tanjore—continued.</i>							
(44.) Head sluice of the River Shemba Cauvery.	To regulate the supply of water -	Commenced 1849 -	- - - -	Rs. a. p. 3,106 --	Rs. a. p. 3,143 --	Completed 1849 -	-- The Shemba Cauvery branches from the left bank of the Vennar, four miles from Tanjore, and irrigates 3,063 acres of land, yielding a revenue of 25,795 rupees. To regulate the supply of water, the sluice was built, consisting of five vents each six feet wide, divided by piers seven feet high, flanked by ample wing-walls, and secured by broad aprons in front and rear; the piers are faced with cut granite, and the aprons covered with granite; the foundations and super-structure are of brick in chunam.
(45.) Improvement of the Mercalcurry River.	-- To prevent the overflow of its banks in the rainy weather.	Commenced 1846 -	- - - -	8,398 --	9,500 --	-- Completed; date not given.	-- The Mercalcurry is a stream in the south part of the Cauvery Delta, carrying off the drainage of 15,074 acres of irrigated land, bearing a revenue of 53,476 rupees; it had never been fully embanked, but overflowed the lands west of its channel. The bed of the river has been widened and deepened, and a dike formed. The best results have been obtained.
(46.) Improvement of the Valavanar River.	-- For deepening and embanking its channel.	- - - -	- - - -	3,072 --	- - - -	- - - -	-- The Valavanar is another great draining channel of the Tritrapoondy Talook, and discharges the surplus water from 12,641 acres of irrigated land, bearing a revenue of 42,609 rupees, into the great southern swamp lying between Point Calimere and Adrampatam. This river had never been embanked, and the lands were exposed to constant inundation, and the crops to destruction. The estimate was sanctioned for deepening and embanking the channel, and cutting a new and direct course for its discharge into the swamp. The part completed in 1849 was very efficiently performed.
(47.) Bridge over the River Coraysar, on the road between Tritrapoondy and Mootoopettah.	-- To facilitate the export of grain from Tritrapoondy Talook by the seaport of Mootoopettah, on the southern coast.	- - - -	- - - -	6,341 --	6,400 --	-- Completed; date not given.	-- This bridge is of five segmental arches of 32 feet span. This bridge has proved a valuable addition to the means of communication.
(48.) Bridge over the River Cuddaveyann, on the road from Negapatam to Point Calimere, in the Keevalore Talook.	-- To connect the villages south of Negapatam with the port of Negapatam, as well as to facilitate the communication with Ceylon by the coast road.	Commenced 1848 -	- - - -	7,590 --	7,867 --	Completed 1849 -	-- The bridge is of three segmental arches of 35 and 30 feet span across a tidal river. The bridge was finished in a satisfactory manner, and has proved a most important improvement.
(49.) Bridge over the Nundalam River, on the road between Tranquebar and Negapatam, in the Tranquebar Talook.	-- Was built in consequence of the great increase of traffic between Tranquebar and the ports to the southward of it.	Commenced 1849 -	- - - -	10,179 --	10,631 --	Completed 1849 -	-- The bridge is of five segmental arches of 38, 35, and 32 feet span; the roadway is 24 feet wide. The construction of this bridge was conducted with the utmost vigour and efficiency, and its completion has conducted greatly to the comfort of a large trading population.
(50.) Bridge over the River Trimulrajén, on the road from Combaconum to Negapatam.	-- Built to open the communication between the large town of Combaconum and the chief seaport of the province.	- - - -	- - - -	5,302 --	6,458 --	Completed -	-- This bridge is of five segmental arches of 30 feet span; the foundations consist of solid brick masonry; the piers and the arches of the same material; the entire work was completed within five months in a perfectly satisfactory manner. The width of roadway is 24 feet, including parapets.



(61.) Bridge over the River Moneccandam, on the same road.				9,841	4,584	Completed	-- Of similar construction with the former bridge, except that it is partly founded on walls.
(62.) Bridge over the River Poodari, in the Cadaveras Talook, on the same road.			9,996	3,944	Completed	-- This bridge is similar in construction to the above. The advantages resulting from the construction of these three last-mentioned bridges are fully appreciated by the traders and landholders along this important line.	
(63.) Bridge over the Panmany Combaomam to Maanagooly.	Commenced 1849		5,848	6,996	Completed 1849	-- This bridge is of fine cast arches of 50 feet span; the foundations are of solid brick masonry, and the piers and arches, of similar material, were finished in a style of great efficiency. The work proves of the utmost convenience to the people, and being on one of the Salt roads, subverts materially to the convenience of Government.	
(64.) Beacon Column at Point Callimera.	Commenced in 1848		9,759	2,785	Completed 1849	-- At this point the shoals render navigation peculiarly unsafe. The structure consists of a plain Doric shaft 50 feet high, but hollow, which is to be converted, if necessary, into a light-house. The shaft is of white stone, the material is brick in shape, carefully plastered with a fine white surface; the base is faced with stone to a height of three feet, to secure it from the action of salt.	
(65.) Beach defences at Travancore.			6,058	4,145	Completed	-- This work is effected by means of groins and planting and pile work.	
(66.) Improving the Port of Negapatam.	Commenced in 1846		9,000	9,500	Completed 1849	-- The work consisted of the excavation of a new channel for the Cuddavagar River to bring its whole volume of water to the sea at Negapatam, and the construction of a small sand and rubble jetty to restrain the mouth of the river and facilitate the shipment and landing of goods. The result has been great increase in the trade of the port.	
(67.) Improvement of the Wayacoodam Channel.	Length, 5½ miles	-- 17½ miles eastward of Trichinopoly.	39,748	14,000	Completed	-- The channel is led off from the River Carvery, 10 miles west of Trichinopoly, and flows, including dimonities, 89½ miles; its irrigable land to the extent of 9,321 acres. The channel has been deepened and widened, and the result is highly satisfactory.	
(68.) Rebuilding of Durb's Bridge across the Wayacoodam Channel.		Trichinopoly	9,656	3,110	Completed	-- This channel was crossed near the town of Trichinopoly by an ancient native bridge, or causeway, which caused great obstruction to the free flow of the water, and was most injurious to the cultivation dependent on the channel to the eastward of the town; the old work was demolished, and a new bridge constructed of three segmental arches of 27 and 56 feet span; the width of the roadway is 40 feet. The effect on the channel has been highly beneficial.	
(69.) Extending the Corvelly Surplus Channel.	Commenced in 1848		9,718	9,000	Completed 1849	-- The drainage of 1,656 acres of irrigated land was much impeded by the high level at which it was discharged through the Corvelly Channel into the sea. The drainage was improved by the construction of a dam, by which a fall of nearly four feet was gained; a dam was also constructed for the irrigation of the lands of Killioor.	

No. 9.—PARTICULARS of some of the more Important of the Works executed under the Madras Civil Engineers' Department in the Years 1848 and 1849, &c.—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
SIXTH DIVISION—continued.							
Trichinopoly—continued.							
(60.) Improving the Nadookarray Main Channel.	-- To prevent its being over-supplied from the Cauvery River.	- - - - -	- - - - -	Rs. a. p. 8,701 - -	Rs. a. p. 9,258 - -	Completed - -	-- This channel, branching from the Cauvery on its north side, irrigates the Island of Seringam. The head of the main channel has been extended 3 1/2 miles higher up the course of the Cauvery, and a head sluice built there for regulating the supply of water. The sluice is a work of four vents of five feet each. The irrigation of 4,021 acres of the Seringam Island will be materially benefited.
(61.) Extending the Rettengundy Annicut, and widening the Nuttad Nullah Channel.	-- To facilitate the flow of water for irrigation.	- - - - -	- - - - -	10,948 - -	11,276 - -	Completed - -	-- This annicut is a work of native construction, which serves to carry the Peravully channel (issuing from the Cauvery) across the Oopaur, a large and violent torrent which rises in the neighbouring hills; beyond the Oopaur the channel is called the Nuttad Nullah, and this, after a course of 10 miles, in which it irrigates a large extent of land, finally terminates in the Shengundy Tank. The annicut was much too confined and the nullah too narrow for the vast flood of water that occasionally passed. The addition to the annicut is a solid brick in chunnam wall 11 feet high, 12 feet thick at the base, 4 feet at the crown, and 108 feet long, secured by an apron of stone 40 feet wide, and a wing wall of ample dimensions.
(62.) Improving the road from Trichinopoly along the right bank of the Cauvery.	-- For making the road suitable for traffic at all seasons of the year.	Commenced in 1847	- - - - -	8,683 - -	8,683 - -	Completed 1849 - -	-- The chief masonry works consisted of nine bridges, with an aggregate of 14 arches, varying from 9 to 18 feet, viz., of a bridge of one arch of 18 feet span across the Kizharyapoomun irrigating channel; another of one arch, 12 feet span, across the Chintelwady surplus channel; a bridge of three arches, 10 feet span, across the Pillapolliam surplus; and one arch of 12 feet span across the irrigating channel of the same village; a bridge of one arch, 18 feet, across the Murdoor channel, near Wuddium; another, of 14 feet, over the same channel near Kootitullay; one of two arches, 11 feet, across the Nunga Voikal irrigating channel; one of two arches, 18 feet, across a surplus stream. The roadway of the head sluice was widened by 31 1/2 feet by the construction of three arches of 12 feet average span. Other additional channels, and 24 road tunnels have been constructed. This road is available for cart traffic throughout the year.
(63.) Gaol at Trichinopoly	-- To provide space for more prisoners, the old gaol being inadequate in space, and defective in arrangement.	- - - - -	Trichinopoly - -	14,441 - -	15,975 - -	Completed - -	-- The old gaol was inadequate in space, and defective in arrangement. The new building is calculated for 500 prisoners, including sick. The buildings are arranged in a double row, with a central passage 50 feet wide. The gaol is surrounded by a boundary wall 15 feet high. The drainage and water supply are complete. This gaol has been very favourably reported on by the judicial and medical officers of the station.
(64.) Improving the Peravully Channel.	-- For clearing the bed and strengthening the banks of this great channel for about 15 miles.	- - - - -	- - - - -	4,604 - -	5,113 - -	Completed - -	-- This channel branches from the north side of the Cauvery above the upper Coleroon Annicut, and its main stream irrigates 9,737 acres, yielding 54,552 rupees. The bed has been cleared, and the banks, for 15 miles, strengthened.

987.	(65.) Improving the Fungoony Channel.	-- For widening and deepening its channel.	Commenced in 1849	- - - - -	2,535 - -	2,581 - -	Completed 1849	-- The Fungoony Channel is a branch of the Peravully, and acts both as a draining and irrigating channel. The land dependent on it is about 8,901 acres, producing a revenue of 32,182 rupees. The result of the improvements has been a great improvement in the state of the cultivation affected by it.
	(66.) Improving the Vitticutty Main Channel.	- - - - -	Commenced in 1847	- - - - -	2,077 - -	2,424 - -	Completed in 1849	-- The land irrigated is a comparatively narrow strip, about a mile and a half in width, but its means of supply are abundant. A new branch channel from the Cauvery has been cut, and the main channel for 8,000 yards widened and embanked. An old sluice has been enlarged, and a new one constructed; the new sluice has two vents of five feet each.
	(67.) Bridge over the Cauvery at Trichinopoly.	- - - - -	-- February 1846; length, 1,882 feet.	- - - - -	97,414 - -	99,146 - -	Completed 1849	-- This bridge is of 32 elliptical arches of 49 feet span. The work was commenced in February 1846; in February and April 1847 the works were destroyed by floods. In 1849 the bridge was opened for use. The foundations are on wells sunk nine feet below the bed, which is sand. The piers are 7 1/2 feet average thickness, 8 1/2 feet high, and the rise of the arch 12 1/2 feet; the width of roadway, including parapets (one foot thick) 27 feet; the total length, from wing to wing, is 1,882 feet; the material throughout is brick in chunam. Average daily traffic in October 1850, foot passengers, 9,061; carts and carriages, 223; bullocks and cows, 484; horses, 20.
83	(68.) New road from Trichinopoly to Towagoody, the first stage to Tanjore.	- - - - -	-- April 1849; length, nine miles.	Towagoody	17,878 - -			-- The old line was very circuitous, and in bad order; a considerable extent of the land to be traversed is under irrigation; and the Wayacondam channel crosses the line three times, besides other unfordable irrigating streams. Operations commenced in April 1849, and by the end of that year the following masonry works had been completed: Two bridges, each of three arches of 26 feet span, across the Wayacondam; one bridge, of three arches, 20 feet span; one of three arches, of 16 feet, across the Covelly surplus channel; one bridge of three arches, of 42 feet, over the Killy Voikal (irrigating channel); a single arch of 24 feet span over the Retta Voikal; an arch of 12 feet over the Tadenyval surplus channel; besides 27 tunnels, varying from one and a half to eight feet span. The length of road raised and gravelled through paddy fields is three miles, and through dry lands six miles. The road was opened and used in 1849 (though not quite finished); it facilitates the access to many villages surrounded by wet cultivation and watercourses, which previously cut them off from the great local market for their produce.
	(69.) Constructing part of road from Trichinopoly to Arriailoor.	- - - - -	- - - - -	- - - - -	2,188 - -			-- The portion of road extends for 1 1/2 mile across a sheet of irrigated land; and the masonry works include a bridge of five arches across the Cooyasur, and one of three arches over the Fungoony. In 1849 the earthwork of the road was finished and covered with sand; seven tunnels and three small bridges of various dimensions were built.
	(70.) Improving the road from Trichinopoly to Laal-goody.	-- For raising low inundated parts, and building eight tunnels and three bridges.	- - - - -	Laulgoody	1,347 - -			-- This road extends for 10 miles through one of the richest tracts of irrigated land in the district, and being quite neglected for a long period, and unprovided with any bridges or tunnels, it was impassable for carts.

(continued)

No. 2.—PARTICULARS of some of the more Important of the Works executed under the Madras Civil Engineers' Department in the Years 1848 and 1849, &c.—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
SIXTH DIVISION—continued. Trichinopoly—continued.				Rs. a. p.	Rs. a. p.		
(71.) Widening the Vuddavarr River, and forming a dike on its left bank in Manargoddy Talook.	-- To improve the means of irrigation.	-- -- --	-- -- --	2,050 -- --	3,056 -- --	Completed -- --	-- The Vuddavarr River branching from the Coleroon, supplies the great Veeranum tank, and irrigates about 40,000 acres, yielding a revenue of 2,00,000 rasees. The channel has been widened for a distance of 3½ miles, and a dike constructed; the result has been the resumption of cultivation on 85 acres of land previously abandoned, and the far more abundant supply of water to the irrigated tract.
(72.) Repair of the banks of the Coleroon in the limits of Goodelaspady, in Chellumbrum Talook.	-- To force back a due proportion of the current into the southern branch.	-- -- --	-- -- --	3,230 -- --	3,264 -- --	Completed -- --	-- The Coleroon divides into two branches a short distance below the ferry on the road from Madras to Tanjore, the southern branch of which had been greatly filled up with sand. It became necessary to check the great draught of the northern arm by forcing a due proportion of the current into the southern branch, for which purpose an embankment 400 yards in length and five yards in height was thrown across the northern stream, with a view of the additional stream thrown into the southern channel clearing out the sand by which it was obstructed. The embankment remained firm until the extreme freshes in July, when, as was expected, it was breached; after having had the most decided effect in restoring the proportions of the two streams; but the operations could not be considered final.
(73.) Improving the road between Manargoddy and Chellumbrum.	-- For completing the road as far as Laulpett.	Length, 12½ miles --	Laulpett -- --	4,896 -- --	5,981 -- --	Completed in 1850 --	-- The road lying across an alluvial plain, subject in many places to inundation, was impracticable for all wheeled carriages, and very difficult even for bullocks. The distance formed under this expenditure is 12½ miles in both talooks. There are 16 masonry tunnels varying from one to three feet.
(74.) Improving the road from Laulpett, through Manargoddy to Womampillioor.	-- Raising and forming the road for six miles, and constructing seven tunnels.	-- -- --	-- -- --	2,717 -- --	2,799 -- --	Completed -- --	-- This is a much frequented road between the district of Tanjore and South Arcot. The road has been raised for six miles, and seven tunnels of three feet span constructed.
(75.) Bridge across the Khanasai's channel, on the road between Manargoddy and Chellumbrum.	To enlarge the waterway --	Commenced in 1849 --	-- -- --	3,233 -- --	3,244 -- --	Completed in 1849 --	-- The bridge was injured by a flood in 1847, while unfinished, and it was found necessary to enlarge the water-way. It has one segmental arch of 40 feet span, and was completed in 1849, in a very satisfactory manner. The foundations and superstructure are of solid brick masonry; breadth of roadway 19 feet.
(76.) Bridge across the Nundimungalum Openear River, on the road between Chellumbrum and Sheally.	-- To obviate the difficulty caused to the traffic.	Commenced in 1848 --	-- -- --	16,077 -- --	16,170 -- --	Completed in 1849 --	-- This is a great draining stream which falls into the Coleroon; it always caused most serious difficulties to the traffic. The bridge, which is of three elliptic arches of 49 feet span, was finished in 1849; height of the piers 10 feet; rise of the arch 12 feet; breadth of roadway 24 feet, including parapet. The greatest possible advantage has resulted to the extensive traffic on the line.

SEVENTH DIVISION.

(77.) Perambaddy Pass. Line from the frontiers of Coorg to the Coast at Cannanore.

-- To connect the great western trunk road from Madras with Cannanore, with a branch to Tellicherry, on the western coast.

2,00,376

-- It is stated that, in 1842, there was no tolerable road from the interior to the great trading town of Tellicherry, or to Cannanore; the only road practicable for wheels being by the Periah Pass, which from its steepness could not be kept in such condition as to be used by bandies during the rainy months, a season in that part of India occupying a third of the year. The roads on this part are most dangerous, from the fevers which infest them, and in consequence of which no inducement will keep the people to their work, and the Ghaut is so situated in a narrow gorge, that it could not be remodelled. The Perambaddy Ghaut makes a descent from the level of Coorg to the plain of Malabar of 3,000 feet in 10 miles, the inclination varying from 1 in 18 to 1 in 24, with a very short grade, 1 in 16. There is no counterslope in any part of the line, and only a few yards of level. Besides the Ghaut, the estimate covers the cost of the road above and below from the frontiers of Coorg to the station of Cannanore, a distance of 80 miles. There is a year's work at least to be done. Besides the value of the line in a military point of view, as an approach to Cannanore, which is not only the principal cantonment and arsenal on the Western Coast, but the port at which a force could be best collected for embarkation on steamers, the trade will be very great, and the benefit accruing will be felt, both by the Astagan division of Mysore and the town of Tellicherry.

(78.) The Calicut Canal (Malabar).

-- 1st Work. The Pyloes Canal, to enable boats passing down the Cottiaddy River to land their cargo at the port of Vuddagherry. 2d. To connect the Ellatoor and Beypoor backwater by a cutting, six miles. One great object of the navigation is to take the rice of Southern Malabar to the talooks in the north, where pepper is the produce. No. 4. To unite the Beypoor River with Ponany, and that town will have an inland water communication with Calicut and all the coast towns as far as Vuddagherry, within 12 miles of Tellicherry, a distance of 60 miles.

No. 3 Work - 18,429

No. 2 Work - 15,333

No. 1 Work - Completed in 1848.

-- 3d. Calicut Canal. The executive difficulties were a rapid and destructive stream, that in the freshes left the Tambercherry River, and flowed into a small lake through which the navigation had to pass. The cutting was through two parambas, or high laterite ridges. The forcible stream from the Tambercherry threatened to turn the whole current, should it be allowed to flow into the lake, and make its exit by the northern entrance of the canal. This breach was therefore closed, since which much of the lake has been reclaimed for cultivation. No. 4. Tamnoor Canal. The work is progressing, but has been delayed by a bed of sand of the finest description, 30 1/2 feet in depth, having been met with.

R 4

(79.) The Yenudmuckle Apron

-- To fit a great portion of the bed of the lake for cultivation, which would otherwise be under salt water for six months in the year.

about 40,500

-- The works consist of an earthen embankment 550 yards in length, and a calingulab 110 yards from wing wall to wing wall; their effect is to exclude the tide water while the drainage of the country has a free passage to the sea. The dam was destroyed in 1849, in consequence of the piles having been in many cases cut six feet shorter than was planned; the loss by this failure is estimated at 8,758 rupees. A new project has since been sent in for a dam near the sea, on a more secure section and advantageous site.

(80.) Hassanoor Ghaut

-- Originally traced as a substitute for the Guzzlehutty, an ancient pass between Mysore and Coimbatore, too steep for wheels.

23,271

September 1849

-- This work was left for two years untouched, in consequence of the great loss of life fever had occasioned among the work-people. This road will be of value to the towns of Mysore, Coimbatore, Trichinopoly, and perhaps Modura, by giving them an easy communication suitable for carts.

(continued)

No. 9.—PARTICULARS of some of the more important of the Works executed under the Madras Civil Engineers' Department in the Years 1848 and 1849, &c.—*continued*.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
				Rs. a. p.	Rs. a. p.		
<i>SEVENTH DIVISION—continued.</i>							
(81.) The Teppacandoo Bridge	- - - - -	- - - - -	- - - - -	3,000 - -	- - - - -	- - - - -	- - Over the River Moydur, a main branch of the Bowany, and tributary of the Cavary, having its source on the Neigherries, its course follows the line of the mountains, its bed at Teppacandoo being nearly on a level with the country, while a few miles lower down it forms a deep and precipitous ravine 1,000 feet deep, the opposite sides of which are not more than from 2,000 to 3,000 feet apart. This curious feature in the plain is known by the name of the Mysore Ditch. In consequence of the loss of life from fever when the bridge was first erected, the new bridge was made of the simplest form, and prepared of teak timber at Ecosoor, to be put together with the greatest rapidity. The centring was of the rudest kind; a few small straight trees were cut for uprights, and a scaffolding of bamboos lashed together did all that was required. Span of the bridge, 69 feet; height above the bed of the river, 38 feet.
(82.) Examination of the Anamullay Teak Forest.	- - - - -	Commenced 1849	- - - - -	- - - - -	- - - - -	- - - - -	- - This forest was begun to be worked on account of Government in 1849; it is stated that such wood could be stored at Ponany, on the western coast, for half a rupee per cubic foot, as has cost the Bombay Government hitherto 2½ rupees. The only difficulty anticipated in 1849, was the collection of men sufficient to cut the 100,000 cubic feet required to furnish the several departments in Bombay and Madras.
<i>EIGHTH DIVISION.</i>							
<i>Madura.</i>							
(83.) New Sepoy Lines in the town of Madura.	- - - - -	Commenced in 1847	- - - - -	6,090 - -	6,090 - -	Completed in 1848	- - It was deemed advisable to substitute for the thatched huts formerly occupied by the detachment of Native Infantry at Madura, a superior description of house with tiled roof and yard in rear, to be in keeping with other parts of the town, also for the prevention of fires, which were of common occurrence. The new lines have a very neat appearance, and are exceedingly airy and healthy.
(84.) Improvement of the drainage of the town of Madura.	- - - - -	Commenced in 1848	- - - - -	2,586 - -	- - - - -	- - - - -	- - The drains are constructed of old fire stones (granite), backed and covered with brick in chunnam.
(85.) Improvement of road to, and construction of a bridge over the Oopaur River on Road No. 5.	- - - - -	Commenced 1846-47.	- - - - -	- - - - -	2,908 - -	- - - - -	- - The bridge is of three arches; centre arch 15 feet, and side arches each 12 feet.
(86.) Bridge across the Head of Thiroopovvanum Channel.	- - - - -	Commenced 1846	- - - - -	- - - - -	2,315 - -	- - - - -	- - This bridge is of three arches, but was not quite completed.
(87.) Repairs to Road No. 2, between Dindigul and Pulney.	- - - - -	- - - - -	- - - - -	6,492 - -	6,519 - -	Completed in 1849	- - The repairs provided for in the estimate, are confined principally to 4½ miles of black cotton soil, between the villages of Chuttrapetty and Cannacampetty. This road is put in very good order.
(88.) Panlaur River Waggonies.	- - With a view of straightening the course of the stream, and thereby preserving the topee and cultivation on the right bank of the Panlaur from injury during high freshes.	Commenced in 1847	- - - - -	1,930 - -	- - - - -	- - - - -	

(80.) Restoration of the Coonor Anicut.	-- For restoring the anicut to an efficient state.	Commenced in 1847 -	1,975 - -	2,050 8 -	Completed - -	-- The cultivation under this anicut had fallen off to a considerable extent for want of sufficient water, the body of the anicut being in a leaky state, and the head of the channel too confined. The materials and workmanship were of good quality.
(81.) Rebuilding Causeway across the Vigay River.	- - - - -	Length, 1,095 feet -	1,173 15 -	- - - - -	- - - - -	-- The method pursued has been to place three lines of stone endwise, to serve as retaining walls to the pavement, and prevent the stand being removed from under it; the spaces filled up with rubble in cement.
(81.) Supplying channel of Vad-dakurray Tank from the Peracaul on the Vigay River.	- - - - -	Commenced in 1849 -	1,726 - -	- - - - -	- - - - -	-- The estimate provided for raising and widening the right bank and for repairing six sluices of irrigation in the same, besides sundry other items for masonry work.
(82.) Cotton Gin-house at Shevacansee, in the Santoor Talook.	-- To accommodate two (2) 60 saw-gins worked by cattle, and three (3) hand-gins.	- - - - -	2,085 - -	2,699 - -	Completed - -	-- The materials and workmanship were favourably reported on.
(83.) Bridge across Nally Oday, on the high road from Madras to Quilon.	- - - - -	Commenced in 1846 -	2,987 - -	4,091 - -	Completed in 1848 -	-- The bridge is of three arches of 30 feet span each, and its construction has been of great service to the traffic of the district, particularly to the cotton banties.
(84.) Floorings to six of the arches of the Ambassamooduram bridge across the Tambrapourney river.	- - - - -	- - - - -	1,223 - -	1,295 - -	Completed in 1848 -	-- The dip or versed sine of the flooring is three feet, and the span of the arches 45½ feet. The work was carried into effect in a satisfactory manner.
(85.) Repairing high road No. 4, from Madras to Quilon, in the Ootspadaram Talook.	- - - - -	Commenced in 1848 -	5,311 - -	5,311 - -	Completed in 1849 -	-- The natural soil of the road is "black cotton." The principle of construction is, first, to raise the road half a yard or more above the level of the country with soil from the side trenches, and to place thereon a foundation of broken stones nine inches in thickness, and over them a coating of gravel of the same thickness. This plan is found to answer well.
(86.) Reconstruction of the Thimmarajassamoodrum Cooteacaulanicut across the Monneemoolar.	-- Its reconstruction appeared likely to be less expensive in the long run than partial repairs.	- - - - -	2,486 - -	2,538 - -	Completed - -	-- The body of this anicut was in a very leaky state, and the foundations undermined. The foundations were of brick in chunnam laid on rock, at the depth of 2½ yards, and the body of the anicut above of the same material, faced with cut stone.
(87.) Restoration of the Thirtangul Pervecolum, in Santoor Talook.	- - - - -	- - - - -	1,427 - -	1,525 - -	Completed 1847-48 -	-- The tank bund has been raised, and a breach closed at the south end by a wall of rough stones in chunnam. Since the repairs, the tank has been yielding a revenue to Government.
(88.) Repair of the Thentharpalree Head Sluice, in Siraevigoonnam Talook.	- - - - -	- - - - -	2,700 - -	2,700 - -	-- Completed; date not given.	-- This work serves to supply water from the Tamrapoor River to 1,070 acotays of land, yielding a revenue of 23,081 rupees annually. The foundations are of brick in chunnam, laid at the depth of nine feet on stiff clay.
(89.) Newmasonry anicut channel and tank in Santoor Talook.	- - - - -	- - - - -	1,070 - -	1,272 - -	-- Completed; date not given.	-- The anicut was breached by freshes in 1847, so close which effectually it was necessary to extend the anicut for a distance of 44 yards, and to connect it by a wing-wall with the head of the channel; a further portion of 16 yards required to be raised, also the channel and tank banks and revetments required raising. The body of the anicut is of rough stone in chunnam, floored on top with brick in chunnam.

(continued)

No. 9.—PARTICULARS of some of the more Important of the Works executed under the Madras Civil Engineers' Department in the Years 1846 and 1849, &c.—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<i>EIGHTH DIVISION—continued.</i>							
<i>Madura—continued.</i>							
(100.)	Cumadien Channel, from an ancient across the Tambrapoorney, in Shairmadevy Talook.	- - - - -	- - - - -	Rs. a. p. 2,135 - -	Rs. a. p. 2,231 - -	Completed - -	-- The banks were raised, and the bed of the channel cleared, several sluices repaired, &c. The channel is one of the most, if not the most valuable work in Tinnevely, yielding nearly two lacs of rupees annually to Government.
(101.)	Tinnevely Channel, from the Sootamulley Anicut, across the Tambrapoorney.	-- With the view to the preservation of existing revenue, which, in Fealy 1258, amounted to 63,942 rupees.	- - - - -	1,118 - -	1,123 - -	Completed, 1848 -	The repairs were similar to the above.
<i>Tinnevely:</i>							
(102.)	New Sea Custom-house and Master Attendant's Office, at Tentacurin.	-- The former Sea Custom-house having been found insufficient for the wants of the port of Tentacurin.	- - - - -	2,338 - -	2,339 - -	Completed - -	-- The former Sea Custom-house having been found insufficient for the wants of the port of Tentacurin, has been transferred to the post-office department. The master attendant's office and the customs and salt department are under one roof, with verandahs front and rear. The material is sandstone in chunam.
(103.)	Talook Revenue and Police Cutcherry, in Streevigoontum.	-- The want of a good cutcherry at Streevigoontum was very much felt.	- - - - -	2,521 - -	2,782 - -	Completed - -	-- Constructed throughout of burnt brick in chunam, with tiled roof, in the form of a parallelogram; length, outside, 91 $\frac{1}{2}$ feet, and breadth, 53 feet; contains one room for Tamil and another for Hindoo records, with a room for prisoners under examination. The treasury room is a separate building, in the centre of the inner court, with flat terraced roof, and iron-barred door.
(104.)	Repairs on the high road from Madras to Quilon, in several Talooks.	- - - - -	- - - - -	- - - - -	1,704 - - 7,786 - - 5,688 - -	- - - - -	-- The estimates provided for constructing pavements, open drains, and tunnels. Their construction has been of great service to the traffic on lines, of which a part has been made available thereby for wheeled conveyances during the rains.
(105.)	Mallacul Channel, from the Murdoor Anicut, on the Tambrapoorney River.	- - - - -	- - - - -	1,946 - -	- - - - -	- - - - -	-- This is one of the most important irrigating channels in the Tinnevely district, the annual revenue derived from it being about 1 $\frac{1}{2}$ lacs of rupees. The breadth of this channel was insufficient; the first 4 miles 4 furlongs and 170 yards of the channel's course had been widened to an average breadth of 14 yards, and the bed cleared of rock.
(106.)	Panpancanl Channel, from the Carapanuddee.	- - - - -	- - - - -	1,017 - -	1,166 - -	Completed - -	-- The bed of this channel has been widened, and cleared of rocks and deposit. The numerous tanks dependent on it have been rendered more effective, especially the large tank of Veersakamance, in the Sunkermnarcovil Talook, the crops under which frequently suffered from drought, owing to the bad state of the channel.



## No. 10.

A STATEMENT of Expenditure on Works of Irrigation, Roads, Bridges, and Ghauts in the Collectorates under the Presidency of Fort St. George, for the years ending 1838 to 1847 inclusive, will be found at Page 166 of the Printed Parliamentary Paper of the Honourable the House of Commons, No. 622 of 1851, the total amount being 82,51,187 rupees.

The expenditure in the Civil Engineer's Department, and by that of the Superintendent of Roads, for the years 1848 and 1849, was as follows :

Y E A R.	BY CIVIL ENGINEER'S DEPARTMENT.	BY DEPARTMENT OF SUPER- INTENDENT OF ROADS.	TOTAL.
	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>
1848 - - - -	* 18,17,192	1,54,627	14,71,819
1849 - - - -	* 9,94,603	2,57,519	12,52,122

\* Exclusive of expenditure on the Godavary Anicut

In a Report from the Board of Revenue, in the Department of Public Works, the total disbursement during the year 1850, on Public Works is shown to have been

Fort St. George  
Public Works  
Letter, 18 May  
(No. 2) 1853.

Y E A R.	FOR WORKS OF IRRIGATION.	FOR BUILDINGS.	FOR ROADS.	FOR TRUNK ROADS.	TOTAL.
	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>
1850 - -	9,60,960	1,05,516	1,62,165	3,52,523	15,81,165

Total Expenditure for the year 1838 to 1847 inclusive - -	<i>Rs.</i>	82,51,187
"    "    1848    "    - -		14,71,819
"    "    1849    "    - -		12,52,122
"    "    1850    "    - -		15,81,165
Total Expenditure for the year 1838 to 1850 inclusive - <i>Rs.</i>		1,25,56,293



## PRESIDENCY OF BOMBAY.

## No. 11.

## FORMATION OF THE ROAD AND TANK DEPARTMENT AT BOMBAY.

IN 1836, the Government of Bombay represented to the Court the bad state of the roads at that Presidency; that the tanks and bunds also were under no effective supervision, and reported that they had instituted the Department of Roads and Tanks, which measure was approved of by the Honourable the Court of Directors in 1837, as will be seen from the following extract from their despatch to the Government of Bombay, dated the 2d of June in that year.

Para. 8. "The bad state of the principal roads in your Presidency is attributed to the absence of systematic supervision, and to the employment of many persons on the same line, who are frequently without knowledge of road making, and have not time to look after the portion under their charge. The tanks and bunds are also stated to have been under no effectual supervision.

Answer to Letters dated 28th February (No. 6) 1836, and 18th March (No. 10) 1836.

Reporting the adoption of a new system for the improvement of the roads, tanks, and bunds of the Presidency, and various measures commenced or proposed.

9. "The measures recently adopted to remedy these defects, consist of the appointment of one engineer officer as superintendent of roads and tanks in the Concan, Poonah and Ahmednuggur collectorates, to act in concurrence with the Collectors of Poonah, Ahmednuggur and the Concan, having under him two junior engineer officers, as assistants in each collectorate; and you propose eventually to place other districts under similar superintendence. There will, as you state, be some increase of expense occasioned by this plan, but no additional appointments will be required; the officers employed will not be diverted from their usual duties, their operations will merely become more systematic and combined."

Although these measures were not altogether approved of by the Bengal Government, the Court's sanction is nevertheless requested, as they will prove of immense benefit to the inhabitants, and greatly increase the revenue. The construction of a causeway to connect Salsette with the Continent, at an estimated expense of 20,000 rupees, is also earnestly recommended for the Court's sanction.

2. Under date the 10th August 1836, the superintendent of roads submitted his first progress report under the new system, with a short description of the roads of the Presidency, from which it appeared, that there existed 449 miles of old roads, the repair of 211 miles only of which had been provided for, at a sanctioned charge of 36,449 rupees per annum. The only metalled road was that from Poona to Panwell (88 miles), being the only made road up the ghauts between the Tull Ghaut on the north and the Parr Ghaut on the south, both of which are nearly 100 miles distant, and both exceedingly difficult, indeed almost impassable for laden carts; so that all the wheel traffic from the Deccan might be said to be dependent on this line. In continuation of this line to the northern stations was the road to Ahmednuggur, but this had never been constructed on any regular system, cheaply patched in parts, and expensively though imperfectly built in others, partly under civilians, partly under contract, partly under engineers. The next in importance was the Great Northern Road, leading by Tannah and Bhowndy to Nassick; this "was constructed several years ago, but the line chosen presents so many difficulties, in the want of forage and water, and the extraordinary steepness of its ascents and descents, sometimes exceeding one in four, that it has become absolutely necessary for the furtherance of trade to improve the old, or construct a new route for the introduction of carts."

**Tanks.**

Of the old tanks, it was stated in 1836, "few are now in use for the purposes of irrigation, \* \* \* they are choked with the yearly accumulation of mud; one, however (the Paste), has to be partially cleared out for the purpose of affording drinking water; and one (the Goreygaum) has been thoroughly cleared, and its sides built up to the height of several feet."

**Bundaras.**

On the subject of bundaras, it was stated, that "in the Ahmednuggur collectorate, particularly towards Nassick, every stream appears to have been most carefully husbanded in former days, not by damming it up in large sheets of water, but by merely throwing low walls across them, at distances of three or four miles asunder, and diverting the channel into watercourses for the purposes of irrigation after the close of the rainy season; of these bundaras many are in ruins, and very few complete."

On the receipt of the annual report for 1846-47, Sir G. Clerk recorded a minute concurred in by the Commander-in-Chief, proposing to abolish the Department of Roads and Tanks, and by incorporating its members with the Military Engineer Establishment, to provide a concentrated and general system of supervision and control over the entire Department of Public Works. The plan proposed to provide each district with a superior professional executive officer, in whom should be vested exclusively (subject to the general control of the superintending engineer of the division) the duty of originating and personally planning all public works of importance, he alone being responsible for their proper execution, his subordinates being merely required to work out the details under his instructions.

Sir George Clerk did not, however, remain long enough in India to carry out the scheme, and the Government of Lord Falkland deferred the proposed reforms until the Court's sentiments thereon had been declared. The Court's instructions were communicated to the Government of India in their despatch,\* dated the 30th January (No. 2) of 1850.

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\* See printed Parliamentary Return of the Honourable the House of Commons, No. 622 of 1851, pp. 149, 150, and 153.

TABULAR STATEMENT of the PRINCIPAL WORKS executed by the BOMBAY ROAD and TANK DEPARTMENT, from 1836 to 1850-51 inclusive, and by the BOMBAY ENGINEERS in the Civil Branch of Public Works, from 1846-47 to 1850-51 inclusive.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
Ahmednugger to Searoor -	- - - - -	Length, 16 miles	Searoor - - -	<i>Rs. a. p.</i> -- Executed by convict labour.	<i>Rs. a. p.</i> - - - - -	-- Formed prior to the year 1840.	-- This line was excellently completed in two seasons, under the superintendence of the Road and Tank Department.
Ahmednugger to Malligaam -	- - - - -	Length, about 10 miles	Malligaam - - -	-- Executed by convict labour.	- - - - -	-- Finished in 1839, with the exception of drains and bridges, but including a very difficult and extended ghaut.	-- Constructed under the superintendence of the Road and Tank Department.
Akoordie New Road and Junction Lines.	-- The Ounde and Panowlie and Bhojpoor lines will be abandoned on the completion of the Akoordie road, and the saving in repairs will amount to no less than 4,800 rupees per annum.	-- Length, 8½ miles; sanctioned 25th November 1847.	- - - - -	-- Executed under contract.	<i>Rs.</i> For Roadway, 18,432 For Bridges and Nullahs } 28,426 <hr/> Rs. 46,858  Or, 5,612 rupees per mile.	- - - - -	-- The rate of cost of this road may be accounted moderate for a metalled and perfect road in the Deccan, considering that the country is almost always either undulating and intersected by numerous water-courses, or else composed of black soil, where the foundations of a road are an unavoidably expensive item. This road, commencing at the Dapooree Bridge, was stated to be in very good repair in December 1849, but the traffic increasing, it became dreadfully broken up during the hot weather, and it has subsequently been put into good order. In 1851 an expenditure of 6,938 rupees was sanctioned for increasing the width of the road from 20 to 25 feet, in consequence of the increase of carriage and cotton cart traffic.
Agra and Bombay Road -	-- See paras. 13 to 17 and 66 of Court's Despatch to the Government of India, dated 30 January (No. 2) 1850, at pages 147, 148 and 153 of the printed Paper of the Honourable House of Commons, No. 622 of 1851.	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
The Wakee Nullah Bridge, No. 1.	- - - - -	Commenced 1845-46	- - - - -	3,744 5 6	- - - - -	Completed 1846-47 -	-- This bridge consists of a semi-elliptical rubble masonry arch, 30 feet span and 8 feet rise, with two side semi-circular arches of 5 feet span each. The work throughout is constructed of rubble masonry, on a pitched foundation of the same; the breadth of roadway between the parapets is 18 feet; the roadway is embanked on the north side 250 feet in length, and on the south side 450 feet, at an average height of 5½ or 6 feet. The parapet is 3½ feet high, and the length of parapet from end to end, 71 feet. The top is coped with chunam plaster.

(continued)

No. 12.—TABULAR STATEMENT of the Principal Works executed by the Bombay Road and Tank Department, from 1836 to 1850-51 inclusive, and by the Bombay Engineers, &c.—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<i>Agra and Bombay Road—continued.</i>							
The Wakce Nullah Bridge, No. 2.	- - - - -	- - - - -	- - - - -	Rs. a. p. 4,120 - -	Rs. a. p. - - - - -	Completed 1846-47 -	-- This bridge is composed of two wooden trusses, each 54 feet in length, firmly fixed in rubble masonry abutments. The road being laid on the lower beams of the trusses, it has a water-way of 46 feet in the clear, the road crossing the nullah somewhat obliquely. The trusses are composed of pieces of teak, none exceeding 10 feet in length, taken out of the ruins of the fort of Malligaum. The embankment on the south approach is about 530 feet, filled in to an average height of 6½ feet; that on the north approach is 500 feet.
Walwarree Nullah Bridge	- - - - -	Commenced 1845-46	- - - - -	3,004 10 8	- - - - -	-- Completed season 1846-47.	-- This bridge is composed of two semi-elliptical arches of 13 feet span each, and 6 feet rise. The breadth of the roadway between the parapets is 13 feet, and length of parapet, from end to end, 60 feet. The roadway is 22 feet broad, and embanked on the north side of the bridge 430 feet in length, and on the south side 530 feet, and an average height of 5½ feet. The work throughout is constructed on a pitched foundation of an uncoursed rubble masonry to a depth of 4 feet.
Kussara to Kurdee, proposed New Line.	To supersede the old line of road	-- Sanctioned 18th March 1849.	Kurdee - - - -	- - - - -	1,89,391 - -	- - - - -	-- The new line only deviates from the old one where the dips are at present too steep for traffic, and no slope is to exceed 1 in 19.
Bridge over the Pharserry River.	-- The post was occasionally delayed as much as eight hours.	- - - - -	At Pimpulgaom.	- - - - -	- - - - -	- - - - -	- - - - -
Agra Road, between Scindwal Fort and the River Nerbudda, through the Nimar Territory.	-- Converting it into a fair-weather road.	-- Length, 49 miles; commenced 1849.	Nerbudda River -	3,705 13 3	- - - - -	Completed 1850 -	-- The nature of the work is the removal of obstructions, the cutting of side drains, and the sloping the approaches into rivers and nullahs. This has been an useful piece of work. The amount here expended is said to be required to be spent annually on this piece of road, to make it a clearly marked fair-weather road during the proper season.
Akheira: Repairing Bhundarraah and Watercourse.	- - - - -	- - - - -	- - - - -	1,183 8 7	- - - - -	Completed 1849 -	-- It was satisfactorily completed shortly after the commencement of the past official year.

98 Bombay, <i>via</i> Tannah and Bhowdy, to Nasseck, <i>via</i> Tully Ghaut, on the Great Northern Road.	-- For the furtherance of trade with Candesh.	- Length, Bombay to Bhowdy, 33 miles; Bhowdy to Nasseck, 78 miles. This road was constructed previously to 1836, and provision made for annual repairs.	Nasseck - - -	Not known - -	Not known - -	Not known - -	-- The line chosen presented so many difficulties, in the want of forage and water, and from the extraordinary steepness of its ascents and descents, sometimes exceeding one in four, that a new route was ordered to be surveyed in 1836.
Bombay: Continuation from Nasseck to Chandore.	- - Ditto - - ditto - -	- - Length, 40 miles, which completes the line as far as the Candesh Collectorate. Sanctioned season 1835-36.	Chandore - - -	- - - See Nasseck and Chandore Road, Letter N.			-
Bassein: Construction of the Gerridge Bund.	-- For the recovery of land from the sea.	- - - - -	- - In the neighbourhood of Bassein.	- - - - -	- - Two estimates, Rs. 9,354. 12. 8.	- - - - -	-- In 1841 the Superintendent reported that the estimates would be considerably exceeded before the works could be completed, if, with reference to the violent ebbing and flowing of the tide, that end could ever be accomplished. Report of 1839, page 19. Letter 61, of 1840.
Bassein: Construction of the Kullam Bund.	- - Ditto - - ditto - -	- - Sanctioned 15th February 1838.	- - ditto - -	- - - - -	9,122 11 -	- - Completion not reported.	-
10 Bhore Ghaut Road - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - This road runs in a single line as far as Poona, where it receives, as in a centre, 4 the diverging lines from Ahmednuggur, Sholapore, and the Neera Bridge, the prolongation of which extends the communication to the centre of the Peninsula.
Bombay: The Bombay Pier; the Tannah Causeway and Bridge; the road from Trombay to Chimboor; the Chimboor Causeway, and the junction of this work with the causeway at Sion.	- - Connecting the former islands of Bombay, Salsette and Trombay into one, and these again with the main continent of India.	- - - - -	- - These works are all within 23 miles of the capital.	- - These works were undertaken by convict labour, and are all of such a costly and extensive description that it was considered that they could not possibly have been undertaken by other means.	- - - - -	- - Completion of the Chimboor Causeway, and of the Trombay and Chimboor Road, reported in season 1840-41.	- - These works open two more lines of ingress for the traffic of the port, which owing to its chief export (cotton), and the one particular season at which it all crowds into the harbour, are particularly wanted, giving a very greatly increased value to all property in the island of Trombay, and leading to the reclaiming of many thousands of acres of ground from the sea.
Bhadra, repairing the Bundarrah and Watercourse of.	For irrigation - - - -	Season 1847-48	Bhadra - - -	Rs. 2,968. 1. 11.	- - - - -	- - Completed season 1840.	- - The work was completed satisfactorily shortly after the commencement of the official year.
Bazar, Peera, Sattara: constructing a tunnel at.	- - To connect the town of Sattara with the valley of the Omooree River, a high ridge having previously interposed an effectual barrier to communication between them without a long detour.	Length, 192 feet	Omooree Valley -	- - - - -	- - Rs. 31,500. 14. 9., of which Rs. 18,700. 14. 9. were to be subscribed by the natives.	- - - - -	- - This tunnel was completely driven through the range joining Esteswar and the port of Sattara into the Omooree valley, in January last. Length, 192 feet; breadth at base, 30 feet; at top, 24 feet; height from bottom to roof, 24 feet.

(continued)

No. 12.—TABLE STATING OF THE PRINCIPAL WORKS EXECUTED BY THE BOMBAY ROAD AND TANK DEPARTMENT, FROM 1830 TO 1850—51 INCLUSIVE, AND BY THE BOMBAY ENGINEERS, &c.—CONTINUED.

NAME OF WORK.	Object of Construction.	Length and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
Agra and Bombay Road—continued. The Waiwar Nullah Bridge, No. 2.	-	-	-	Rs. 4,150 - -	Rs. 6,000 - -	Completed 1846-47 -	-- This bridge is composed of two wooden gresses, each 34 feet in length, firmly fixed in rubble masonry abutments. The road being laid on the lower beams of the gresses, it has a water-way of 40 feet in the clear; the road crossing the nullah at an oblique angle. This was a very important work, and the bridge, which is 10 feet in length, takes out of the ruins of the fort of Malligrama. The embankment on the south approach is about 650 feet, filled in to an average height of 6½ feet; that on the north approach is 500 feet.
Waiwarre Nullah Bridge	-	Commenced 1845-46	-	3,004 10 8	-	-- Completed season 1846-47.	-- This bridge is composed of two semi-elliptical arches of 13 feet span each, and 6 feet rise. The breadth of the roadway between the parapets is 18 feet, and length of parapet, from end to end, 80 feet. The roadway is 23 feet broad, and embanked on the north side of the bridge 490 feet in length, and on the south side 530 feet, and an average height of 6½ feet. The work throughout is constructed on a pitched foundation of an unconsolidated rubble masonry to a depth of 4 feet.
Kassera to Kander, proposed New Line.	To supersede the old line of road	-- Functioned 18th March 1842.	Kandee	-	1,53,281 - -	-	-- The new line only deviates from the old one where the dips are at present too steep for traffic, and no slope is to exceed 1 in 19.
Bridge over the Phare-sherry River.	-- The post was occasionally delayed as much as eight hours.	-	At Pimpignoon.	-	-	Completed 1850	-- The nature of the work is the removal of obstructions, the cutting of side drains, and the sloping the approaches into rivers and nullahs. This has been an useful piece of work. The amount here expended is said to be required to be spent annually on this piece of road, to make it a clearly marked fair-weather road during the proper season.
Agra Road, between Seindwal Fort and the River Nerbudda, through the Mimar Territory.	-- Converting it into a fair-weather road.	-- Length, 43 miles; commenced 1846.	Nerbudda River	3,708 13 3	-	Completed 1849	-- It was satisfactorily completed shortly after the commencement of the past official year.
Atheera: Repairing Bhumdarah and Watercourse.	-	-	-	1,188 8 7	-	-	-



Bombay, of Trambak and Bherwady, to Nasick, via Tully Ghant, on the Great Northern Road.	For the furtherance of trade with Candlish.	Length, Bombay to Bherwady, 53 miles; Bherwady to Nasick, 78 miles. This road was constructed provisionally to 1839, and provision made for annual repairs.	Nasick	Not known	Not known	Not known	The line above presented so many difficulties, in the want of forage and water, and from the extraordinary steepness of its ascents and descents, sometimes exceeding one in four, that a new route was ordered to be surveyed in 1850.
Bombay: Continuation from Nasick to Chandore.	Ditto	Length, 40 miles, which completes the line as far as the Candlish Collectorate, sanctioned season 1839-40.	Chandore	See Nasick and Chandore Road, Letter N.	Two estimates, Rs. 9,264, 18. 8.	Not known	In 1841 the Superintendent reported that the estimate would be considerably exceeded before the work could be completed. If, with reference to the violent shelling and burning of the tide, that road could ever be accomplished. Report of 1839, page 10. Letter 61, of 1840.
Nasick: Construction of the Gerridge Road.	For the recovery of land from the sea.		In the neighbourhood of Nasick.		Rs. 9,264, 18. 8.	Completion not reported.	This road runs in a single line to Ar as Poona, where it meets, on its return, the diverging line from Ahmednagar, Sholapur, and the Iron Bridge, the prolongation of which extends the communication to the centre of the Presidency.
Bombay: Construction of the Kallian Road.	Ditto	Sanctioned 18th February 1836.	Ditto		9,122 11	Completion not reported.	These works open two more lines of highway for the trade of the port, and the one particular season in which it all occurs, into the harbours, are particularly treated, giving a very greatly increased value to all property in the Island of Bombay, and leading to the reclaiming of many thousands of acres of ground from the sea.
Bombay: The Bombay Pier; the Trambak Causeway and Bridge; the road from Trambak to Chalmers; the Chalmers Causeway, and the junction of this work with the causeway at Bherw.	Connecting the former islands of Bombay, Salsette and Trambak with the main continent of India.		These works are all within 53 miles of the capital.	These works were undertaken by contract, and are all of a similar kind, and so their classification that it was considered that they could not properly have been undertaken by other means.	Rs. 5,000, 1. 11.	Completion of the Chalmers Causeway, and of the Trambak and Chalmers Road, reported in season 1840-41.	The work was completed satisfactorily shortly after the commencement of the calendar year.
Bombay, Poona, Bherwady: connecting a tunnel at	To connect the town of Poona with the valley of the Chalmers River, a high ridge having previously been passed an elevated barrier to communication between them without a long detour.	Season 1847-48	Bherwady	Chalmers Valley	Rs. 81,500, 14. 8.	Completed season 1848.	The tunnel was completely driven through the range joining Salsette and the part of Salsette into the Chalmers valley, in January last. Length, 102 feet; breadth, 20 feet; and 277, 24 feet; height from bottom to roof, 54 feet.

(continued)

No. 12.—TABULAR STATEMENT of the Principal Works executed by the Bombay Road and Tank Department, from 1836 to 1860-61 inclusive, and by the Bombay Engineers, &c.—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
Chandore Ghaut Road.		-- Length, 5 miles; was laid out, and provision made for annual repairs, previously to the formation of the Road and Tank Department in 1836.		8,069 --			-- This ghaut into the plain of Candelah had a descent of 1 in 5 and a third, but the worst portion is only about 500 feet in length. In November 1841 the Government ordered the slope of this ghaut to be reduced to 1 in 18. This ghaut has been passable for carriages since May 1843.
Chowh on the Great Northern Road to Callian, to be continued to join the Thull Ghaut Road.	-- This road will open up some of the most productive districts in the Northern Concan.	Season 1838-39	Cassian	-- 33 miles finished to 1840-41, at an expense of 22,191 rupees.			-- This line, when finished, with the exception of a few miles between Fern and Nagota, for which sanction is anticipated, will open a line of road through the Northern Concan, from Mahabaleshwar to the Thull Ghaut.
Chiploon, in the Southern Concan, over the Koombarlee Ghaut.	-- With the view of facilitating intercourse and traffic.	-- Length, 17 miles; season 1838-39.		3,340 7 3	-- This line was originally constructed at a considerable cost, but for many years was left without any repairs; a supplementary estimate of 3,112 rupees was passed in 1844-45.		-- This line was, for the most part, obliterated, and required to be constructed "de novo."
Cooly Bridge, repairs of the	To facilitate communication	-- Sanctioned 28th December 1845.	-- Situated on the west of the town of Bapeln.	569 --	569 --	-- Completed season 1845-46.	
Carringa: Construction of a Mamlutdar's Cutcherry.		-- Sanctioned 30th April 1847.	At Ooran		-- 1,367 rupees by contract.		
Chowdanah Bundarrah, improvements to the.	For irrigation	Sanctioned 1845-46	Chowdanah	1,503 9 9		-- Completed season, 1848-49.	-- A large body of water now occupies the place of a mass of sand and deposit, previously choking up the rear of the bundarrah wall, and the supply of water has enabled the villagers to bring under wet cultivation land previously yielding monsoon crops only.
Cunnasee Watercourse, improvements to the.	For purposes of irrigation	Sanctioned 1848-49	Cunnasee	4,961 --		Completed 1849	-- On the 22d of July, and on the 4th October 1849, the parapets of the aqueducts were injured by floods, owing to the steep slopes to the sides of the cutting of the watercourse.
Churrygaum Khind, constructing a road over the.		Sanctioned in March 1850.	Churrygaum	3,168 3 2	4,000 --		

987.

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Chineh Khind, constructing a Bullock Track over the.	-	Length about 2½ miles	-	-	7,148 - -	-	-- This khind is situated on the direct line of road between Neera and Wace; and a line was marked out with a slope of 1 in 21, the line being about 2½ miles in length; for the greater part, the cuttings being through solid rock.
Dapooris and Holkar Bridge Junction Road.	-- To perfect the communication between Bombay and Nuggur, when the Bhogapoor line shall have been abandoned.	-- Sanctioned 25th November 1847.	-	-	-- Under contract for 6,350 rupees.	-	-- It is believed that during the fair season the greater portion of the traffic between these places will proceed by Poona and Kurralee.
Dabaree Patna Bundarrah, improvement of the.	-- For a supply of water to the villagers.	Sanctioned in 1847-48	- On the Girna River bank.	3,712 9 11	-	Completed 1848-49	-- The monsoon of 1848 did not injure this work, but the shifting of the deposit in rear of this bundarrah, consequent on the construction of four sluices on the left bank, and the prolongation of the wall on the right bank, had not given satisfaction to the villagers of Dhabaree and Patna, on the opposite banks of the river, who were constantly quarrelling about the supply of water. It is remarked by the Superintendent of Roads and Tanks, "in a river having low banks, like the Girna River, at the point where this bundarrah is constructed, it does not appear possible to modify an old existing bundarrah so as to supply water in the required proportions to land on both sides of the river; all that can be done is to render the bundarrah and watercourses so efficient that there may be as little loss as possible of the water supplied by the river, leaving it to the villagers, under the superintendence of the proper revenue authorities, to divide the water proportionally to their requirements on either side of the river."
Ghorabunder, New Pier at, and Causeway between Bendora and Muhim.	-- To enable the traffic from Surat to reach Bombay by the direct route of the Muhim Causeway, without incurring the delay often attendant upon the navigation around the southern extremity of the island.	-	-	-	64,239 9 3	-	-- All intention of building the new wharf was abandoned, for the time, in 1845-46, in consequence of the traffic being considered too slight to warrant the extensive outlay.
Ghoreygaum Tank, reconstruction of.	-- To afford supplies of water to travellers.	- Commenced in season 1835-36.	-- In the Northern Concan.	5,958 3 4 of which sum 3,000 rupees were subscribed by the inhabitants.	-	-- Completed, season 1836-37.	-- This work was undertaken on petition of the inhabitants.
Gokhirwa Bridge, repair of the	-- Connects the island of Bassein with the main land.	- Sanctioned 31st March 1846.	-	-	5,702 Supplementary } Estimate - } 976 <u>Rs. 6,678</u>	-	-- This bridge was represented to be much required on account of its being on the high road from Bassein to Bhevnly, and in the neighbourhood of extensive salt pans, the produce of which is conveyed over it into the interior of the country; the supplementary estimate was rendered necessary from the timbers of the old bridge being in so bad a state as to preclude the possibility of their being used to the extent allowed for; the progress of the work was likewise much retarded by the tides by which, at the springs, the piers and abutments were covered for several days.

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No. 12.—TABULAR STATEMENT of the Principal Works executed by the Bombay Road and Tank Department, from 1836 to 1850-51 inclusive, and by the Bombay Engineers, &c.—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expence Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
Jhorgah and Nusseerabad, completing the road between.	- - - - -	-- Length, 63 miles; sanctioned season 1847-48.	Nusseerabad - -	Rs. a. p. 15,151 - 4	Rs. a. p. - - - - -	Completed 1849-50 -	-- The sum of Rs. 172. 15. 6. out of the total cost was incurred for repairs to the embankments and roadways of the bridges, in consequence of the country people having cut them up with their carts before the earthwork had had time to consolidate. It runs somewhat parallel to the Boree and Geerna Rivers.
Kesseylee Bunder - - - -	- - - - -	-- Completed prior to 1840.	Kesseylee - - -	-- Actual cost of materials, and all the labour executed by convicts in 1839, Rs. 10,904. - 6.	-- By free labour, Rs. 45,653. 12.	-- Completed prior to 1840.	-
Kesoordee Tank, in the Poonah Collectorate.	For irrigation - - - -	-- Estimated in season 1835-36. Length about 1,409 feet, of which 139 feet are solid masonry, 1,170 feet earthen embankment, and 100 feet excavation, for an escape channel for floods.	-- Within 24 miles of Poona.	11,824 - -	-- Two estimates, Rs. 7,045. 3. 11., and Rs. 9,043. 11. 1.	Completed in 1837 -	-- Lying across the gorge of a long valley, and to form, when completed, a sheet of water, below which there are upwards of 1,900 acres of fine land lying waste, which by the agreements taken from the natives will be brought under cultivation. The greatest depth of water, when full, will be 38 feet, the greatest breadth nearly half a mile, and the greatest length nearly three-quarters of a mile; this work failed during season 1843-44, from the water rising above the top of the embankment, which was of earth, and carrying away a great portion of it; it is remarked, by the Superintendent of Roads and Tanks, "results such as these, from works designed by officers of acknowledged talent, must impress extreme caution in all future projects of the kind, and I think it will be found that the most profitable method of extending irrigation will be, in the first place, to restore the boundaries which formerly existed in the richer districts, and gradually to extend this system as far as appears practicable, instead of attempting to form immense reservoirs of water in less productive parts of the country."
Khandalla Tank, additions to	-- To render it efficient and complete for the supply of water to travellers.	Sanctioned in 1845 -	Khandalla - - -	1,421 - -	- - - - -	Completed in 1845-46	-- The retaining wall has been raised to an uniform height, and a coping added of three feet broad; coping stones of angular formation have also been affixed to the tops of the well walls, so as to prevent people washing in the water they contain.
Kesseylee: Protection of the village of Kurrud from inundation.	-- The village had been endangered by encroachments of the Kurra River.	Sanctioned May 1845	Village of Kurrud	- - - - -	715 - -	- - - - -	-- The villagers consented to be assessed for the sum of 200 rupees.
Kirkee: Construction of a piece of road.	-- For shortening the communication between the hospital and burial-ground.	-- Length about 3,000 feet.	At Kirkee - - -	-- To be constructed under a contract of 1,920 rupees.	- - - - -	- - - - -	-- In the event of the junction between the new line by Aikoortie and the Nuggur Road being effected across the Depoorie and Holkar bridges, the newly constructed piece now reported on will also form part of the connecting line.

Korgaon: Construction of a foot suspension bridge over the Wyturnee River.	-- A bridge has long been required, the river being of a remarkably peculiar section, very confined in breadth, and extremely deep.	-- Sanctioned season 1844-45.	Korgaon - - - - -	951 - - - - -	- - - - -	-- The amount is probably higher than it may be deemed expedient to lay out on a work off any of the main lines, and for the use of foot passengers only; but no bridge could be built in the locality for less amount.
Khandalla: Erection of a small tiled building.	-- For the purposes of a post-office.	-- Sanctioned season 1845-46.	Khandalla - - - - -	286 - - - - -	256 - - - - -	-- Completed season 1845-46. -- The outlay exceeded the estimate by 30 rupees, chiefly in consequence of teak having been used instead of junglwood in the construction of the doors and windows.
Karlee, on the Panwell and Poona Mall Road: construction of new works.	-- For a travellers' bungalow, and a public well.	-- Sanctioned season 1845-46.	Karlee - - - - -	-- For bungalow, 2,280 rupees; for well, 770 rupees.	- - - - -	-- Completed season 1845-46. -- The bungalow was entirely new, and includes out-houses; the well is a complete construction of cut stone masonry.
Kundanah Bundarrah, improvements to the.	For irrigation - - - - -	Sanctioned 1847-48 - - - - -	Kundanah - - - - -	1,189 - 1 - - - - -	- - - - -	-- Completed season 1848-49. -- This outlay has been lost to Government, as it appears that no water occupies the place of previously accumulated deposit, or at least in quantities too trifling to be of any service; it would have been difficult, if not impossible, to have anticipated such a failure.
Khutghur Watercourse, improvements to the.	- - - - -	- - - - -	In Candeah - - - - -	1,226 7 - - - - -	- - - - -	-- Completed season 1848-49. - - - - -
Morai Bunder to Carangah	- - - - -	Length, five miles - - - - -	- - - - -	- - - - -	- - - - -	-- This line existed previously to the formation of the Road and Tank Department in 1836, but no regular provision had been made for annual repairs.
Mulligaum and Surat Road	- - - - -	-- Made by the Pioneer Corps, 1823 or 1824.	- - - - -	- - - - -	- - - - -	-- This line never appears to have received any regular repairs; the largest grant on the line is the Koondalbarree Grant, between Dhywell and Beersurwarree, the slopes of which are in some parts 1 in 5.
Mhar: Clearing out of the Chowdar Tank.	For supply of water - - - - -	-- Commenced season 1845-46.	Chowdar - - - - -	4,433 - - - - -	6,407 - - - - -	-- Completed season 1846-47. -- The mud in the bed of the tank was found, after the water was drawn off, to be but 4 1/2 feet in depth, instead of 5 1/2 feet, as had been estimated for; the balance was to be expended in repairing portions of the retaining wall.
Moode Bundarrah, improvement to the.	For supply of water - - - - -	-- Commenced season 1846-47.	In Candeah - - - - -	2,903 5 9 - - - - -	2,698 5 9 - - - - -	-- Completed season 1848-49. -- The excess of expenditure was occasioned by modifications of the original plan.
Memadpoor Tank, prolongation of the retaining wall to the.	To strengthen it - - - - -	Length, 639 feet - - - - -	In Sattara - - - - -	- - - - -	6,540 - - - - -	- - - - - -- This will complete the retaining wall to a length of 639 feet, averaging from 6 to 43 feet high, and with the other repairs tend to the preservation of this old Mohamedan work.
Nagitara to Mahbleshwar Road	- - - - -	-- Length, 71 miles; this line of road existed previous to the formation of the Road and Tank Department in 1836, but no provision had been made for annual repairs.	- - - - -	5,325 - - - - -	- - - - -	- - - - - -- In season 1842-43 it was reported that a contract had been entered into for keeping this line in repair for 5,325 rupees annually, which plan had hitherto succeeded very well, as the road was reported to be in a much better state than in former years.

(continued)

No. 12.—TABULAR STATEMENT of the Principal Works executed by the Bombay Road and Tank Department, from 1836 to 1850-51 inclusive, and by the Bombay Engineers, &c.—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
Chowdware Tank, at Mhar	- - - - -	- - Sanctioned season 1844-45.	- - - - -	Rs. a. p.	Rs. a. p.	-	-
Naseick to Chandore, on the Great Northern Road.	- - Undertaken in continuation of the road which already existed from Bombay to Naseick, to open the flourishing district of Candesh.	- - Length, 43 miles, 2 furlongs, 91 yards; commenced in season 1837-38.	- - - - -	Rs. 57,884. - 10., viz. Road - 27,512 13 2 Bridges, 10,371 3 8  Average, } 274 14 2 per mile - }	- - - - -	Completed in 1839	- - This road, in connexion with the one constructing through Candesh, reaches from Bombay to the Sindwar Pass in the Santapora range, and forms the whole Bombay portion of the road to Agra, while the traffic of Bezar flows into it by the line of Oomera-watty and Mulka-poor; in 1847 it was reported that it would be difficult to find a half mile in any portion of this line which could be justly characterised as in indifferent order.
Naseick and Sinnur Road	- - To connect the towns of Naseick and Sinnur.	- - - - -	Sinnur	- - Expended on the road, Rs. 15,852. 11. 11.	- - - - -	-	- - The portion between Sinnur and Siada is by no means well laid out; no survey was made of this line before commencing it, as the country appeared to present little or no difficulty to the formation of a cleared road; the result has proved that even in the most easy cases it is impossible to produce any satisfactory road without going through all the preliminary details. The road was reported in 1844-45 to be in fair order; paved dips were ordered to be constructed across the four principal nullahs, as the traffic was not of sufficient importance to warrant the outlay for bridges.
Narrangaon: Repairs to a Bridge across a nullah, between Serour and Soopah.	- - - - -	Erected in 1842	Narrangaon	- - - - -	- - - - -	-	- - This bridge was designed by Major Peat; some deflexion is observable in the joists which will render supports necessary; this is ascribed to no fault in workmanship, but solely to deficiency in the scantling of the timber.
Poono to Panwell Road, via Dhaporee, with sid Branch, via Cund and Panowlee.	For traffic over the ghats	- - Length, 86 miles; constructed, and provision made for annual repairs, previous to the formation of the Road and Tank Department in 1836.	Panwell	Not known	Not known	- - This road was constructed previously to the formation of the Road and Tank Department in 1836.	- - This is the only made road up the ghats between the Tull Ghaut on the north and the Parz Ghaut on the south, both of which are nearly one hundred miles (100 miles) distant, and both exceedingly difficult, and indeed almost impassable for laden carts, so that all the wheel traffic from the Deccan may be said to be dependent on this line (in 1839-40); the present ghaut in several places is still somewhat steep, being in some places about 1 in 10, which renders it necessary for carts to drag their wheels in descending. The toll returns of 1839-40 amounted to 18,620 rupees, and of 1840-41 to 27,741 rupees, being an increase of 9,121 rupees. On this line is the Dapoores bridge, 20-feet in breadth and 470 feet in length, with a raised approach on the right bank 540 feet in length; this bridge is of timber, with waterways of 35 feet, and the roadway supported by three trusses, each composed of a straining-beam and three struts; its completion was reported in season 1842-43, the cost having been Rs. 68,587. 15. 10.

<p>Poonah to Ahmednagar -</p> <p>Miles. Poonah to Seroy, 44 Seroy to Ah- } 31 } mednagar - } Miles - - 75 } This line had been laid out previously to 1856, but no provision had been made for annual repairs.</p>	<p>-- In continuation of the Poonah and Parwell lines to the northern stations.</p>	<p>Ahmednagar -</p>	<p>-- 80,161 rupees had been laid out on about 17 1/2 miles of the road prior to 1856, but the total expenditure on the line is not known.</p>	<p>-- By the employment of convict labour it was hoped that the completion of this line would be effected in season 1846-47, at a trifling cost to Government.</p>
<p>Poonah to Kasoolie Road, at the bottom of the Bore Ghaut.</p>	<p>-- Is expected to advance in an extraordinary degree the salt trade carried on from Poonah with the interior of India, by increasing the number of carts instead of bullock caravans.</p>	<p>-- From Poonah, in the Northern Concan, to Kasoolie, at the foot of the Bore Ghaut.</p>	<p>6,700 9 6</p>	<p>-- Completed in June 1857.</p>
<p>Poonah to Sholapur</p>	<p>-- To open out the valuable Barsoo cotton trade, and to insure communication for troops and guns with that military station during the rainy season.</p>	<p>-- Length, 140 miles; surveyed in season 1855-56.</p>	<p>1,27,865 8 6</p>	<p>-- The portion of this road through the cantonment of Poona was specially, in 1846-46, repaired by contract, for 5,156 rupees; estimates were also prepared for extending this road for some distance towards Humnabner, crossing the Nalla which flows past the horse artillery lines by a bridge.</p>
<p>Patas and Indrapoor Road</p>	<p>-- Undertaken for the purpose of furnishing food and employment to the distressed population of the Bherambury and Indrapoor districts, who were expected to be suffering severely, in consequence of successive years of unpropitious seasons.</p>	<p>-- Length, 44 miles, 8 furlongs; surveyed in season 1845-46.</p>	<p>1,49,984 rupees expended to 1847, of which 1,25,308 rupees solely on labour and its superintendance.</p>	<p>-- The superintendance of this work was entrusted to Sergeant Oversee Armitage, whose constant and severe duties of military and civil nature, rendered it impracticable for him to attend on the work. It was therefore necessary to select him the man nearest at hand to the right hand of the road, and to employ on the line a number of people daily employed on the road surveyed in June 1846, six thousand four hundred and seventy (5,470); the workmanship on this line was reported in 1847 to be inferior to some in the Bombay Presidency.</p>
<p>Poonah to the Narni Bridge</p>	<p>-- Length, 40 miles 6 furlongs; this line was in existence previously to the formation of the Road and Tank Department in 1856, but no provision had been made for annual repairs.</p>	<p>-- The expenditure of Rs. 2,075, 19 s. 10 p. was reported to season 1845-46.</p>	<p>-- (1858). The Bapdeo Ghaut, near Poona, is the great obstacle on this line, being almost impracticable for carts, and in some parts dangerous from want of parapet walls; the traffic on this ghaut, however, is stated (in 1847) not to be so important as to render the construction of a new ghaut advisable.</p>	<p>-- In 1840-41 this road was represented to be in good repair, but as it crossed so many waterlogged rivers, it was of little use during the monsoon, and could only be considered as a good-weather road; it will form a portion of the central line between Belgam and Bhandak.</p>
<p>Poonah to Kurnagwan</p>	<p>-- Length, 45 miles 7 furlongs; this line was in existence previously to the formation of the Road and Tank Department in 1856, but no provision had been made for annual repairs.</p>	<p>Kurnagwan</p>	<p>--</p>	<p>--</p>

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No. 12.—TABULAR STATEMENT of the Principal Works executed by the Bombay Road and Tank Department, from 1836 to 1850-51 inclusive, and by the Bombay Engineers, &c.—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount	Estimated Amount	Probable Time of Completion.	REMARKS.
				of Expense Incurred.	for Completion.		
Panwell to Penn - - -	-- For the accommodation of the salt trade.	- - - - -	- - - - -	Rs. a. p. 148 9 -	Rs. a. p. - - - - -	- - - - -	-- Improvements were made to the Aptal Ghant in season 1843-44, much to the convenience of the Bringreets, considerable numbers of whom proceed from Panwell to Penn, to take salt from the latter place.
Paste Tank, repairs to - -	For purposes of irrigation -	-- Sanctioned, season 1835-36; length 1,680 feet; greatest breadth 125 feet, and greatest depth 9 feet.	-- At the village of Paste, in the Sinnur Pergunnah.	-- Cost to Government, 250 rupees, an equal amount having been given by the villagers in money, materials and labour.	- - - - -	-- Completed in season 1836-37.	-- This work, in addition to securing the former baghayet revenue of the village, is to return to Government an additional 30 per cent. on the capital expended.
Panwell Port to the Salt Panes of the Island of Carranjah.	-- This road was undertaken by Government, not only with a view to its general usefulness, but also to furnish employment to the Kattywar emigrants.	-- Length, 40 miles 4 furlongs.	- - - - -	19,188 14 8	-	-	-
Poona New Bridge - - -	-- The old bridge has been removed, it having been in a very unsafe state.	-- Commenced on the 1st November 1845.	- - - - -	Rs. 29,564, of which Rs. 10,382 were subscribed by the inhabitants of the town.	-- Commenced by contract, under Lieutenant Cowper's superintendence, for 26,975 rupees.	-- Completed in December 1846.	-- This bridge was designed by Major Peat. The excess over the contract amount was expense allowed by Government for removing the centreings, &c. of the old bridge.
Panwell Bunder - - -	-- Raising the platform on which the custom-house is situated, together with the reconstruction of masonry revetments.	-- Sanctioned 2 January 1846.	Panwell - - - -	5,725 - -	-- Under contract for 5,725 rupees.	-- Completed season 1846-47.	-
Poona to Ahmednuggur Road -	-- Estimates for constructing stone and foot bridges over the Hung Nullah for 21,704 rupees, and over the Seena River for 6,358 rupees, were submitted in 1843-44; a second flying bridge was constructed at Karringaon, at a cost of 990 rupees. Bridges were sanctioned on the 30th January 1846, over the Kondapoor and Nusudwady Nullahs, the streams of which had hitherto, at flood, invariably impeded the dawk. Both bridges to be built by contract, on designs by Major Peat; that over the Kondapoor Nullah for 6,995 rupees, that over the Nusudwady Nullah for 4,805 rupees.						
Poona and Wangoolie, new line of road.	-- To avoid the present circuitous route by Holkan's Bridge and Lowganm, as far as traffic and communication between Poona and Nuggur are concerned.						



987.	Ratnagherry Collectorate: Construction of road leading into Chiploon.	-- To perfect the communication between the town of Chiploon and the Koombarlee Ghaut.	-- Length, 3 miles; sanctioned season 1845-46.	Chiploon	2,700	-- Completed season 1845-46.	This cross road was very defective.
	Rawere and Dhurungaum Road		Length, 54 miles				-- This is a fair-weather road, passing mostly over black soil; it crosses the Taptes and Geerna, both large rivers with very high banks.
	Ratraz Tank, clearance and improvement of the.	-- The tank is for the supply of the inhabitants of Poona with water; the additional quantity of water which it was calculated would become available through the intended improvements, amounted to 30 days' supply.	Season 1846-47	Poona	46,765		-- The work to be performed includes the removal of 2,900,000 cubic feet of earth, also the re-opening of a channel, and repair of a bund, which had been originally constructed with the intention of carrying off all earthy matter, and preventing any deposit in the tank, but which had fallen into complete neglect and disuse.
	Salsette, roads in the island of		-- 40 miles of road existed previously to the formation of the Road and Tank Department in 1836, for the annual repairs of which provision had been made.	Salsette			-- These roads consist of 17 1/2 miles of the Agra Road, between Sion Causeway and Colsette Bund, of 21 1/2 miles between Bandora and Oherabunder and Sauksee, and an area of 5 1/2 miles between Trombay and Sion Chowkie; their aggregate annual cost for repairs is 12,000 rupees, or 270 rupees per mile.
U	Salsette: Road connecting Sion with Trombay.	-- Opens up a fertile district in the vicinity of Trombay, to the Bombay market, and also affords facilities for the transit of the mail from Panwell during the monsoon.	-- Length of road, five miles.	Trombay		-- Completion reported in 1840-41.	-- This work was performed entirely by convict labour.
	Salsette: Girridge Bund					-- Completed 1840-41, with the exception of the sluices.	-- The slope of this bund is 1 1/2 to 1, with a surface of turf; whereas with such material, the inclination should have been as much as 5 to 1 to ensure stability.
	Salsette: Construction of a bridge across a nullah near the 21st mile on the road to the Chimbor Causeway.	-- In lieu of an old wooden bridge reported to be in a dilapidated and ruinous state.	-- Sanctioned season 1844-45.		1,310		-- This bridge has masonry abutments and wooden superstructure.
	Salsette: Proposed new bridge at Erie Para.	-- In lieu of one which was represented by Sir Jamesjee Jeejeebhoy to be inconveniently shaped and situated, so as to impede the increased traffic which the new causeway was calculated to attract; the old bridge had been built at right angles with the course of the stream, while the direction of the road is very oblique.	-- Sanctioned season 1845-46.	-- About five miles from Bandora.	5,224	-- of which Sir Jamesjee Jeejeebhoy expressed his readiness to furnish 4,000 rupees.	-- The new work will be a skew bridge, consisting of two brick arches, of 20 feet span, with a stone pier and abutments.

(continued)

No. 12.—TABULAR STATEMENT of the Principal Works executed by the Bombay Road and Tank Department, from 1836 to 1850-51 inclusive, and by the Bombay Engineers, &c.—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
Shada: Repairs to a Bundarrah and Watercourse.	For irrigation - - -	Season 1848-49 -	- - At the town of Shada, in Candesh.	<i>Rs. a. p.</i> 885 3 6	<i>Rs. a. p.</i> - - -	- - Completed season 1848-49.	- - The repairs consisted of stopping a considerable leak in the rear of the bundarrah wall, by backing the wall with new masonry near the leaky point, and constructing four breast walls on the line of the watercourse.
Beerwarra: Repairs, &c. to the centre Bundarrah and Watercourses.	For irrigation purposes - -	Season 1848-49 -	In Candesh - -	- - -	- - -	Completed 1848-49	- - The works consisted of breaking two scouring sluices in the main bundarrah wall, building a screen wall with an arched opening at the mouth of the watercourse, and breaking a small open-headed scouring sluice below this screen wall. The parapets of an old aqueduct on the line of watercourse had to be renewed.
Seerumeene Bundarrah, constructing the.	For purposes of irrigation - -	Season 1847-48 -	In Candesh - - -	9,047 12 3	- - -	Completed May 1849	- - It is the first bundarrah constructed entirely by the Engineer Department. The arrangement of the masonry work, &c. was much the same as in modifications of old existing bundarrahs, with the addition of a reservoir and sluice apparatus at the mouth of the watercourse. During the monsoon of 1849, the floods being unusually high, inflicted some slight injuries to the bed of the river and the pointing, but the work had borne the violence of the monsoon as well as could have been wished. The pointing was repaired and the excavation in the river begun to be filled in with dry stone work, protected by a "pukka" masonry apron above, and supported by a retaining wall.
Sattara and the Limb Khind: Road with continuation for 3 1/4 miles.	- - This is a part of the Sattara and Waee Road, a direct Sattara and Poona Road.	- - Season 1850-51; length from Sattara to the Limb Khind four miles, beyond the Limb Khind 3 1/4 miles.	Sattara - - -	8,000 - -	- For the bridge over the Kodally River, 8,748 rupees.	- - -	- - Of the first portion of four miles, two were completed by the prisoners, the remaining two miles were made by Ballajee Punt Nakhoo, inamdar of Pancharwar, at his own expense; the second part has been bridged and drained, the inamdars of the Waee Valley giving 4,000 rupees, and Government another 4,000. A bridge across the Kodally River has also been sanctioned. The following serious obstacles on these lines have to be overcome: The Yenna River, the Khrisna River, the Kamalkee Ghaut, the Neera River, the Katriz Ghaut. Travellers' bungalows have been erected and finished at Punderpoor, Waugi, Poosnaolee, and Kurar; other bungalows are much required, and will be constructed.
Sattara, improvements in the town of.	- - The road in the Prutab Gunj Petta in the town was reported, in season 1850-51, to have been completed by the prisoners, with the aid of a few free labourers, and the following improvements to have been effected, viz., improvements in the market, including a line of road carried through it, joining the Sumvar and Prutab Gunj Peth roads; a large arched drain constructed on the southern approach to the tunnel; an approach lined out, and executed in the rough by the prisoners, from the town to the tunnel entrance, south side; this approach partly extended into the town by the Inaumpoora tank by the prisoners. A new line of road, 2,740 feet long, made, running at the back of the palace joining the Shukurwar Petta and the Genda Mall lines. A vegetable market formed out of the old engineers' stores, yielding a yearly rent of 376 rupees, and every stall rented and occupied.						

987.	Tannah Causeway - - -	-- To unite the island of Salsette to the continent of India.	Suggested 1836-37		-- Original estimate, 20,000 rupees.		-- The work which is designated the Tannah Causeway, consists, strictly speaking, of but a couple of ramps, one on either bank of the estuary, which approach each other towards the centre of the stream, where there is a flooded interval of the natural bed of considerable length at ebb tide, and never less than five (5) feet deep. The greater portion of the ramps is consequently submerged at high water, and the guns, erected along the sides for the purpose of fastening vessels to, were complained of as causing, while thus invisible, much damage to the native craft; they were consequently removed in 1845-46, and mooring rings substituted.
	Trombay Pier (see Bombay) -		Commenced in 1837			-- Completed season 1843-44.	
	Tull Ghaut Road: Survey and Improvement.		Length, 78 miles	-- The sum of 1,16,789 rupees was expended on its construction; the balance, 21,723 rupees, was to be laid out in metalling the road; also an additional sum of 7,386 rupees, for further improvements, recommended by the committee appointed to examine the line.	1,38,506	Completed in 1850	-- This road was carefully inspected by a committee of engineer officers, who reported that with reference to the amount expended on it, "the construction is very perfect."
U 2	Tull Ghaut: Experimental Line		-- Commenced December 1845. Length, 1½ miles.		70,256	-- Completed 27th December 1847.	-- The construction of a masonry parapet, until the whole of the Ghaut should have been in other respects completed, was not originally contemplated; whereas, for unanswerable reasons, it has been judged advisable to proceed with the parapet simultaneously with the rest, and the consequence is, that a well-built wall, three feet in height, and 4,445 feet in length, had been completed up to 1845-46. It has been found that the entire distance requiring to be so defended is about 3 miles, 4 furlongs, and 24 yards. The unusually tardy progress of the works is stated to have been caused by several circumstances: first, the position of the work, far removed from any town, and in a remarkably thinly populated country; secondly, the unhealthy climate, which is deservedly shunned; thirdly, the scarcity of water, which at the close of the hot season occasionally fails <i>in toto</i> , and the neighbourhood is consequently partially deserted; building materials are also expensive, and have to be brought from a distance.
	Tannah Church, repairs to the roof of.	-- Some of the timbers were discovered to be in a state of decay.	-- Sanctioned 16 April 1845.	Tannah " " "	5,070 = =	-- Completed in March 1846.	
	Toka: Construction of a new rafter, or decked double boat.	-- For crossing the Godavery River.	-- Sanctioned season 1845-40.	-- Toka on the Nag-poor dawk line.	2,434 = =	-- Completed season 1845-40.	

(continued)

No. 12.—TABULAR STATEMENT of the Principal Works executed by the Bombay Road and Tank Department, from 1836 to 1850-51 inclusive, and by the Bombay Engineers, &c.—continued.

NAME OF WORK.	Object of Construction.	Length, and Date of Commencement.	Place of Termination, or of Intended Termination.	Amount of Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
Tannah: Construction of a new hospital.	For a detachment hospital	-- Sanctioned 12th March 1847.	- - - - -	<i>Rs. a. p.</i> - - - - -	<i>Rs. a. p.</i> 4,340 - - -	- - - - -	-- 56 ½ feet in length, by 18 feet in breadth, with dispense rooms and out-offices.
Wurgaon Bundarrabs in the Ahmednuggur district.	For irrigation - - -	-- These bundarrabs are three in number; sanctioned 1836-37.	-- In the Sunnar Pergunnah.	-- Two bundarrabs, 54 rupees.	236 - - The Gaom was to contribute 150 rupees, and a jagheerdar 100 rupees.	- - - - -	-- 377 beegahs and four ponds are watered from these bunds, assisted by a few wells.
Wurrunder Ghaut to Mhar, constructing a bullock track over the.	- - - - -	Commenced 1850-51	Mhar - - - - -	- - - - -	17,500 - - has been raised for the purpose of this work.	- - - - -	-- As a great part of the proposed line would pass through the Smehow Punt's territory, at a visit from Mr. Frere, the Punt expressed his willingness to subscribe a sum of 8,750 rupees; the Government granted a like sum.
Zeykheira Bundarrab, completing the, &c.	For purposes of irrigation	- - - - -	- - - - -	35,451 15 11	- - - - -	-- Completed season 1848-49.	-- The magnificent old bundarrab, which for some portion of its length is from 20 to 30 feet in height, and 10 feet thickness at top, has been raised and strongly coped for securing a larger supply of water in its rear. The water-course is carried over five miles of most difficult ground, and in its course is carried through three tunnels of considerable length; over three nullahs, by means of arched aqueducts; four nullahs are carried clear over it, and is crossed by roads in three places. The work thus completed affords a fine specimen of the application of the resources of the Engineer department to the restoration and improvement of an old work of irrigation. It is only to be hoped that a work on which upwards of 85,000 rupees have been expended by Government may not suffer injury from the notorious inattention of the villagers (in whose charge it now is) to the care of all permanent works on the line of their water-courses.

In the Printed Parliamentary Paper of the Honourable the House of Commons, No. 622 of 1851 (Pages 206 and 207), Statements have been given of the Expenditure incurred under the Presidency of Bombay, on Works of Irrigation, and in the Construction of Roads and Bridges, for the Ten Years from 1836-37 to 1845-46 inclusive. The following Statement exhibits the Amount of Expenditure reported by the Road and Tank Department, from its formation to the year 1850-51 inclusive; and in the Civil Branch by Superintending Engineers from 1845-46 to 1850-51 inclusive.

Y E A R.	Road and Tank Department.	Civil Architect's Department.	By Superintending Engineer, Southern Provinces.	By Superintending Engineer, Northern Provinces.	By Superintending Engineer, Scinde.	By Civil Engineer, Candesh.	By Civil Engineer, Suttara.	T O T A L.
	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	<i>Rs. a. p.</i>	
Total expenditure to 30 June 1839	4,58,702 11 1	- - -	- - -	- - -	- - -	- - -	- - -	4,58,702 11 1
From 30th June 1839 to end of Season 1840-41	2,70,815 14 -	- - -	- - -	- - -	- - -	- - -	- - -	2,70,815 14 -
Season 1841-42	1,76,118 - -	- - -	- - -	- - -	- - -	- - -	- - -	1,76,118 - -
Season 1842-43	1,24,914 14 2	- - -	- - -	- - -	- - -	- - -	- - -	1,24,914 14 2
Season 1843-44	1,27,814 6 -	- - -	- - -	- - -	- - -	- - -	- - -	1,27,814 6 -
Season 1844-45	1,27,044 7 -	- - -	- - -	- - -	- - -	- - -	- - -	1,27,044 7 -
Season 1845-46	No Report* - -	1,07,087 8 10	1,64,991 14 6	64,799 5 5	3,76,290 5 3	54,439 11 2	- - -	10,82,854 10 5
Season 1846-47	3,14,795 13 3	- - -	- - -	- - -	- - -	- - -	- - -	3,14,795 13 3
Season 1847-48	3,09,179 15 8	- - -	- - -	- - -	- - -	- - -	- - -	3,09,179 15 8
Season 1848-49	2,83,158 8 1	42,582 15 8	1,60,466 12 -	51,002 10 11	- - -	- - -	- - -	5,37,210 14 8
Season 1849-50	3,53,788 1 7	33,316 11 2	1,56,957 - 3	35,855 13 9	- - -	58,000 9 -	42,205 15 8	6,80,124 3 5
Season 1850-51	3,61,893 4 4	59,315 10 3	3,99,559 11 5	43,293 10 7	4,619 13 6	- - -	2,25,314 13 4	10,93,096 15 4.
Total Expenditure reported from the formation of the Road and Tank Department to the year 1850-51 inclusive								49,88,276 15 9

\* Note.—The practice of printing the Reports of the Superintending and Executive Engineers, in connexion with those of the Road and Tank Department, appears to have been first adopted in Season 1846-47, and to have originated from the plan proposed by the Chief Engineer and the Military Board in 1844, for the abolition of the Road and Tank Department.

## S U M M A R Y.

SUMMARY OF EXPENDITURE Incurred under the several PRESIDENCIES of India, as follows: viz.,

PRESIDENCY.	DESCRIPTION.	AMOUNT.
		Rs.
Bengal - - - - -	-- Known expenditure on works under the general management of the Military Board, as per Preparatory Report, dated 8th September 1840 - -	1,32,64,099
Ditto - - - - -	-- Amount expended from season 1839-40 to season 1850-51, inclusive - -	2,85,04,891*
Fort St. George - - - - -	-- On repair and construction of works of irrigation, and on roads, bridges and ghauts, from 1838 to 1850, inclusive -	1,25,56,298
Bombay - - - - -	-- Amount of expenditure reported by the Road and Tank Department, from its formation in 1836-37 to 1850-51, inclusive - -	49,88,277
	Rs.	6,00,13,560
	The amount thus far expended under special grants (which exceed two crores) for the Ganges Canal, and for Works in the Punjab, has been about -	1,00,00,000
	Making a Total, still exclusive of } other items noted below, of - } Rs.	7,00,13,560

While the total of ascertained expenditure, as above, amounts to the sum of 7,00,13,560 rupees in the aggregate, that sum cannot be considered as the total amount expended by Government on Works of public utility, the 'outlay incurred' in public improvements under the control of Local Committees, from the proceeds of the One per Cent. Fund in the North-Western Provinces, from the Ferry Funds and from other sources, not being included, nor the value of convict labour employed on Public Works.

\* Exclusive of Expenditure on the Godavery Anicut.

Considerable progress has been made in the several works alluded to at page 208 of the Printed Parliamentary Paper, No. 822 of 1851, for which special grants had been sanctioned, as will be seen from the Court's more recent despatches, given in Appendix No. 1.

Copies of Despatches to the Governments of the respective Presidencies on certain subjects which have of late engaged the attention of the Court of Directors, and a Memorandum on the Roorkee College, form Appendix No. 2.

## A P P E N D I X.

## APPENDIX No. 1.

## GANGES CANAL.

India Revenue Despatch, 21 December (No. 17) 1847.

Our Governor-General of India in Council.

1. We have received two letters from our Governor-general, dated 3d and 20th September last (Nos. 16 and 17), transmitting further proceedings relative to the Ganges Canal, consequent on the receipt of our despatch of the 7th July (No. 9) 1847.

Ganges Canal.

2. His Lordship had communicated extracts of that despatch to Major Baker, director of the canal, and to Lieutenant-colonel Abbott, Superintending Engineer in the North-Western Provinces, and now forwards copies of the observations which they have submitted to him.

3. Major Baker is of opinion that the estimate of 93 lacs, as given by Major Cautley, is not likely to be exceeded beyond the sum of four lacs, which he considers will be required to give greater strength to the works of the Solani Aqueduct. The period within which the whole work can be completed will be regulated by that occupied in the construction of the aqueduct, and he is confident that this may be accomplished within six years. Lieutenant-colonel Abbott confirms Major Baker's opinion with regard to the Solani Aqueduct, adding a recommendation for increasing the strength of some of the abutments, which it appears Major Baker had already effected by an alteration in Major Cautley's original plans.

4. With respect to the expediency of making the canal subservient to purposes of navigation, Major Baker estimates the total additional expense which will have to be incurred for that object, at 2,23,770 rupees. He says, "It has been shown in reports already before Government, that the navigation of the Ganges below Cawnpore will not be impaired by the abstraction of the canal supply at Hardwar, but that during a few months of the year some hinderance may occur in the higher course of the river. The inconvenience thus arising would be practically small, and is easily remediable by the substitution of a safe and expeditious route for the tedious, and often dangerous, passage now afforded by the river." Major Baker adds, "The sum of money which might be saved by leaving navigation entirely out of account, is thus seen to bear a small proportion to the whole estimate, and the additional expenditure of 2½ lacs will be well bestowed on the provision of a navigable communication through the centre of the Doab, especially as the river steamers will be enabled to approach by the Jumna to the canal terminus, and there to deliver their freight at once into the canal boats."

5. Major Baker estimates the net revenue from the canal at 10 lacs, or 10 per cent. on the outlay, observing that "the rates of irrigation rent have been purposely fixed below the real value of the water, and therefore that the amount of direct revenue cannot be looked upon as a fair measure of the work of the canal."

6. The Governor-general informs us that he has applied to the President in Council for the services of Mr. Simms, the civil engineer, being of opinion that "it will be satisfactory to all parties that this gentleman should in person make an inspection of the Solani Aqueduct, assuming that his experience in this description of work justifies the reference."

7. We shall be glad to be furnished with Mr. Simms's opinion with regard to the Solani Aqueduct, and he may also be able to afford information respecting the suggestion of Lieutenant-colonel Abbott, for the construction of galvanic telegraphs on the line of the canal, "so that in case of accident at any part of the works the immense flow of water might be instantly stopped, and let off at the places prepared for its escape."

8. We trust that the Earl of Dalhousie will apply himself to the consideration of the question in all its bearings, with the same zeal and judgment which have been evinced by his predecessor in the Government of India.

We are, &c.

London, 21 December 1847.

(signed) *H. S. G. Tucker.*  
*J. L. Lushington,*  
&c. &c.

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India Revenue Despatch, 2 June (No. 11) 1852.

Our Governor-General of India in Council.

1. WITH his letter dated 28th July last (No. 1), our Governor-general has forwarded to us a revised estimate, prepared by Lieutenant-colonel Cautley, of the probable expense to be incurred in constructing the Ganges Canal works. His Lordship observes, that although the increase of cost which is contemplated in this estimate is undoubtedly large, he conceives that Lieutenant-colonel Cautley has satisfactorily accounted for it in the paper submitted by him to Government, and he accordingly trusts that we shall see cause to bestow our approval on what has already been done, and to give our sanction to the revised estimate now submitted.

2. The former estimate, as sanctioned in our despatch of the 7th July (No. 9) 1847, amounted to 93,39,746 rupees. In the estimate now before us the probable cost (including establishment and current repairs, which were omitted in the former one,) is given at 1,55,55,481 rupees. Of this sum the total amount actually expended up to the 30th April 1851 is stated to be 72,45,560 rupees.

3. This estimate has been prepared under instructions dated the 12th June 1850, addressed to Lieutenant-colonel Cautley by the Lieutenant-governor, who observed that it had occurred to him that sufficient progress had then been made in the construction of the Ganges Canal to enable a proximate estimate of its entire cost to be formed. "It is obvious," he remarked, "that in all great undertakings of this nature, the first estimate of the cost can only be a rough approximation towards the truth. It is impossible to foresee all the difficulties that arise from a new and large demand for labour and materials," which have hitherto been required only in small quantities or at places favourable for their production. It is also well known that during the progress of this, as of all other similarly large undertakings, important modifications of the original plan suggest themselves, which, though at first more expensive, add greatly to the stability and efficiency of the work, and will save future expense.

"But it is of importance that the earliest possible period should be seized for correcting the unavoidable errors of the first estimate, and for accurately appreciating the real expenditure involved in the undertaking. It is believed that



that this period has now arrived in the progress of your works on the Ganges Canal, and that you will find little difficulty in forming a revised estimate of the whole, which will be a near approximation to the truth."

4. The causes which have led to the increase in the estimated cost of the canal are given in detail in Lieutenant-colonel Cautley's report, and are briefly summed up as follows :

"There are three points which have greatly influenced the designs of the works now estimated for ; viz. :

1st. "The results of the proceedings of a medical committee, which determined that the high-water mark of the canal should be kept as much as possible below the surface of the country.

2d. "The results of excavation in the upper division, showing that the super-soil only was clay, with an uninterrupted substratum of sand.

3d. "The change of design in the distribution of the supply below the 110th mile, which, in connexion with the results above referred to, have in fact led, with few exceptions, to the total re-projection, not only of the masonry works, but of the capacity of the canal channel.

"In referring, therefore, to the papers already printed, the present may rather be considered a fourth in succession to the three projects formerly submitted, than a revised estimate of what has gone before."

5. The excess of the revised over the original estimate is doubtless large, but considering that the latter was framed on data which were necessarily, to a great extent, imperfect or conjectural, we agree in the opinion expressed by the Governor-general, that Lieutenant-colonel Cautley has satisfactorily accounted for it. With full confidence, accordingly, in the zeal, ability, and high professional attainments of that distinguished officer, we give our sanction to the revised estimate now submitted to us, and we trust that every means will be taken for carrying on the construction of the canal with all practicable speed.

6. We take this opportunity of acknowledging the receipt of the letters and paragraphs referred to in the margin,\* by which we have been kept informed of

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- \* India Revenue Letter, 26th June (No. 6) 1847, paras. 24, 25.
  - India Revenue Letter (Governor-general's), 6th December (No. 25) 1847, whole.
  - India Revenue Letter, 24th December (No. 21), whole.
  - Bengal Military Letter, 17th March (No. 36) 1848, p. 111 to 114.
  - Bengal Military Letter, 14th July (No. 110) 1848, p. 43 and 90.
  - India Public Letter, 14th August (No. 41) 1848, paras. 16 and 19.
  - India Revenue Letter (Governor-general's), 17th November (No. 4) 1849, whole.
  - Bengal Military Letter, 19th November (No. 185) 1850, p. 45, 46.
  - India Foreign Letter (Governor-general's), 26th February (No. 14) 1851, whole.
  - Bengal Military Letter, 26th September (No. 152) 1851, para. 38.
  - India Public Letter, 28th November (No. 37) 1851, para. 32.
  - Agra Revenue Narrative, 15th March (No. 1) 1847, paras. 12 to 46.
  - Agra Revenue Narrative, 12th May (No. 2) 1847, paras. 11 to 42.

Agra Revenue Narrative, dated—

29th June (No. 3) 1847	- p. 13 to 38	10th October (No. 3) 1849	- p. 17 to 38
15th October (No. 4) "	- p. 8 to 47	26th December (No. 4) "	- p. 23 to 42
20th December (No. 5) "	- p. 22 to 52	27th April (No. 1) 1850	- p. 18 to 45
16th February (No. 1) 1848	- p. 14 to 38	15th June (No. 2) "	- p. 21 to 59
30th May (No. 2) "	- p. 15 to 46	16th September (No. 3) "	- p. 23 to 61
24th October (No. 3) "	- p. 22 to 70	13th November (No. 4) "	- p. 21 to 51
30th December (No. 4) "	- p. 41 to 85	11th April (No. 1) 1851	- p. 20 to 62
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9th July (No. 2) "	- p. 18 to 43		

of the details of progress in the works of the Ganges Canal, and of other less important works of irrigation and drainage in the North-Western Provinces. It does not appear to us that they contain any particular points on which our observations are required, but we cannot pass them over without expressing our gratification at the evidence they offer of the zealous services rendered by the late and present Governors-general, no less than by the Lieutenant-governor, in the efficient prosecution of these important works, in which the best interests of the country are involved, and which has been ably and actively responded to by the officers of all grades attached to the Canal Department.

London, 2 June 1852.

We are, &c.  
(signed) *J. W. Hogg.*  
*R. Ellice,*  
&c. &c.

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ROADS in the PUNJAUB.

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India Public Despatch, 4 August (No. 30) 1852.

Our Governor-General of India in Council.

Foreign letters from the Government of India, dated 7th December (No. 29) 1850, paras. 23<sup>a</sup> A, and 247; 7th March (No. 10) 1851, para. 190; 7th November (No. 34), para. 83.

Foreign letters from the Governor-general, dated 18th January (No. 4) 1851; 5th April (No. 26) 1851.

1. We now reply to the letters and paragraphs noted in the margin, relating to the construction of various lines of road in the Punjab, the expense of which will be chargeable to the five lacs of rupees annually set apart under our sanction for public improvements in that territory.

2. The following are the works which, as here reported, have received your sanction: 1st. A fair-weather road from Lahore to Mooltan, the cost of which, at 200 rupees per mile for 224 miles, is estimated at 44,800 rupees. 2d. A road from Dera Ismael Khan to Shahpoor, a distance of 104 miles, the formation of which for ordinary traffic, with the necessary wells, is estimated to cost 3,000 rupees.

3d. A good but unmetalled road from Sheikapoor (between which place and Lahore a road was previously in course of construction) to meet the above road at Shahpoor, and thus complete the communication between Lahore and Dera Ismael Khan. The distance is 100 miles, and the estimated cost, including all expenses, is Rs. 21,651. 4.

4th. Two roads, from Mozuffurgurh, in the Khangurh district, one to Mooltan, a distance of 13 miles, and the other to Dera Ghazee Khan, a distance of 20 miles, at a cost of 1,000 rupees.

5th. The completion, as a second class road, of a line on which 20,000 rupees have already been expended, from Rawul Pindee to Kalabagh on the Indus; the distance is 107 miles, and the additional expenditure was estimated at 13,775 rupees.

3. All these lines of road are severally recommended by their greater or less importance in a military, a political, or a commercial point of view, and we approve the sanction given to their formation.

4. The most important work referred to in the letters under reply is, the proposed new road from Lahore to Peshawur, the formation of which was recognised in our despatch in the Revenue Department, dated the 5th December 1849, as a highly desirable object. The Governor-general has now forwarded to us plans and estimates for the construction of this road, to which he requests our sanction;

tion; and, pending the receipt of our orders, his Lordship has authorised the commencement of operations and an advance of 3,00,000 rupees for the needful preliminary expenses.

5. The proposed line has been carefully surveyed by Lieutenant Tayler, the executive officer, with the personal assistance, in some parts, of Lieutenant-colonel Napier; and while it adheres generally to the direction of the existing road, deviates from it in those places where a more favourable course could be selected. It is proposed that the road shall be of the width of 40 feet; that it shall be metalled throughout; that the numerous small rivers and nullahs shall be crossed by timber bridges; and that across the four great rivers, the Ravee, the Chenab, the Jelum, and the Indus, bridges of boats shall be thrown, which, in the case of the last, will be maintained throughout the year, while those over the other rivers will, during the rainy season, be disconnected, and the boats used for the purposes of a ferry.

6. The length of the road will be 275 miles, and the estimated cost, including the floating bridges and establishment and superintendence for two and a half years, is Rs. 15,48,841. 2.

7. We concur with the Governor-general in regarding the formation of an efficient road to Peshawur as a work not simply of importance, but of absolute necessity. It is most desirable for military purposes that the road should be passable at all seasons, and that there should be no danger of a stoppage at any point. On these grounds it is necessary that the road should be metalled, and that adequate means of crossing the great rivers on the line should be constantly kept up. We accordingly give our sanction to the entire scheme for the formation of the proposed road, which will join the grand trunk road at Lahore, and by means of which a direct line of communication will thus be opened between Calcutta and the extreme boundary of our territory on the north-west frontier.

8. The estimates submitted to us for this road are not of so detailed a character as is usually required, but they are stated to be "as near the truth as the most detailed estimate could be in the present knowledge of the resources of the country." The work will, of course, not be finally proceeded with till the fuller estimates called for by the Governor-general shall have been submitted for sanction.

9. We take this opportunity of repeating our orders that when sketch and survey maps accompany the estimates for roads submitted for sanction, a copy be invariably forwarded to us with the papers relating to the case.

We are, &c.

(signed) *J. W. Hogg,*  
*Russell Ellice,*  
&c. &c.

London, 4 August 1852.

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#### KURRACHEE MOLE AND ROAD.

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Bombay Public Despatch, 11th August (No. 28) 1852.

Our Governor in Council at Bombay.

Para. 1. Your letter, dated the 16th February (No. 9) 1852, informs us with reference to our despatch No. 4 of 1851, that the Military Board has reported that the mole and road at Kurrachee can certainly be completed within the estimates; that, in their opinion, the exclusive attendance of an engineer officer

Further proceedings respecting the Mole and Road at Kurrachee.

is not necessary for the superintendence of the work, and that you have therefore authorised its completion, and have placed it under the superintendence of Captain Hill, providing that officer with an assistant to aid him in the performance of general duties as executive engineer in Lower Scinde.

2. These proceedings do not require any other notice than the expression of our approbation.

3. We are glad to observe that the Military Board has been directed to furnish quarterly reports of the progress of the works, by which your Government will be enabled to judge whether they are proceeding within the estimates.

4. With regard to the opinions of Lieutenant-colonel Scott and the Military Board respecting the probable effect of the mole on the Chiny Creek, we do not think it necessary at present to offer any remark.

We are, &c.

(signed) *J. W. Hogg.*  
*R. Ellice,*  
&c. &c.

London, 11 August 1852.

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APPENDIX, No. 2.

Copy of Despatch to the Government of India,—Works on the Eastern Jumna Canal. The improvement and extension of Cochrane's Canal. The improvement of the Begaree Canal in Upper Scinde. Progress of the Hindoostan and Thibet Road.

Copy of Despatch to the Government of Fort St. George,—The construction of the Pennair Bridge and Anicut; the proposed construction of a Dam at Chetwye.

Copy of Despatch to the Government of Bombay,—Improvement of the roads in the Broach Collectorate.

Copy of Despatch to the Government of India,—Preparation of annual schemes for the construction of roads and bridges by the Governments of Fort St. George and Bombay.

Memorandum on the Roorkee College.

EASTERN JUMNA CANAL.

India Revenue Despatch, 15th June (No. 11) 1853.

Our Governor-General of India in Council.

Para. 1. In your letter in the Home Department, dated the 11th March last (No. 16), you have submitted for our sanction a plan for remodelling the central division of the Eastern Jumna Canal, the estimated expense of which is Rs. 1,52,760. 5. 1.

2. The necessity which would ultimately arise for straightening the tortuous course of this portion of the canal has long been recognised by the officers employed on it, and the time seems now to have arrived when it is most desirable that the work should be commenced. The mode in which it is proposed to carry it out is clearly shown in the printed memorandum prepared by Lieutenant Morton, the superintendent of the Eastern Jumna Canal, and has received the entire approval of Lieutenant-colonel Cautley, of the Military Board, and of the Lieutenant-governor of the North-Western Provinces.

3. The main advantages which are anticipated from the work consist in greatly economising the water and facilitating its distribution for purposes of cultivation. In addition to this, the high embankments which now exist on this part of the canal, and which occasionally give way, and thereby cause much loss and injury, will be dispensed with, and the sanitary condition of the country near its banks, which now suffers materially from the swamps which are formed by the leakage of the water, will be largely improved.

4. We observe that Colonel Cautley states the clear profit to the Government from this canal, after allowing 5 per cent. interest on the receipts and disbursements, to have amounted on the 1st May 1852 to 97,595 rupees.

5. Under these circumstances we have no hesitation in acceding to your recommendation, and willingly accord our sanction to the expenditure proposed.

We are, &c.  
(signed) R. Ellice.  
J. Oliphant.

London, 13 June 1853.

## COCHRANE'S CANAL.

India Public Despatch, 31 March (No. 14) 1852.

Our Governor-General of India in Council.

Public Letter, dated 20 September (No. 36) 1850.

Public Letter (Public Works Department), dated 24th January (No. 2) 1849.  
 Revenue letter, 6th June (No. 30) 1850, para. 10; Revenue letter, 4th July (No. 33) 1851.

Para. 1. In this letter you request our orders on the measures proposed by the Madras Government for the improvement of Cochrane's Canal and for the extension of the line of canal communication through the Pulicat Lake to Doogoorauzepatam. The subject is placed more fully before us in the letters from the Government of Fort St. George, noted in the margin.

2. In our despatch to the Madras Government, dated 31 May (No. 12) 1848, we expressed our approval of the proposed expenditure of Rs. 22,047. 7. 9. for the improvement of the water communication between Madras and Sooloorpet, by means of Cochrane's Canal. This portion of the work, it would appear, has not been carried into execution, in consequence of the wish of the Madras Government to give their previous consideration to the recommendation conveyed in our despatch of the 22d July 1846, in favour of Colonel de Havilland's proposition for the extension of the canal. As the work appears to be desirable, it is unnecessary here to do more than renew our sanction to its adoption.

3. The extension of the line of water communication to Doogoorauzepatam, at the northern extremity of the Pulicat Lake, was recommended by us to the consideration of the Madras Government in our despatch above referred to of the 22d July 1846. All the officers consulted appear to concur in opinion as to the practicability of this measure. It is proposed to carry it out by means of a channel, to be formed by a dredging machine in the bed of the Pulicat Lake, between Sooloorpett and Doogoorauzepatam, and the expense is estimated, after a careful survey by Captain de Butts, the executive engineer, at Rs. 47,274. 15.

4. We are willing to give our sanction to this expenditure, provided that you adhere to the opinion that the proposed measure will not only be of great advantage to the trade of the district, but will also lead to a considerable increase in the traffic and revenue of the existing canal.

5. As the work in question is intended to occupy two years in completion, a considerable time must elapse before it will be possible to judge of its results, but we desire to be kept duly informed of the proceedings of the Madras Government on the subject.

We are, &c.

(signed) J. Sheppard.  
 J. W. Hogg,  
 &c. &c.

London, 31 March 1852.

## BEGAREE CANAL.

India Revenue Despatch, 25 February (No. 3) 1852.

Our Governor-General of India in Council.

Begaree Canal. Para. 1. In a letter dated the 26th of September last (No. 2), the Governor-general has solicited our favourable consideration of a project which had been submitted to him by the Government of Bombay, for widening and deepening the Begaree Canal in Upper Sindh. The cost of the work is estimated at 1,30,004 rupees, and the probable return at 1,19,000 rupees per annum. The canal flows partly through territory which belonged to Meer Ali Moorad, and it was proposed that that chief should be called on to defray a portion of the cost, but in the peculiar state of our relations with him, it was deemed unadvisable

advisable to enter into any negotiation on the subject. Under the decision communicated to you in our Political Despatch, dated the 24th September (No. 33) 1851, no difficulty will probably be found in making the needful arrangements, or perhaps in dispensing altogether with his co-operation.

2. The account given by Mr. Frere, in his letter of the 10th June 1851, of the greatly improved condition of that portion of Upper Sind which is under the charge of Major Jacob (with whom the project under consideration originated), is highly satisfactory. Besides the anticipated increase of revenue, advantages of various kinds, tending to the prosperity of the people, to be expected from the execution of this work, are pointed out by the Commissioner, and we readily accord the sanction solicited.

3. We observe with satisfaction the praise bestowed by the Commissioner in Sind, Mr. Frere, on Major Jacob, for the part he has taken in bringing this project to the notice of Government, and that that recommendation is fully concurred in by the Governor of Bombay.

4. We shall forward a copy of this despatch to the Government of Bombay.

We are, &c.

(signed) *J. Sheppard.*  
*J. W. Hogg,*  
&c. &c.

London, 25 February 1852.

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PROGRESS OF THE HINDOOSTAN AND THIBET ROAD.

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Public Department, 18th May (No. 26) 1853.

Our Governor-General of India in Council.

Para. 1. THE plan for the construction of this road was regarded by us with great interest when it first came under our notice. Not only did we warmly approve the Governor-general's object of putting an end to the "Begaree system," by the formation of that portion of the line lying between Kalka and Simla, and look with interest to the political and commercial advantages likely to result from the opening of a line of communication with Thibet by way of Chini, but we regarded as highly important the solution of the question raised by Major Kennedy, when he laid out the line, viz., the possibility of constructing, through such a region as the Himalayas, a road which, while formed on correct and scientific principles, might yet be executed at a moderate cost.

Foreign Letter from, dated 7 December (No. 74) 1852.

With reference to paras. 16 to 19 of Public Despatch, dated 15 September (No. 35) 1852, transmit copy of a report, by Lieutenant Briggs, on the Hindoostan and Thibet Road, with the accompanying minute and correspondence, and solicit sanction to the further works required for the completion of the road, as well as to the construction of a branch road from Kussowlee to Buddce.

2. The results, as exhibited in the highly interesting report of Lieutenant Briggs, must be considered to be eminently satisfactory, so far as the work has yet proceeded. "Within little more than two years," observes the Governor-general, "a road of more than 50 miles long, 12 feet broad, and with a ruling gradient of three in 100 feet (temporarily departed from in two places where it will hereafter be rectified), will have been constructed from the Plains to Simla. One half of the road from Simla to Chini, that is 70 miles in length and six feet in breadth, with the same ruling gradient of three feet in 100, has been constructed, and a tunnel of 200 yards in length has been excavated through solid rock. By the aid of the tribute labour due by the hill chiefs, the road of 12 feet in width has cost only 1,237 rupees a mile, and the road of six feet 690 rupees." The leading principle of Major Kennedy's plan, adherence to the ruling level, has thus, as more fully shown by Lieutenant Briggs, been departed from in two or three unimportant instances only; and though the former officer's sanguine expectations as to cost and rapidity of execution, have not perhaps been altogether realised, the experiment has been fully as successful in these respects as could have been expected, had the formidable nature of the country and the difficulty of procuring labour been more accurately known.

It appears desirable that this example of the successful working out of an important principle in road-making should be made generally known, and the printing of Lieutenant Briggs' report and its communication, not only to the officers of your Government, but also to the Governments of the other Presidencies, would seem to be the best means of accomplishing this object.

3. Additional works are still required on the Kalka and Simla road, at a cost of 10,000 rupees, in order to make it thoroughly complete, and 71 miles of the road between the latter place and Chini still remain to be finished, the cost of which will probably not exceed that of the completed portion. In addition to these works, Lieutenant Briggs proposed the formation of a branch road from Kussowlee to Buddee, at an estimated cost of 15,000 rupees, which would open a way from the Hill Stations to the Punjab, and the Governor-general is desirous that a branch road should be constructed from Dugshai to Subathoo, for the purpose of connecting all the stations in the hills with each other and with the plains. We give our cordial sanction to the expenditure required for the execution of these works.

4. We have, in conclusion, to express our concurrence in the commendations bestowed by the Governor-general on Lieutenant Briggs, the perusal of whose report has impressed us with a very high opinion of his general intelligence, as well as of his professional qualifications.

We are, &c.  
(signed) *R. Ellice.*  
*J. Oliphant,*  
&c. &c.

London, 18 May 1853.

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PENNAIR BRIDGE AND ANNICUT.

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Madras Revenue Despatch, 18th February (No. 2) 1852.

Our Governor in Council at Fort St. George.

Pennair Bridge and  
Annicut.

Para. 1. IN a letter dated the 12th August last (No. 10), the Government of India have submitted for our favourable consideration a project laid before them by your Government for the construction of an annicut (to serve likewise as a bridge) across the Pennair River, in the Nellore district, at a cost of Rs. 85,547. 4. 6.

2. This work is intended to secure and extend the cultivation of a large tract of country. It is stated that on the average of the last five years, land bearing an assessment of 13,094 rupees has been annually abandoned, solely from the want of water to irrigate it. This amount would be at once secured by the execution of the proposed work; but it is further confidently anticipated that by increased cultivation, the ultimate gain to the revenue would not fall short of 20,000 rupees.

3. Relying on the correctness of your estimates, both of expenditure and return, we accord the sanction solicited by you and by the Government of India. Although in authorising expenditure on works of this description, we of course look to the direct return which they are calculated to produce in the shape of an increase to the land revenue, we are also mainly influenced by a consideration of the great advantages which they afford to the cultivators by extending the field of their labour, securing to them its fruits, and adding to its productiveness.

We are, &c.  
(signed) *J. Sheppard.*  
*J. W. Hogg,*  
&c. &c.

London, 18 February 1853.

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## CHETWYE DAM.

Madras Revenue Despatch, 15th December (No. 19) 1852.

Our Governor in Council at Fort St. George.

Para. 1. WE now reply to your letters of the dates noted in the margin, forwarding for our sanction a proposal of Major Cotton to construct a dam at Chetwye, in lieu of that which failed at Yennamaikal, in the district of Malabar.

Chetwye Dam.  
Letters dated  
10th September  
(No. 53) 1851;  
25th June (No. 30)  
1852.

2. Chetwye is some miles further down the stream than Yennamaikal, and before finally determining on the new site, the question seems to have received a very careful investigation, and no effort seems to have been spared to arrive at an accurate view of the comparative advantages of the former and proposed position of the dam. The discussion which preceded the decision of the question being of an exclusively professional character, it is not our intention to enter into a review of it. It is sufficient to observe in this place, that Major Cotton appears not only to have effectually disposed of the objections which were urged against the work so far as to carry the opinion of his official superiors with him, but to have obtained the acquiescence of his opponents in the correctness of his views.

3. We observe also that the opposition originally offered by the Cochin Sirkar to the removal of the bund from Yennamaikal to Chetwye was based on an erroneous view of the subject, and was subsequently withdrawn.

4. In a financial point of view, the proposal of Major Cotton appears to possess many great advantages. The expense of restoring the dam at Yennamaikal is estimated at Rs. 34,814. 13., and that of constructing a new dam at that place at Rs. 74,214. 4.; while the total expense of a dam at Chetwye is estimated at Rs. 36,215. 14. The revenue derived from the bund at Yennamaikal is 2,500 rupees per annum, and the annual revenue to be expected from the erection of the bund at Chetwye is, at the lowest estimate, 7,500 rupees. If, therefore, the cost of erecting a bund, and the return to be expected from it at these two positions, be compared, it appears on a rough computation that the work might be executed at Chetwye at half the cost, while the return would be trebled, showing a return of 3½ per cent.\* on the outlay in one case, and of 21 per cent. in the other.

* Cost.	Return.	Return.	
Rs.	Rs.	Dec.	Rs. a. p.
74,000	2,500	3'24	or 3 3 11
36,000	7,500	20'83	or 20 13 4

5. Relying, therefore, on the accuracy of the information and estimates submitted to us, we have no hesitation in according our sanction to Major Cotton's proposal.

6. You solicit our orders on another question in connexion with this work, viz., the portion of expense that the Cochin Government should bear in its construction and subsequent maintenance in repair. As the Cochin State will participate in the benefits accruing from the work, it seems but reasonable that that State should contribute towards the expense of constructing it. But the dewan of Cochin, and the Resident, Major-general Cullen, object to such contribution, the former on general grounds, and the latter on the ground that the Cochin Government was in no way responsible for the failure of the bund, and is in consequence of its poverty entitled to liberal consideration. The force of these objections is recognised by your President, while Mr. Thomas does not wholly concur in them.

7. Under all the circumstances of the case, we are disposed to concur in the opinion expressed by your President in his minute, dated 12th June 1852, that the Cochin Durbar having intimated its readiness "to contribute to the preservation of the dam so soon as it shall be built, this is as much as ought to be required."

London, 15 December 1852.

We are, &c.  
(signed) J. W. Hogg.  
R. Ellice,  
&c. &c.

## REPAIR OF ROADS IN THE BROACH COLLECTORATE.

Extract Public Letter to Bombay, dated 29th June (No. 22) 1853.

Letter from, dated 15th February (No. 13) 1851.

(Paras. 24, 25; also letter dated 27th January (No. 5) 1852, p. 28.)

Expenditure of 3,000 rupees, out of certain fines imposed on account of the adulteration of cotton, on the repair of roads in the Broach Collectorate, sanctioned, in addition to 1,000 rupees from the annual repair fund, which it was intended to appropriate to the object. An estimate was subsequently sanctioned for the construction, at a cost of 879 rupees, of a causeway over the Dhadur Creek, which had long been a serious obstacle to the traffic between the different parts of the Broach Collectorate. The causeway was to be made by driving in two rows of piles across the river, at the distance of 12 feet apart, the inner sides being boarded with coarse planks, and the centre being filled in with stones and rubbish, which would form the roadway.

Para. 30. It appears to be the decided opinion of Mr. Davies, the Collector, that no expensive measures for the improvement of the roads in the Broach Collectorate are required, and that the removal of the obstacles, arising principally from their narrowness, which at present impede traffic on "the rough though practicable roads," by which the district is intersected in "all directions," may be accomplished without much difficulty. It is highly satisfactory that Mr. Davies finds the inhabitants ready to assist him in these works, and that he expects to be able to carry out his objects as regards the improvement of the roads, without the aid of the engineers' department.

31. The want of the means of crossing the numerous streams within the collectorate, appears far more pressing than even that of the repair of the roads, and should receive your early attention. The simple method employed at the Dadur Creek, where it is crossed by the road leading to the port of Tunkaria, may, if successful there, be applicable probably to other places of the same character; but we are desirous of learning whether the suggestion of Mr. Davies to Captain Goodfellow for the construction of "a strong, simple, wooden bridge" over the Kharree, between Khutpoor Sumlee and Hansote, and which he thought might serve as a model for others, if it should be found to answer, has yet been acted on.

32. We observe that, in this instance, the Collector of Broach, finding the amount assigned for the repair of the roads in his district insufficient, applied for an additional amount (2,000 rupees) out of the sums realised from fines levied under a recent law upon persons guilty of the offence of adulterating cotton. You are aware of our objection to any special appropriation of assets of this description to local purposes, but we should have entirely approved of your having sanctioned the additional grant out of the general revenues for an object of public benefit, such as that in question.

Public Department, 24th May (No. 32) 1853.

Our Governor-General of India in Council.

Preparation of annual schemes for the construction of roads and bridges by the Governments of Fort St. George and Bombay.

1. We have been anxiously awaiting the result of the inquiries which, in accordance with our orders of the 30th January 1850, have been instituted by the Governments of Fort St. George and Bombay, with regard to the superintendence and execution of public works at those Presidencies.

2. In our consideration of the proceedings of the above-named Governments with regard to various proposed works of public improvement, and especially in the case of roads, we have often, and in that despatch especially, noticed the irregular and unsystematic manner in which the plans laid before them have been disposed of. The sanction given to the several schemes by the local governments, or the recommendations made to your Government in favour of them, appear to have been grounded too frequently on considerations limited to each particular project, and having no reference to the general wants of the country. The natural consequence of such a mode of proceeding, as regards roads, has been that large expenditure has not unfrequently been incurred on lines of inferior importance, while the trunk lines have remained in an imperfect state, on the ground that the necessary funds could not be spared to complete them.

3. In

3. In the despatch above referred to, we showed ourselves strongly impressed with the evils arising from so imperfect and inadequate a mode of considering the subject, and referred to your consideration not only the best mode of departmental management to be adopted with regard to public works, but also the importance of taking into view all such works, and especially trunk and branch roads, as portions of one connected system. While we shall await the information referred to in the first paragraph of this despatch, before entering on a consideration of the general subject, we are desirous that no time should be lost in applying a remedy for the particular evil we have pointed out.

4. It is our opinion that the object in view may best be attained by the adoption of a plan of the following description. Each of the local governments should require, annually, from the officers who, in the respective Presidencies, may be vested with the general charge of the roads, a statement of the new works most urgently required for the purposes of inter-communication, and the execution of which, within the ensuing year, he may be prepared to undertake. On receiving this statement, it would be the duty of the Government to decide, after a careful consideration of the circumstances of the Presidency at the time, whether the works proposed had been properly selected, in preference to others, for immediate execution; and having come to a conclusion on this point, the whole scheme involving the proposed expenditure on new roads and bridges for the coming year, should be submitted for your final sanction and approval.

5. The plan above indicated, though peculiarly required with reference to the means of internal communication, ought also to be applied to public works of every description; and believing that much benefit would arise from the means it would afford of bringing annually under review the wants of each Presidency, as regards buildings, works of irrigation, and other works of a miscellaneous character, we direct that its operations be extended accordingly. It is desirable that, with respect to these works, as in the case of roads, the statements should exhibit the entire expenditure proposed to be incurred on new works, whatever may be the amount of the estimate for each; and we forward to you a number in the packet, a copy of the Ordnance Estimate, as annually laid before Parliament. You will find in that portion of them which relates to the public works, the form giving the estimated expense of new works, and the past as well as probable expense of those in progress, and we should recommend that this form should be adopted so far as it is applicable to the circumstances in India.

6. We wish it to be distinctly understood, that in issuing these orders, it is far from our desire either to place any further restriction on the amount heretofore expended on works of public improvement, or to deprive the Governments of Fort St. George and Bombay of any of the power they have hitherto possessed of authorising expenditure on such works. Our object is primarily to secure the application of the money to be expended in such a way as to produce the greatest possible benefit to the country and to the community; but the proposed plan, while preserving to your government that general control over the finances of India, which it is intended that you should possess, will have the advantage of relieving your government from that unnecessary distraction of attention and waste of time, which arise from a number of separate projects, relating to objects of a kindred nature, being brought under your consideration at different periods.

We are, &c.  
(signed) R. Ellice,  
J. Oliphant,  
&c. &c.

London, 24 May 1853.

#### MEMORANDUM on the ROORKEE COLLEGE.

For years there had existed a large demand for skill in every branch of civil engineering, to supply which efforts were for some time made by providing the means of special training in institutions which were then existing. In January 1845, Lieutenant Baird Smith, of the Engineers, superintendent of the Eastern Jumna Canal, undertook to conduct, at Saharunpoor, the education and training

ing of native youths in civil engineering; and two of the most advanced scholars in the Agra and Delhi Colleges were placed under Lieutenant Smith's care. Towards the close of the same year masters were appointed to the Delhi and Agra Colleges for the special purpose of teaching architectural drawing and surveying; a class of "sub-assistant engineers" was also formed, with fixed allowances and a recognised standing in the public service.

The number of sub-assistant executive engineers was at first limited to four, but was subsequently (22d December 1846) increased to 20. One of Lieutenant Baird Smith's pupils, named Mannoo Lall, was immediately examined, and found qualified for an appointment of this nature; he has since rendered valuable services as a teacher in the Roorkee College. Three other native youths passed the required examination and obtained appointments as sub-assistant executive engineers. The chief benefit of the measure had been, to hold out definite expectations to the educated youth in the Government colleges. The standard of mathematical attainments had been designedly fixed high, and there were many who were making great exertions to reach the mark.

In 1847 Lord Hardinge determined on the vigorous prosecution of the Ganges Canal. The science that was necessary to construct a work of this magnitude would also be constantly kept in exercise for its maintenance, improvement and extension; immediate measures were necessary to meet the emergency, and to provide a constant supply of well-trained, experienced civil engineers. Out of this emergency Roorkee College had its rise.

The proposal for its institution obtained the immediate and cordial support of the Governor-general of India. On October 19th, 1847, Lieutenant R. MacLagan, of the Bengal Engineers, was appointed principal of the college, and on November 25th of the same year the Prospectus was issued:—

No. 949.

General Department, North-Western Provinces. Head Quarters,  
the 25th November 1847.

#### NOTIFICATION.

"The Lieutenant-governor directs the publication, for general information, of the following \* Prospectus of a college for instruction in civil engineering, which is now established at Roorkee, and of which Lieutenant R. MacLagan, Engineers, has been appointed principal."

\* See Report printed by order of the Honourable the Lieut.-Governor of the North-Western Provinces, 1851.

It was reported in 1851 that, though little more than three years have passed since the first opening of the college, and during part of that time the exigencies of the public service in the Punjab war caused a temporary suspension of operations, yet a considerable number of well-trained men had been furnished to the service of the state, and the institution had obtained a standing and organization which afforded promise of much future usefulness.

The following measures were proposed, in 1851, for the further development of the scheme which was contemplated in the first design of the institution; viz., —

1st. The admission of officers, both of the Royal and East India Company's armies, to study at Roorkee College.

2d. The improvement and superintendence of the village schools in a circle of 40 or 50 miles round Roorkee.

3d. The establishment, in connexion with the college, of a depôt of mathematical and scientific instruments, and of a workshop for their manufacture and repair.

4th. The formation of a museum of economic geology.

5th. The erection of an observatory for instruction.

6th. The maintenance of metal and stone printing presses, with a book-binder's establishment, and all that is necessary for the publication of scientific works, with appropriate drawings and illustrations.

7th. The

7th. The enlargement of the college building and establishment to meet all the purposes.

The applications for admission into the several departments of the college had been very great.

The following are Extracts from the Court's Despatches on the subject of the College.

EXTRACT Public Letter to India, dated 28 March (No. 6) 1849.

Para. 2. We concur in the view taken by the Lieutenant-governor of the North-Western Provinces, of the advantages which may reasonably be expected from an institution of this nature, and we therefore approve of its establishment.

EXTRACT Public Letter to India, dated 2 June (No. 23) 1852.

Para. 7. We accordingly give our sanction to the expenditure which will be necessary to carry out the plan of the Lieutenant-governor.

8. While we have been mainly influenced in authorising this large outlay by the considerations placed before us by the Lieutenant-governor, arising from the advantages to the public service, and the general benefits to the people which may be expected from placing the college on a thoroughly efficient footing, we hail with much satisfaction the means which the institution, on its extended plan, will afford to the native youth of qualifying themselves for the service of Government in a way which is, to a great extent, new to them, but for which, so far as they have been tried, they have manifested a perfect aptitude.

EXTRACT Public Letter to India, dated 14 July (No. 27) 1852.

68. We notice with much satisfaction the additional evidence afforded in these papers of the successful working of this important institution, and we approve the measures which you have sanctioned for the further extension of its usefulness.

Letter from, dated 21 December (No. 47) 1850.

(7 to 9.) The establishment of a class in the Roorkee College for imparting the rudiments of civil engineering in the vernacular language having proved very successful, the number of the class increased from 16 to 24. At the same time, the allowance of one-third of the whole number was fixed at 10 rupees instead of 5 rupees per mensem, and as it was thought desirable to encourage the resort to the college of youths from the Punjab, sanction was given for the payment of travelling allowance to a limited number of young men from Lahore.

(True copies.)

(signed) T. L. Peacock,  
Examiner of India Correspondence.

East India House,  
17 August 1853.