

**PUBLIC WORKS (INDIA).**

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

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. MELVILLE

(*Mr. Bright.*)

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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 1831, 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 the 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.

## PRESIDENCY OF BENGAL.

## No. 4.

INDEX to a TABULAR ANALYSIS of the Statement by the MILITARY BOARD at Bengal, dated 8th September 1840, of Works of public utility then under their general Management.

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16.	Arrah to Akberpore.
16.	Arrah to Brookgunge.
22.	Ajmere to Nusseerabad.
8.	Burdwan Division.
7.	Calcutta to Kishnegur.
15.	Calcutta to Benares.
8.	Culna to Burdwan.
12.	Cachar to Munipore.
16.	Chupprah to Mozufferpore.
16.	Chupprah to Mootearee.
18.	Chunar to Sukroot.
23.	Cawnpore to Grand Trunk Road.
24.	Cawnpore to Bittoor.
20.	Deccan Road from Mirzapore to Jubbulpore.
21.	Dhamow to the Deccan Road.
28.	Delhi Division.
4.	Grand Trunk Road.
10.	Gowahattee to Sylhet.
27.	Gazeeoodeenuggur to Meerut.
16.	Hadjpore to Poosah in Tirhoot.
2.	Juggernaut Road.
21.	Jubbulpore to Titwarra Ghaut.
21.	Jubbulpore to Hansi Ghaut.
21.	Jubbulpore to Cullinghee.
28.	Kurnaul Division.
29.	Kumaon Division.
1.	Madras Frontier to Cuttack.
3.	Midnapore to Calcutta.
15.	Moorshedabad to Benares.
17.	Mogul Serai to Allahabad.
19.	Mirzapore to Gopeegunge.
20.	Mirzapore to Jubbulpore.
2.	Poree to Bissenpore (known as the Juggernaut Road).
14.	Patna to Gya and Shergotty.
13.	Revelgunge to Moozufferpore.
25.	Rohilcund Division.
21.	Saugor to Jubbulpore.
26.	Strand Road.
CANALS.	
No. 32.	Bullinghatta.
33.	Bejapore Water-course.
41.	Calcutta Canals.
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42.	Burdwan.
42.	Berbampore.
43.	Behar.
43.	Central Provinces.
42.	Gunduch River.
44.	Ganges River.
42.	Hooghly.
44.	Jumna River.
42.	Midnapore.
42.	South-western Provinces.
42.	Southern and Northern Cuttack.
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42.	Twenty-four Pergunnabs.
CIVIL BUILDINGS.	
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47.	Chittagong Jetty.
50.	Churches, &c.
50.	Divine Worship.
49.	Educational Purposes.
45.	False Point Lighthouse.
51.	Hospitals.
52.	Hurdwar Bathing Ghaut.
47.	Jetty at Chittagong.
53.	Juma Musjid, or Mosque.
46.	Kedjeree Lighthouse.
54.	Kotub Minar.
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48.	Point Palmyras Lighthouse.

## 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 Chatterghur to Cuttack.	-- To make the Dakk 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. 128,957	Rs. a p. 8,558 6 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 Bissenpore, on the Grand Trunk Road.	-- This road is known as the Juggernath road, its construction having originated in a donation by Rajah Sookmoy Roy of 1,50,000 rupees for the construction of a road to the Temple of Juggernath.	- 201 miles in length; was commenced in 1822.	Bissenpore - - -	15,21,606 or 5,415 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 repair, including the value of convict labour, averages 28,166 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 1826	Calcutta - - -	Rs. a p. 72,000 13 4	- - - - -	Completed in 1830 -	- - The Hooghly, Damoodah, Loop-sarrah, and Cosays Rivers on this line were (with the exception of the last) extensive tideways, and are all crossed by ferries. The annual repair is about 2,076 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 1,408 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 14,007 rupees have been contributed by Rajah Soebchunder Roy and Nursingchunder Roy, and the whole of the remaining outlay, which is 20,003 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.2,69,830. 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. 42,000 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 bridges 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 Coonyah Hills from Gowahatty in Assam via Cherra 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 Gowahattee and Cherra Poonjee respectively.



987-	<i>Burrissaul 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 Manipore.	-- 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.	Munnipora	-- 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 Revelgunge, near the junction of the Ganges and Gogra, via Chupprah and Rewa 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 80,392 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 Revelgunge to Mozufferpore is one of the chief.
	(14.) Road from Patna to Gyah and Shergotty.		-- Length 80 miles. This road was not originally constructed by the Department of Public Works.	Shergotty	Not known	-- The drainage being imperfect, the road is about being renewed and improved at an estimated cost of 70,222 rupees, under the executive officer.	Not stated	-- The repairs made heretofore have been effected by convicts.
	(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 Basseram; road from Arrah to Akbarpore; road from Arrah to Brookgunge; Hadjore to Pooah in Tirhoot; Chupprah to Mozufferpore; Chupprah to Mooteerree in Chumparan, &c.				Not known	-- The repair of these roads by the Department of Public Works is under discussion, and estimates amounting to Rs. 72,880. 13s. 10p. have been sanctioned.		These roads are highly useful.
	<b>ROADS AND BRIDGES IN THE CENTRAL PROVINCES:</b>							
	<i>5th, or Benares Division :</i>							
	(17.) Road from Mogul Seraf, on the Grand Trunk Road, eight miles from the Ganges at Benares to Allahabad, via Chunar 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 Jabulpore 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 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 CENTRAL PROVINCES—continued.</b>							
<i>5th, or Benares Division—continued.</i>							
(18.) Road from Chunar, southward to Sukroot.	-- To facilitate the traffic with the southern portions of the district.	Length 16 miles	Sukroot	- - - - -	0,325 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 magistrate. Other roads in this division, viz., from Benares to Jounpore, from Ghaseepore 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 300 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 6 to 78 feet, and 213 causeways or pavements
(21.) Other roads in the Saugor and Nerbudda Territories of which the Department of Public Works has cognizance: viz., From Saugor to Jubbulpore, via Puttereen and Dhanow. From Dhanow to the Deccan Road at Jokeva. From Jubbulpore to Tilwara Ghât on the Nerbudda. From ditto to Jhansi Ghaut. From ditto to Cuttinghee	- - - - -	Length, 48 miles " 65 " " 5 " " 23 " " 20 "	- - - - -	Nearly 2,00,000	80 rupees per mile	- - - - -	of masonry for crossing the more shallow streams; one of these latter, however, is over the Belun river, and is 950 feet in length. The chief obstacle to the construction of this road was the ascent from the plains to the table land of Rowah; this is effected at the Klutra Pass, up an ascent of 690 feet by a winding path 2 1/4 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.  -- 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 Nusseerabad.	- - - - -	" 13 1/2 "	Nusseerabad	- - - - -	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.

ROADS AND BRIDGES IN THE NORTH-WESTERN PROVINCES:

<i>8th, or Rohilkund Division:</i>						
(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 1,20,075 rupees.	
<i>10th, or Agra Division:</i>						
(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 49 feet; raised 11 to 13 feet in height above the natural soil of the river's bank.			3,76,700 rupees	<p>-- 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.</p> <p>-- Of the sum 3,76,700 rupees, the sum of 3,45,105 rupees was paid to the starving poor, who could give but very inadequate returns in labour for the support they received. The remainder, 31,595 rupees, was expended for tunnels, ghats, bridges, &amp;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 1886, is stated at 6,12,431 rupees.</p>
<i>11th, or Meerut Division:</i>						
(27.) Branch from the Grand Trunk Road at Glazecoodenuggur, on the west bank of the River Hindun, to Meerut.		Length, 23 miles	Meerut		<p style="text-align: right;"><i>Rs.</i></p> <p>For earth-work 10,000 For bridges and drains - 7,763 For metalling - 75,788</p> <p><b>TOTAL - Rs. 93,551</b></p> <p>A further expenditure of 94,000 rupees is anticipated; 1,38,818 rupees have been expended on bridges by the Department of Public Works.</p>	<p>-- The earth-work is managed by a local committee. The bridges, drains, and metalling are to be constructed by the executive engineer. This will be a work of great utility, as the old road had, from long use, been worn to a lower level than that of the adjacent fields, and was consequently converted into a ditch in wet weather.</p>
<i>Delhi and Kurnaul Division:</i>						
(28.) Drains and small bridges, exclusive of those on the Grand Trunk Road.					20,571 rupees	<p>-- The roads in this division are under the charge of the civil authorities.</p>
<i>Kumaon Division:</i>						
(29.) Bridges and staging bungalows.					-- 45,688 rupees, and for annual repairs 2,300.	<p>-- In this division the roads are all mountain paths adapted for Hill Coolies, and on one line, viz., that from Romourie to Almora, for bullocks and tatoes. 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.</p>

The total outlay for roads, as above, is 57,94,223 rupees, but this does not include any sums which may have been expended by the civil authorities without the cognizance 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. 3.—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 Hijeliee and Tunlook.	-- Are much used in the Salt Mehals 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 Banksa Nullah, between the rivers of Huldee and Roopnarain, are under the control of the officers of the Salt Department.
(31.) Oolabarrah Canal.	-- Was formed by the excavation necessary for raising the earth-work of the road from Midnapore to Calcutta, crossing the Hooghly at Oolabarrah (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 1,921 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 35 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. Ballaghhatta. 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, 66,225 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. 1,82,089. 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. * Koolas Wooden Bridge. Ballaghhatta Iron Suspension Bridge. Nurkuidanga - ditto. Manichtolla - ditto. Barrackpore - ditto. Dum Dum - ditto.
(33.) Canal from the east end of the Ballaghhatta 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	-- 8,77,188 rupees. Their maintenance involves an average outlay of 2,000 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 Sunderbunds, and to the Eastern Canals at Tarda.	Length 18 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. † Kalgihaut Suspension Bridge. Kidderpore - ditto. Tollygunge - ditto. Gurrahhaut - ditto. Hastings - ditto. Allipore - ditto. Prannath - ditto.

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CANALS IN THE LOWER PROVINCES:

(35.) No artificial canals. Clearance of the Nuddes 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, 32,840 rupees, including salary and establishment; average toll collections for the same period 1,44,828 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.
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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 295 miles. It was originally constructed in the 14th century by the Emperor whose name it bears.	- - Neighbourhood of Hisar.	- - Cost of reconstruction about 10,33,170 rupees. Total amount expended to the end of April 1840, 15,66,592 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. 2,58,826. 10. 0.; 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 Hisar 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 2,58,620 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 Ali Murchan Khan.	Kurnaul			
(38.) Branch from Feroze Shah's Canal, near Kurnaul, to Rohtuck.		Length 45 miles	Rohtuck			

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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.
Dooab 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 Aurungzebe's successors. It had been entirely abandoned, and in some places its trace quite lost, when the Scharanpore 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 Bude, Engineer, in 1822-23. The re-opening of it was entrusted to Captain R. Smith, Engineers. Since its restoration, it has been under charge of Captain Cautley, Artillery; the outlay since he received charge of the works has been 5,79,164 rupees, and the return from water rent, mills, &c., 5,13,150 rupees.	Delhi	4,67,512 rupees.	Restored in 1831-32	- - Captain Cautley has met with many unforeseen difficulties in the efficient maintenance of this valuable work, which have arisen chiefly from the slope of the country, and the sandy nature 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 of life from absolute starvation, it must be allowed that the utility of a canal like this, by which full 71,630 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 10th April 1830, after a survey, and on plans, &c. prepared by Lieutenant Anderson, Engineers.	Ganjam River - -	Rs. a. p. - - - -	Rs. a. p. - - - -	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 Rohilkund.
(40.) Proposed Canal from the Ganges to Kunkul, to pass near Meerut and Coel, and finally to join the River Esau, near Mynpooree.	Irrigation - - - -	-- In 1830, Captain Cauley, 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 Esau - - -	- - - - -	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 Arsun, 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 40,03,288 rupees; and the returns in water rent, tolls, &c., is now 8,47,386 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, 3,450 miles, their height and mean thickness varying from 20 feet by 65 feet to the smallest size.	- - - - -	-- Came under charge of Military Board in 1831, since which period the amount expended is 18,07,822 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 expenditures, the maintenance of the embankments is believed to constitute
Southern Cuttack							
Balazore							
Midnapore							
Hooghly							
The 24 Pergunnahs							
Burdwan							

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**EMBANKMENTS, LOWER PROVINCES:**

Embankments on the Hooghly River, in the Berhampore Division.

Bunds on the Gonduck 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.

-- Have cost, since 1831, 1,34,226 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 --

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

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

-- Have cost 30,100 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 50,742 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 Bunde falls short of the actual expenditure.

-- Are of the greatest utility. They were breached in 1856 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 Bunde are not equal to the outlay.

**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.

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-- Cost, including superintendence, 69,246 rupees for the building, and 23,760 rupees for the light-room, or lantern; total, 93,006 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 Kadjeree

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-- Not known. Cost of annual repairs about 460 rupees.

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

(47.) Jetty at Chittagong

For landing goods

-- Projects 115 feet into the tideway.

6,708 --

Just completed

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

(48.) Lighthouse at Point Palmyra.

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Not known

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

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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, 15,007 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, 48,740 rupees; cost of repairs, about 934 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:

Stones bathing ghats at Hurdwar.	-- 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 Musjid, 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 1,90,64,000 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.
ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:							
Roads from the Town of Aeng, in Arracan, to Nagatongu and Thorowah, and for the construction of Bridges.	- - - - -	Sanctioned 1840-41-	- - - - -	Rs. a. p. 17,823 7 4	- - - - -	Season 1840-41	-- Seven of the bridges to be restored, were destroyed by the Burmeses in their flight from Arracan to Ava, in the year 1824.
<i>Akyab:</i> Construction of two wooden Bridges over the Peck Toek Kyng Nullah.	-- To replace old bridges, which were originally constructed of indifferant materials by the Mughls of the Province.	-- Sanctioned 12th January 1841.	Akyab - - - -	5,869 11 1	5,470 11 3	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 22, and the other to 24 feet. This has consequently increased the expense by Rs. 608. 2. 7.
Construction of five masonry bridges over Nullahs.	-- For maintaining an uninterrupted communication at the station.	-- Sanctioned 16th February 1841.	- - - - -	6,076 10 7	6,272 - 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 Nagapers, and the other in the town, on the bank of the Peck Sikk 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. 7,527. 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.	- - - - -	4,375 10 2	5,523 .3 9	-- Completed season 1842-43.	- - - - -
Construction of two Pucka Drain Bridges in the town of Akyab.	- - - - -	-- Sanctioned 28th November 1842.	- - - - -	351 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>Along Road and Pass: Construction of a Bridge, and repair of seven others, and of Travellers' Houses.</i>	-- These works are intimately connected with the interests of the trading community.	-- Sanctioned 9th September 1844.	- - - - -	- - - - -	<i>Rs. a. p.</i> 1,161 11 1	- - - - -	
<i>Agrahour to Balidah: Construction of a Foot Road, connecting the Centar with the Cattack Road.</i>	-- To facilitate the transmission of the daks between Centar and Midaspore.	-- Sanctioned 10th April 1845.	Balidah - - -	1,873 6 8½	1,886 8 7	- - - - -	
<i>Akyab: Repairs to the Phoongparrah Bridge.</i>	- - - - -	-- Sanctioned 28th June 1848.	Akyab - - -	928 14 4	- - - - -	Season 1849-50	-- The planking, beams, rails, &c., have been renewed.
<i>Construction of a wooden Bridge on the Gaol Road.</i>	-- The necessity for this work was pointed out by the officer commanding at Akyab.	-- Sanctioned 10th October 1850.	ditto - - -	- - - - -	1,371 - -	- - - - -	-- The estimate is exclusive of the costs of excavations, which will be performed by convicts.
<i>Construction of a wooden Bridge at Nazerparah.</i>	- - - - -	-- Sanctioned 6th November 1850.	ditto - - -	- - - - -	1,672 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>		Length.					
<i>From Raha to Gobha</i>	- - - - -	27 miles	Assam ditto ditto ditto	- - - - -	981 7 5	- Completed season 1842-43.	-- These are unmetalled roads, and their width is 16 feet; they have been raised where necessary.
<i>From Talia Mhookatia to Lowkhaoh.</i>	- - - - -	10 "		- - - - -	9,917 7 11		
<i>From Nowgong Division Roads</i>	- - - - -	0 "		- - - - -	072 0 -		
<i>From Borallygong to Sounarte</i>	- - - - -	3 "		- - - - -	297 10 7		
<i>From Nowgong to Demoorogoores.</i>	- - - - -	2 "	- - - - -	539 8 -			
<i>Repair of the Road from Kulling River to Koliabur.</i>	- - - - -	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.
<i>From Koliabur to the Dunsary</i>	- - - - -	00 "		- - - - -	- - - - -		
<i>Repair of Road between Nowgong and Tezore.</i>	- - - - -	17 "	Sanctioned 20th April 1843.	4,924 - 8	4,924 - 8	- Completed 1840-47	-- Width, 12 feet, with 22 bridges and drains.
<i>Repair of Road from Raha to Daboka.</i>	- - - - -	23½ "		- - - - -	5,152 15 3		
<b>ROADS AND BRIDGES, CENTRAL PROVINCES:</b>							
<i>Ajmere and Nusserabad Road: Metalling of.</i>	-- 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 -	- - - - -	

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<p><i>Agra and Bombay Road:</i> Construction of Bridges over the Bulbookee Nuddes and the Bhowkerie Nuddes.</p>	<p>- - - - -</p>	<p>- - Sanctioned 9th September 1849.</p>	<p>- - In the Province of Malwa.</p>	<p>1,740 8 11 1,466 12 9</p>	<p>{ For bridge over the Bulbookee Nuddes } 1,802 5 9 { For bridge over the Bhowkerie Nuddes } 1,597 - -</p>	<p>-- Completed season 1849-50.</p>	<p>-- Both bridges are on the territory of the Maharajah Scindia.</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>2,802 - -</p>	<p>- - - - -</p>	<p>- - In the territory of the Maharajah of Holkar.</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 26th October 1848.</p>	<p>- - On the Agra and Bombay Road.</p>	<p>799 8 5 1/2</p>	<p>872 - -</p>	<p>- - - - -</p>	<p>- - - - -</p>
<p>Ford on the Parbutty River -</p>	<p>- - To provide for a passage for wheel carriages across the Parbutty River on the general level of the channel during the dry season only.</p>	<p>- - Sanctioned 6th September 1849.</p>	<p>Near Barsad - -</p>	<p>2,010 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>- - This bridge to be of one arch of 30 feet span. Sanctioned 4th February 1850.</p>	<p>At Chuper Kajhore -</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 3d December 1848.</p>	<p>- - At Dolterin, between Bissara and Puchore.</p>	<p>1,477 8 6 1/2</p>	<p>1,711 18 8</p>	<p>- - - - -</p>	<p>in the territory of the Rajgush 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 Par Muddy, and Belloda Village Nullahs.</p>	<p>- - - - -</p>	<p>2,706 - 10</p>	<p>- - - - -</p>	<p>- - - - -</p>
<p>Construction of a Bridge over the Kokooba 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>968 - -</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 26th March 1850.</p>	<p>- - Crosses the main road between Sossam and Gohar.</p>	<p>- - - - -</p>	<p>1,338 - -</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>7,010 15 -</p>	<p>9,620 7 1</p>	<p>- - Completed season 1849-49.</p>	<p>- - - - -</p>
<p><i>Agra Bridge:</i> Over the Doorukar Ravine.</p>	<p>- - On account of the inconvenience experienced by the public, who have occasion to pass by the bridge and bazar near the Tripolith vid Caszapara, owing to there being but one narrow confined road at this entrance of the town.</p>	<p>- - Sanctioned 7th December 1849.</p>	<p>- - - - -</p>	<p>910 8 9</p>	<p>1,113 2 4</p>	<p>- - Completed season 1841-42.</p>	<p>- - - - -</p>

PAPERS RELATING TO PUBLIC WORKS (INDIA).

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 Expenses Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES—continued.</b>							
<i>Agra to Mynpooree:</i>							
Construction of Bridges over the Jhera River and Guddakhar Ravine, and over the Peelakar Rivulet.	-- This road is of much importance, being a direct communication between Agra and Futtighur.	Sanctioned 1840-41-	Mynpooree - - -	Bridge over the Jhera - - - 7,063 8 6 Ditto over the Peelakar Rivulet 5,151 10 - <u>Rs. 12,215 9 6</u>	13,017 12 5	- - Completed season 1842-43.	-
Construction of a Bridge over the Urind Nadda.	- - - - -	- - Of three arches of 40 feet span. Sanctioned 3d January 1845.	-- Crossing the Agra and Mynpooree Road, 15 miles from Mynpooree, at the village of Kuliore.	17,071 - 1	23,874 3 7	- - Completed season 1846-47.	-- The savings on the sanctioned estimates, viz., Rs. 6,803. 5. 6., and Rs. 10,681. 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 Siogar 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 Mynpooree Road, 23 miles from Mynpooree, at the village of Nrown.	22,051 5 7	33,633 5 3		
<i>Agra and Bombay Road:</i>							
To the Nerbudda River - (See Para. 13 to 17 of Court's Despatch, 30th January 1850, at page 148 of Parliamentary Return, No. 922, 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	Bombay - - -	-- The expenditure within the Bengal Division to November 1847 is stated as follows; viz., <u>Rs.</u> New work of road, 1,04,310 Superintendence, 1,13,108 Repairs, &c. - 47,542 <u>3,64,958</u> 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 } <u>Rs. 13,30,709</u>	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 Supree, 115 1/2 miles; and between Indore and the Nerbudda River, 78 1/2 miles; so as to be practicable for wheeled carriages, including a branch road from Supree to Gwallior. 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 Candcish Rs. 1,00,000 For completing part of the road under charge of the Civil Engineer, a distance of 93 miles, with bridges and drains - 2,40,514 For bridging a portion of the road between Soonghur and Dhoolia - - - - - 65,000 For completing the unmetalled portion of the line in Kandeish 3,00,000 <u>TOTAL - - - Rs. 7,11,514</u>
		Length, 2d portion: Indore to Akberpore on the Nerbudda - - - 51 0 107					
		Length, 3d portion: Akberpore to Sindwa, 43 1 0					
		Length, 4th portion: Studwa to Bombay 270 1 179					
		TOTAL - - - 734 7 8					
		Commenced in 1840.					
<p>These works, however desirable, were considered too costly to be undertaken at present. A sum of 4,224 rupees was sanctioned in June 1840 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.</p>							

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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 Doodat and Akbarpore.	864 14 8	760 14 5	-- Completed season 1846-47.	
Agra: Proposed construction of a Suspension Bridge over the River Jumna.			Agra		5,93,378 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 28 feet broad, supported by three
<p>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 cause of the failure of the Balli Kball 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.</p>							
<p>CIVIL BUILDINGS, SOUTH EASTERN PROVINCES—JUDICIAL:</p>							
Akyab:							
Construction of a Cutcherry	-- To replace the existing cutcherry, not worth repairing.	-- Sanctioned 1st August 1836.	Akyab	4,869 8 5	4,742 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	12,150 9 4	14,502 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 6th January 1838.	-- Situated at the end of the Farquar's Rocks, two miles from the station of Akyab.	4,813 0 10		-- Constructed in 1840-41.	
Construction of a Treasury Record Room, malkana, and cash-room, at the civil station.		-- Sanctioned 19th October 1841.	Akyab	5,741 15 6	5,414 15 0	-- Completed season 1843-44.	
Amherst: Construction of a new Gaol at.	-- In consequence of the insufficient accommodation afforded by the existing gaol.	-- Sanctioned 11th January 1842.	Amherst	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 9d June 1842.	-- Sanctioned 9th January 1843.	Allipore	5,404 12 1	5,770 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.

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PAPERS RELATING TO PUBLIC WORKS (INDIA).

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(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 - - - -	<i>Rs. a. p.</i> 9,100 14 2	- - - - -	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 - - - -	14,302 7 1	14,362 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 - - - -	1,703 1 -	1,397 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 - - - -	20,734 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 1845.	-- On the Chowreggya road.	1,942 5 8	2,292 - -	-- Completed season 1846-47.	-
Construction of a Bridge at Tulce 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 - - - -	- - - - -	0,313 - -	-	-
Construction of a Bridge at Nazirpah.		Twenty-four feet span	ditto - - - -	- - - - -	4,008 - -	-	-
<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 0 -	-- Completed season 1846-47.	-
<i>Akyab:</i> Construction of the Budder 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.

987.	Allipore Gaol: Alterations and improvements	-- To improve the gaol as regards cleanliness, salubrity, and discipline.	-- Sanctioned 22d June 1844.	Allipore - - -	20,734 18 10	22,577 15 8	-- Completed season 1843-44.	-- 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 partition walls with a view to the separation of the convicts into squads of about 100 men; the removal of the existing solitary cells to a more airy site, and the construction of an additional ward and working shed.	
	Construction of a Balangutee Guard-room to the	-- This building will be of more durable materials than the last, which has been entirely destroyed by white ants.	-- Sanctioned 25d June 1845.	Allipore - - -	808 - -	808 - -	-- Completed season 1845-46.		
	Ahyab: Additions and alterations to the Catcherry at.	-- For the better accommodation of the different civil officers.	-- Sanctioned 3d June 1844.	Ahyab - - -	- - - -	2,306 9 3	- - - -	-- This building has been lengthened about 40 feet.	
	Allipore Gaol: Construction of a Retiring-room, with Anti-room, to the Catcherry of the additional Judge.	-- These works were undertaken under a representation from the additional Session Judge of their necessity.	-- Sanctioned 20th May 1846.	Allipore - - -	953 5 3	- - - -	-- Completed season 1846-50.	-- Additions and alterations to the catcherry itself were also effected.	
CA	Allipore: Renewing the Roof of the Sepoy Guard-room.	-- In lieu of the old roof, condemned by a committee.	-- Sanctioned 20th June 1840.	Allipore - - -	- - - -	2,302 1 8	- - - -		
	Alterations and Additions to the Gaol Hospital.	-- Under a representation from the superintendent of the gaol, of the necessity for a better classification of the patients.	-- Sanctioned 18th October 1839.	Allipore - - -	- - - -	3,084 - 1	- - - -	-- The superintendent observed, that in the large gaol at Allipore the different kinds of prisoners are kept as 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 mingled together.	
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL</b>									
	Arrah: Sadder Ameen's Catcherry.	- - - - -	-- G. O. 23d January 1839.	Arrah - - -	1,550 - -	- - - -	Season 1839-40.		
	Ahyab: Construction of a Catcherry at.	- - - - -	-- Sanctioned 1st August 1836.	Ahyab - - -	4,742 - -	- - - -	- - - -		
	Arrah: Construction of a Dewanny or Civil Gaol.	-- No separate provision had been made for the confinement of civil prisoners, and, in consequence, persons of this class were mixed up with the common felons in the gaol.	-- Sanctioned 1st November 1843.	Arrah - - -	3,437 12 7	4,040 10 5	-- Completed season 1844-45.	-- In the new gaol, and, at the suggestion of the Judge, separate accommodation is provided for prisoners of rank and caste.	
	Arrah Gaol: Construction of 50 Ventilators, and lowering Compound Walls.	-- For the better ventilation of the criminal wards.	-- Sanctioned 17th February 1841.	Arrah - - -	492 7 10	412 4 8	Season 1848-49.		

(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.	Level, 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> Bullock Amcen's Cudumery.		-- Sanctioned 29th August 1841.	Allahabad	<i>Rs. a. p.</i> 1,273 0 8	<i>Rs. a. p.</i> 1,570 8 -	-- Completed season 1841-42.	
<i>Ajmere:</i> Const. Alterations to Lie.		-- Sanctioned 24th December 1840.	Ajmere	1,700 - -	1,700 - -	Season 1840-41.	
<i>Allypore:</i> Construction of a Hoosed Room.	-- For the use of the Collector and Magistrate.	-- Sanctioned 25th March 1844.	- - - -	2,235 7 9	2,238 0 0	-- Completed season 1840-47.	
<i>All Allahabad:</i> Construction of an additional Room to the Judge's Cudumery.	-- For the accommodation of the records.	-- Sanctioned 7th January 1841.	Allahabad	- - - -	1,098 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>Allahabad:</i> Const. 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> E. wing 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	- - - -	11,950 13 9	Season 1842-43.	
Errection of Offices for the Court of A. Adet Dewaany.		-- Sanctioned April 1843.	- - - -	20,309 9 8	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.
Errection of Offices for the Board of Revenue.		-- Sanctioned April 1843.	- - - -	- - - -	11,007 - -	- - - -	-- The excess of expenditure is owing to a rise in the price of timber in the bazaar.
Construction of a Hospital Ward at the Foudjarry Gaol.	For the use of females	-- Sanctioned 4th November 1843.	Agra	849 6 7	909 13 9	-- Constructed season 1843-44.	-- The necessity for this work was reported direct by the civil authorities to the Government.
<i>Allypore:</i> Construction of a Gaol in the Fort.	-- To relieve the district gaol, by the withdrawal of the prisoners, and to lessen the expense for increased guards for the custody of convicts.	-- Sanctioned 2d March 1844.	Allypore	-- These works suspended in season 1844-45.	60,080 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 2d June 1843.	Agra	6,436 10 -	6,558 12 9	-- Completed season 1840-47.	



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<i>Allyghur</i> : Construction of Cutcheries for the Sudder Amerns and Omahs.	-- During the last rains the old buildings became too dilapidated for use.	-- Sanctioned 25th March 1846.	<i>Allyghur</i>	3,355 13 10	3,008 - -	-- Completed season 1846-47.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES--REVENUE:</b>						
<i>Akyab</i> : Additions and Alterations to the Treasury and Record-room.		-- Sanctioned 9th September 1844.	<i>Akyab</i>	1,625 - -	1,625 - -	-- Completed season 1846-46.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES--REVENUE:</b>						
<i>Allahabad</i> : Pilgrim Hospital, additions to		20th December 1839	<i>Allahabad</i>	1,475 1 -	1,475 1 -	-- Completed season 1840-41.
Office of the Sadr Board of Revenue.	-- Repair of 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 Tehsil-darry Cutcheries.		-- Sanctioned 27th August 1840.	-- These cutcheries are situated at Menjah Chail, Kurchunna, and Munjeirpore.	19,812 4 8	20,423 2 4	-- Completed season 1842-43.
<i>Azimgurh</i> : Construction of a Tehsil-darry Cutchery.		-- Sanctioned 31st March 1838.	At Chaeerkota.	5,790 - 4 1/2	- - - -	-- Completed season 1841-42.
<i>Allahabad</i> : Construction of a Treasury Room to the late Judges' Cutchery.	-- This cutchery has been transferred to the Collector of Allahabad.	-- Sanctioned 27th March 1847.	<i>Allahabad</i>	- - - -	3,869 - -	- - - -
<b>CIVIL BUILDINGS, NORTH WESTERN PROVINCES--REVENUE:</b>						
<i>Agra</i> : Construction of a Cutchery for the Commissioner of the Division.		-- Sanctioned 11th August 1846.	<i>Agra</i>	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 shed.	-- 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 -	1,206 5 7	1,533 - 3	-- Completed season 1847-48.
<i>Allyghur</i> : Construction of a Tehsil-darry Cutchery at Eglass.	-- The Tehsil duties have been carried on with much inconvenience at the Sudder Station, which is a distance of 15 miles.	-- Sanctioned 7th July 1843.	<i>Eglass</i>	- - - -	4,082 12 8	- - - -
<b>CIVIL BUILDINGS, SOUTH EASTERN PROVINCES--GENERAL:</b>						
<i>Akyab</i> : Enclosure of the Burial Ground.		-- Sanctioned 16th May 1842.	- - - -	- - - -	1,985 12 8	- - - -
<i>Allipore</i> : Removing and setting up a Steam-engine in the Iron Bridge Yard.	-- This engine, which has been transferred from Chaund Paul Ghaut, is of 10 horse-power.	-- Sanctioned 23d October 1843.	<i>Allipore</i>	7,249 - -	7,020 - -	-- Completed season 1844-45.

-- The works executed consisted of an arched pucea verandah in lieu of a thatched one; additional alterations to doors and windows, and renewing the terrace roof.

(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—continued.</b>							
<i>Allipore—continued.</i> Construction of new buildings.	-- For the establishment attached to the Mathematical Instrument Department.	-- Sanctioned 10th January 1844.	Allipore . . . .	Rs. a. p. 3,794 12 8	Rs. a. p. 3,794 12 8	Season 1843-44.	—
<i>Akyab:</i> Protection of the Beach, and formation of a Landing-place.	-- The necessity for this work was brought to notice by the Marine Board and the Commissioner of Arracan.	-- Sanctioned 19th June 1843.	Akyab . . . .	10,120 - 7	13,868 11 2	-- Completed season 1845-46.	-- This outlay is to be defrayed from the port dues. The saving on the work is 3,748 rupees, in consequence of 7½ groins having been constructed instead of 10. The pier provided in the sanctioned estimate has not been executed. The above amount has been placed at the disposal of the Commissioner of Arracan for completing the pier or breakwater.
Constructing of a Large Shed with Verandah, to serve as an Exchange.	-- A place of this description is much wanted at Akyab, where merchants, agents, captains, &c. may assemble under shelter from sun or rain.	-- Sanctioned 17th November 1845.	- - - - -	- - - - -	1,500 - -	Season 1845-46	-- The shed is to be 66 by 20, with a verandah 12 feet on four sides.
Construction of Three Marine Wells.	. . . . .	-- Sanctioned 20th March 1844.	- - - - -	767 3 3	- - - - -	-- Completed season 1845-46.	—
<i>Allipore:</i> Additions, &c. to the Iron Bridge Yard.	-- For increasing the accommodation to afford shelter to the carpenters, who at present work in the open air; for English smithy coal, to prevent its wastage from wind and rain; and also to provide sufficient space to meet heavy demands.	-- Sanctioned 27th May 1844.	Allipore . . . .	4,209 2 6	4,199 - -	Season 1848-49.	—
Construction and setting up of an additional boiler to the Steam-engine at the Iron Bridge Yard.	-- Necessary to secure the efficiency of the establishment and prevent delays, which would prove detrimental to the public service.	-- Sanctioned 17th May 1845.	- ditto - - - -	3,289 15 9	3,289 15 9	-- Constructed season 1846-47.	—
<i>Amherst:</i> Provision of a Pilot Station on the Island off Amherst.	- - - - -	-- Sanctioned October 1848.	Amherst . . . .	487 11 11	500 - -	-- Reported season 1846-47.	—
<b>CIVIL BUILDINGS, LOWER PROVINCES—GENERAL:</b>							
<i>Akra:</i> Additions to the Semaphore Tower.	- - - - -	-- Sanctioned 19th August 1846.	Akra . . . .	575 10 1½	- - - - -	Season 1847-48.	—
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL:</b>							
<i>Allahabad:</i> Ghant on the Jumna, &c.	- - - - -	-- Sanctioned 1839-40.	- - - - -	5,799 12 -	3,500 - -	-- Completed 1840-41.	-- The excess over the estimated amount is owing to the execution of the work on a more complete plan than was intended, in accordance with the advice of the magistrate, who had promised aid to the extent of 2,000 rupees towards the undertaking.

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Agra: Provision of accommodation for the Establishment with the Governor-general.	-- Sanctioned season 1843-44.	Agra - - -	2,611 15 11		Season 1843-44.	
Allahabad: Enlargement of the Burial Ground.	-- The ground in the existing cutcherry was completely occupied with graves, and the burial-place required extension.	-- Sanctioned 14th February 1848.	Allahabad - - - 529 2 11	564 5 5	-- Completed season 1848-49.	
Landing-place for Goods and Passengers, and Apparatus for landing Goods, &c.	-- Under a representation from the agent Government steamers of the necessity of the works.	-- Sanctioned 28th December 1849.	Allahabad - - -	7,108 4 5		-- In consequence of the increased influx of stores to be sent per bullock train, the steam agency is not at all times sufficient to contain the whole of the goods in store. With reference to the Ghant, &c., it is stated that the crews of the vessels work much harder than the Bandaries or Coolies, so that with the aid of the machinery and works provided for in this estimate, it is expected that a Government vessel may be cleared of the largest cargo ever brought to Allahabad in six or eight hours, which at present occupies 1 1/2 to two days.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—GENERAL:</b>						
Agra: Enclosure of the new Burial Ground.	-- For the accountant North-Western Provinces.	-- Sanctioned 17th October 1849.	Agra - - -	886 1	-- Completed season 1848-49.	
Construction of a Record Room.	-- In lieu of the present building, which is not suited for the accommodation of travellers.	-- Sanctioned 6th October 1845.	Agra - - -	2,181 10 10	2,168 - -	-- Completed season 1846-47.
Erection of a new Staging Bungalow.	-- At the instance of the Postmaster-general.	-- Sanctioned 14th August 1845.	Agra - - -	1,756 5 9	2,102 - -	-- Completed season 1846-47.
Construction of a Post Office and Godown, with Compound Wall.	-- Under orders of the Lieutenant-governor.	-- Sanctioned 10th July 1849.	Agra - - -		5,511 - -	
Construction of a Theatre, with Museum attached, as a Wing to the College.	-- The grounds for the preparation of this estimate were not made known to the Military Board.	-- Sanctioned 19th July 1850.	Agra - - -		13,840 8 -	
<b>CIVIL BUILDINGS, LOWER PROVINCES—POLITICAL:</b>						
Assam, Upper: Construction of various Buildings at	-- At Subeaugor: treasury, record room, magazine, with guard room. At Detroghur: record rooms, treasury, powder magazine, store room.	-- Sanctioned 8d August 1840.	Upper Assam - - -		11,919 9 8	Season 1840-41.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—POLITICAL:</b>						
Ajmere: Construction of Residency Buildings.		-- Sanctioned 31st August 1840.		1,024 8 5	1,160 15 11	-- Completed season 1841-42.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—POLITICAL:</b>						
Agra: Construction of additional Buildings.	-- For the accommodation of the records of the office of the Secretary to Government.	-- Sanctioned 18th February 1846.	Agra - - -	2,786 9 10		-- The new record room measures 30 by 18 feet, with two side and one end verandah, 10 feet in the clear. (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>MARINE BUILDINGS, LOWER PROVINCES:</b>							
<i>Azyah</i> : Construction of a Lighthouse on the Great Savage Rock.	- - - - -	- - Sanctioned 9th November 1842.	- - - - -	<i>Rs. a. p.</i> Cost of Light-house - 39,587 10 4 Buildings attached - 1,501 9 6 Lantern - 15,000 - - <hr/> <i>Rs. 50,089 3 10</i>	<i>Rs. a. p.</i> 39,425 8 7 The cost will be defrayed from the funds of the port, which are believed to amount to 20,000 or 30,000 rupees. The lantern to be used, which is valued at about 21,000 rupees, will be supplied from the marine stores in Calcutta.	-- Completed, season 1843-44.	-- Thirty-five feet of the rock downwards has been removed, and a base thus obtained for the superstructure. The rock is now 49½ feet above high-water mark, and the lighthouse will be raised to the height of 50½ 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>							
<i>Burdwan Division</i> : Restoration of the Kanooe Khal Bunds.	- - - - -	- - Sanctioned 15th July 1841.	Burdwan	- - - - -	1,075 12 -	Season 1841-42	-- The length of embankments in the Burdwan Division is represented, in 1839-40, to be 285 miles, and the estimated cost of annual repairs, 4,619 rupees.
New Bund on the Adjee River.	-- To prevent injuries to lands by the overflows of the river.	Sanctioned 1841-42	- - - - -	1,884 11 -	- - - - -	-- Completed season 1841-42.	-
<b>EMBANKMENTS, SOUTH-EASTERN PROVINCES:</b>							
<i>Bogree</i> : Construction of a new Bund on the Selin River.	-- To replace the old bunds, which were pronounced to be quite insusceptible of efficient repair.	- Length, 10,400 feet; sanctioned season 1843-44.	Bogree Pergunnah	2,437 14 1	- - - - -	-- Completed season 1843-44.	-- It is expected that about 844 beegahs of land will be fertilised.
<i>Burdwan</i> : Construction of a new line of Bund from Salaspore to the Canna Nuddee, and repairs and renewals to the Burdwan Bunds generally.	-- The new bund is proposed for construction at a point where the old one has frequently failed, causing great damage to the country.	- Length of new bund, four miles; sanctioned season 1847-48-49.	Burdwan	- - - - -	72,176 12 9 16,469 - - <hr/> 88,645 12 9	-	-
<i>Burdwan Bunds</i> : Repair of a breach at the Ragulpore Bund.	-- This bund was breached during the floods of 1848, nearly opposite to Burdwan, at a point where the whole force of the Damoodah acts upon it.	-- Sanctioned season 1848-49.	Near Burdwan	7,291 7 10	- - - - -	Completed 1849	-- The length of the new bund is 11,600 feet; the centre has an average height of 16 feet; it is 14 feet broad, and has slopes of four to one and three to one. The ends, which are not exposed to the force of the river, 8,100 feet in length, have a height of 10 feet, and a crest of 8 feet.
<i>Balassore Division</i> : Construction of new Bunds, and restoration of others which had been abandoned.	-- Required for the protection of the estate Mouzah Shideeah, Pergunnah Soonhut.	- Sanctioned January 1844.	- - - - -	- - - - -	230 - -	Season 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 <i>Rs. 7,007. 13. 9.</i>

EMBANKMENTS, LOWER PROVINCES:								
057	<i>Behanpore Division:</i> Bunds at Moorshedabad.		-- Length, about 74 miles.				-- The cost of annual repairs for 1850-51, amounted to 4,724 rupees.	
	<i>Danleah Bunds:</i> New Bund from Hantalsabad to Banleah Ghaut.	For the protection of the town	-- Length two miles, one furlong, and 180 yards, sanctioned 6th February 1840; 3,100 feet additional sanctioned December 1840		4,111 - -	-- This work is in progress.		
	<i>Buzos Bund:</i> Construction of a Bluce Bridge at the western end of this Bund.	-- To prevent influx of the waters of the Ganges.	-- Sanctioned 22d February 1850.	-- At the village of Chooter Bogree, Al-lahabad.	64 8 1½	1,337 - -	-- Completed 1841-42.	
						2,223 10 3	-- Rr. 1,272. 14. 1½ less than the original estimate, owing to the employment of convicts on the work. -- 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 Ganges run up a hollow many hundred feet in rear of the left flank of the Bund.	
EMBANKMENTS, CENTRAL PROVINCES:								
	<i>Behar, Sacri Bund:</i> Reconstruction of.	-- To protect the country on the Western Channel from inundations.	-- Sanctioned season 1838-39.	Behar	13,218 - - Estimate for ordinary repairs, 1,500 rupees.	8,155 2 7	Completed 1840-41	-- The great excess of expenditure beyond the estimate, was occasioned by Lieutenant Ommangy not making a sufficient allowance, for the great distance from which the earth had to be brought. The bund has fully answered the purposes for which it has been reconstructed, and the collector anticipates no difficulty in realising from the Zemindars the amount expended.
CANALS, NORTH-WESTERN PROVINCES:								
103	<i>Bejapore:</i> Watercourse in the Deyrah Dhoon.	-- For the irrigation of land lying between the Tonse, the Arson, and Bogal Rivers.	Sanctioned 1838-39	Deyrah Dhoon	15,026 14 7		Completed 1840-41	
	Construction of masonry falls	-- To lessen the rapidity of the stream.	Sanctioned 1838-39		6,384 2 4		-- Completed 1841-42.	
	<i>Brotana Branch Canal:</i> Construction of 50 masonry outlets.	For irrigation	-- Sanctioned 7th March 1837.		4,501 1 4		-- Completed season 1842-43.	
	<i>Bejapore Watercourse:</i> Construction of a masonry Tunnel.	In lieu of a wooden tunnel	-- Sanctioned 26th September 1843.	-- Near the village of Dakra.	2,906 14 -	2,906 14 -	-- Completed season 1843-44.	-- The wooden tunnel was a source of much trouble and expense, owing to the repairs which it required constantly.
	Construction of a Corn Mill at Dakra.		-- Sanctioned 1st June 1844.	-- ditto	682 12 8			
CANALS, SOUTH-WESTERN PROVINCES:								
	Canal from the Banks Nullah to the New Pootankhollee Canal in Tutnook.	-- The Banks Nullah Canal forms a navigable communication between the Huldee and Roopernain River, and is chiefly used for the transport of salt. By the new cut the dangerous route taken by the salt boats of Tangrakhully and Roopernain Rivers will be avoided.	-- Length of the new cut 8 miles and 145 feet; sanctioned 24th November 1841.		-- This project was abandoned under orders of Government, 17 August 1842.	-- Estimated for the new cut, 17,010 2 -		-- Further inquiry established the fact, that there are no sufficient grounds for entertaining the expectation that it will be possible to locate 300 or 400 Khalines along the sides or in the vicinity of the proposed canal, and that the risk attending the transport of the Durung salt to Ghat Narampore, as now conducted, ought, with proper precautions, to be quite inconsiderable.

(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, SOUTH-WESTERN PROVINCES—continued.</b>							
Balinghatta Canal - - -	- - - - -	- - Sanctioned 13th December 1839.	- - - - -	Rs. 1,811 4 - Sanctioned, for strengthening the south bank by piling.	Rs. - - - -	- - Completed season 1843-44.	- - - - -
Balinghatta Canal, repair of a portion of the south bank,	- - To obtain a wider road, and improve the slopes of the bund.	- - Sanctioned season 1846-50.	- - - - -	508 13 7 1/2	- - - - -	- - Completed season 1849-50.	- - The dock gates were taken out and repaired at a cost of Rs. 457. 2. 6.
<b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:</b>							
Construction of a Bridge on the Burdwan and Hooghly Road, at Shacckpore.	- - This bridge is required on a part of the road which is liable to be cut through, whenever the floods of the Damoodah Nullah are brought down the Banks Nullah from the neighbourhood of Burdwan.	- - Sanctioned 22d December 1840.	- - - - -	1,588 9 5	1,681 1 10	- - Completed season 1842-43.	- - This is to be a bridge of three (3) arches.
Bancoors and Burdwan Road -	- - A portion of the old line of road bordering on the southern bank of the Damoodah River, by the floods of which it is constantly breached, is to be abandoned, and a more direct one adopted.	- - Length 14 1/2 miles; sanctioned 16th February 1841 and 19th May 1842.	- - - - -	- - Cost of the bridges, 7,890 rupees.	12,000 - - and 6,880 14 3	- - Completed season 1846-47.	- - The number of drains and bridges to be constructed, amounts to 34. The road is under charge of the Burdwan Local Committee.
<b>Bisnaspore Road.</b>							
Construction of a new masonry Bridge on the.	- - Indispensable for the safety of the Bisnaspore road, of which, owing to insufficiency of drainage, 2,000 feet were carried away by a flood.	- - Sanctioned 28th August 1843; to consist of two arches of 16 feet span each.	Near Gobroo Bazar -	2,120 1 - 1/2	2,438 2 10	- - Completed season 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 Doodiah Khal.	- - To supply the place of an old bridge, which was destroyed by inundation.	- - Of four arches, 20 feet span each; sanctioned 20th March 1845.	- - Between Midnapore and Blaspore.	7,449 - -	8,646 4 -	- - Completed season 1847-48.	- - - - -
<b>Boringham:</b> Construction of two additional Arches to the masonry Bridge at.	- - This bridge was severely injured by the overflowing of the river in September 1843. It is hoped that these arches will reduce the elevation of the waters 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 Raopore mail road, in the Nagpore territory.	4,945 13 -	4,945 13 -	- - Completed season 1846-47.	The bridge consisted of three arches.

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**Hathu Khal Iron Tension Bridge:**

Construction of - - -

-- A bridge at the spot selected will be a great public convenience.

-- One span of 260 feet, with a 10 feet roadway, sanctioned 2d June 1844.

-- Situated on the right bank of the Hooghly River, near Howrah, opposite Calcutta.

56,680 4 2

46,447 8 -

Completed in 1845 -

-- The inhabitants subscribed 17,800 rupees towards its erection; the requisite disbursement for completing the structure was to be made from the terry funds of the district. This bridge fell down in June 1845, immediately after its completion, which was attributed to a want of sufficient strength in the central connexion of the chains.

The bridge was again put up, greatly strengthened in the central connexion. The Court, in a despatch dated 2d December (No. 9) 1845, disapproved the tension principle, and directed that it should not be further adopted in the construction of suspension bridges.

Restitution of the - - -

-- Sanctioned 28th October 1845.

12,027 9 8

7,431 - -

-- Reconstructed season 1846-47.

Making the approaches to the - - -

-- Sanctioned 10th March 1846.

2,445 0 7

**Bisnapore Road:** Strengthening of the Tamaul Nullah and Santbarcoorah Masonry Bridges.

-- In consequence of injuries sustained by the floods of season 1844.

-- Sanctioned 27th August 1845.

-- Situated in the Midnapore Division.

2,172 1 -

3,572 - -

-- Completed season 1847-48.

**Banhipore to Jehannah:** Reconstruction of a Bridge and two small Drains.

-- These works were carried away by a high flood on the 23d August 1844.

-- Sanctioned 7th May 1845.

1,901 10 1

and 10,000 for drainage.

10,000 for drainage.

--

**Bchar District:** Construction of Drain Bridges on the line of the Grand Trunk Road.

-- For the drainage of the road.

-- Sanctioned 30th April 1845.

8,177 18 4

8,177 18 4

-- Constructed season 1846-47.

**Budge-Budge Road:** Construction of four Drain Bridges, and repairs thereon.

-- With a view to render the road more practicable for mail-carts.

-- Sanctioned 24th December 1845.

2,440 - 9

2,440 - 9

Season 1845-46.

**Bisnapore Road:** Repair of the Masonry Bridge over the Tamaul Nullah.

-- Sanctioned 9th May 1847.

1,310 15 1

1,310 15 1

--

**ROADS AND BRIDGES, LOWER PROVINCES:****Royalal to Diamond Harbour:** Repairs to the Pucka Road and Bridges on.

--

-- Length, 24 miles; width, 14 feet; sanctioned 29th July 1845.

Diamond Harbour

35,000 - -

35,000 - -

-- Completed season 1845-46.

-- The estimate for annual repairs to the pucca centre of this road amounts to 2,000 rupees.

**Harripore to Calpee:** Construction of a Cutcha Road.

--

-- Length, 32 miles; sanctioned in 1844.

Calpee

19,048 0 0

19,048 0 0

-- Completed season 1847-48.

**Durgachy to Dinagore:** Raising of the Road.

-- This line was adopted in lieu of the old road via Mulda, when the settlement at Darjeeling was first formed.

-- Length, 91 miles and 71 yards; sanctioned 20th October 1847.

Dinagore

15,204 0 6

10,048 2 9

-- Completed season 1848-50.

-- A portion of this road, a distance of 60 miles, has been raised above the level of inundation mark.

(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 Peeleebet Road, in the district of Rohilcand.	- - - - -	-- Sanctioned in season 1839-40.	- - - - -	Rs. a. p. 11,298 3 8½	Rs. a. p. 9,168 8 -	-- Completed season 1841-42.	-- The excess, Rs. 2,130. 11. S., 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 receptions of the followers of the Ameers of Scinde, were undertaken.	-- Sanctioned 18th July 1844.	- - - - -	1,057 9 2½	- - - - -	-- Completed season 1844-45.	-- Government subsequently decided on sending the ex-Ameers to Hazareebaugh.
<b>CIVIL BUILDINGS, SOUTH-WESTERN PROVINCES—JUDICIAL:</b>							
Balasora Gaol: Construction of additional Wards.	-- Owing to the insufficiency of accommodation.	-- Sanctioned season 1839-40.	Balasora - - -	4,740 - -	4,005 - -	-- Completed season 1841-42.	-
Improvements to the drainage of.	- - - - -	-- Sanctioned season 1841-42.	- - - - -	1,095 2 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, 361 feet.	Bauleah - - -	6,027 8 9	7,720 - - 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 1843.	Behar - - -	1,239 5 -	1,239 3 -	Season 1843-44	-- The necessity for this additional accommodation was brought to notice by the Sudder Dewanny Adawlat.
Burnagore: Construction of a small Gaol, with Out-offices.	-- For the prisoners employed at Burnagore.	-- Sanctioned 12th December 1845.	Burnagore - - -	1,306 - -	1,300 - -	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 13 feet.
Bauleah: Addition of a Verandah to the Principal and two Sudder Ameers' 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 6 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 - - -	- - - - -	575 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 needed.	-- Sanctioned 8th 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</i> : Construction of two additional walls.		Sanctioned 7th October 1842.	Bareilly	11,170 9 1/2 10,000 rupees have been paid for the site of the building.	12,490 5 8	-- Completed season 1842-43.	
Construction of additional Public Buildings.	-- For a mail-house, guard-room and cook-room.	Sanctioned 17th February 1843.	Bareilly	2,143 4 10	2,365 10 -	-- Completed season 1844-45.	
Prison Gaol		Sanctioned 15th June 1842.	Budaon	19,981 - - And Rs. 400. 8. 4. for draining.	- - -	-- Completed season 1844-45.	-- This gaol consists merely of an enclosure wall, a hospital, guard-room, sentry-boxes, and walls. The convicts to build their own huts.
<i>Bareilly</i> : Construction of a Thowlat, &c.	-- For the accommodation of prisoners under trial.	Sanctioned 16th November 1841.		- - -	2,634 5 -		
<i>Budaon</i> : Alterations.	-- For the improvement of the prison discipline, and for two separate rooms for juvenile offenders.	Sanctioned 16th December 1842.		602 10 8	1,483 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>Baramulla</i> : Construction of Thowlat, &c.	-- The old cutchery was in ruins, and inconveniently situated.	Sanctioned 22d November 1842.		5,841 3 1	5,841 3 1	-- Completed season 1842-43.	
<i>Baramulla</i> : Construction of Police Guards and Gaol.	For prisoners under trial	Sanctioned 27th April 1844.	-- In the districts of Kutchwagar and Bhandaree.	2,200 - -	2,200 - -	Season 1844-45.	
<i>Baramulla</i> : Construction of Out-buildings and Cook-rooms.		Sanctioned 20th August 1844.	Boolandshaher	1,601 1 1	1,600 5 1	-- Completed season 1844-45.	
<i>Baramulla</i> : Cutchery for the Superintendent.	-- For the accommodation of the superintendent English officer, Post Office.	Sanctioned 1st October 1840.	Bhutesana	3,000 - -	- - -	Season 1849-50	-- This building was purchased from the estate of Lieutenant Mackeson at Sirsa.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—JUDICIAL</b>							
<i>Bombay</i> : Additions and Alterations to the Madras Hospital.	-- For the better classification and custody of the inmates, two of whom lose their lives from the want of means of separating the harmless from the violent.	Sanctioned 26th February 1843.	Benares	5,450 0 0	6,173 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>Bombay</i> : Alterations, &c.	-- For security of the prisoners, and ventilation of the gaol.	Sanctioned 4th May 1843.	Bedur	714 14 2	714 14 2	Season 1843-44.	
<i>Bombay</i> : Construction of a Pucca Well.	-- Required to replace an old one, which has failed.	Sanctioned 18th August 1843.	Bundah	- - -	1,804 1 -		
<i>Baitool</i> : Construction of a Prison Gaol.	-- To replace the gaol constructed by the civil authorities, which was reported to be in a defective state.	Sanctioned 29th December 1842.	Baitool	22,582 4 11	20,849 - -	-- 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 houses for native doctor, dispensary, and out office; the station of Baitool has been transferred to the Madras Presidency.

(continued)

No. 6.—STATEMENTS 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—continued.</b>							
<i>Bundah</i> : Construction of a new Cutcherry for the Collector.	-- The cutcherry is a permanent held in a hired building in the town, but it is required to be given up to the military.	-- Sanctioned 3d April 1847.	Bundah - - -	Rs. a. p. 14,709 11 6	Rs. a. p. 7,104 - -	-- Completed season 1848-49.	-- This cutcherry has been made of permanent materials on a revised plan.
<i>Benares</i> : Construction of a well outside the Gaol Compound.	-- The only well outside the gaol which supplied water to the establishment of the Burkhoudanahs had fallen in.	-- Sanctioned 17th June 1847.	Benares - - -	830 4 9	571 5 9	-- Completed season 1847-48.	
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL.</b>							
<i>Burrissaul</i> : Cutcherry for the Magistrate and Registrar.	-- To replace the cutcherry destroyed by fire in February 1839.	-- Sanctioned 15th January 1839.	Burrissaul - - -	7,052 4 7	- - -	Completed 1840-41.	
New Cutcherry for the Principal Sudder Am-wa.	-- This was rendered necessary in consequence of the existing cutcherry being far removed from that of the Judge, and thus occasioning much inconvenience to suitors and pleaders.	-- Sanctioned 10th November 1841.	- ditto - - -	2,005 13 11	2,804 15 9	-- Completed 1843-44.	-- The old cutcherry has been made over to the local committee of public instruction at Burrissaul, to be used as a school-house.
Fixing of the bank of the River	-- In consequence of an encroachment of the Burrissaul River on the town.	-- Sanctioned 12th March 1842.	- ditto - - -	2,330 9 10	2,064 6 -	-- Completed season 1848-44.	-- The labour will be performed by convicts. These measures proved a failure. The executive officer submitted a project for the purpose of turning the current of the river, which, in execution, would cost about 1,00,000 rupees; the Government declined to sanction the work, deeming it inexpedient to incur further expense.
<i>Bongah</i> : Construction of a new Circuit Bungalow, with Out-offices.	- - - - -	-- Sanctioned 20th November 1844.	- - - - -	4,682 14 7	4,000 5 -	-- Completed season 1846-47.	
<i>Burrissaul</i> : Construction of a new Circuit House and Out-offices.	-- On the requisition of the Commissioner of Decca, who represented that there was no circuit house for his accommodation as well as that of his office, and that the transfer of a large section of the Soonderbuds to the Collector's jurisdiction, demanded that a great portion of his time should be devoted to the affairs of this collectorate.	-- Sanctioned 19th December 1840.	Burrissaul - - -	5,416 10 9	- - - - -	-- Completed season 1850-51.	

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*Burrisaul Gaol*: Construction of four Solitary Cells, and Drainage of.

-- The necessity for these works was originally brought to the notice of Government by the local civil authorities.

-- Sanctioned 28th December 1846.

Burrisaul - - -

1,718 1 0

1,843 15 11

-- Completed season 1849-50.

*Burdwan Gaol Hospital*: Construction of an additional Ward.

- - - - -

-- Sanctioned 24th November 1847.

Burdwan - - -

1,000 - -

- - - - -

-- To be constructed by the convicts, under the immediate superintendence of the magistrate, assisted in respect of plans by the executive officer of the division.

**CIVIL BUILDINGS, LOWER PROVINCES--REVENUE:**

*Bhaugulpore*: Additions to the Collector's Cutcherry.

-- On a representation from the Collector to the Commissioner of the great inconvenience felt from the small size of the cutcherry.

-- Sanctioned 11th August 1847.

Bhaugulpore - - -

3,109 5 8 1/2

3,209 4 9 1/2

-- Completed season 1849-50.

**CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES--REVENUE:**

*Burrisaul*: Additions to the Collector's Cutcherry.

-- Required on account of the crowded state of the record-room, and also for the accommodation of two deputy collectors, recently added to the collectorate of Bankergunge.

-- Sanctioned 26th November 1845.

Burrisaul - - -

5,848 14 10

6,593 - -

-- Completed season 1847-48.

**CIVIL BUILDINGS, CENTRAL PROVINCES--REVENUE:**

*Bundelcund*: Enclosure of the Tahildary Cutcherry at Koonch.

-- In consequence of an attempt made to plunder the treasury.

-- Sanctioned 29th March 1842.

Koonch - - -

1,173 4 4

1,441 5 11

-- Completed season 1842-43.

*Benares*: Construction of a Verandah to the Collector's Cutcherry.

-- The necessity of this work was brought to the notice of Government by the local civil authorities. These verandahs will make the cutcheries cooler, and afford greater facilities for putting up tables during the hot season in the upper rooms.

-- Sanctioned 20th April 1846.

Benares - - -

1,683 2 11

1,683 2 11

-- Completed season 1845-47.

*Banda*: Construction of an additional Record-room.

-- For the use of the Collector's office.

-- Sanctioned 14th August 1849.

Banda - - -

6,007 - -

- - - - -

**CIVIL BUILDINGS, LOWER PROVINCES--GENERAL:**

*Bullaah*: New Salt Cutcherry

-- For the use of the Salt agent

Sanctioned 1839-40-

At Noncolly - - -

2,640 - -

- - - - -

-- Completed 1839-40.

-- The former building was altogether unfit for the purpose, for want of sufficient accommodation, and from the dampness of the floors.

*Barrackpore*, Government House: Construction of new Out-houses.

- - - - -

-- Sanctioned 4th November 1840.

- - - - -

4,646 4 8 1/2

- - - - -

-- Constructed 1840-41.

*Bagundee*: Construction of a New Guard-house.

For the Sepoy guard - - -

-- Sanctioned 3d January 1841.

- - - - -

502 11 1

543 2

-- Completed 1841-42.

-- Great sickness and mortality occurred in the Sepoy guard, which, in the general opinion of the officers as well as of the civil surgeons, was owing to the proximity of the old guard-room to the Salt godowns.

(continued)

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.
<b>CIVIL BUILDINGS, LOWER PROVINCES—GENERAL—continued.</b>							
<i>Barrackpore:</i> Enlargement of the Burial-ground.	-- The extension is urgently required.	-- Sanctioned 6th September 1844.	Barrackpore - -	Rs. a. p. 1,044 10 5	Rs. a. p. 1,025 7 8	-- Completed season 1845-46.	-- The additional space to be included measures 380 x 100 feet.
Conversion of a Building in the Park into an Aviary.	- - - - -	-- Sanctioned season 1845-46.	- - - - -	7,558 13 4	7,558 13 4	-- Completed season 1845-46.	- - - - -
<i>Baulnah:</i> Construction of a Post-office.	This is a pucca building	-- Sanctioned 10th February 1847.	Baulnah - - -	1,100 7 11 ½	1,320 11 1	Completed 1847-48.	- - - - -
<i>Bhaugulpore:</i> Repair of the Mausoleum of Mirza Abraham Hoosain.	- - - - -	-- Sanctioned 6th October 1848.	Bhaugulpore - -	356 10 10 ½	356 10 10 ½	Season 1849-50.	- - - - -
<i>Baulnah:</i> Construction of a School-house.	- - - - -	-- Sanctioned 1st August 1850.	Baulnah - - -	6,330 11 11	- - - - -	-- Constructed in season 1850-51.	-- This building measures 81 feet by 81 feet, and is intended to contain 200 children.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL:</b>							
<i>Bunar Chapel:</i> Repair of the, and construction of a Verandah.	- - - - -	-- Sanctioned season 1846-47.	-- Situated midway between the fort and the buildings occupied by invalids.	1,714 8 11	1,874 11 9	Completed 1847-48	-- This chapel was assigned over to Government by the Missionary Society; it measures 40 feet by 30 feet (interior dimensions).
<i>Benares:</i> Construction of an additional Godown.	-- To extend the accommodation of the opium factory premises.	-- Sanctioned 17th February 1847.	Benares - - -	4,317 - -	3,017 - - A further sum of 400 rupees sanctioned for alterations to the boundary-wall of the factory.	Season 1847-48.	- - - - -
<b>CIVIL BUILDINGS, LOWER PROVINCES—ECCLESIASTICAL:</b>							
<i>Barrackpore Church:</i> Construction of a Wall.	To enclose the church	-- Sanctioned 9th October 1830.	Barrackpore - -	- - - - -	1,100 10 7	Season 1830-40.	- - - - -
<b>EMBANKMENTS, SOUTH-WESTERN PROVINCES:</b>							
<i>Culmcejole Division</i>	- - - - -	-- Length, 428 miles; estimated cost of annual repairs, 1830-40, Rs. 16,323. 9.	- - - - -	- - - - -	- - - - -	- - - - -	-- The average cost of annual repairs in the Culmcejole Division was, in 1850-51— To Government funds, Rs. a. p. including sluices and inspection bungalows, - 24,028 6 10 Zemindary - - 12,334 8 6 Rs. 36,362 15 4
<i>Cuttack</i>	- - - - -	Length, 560 miles	- - - - -	- - - - -	- - - - -	- - - - -	-- The cost of repairs to the embankments in the Cuttack Division, in 1847-48, was Rs. 22,322. 14. 7. In Report 1840-41, para. 10, it is stated that in Central Cuttack alone, during the last 10 years, 11,00,427 rupees have been remitted on account of loss from drought and inundations. A report was received in 1850 on the protective works undertaken as a temporary measure for the safety of the Cuttack Revetment, from which it appeared, that, notwithstanding the occurrence of unusually high floods in the Kutorjee river, the revetment has stood well without sustaining the slightest injury. These works have had the effect of giving the current a favourable direction, by which the station and town of Cuttack have, in all probability, been saved from destruction.

ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:

987	Construction of Wooden Bridges on the Road between Chittagong and the Fenny River in Arracan.				3,025 0 0		-- The executive engineer will consider the future maintenance of this road as part of his ordinary duty.
	<i>Culina Road:</i> Repair of	-- Length, 85 1/2 miles; sanctioned 1841-42.	-- From Burdwan to the Hooghly River.	3,283 12 10 And Rs. 1,282. 1. 10. for drain bridges.		Completed 1841-42	-- The expenses will be paid by the Rajah of Burdwan.
	Metalling of the	-- Sanctioned 6th June 1844.	-- Ditto	19,410 - -	11,037 6 0	-- Completed season 1846-47.	
	<i>Chittagong:</i> Construction of a Drain Bridge	-- In the place of a bridge destroyed in the rains of 1843.	-- Sanctioned 16th January 1845.		538 11 10	-- Constructed season 1840-40.	
	Construction of Ramps in the Nullahs on the Chittagong Road.	-- These ramps are intended for the passage of cattle, with a view to the preservation of the wooden bridges.	-- Sanctioned 28th January 1840.	-- Between Chittagong and the Big Fenny River.	1,165 4 -	1,521 - -	-- Constructed season 1840-47.
	<i>Calcutta to Barrackpore:</i> Repair of the road.		-- Sanctioned 2d September 1840.	-- From Shambazar Bridge to Pottah Ghaut.		57,718 15 11 1/2	-- The road is to be repaired with three-inch gouting.
988	<i>Chittagong City:</i> Construction of a Bridge.	-- In lieu of a bridge destroyed by inundation during the rains of 1841.	-- Sanctioned 31st March 1847.	Chittagong		1,661 - -	-- The new bridge will be of two segmental arches of 10 feet span, each versed 1 1/2 of span.
	<i>Chittagong:</i> Road to the Big Fenny River.	-- Additional flooring to six masonry bridges, to prevent their destruction by undermining.	-- Sanctioned 11th January 1848.	Big Fenny River	1,219 9 10	1,260 8 7	
	<i>Chittagong and Daood Kandy Road:</i> Improvements by making Slopes.	-- The present road is outside, which renders it necessary that a distinct space be allotted as a berm, to serve both as a base to the slopes intervening between them and the side open drain, and as a prevention to encroachment.	-- Sanctioned 10th February 1850.			78,281 10 11	-- This estimate was called for by Government on a recommendation from the Military Board of the necessity of the work.
ROADS AND BRIDGES, LOWER PROVINCES:							
	<i>Chupprah to Mootearoc</i>	-- As a means of communication with the new civil station, established in Chumparam in 1837.	-- Length, 61 miles; estimated for in August 1838.	-- Mootearoc, in Chumparam.		47,280 7 4	-- Its completion not reported.
	<i>Chupprah to Bewah Ghaut</i>		-- Length, 22 1/2 miles; estimate dated 4th June 1830.		7,448 1 0	8,802 0 7	Season 1841-42.

(continued)

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.
<b>ROADS AND BRIDGES, LOWER PROVINCES—continued.</b>							
<i>Colmore Ghaut to Buzar:</i> Construction of Bridges and Drains.	-- For keeping open the communication between Ghazepore and Dinapore.	- - - - -	Buzar - - - -	- - - - -	<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.	Paiksandy, in Cachar	About 39,047 10 4	- - - - -	-- Completed season 1842-43.	-
<i>Chota Nagpore:</i> Bridge over the Nullah at Dorundah.	-- For keeping up the communication in the rainy season between the military and civil stations at Dorundah.	-- Sanctioned 2d May 1842.	Dorundah - - -	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 Ferry.	- - - - -	880 3 6	Season 1844-45.	-
<i>Cossyah Hills to Assam:</i> Repair of the Road and Bridges over the.	- - - - -	-- Length, 85 miles; sanctioned 13th November 1844.	- - From Purroeya Ghant to Panegong, in Assam.	4,500 - -	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 new rum distillery.	-- Sanctioned 17th April 1850.	- - Situated between the Maniektollah 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 Budoapee Torrents.	- - - - -	-- East Bridge, six feet in width; sanctioned 10th July 1839.	Cossya Hills - -	14,057 11 1½	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 Bôgapanee 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 Buropanee consists of two spans, one of 83 feet, and the other 65 feet between the points of suspension.
<b>ROADS AND BRIDGES, CENTRAL PROVINCES;</b>							
Chunar to Bookroot, in the Mirzapore District.	To supersede the old road -	-- Length, about 10 miles; estimated in September 1830.	Bookroot - - -	6,908 7 9	6,325 - -	-- Completed season 1841-43.	-

CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:						
Chunderos: Construction of a small Quail and Cutcherry Bungalow.	- - - - -	-- Sanctioned 4th January 1843.	Chunderos - - -	800 - -	800 - -	-- 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 - - -	9,688 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 Quail Hospital: Construction of three Wards.	For insane patients - - - - -	- Sanctioned 28d July 1840.	Cuttack - - -	646 12 2	400 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. 887. 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 -	- - - - -	80,800 - 7	82,900 8 9	-- 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.	- - - - -	2,200 15 8	2,200 15 8	-- Completed season 1844-45.
Calcutta Aqueducts: Setting up a Steam-engine, and alterations and enlargement of the Aqueducts, from the Reservoir at Chaudpaul Ghant 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 16-horse power engine.	-- Sanctioned 8th January 1841.	Calcutta - - -	-- Cost of setting up the engine, Rs. 11,074. 12. 7. Cost of new aqueduct, Rs. 8,104. 8. 6.	- For setting up the engine, Rs. 11,074. 12. 7. -- For enlarging the aqueduct, Rs. 8,863. 11. 3.	-- Completed season 1842-43. -- Completed season 1845-46. -- The engine, which is of 20-horse power, is valued at Rs. 11,000. 12. 11 3/4, and was sent to India in 1828-30 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 1811-42.
Construction of a tiled Shed at the Sudder Damma.	-- For the convenience of vakools and others who attend the Court.	-- Sanctioned 19th September 1842.	Ditto - - -	1,340 4 0	1,358 5 8	-- Completed season 1843-44.
Calcutta Penitentiary: Construction of six Wards -	-- For civil and criminal Supreme Court prisoners.	-- Sanctioned 16th June 1841.	Ditto - - -	80,800 - 7	82,900 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 Chaud Paul Ghant.	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 Chaund Paul Ghant.	Rs. a. p. 10,253 1 7	Rs. a. p. 10,253 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 7th October 1842.	Chittagong - - -	1,288 11 9	1,288 11 9	- - Completed season 1842-43.	- -
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 - - -	12,293 12 7	9,674 13 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 3,408 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 1840-47	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 22 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 1840-47.	- -
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 20th 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 × 15½ and one 53 × 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.	
<i>Trj</i> Erection of Sheds at the Iron Bridge Yard for 20 additional Fergas.	-- 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 6 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>Chempore</i> : Construction of a Tahsildary Cutcherry.	-- Rendered necessary with reference to the new settlement of land revenues in the North-Western Provinces.	-- Sanctioned season 1838-39.	In Zillah Bijnore	3,264 - 6		-- Completed season 1840-41.	
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—REVENUE:</b>							
<i>Cuttack</i> : Repair of the Tahsildary Cutcheries at.		-- Sanctioned, 27th May 1840.		4,894 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>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<i>Calcutta Mint</i> : Construction of a Guard-house and Stabling.	-- To replace buildings destroyed by a storm on the 29th of April 1839.	-- Sanctioned season 1839-40.	Calcutta . . .	18,850 8 10	20,626 9 1	-- Completed season 1840-41.	-- The proposed dimensions and architectural decorations were considered superior 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> : Improvements at the.	-- To remedy the inconveniences felt for want of office accommodation.	-- Sanctioned 4th March 1840.	- - - - -	- - - - -	23,138 4 6	- - - - -	-- The house used for the Savings Bank is altogether removed, and a new building erected on the entire frontage between the Treasury and the Accountant-General's Offices. The new building will be carried up to the full height of the Treasury, and will provide accommodation for the General Treasury, the Accountant-General's Offices, and the Savings Bank.
<i>Chittagong</i> : Repairs to the Breakwater in front of the Salt Golahs.	-- 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. 10. 5. occurred on the amount authorised, in consequence of a reduction in the quantity, as well as in the rates of the work.
<i>Calcutta Custom 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 1842-43.	- - - - -
Reconstructing the Import and Export Godown Sheds.	-- A committee report stated that the sheds were unserviceable and in a dangerous and tottering condition.	-- Sanctioned 30th July 1842.	Calcutta - - -	4,756 5 6	- - - - -	-- Completed season 1850-51.	- - - - -
<i>Calcutta General Treasury</i> : Additions to.	-- To afford additional accommodation.	-- Sanctioned season 1838-39.	- - - - -	26,021 15 6	- - - - -	-- Completed season 1841-42.	- - - - -
<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 2 9	-- Completed season 1842-43.	- - - - -
Construction of a Record-room.	-- For the General and Financial Departments.	-- Sanctioned 26th March 1842.	- - - - -	4,289 15 4	4,289 15 4	- - ditto.	- - - - -
Raising the Floors of two Godowns.	-- They were subject to inundation in heavy rains.	-- Sanctioned 14th September 1842.	- . . . .	1,325 10 6	1,412 4 8	- - 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.

Quadrennial repairs to the Government House and Out-offices.	- - - - -	- - Sanctioned season 1842-43.	- - - - -	26,983 14 -	26,983 14 -	Season 1842-43.	-
Construction of Lecture-rooms and School-rooms at the Hindu College.	- - For the General Committee of Public Instruction.	- - Sanctioned March 1843.	- - - - -	18,152 4 5	10,634 3 -	- - Constructed season 1844-45.	- - The expense will be borne, in nearly equal shares, by Government and the College.
Repairs to the General Treasury premises.	- - - - -	- - Sanctioned 6th March 1843.	- - - - -	435 11 -	-	-	-
Calcutta Medical College: Construction of Quarters for the House Surgeon and Staff Sergeant.	- - In consequence of insufficient accommodation.	- - Sanctioned 18th September 1843.	Calcutta - - -	6,091 6 5	6,319 6 11 Rs. 2,000 also granted for the purchase of ground required to be added to the Medical College premises.	- - Completed season 1844-45.	-
Construction of a Verandah to the Male Hospital.	- - Under a representation of its necessity from the Council of Education.	- - Sanctioned 14th July 1843.	ditto - - -	987 14 1	1,019 8 10	- ditto - -	- - This work was necessary to the comfort, efficiency, and internal economy of the establishment.
Calcutta Medical College: Construction of a new Dissecting-room.	- - It was considered necessary to remove the dissecting operations to a distinct building; they had been carried on in a room in close proximity to the Female Hospital and quarters of the Secondary School.	- - Sanctioned 2d October 1843.	ditto - - -	5,119 5 7	5,119 5 7	Season 1843-44.	-
Calcutta: Additions to St. James' Church.	- - The works consist of a new wooden gallery, laying a marble floor, &c.	- - Sanctioned 15th March 1843.	ditto - - -	4,007 3 10	- - - - -	- - Constructed season 1843-44.	- - Of the amount expended, Rs. 2,344. 2. 9. have been recovered from the vestry of the church, such being the engagement under which the work was executed.
Calcutta Government House: Construction of an Entrance Gate.	- - To the gardens south of the building.	- - Sanctioned 14th February 1843.	ditto - - -	851 15 8	871 10 1	- - Completed season 1844-45.	Ordered by the Governor-General.
New Supreme Court House and Insolvent Court.	- - In consequence of the existing buildings and arrangements not affording the necessary accommodation for the distribution of business.	- - Estimates called for 7th June 1842.	- - - - -	- - - - -	3,94,530 - -	- - - - -	- - The present Court-house is a public building, valued at 80,000 rupees, and the Insolvent Court is held in an adjoining building, rented at 500 rupees per mensem.
Construction of new Salt Golahs on the banks of the creek, between the Islands of Kaukra and Kiasenpura.	- - - - -	- - - - -	- - - - -	- - - - -	16,236 2 6	- - - - -	- - The estimate is for ten golahs, each calculated to hold 25,000 mounds of salt, and for a mound raised 7½ feet, 717 × 264 feet for the golahs to be built on. The excavation of the work entrusted to the officers in the Salt Department, there being no officer of the Department of Public Works available for the duty.

(continued)

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.
CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL—continued.				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
Chittagong: 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 - - -	5,150 1 -	5,448 - 9 Cost of site, <i>Rs.</i> 5,000	-- Completed season 1846-47.	-- The bridging of the Nullah would have been more expensive than the building the new Custom-house.
Calcutta General Post-office: Additions &c.	-- 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 x 35, a room 16 x 16.
Calcutta Medical College: 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 x 97; to remove the doors between the proposed verandah and ward.
Calcutta Mint: Building and fitting up an Electrotyping Re-finery.	- - - - -	-- Sanctioned 13th December 1844.	- - - - -	3,510 - -	- - - - -	-- Constructed season 1846-47.	-
Calcutta Stamp-office: 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.	-
Cuttack: 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.	-
Calcutta Post-office: Construction of Stables 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.	-

987.

988.

<p><i>Calcutta General Post-office:</i> Construction of a Stable, Cart, and Overland Van sheds, in the Compound of the Post-office.</p>	<p>-- 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.</p>	<p>-- Sanctioned 19th July 1847.</p>	<p>Calcutta - - -</p>	<p>2,505 9 11</p>	<p>3,107 8 9</p>	<p>-- Completed season 1848-49.</p>	
<p><i>Calcutta Episcopal Residence</i> - -</p>	<p>-- 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.</p>	<p>-- Sanctioned 31st March 1849.</p>	<p>Calcutta - - -</p>	<p>-- 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.</p>	<p>- - - - -</p>	<p>- - - - -</p>	<p>-- 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.</p>
<p><i>Calcutta:</i> Extension of the Jetty at Bunk's Hall.</p>	<p>-- Rendered necessary in consequence of the siting up of the river bank.</p>	<p>-- Sanctioned 24th July 1850.</p>	<p>Calcutta - - -</p>	<p>- - - - -</p>	<p>2,047 2 2</p>	<p>- - - - -</p>	<p>-- The siting up of the river bank had removed the low water mark full 13 feet from the crane used by the Marine Department for landing anchors.</p>
<p><b>CIVIL BUILDINGS, LOWER PROVINCES--GENERAL:</b></p>							
<p><i>Chinsurah Church:</i> Repairs to</p>	<p>-- The roof, owing to the decayed state of the beams, was reported to be in a dangerous state.</p>	<p>-- Sanctioned 23d February 1842.</p>	<p>- - - - -</p>	<p>2,674 7 12</p>	<p>2,674 7 12</p>	<p>-- Completed season 1842-43.</p>	<p>-- This is an old Dutch building, and is supposed to have been built in the year 1685.</p>
<p><i>Cheera Coal Mines:</i> Construction of a Roadway.</p>	<p>-- For facilitating the means for the conveyance of coals from the Cheera Hills to the plains.</p>	<p>-- Sanctioned 5th October 1842.</p>	<p>Cheera - - -</p>	<p>- - - - -</p>	<p>66,584 11 -</p>	<p>- - - - -</p>	<p>- - - - -</p>
<p><i>Chinsurah:</i> Enlargement of the Burial-ground.</p>	<p>- - - - -</p>	<p>-- Sanctioned 15th February 1847.</p>	<p>Chinsurah - - -</p>	<p>- - - - -</p>	<p>-- The payment of Rs. 2,788. 11. was sanctioned, as well as the remission of Rs. 25. 4., or Company's Rs. 26. 15., on account of annual revenue.</p>	<p>Season 1846-47</p>	<p>-- An estimate amounting to 452 rupees was sanctioned on the 28th July 1848, for the enclosure of the newly purchased ground.</p>
<p><i>Calcutta:</i> Renewing the Crane at the Bank's Hall, and some of the Beams and Posts of the Jetty.</p>	<p>-- The crane gave way whilst an anchor of about 56 cwt. was being towed off from the jetty.</p>	<p>-- Sanctioned 21st July 1849.</p>	<p>Calcutta - - -</p>	<p>- - - - -</p>	<p>1,227 15 6</p>	<p>Season 1849-50.</p>	<p>- - - - -</p>
<p><b>CIVIL BUILDINGS, SOUTH-WESTERN PROVINCES; ECCLESIASTICAL:</b></p>							
<p><i>Circular Road:</i> Purchase of Land.</p>	<p>For a burial-ground - - -</p>	<p>-- Sanctioned 28th August 1839.</p>	<p>- - - - -</p>	<p>1,988 1 10</p>	<p>19,700 - - for grounds, and Rs. 2,385. 9. 5. to adapt it for the object intended.</p>	<p>-- Completed season 1840-41.</p>	<p>-- 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.</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>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—ECCLESIASTICAL:</b>							
<i>Chittagong Church</i> : Construction of.		Sanctioned 9th October 1840.		Rs. a. p. 10,335 - -	Rs. a. p. 9,947 3 3	- - Completed season 1843-44.	- - Of the amount, 3,518 rupees has been paid by Government, and the remainder (6,817 rupees) by the community and the Church Building Fund.
<b>MARINE BUILDINGS, SOUTH-WESTERN PROVINCES:</b>							
<i>Calcutta</i> : Construction of a House and Offices for the Master Attendant.	- - Residence for the Master Attendant and offices and godowns for naval stores.				48,000 - -		
<b>MARINE BUILDINGS, LOWER PROVINCES:</b>							
<i>Chittagong Pier</i> : Construction of				6,504 14 10	6,504 14 10	Completed 1839-40.	
Repairs to the	- - In consequence of injuries done to it by marine worms.	- - Sanctioned season 1842-43.		1,213 14 10		- - Completed season 1842-43.	
<i>Chittagong</i> : Construction of a tiled-roof Custom-house.	- - To replace a thatched shed, which is out of repair and inconveniently situated.	- - Sanctioned 8th March 1843.			5,448 - 9		
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<i>Chupprah</i> : Construction of a Hazut Turweez Ward.	For the Magistrate of Seram	- - Sanctioned 24th May 1843.	Chupprah	4,782 - 6½	5,409 1 3	- - Completed season 1846-47.	
<i>Chitpore</i> : Construction of a Thannah House near the Suspension Bridge.	- - To replace the former thatched building, which was destroyed by fire.	- - Sanctioned 7th July 1847.	Chitpore	1,150 15 7	1,150 15 7	- - Completed season 1847-48.	- - As the thannah at this locality has been burnt down three times during twelve years, the present estimate provides for the erection of a pucca building.
<b>CANALS, NORTH-WESTERN PROVINCES:</b>							
<i>Doab Canal</i> : Construction of five additional Falls and Locks.	For irrigation and navigation	- - Estimates sanctioned in 1839.	- - Doab; the falls are to be at Lerkurrie, Hullahpore, Mcg Chupper, Ruree, and Balpore.	52,356 8 1	69,171 - -	- - Completed season 1840-41.	- - The raising of the banks of the Doab Canal was sanctioned in 1838-39; the cost was Rs. 70,644. 8. 6, and the entire length of the work done 385,132 feet; the additional bunding up of the main stream of the Jumna, in order to convey the water to the canal, puts an entire stop to the timber trade from the hills, but when the canal has been made navigable, this inconvenience will cease. The total amount expended on account of the Doab Canal, in 1840-41, amounted to Rs. 1,15,156. 12. 1., and the direct return to 1,63,965 rupees.
Introduction of Rajbuhes in the tract between the Canal and the River Hindun.	- - These rajbuhes are water channels, which, diverging from the main stream of the canal, flow to a considerable distance from its line, and serve to extend the irrigation to numerous villages, which could not, without much inconvenience and many disputes, obtain water direct from the canal itself; they are very useful works, and likely to afford a good return for the outlay expended on them.	- - Estimates sanctioned May 1839.		20,000 - -	20,000 - -	Season 1839-40	- - This sum of 20,000 rupees was placed at the disposal of Captain Cauley, for the introduction of rajbuhes, or watercourses, on a tract of land lying between the Doab Canal and the River Hindun, a great part of which had fallen to the British Government by the death of her Highness the Begum Sunroo.

	Plantations of trees on the banks of the	-- From 1830 to 1840-41.		14,381 12 7 Amount realised from cuttings, 10,435 rupees.			-- The number of trees on the banks of the Doab Canal, to 30th April 1843, was 235,327, and their value was estimated at 30,000 rupees; a sum of Rs. 9,872 4. 4. had been realised by the sale of timbers.
	Connection of the, with the Jumala River.	14th September 1839	Doab Canal		13,800 sanctioned for the construction of aqueducts.		
	Delhi Canal				-- The amount of expenditure incurred on account of plantations on the banks of the Delhi Canal to the 30th April 1847, was Rs. 27,363 5. 7.; the amount realised Rs. 52,025 12. 6.; and the estimated value of the trees on the banks of the canal, Rs. 5,66,998 5. 4. Orders, were reported in season 1848-49, for the removal of 5,746 trees; the number remaining amounted to 369,646 of different ages, and their value was estimated at Rs. 5,57,828 2. 8.		
	Deyra Dhoon; Construction of a Masonry Tunnel in lieu of a wooden one on the Bejapore Canal.	-- Sanctioned 26th September 1843.	-- Situated near the village of Dekra.	3,358 1 6 Rs. 6,244 sanctioned for the construction of falls, or masonry descents, for the passage of the waters.	2,996 14 --	-- Completed season 1844-45.	
	Rajpore Watercourse	-- Length 7 1/2 miles; sanctioned 8th March 1841.	-- From the hills at Rajpore to the town of Deyra.	42,984 11 9	41,207 2 4	-- Constructed season 1844-45.	-- The object for which this watercourse was constructed has been fully obtained, the water running in a clear and pure stream.
	Setting up of a Saw Mill	-- Sanctioned 11th September 1843.	At Dhurrampore	8,567 8 7		-- Constructed season 1844-45.	-- The cost includes the adapting of machinery to the building erected; the machinery to be applicable to vertical as well as circular saws.
	Construction of 12 small Reservoirs on the Rajpore Watercourse.	-- Sanctioned 14th June 1844.	In the Deyra Dhoon	1,608 --	1,608 --	-- Constructed season 1844-45.	
	Construction of 4 Corn Mills on the Bejapore Watercourse.	-- Sanctioned 15th June 1844.	ditto	2,500 --	2,500 --	-- Constructed season 1844-45.	

(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 Bounance 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. 2,315 3 10	Rs. 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 Dadopore Dam.	-- To protect the Delhi Canal from injury by incursions of the Soanee 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 Dadopore Dam.	-- For securing the right bank of the Soanee 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 Bhandour.	-- To promote the traffic of the town of Bhandour.	-- 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 Indora, over the.	-- With a view to the maintenance of the communication of the country.	-- Sanctioned 24th August 1838.	" " " "	13,267 7 5	" " " "	-- Completed season 1840-41.	" " " "
New channel under the Indora 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 Dadopore.	-- 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 Hisar.	-- 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 Hisar and the village of Solumna 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>Dehra Doos:</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 " 3,960 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.	-
Doab 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 6 Amount realised by revenue - - - - - 14,63,198 4 11 Deficit, Co.'s Rs. - - - - - 55,688 - - -
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 Pathina 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 26th 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 Hissar - - -	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 Hissar.
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.	- - - - -	- - - - -	9,133 4 10	-- Completed season 1845-46.	-

The amount expended on account of plantations on the banks of the Doab Canal, to 30th April 1847, was Rs. 21,182, 12 s. 2 p. The amount realised, Rs. 6,505, 8 s. 9 p., and the value of the trees on the canal banks, 1,46,793 rupees.

(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>Doonab Canal:</i> Construction of three Bridges on the.	-- To facilitate the communication of the country. At present the villagers, with difficulty and inconvenience, ford the canals at their respective ghats.	-- Sanctioned 3d April 1846.	-- At Admerpore, Kyanpore, and Behlap, in the South Division.	4,004 - 9	4,394 - -	-- Completed season 1847-48.	--
Alterations to 15 Bridges on the.	-- With a view to give an increased and less impeded water-way.	-- Sanctioned 28th March 1846.	-- In the centre division.	7,270 3 9	8,528 - -	-- Completed season 1847-48.	--
Digging of the Mantl Rajbecha on the.	-- To give a supply of drinking water to 33 villages in the district of Beharunpore, and for irrigation.	-- Sanctioned 22d November 1841.	- - - - -	- - - - -	-- An advance of 19,120 rupees sanctioned on the 22d November 1841.	- - - - -	-- The return to the State will be about 5,500 rupees per annum.
Construction of a Dam with Bridge for.	-- For securing all the Doonab Canal escape water for the Delhi Canal.	-- Sanctioned 23d October 1841.	At Fysabad - -	13,881 3 1	13,304 - - for a bridge Rs.3,021. 3.	-- Completed season 1843-44.	-- This outlay will soon be repaid by the return derived from the employment in irrigation of the quantity of water now lost, and by the annual saving of the expense of temporary bunds.
Construction of Drains for irrigation.	- - - - -	-- Sanctioned 31st May 1831.	- - - - -	16,221 8 2	16,376 8 2	-- Completed season 1841-42.	--
<i>Doonab Canal:</i> Construction of a third Chamber at the Ghinca and Megla Falls.	-- To facilitate repairs, and to avoid the necessity of forming cuts around the Falls for the passage of water, and thereby admitting silt at the same time into the canal.	-- Sanctioned season 1838-39.	- - - - -	20,761 11 -	13,518 8 3	-- Completed season 1841-42.	-- The estimate is exceeded by the amount of Rs. 7,243. 5. 9., owing to the difficulties which had to be overcome.
Construction of a third Chamber at the Randois and Bolya Falls.	- - - - -	-- Sanctioned season 1838-39.	- - - - -	7,996 3 1	10,178 - 2	-- Completed season 1841-42.	-- There not having been any natural difficulties to overcome in this work, the charge is by Rs. 2,181. 13. 1. less than the sanctioned estimate.
Construction of a Fall at Behut, between the Misakarra Dam and Bekla Falls.	-- To lessen the velocity of the water in that part of the Doonab Canal, and its injurious effects on its bed and sides.	-- Sanctioned 14th March 1837.	- - - - -	22,885 15 6	14,743 - 9	-- Completed season 1841-42.	-- Owing to the difficulties met with in the execution of the work, the bill has exceeded the estimate by Rs. 8,142. 14. 9.; but no blame attaches to the executive officer.
Construction of an additional Tail to the Nowgong Dam.	-- Necessary for the safety of the dam.	-- Sanctioned 19th April 1842.	- - - - -	16,488 11 9	18,000 - -	-- Completed season 1842-43.	-- This dam was almost entirely destroyed by a severe flood on the 21st June 1841.
Dadoopore Dam - - -	-- Repair of breaches made by floods in July 1845.	-- Sanctioned 18th August 1846.	- - - - -	1,756 6 1	- - - - -	-- Completed season 1846-47.	--
<i>Delhi Canal:</i> Construction of a Pucca Re-vestment.	-- This work will conduce to the appearance of the Canal, and to the comfort, and perhaps even the health of the inhabitants of Delhi.	-- Sanctioned 3d September 1846.	- - - - -	- - - - -	9,277 - -	- - - - -	--

Construction of 114 Masonry Outlets on the banks of the Canal.		-- Sanctioned season 1846-47.		16,059 12 2		-- Completed season 1846-47.	-- These are fitted with lever frames, lever sluice and shutters.
<i>Doonab Canal:</i> Improvement to the Romalla and Kandrasoff Bridges.	-- To remedy the inconvenience experienced in the free transit of boats between Selimpore and Shamli.	-- Sanctioned 8th June 1846.	Doonab Canal	2,347 13 5	2,338 --	-- Completed season 1847-48.	-- The superstructure of these bridges has been raised.
Construction of 60 Cross Drains attached to the ramps of 30 Bridges.	-- The ramps are high and massive, and as they intersect the natural drainage of the country at right angles, the rain water, without these drains, would have accumulated on the upper side of the ramps, and noxious swamps have been formed.	-- Sanctioned 5th March 1847.			5,174 8 --		
Protection of the Gundewar Bridge by a masonry Tail.	-- Considered indispensable to the safety of the bridge, which has been considered for some time past in a precarious state.	-- Sanctioned 17th December 1846.			3,021 2 --		
Construction of a first-class Choke at the Kharra or upper head of the Canal.	-- It was considered desirable to have a depot for tools and stores at the head work, instead of having to depend on that at Nyaskur, the nearest first-class choke, which is at a distance of 6 1/2 miles from the Kharra head.	-- Sanctioned 10th December 1846.		1,191 9 8	1,193 7 4	-- Completed season 1849-50.	
<i>Delhi Canal:</i> Repair of the Madhlopore Bridge over the.	To increase the waterway	-- Sanctioned 23d June 1847.	Madhlopore		2,490 --		-- The eastern abutment of the bridge was turned by the floods of August 1846, and as the Canal is about 20 feet wider than the length of the bridge, it is proposed to reconstruct the abutment as a pier, and to add an arch of 22 feet to the bridge.
<i>Doonab Canal:</i> Reconstruction of Watermill's Range.	No. 17 and 18	-- Sanctioned 13th March 1847.	Delhi	681 --	681 --	-- Re-constructed season 1847-48.	
<i>Delhi Canal:</i> Formation of Road Embankments.	-- These artificial banks, constructed on low ground, confine the waters of the canal within their limits, and prevent the formation of swamps.	-- Sanctioned 19th September 1845.		13,974 6 6		-- Completed season 1847-48.	-- The swamps originated in too great an economy in the construction of a canal, which was led through low and broken ground without any measures being adopted to confine its water.
Construction of Buildings	-- For a dispensary and quarters for the sub-assistant surgeon appointed to the medical charge of the canals at Dadopore.	-- Sanctioned 17th February 1848.	Dadopore	960 15 9	1,029 --	-- Completed season 1848-49.	
Defining the Boundary of Canal property in the city of Delhi.	-- It was impossible to recognize the boundary of the property.	-- Sanctioned 23d October 1849.	Delhi	958 --	958 --	Season 1849-50.	
Construction of new Chokies.	-- For the convenience and efficiency of the canal establishment.	-- Sanctioned 21st February 1850.	-- At Gungatole Nar- noand, Landakherra and Kylana.		2,605 --		

(continued)

No C.—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—continued.</i> 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 8th October 1849.	-- At Jooah and Chota Thannah.	- - - - -	- - - - -	Season 1849-50	-- The Jooah bridge to have one arch, with a waterway of 34 feet; the Chota Thanna bridge one arch, 30 feet span.
Alteration of one mile of the Canal, between the Bridges Kutra and Bolak Begum, near the city of Delhi.	-- To render the Delhi branch available for rafts and boats up to the walls of the city.	-- Sanctioned 24th October 1850.	Delhi - - - -	- - - - -	-- Rs. 7,730. 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 obstructions by old enclosures, gardens, tombs, &c.; boats and rafts will be enabled to pass down to the city walls and to the Cabul gate, through the removal of old bridges, &c.
<i>Dooab Canal:</i> Construction of masonry Heads to nine Rajbhas.	For the protection of the banks -	-- Sanctioned 5th June 1847.	Dooab Canal - - -	- - - - -	3,631 11 -	- - - - -	- - - - -
Construction of two Flour Mills on the Cardbunna and Madhoopore Rajbhas.	-- In order that advantage might be taken of water-power available in these rajbhas.	-- Sanctioned 5th August 1847.	- - - - -	2,214 7 7	2,378 2 8	-- Completed season 1849-50.	-- There is every reason to believe that the outlay will be turned to good account.
Mangoe Gardens, under the Superintendent of the Dooab Canal.	-- For supplying the mangoe fruit and grafts of the trees.	-- Sanctioned 29th November 1849.	-- The gardens are at Manickmew, Berkherree Dowlah, Surrowlis and Selimpore.	- - - - -	8,040 5 9	-- Completed season 1849-50.	-- The only garden which had reached the self-supporting stage was that at Surrowlis, which had paid 8 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 5 annas, there was no diminution of the demand.
Cut to complete the drainage of the country round the town of Shamlic.	-- To excavate a straight channel for the Shamlic Nullah, from the escape of the Shamlic Mills to the Khern 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 to the Beharunpore 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 Beharunpore.	1,436 3 3	- - - - -	-- Constructed season 1847-48.	-- The land thus relieved from standing water is now available for cultivation.
<i>Dehra Doon:</i> Repairs to the Rajpore Water-course.	-- The Rospinmah River has been turned 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 Gurrishaut 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.

*Dondcondy to Mungda:* Construction of 40 wooden Bridges.

--

-- Sanctioned 27th May 1841.

Chittagong to the Ferry near Company Kattath.

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 Kishnagar, 60 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 Dinagore *vid* 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 30th 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 Burgat- chee and Dinagpoor.

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 -

4,499 8 -

-- Completed season 1844-45.

Construction of a wooden Bridge.

--

-- Sanctioned 17th September 1849.

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

841 8 10½

756 - -

-- Completed season 1849-50.

-- The bridge is on a steel framework, of three openings of 14 feet wide by 7 feet high; the Fransawgor 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 planked drains in the bund, which, at its southern end, is annually 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>ROADS AND BRIDGES, LOWER PROVINCES—continued.</b>							
<i>Darjeeling Road—continued.</i> Formation of a new piece of road on the Darjeeling route.	-- In lieu of the road between Burgutchy and Godagaree, which was liable to be cut away and inundated.	-- Length 5 miles and 33 yards. Sanctioned 14th March 1848.	-- On the Darjeeling route.	Rs. a. p. 1,136 9 11	Rs. a. p. - - - -	-- Completed season 1849-50.	-
<i>Dinapore to Bankipore</i> : Reconstructing the Pucka portion of this Road.	-- Leading from the Main Guard Bridge at Dinapore to the Parade at Bankipore.	-- Sanctioned 14th May 1845. Length 7½ miles.	Bankipore	12,775 11 11½	- - - -	Completed.	-
<i>Darjeeling Road</i> : Dinapore to Bankipore; re-metalling of the Pucka portion of this Road.	-- This road connects the city of Patna with the cantonment of Dinapore.	-- Length about 7½ miles from the Main Guard Bridge at Dinapore to the Parade at Bankipore. Sanctioned 17th February 1851.	Bankipore	- - - -	14,363 8 -	- - - -	-- The width of the metal is 26 and 20 feet.
Repair of the road between Dum Dum and Cossipore.	- - - - -	-- Length 3 miles. Sanctioned 3d December 1839.	Cossipore	6,776 - -	6,776 - -	-- Completed season 1839-40.	-- This is a pucka road.
<i>Dinapore Bridge</i> , over the Guggrah Nullah st.	-- Required in the place of the Creighton's Pucka Bridge, which was destroyed by an inundation in July 1841.	-- The water-way of this bridge is 191 feet in length. Sanctioned 9th January 1843.	Dinapore	6,601 11 6½	6,260 11 2	-- Completed season 1847-48.	-
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b>							
<i>Delhi to Shamlee via Kurnaul</i> : Estimates for bridging and metalling the Road.	- - - - -	-- Estimate submitted July and August 1840.	Shamlee	- - - -	2,95,056 - -	- - - -	-- The work has been placed in the hands of the local civil officer; the expense to be defrayed from local funds.
<i>Delhi</i> : Projects for a permanent communication across the Jumna st.	-- A permanent communication at the point proposed is important in a military point of view, as it would provide the ready means of access to the city of Delhi, and the arsenal it contains, from the neighbouring cantonment of Meerut, in the Dooab. In a commercial point of view it is important to connect Delhi with the grand trunk road, and so form a good means of transit for the valuable merchandize which passes through Delhi in either direction, from the east or west.	-- Submitted to the Lieutenant-governor on the 3d April 1846.	Delhi	1st Scheme. By a causeway and bridge of boats: Causeway - - - - Bridge of boats - - - - Total Rs. 2,50,000	Rs. 1,50,000 1,00,000 <u>2,50,000</u>	- - - -	-- The Governor-general admitted the importance of the work, but was nevertheless of opinion, that in the present state of the finances, other public works of still greater utility must have the preference.
				2d Scheme. By a suspension bridge with causeway: Suspension bridge - - - - Causeway - - - - Total Rs. 8,50,000	Rs. 7,00,000 1,50,000 <u>8,50,000</u>		
				3d Scheme. By a masonry bridge and causeway: Masonry bridge - - - - Causeway - - - - Total Rs. 6,00,000	Rs. 4,50,000 1,50,000 <u>6,00,000</u>		

Construction of a Causeway on both banks of the River Juanna, having two openings, each duly provided with Pucca Bridge Heads, for the passage of the waters of the river.	- - - - -	- - Sanctioned 22d July 1846.	- - From the terminus of the grand trunk road at Selempero to the Nagumbode gate of the city.	- - - - -	1,37,481 - -	- - - - -	- - The less expensive project of a causeway with two openings was sanctioned by the Governor-general in July 1846. The main opening having a span of 2,800 feet, the other, immediately below the Nagumbode gate, of 200 feet, making a total of 3,000 feet, or allowing for the floating of 80 boats, 24 feet wide, drawing 1. 6. 0. water (assuming the main depth of the river at 8 feet), an uninterrupted waterway of 2,670 feet.
<b>ROADS AND BRIDGES, CENTRAL PROVINCES:</b>							
Deeskulle Bridge over the Gungee Nullah, on the road from Benares to Ghazepore.	- - This bridge was required in the place of one built in 1820, which, owing to an insufficiency of waterway, fell in the year 1830.	- - - - -	- - - - -	14,087 - 3	- - The immediate space will be filled by a bridge of boats, which will be formed and maintained by the Ferry Fund Committee.	- - Completed season 1841-42.	- - This bridge is of three arches, of 35 feet span each.
Decodes River: Construction of a Causeway across the.	- - To supersede the construction of a bridge which would have cost, by a rough calculation, about 40,000 rupees.	- - Sanctioned 7th October 1846.	- - - - -	7,866 8 5	7,909 - -	- - Completed season 1846-47.	- - The length of the pucca pavement is 201 feet clear roadway, of which 156 feet are level, and raised one foot above the highest dry weather stream.
<b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:</b>							
Dum Dum to Baraset, repairs of the Pucks Road.	- - Forms a part of the road to Darjeeling.	- - Length 7 miles; sanctioned 15th April and 31st May 1844.	Baraset - - - - -	7,153 9 3	7,153 9 3	- - Completed season 1844-45.	- - - - -
Darjeeling Road: Construction of 13 Houses.	- - For the accommodation of dawkbearers, and to prevent their resorting in bad weather to the villages at some distance from the road for protection, and thus occasioning much delay and inconvenience to travellers.	- - Sanctioned 23d May 1843.	- - Between Bargatchee and Titalya, and Dinagepore.	635 6 6	- - - - -	- - Completed season 1845-46.	- - - - -
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES:</b>							
Dhullundah Insane Hospital: Construction of Sleeping Sheds for Guards.	- - Constructed by orders to the address of the Sessions Judge of the 24 Pergannaha.	- - Sanctioned 6th October 1848.	Dhullundah - - - - -	1,455 11 2	1,455 11 2	- - Constructed season 1849-50.	- - This work was executed under a contract.
Construction of additional Vardaha, Cook-rooms, &c.	- - - - -	- - Sanctioned 25th May 1848.	- - - - -	2,528 2 10	- - - - -	- - Completed season 1850-51.	- - - - -
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—JUDICIAL:</b>							
Dumoh: Construction of a Fortified Gaol at.	- - - - -	- - Sanctioned 16th April 1845.	Dumoh - - - - -	22,735 9 2	20,460 7 2	- - Completed season 1848-49.	- - Government 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 accordingly made to consist of a centre barrack of two wards, empty bastions, with towers, solitary cell, airing yard, reservoirs, drains, aqueducts, cesspools, &c. &c.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:</b>							
Delhi Gaol: Construction of Gaol Wards, with Cook-rooms and Guard-rooms.	- - - - -	- - Season 1841-42.	Delhi - - - - -	9,542 5 11	9,999 - 3	- - 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, NORTH-WESTERN PROVINCES—JUDICIAL—continued.</b>							
Delhi Hospital	For insanes	Sanctioned 9th March 1841.	- - - -	Rs. a. p. 25,793 - 10 (Exclusive of Rs. 300. 5. for clearing and levelling a portion of the site for the asylum.)	Rs. a. p. 20,008 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 1838-50	- - - -	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.	- - - -	2,586 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	-- For the lock-up house, 2,309 10 10	-- For the Rs. a. p. Kotewallee 5,029 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 23d May 1845.	Ditto	934 4 4	1,358 10 6	-- Completed season 1846-47.	-
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<b>Dinapore Gaol:</b>							
Drainage and Ventilation of the.	To improve the salubrity	Sanctioned January 1840 and April 1841.	Dinapore	3,227 10 8	3,780 - -	-- Completed season 1842-43.	-
Addition of 13 Skylights	-- Ditto	Sanctioned 28th February 1842.	Ditto	6,149 13 -	8,149 13 -	Season 1842-43.	-
<b>Dacca Insane Hospital:</b>							
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 2d November 1841.	Durrung	1,217 11 7	1,158 11 -	-- Completed season 1844-45.	-



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<i>Debrooghur</i> : Construction of a Gaol at -	-- For the accommodation of 136 prisoners, males and females.	- Sanctioned 3d April 1843.	- - - -	6,485 1 10	6,506 5 7	-- Completed season 1844-45.	-
Construction of a Circuit Bungalow.	-- In consequence of the inconveniences experienced by the Deputy Commissioner in holding his Court, from the want of proper buildings.	- - Sanctioned 14th August 1843.	Debrooghur - -	1,100 2 11	1,746 2 6	-- Completed season 1845-46.	-
<i>Dumoh</i> : Construction of a new defensive Gaol.	- - - - -	- - Sanctioned 27th January 1844.	Dumoh - - - -	- - - - -	16,002 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.
<i>Debrooghur</i> : Construction of a new Cutcherry.	-- In lieu of a similar one condemned by the annual Survey Committee.	-- Sanctioned 3d February 1846.	Debrooghur - -	900 - -	5,822 1 7	Season 1847-48	-- The purchase of Captain Fagan's bungalow for 200 rupees, for a cutcherry, was authorised on the 9th June 1847, as the site was better than any other that could be obtained.
<i>Dinagopore</i> : Improvements to the Magistrate's Cutcherry, by the construction of a Room with Verandah.	-- 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 - -	3,760 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.
<i>Debrooghur</i> : 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 13th May 1847.	Debrooghur - -	- - - - -	681 1 4	-	-
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES--REVENUE:</b>							
<i>Datagunge, in the District of Budson</i> : Construction of a Tehsil-darry Cutcherry at.	- - - - -	- - Sanctioned 13th December 1838.	Datagunge - -	4,300 12 -	4,360 12 -	-- Constructed season 1838-39.	-
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES--GENERAL:</b>							
<i>Delhi</i> : 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 6th April 1845.	Delhi - - - -	1,840 10 -	1,846 10 -	-- Completed season 1845-46.	-
New College at - - - -	-- Altering the residency buildings to adapt them for a college.	- - Sanctioned 26th November 1846.	- - - - -	5,000 1 3	6,249 8 6	-- Completed season 1847-48.	-

(continued)

No. 5.—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>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<i>Daugurtal, on the road between Nagpore and Seonoe: Construction of a Staging Bungalow.</i>	For the convenience of travellers	-- Sanctioned 3d August 1840.	- - - - -	1,068 5 6	1,075 6 1	-- Completed season 1841-42.	-- This route is much frequented by persons on their way to or from Bombay.
<i>Dumow: Construction of a Dakh Bungalow and Out-offices.</i>	- - - - -	-- Sanctioned 21st June 1843.	Dumow - - - -	1,478 14 7	1,478 14 7	-- Completed season 1843-44.	- - - - -
<i>Dacres: Enclosure of the Burial-ground.</i>	- - - - -	-- Sanctioned 20th 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 10th October 1844.	Dacca - - - -	33,707 14 - 1/2	20,568 5 10	-- 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.
<i>Construction of a surrounding Wall and Out-offices.</i>	- - - - -	-- Sanctioned 30th September 1840.	- - - - -	- - - - -	The Government contribution not to exceed 17,000 rupees. An additional outlay of 11,874 rupees sanctioned 16th April 1844.	- - - - -	- - - - -
<i>Debrooghar Road to Jaipore: Construction of two Baracas on the</i>	- - - - -	-- Sanctioned 30th April 1845.	- - - - -	3,137 - -	3,137 - -	-- Constructed season 1846-47.	- - - - -
<i>Darjeeling: Construction of Staging Bungalows at Carrogah Ghaut, Purneah and Kishengunge.</i>	-- 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.
<i>New Shingle Roof to the Church.</i>	-- 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 - -	650 - -	-- Completed season 1849-50.	- - - - -
<i>Dacca: Rebuilding the Enclosure of the old Burial-ground.</i>	-- The old wall fell during the rains of 1845.	-- Sanctioned 23d September 1846.	Dacca - - - -	080 - 8	- - - - -	Season 1847-48.	- - - - -
<i>Dum Dum: Repair of the Roman-catholic Chapel.</i>	-- 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.
<i>Renewing the Roof of the Church.</i>	-- 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.

<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	2,884 2 7		-- This church was built in the year 1844, at a cost of 8,500 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 1838-40.
<i>Darjeeling</i> : Construction of Public Buildings at the Civil Station of.	-- These consisted of a magistrate's catcherry, a hospital, thannah, bazaar, shops, out-offices, tanks.	-- Resolution of Government, Political Department, 23d May 1838.		15,087 2 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 9d Police Battalion.	-- Sanctioned 11th March 1844.	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 1845.		25,117 7 -	23,845 8 -	-- Completed season 1846-47.
<i>Delhi Palace</i> : Repairs to		-- Estimate submitted 27th February 1846.	Delhi	5,533 12 4	50,579 - -	-- 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>Entalloe Canal</i> : Excavation of Mud from the bed of the.		-- Sanctioned 9th January 1843.		3,248 15 8	3,079 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.		3,726 11 8	4,368 11 8	-- Completed season 1844-45.
<i>Entalloe 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 Ekhsarpore</i> , on the road from Jampur to Buxar.		-- Of five arches of 20 feet span each; sanctioned 6th February 1838.		4,107 11 6	4,107 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.		96,701 14 4	13,357 5 7	-- Completed season 1841-42.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—GENERAL:</b>						
<i>Etawah</i> : Construction of Etaging Bungalows.	-- For the accommodation of travellers.	-- Sanctioned 7th January 1846.	Etawah	4,407 - -	4,647 - -	-- Completed season 1846-47.

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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.	Places 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>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<i>Eastern Settlements:</i> Singapore	Hospital for convicts	Sanctioned June 1837	- - - -	2,070 7 9	- - - -		
	Market at Company Glam	Sanctioned January 1836.	- - - -	5,708 9 4			
	Enclosure to gaol	Sanctioned July 1836	- - - -	10,290 5 10			
				<u>Rs. 18,668 15 11</u>			
	New market at the China Town at Singapore.	Sanctioned September 1834.	- - - -	23,980 2 7		Completed 1839-40	-- 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:</i> Construction of a new.	-- In consequence of the present market being liable to inundation.	Sanctioned season 1840-41.	- - - -	2,218 2 4		Completed 1841-42.	
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b>							
Road from Ferozah 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 Ferozepore to Shikarpore.	For a military road	Sanctioned season 1841-42. Length 415 miles.	Shikarpore	11,145 8 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>Ferozepore:</i> Construction of a Gaol at.	-- 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.	Ferozepore	1,402 3 5		-- Completed season 1846-47.	
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<i>Furzedpore:</i> Additions and alterations to the Gaol.	-- To improve the salubrity of the building.	Sanctioned 9th April 1845.	Furzedpore	4,104 10 10	3,623 11 10	Season 1846-49	-- The floors will be built on flues 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>Futtehpoore:</i> Construction of a Judge's Court-house and Offices.	-- A new court-house was much required; the records were kept in almost irreparable hangalows, and were exposed to much risk of destruction.	Sanctioned April 1847.	Futtehpoore		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>Farrukhabad:</i> Construction of Tehsil-harry Cutcherries.		Sanctioned April 1843.	At Terivah and Ayrwah.	At Ayrwah 3,055 3 5	8,670 4 6	-- Completed season 1846-47.	

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<p><i>Futtehpora</i>: Enlargement of the Circuit-house to accommodate the Collector and Magistrate and their Records; and construction of a Catchery for the Husoor Tubwell, 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>Futtehglur - -</p>	<p>15,807 1 9 1/2</p>	<p>17,482 5 4</p>	<p>-- Completed season 1844-45.</p>	
<p><b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES--GENERAL:</b></p>							
<p>Fales Point Lighthouse - -</p>		<p>-- Sanctioned season 1839-40.</p>		<p>-- The breakwater has been completed at a cost of Rs. 2,204. 8. or 206 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 stones 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 1842, and was found quite effective in preventing an encroachment of the sea.</p>
<p><i>Futtee Point</i>: Construction of a Lighthouse.</p>		<p>-- Sanctioned 5th November 1843.</p>		<p>7,082 9 10</p>	<p>5,000 - -</p>	<p>-- Completed season 1845-46.</p>	<p>-- The anomaly 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>Futteebad</i>: Repairs to the staging Buogalow.</p>	<p>-- Considered indispensable for the superintendent of the Bhuttana territory, and the residents at Suss.</p>	<p>-- Sanctioned 28th March 1843.</p>	<p>-- Situated between Suss 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>Ferozepore</i> Burial-ground; Enlargement of the.</p>		<p>-- Sanctioned 25th March 1840.</p>	<p>Ferozepore - -</p>		<p>3,804 1 -</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 Doab.</p>	<p>-- Suggested by Captain Cautley, in the year 1830.</p>	<p>-- To leave the Ganges at Kunkul and pass near to Meerut and Coel, and finally join the river Esau, near Mynpoore.</p>	<p>-- Estimates submitted in season 1841-42.  <i>Miles.</i>                  Length of main line 453                  " of Futtehglur Branch 100                  " Boolundshur 70                  " Etawah 172                  " Cawnpore 42 1/2                  -----                  898 1/2</p>	<p>-- Rs. 66,65,223, 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 20 miles, by an expensive series of works, estimated at Rs. 10,64,370. 12., of which sum about 8,63,008 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. 28,34,281. 0. 6.; and for four branch canals; viz. the Futtehglur</p>
<p>Branch 100 miles, mean breadth 40 1/2 feet, cost 6,53,867 rupees; the Tuppul Branch 70 miles, mean breadth 30 feet, cost 1,03,740 rupees; the Shekoubud Branch 180 miles, mean breadth 38 1/2 feet, cost 7,10,107 rupees; the Allahabad Branch 100 miles, mean breadth 30 feet, cost 3,00,160 rupees. A sudden stop was put to the progress of the work in 1842, the Government 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 29th 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 Cautley 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 20th 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. 40,48,295. 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>1,280 1 7</p>	<p>673 - -</p>	<p>-- Completed season 1847-48.</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—GENERAL—continued.</b>							
<i>Ganges Canal: Construction of an Inlet at Ranipore Rao.</i>	-- This work is required at a point where the Ganges Canal crosses the Ranipore Itan, a mountain torrent, and is designed to overcome the difficulties arising from its position.	-- Sanctioned 16th July 1849.	-- Northern Division of the Ganges Canal.	Rs.    a.    p.	Rs.    a.    p.		-- The plan is to give the water of the Rao admission into the Canal by a masonry overfall. Great advantages are anticipated. The inlet will be built almost entirely of boulder masonry, faced with stone.
<b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:</b>							
<i>Grand Trunk Road between Allahabad and Delhi: (See paras. 3 to 12 of Court's Despatch, 30th January 1850, at pages 140 and 147 of Parliamentary Return, No. 622 of 1851.)</i>	-- 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.		<i>Mls. fms. ft.</i>	-- Expenditure to 30th April 1848,	-- The estimated amount for completion in December 1848, was		-- The Court, in a despatch dated 30th January (No. 2) 1850, observe, "We attach great importance to the completion of the Great Trunk Road; we desire to see it completed with substantial bridges. Those over the Soane and Jumna should be for the present suspended; but you will carefully consider whether the prospect of a railway through the North-west Provinces is sufficiently near to justify the suspension of any other portion of this great work." In season 1850-51 the formation of a firm roadway over the sandy bed of the Soane, in the 2d Division of the road, was proposed, at an estimated cost of Rs. 40,579. 6. 4. The breadth from eastern to western Ghaut in a straight line is 2 miles 3 furlongs and 68 yards, about 1,800 feet of which consists of shifting channels and still water, being about two miles of sandy road to be made practicable for the traffic of the country. This project contemplates a roadway of the best hydraulic concrete 3 feet deep, 12 feet broad at top, and 10 feet at base; the top surface to be level with the bed of sand, and composed of two courses of cut-stone slabs, upon a concrete base, the bed of concrete to have a slope of 2 feet at every 100 feet; an opening covered by a platform of saul 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 outlay of Rs. 3,000 was sanctioned for the construction of 150 yards of causeway, on this plan, experimentally.
		1st Division.		48,01,000    --    --	Rs.    a.    p.		
		-- Paltah Ghaut on the Hooghly to East Burrakur River - - -	730    4    --		33,02,507		
		2d Division.			60,00,000		
		East Burrakur River to the West Burrakur River	96    2    442		10,00,000		
		3d Division.			Rs. 103,02,507		
		West Burrakur River to Curramnaasa River -	142    --    325				
		4th Division.					
		Curramnaasa River to Allahabad - - -	180    0    402				
		5th Division.					
		Allahabad to Bhogong, and of the Branch Road from Bhogong to Agra - - -	224    7    475				
		6th Division.					
		Bhogong to Ghazeeodeennugur, and of Branch Roads from Allyghur to Agra, and from Khoorjah to Meerut - - -	254    5    510				
		7th Division.					
		Meerut to Delhi, which comprises a portion of the Grand Trunk Road from Ghazeeodeennugur to Delhi; the Grand Trunk Road prolongation, now under construction from Delhi to Kurnaul, and the new Branch Road from Meerut to Kurnaul -	179    --    --				
		From Paltah Ghaut to Kurnaul, with branches - - -	1,208    --    --				

Continuation of, from Delhi to Kurnaul.	- - - - -	-- In length 70 miles; sanctioned 10th February 1850.	Kurnaul - - -	The Earthwork, Rs. 82,711 5 2	4,36,076 - -	Completed 1850-51 -	-- The earthwork of the road is estimated at 43,201 rupees, the metalling at 2,51,038 rupees; the construction of 140 drain bridges and 18 masonry bridges, with 31 arches varying from 20 to 40 feet span.
Restoration of the Iron Suspension Bridge at Muggra.	-- Blows down during a storm on the 3d June 1842.	-- Length of the bridge 110 feet, and breadth 12 feet; built in the year 1830 by subscription. Its restoration sanctioned 1st August 1842.	-- Situated 7 miles to the westward of Hooghly.	- - - - -	1,189 1 7	- - - - -	- - - - -
Metalling of the portion of the, within the Benares Division.	- - - - -	-- Length 4 miles, 7 furlongs; sanctioned 6th October 1846.	- - - - -	- - - - -	11,774 - -	- - - - -	- - - - -
Repairs to the portion from Gooreegunge to Futtchpore.	- - - - -	-- Length 114½ miles; sanctioned season 1846-47.	- - - - -	- - - - -	14,483 - -	- - - - -	- - - - -
Construction of a new Masonry Bridge on the.	-- Required to replace an old one, with reference to the injury done to it by a breach near it during the heavy rains of the last season.	-- Sanctioned 8th July 1846.	- - - - -	- - - - -	2,057 9 10	- - - - -	- - - - -
Construction of Wells on the	-- These wells are much required, as travellers halting at the bungalows have felt much inconvenience for the want of water.	-- Sanctioned 28th December 1846.	-- At Mirzapore and Futtchpore.	- - - - -	1,201 6 6	- - - - -	- - - - -
Raising of the Wing Walls and Parapets of Bridges, and Drains, between Futtchpore and Goorshaigunge.	- - - - -	-- Sanctioned season 1846-47.	Goorshaigunge - -	8,088 7 5	- - - - -	-- Completed season 1846-47.	- - - - -
Renewal of a Bridge on the	-- To replace a bridge injured by a breach which occurred on the road near it, during the heavy rains of 1846.	-- Sanctioned 8th July 1846.	Grand Trunk Road -	1,791 11 11	1,791 11 11	-- Completed season 1846-47.	-- This is a bridge of two arches of ten feet span.
Iron Suspension Bridge over the Tomich Torrent.	- - - - -	Sanctioned in 1843 -	-- Situated 3 miles east of Undall.	9,168 - 10	9,168 - 10	-- Completed season 1844-45.	-- This bridge is to consist of two spans of 80 feet, and one of 90 feet, with a 18 feet roadway; and is to be constructed on the dredgian or tension principle.
Reconstruction of the	- - - - -	-- Sanctioned 15th September 1847.	- Ditto - - -	9,108 12 10	9,108 12 10	-- Completed season 1847-48.	-- The bridge first constructed fell down, owing to a deficiency of waterway, and to a want of depth of foundation to the abutment piers.

(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 SOUTH-EASTERN PROVINCES—continued.</b>							
<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.	98,893 13 -	26,293 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 1,610 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 2,600 feet long, and averaging 20 feet high.
Laying down Iron Tract Roads over the Noonah, Singharra, and Tomlah Bridges.	- - - - -	-- Sanctioned 21st May 1847.	- - - - -	- - - - -	2,009 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 25th September 1843.	-- In the district of Behar.	19,001 12 5½	19,001 12 5½	-- Completed season 1847-48.	-- This is a stonemasonry bridge of five arches, each 36 feet span.
Construction of a Bridge over the Danwah 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 Muddempore.	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>Cokeelpore: Construction of a new Bridge on the Tension principle over the Kallee Nuddee, at.</i>	-- The old bridge was severely injured by floods on the 20th June 1842.	-- Sanctioned season 1844-45.	- - - - -	- - - - -	16,517 - -	- - - - -	-- The expanse of water in the valley of the Kallee Nuddee during the flood in June 1843, extended over a breadth of 3,030 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.



Googres: Construction of a Staging Bungalow at.	- - - - -	- - Sanctioned 27th June 1840.	- - - - -	2,403 7 9	2,403 7 0	- - Completed season 1840-47.	- - - - -										
<b>ROADS AND BRIDGES, LOWER PROVINCES:</b>																	
Gonohatty 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 33½ miles; sanctioned 15th August 1842.	Kulling River -	6,535 2 3	9,902 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.	- - - - -	<table border="0"> <tr> <td colspan="2" style="text-align: right;">Miles.</td> </tr> <tr> <td>- From Gya to Jehanabad on the Patna road</td> <td style="text-align: right;">80</td> </tr> <tr> <td>- From Gya to Shergatty on the Trunk road</td> <td style="text-align: right;">99</td> </tr> <tr> <td>- From Gya to Surwah on the Trunk road</td> <td style="text-align: right;">20</td> </tr> <tr> <td colspan="2" style="text-align: right;">Miles 79</td> </tr> </table>	Miles.		- From Gya to Jehanabad on the Patna road	80	- From Gya to Shergatty on the Trunk road	99	- From Gya to Surwah on the Trunk road	20	Miles 79		- - - - -	2,132 5 7½	1,911 6 7	- - - - -	- - Of this extent of road, 15 miles are kept in repair by the Gya convicts, and accordingly provision is not made in the estimate for repairing the same.
Miles.																	
- From Gya to Jehanabad on the Patna road	80																
- From Gya to Shergatty on the Trunk road	99																
- From Gya to Surwah on the Trunk road	20																
Miles 79																	
Golar Ghant to Bor Pathor, through Nagara.	- - The opening of this road will, it is considered, afford the most effectual means of opening an intercourse with and controlling the Nagas.	- - Length, about 80 miles; sanctioned 24th August 1844.	Bor Pathor -	800 - -	800 - -	- - Season 1844-45.	- - - - -										
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-carriage 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 80 miles), will not be changed.										
Construction of two Drain Bridges.	- In lieu of two others destroyed by floods in August 1843.	- - Sanctioned 10th October 1843.	- - 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 1843, amounted to Rs. 8,007, 12.										
<b>ROADS AND BRIDGES, CENTRAL PROVINCES:</b>																	
Great Deeran Road: Metalling of the .	- - In consequence of the great wear and tear on the.	- Length, 24½ miles; sanctioned 29th September 1840.	- - From Telwarra Ghant, between Jubulpore on the Nerbudda, and Miranpore on the Ganges.	83,924 10 5	86,828 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. 8,048, 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>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.	- - - - -	Rs. a. p. 846 8 7	Rs. a. p. 591 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.	630 9 0	630 9 0	-- Completed from 1849-50.	This is a bridge of 12 feet span.
Construction of a line of Road from the top of the Lohage 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 via Miraspore, which route increases the natural distance some 70 miles.	-- Sanctioned 8th February 1850.	-- At a village called Mangowah.	- - - - -	30,828 9 -	- - - - -	-- The whole distance from the Great Deccan Road, near Mangowah, 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 Lohage Pass; the remaining portion is now sanctioned, including 19 viaducts.
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL.</b>							
<i>Gyuh:</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 13 8	- - - - -	-- Completed 1840-41.	-
<i>Gowahatty:</i> Construction of Buildings.	-- For a cutcherry for the collector and magistrate.	-- Sanctioned 4th January 1842.	- - - - -	6,705 8 8	6,038 5 10	-- Completed season 1843-44.	-
Construction of temporary Gaol Buildings.	-- To replace buildings burnt down on 4th April 1840.	-- Sanctioned 19th February 1841.	- - - - -	1,150 8 6	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 8 8	- - - - -	-- Completed season 1841-42.	-
<i>Gowalparrah (Lower Assam):</i> Construction of a Cutcherry for the Magistrate.	-- To replace an old cutcherry of temporary materials, which was in a dilapidated state.	-- Sanctioned 5th December 1837.	- - - - -	3,500 9 -	- - - - -	-- Completed season 1841-42.	-
Reconstruction of the Gaol Buildings.	-- In consequence of the decayed state of the present temporary gaol buildings.	-- Sanctioned 20th December 1842.	- - - - -	3,015 3 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 - - -	2,160 6 9	2,210 10 -	-- Completed season 1845-46.	-
<i>Gyuh:</i> Construction of an additional Room to the Judge's Record Office.	- - - - -	-- Sanctioned 11th September 1844.	Gyuh - - -	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 1846.	Gowalparrah	2,812 14 8	2,812 14 8	-- Completed season 1845-46.	-
<i>Gowahatty</i> : Addition to the Commissioners' Cutcherry.	-- To afford shelter to the people attending court.	-- Sanctioned 5th November 1846.	Gowahatty	609 4 4	609 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 19 4	3,454 7 9	-- Completed season 1846-50.	-- 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 19th May 1847.	Gowahatty	- - - -	1,768 7 0	-	-
<i>Gyrah</i> : Construction of a Cutcherry.	-- For the Principal Sudder Ameer and additional Moonshiff of Bahar.	-- Sanctioned 22d March 1846.	Gyrah	- - - -	1,618 - -	-	-
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:</b>							
<i>Goorgoon</i> : Construction of a Cutcherry with Out-office.	-- For the collector and magistrates; the construction of this outcherry will do away with the renting of buildings, stated by the local officer to be inconvenient and ill-adapted.	-- Sanctioned 27th November 1847.	Goorgoon	11,188 16 8	11,465 5 8	-- Completed season 1849-50.	-
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—REVENUE:</b>							
<i>Gunour</i> : Construction of a Tahaldarry Cutcherry.	- - - - -	-- Sanctioned season 1838-39.	In Zillah Budson	4,581 15 8	- - - -	-- 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>Ghaseepore</i> : Construction of a Guard-room to the Collector's Cutcherry.	-- In consequence of the insufficiency of accommodation for the guard.	-- Sanctioned 26th May 1844.	Ghaseepore	875 4 2	875 4 2	-- Completed season 1844-45.	-
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL:</b>							
<i>Ghaseepore</i> : Extension of the Godown accommodation in the Opium Factory, and Bungalow for the use of the First Assistant.	- - - - -	-- Sanctioned 1st May 1839.	- Ditto -	11,864 - -	- - - -	-- Completed season 1841-42.	-

(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—GENERAL—continued.</b>							
<i>Ghazepore—continued.</i> Construction of an Opium Godown at.	-- Required in lieu of one built in 1835-39, which was reported to be in ruins.	-- Sanctioned 10th September 1845.	Ghazepore - - -	Rs. a. p. 2,337 8 3	Rs. a. p. 2,314 14 11½	-- Completed season 1846-47.	- In 1850-51 a sum of Co.'s Rs. 601.5. 8. was expended in renewing the terrace of the caking godown.
Construction of a Bungalow and Out-offices at the Opium Factory.	-- For the second assistant to the superintendent at the factory.	-- Sanctioned 17th September 1845.	- Ditto - - -	- - - - -	1,275 - -	Season 1845-46.	-
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b>							
<i>Great Savage Rock:</i> Construction of a Lighthouse on the.	- - This lighthouse will enable vessels of a certain draught of water to cross the bar of the river during the night.	- - Sanctioned 9th November 1842.	- - - - -	33,587 10 4	33,425 8 7	-- Completed season 1843-44.	- - The lantern was first lighted on the night of the 7th March 1844: Rs. a. p. Cost of lighthouse - - 33,587 10 4 Buildings attached - - 1,501 9 6 Lantern - - - - - 15,000 - - <hr/> Rs. 50,089 3 10  The total cost of the structure, including a building for establishment and stores, has been Rs. 50,089. 3. 10.
<b>CIVIL BUILDINGS, LOWER PROVINCES—GENERAL:</b>							
<i>Ghazepore:</i> Enlargement of the Burial-ground.	- - The necessity of its enlargement was brought to the notice of Government by the local authorities at Ghazepore, through the Atchdeseon.	-- Sanctioned August 1843.	Ghazepore - - -	1,527 3 4	1,527 3 4	Season 1843-44 - -	- - A space of 300 by 330 has been added.
<i>Goolzarbaugh:</i> Construction of a Boundary Wall to the Opium Godown.	- - Considered necessary for the security of much valuable property from fires and plunderers.	- - Sanctioned 3d December 1845.	Goolzarbaugh - -	4,883 14 3	5,170 - -	-- Completed season 1846-47.	-
<i>Gyah Road:</i> Additions and alterations to the Staging Bungalows on the.	- - With a view to assimilate them to the bungalows on the Grand Trunk Road.	-- Sanctioned 3d September 1845.	Gyah Road - - -	611 - -	611 - -	-- Completed season 1845-46.	-
<i>Gowahatty:</i> Rebuilding the top of the Spire of Christ's Church.	- - Fractured by a shock of earthquake on the 18th June 1846.	-- Sanctioned 12th February 1847.	Gowahatty - - -	187 7 10	200 - -	-- Completed season 1847-48.	- - Twelve zinc pipes, 2½ inches in diameter, were put up in season 1849-50, to carry the water off the roof to the ground outside the building.
Rebuilding of the Gaol Hospital.	- - Ditto - - -	Ditto - - -	- Ditto - - -	151 1 3	- - - - -	-- Completed season 1847-48.	-
<i>Gyah:</i> Construction of an additional Opium Godown.	- - In compliance with the opinion of the Board of Customs, Salt and Opium, in regard to the necessity of the proposed outlay.	-- Sanctioned 13th March 1848.	Gyah - - -	3,907 15 7	2,776 10 3	-- Completed season 1849-50.	- - A supplementary estimate was sanctioned on the 5th February 1850, in consequence of the insufficiency of the rates assumed in the first estimate.

CIVIL BUILDINGS, NORTH-WESTERN PROVINCES - POLITICAL:							
987.	Gwalior Hospital - - -	-- For the sick of the escort of the Resident.	-- Sanctioned 6th April 1840.	Gwalior - - -	2,128 2 6 1/2	2,008 15 7	-- Completed season 1843-44.
EMBAKMENTS, SOUTH-EASTERN PROVINCES:							
Hidgelles:							
	Re-construction of the Sea Bunds.	-- To protect the country from inundation.	-- Sanctioned 10th January 1851.		-- Rough estimate for renewing and strengthening the embankments -	2,03,930 - -	
	Embankments in the Rasseulpore River Frontage.	-- For the protection of large tracts of resumed lands in Hidgelles.	-- Length 56 miles; sanctioned 6th November 1841.		-- General estimate, embracing embankments of larger section, and assuming a very low rate for the work to be executed -	5,54,255 - -	
	Construction of a new Line of Bunds in Pergunnah Khadar.	-- For the protection of the Government estate of Bolakeepore.	-- Length 2 1/2 miles; sanctioned 25th April 1842.			11,848 - 11	-- The length of the embankments in the Hidgelles division in 1830-40 was 1,040 miles, and the estimated cost of annual repairs in 1850-51 amounted to upwards of 24,300 rupees. In this division 12 sluices have been sanctioned in the Soojamote Pergunnah, which is under the management of the Court of Wards.
13	Excavation of the Moonjore and Mirzapore Khalls.		-- Length 8 miles; sanctioned season 1843-44.		3,314 5 8	3,168 7 6	-- Completed season 1843-44.
	Excavation of Patgoda Canal		-- Sanctioned season 1843-44.		3,645 5 9	3,680 8 2 1/2	-- Completed season 1847-48.
	Drainage of the Jellamootah Pergunnah.	-- This work is stated to be indispensable to the prosperity of the cultivation of the Pergunnah.	-- Sanctioned 6th June 1844.			4,030 10 -	
	Construction of a new Bund	-- To prevent the ingress of salt water to the Kusbah, which now finds its way into the cultivated lands at high spring-tides through certain low channels.	-- The new bund measures two miles and 405 feet, and its average height is nine feet; sanctioned 20th September 1844.	At Kusbah - - -		3,300 3 2 1/2	-- Its completion not reported.
	Construction of new Bunds	-- For the protection of the resumed mahals of Ustiaocool and Banderboorlah.	-- Length, four miles and five furlongs; sanctioned 15th January 1845.	-- Situated at Pergunnah Paharpore.	1,003 2 5 1/2	1,003 2 5 1/2	-- Completed season 1845-46.
	Construction and repair of Bunds on resumed estates.	-- For the protection of resumed estates, and with a view to increased cultivation.	-- Length, three miles and one furlong; sanctioned 18th January 1845.	-- In Pergunnah Nur-roomootah.	1,352 13 -	1,380 6 -	-- Completed season 1846-47.

(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>EMBANKMENTS, SOUTH-EASTERN PROVINCES—continued.</b>							
<i>Hidjellee—continued.</i>							
Construction of five Inspection Bungalows.	For the use of inspecting officers	-- Sanctioned season 1849-50.	-- In the Hidjellee Division.	- - - - -	Rs. a. p. 3,593 6 7	- - - - -	-- 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>Hidjellee Canals:</i> Deepening of a Khair leading from Tazro-pukeriah to Kalliyuggur, on the Hidjee and Bussoolpore.	-- To facilitate the concentration of the salt of the Hidjellee Agency in one set of gahals; for this object the canal is of great importance, when the strong winds make the coast navigation dangerous.	-- Sanctioned 15th May 1839.	- - - - -	- - - - -	23,138 - -	- - - - -	- - - - -
<b>CANALS, NORTH-WESTERN PROVINCES:</b>							
<i>Hallalpoore 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 1838-39.	On the Doab Canal	90,725 - -	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>Hajeepore to Kurrinjah,</i> on the Mozufferpore Road.	-- To supersede the old road to Mozufferpore via Persa Ghaut.	-- Estimated January 1840.	Kurrinjah	- - - - -	40,686 12 1	- - - - -	-- This work does not appear to have been carried out.
<i>Hazareebaugh:</i> Construction of Abains, &c., on the Road from, to the Grand Trunk Road.	-- This road connects the military station of Hazareebaugh with the Grand Trunk Road at Barria.	-- Sanctioned 2d April 1841.	Grand Trunk Road	8,707 14 8	3,758 15 5	-- Completed season 1841-42.	- - - - -
<i>Hazareebaugh and Dorundah:</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.	Dorundah	- - - - -	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 Aarah Naddee.	- - - - -	-- Sanctioned 16th October 1843.	- - - - -	5,029 - 7	5,029 - 7	-- Completed season 1846-47.	-- This bridge has three arches of 20 feet span.
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b>							
<i>Hindun Bridge:</i> Proposal for converting it into a Suspension Bridge.	- - - - -	- - - - -	- - - - -	- - - - -	1,45,577 10 2 Including the expense of metalting the portion of the Grand Trunk Road between the bridge and Sehnipore, near Delhi.	-- Completed season 1845-46.	-- This bridge was thrown open to the public on the 23th August 1845.

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Filling up deep Pools in front and at the tail of the Bridge.	-- The pools were filled up with blocks of kunkur, to prevent damage to the bridge.	-- Sanctioned 28th May 1847.			640 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 Kallee Nuddee: Metalling the Causeway of.</i>	-- 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.		3,520 15 -		-- Completed season 1844-45.	-- The expenditure was incurred for carting kunkur. The labour was performed by convicts.
<i>Hindus Causeway: Construction of a Drain Bridge under the.</i>	-- Required to pass off the waters which collect in the nook or angle formed by the junction of the Meerat Road and Causeway.	-- Sanctioned season 1844-45.			702 9 11		
<i>Hurreepora: Construction of an Iron Suspension Bridge over the Dumbker River.</i>	-- To replace a Shakespearian Bridge, reported unworthy of further repair.	-- Sanctioned 26th July 1844.	-- To be one span of 130 feet, with breadth of roadway 7 feet; situated about 8 1/2 miles from Subathoo.	21,712 13 8	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, Construction of a Road.</i>	-- 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 returning it by instalments of 2,000 rupees per annum. This work was projected by Lieutenant Strachey, an executive officer of the Ganges Canal, and the execution will be entrusted to him.
<i>Hindus Bridge: Completion of the Causeway leading to the.</i>		-- Sanctioned 16th March 1847.		5,882 6 11	5,882 6 11	-- Completed season 1847-48.	
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES--JUDICIAL:</b>							
<i>Hydrabad: Conversion of an Inclosure into a temporary Civil Gaol.</i>	-- At the recommendation of the Governor of Sainda.	-- Sanctioned 8th August 1844.	Hydrabad		1,598 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: Purchase of an Estate, the property of Major Bird, for a Cutcherry for the Principal Assistant Commissioner.</i>	-- 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	3,500 - -		Season 1841-42	-- The estate is beyond the limits of cantonments.
<i>Construction of a Gaol at Hazareebaugh.</i>	For civil and criminal prisoners.	-- Sanctioned 8th May 1838.	Ditto	4,899 7 - 1/2	4,899 7 - 1/2	-- 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.
<i>Purchase and alteration of a Bungalow as a Cutcherry for the Principal Agent, Governor-general.</i>	-- Rendered necessary in consequence of the Government cutcherry bungalow having been appropriated to the use of the ex-Ameers of Scinde.	-- Sanctioned 24th January 1846.	Ditto	3,772 8 9	3,772 8 9	Season 1845-48.	

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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>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<i>Hooghly Gaol:</i> Supply of Water to the	For the use of the prisoners	-- Sanctioned 25th February 1846.	Hooghly - - -	2,089 9 4	2,124 - -	-- 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	1,092 10 8	-	
Judicial Buildings	-- The necessity for new buildings was brought to notice by the superintending engineer.	-- Sanctioned 2d September 1850.	- Ditto - - -	- - - - -	5,256 6 4	-	
<i>Hazareebaugh:</i> Transfer of the European Hospital to the Judicial Department.	For the confinement of prisoners	-- Sanctioned 1st December 1847.	Hazareebaugh - - -	- - - - -	1,889 9 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 gaol discipline.	-- Sanctioned 9th March 1846.	Hoshungabad - - -	6,411 9 9	6,004 - -	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 - - -	11,539 - -	14,673 - -	-- 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 Pealkarree 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 Pealkar's Cutcherry.	- - - - -	-- Sanctioned 20th December 1838.	- Ditto - - -	1,074 8 6	- - - - -	-- Completed season 1841-42.	- - -
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b>							
<i>Howrah:</i> Extension of the Burial-ground.	- - - - -	-- Sanctioned 14th March 1842.	Howrah - - -	855 - 0	- - - - -	-- 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>Hughly 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 Hug River Creek.
			1,237 4 10 1/2
			2,008 12 5
			-- Completed season 1845-46.
			-- The obelisk at Canterbury Point is to be 50 feet, and that at Hug River Creek 40 feet in height.
CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL:			
<i>Hattrass</i> : Repairs and improvements to Hardingunge.	- - - - -	-- Sanctioned 26th July 1841.	Hattrass - - -
			3,339 15 7
			4,006 1 7
			-- Completed season 1843-44.
CIVIL BUILDINGS, LOWER PROVINCES, POLITICAL:			
<i>Hazureebagh</i> : Repair of Buildings.	-- Purchased for the accommodation of the ex-Ameers of Scinde.	-- Sanctioned 17th January 1845.	- - - - -
			520 5 6
			529 5 8
			-- Completed season 1845-46.
CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—POLITICAL:			
<i>Hawallagh</i> : Purchase of three Bungalows.	For exiled Hill Ryots - - -	-- Sanctioned 23d August 1840.	Hawallagh - - -
			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>Jeshoorkhally</i> : Construction of a New Line of Dabandy in the Doaroo 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 16th May 1840.	- - - - -
			- - - - -
			838 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 Singarea.
<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 - - -
			4,10,026 - - -
			-- 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 19,936 rupees, and the amount expended, 22,426 rupees.
			- - - - -
			-- They consist chiefly of babool, teak, saul, and aissoo, 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 - - -
			3,000 - - -
			3,000 - - -
			Season 1849-50
			-- The total amount of expenditure up to the 30th April 1849 was Rs. 27,865. 5. 0., and the amount realised from the sale of the produce, Rs. 20,646. 15. 8.; the estimated value of the trees on the banks of these canals was Rs. 1,48,408. 8. -, the number of trees, 238,817, of different ages.

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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>Jumna Bund</i> ; Repair and extension of the.	-- For the purpose of relieving the Jumna New Cut and Bund from a portion of the flood-water, and clearing out the mouth of Blane's Cut.	- Sanctioned 3d April 1837.	- - - -	Not reported - - -	Rs. a. p. 10,363 11 1	-	
<b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:</b>							
<i>Juggernaut Road</i>	- - - - -	- Length, 261 miles; extends from the Old Benares road at Jellalahad via Midnapore to Pooree.	- - - -				
Repairs to the Ghoree Khall Suspension Bridge on the.	- - - - -	- Built by Lieutenant Schmalch many years ago; repairs sanctioned 20th July 1841.	-- In the Balasore Division.	3,088 14 6½	2,773 - -	-- Completed season 1844-45.	-- The standards have given way, and the failure is ascribed either to the masonry on which the ground links are built having sunk and allowed the chain to come forward, or to the ground links not having been firmly built into the masonry at first.
Repairs to the Foolnackra Bridge, in the Cuttack Division of this road.	-- Damaged by a flood on the 2d October 1842.	- Sanctioned 5th June 1843.	- - - -	1,399 11 9	1,399 11 9	-- Completed season 1843-44.	
Construction of a Drain Bridge in the Balasore Division at Ummerrah.	-- To supply the place of a four feet drain, which was carried away by a flood in September 1841.	-- The new drain is of 8 feet span.	- - - -	579 10 7	- - - -	-- Completed season 1842-43.	
Renewal of the wood-work of the Iron Suspension Bridge at Kuddua Khandee.	- - - - -	- Sanctioned 3d October 1842.	- - - -	866 11 5	892 2 1	-- Completed season 1843-44.	
Construction of a new Drain Bridge on the.	-- This drain is much required at the spot, which is cut every year by the ryots to let off the water from their fields.	- Sanctioned 23d October 1843. This bridge is to be of 8 feet span.	At Dysurrah - -	313 8 3	313 8 3	-- Completed season 1843-44.	
Construction of a New Bridge near the present Noomajury Bridge.	-- With a view to the preservation of the Juggernaut Road, which, at the site fixed on for the new bridge, was constantly liable to be cut through by the floods of the country.	-- Sanctioned 27th August 1844.	- - - -	11,094 2 4	16,856 4 9	-- Completed season 1846-47.	-- This is a bridge of five arches, viz., two of 22 feet, two of 24 feet, and one of 26 feet span. A saving of Rs. 5,762. 2. 5. has been effected by a reduction in the quantity of masonry, as well as in the rates assumed in the estimate.

Repairs to, in the Belasore Division.	-- In consequence of heavy damage sustained by floods.	-- Length about 84 miles; sanctioned 27th February 1845.	-- Between Goreek-haul and Rajghaut.	1,404 9 11	1,404 9 11	Season 1845-46.	—
Construction of a Drain Bridge on the.	-- The road was every year cut through by the ryots, to let the water off their fields; this practice, it is hoped, will be put a stop to.	-- Of eight feet span; sanctioned 23d October 1843.	At Dyaurreh - - -	502 8 5	502 8 5	- Constructed season 1843-44.	—
Construction of a Drain Bridge on the.	-- With a view of bringing the water into the villages, instead of allowing it to be carried off to a different direction.	-- Sanctioned 28th April 1844.	At Khurruckpore - -	243 5 11	243 5 11	Season 1844-45.	—
Construction of two Bridges -	For drainages - - - -	-- Sanctioned 8th September 1842.	At Rajghaut - - -	777 15 10	Not stated - - -	-- Completed season 1840-50.	-- Each of two arches of 10 feet span.
Annual repairs from Pooras to Rajghaut, and the Cross Road towards Jehajpore; also for Bridges, Drains, and Barais.	The preservation of the road -	-- Length 183 miles 3 furlongs and 100 yards; and of the cross road 4 miles and 6 furlongs.	- - - - -	- - - - -	5,326 9 3	-- Annual repairs for season 1849-50.	-- These bridges, &c., will be on the south side of the Soobunrukah River.
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b>							
Josh Bridge, under the city of Bareilly, on the road to Moradabad.	- - - - -	- - - - -	- - - - -	- - - - -	15,703 - - -	- - - - -	-- A wealthy native gentleman, Dewan Behadour Sing, offered to defray the cost of this bridge, which had been taken out of the hands of the executive engineers.
Jyaree: Construction of an Iron Suspension Bridge on the taper chain principle, over the Kos-sillah River, at.	-- In lieu of a bridge which was carried away in September 1840, by a sudden rise of the river.	-- Sanctioned 5th April 1842.	Jyaree - - - - -	10,542 - - -	9,591 8 3	-- Completed season 1846-47.	-- This bridge is to consist of five arches of 20 feet span each, with piers 20 feet high.
<b>ROADS AND BRIDGES, LOWER PROVINCES:</b>							
Jamalpore: Construction of Drain Bridges at.	- - - - -	-- Sanctioned 10th May 1844.	Jamalpore - - -	950 9 9	- - - - -	-- Completed season 1844-45.	—
Jalpoore to Ningroo: Opening of a Road:	-- Military posts having been established at these places, it has been found necessary to open a temporary communication between them.	-- Length 27 miles; sanctioned season 1844-45.	Ningroo - - - - -	1,075 8 5	989 - - -	- Constructed season 1845.	-- The road has been merely cleared of the jungle, so as to admit the passage of troops.
<b>ROADS AND BRIDGES, CENTRAL PROVINCES:</b>							
Jubbulpore to Mirzapore, or the Great Deccan Road: Metalling of the	-- In consequence of the great wear and tear on this road.	-- Length 245 miles; sanctioned 28th September 1840.	-- From Tilwarra Ghaut, between Jubbulpore on the Nerbudda, and Mirzapore on the Ganges.	88,924 10 5	86,826 15 4	-- Completed season 1846-47.	-- This road was originally constructed by Major Drummond.

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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>Jubbulpore to Mirzapore, or the Great Deccan Road—continued.</i>							
Annual repair to the metalled portion of.	--- Also for making wooden bridges, &c.	-- Sanctioned 30th November 1842.	Mirzapore - - -	For bridges - Rs. 2,448 For repairs - 2,708 <u>Rs. 5,156</u>	5,168 3 8½	-- Completed season 1846-47.	-- This estimate also provides for the construction of 15 wooden bridges on the road connecting Jokehia and Dumoh, and clearing the Nuddee Ghauts.
<i>Jubbulpore via Seonee to Kamptee</i> : Proposed metalling and partial bridging of the road.	-- To continue the great road from Mirzapore to Jubbulpore (or Great Deccan Road).	Length: <i>M. f. yds.</i> Jubbulpore to Seonee } 83 7 52 Seonee to Kamptee } 63 7 96 <u>Miles 148 0 0</u>	Kamptee - - -	- - - - -	1,76,246 - - 61,500 - - <u>Rs. 2,37,746 - -</u>	- - - - -	-- Rs. 20,010. 5. 6½. were expended in season 1847-48 in cutting jungle, making proper inclined ghauts, and clearing and smoothing the surface of the ghauts; an advance of 16,000 Company's rupees was sanctioned for the earthwork of the portion of the road in the Nagpore territory, and Rs. 24,180. 8. 10. for earthwork between Jubbulpore and Seonee.
	outlay contemplated, its commencement has been deferred until the estimates have been reported on by the superintending engineer, after personal inspection.				Exclusive of the item of bridges.		
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL:</b>							
<i>Intally</i> : Purchase of Ground -	-- For the sheds of the conservancy department.	-- Sanctioned 2d April 1839, and 23d June 1840.	Intally - - -	7,000 - -	- - - - -	Season 1840-41.	-
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<i>Jessore</i> : Construction of a flat-roofed Cutcherry.	-- For the two Principal Sudder Amceens, 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 2d May 1842.	Jessore - - -	2,000 5 8½	2,800 14 5	-- Completed season 1844-45.	-- The cutcherry is to be flat-roofed, with tiled verandahs.
<i>Jessore Gaol</i> : Construction of 12 Necessaries.	- - - - -	-- Sanctioned 25th January 1843.	Jessore - - -	1,284 8 1	1,113 12 6	-- Completed season 1844-45.	-
<i>Jessore</i> : Cutcherry for the Sudder Amceen.	- - - - -	-- Sanctioned 27th February 1843.	Jessore - - -	2,000 5 8½	3,657 10 0	-- Completed season 1844-45.	-

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Construction of a Selakhana	-- For the reception of property recovered in cases 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 cutcherry.	704 3 5	823 11 10	-- Completed season 1844-45.	
Jessore Gaol: Construction of a Dead-house and Dispensary.		-- Sanctioned May 1846.	27th	Jessore - - -	588 4 5 1/2		-- Completed season 1847-48.	
Jamalpore: Alterations to the Deputy Magistrate's Cutcherry.	-- In consequence of the wood work of the roof having become entirely decayed.	-- Sanctioned December 1849.	23d	Jamalpore - - -	1,459 1 -		-- Completed season 1849-50.	-- The cutcherry 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	Jubbulpore - - -	10,044 11 8	15,541 11 1	-- Completed season 1842-43.	
Construction of Public Buildings.	-- For the 1st battalion of military police.	-- Sanctioned August and 18th October 1843.	14th	- - - - -	2,411 7 - 1/2	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 united Thug and Zillah sick prisoners.	-- Sanctioned season 1844-45.		- - - - -	8,765 5 3	8,676 7 5	-- Completed season 1846-47.	
Jaunpore: Construction of a Court-house.	-- For the Collector and Magistrate.	-- Sanctioned November 1850.	25th	Jaunpore - - -		6,994 - -		
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES--GENERAL:</b>								
James Prinsep Ghaut: Contributions towards the erection of -	-- To be erected with the aid of Government, by the inhabitants of Calcutta, to the memory of the late James Prinsep, Esq.	-- Sanctioned 1840-41		-- To be erected in a situation highly useful for the embarkation or disembarkation of European troops.	Donation, season 1840-41 23 Nov. 1842, flag-stones contributed towards its erection to the value of 8 July 1843, a further grant authorised of - -	10,000 - - 800 - - 2,756 - -		-- On the 3d July 1843, the completion of the work devolved on the garrison engineer of Fort William, who, it was understood, had been provided with funds sufficient for that purpose.
						Rs. 13,556 - -		
<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 Fulta, on the Hooghly River.	2,642 10 4 1/2	1,861 - 10	-- Completed season 1843-44.	Its height will be 80 feet.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES--GENERAL:</b>								
Inathowra: Construction of a Staging Bungalow at.		-- Sanctioned May 1843.	7th	-- Situated between Fulta and Benares.		1,881 4 8	Season 1843-44	-- This bungalow will be constructed from the funds, originally granted for the bungalow at Benares, a bungalow at the latter place being under construction from funds collected by private subscription.
Jugadree: Erection of a Staging Bungalow and Out-offices.		-- Sanctioned September 1843.	9th	-- Situated between Umballah and Khera.	3,244 10 6	3,243 10 9	-- Completed season 1846-47.	

(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, JHULLUNDHUR DIVISION—GENERAL:</b>				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<i>Jullundar:</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 Jullundar, formerly used as a catcherry, has been sold for 40,000 Company's rupees.
Construction of a Dak Bungalow and Offices.	-- On the recommendation of the Postmaster-general, North-Western Provinces.	-- Sanctioned 4th January 1850.	- - - - -	- - - - -	3,809 15 3	Season 1849-50	-- The expense will be defrayed from the North-Western Provinces Staging Bungalow Fund.
<b>CANALS, SOUTH-WESTERN PROVINCES:</b>							
<i>Kamapookreeah Khal:</i> Repair of the Dam across the mouth of the.	- - - - -	Sanctioned 1840-41	- - - - -	813 15 6	825 - -	-- Repairs completed 1841-42.	-- The total sum expended for this work since its commencement is 2,945 rupees.
<b>CANALS, SOUTH-EASTERN PROVINCES:</b>							
<i>Kotahally Nullah, in Chittagong:</i> Excavation of the.	- - - - -	-- Sanctioned 20th May 1839.	- - - - -	1,224 9 11	- - - - -	-- Completed season 1841-42.	- - - - -
<i>Khattee Canal:</i> Repair and improvement of.	-- In consequence of the abandonment of the Oolabarreeah Canal.	-- Sanctioned 12th 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 1846.	- - - - -	- - - - -	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 Puther Canal	-- For the purpose of irrigating a tract of country bounded by the Jumna on the west, by the Asura on the south, by the hills on the north, and on the east by a stream called the Sutwala Raos.	-- Sanctioned 4th February 1848.	- - - - -	- - - - -	88,002 11 1	- - - - -	-- This tract of land to be irrigated contains 20,254 acres (81 square miles), more than four-fifths of which is good land for cultivation.
<i>Kallees Nuddes:</i> Iron Suspension Bridge at Khodagunge, between Cawnpore and Furruckabad.	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	-- Was built by the late Nawab 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.

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<i>Kamson:</i> Construction of a Bridge on the taper chain principle over the Kosiiah River.	-- The old bridge was injured by a sudden and unusual high rise of the river in September 1840.	-- Sanctioned 6th April 1842.	At Jyaree - -
<i>Kathar Nuddos:</i> Bridge near Subathoo.	-- To replace an old bridge which was represented to be unsafe for travellers.	-- Sanctioned season 1841-43; a revised estimate sanctioned 19th July 1844.	-- On the road from Subathoo and Simla.

**ROADS AND BRIDGES, LOWER PROVINCES:**

<i>Kubbadduck River:</i> Suspension Bridge over the, on the tension principle of Mr. Dredge, of London.	- - - - -	-- Sanctioned 28th February 1841.	Near Jessore - -
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<i>Kamroop:</i> Construction of Bridges on the Mofussil roads in the district of Kamroop, and the town of Gowahatty.	- - - - -	-- Sanctioned 12th September 1842.	- - - - -
<i>Kollabar to the Dunsurry River</i>	-- The construction of this road will complete the direct communication between Upper and Lower Assam.	-- Length 67 miles 1 furlong; sanctioned 4th December 1844.	Dunsurry River - -
<i>Kulling River to Koliabar:</i> Repair of the Road.	-- This road follows the course of the river, and forms a band to keep out inundation.	Length 72 miles	Koliabar - -

**ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:**

<i>Khoorda Road:</i> Repairs to, and clearance of jungle on.	- - - - -	-- Length of road 60 miles, 5 furlongs and 115 feet; repairs sanctioned 24th November 1840.	-- Extends from the Madras frontier to Cuttack.
Construction of 120 Bridges and Drains on the.	-- To facilitate the means of communication.	-- Sanctioned season 1839-40.	- - - - -

5,000 4 8	9,170 18 1	-- Completed season 1842-43.	- -
940 11 6	420 5 7	-- Completed season 1844-45.	-- This bridge was totally destroyed by the storms which occurred between the 17th and 20th July 1844. It will not be restored.
21,056 - 8	22,218 13 4	Completed in 1840 -	-- A wealthy native gentleman, by name Kalice Kolar, has made an offer to Government to defray half the cost of this bridge. This bridge had been

but recently constructed and reported upon (on the 26th August 1840) by a special committee, and while their report was under consideration, accounts were received of its failure on the 30th September 1840, with a loss of 150 lives, in consequence of the whole structure having been thronged with natives witnessing the passage of the Doorgah under the bridge. The estimate for the restoration of the bridge amounts to 5,425 rupees. The Court, in their despatch to the Government of India, dated the 20th September (No. 25) 1847, reiterated their orders of 1845, forbidding the further adoption of the tension principle in the construction of suspension bridges. See Balice Khal Bridge. This bridge was reconstructed at a cost of Rs. 7,722. 1. 10.; the total expenditure incurred, including the cost of testing the bridge, had been Rs. 31,044. 9. 8. A committee of engineer officers was assembled to report on the bridge after its reconstruction; and their report, dated the 24th February 1840, 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 1840 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 chowkedar to prevent crowds from assembling, and trains of carts from passing both ways at the same time."

1,839 14 5	- - - - -	-- Completed season 1842-43.	-- The amount will be charged partly to the Town Improvement Committee funds, and partly to the Mofussil Road funds.
Not reported - -	24,600 2 2	- - - - -	-- The construction of 240 drain bridges on the line is provided for in the estimate.
6,212 - -	6,212 - -	-- Completed season 1844-45.	- -
- - - - -	11,459 10 - 1/2	- - - - -	- -
40,702 8 5	60,673 3 0	-- Completed season 1845-46.	-- The saving of Rs. 10,070. 1 1/2. is owing to a reduction of rates, and also to the quantity of masonry. (continued)

PAPERS RELATING TO PUBLIC WORKS (INDIA).

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>Kyook Phyoos</i> : Construction of five first-class masonry Bridges.	- - - - -	- - Sanctioned 18th September 1841.	Kyook Phyoo - -	Rs. a. p. 10,518 14 10	Rs. a. p. 11,350 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 60 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 9,603 9 2 20,933 - -	- - - - -	- - 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 19 pucca Drain Bridges.	- - These works were undertaken at the requisition of the Commissioner of Arracan.	- - ditto - -	At Mugh Bazar - -	- Rs. 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 - -	- - - - -	1,348 - -	- -	- -
<i>Kedgeree Dāk 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.	Kedgeree Dāk Road	4,009 7 10	2,230 1 1 1,779 6 9 <hr/> Rs. 4,009 7 10	- - 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>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 Mokaus Bridge.	- - Constructed on the requisition of the local authorities, the old bridge having fallen down.	- - ditto - -	- - - - -	507 - -	- - - - -	- - 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 Rs. 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 Catcherry Bungalow at.	- - To be used either by the assistant at Acng, or by the commissioner.	- - G. O., 26th September 1830.	Kyook Phyoo - -	7,436 5 8	6,335 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.



<i>Koosbaugh, near Moorshedabad:</i> Repairs to buildings at the Mausoleum of Mohabub Jung.	- - - - -	-- Sanctioned seasons 1840-41 and 1841-42.	Koosbaugh - - -	2,308 10 6	2,308 10 6	Season 1841-42.
<i>Kishenapur Gaol:</i> Erection of a Dead-house.	- - - - -	- - Sanctioned 25d November 1840.	Kishenapur - - -	417 11 4	- - - - -	-- Constructed season 1847-48.
<i>Khoolna:</i> Construction of a Catcherry and Dwelling-house for the Joint Magistrate.	-- The construction of the building was rendered unavoidable in consequence of a tendency to outrage and disturbances existing in that quarter, which called for the constant presence of a joint magistrate.	-- Sanctioned 3d June 1844.	Khoolna - - -	6,796 11 10	7,150 6 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 16th September 1844.	Kissenpore - - -	2,066 5 11	2,016 4 9	-- 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 8 9	1,082 - 8	-- 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 - - -	- - - - -	20,807 5 2	- - - - -
Construction of a Sudder Hospital.	-- Indispensably necessary for the accommodation of the sick of the police, the Artillery, and other civil establishments.	-- Sanctioned 24th June 1844.	- - - - -	1,753 10 6	1760 5 -	-- Completed season 1845-46.
Construction of two new Walls for the gaol.	- - - - -	-- Sanctioned 31st July 1843.	- - - - -	517 5 9	517 5 9	-- Constructed season 1845-46.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:</b>						
<i>Kumaon:</i> Construction of a Catcherry.	-- For the accommodation of the junior Assistant Commissioner and Sudder Amcen.	-- Sanctioned 7th July 1841.	- - - - -	685 1 9	779 15 -	-- Completed season 1841-42.
<i>Kuchwagar:</i> Construction of Police Guards.	For prisoners under trial - - -	-- Sanctioned 27th April 1844.	Kuchwagar - - -	2,200 - -	2,200 - -	-- 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 3 11	2,577 3 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.

(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—REVENUE—continued.</b>				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<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.	508 14 9	508 14 9	-- Completed season 1847-48.	
Construction of a Sluice Bridge called Chota Nemuch Golsah.	-- With the view of improving the salubrity of the station.	-- Sanctioned May 1847.	Kyook Phyoo - -	800 - 4	800 - 4	-- Constructed season 1849-50.	-- This work was projected by the Commissioner of Arracan.
New Sluice in Freeman's Bond	- - - - -	-- 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>							
Kedgeroe Tripod - - -	-- For the security of the establishments at Kedgeroe, as well as of the inhabitants, in the event of a gale occurring similar to that in 1833.	-- The fabric will be 50 feet high, and of four stories; sanctioned 27th January 1840.	Kedgeroe - - -	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 Semaphore 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.	- - - - -	19,945 - 1	- - - - -	-- Completed season 1841-42.	-- The work has been satisfactorily executed.
Kedgeroe: 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 28th April 1842.	- - - - -	764 12 11½	796 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 - -	2,550 8 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 - -	39,235 8 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.

Construction of Pucca Dry Dock.	-- In lieu of the existing catcha dock.	-- Sanctioned 10th October 1842, and 5th February 1844.	- - - -	92,043 7 9½	87,788 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.	- - - -	8,429 8 9	7,005 8 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 1846-50, at a cost of Rs. 11,372. 15. 11.	33,567 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.	- - - -	- - - -	20,340 - -	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 1840.	Kidderpore - -	- - - -	1,27,911 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 31st June 1847.	- Ditto - -	- - - -	16,057 7 6	- - - -	- - - -

(continued)

No. 3.—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—continued.</b>				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<i>Kidderpore—continued.</i>							
Dockyard; construction of Dwelling-houses.	-- For the Naval Storekeeper and Marine Surveyor and Builder.	-- Sanctioned 29th April 1848.	Kidderpore	- - - - -	10,008 11 8.	- - - - -	-- This arrangement will make the present house occupied by the naval storekeeper available for the assistant surveyor and builder. The quarters of the latter, which are unfit for a dwelling-house, the rooms being confined and low, will be converted into godowns, as proposed by the Marine Superintendent.
Additions and Alterations to the Marine Superintendent's house.	-- Most of the beams and burghs were in a decayed state.	-- Sanctioned 7th May 1849.	- Ditto -	7,803 14 -	7,803 14 -	-- Completed season 1849-50.	-- It was at first contemplated, on account of the almost ruinous state of the building, to substitute a new one at an estimated cost of Rs. 27,898. 2., but a committee of civil architects were favourable to the retention of the old building.
<i>Kyook Phyoo:</i>							
New Office for the Salt Superintendent.	-- On a representation from the Board of Customs, Salt and Opium, of the necessity for such an office, in lieu of the old dilapidated building previously used.	-- Sanctioned 24th March 1847.	Kyook Phyoo	11,000 6 10	- - - - -	-- Constructed season 1849-50.	-
Erection of a New Treasury, Record Room, and Guard Room.	-- Under a representation from the Commissioner of Arracan, that the existing buildings were unsafe, having been several times actually on fire.	-- Sanctioned 12th December 1840.	- Ditto -	- - - - -	3,656 - -	Season 1849-50.	-
<b>CIVIL BUILDINGS, LOWER PROVINCES—GENERAL:</b>							
<i>Kurseong:</i> Construction of a Staging Bungalow.	-- This bungalow is to be in the place of the staging bungalow at Mahalderam, built by the Darjeeling committee, but now in a dilapidated state.	-- Sanctioned 5th August 1844.	Kurseong	3,100 11 6	3,107 15 4	-- Constructed season 1846-47.	-- At the suggestion of the superintendent of Darjeeling, the site of the bungalow has been removed to Kurseong, which station is five miles nearer the plains than Mahalderam, at which latter place there has hitherto been, and still is, an hotel for the accommodation of travellers.
<i>Kishenagar:</i> Construction of a Post-office at.	-- The accommodation heretofore afforded to the records of the Post-office in the Collector's office, is no longer available.	-- Sanctioned 6th March 1846.	Kishenagar	733 0 5	722 - -	-- Completed season 1847-48.	-- This building is to be of pucca, on account of the great destruction of woodwork at the station.

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

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<i>Kurnaul</i> : New Roof to the Roman Catholic Chapel.	- - - - -	-- Sanctioned 6th April 1842.	Kurnaul - - -	577 15 11	- - - - -	-- Completed season 1842-43.	-
<i>Kussowles</i> : Construction of a Protestant Church at.	- - - - -	-- Sanctioned 17th January 1845.	Kussowles - - -	-- This work was suspended in season 1845-46.	25,734 12 6	- - - - -	-
Construction of a Staging Bungalow.	-- The necessity for this bungalow appears to have been brought to notice by the Post-master, North-Western Provinces.	-- Sanctioned 23d November 1844.	- - - - -	9,806 12 8	8,018 12 5	-- Completed season 1845-46.	-
Enclosure of the Burying-ground.	-- On a representation from the Archdeacon of Calcutta.	-- Sanctioned 6th November 1843.	- - - - -	2,356 6 6	3,555 6 6	-- Completed season 1840-50.	-- The total length of the enclosure wall is 816 feet.
<i>Kurrachee</i> : Erection of a Post-office.	-- Sanctioned by Government in the Foreign Department.	-- Sanctioned 13th July 1844.	- - - - -	849 6 -	- - - - -	-- Constructed season 1844-45.	-
<i>Kunson</i> : Alterations to four Staging Bungalows.	-- The necessity for these alterations was brought to notice by the Postmaster-general.	-- Sanctioned 10th November 1843.	- - - - -	1,909 9 8	1,909 0 3	-- Completed season 1845-50.	-
			-- These bungalows are situated at Paura, Ramgar, Bhuntal and Bamouri.				

**CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL:**

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<i>Kheres</i> : Construction of a Staging Bungalow.	-- The existing buildings, owing to the inefficiency of accommodation, did not meet the public wants.	-- Sanctioned 9th September 1843.	Kheres - - - -	1,047 4 2	2,037 10 2 and Rs. 136. 7. 3. for the requisite furniture.	-- Completed season 1844-45.	-
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**CIVIL BUILDINGS, SOUTH-WESTERN PROVINCES—MARINE:**

<i>Kidderpore</i> : Construction of a Workshop for the Comptroller of Steam Machinery.	- - - - -	-- Sanctioned 22d May 1839.	- - - - -	6,801 12 -	6,892 4 8	-- Completed season 1839-40.	-
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**ROADS AND BRIDGES, CENTRAL PROVINCES:**

<i>Lucknow Canal</i> : Bridge over the, on the rxd from the City to Constantia, and Bridging of the Wat-recourses on that road.	-- These bridges are to be on a new line of road, half a mile less in length than the old road, which is through the King of Oude's private park at Delkoonah; and although his Majesty permits all European gentlemen to use this road, it is apprehended that this privilege would not be extended to all classes of persons proceeding to and from Constantia, after it shall have become a public college.	-- Estimate submitted 26th February 1842.	- - - - -	Not reported - - -	12,565 3 6 and Rs. 682. 7. 10., for bridges.	Not reported - - -	-- The bridge over the Lucknow Canal is to be of three arches; the cost will, it is believed, be defrayed from the Maritime Fund.
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**ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:**

<i>Loharee Bridge</i> , over the Urel River.	-- Increase of the waterway in consequence of the approaches to it being flooded in the rains.	-- Sanctioned 3d June 1842.	Loharee - - - -	11,322 3 5 1/2	11,933 15 1	-- Completed season 1842-43.	-
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(continued)

No. 6.—STATEMENT compiled from the Reports of the Military Board at Bengal, from Season 1839-40, to 1860-61 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>Lucknow Bridge, and repair of the Causeway.</i>	-- Two lengths of the causeway, measuring 551 and 307 feet respectively, were entirely destroyed by a violent flood on the 20th June 1842.	- - - - -	Near Seharunpore -	- - - - -	- - - - -	- - - - -	-- The causeway of the Lucknow Bridge is constructed on land arches traversing a plain of deep sand, and extends to a length of 2,224 feet. The bridges and causeway were constructed in the year 1827, at a cost of 56,000 rupees.  The piers of the main arches of the bridge are carried down 26 feet below the bed of the river to solid soil. Two of the arches having been choked up, and shown symptoms of settlement in 1847-48, a sum of Co.'s Rs. 536. 8. 6. was expended in flooring the spaces between the piers with rough wooden caissons. An estimate, amounting to Rs. 1,907, for metaling the roadway of the bridge, was sanctioned on the 1st May 1850; the traffic over the bridge was represented to be incessant.
<i>Landour Roads: Reconstruction of several portions of the Embankment Walls.</i>	-- These roads were greatly injured by heavy rains in August 1842.	-- Sanctioned 6th January 1843.	- - - - -	5,548 3 8	5,832 7 11	-- Completed season 1843-44.	- - - - -
<i>Repair of, and Enclosure of parts of the Road leading from the Barracks to the Hospital, with a rough Balling.</i>	-- These roads were again injured by the heavy rains of August and September 1843.	-- Sanctioned 1st December 1843.	- - - - -	2,131 5 3.	3,444 5 3	-- Completed season 1844-45.	-- A railing has been erected along the road.
<i>Lohoo Ghaut: Construction of an Iron Suspension Bridge over the Lohoo River, at.</i>	-- This bridge is intended to replace an old wooden bridge, which is considered by the local authorities to be no longer safe.	-- Sanctioned 20th September 1843.	Lohoo Ghaut -	- - - - -	2,455 0 7	- - - - -	- - - - -
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—GENERAL:</b>							
<i>Landour: Enclosure of the Burial-ground at.</i>	- - - - -	-- Sanctioned 1st October 1843.	- - - - -	781 12 0	781 12 0	-- Completed season 1844-45.	- - - - -
<i>Lohoo Ghaut: Construction of a Wall around the Burial-ground.</i>	- - - - -	-- Sanctioned 21st July 1843.	- - - - -	261 1 2	261 1 2	-- Completed season 1844-45.	- - - - -
<i>Lodiiana Church: Addition to</i>	-- In consequence of the accommodation being insufficient for the increased number of European troops.	-- Sanctioned 3d April 1844.	- - - - -	4,043 11 2	- - - - -	-- Completed season 1845-46.	-- An addition of 40 feet has been made to the length of the church.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—ECCLESIASTICAL:</b>							
<i>Lucknow Church</i>	- - - - -	-- Sanctioned in August 1838.	- - - - -	5,400 - - of which, 1,000 rupees were by private subscription.	- - - - -	-- Completed season 1840-41.	-- The future repairs of the church will be repaid by the State.

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CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—ECCLESIASTICAL:							
Lahore Church: Construction of.	- - - - -	Sanctioned in 1834	- - - - -	6,403 7 0	5,000 - -	- - Completed season 1840-41.	- -
Lahore Burial-ground: Construction of a Wooden Railing.	To inclose the burial-ground	- - Sanctioned 20th November 1830.	- - - - -	- - - - -	937 11 7	- -	- -
CIVIL BUILDINGS, CENTRAL PROVINCES—POLITICAL:							
Lucknow: Completion and repairs of the Constantia House Buildings.	- - - - -	- - Estimates submitted 19th July 1843.	- - - - -	- - - - -	1,96,650 4 4	- - - - -	- - The estimates were returned with an opinion that the design appeared good and the rates moderate.
CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—POLITICAL:							
Lahore: Conversion of the Anarkuller House into a Residence.	For the Political Resident.	- - Sanctioned 8th October 1847.	Lahore - - - - -	- - - - -	24,900 - -	- - - - -	- - The Resident is to be permitted to occupy the building rent-free, on the condition that he shall keep it in tenable repair at his own cost, after the additions and repairs provided for have been completed.
CIVIL BUILDINGS, PUNJAB CIRCLE—GENERAL:							
Lahore: Fitting up of a large Hall in Dyan Sing's House.	- - To serve as a place of Divine worship.	- - Sanctioned season 1840-50.	Lahore - - - - -	1,837 9 2	- - - - -	Season 1840-50.	- -
Fitting up a Residence in Suchet Sing's House.	- - For the use of the Civil Department.	- - Ditto	- Ditto - - - - -	703 6 3	- - - - -	- - - - -	- -
Erection of a Staging Bungalow, with Offices.	- - On a representation from the Postmaster-general, North-Western Provinces.	- - Sanctioned 20th November 1849.	- Ditto - - - - -	- - - - -	Not stated	Season 1849-50	- - The bungalow is to consist of one large room 30 x 18, with two rooms on each side 16 x 14, the whole to be surrounded by a verandah 10 feet high; this will be enclosed on two sides, forming four rooms 10 x 14, with four bathing rooms each 10 x 10.
Construction of a Chapel for the Roman-catholics.	- - - - -	- - Sanctioned 27th October 1849.	- - - - -	- - - - -	4,801 0 -	- - - - -	- - With reference to the removal of the cantonment from Anarkullee to Mean Meer, this chapel will be constructed at the latter place.
Repairs, &c. of General Ventura's House at.	- - To adapt it for the residence of the Resident and his assistants.	- - Sanctioned October 1847.	- - - - -	12,408 7 3	- - - - -	Season 1850-51	- - The house is situated in the Anarkullee cantonment.
EMBANKMENTS, SOUTH-EASTERN PROVINCES:							
Midnapore Division	- - - - -	Length 657 miles	- - - - -	- - - - -	- - - - -	- - - - -	- - Estimate for annual repairs of 1850-51, including repairs to sluices and inspection bungalows, amounts to Rs. 85,411. 2. 1.
Construction of a new line in lieu of the old Zemindary Kintree Bund, in Pergunnah Mingleghaut.	- - For the protection of the Oolbareah mill road.	- - Length, 8 miles 1 furlong; sanctioned 14th February 1842.	- - - - -	7,717 5 9	7,717 5 -	- - Completed season 1843-44.	- - Large plains, heretofore totally unproductive, have been brought under cultivation. Estimate for repairs to the Zemindary embankments for 1850-51, amounts to Rs. 12,354. 8. 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>EMBANKMENTS, SOUTH-EASTERN PROVINCES—continued.</b>							
Construction of two Irrigation Channels, with Sluices.	-- These works were proposed by the local authorities for the improvement of the Government estate; viz., the pergunnah of Khider Koond.	-- One of the sluices 10,000 feet in length, the other 765 feet in length, from the Cosyo River, with two sluice-gates; sanctioned 9th October 1845.	Midnapore . . .	Rs. a. p. 8,078 - -	Rs. a. p. 2,078 - -	Season 1845-46.	—
Construction of two Inspection Bungalows.	-- To enable the executive officer to exercise a vigilant superintendence over the works in progress.	Sanctioned in 1847 -	-- Bheetcool and Itchapora.	503 - 5	503 - 5	-- Completion reported in 1849.	—
Middleton Point, Saugor Island: Construction of a new Bund.	-- In consequence of the old bund having been nearly washed away during the gale of September 1840.	-- Sanctioned 17th February 1847.	—	1,025 - -	1,025 - -	—	—
<b>CANALS, SOUTH-EASTERN PROVINCES:</b>							
Mofussil Canals: Improvement of the.	-- By cutting down jungle, repairing and making tow-paths, &c.	-- Sanctioned 28th September 1843.	—	- - - - -	4,368 4 6	- - - - -	-- These works will materially facilitate the inland communication.
<b>CANALS, NORTH-WESTERN PROVINCES:</b>							
Muskurra River: Construction of Retaining Dam, south of the Masonry Dam.	-- For the protection of the dam, which, during the flood of the 21st and 22d June 1842, appears to have been in great danger.	-- Sanctioned, 2d March 1842.	—	10,490 5 -	13,530 - -	-- Completed season 1843-44.	-- This work has fully answered the expectations entertained of it.
Prolongation of the Boxwork Tail of this Dam.	-- Considered indispensable for the safety of the dam.	-- Sanctioned 20th January 1844.	—	5,998 13 10	6,102 8 5	-- Completed season 1844-45.	—
Muskurra Dam: Repairs of damage occasioned by floods.	-- The Muskurra River, by the breaking of the bands at the Kowalla Pass, and at the Dawalooka, received all the mountain supply which usually passes off down the Hindun.	-- Sanctioned 20th March 1845.	—	- - - - -	6,222 - -	—	—
<b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:</b>							
Midnapore: Construction of a new Masonry Bridge.	-- In lieu of an unserviceable bridge.	-- Sanctioned 28th February 1842.	—	781 8 10	- - - - -	-- Constructed season 1843-44.	—
Mayra to Chotekund, on the Grand Trunk Road, metalling of.	- - - - -	-- Sanctioned 22d April 1847.	Chotekund - - -	- - - - -	76,186 10 5	- - - - -	-- The distance to be metalled is about 20 miles. The high rate for metalling (amounting to nearly 4,000 rupees per mile) is occasioned by the great distances at which the quarries are situated.



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<p><i>Maumbhoom</i>: Construction of a Bridge over the Julgarrah Nudice.</p>	<p>- - - - -</p>	<p>- - Sanctioned 10th October 1843.</p>	<p>Maumbhoom - -</p>	<p>5,029 9 3</p>	<p>8,801 7 1</p>	<p>- - Completed season 1840-47.</p>	<p>- - This bridge is of three arches, of 25 feet span each. The saving of Rs. 2,131. 13. 10. was in consequence of a saving on the quantity of masonry in the foundations, and of a great reduction of rates.</p>
<p><i>Midnapore to Bisenpore</i>: Construction of 12 Masonry Bridges and Drains.</p>	<p>- - To replace the old dilapidated works.</p>	<p>- - Sanctioned 8th September 1847.</p>	<p>Bisenpore - -</p>	<p>1,418 15 7</p>	<p>1,480 - -</p>	<p>- - Completed season 1840-50.</p>	<p>- -</p>
<p><i>Midnapore</i>: Construction of a new Line of Road, and five Masonry Bridges.</p>	<p>- - - - -</p>	<p>- - Sanctioned 30th May 1848.</p>	<p>Midnapore Division -</p>	<p>1,748 2 4½</p>	<p>2,004 - 0</p>	<p>- - Completed season 1840-50.</p>	<p>- - One of the bridges is of two arches, 12 feet span, at Baglooby Shole; two of one arch, 10 feet span, at Kathopottah Khaul, and Kunkabeetha Shole; and two of one arch, 10 feet span, at Range Jhore, and Lodhasoh.</p>
<p><b>ROADS AND BRIDGES, LOWER PROVINCES:</b></p>							
<p>Munipore Road - - -</p>	<p>- - To make the communication between the Eastern frontier and the Burmese country comparatively easy.</p>	<p>- - Length, 99 miles and 6 furlongs.</p>	<p>- - Bunksandy, in Cachar, to the village of Munipore.</p>	<p>92,427 9 1</p>	<p>1,20,340 4 4</p>	<p>- - Completed season 1842-43.</p>	<p>- - The line of road was considered by the committee appointed in 1843 to have been judiciously selected, and the construction of it generally to reflect the greatest credit on the engineer officer. The road is quite practicable for the passage of guns, except at one point, where, however, the difficulty may be obviated by the use of ropes.</p>
<p><b>ROADS AND BRIDGES, CENTRAL PROVINCES:</b></p>							
<p>Mogul Serai to Allahabad -</p>	<p>- - The project is highly advocated, as forming a direct communication between the Grand Trunk Road, East of Benares and Mirzapore, without crossing the Ganges at Benares, and re-crossing it at Mirzapore, as at present.</p>	<p>- - Length, about 93 miles; estimates submitted 26th February 1840.</p>	<p>Allahabad - -</p>	<p>- - - - -</p>	<p>- - Estimate for the portion of the road from Mogul Serai to Mirzapore, 113½ miles, 1,08,940 rupees.</p>	<p>- - - - -</p>	<p>- - In 1840 the Government stated that the large amount contemplated was more than could be assigned to the object from the general resources of the State; it was not intended to abandon the plan altogether, and the surveys and estimates are, therefore, made over to the Commissioner of the Benares Division, with instructions to apply all available resources for the advancement of the project.</p>
<p>Mirzapore to Jubbulpore -</p>	<p>- - For opening a communication with the Saugor and Nerbudda territories, and with a view to its ultimate continuation to Nagpore and Oomraotee.</p>	<p>Commenced in 1824 -</p>	<p>- - Jubbulpore (this is a portion of the Great Deccan Road).</p>	<p>7,60,502 - -</p>	<p>60,000 - - also, Rs. 3,573. 7. 2. for the reconstruction of bridges carried away by hill floods in 1839.</p>	<p>- Completion reported season 1839-40.</p>	<p>- -</p>
<p>Metalling the remaining Kutch portion of the road.</p>	<p>- - - - -</p>	<p>- - Length, 18 miles, 6 furlongs, 25 yards.</p>	<p>- - - - -</p>	<p>24,044 8 5</p>	<p>- - - - -</p>	<p>Completed - -</p>	<p>- - The entire line of this road, measuring 239 miles, is now metalled.</p>
<p>Construction of three Bridges on this Road, between Myhna and Berrangunge.</p>	<p>- - In lieu of bridges carried away by floods in 1839.</p>	<p>- - Sanctioned season 1839-40.</p>	<p>- - - - -</p>	<p>3,508 14 -</p>	<p>3,573 7 2½</p>	<p>- - Completed season 1842-43.</p>	<p>- -</p>

PAPERS RELATING TO PUBLIC WORKS (INDIA).

(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>							
<i>Meerut to Ghazecoodennuggur:</i> Improvement of the Road.	- - -	- - Sanctioned season 1848-49; length, 28 miles, 7 furlongs.	Ghazecoodennuggur.	<i>Rs. a. p.</i> For bridges - 7,745 - 5 For metalling 68,861 14 11 For a pukka drain - 7,745 - 5	<i>Rs. a. p.</i> 77,407 - - sanctioned for metalling this road.	- - Completed season 1842-43.	- - The construction of this road was first undertaken by the Meerut Road Fund Committee, by whom it was abandoned, after eight miles had been completed, owing to insufficient means; the Committee pledges itself to execute the earthwork, leaving the metalling and bridges to Government. This line of road has been transferred from the Meerut to the 7th division of the Grand Trunk Road; the annual repairs are estimated at 6,825 rupees.
Construction of a Bridge over a Nullah.	For drainage - - - -	- - Sanctioned 27th October 1842.	- - - -	620 4 4	620 4 4	- - Constructed season 1843-44.	- -
Meerut to Kurnaul - - -	- - Represented to be useful both for commercial and military purposes.	- - - -	- - - -	- - - -	- - - -	- - - -	- - - -
<i>Makana:</i> Construction of a Paved Causeway across the River Peorbattie.	- - This work is considered absolutely necessary on account of the roughness of the present crossing, at which vehicles frequently break down, or are so much shaken as to render them almost useless.	- - Sanctioned 10th January 1847.	- - On the road between Gwalior and Beepree.	- - - -	9,400 3 6	- - - -	- - The causeway is of rough stone, dressed with chisel.
<i>Mooziffernuggur:</i> Restoration of the Bridge over the Kalise Kuddee.	- - Carried away by a flood on the 20th June 1842.	- - Sanctioned 17th November 1843.	At Mullerrah - - -	14,404 12 9	11,205 8 2	- - Completed season 1844-45.	- - This bridge was constructed in 1826 by Captain M'Mullin, at a cost of 52,000 rupees. The five principal arches which withstood the flood were founded on wells; those which failed rested only on caissons. To the defect and to the contracted span of the arches, the failure is in a great measure to be ascribed. The piers are to be raised to 14½ instead of nine feet.
<i>Meerut to Khoorja:</i> Construction of a Road.	- - - - -	- - Length, 50 miles; sanctioned 24th January 1843.	Koorja - - - -	1,48,019 3 8	93,645 3 8	- - Completed season 1846-47.	- - Twenty bridges will be constructed on the line, and four dak bungalows, viz., Kurkhonda, Hauppura, Gallowtee, and opposite to Boolundahur. The three former bungalows, it was subsequently found, would not be required. The formation and metalling of the portion of this road between Gallowtee and Khoorja (22 miles), which had been left to the Boolundshur Road Fund Committee, was so imperfectly done in the first instance by that committee that a supplementary estimate of Rs. 55,374. 10. was sanctioned on the 27th August 1846, for repairing ruts and restoring the metalling.

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Mulluck Chand Sewer, to the boundary of the cantonments at Agri: Construction of a raised Metal Road.		-- Length, 1½ miles; sanctioned 20th April 1844.	Agri cantonments	5,235 4 -	5,235 4 -	-- Completed season 1843-47.	
Mataoa: Construction of a Bridge over the Nullah at Chittrokhara.	-- The Nullah is bounded for irrigation below the road, and after a favourable rainy season there is sometimes a depth of five feet of water on the ford crossed by the road. The Nullah bed being black soil, and the ford impassable for travellers or carts until the season of irrigation has passed over, the necessity for the construction of the bridge is sufficiently obvious.	-- Sanctioned 5th December 1840.			2,870 - -		-- This bridge is to be of three arches, with raised approaches.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL:</b>							
Moulmein: Alterations to the Gaol, and construction of Buildings.		-- Sanctioned 9th May 1837.	Moulmein		9,308 0 -	Completed 1841-42.	
Midnapore: Construction of an additional Room to the Magistrate's Cutcherry.	-- Owing to the small size of the room in which the magistrate's court is held, it has been found necessary to exclude all persons except those whose cases were actually being heard.	-- Sanctioned 18th July 1844.		2,348 5 -½	2,340 5 6¼	-- Completed season 1847-48.	-- The existing buildings were inadequate for the proper custody of the numerous valuable papers connected with the survey, resumptions and settlement proceedings, recently brought to a close.
Maumbhoon: Construction of a Cutcherry for the Native Judge.		-- Sanctioned 20th June 1842.	Maumbhoon	1,264 11 -		-- Completed season 1844-45.	
Moulmein Gaol: Alterations to		-- Sanctioned 22d June 1844.		9,084 2 0		-- Completed season 1844-45.	-- The gaol wall, which varied from 9 to 12 feet in height, has been raised to an uniform height of 15 feet all round.
Moulmein Court-house: Alterations to.	-- With a view to improve the interior arrangements.	-- Sanctioned 5th August 1844.		1,011 10 2		-- Completed season 1844-45.	
Construction of Night Privies to the Gaol.		-- Sanctioned 23d April 1845.		420 3 0	426 3 0	-- Constructed season 1845-46.	
Construction of seven Police Watch-houses.	-- Constructed on the emergent requisition of the Commissioners of the Tenneserin provinces.	-- Sanctioned 23d May 1845.		621 - -	621 - -	-- Constructed season 1845-46.	
Moulmein: Construction of Offices and Sessions Court.	-- For the Commissioner of the Tenneserin Provinces and his principal assistant.	-- Sanctioned 17th October 1845.	Moulmein	13,877 3 7	10,500 - -	-- Completed season 1847-48.	-- The excess over the estimate is owing to difference of rates, and the execution of much work which was not provided for.
Mergui: Purchase and Repair of a Building.	For a Circuit-house	-- Sanctioned 2d June 1847.	Mergui	1,863 14 0		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, 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 8 × 9 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.	- - - - -	9,012 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>Moorsheadabad</i> : Construction of four experimental Penitentiary Wards.	- - - - -	-- Sanctioned 8th February 1842.	Moorsheadabad - -	23,902 - -	23,963 - -	- - - - -	These four wards are for 120 men.
<i>Moosufferpore</i> : House of Correction.	- - - - -	-- Sanctioned 7th December 1841.	Moosufferpore - -	14,047 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>Moorsheadabad</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.	Moorsheadabad - -	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 0 4½	695 8 9	-- Completed season 1841-42.	-

<i>Monghyr:</i> Construction of a Cutchery for the Magistrate.	-- Called for with reference to the appointment of a separate officer to the magistracy.	-- Sanctioned 20th July 1844.	Ditto - - -	4,081 - 6	5,100 13 10	-- Completed season 1846-47.	-
Construction of a Circuit House.	- - - - -	-- Sanctioned 30th November 1844.	- - - - -	4,572 0 3 1/2	4,000 5 -	Season 1847-48	-- A private house was purchased and converted into a circuit house, in accordance with an estimate sanctioned on the 7th October 1845.
<i>Mootocaree:</i> Construction of a Circuit House and Out-offices.	- - - - -	-- Sanctioned 30th November 1844.	Mootocaree - -	5,075 10 5	4,000 5 -	-- Completed season 1847-48.	-
<i>Maldah:</i> Purchase of a House, and its adaptation for the purposes of a Circuit House.	- - - - -	-- Sanctioned 30th November 1844.	Maldah - - -	5,761 18 11	5,761 18 11	Season 1844-45.	-
<i>Moozufferpore:</i> Purchase of a private Building at.	-- For a cutchery for the Sessions Judge.	-- Sanctioned 28th December 1839.	- - - - -	1,700 - -	- - - - -	Season 1841-42	-- This building, which was the property 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 Cutchery.	To afford more accommodation -	-- Sanctioned 2d November 1841.	- - - - -	- - - - -	- - - - -	- - - - -	-
<i>Mymensing:</i> Addition of a pukka tiled verandah to the Judicial Cutchery.	-- For the accommodation and convenience of suitors.	-- Sanctioned 6th July 1841.	- - - - -	883 4 10	- - - - -	-- Constructed season 1842-43.	-
Construction of Cutcheries for the Principal Sudder Ameen.	-- The present building is a catcha building with a thatched roof, and is considered by Government 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 - -	- - - - -	5,038 - -	- - - - -	-
<i>Mymensing Gaol:</i> Construction of seven Night Prisons.	- - - - -	-- Sanctioned season 1844-45.	Ditto - - -	667 18 9 1/2	- - - - -	-- 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 property 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 18th April 1846.	Monghyr - - -	908 13 1 1/2	1,037 - -	-- Completed season 1847-48.	-
<i>Moozufferpore:</i> Raising the pillars of the verandah of the Judge's Cutchery.	-- 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 502 prisoners, including patients in hospital at Moozufferpore.	-- Sanctioned 17th November 1847.	- - - - -	- - - - -	20,601 9 8	- - - - -	-

(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:</b>				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<i>Muttra Gaoi</i> : Improvements to the.	To increase the accommodation -	-- Sanctioned 20th April 1840.	- - - - -	3,238 15 9	4,041 - -	-- Completed season 1841-42.	-
<i>Malhout in the Bhuttee Territory</i> : Construction of a well.	- - - - -	-- Sanctioned season 1839-40.	- - - - -	1,408 0 4	1,000 - -	-- Completed season 1840-41.	-- The excess of 408 rupees was owing to the necessity for making the well 108 feet deep, instead of 90 feet, as contemplated by the estimate.
<i>Masrut</i> : Construction of houses	-- For the non-commissioned officers of the police battalion.	-- Sanctioned 31st March 1845.	- - - - -	3,677 - -	3,658 2 10	-- Completed season 1845-46.	-
<i>Mooralabad</i> : Construction of a record room for the Collector and Magistrate's Cutcherry.	-- The Lieutenant-governor satisfied himself, on a visit to the station, of the necessity for this accommodation.	-- Sanctioned 22d August 1845.	Mooralabad - -	5,238 11 4	5,235 - -	-- Completed season 1847-48.	-
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—JUDICIAL:</b>							
<i>Mirzapore</i> : Construction of a new Gaol Hospital.	-- On account of the confined and unhealthy site of the existing hospital.	-- Sanctioned 10th August 1841.	- - - - -	12,405 6 2	12,008 8 2	-- Completed season 1843-44.	-
Construction of a bridge near Wellesley's Thannah.	- - - - -	-- Sanctioned 23d March 1841.	- - - - -	610 - 6	- - - - -	-- Completed season 1841-42.	-- This work was represented to be very much required.
Construction of a Cutcherry for the Collector and Magistrate.	-- In consequence of the sale of the Custom-house.	-- Sanctioned season 1839-40.	- - - - -	15,022 4 5½	- - - - -	-- Completed season 1841-42.	-
<i>Mundlaizer Gaoi</i> : Additions to	- - - - -	-- Sanctioned 27th November 1841.	- - - - -	3,771 - 3	2,041 5 - ¼	-- Completed season 1842-43.	-- The new building is capable of holding 60 or 70 convicts.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—REVENUE:</b>							
<i>Midnapore</i> : Additional accommodation to the Collector's Cutcherry.	- - - - -	-- Sanctioned 6th April 1841.	- - - - -	2,045 8 5	2,762 6 -	-- Completed season 1842-43.	-
<b>CIVIL BUILDINGS, LOWER PROVINCES—REVENUE:</b>							
<i>Moazufferpore</i> : Construction of two dams in the River Little Gunduck.	-- For the protection of the station.	-- Sanctioned 25th April 1842.	- - - - -	682 7 11	- - - - -	-- Constructed season 1842-43.	-- This work was proposed by the civil officer and the Durbangah Najah.
<i>Mooralabad</i> : Record-room for the Collector's Cutcherry.	- - - - -	-- Sanctioned 16th June 1840.	- - - - -	1,685 2 9½	- - - - -	-- Completed season 1841-42.	-

<i>Mysnang</i> : Construction of tiled Cutcherry for the Deputy Collector and Law Officer, and rooms for records of the Magistrate and Collector.	-- Rendered necessary in consequence of the crowded state of the collector's cutcherry.	-- Sanctioned 21st September 1840.	<i>Mysnang</i>	4,948 1 5	35,75 1 2		-- As very indifferent roofs are made from tiles at the station, a revised estimate was passed, providing for the substitution of flat roof and pucca superstructure walls, in lieu of tiled roofs and kutcha pucca walls.
<i>Moonufferpore</i> : Construction of two pucca Verandahs.		-- Sanctioned 1st July 1840.	-- To the east and west sides of the collector's cutcherry.	408 4 3	408 4 3	-- Constructed season 1847-48.	
<b>CIVIL BUILDINGS, SOUTH WESTERN PROVINCES--REVENUE:</b>							
<i>Midnapore</i> : Enlargement of the Collector's Cutcherry.	-- To provide accommodation for the joint magistrate and the assistant.	-- Sanctioned 13th September 1838.		7,054 10 2			-- The additions made were four rooms, and verandahs on three sides of the cutcherry.
House for the Revenue Surveyors and Establishment.		-- Sanctioned 10th January 1838.		2,918 11 4			
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES--REVENUE:</b>							
<i>Mynpooree</i> : Construction of a Tehaldarry Cutcherry.	For the collector and magistrate.	-- Sanctioned 3d March 1843.	At Ghirole	4,000 11 9	4,174 7 2	-- Completed season 1843-44.	
Alterations and additions to the Sirpoorah Cutcherry.	-- To adapt for the Tehal establishment of the Lukat Bytah Division.	-- Sanctioned 7th October 1843.	Sirpoorah	1,728 2 6 1/2		-- Completed season 1843-44.	
<i>Mahur</i> : Construction of a Bungalow.	For the deputy collector	-- Sanctioned 18th June 1846.	Scinde Division	1,964 5 2	1,964 5 2	-- Completed season 1846-47.	
<b>CIVIL BUILDINGS, LOWER PROVINCES--GENERAL:</b>							
<i>Moorshedabad College</i> : Construction of.		-- Sanctioned 6th April 1840.	Moorshedabad	70,500 5 4	73,000 - -	-- Completed season 1843-44.	-- In the amount expended is included Rs. 2,400. 5. 4, for the purchase of land, &c. for a site, which was not included in the estimate.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES--GENERAL:</b>							
<i>Mohas Choohee</i> : New Staging Bungalow at.	-- In the substitution of one previously existing at Rajpore.	-- Sanctioned 14th November 1840.		1,477 7 8	1,169 12 5	-- Completed season 1840-41.	-- It is expected that the convenience of travellers will be much increased by this arrangement.
<i>Mussoree Church</i> : Construction of a new Roof, and repairs of.		-- Sanctioned 21st September 1841.		1,352 - -		-- Completed season 1843-44.	-- The cost of furniture is included in the expenditure.
<i>Moziffernuggur</i> : Construction of Staging Bungalows at Beharunpoor.	-- The executive engineer was directed to commence upon the buildings without delay, as they were urgently required for the accommodation of travellers.	-- Sanctioned 18th November 1844.	Beharunpoor	4,122 - -	4,300 3 2	-- Completed season 1845-46.	
<i>Meerut</i> : Purchase of a House for a Post-office.	-- Provided on the representation of the Postmaster-general North-western Provinces.	-- Sanctioned 25th September 1840.	Meerut	4,500 - -		Season 1840-50	-- This house was the property of Mr. Charde; the executive engineer considered it well worth the sum asked by the proprietor, and sanctioned by Government for its purchase.

(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>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b>							
<i>Midnapore:</i>							
Construction of a Staging Bungalow.	As a resting-place for travellers	-- Sanctioned 14th July 1841.	Midnapore - -	1,442 8 9½	1,463 - 4	-- Completed season 1842-43.	—
Construction of a new School-house.	-- To replace a building which is stated to have been accidentally burnt down.	-- Sanctioned 1st December 1841.	-- ditto - - -	3,317 6 7	3,409 - 7	-- Completed season 1843-44.	—
Addition to the Collector's Catcherry.	For a post-office - - -	- - - - -	- - - - -	- - - - -	1,043 2 1½	—	—
<i>Moulmein:</i> Construction of a new Wharf.	For the principal bazaar - -	-- Sanctioned 17th July 1843.	Moulmein - -	- - - - -	2,073 1 9	- - - - -	-- The suspension of the works was ordered on the 23d September 1843, as some changes were stated to be in contemplation, which might render the construction of the wharf unsuitable at the place originally intended.
<i>Middleton Point:</i> Renewal of the Stockade, with sand posts.	-- This stockade must be maintained for the protection of the Government establishment from tigers.	-- Sanctioned 20th November 1844.	Middleton Point -	2,570 9 3	2,605 13 -	-- 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	730 - 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 1849-50.	The new roof is shingled.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—GENERAL:</b>							
<i>Mirzapore:</i> Construction of a Staging Bungalow.	-- For connecting the line of bungalows on the Deccan-road towards Nagpore with those on the Grand Trunk Road from Calcutta to Delhi.	-- Sanctioned 25th September 1843.	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 the European Infantry Hospital.	-- For the reception of sick men of Her Majesty's ships on the river.	-- Sanctioned 24th January 1842.	Moulmein - -	758 8 10	758 8 10	Season 1842-43.	-- 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 men of the regiment.
Construction of a Post-office and five Sheds.	For marine stores - - -	-- Sanctioned 27th April 1842.	- - - - -	4,004 6 3	3,221 5 7	-- Completed season 1842-43.	—



## POLITICAL BUILDINGS, LOWER PROVINCES:

Moresheadabad: Repairs to the Mausoleum of Malobat Mang.

-- Sanctioned season 1840-41.

At Kooalibang

1,014 - -

-- Completed season 1842-43.

## CANALS, NORTH-WESTERN PROVINCES:

Nyashur Watercourse

For irrigation

-- Sanctioned 31st November 1836.

-- This watercourse leaves the main channel just under the village of Tanda, and passes to the east of Nyashur.

4,030 11 8

-- Completed season 1841-42.

Nuggeenah Canal:

At Moradabad

For irrigation

-- Length, 23 miles; sanctioned in 1839-40

83,309 5 7

-- Completed season 1841-42.

-- It is expected that 5,000 rupees will be ultimately realised by water rent.

Raising of the banks of the

-- In order to admit a sufficient quantity of water.

-- Sanctioned 16th March 1841.

1,049 11 -

Season 1842-43.

Nujufpur Jheel Canal: Formation of a Channel for draining the.

-- To enable the people to cultivate such land which in past seasons has been submerged.

Sanctioned 1846-47

-

58,077 8 -

-

-- The complete drainage of the Jheel has this year brought a large quantity of land into cultivation.

Nuggeenah Canal:

Construction of a first-class Chowkee.

-- Sanctioned 3d March 1843.

-- Situated near the regulating dam on the Karoola Nuddee.

932 7 3

932 7 3

-- Completed season 1843-44.

Construction of a second-class Chowkee.

-- Sanctioned 3d March 1842.

-- Situated near Jageepara.

131 6 3

131 6 3

-- Completed season 1843-44.

Nyashur Dam: Increase to the Waterway of the.

-- In consequence of the excessive body of water thrown on the dam during the rains.

-- Sanctioned 31st March 1845.

-

2,040 - -

-

Nujufpur Jheel Drain: Annual clearance of the.

-- Sanctioned 3d February 1848.

711 14 4

-

## CANALS AND RIVERS, LOWER PROVINCES:

Nuddea Rivers: Toll Collections.

-- Length of rivers, 420 miles.

-

-

-- The toll collections on these rivers, viz., the Blaiseretty, Muttabhangah, and Jellingly, during the year 1847-48, amount to Rs. 2,38,720. 8. 8. The total expenditure on account of establishment, and for the execution of the works undertaken to facilitate the navigation, amounts to Rs. 47,902. 15. 6.; surplus, Rs. 1,01,406. 8. 8.

## ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:

Nuddea: Construction of an Iron Suspension Bridge over the Ishamuttee River.

-- Sanctioned 24th February 1847.

-- At the village of Bungong.

-

48,000 8 -  
Of which 20,000 rupees will be subscribed by Baboo Kallepersaud Poddar.

-

-- The project for this bridge contemplates two spans of 180 feet each, with a roadway 18 feet wide, including the thickness of the half drop bars on each side; the angle of suspension will be 15°.

(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, LOWER PROVINCES:</b>							
<i>Nowgong District:</i> Construction of Two Roads: viz., from Nowgong to Sunooogooing, via Deemapore, and from the Golah Ghaut to Deemapore.	-- In consequence of the contemplated operations against the Aagum Nagas.	-- Sanctioned 18th October 1850.	- Nowgong District	- - - - -	<i>Rs. a. p.</i> For the former road For the latter road,	<i>Rs. a. p.</i> Rs. 1,030 Rs. 1,000	
<b>ROADS AND BRIDGES, CENTRAL PROVINCES:</b>							
<i>Nussersabad and Ajmere:</i> Improvement of the Road between.	-- To remove the difficulties attending the passage of wheel carriages between these two places, the one a chief military station, the other a depot for military stores.	- Length 13 1/2 miles; estimate sanctioned 13th November 1840.	- - - - -	5,779 14 10	7,079 9 9	- Completed season 1842-43.	- This road has been made practicable for wheeled carriages.
Further Improvements to	-- By constructing pucca revetments over watercourses which intersect this line.	- Length 13 1/2 miles; sanctioned 5th November 1842.	- - - - -	2,259 4 3	2,204 9 10	- Completed season 1843-44.	-
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b>							
<i>Nowabpore:</i> Construction of an Iron Suspension Bridge over the Pangyle.	-- In consideration of the great traffic on the line of road, and of the importance of the bridge to the good of the country.	- Sanctioned season 1844-45.	-- On the road between Bareilly and Perhibest.	25,043 - -	27,471 11 2 1/2	- Completed season 1847-48.	-
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL:</b>							
<i>Noacolly:</i> Construction of a wall around the Civil Hospital, and one separating the female wards.	- - - - -	-- Sanctioned 15th January 1833.	-- Noacolly - -	1,021 7 11	- - - - -	- - - - -	-- The works were executed a considerable time back, but there has been delay in the submission of the bill.
<i>Noakallee Gaol:</i> Construction of two additional wards.	-- For the Hazut and Dewanny prisoners; to effect a better classification of the prisoners.	-- Sanctioned 4th November 1846.	-- Noakallee - -	1,740 - 9	1,904 - -	- Completed season 1847-48.	-
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<i>Nowgong:</i> Temporary Buildings, Roads, &c.	-- The Civil Station of Bangsarah has been removed to Nowgong.	- - - - -	- - - - -	2,948 6 6	-	-	
Construction of additional Buildings.	-- As a treasury and record-rooms.	-- Sanctioned 22d June 1841.	- - - - -	6,417 - -	4,950 8 6	- Constructed season 1846-47.	-- The buildings are to be of pucca materials, with a terraced roof. There has been an excess of Rs. 1,466. 8. 6, over the sanctioned amount; and as the executive officer has been able to account satisfactorily for this to the extent of Rs. 752. 10. 1. only, he has been held responsible for the balance.

987.	Construction of an additional Gaol Ward and other Works.	- - - - -	- - Sanctioned 30th March 1841.	- - - - -	908 10 7	- - - - -	- Completed season 1841-42.	-	
	Construction of 20 Drain Bridges.	For drainage purposes	- - Sanctioned 12th September 1842.	- - - - -	1,723 13 10	1,723 13 10	-		
	Construction of a Cutcherry	- - To replace an old cutcherry, built originally of inferior materials, and now in a decayed state.	- - Sanctioned 23d October 1844.	- - - - -	7,033 3 11	4,364 9 5	- Completed season 1843-49.	- - The amount includes the cost of an additional wing, not provided for in the estimate, but commenced on, in compliance with a requisition by the Commissioner in Assam.	
	Construction of a new Circuit Bungalow.	- - In lieu of the present circuit bungalow, which is in an unsafe state.	- Sanctioned December 1845.	Nowgong	- - - - -	2,752 - -	-		
	Erection of a Wall around the Gaol Buildings.	- - In accordance with the views of the civil officers.	- - Sanctioned 28th October 1845.	- - - - -	3,302 1 10 1/2	3,302 1 10 1/2	-	- - - An estimate amounting to Rs. 2,188. 10. 2., for the construction of a new gaol in 1843, to consist of a criminal ward 100 x 80, a civil ward 72 x 80, hospital 72 x 80, guard-room and malikans 70 x 20 feet, with six ranges of cooking sheds; the buildings to be thatched over, supported on soil posts and walls of whole bamboo. The new buildings are to be constructed within the walls erected, agreeably to the estimate sanctioned in 1847.	
N 2	Natore: New Roofing the south end of the Judge and Magistrate's Cutcherry.	- - - - -	- - Sanctioned 30th May 1846.	Natore	1,732 5 - 1/2	- - - - -	- Completed season 1847-48.		
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—JUDICIAL:</b>									
	Narsingpore: Construction of a Malikana, and additions to the Cutcherry st.	- - - - -	- - Sanctioned 1st April 1844.	- - - - -	4,084 10 5	4,730 9 -	- Completed season 1846-47.	- - The necessity for these works was brought to notice by the Commissioner of the Saugur Division.	
	Neosabyunge: Addition of a Record-room to the Collector's Cutcherry.	- - - Great inconvenience was experienced from the distance between the cutcherries of the Magistrate and Collector; the new record-room was to be connected by a covered passage.	- - Sanctioned 14th January 1845.	- - - - -	7,407 3 2	7,104 - -	- Completed season 1847-48.		
	Neemuck: Construction of a Gaol st.	- - The outlay is chargeable to the revenues of the district of Jawad Neemuck, transferred by Scindia to the British Government.	- - Sanctioned 10th October 1845.	Neemuck	14,109 10 10	17,800 3 8	- Completed season 1848-49.		
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—REVENUE:</b>									
	Neroal: Construction of a new Tehsilclarry Cutcherry st.	- - To supersede the old cutcherry at Sorb, which will be sold.	Sanctioned in 1843	- - Situated in the Cawnpore District at Soosainpore.	5,687 4 1 1/2	5,674 - 7	- Completed season 1844-45.		

(cont. in next)

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:</b>							
<i>Noakhally</i> : Construction of a Record-room over the Collector's Cutcherry.	-- The necessity for this work was brought to notice by Mr. Commissioner Ricketts, who stated that all useless papers among the Bullooh records had been destroyed, and that the remaining papers had been arranged with all practicable economy of space, but that there was no accommodation for them.	-- Sanctioned 20th December 1847.	Noakhally - -	<i>Rs. a. p.</i> 3,157 3 1	<i>Rs. a. p.</i> - - -	-- Completed season 1850-51.	-
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b>							
<i>Noakhally</i> : Enlargement of the Burial-ground.	- - - - -	-- Sanctioned 26th September 1842.	Noakhally - -	307 14 3	307 14 3	-- Completed season 1843-44.	-- The space enclosed measures 92x63.
<i>Nurrungabad</i> : Construction of a Dak Bungalow at.	-- In lieu of the existing bungalow, which is in a ruinous state and not worthy of repairing.	-- Sanctioned 16th September 1840.	- - - - -	3,021 - -	3,021 - -	Season 1840-47.	-
<b>CANALS, SOUTH-EASTERN PROVINCES:</b>							
<i>Colabareah Canal</i> - - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -	-- The abandonment of this canal was determined on, on the 12th February 1845, owing to its encroachment on the road along its side, and the Khuttee Canal, which is also a communication between the Damoorda and Hooghly Rivers, was repaired and improved.
<i>Daitadanga</i> : Iron Suspension Bridge	- - - - -	- Estimates submitted 19th May 1840.	- - - - -	12,658 8 5½	12,040 2 6	- Constructed season 1843-44.	-- Under instruction from the Court of Directors.
Construction of Roads to the East and West of the Bridge.	- - - - -	-- Sanctioned 25th July 1844.	- - - - -	1,508 5 7	- - - - -	-- Completed season 1845-46.	-
<b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:</b>							
<i>Colabareah Road</i> : Construction of a Bridge on, at Sirrerampore.	- - - - -	-- Length 51 miles; sanctioned in March 1841.	-- From the Cosaye River to the Hooghly River.	1,819 12 8	2,000 - -	-- Completed season 1841-42.	-- Through this road the communication is at present maintained with Bombay via the Raepore Road.
Renewal of a portion of the -	-- This road, owing to the mistake, in its first formation, of placing the canal to the south or lowest side, instead of the north of the road, is liable to constant injuries during the rains. Owing to this defect, it was found necessary to abandon about 1½ miles, and a new and more retired line was adopted.	-- Length 13½ miles; sanctioned in March 1841.	Ditto - - -	6,504 6 3	6,343 12 3	-- Completed season 1842-43.	-- This new line is at a safe distance from the Canal.

Bridge at Jorhattee on the	-- Required for purpose of general drainage.	-- Of one arch of six feet span; sanctioned 28th November 1842.	Ditto - - -	890 10 6	890 10 6	Season 1842-43.
<b>CIVIL BUILDINGS, CENTRAL PROVINCES--JUDICIAL:</b>						
Oorai Gaol: Construction of	-- A statement was received from the local officers, showing the necessity of the work.	-- Sanctioned 9th May 1846.	- In the Gwalior Ceded District of Kuchmarghur, or Bhindares.	10,813 10 7½	- - -	-- Completed season 1847-48.
<b>CANALS AND RIVERS, NORTH-WESTERN PROVINCES:</b>						
Phoolock Bridge: Repairs to the.	-- The renewal of the east abutment, which failed during the rains of 1844.	-- Sanctioned 22d August 1846.	- - - - -	644 - -	- - -	-- Completed season 1846-47.
<b>ROADS AND BRIDGES, LOWER PROVINCES:</b>						
Patna to Gaya: Raising of the Road.	- - - - -	-- Sanctioned season 1838-39.	Gyah - - -	51,292 18 7	70,222 10 7½	-- Completed season 1841-42.
Patna City Road: Reconstruction of the.	- - - - -	Length 7½ miles	- - - - -	15,765 11 8	- - -	-- Completed season 1845-46.
Purneah: 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.	-- Sanctioned 5th June 1843.	Purneah - - -	983 11 -	- - -	- Constructed season 1843-44.
<b>ROADS AND BRIDGES, CENTRAL PROVINCES:</b>						
Puttareah and Dumow: Construction of Drains on the Roads between.	-- This road is crossed by many nullahs, liable to temporary flood.	-- Length of road, 10 miles 6 furlongs.	Dumow - - -	1,484 1 8½	- - -	Completed 1840-41.
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b>						
Pangyle Nuddie: Construction of an Iron Suspension Bridge over the, at Newabgunge, on the road between Bareilly and Peellibheet.	- - - - -	-- Sanctioned 1st February 1842.	Newabgunge - - -	-- This work was suspended in season 1842-43.	22,000 - -	- - -
Pinjore via Khalka and Kusowlee to Subathoo: Construction of a Road.	- - - - -	-- Length 21 miles 6 furlongs; sanctioned 22d March 1845.	Length.		Width.	- - Completed season 1845-46.
			M. fgs.			
			ft.			
			- 1st Portion, from Pinjore to Khalka -	8 5½	48	
			2d Portion, from Khalka to Kusowlee -	8 5	from 16 to 12	
			3d Portion, from Kusowlee to Subathoo	9 4	12	

(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.	Place of Termination, or of Intended Termination.	Length, and Date of Commencement.	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>Penitentiary</i> : Plan for a Central one.	To contain 2,004 prisoners -	- - - - -	- - - - -	- - - - -	4,41,504 8 5	-	
<i>Pooree</i> : Construction of a Circuit House.	-- For the use of the Commissioner. The temporary building was destroyed by a gale, on the 30th April 1840.	- - Sanctioned 29th September 1840.	Pooree - - - -	7,596 8 8 ½	5,751 8 5	- - Completed season 1842-43.	-
<i>Pooree Gaol</i> : Additional Hospital.	For sick and insane prisoners -	- - The gaol was constructed in the year 1838; the addition of a hospital sanctioned in season 1840-41.	- - - - -	1,332 13 7	1,190 11 3	- - Completed season 1841-42.	-
<i>Pooree</i> : Reconstruction of the Dispensary.	-- In lieu of a building which was blown down by a gale on the 30th April 1840.	- - Sanctioned 21st February 1843.	Pooree - - - -	5,256 15 5	5,437 9 1	- - Completed season 1840-47.	-
Buildings for the use of the Treasury Guard.	- - - - -	- - Sanctioned 27th March 1843.	Ditto - - - -	2,030 8 4	2,030 8 4	Season 1843-44.	-
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<i>Patna Penitentiary</i> : 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.	Patna - - - -	36,251 15 3 ½	23,677 - -	- - Completed season 1846-47.	-- The plan approved is for the accommodation of 240 prisoners.
<i>Purellia Temporary Gaol</i> , Chota Nagpore.	- - - - -	- - Sanctioned 11th October 1836.	- - - - -	- - - - -	2,024 7 8	-	
<i>Purneah Gaol</i> : Estimate for floeing the floors.	-- Owing to the dampness in the existing floors.	- - Sanctioned 17th November 1840.	- - - - -	1,151 13 1	1,220 10 - ½	- - Completed season 1841-42.	-
<i>Purneah Gaol Hospital</i> : Additions to.	-- Additional wards for medicine rooms, &c.	- - Sanctioned 12th October 1841.	Purneah - - - -	4,825 7 2	5,008 4 5 ½	- - Completed season 1845-46.	-
<i>Pubna</i> : Construction of a Circuit House.	- - - - -	- - Sanctioned 20th November 1844.	Pubna - - - -	4,414 - -	4,900 5 -	- - Completed season 1845-46.	-
Construction of a Guard-room for the Burkundauzes attached to the Judge's Cutcherry.	- - - - -	- - Sanctioned 28th December 1840.	Ditto - - - -	334 13 8 ½	- - - - -	- - Constructed season 1847-48.	-

<i>Purneah Outer Gaol</i> : Construction of Guard-rooms and Sentry-boxes.	-- For the security of the guards over the convicts.	-- Sanctioned 10th February 1851.	Purneah	- - - - -	1,270	- - - - -	-- It was considered desirable to allow the convicts a free resort to the inner compound, as at Oyah and Furreedpore; but in order to carry out this plan, it was necessary that the guards should be placed in greater security.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b>							
<i>Pooree</i> : Construction of a Wall around the Burial-ground.	- - - - -	-- Sanctioned 29th August 1843.	Pooree	- - - - -	845 2 7	1,108 4 -	-- Completed season 1843-44.
Reconstruction of the Pucka Treasury and Collector's Cutcherry.	-- These buildings were injured by a storm.	-- Sanctioned 17th April 1843.	Pooree	- - - - -	2,720 5 8½	- - - - -	-- Completed season 1844-45.
<i>Puchim Bamney Khall</i> : Construction of an Iron Suspension Bridge over the.	- - - - -	-- Sanctioned 20th January 1847.	- - - - -	-- On the road from Calcutta to Nullooh and Calpee.	16,800 0 4	15,715 4 5	-- Completed season 1840-50.
<b>CIVIL BUILDINGS, LOWER PROVINCES—GENERAL:</b>							
<i>Purneah</i> : Construction of a Cutcherry.	-- For the sub-deputy opium agent.	-- Sanctioned 18th July 1838.	- - - - -	- - - - -	- - - - -	2,048 12 5½	-- Completed season 1840-41.
<i>Patna</i> : Donation towards the construction of a new Church.	- - - - -	-- Sanctioned 15th December 1840.	- - - - -	-- Government donation of	Rs. 16,072	- - - - -	-- For this edifice the Protestant residents at Patna have subscribed 5,500 rupees. It is the intention of the Lord Bishop to make up the deficiency from the Church Building Fund.
Construction of tiled Verandah to the Cutcherry of the sub-deputy opium agent.	-- In lieu of an old verandah, which no longer affords the required protection.	-- Sanctioned 17th March 1843.	Patna	- - - - -	1,115 17 9½	1,338 10 11	-- Completed season 1844-45.
<i>Punkabarree</i> : Construction of a new Staging Bungalow and Out-offices.	-- To replace a similar building constructed by the Darjeeling Committee, which was condemned as totally unserviceable.	-- Sanctioned 18th June 1845.	Punkabarree	- - - - -	- - - - -	8,221 13 1	- - - - -
<i>Patna</i> : New Buildings at the Insane Hospital.	-- For increasing the accommodation.	-- Sanctioned 8th July 1850.	Patna	- - - - -	- - - - -	5,381 14 9	-- This work was undertaken on the requisition of the magistrates of Patna.
<b>CIVIL BUILDINGS, SOUTH-WESTERN PROVINCES—REVENUE:</b>							
<i>Pooree Pilgrim Hospital</i> : Rebuilt.	- - - - -	Sanctioned 1838-39	Pooree	- - - - -	1,386 4 2	- - - - -	- - - - -

(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-WESTERN PROVINCES—REVENUE—continued.</b>							
<i>Patna</i> : Provision of a Circuit Bungalow.	-- The Special Commissioners' cutcherry has been converted for the reception of the office of the Commissioner of Revenue, in order that that officer's cutcherry may be given over for a circuit bungalow.	-- Sanctioned 25th May 1845.	Patna - - -	<i>Rs. a. p.</i> 861 14 8½	<i>Rs. a. p.</i> - - -	-- Completed season 1846-47.	
<b>CIVIL BUILDINGS, SOUTH-EAST PROVINCES—REVENUE:</b>							
<i>Pooree</i> : Construction of a Treasury Guard-house for the Collector's Cutcherry.		-- Sanctioned season 1839-40.	- - - - -	643 7 5½	1,000 8 4	-- Completed season 1841-42.	-- The difference is owing to its having been found practicable to dispense with eight iron gratings, for which provision had been made in the estimate.
<b>EMBANKMENTS, SOUTH EASTERN PROVINCES:</b>							
<i>Ragulpore Bund</i> : Repairs	-- The bund was breached to a considerable extent in 1848.						
<b>CANALS, LOWER PROVINCES:</b>							
<i>Rajmehal Canal</i> : Construction of.	-- For irrigation, and to supersede the changeableness and uncertainty of the channels of the Nudda Rivers, any permanent improvement of the navigation of which cannot be reckoned on.	-- Length 130 miles; breadth 50 feet, and carrying at the lowest depth five feet water.	- - - - -	-- The scheme was rejected by the home authorities in season 1844-45, but a report was called for on another line, viz., from a point near Chinsurah on the Hooghly to one near Monghyr on the Ganges.	38,47,437 - -	- - - - -	-- The boats proceeding through the canal would reach Rajmehal on the great river by traversing 202 miles instead of 528 miles, as by the Soonderbund route, saving 326 miles in distance, and from 15 to 20 days in time; an impetus would be given by it to the working of the iron mines and coal fields. The income from it is calculated at 5,80,000 rupees per annum, or 14½ per cent. on the gross expenditure, assumed at 40 lacs, to be raised by a toll of two rupees per 100 maunds on all boats.
<b>CANALS, NORTH-WESTERN PROVINCES:</b>							
<i>Rohileund Canal</i> - - - - -	Irrigation - - - - -	-- Length 48 miles; estimates submitted in 1840.	-- From a point on the Ramgunga to Shahpore, on the banks of the Dhela, near Moradabad, with a series of branches for irrigation.	- - - - -	4,50,000 - -	- - - - -	-- It is probable that 201 square miles will be susceptible of irrigation when the whole of the waters of the Ramgunga are turned into it; the revenue to be derived from it is assumed at <i>Rs.</i> 87,531.4 per annum. The Revenue Board suggested to Government to postpone this scheme until it can be ascertained with greater certainty what advantages it holds out, and whether the undertaking may not interfere with the completion of works of higher importance.
<i>Rajpore Watercourse</i> ; Repairs to the.	-- Owing to the unusual height of the floods of the year, some injury had been sustained.	-- Sanctioned season 1846-47.	- - - - -	- - - - -	1,88 7 7	- - - - -	



ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:

987.  
Nagpore Road: From Calcutta to Bombay.

-- For rendering the overland communication with England easy to travellers, and rapid for the conveyance of the mails.

-- Length from Bombay to Calcutta about 1,200 miles; suggested by the Bombay Government in season 1837-38.

Bombay -

From 30,00,000  
To 50,00,000  
(30 to 50 lacs.)

-- In 1838-39 the Court were advised of measures adopted for improving the communication between Calcutta and Bombay, but the information supplied was too incomplete to enable them to

decide on the line of transit, or the nature of the road which should be constructed. The Resident at Nagpore reported the willingness of the Rajah to contribute 20,000 rupees towards the road, which he was authorised to accept with suitable acknowledgments. Two plans were submitted; first for the construction of a road to be at all times practicable for wheel carriages, for travellers, and for transit of trade between Bombay and Calcutta; second, to facilitate the conveyance of mails between the capitals, by rendering the line of communication practicable for horsemen or foot-runners. Of the 1,200 miles, 233 had been made practicable for horsemen or dawk runners, by means of a grant of 20,300 rupees, which had been already authorised, and 968 miles remained. As the plans involved a very large outlay, the Court were desirous that no portion of that which remained should be commenced until a more satisfactory survey of the line was made, and an estimate of the expense submitted to them; but as the main road on to Bombay could not be completed for some years, the Government were authorised to take immediate measures for forming a road for horsemen and dawk runners from Ahmednuggur to Midnapore, which would be practicable throughout the year. The Court subsequently (under date the 3d January 1845) informed the Government that they could not sanction the construction of an expensive road, and directed that their exertions be confined to the discovery of the best route, on which such improvements only should be made as the transit of the mails imperatively required.

Construction of four large Bridges on the Third Division of this Road.

Of 3 arches, 30 feet span each.  
Of 3 arches, 36 feet span each.  
Of 5 arches, 45 feet span each.  
Of 2 arches, 45½ feet span each; sanctioned 15th January 1845.

At Sakalis River  
At Sandrawapat.  
At Choolbund  
At Cheekala

10,074 7 4  
9,957 4 8  
19,888 13 2  
7,942 10 8

Rs. a. p.  
48,023 2 8

Cutting and rooting out Jungle between Sacra and Soharapallee.

Clearing the road

-- Length 43½ miles; sanctioned 3d April 1850.

Soharapallee

7,159 - -

Huttenpooral Nullah, on the Grand Trunk Road: Construction of a masonry Bridge over the.

-- Length 222 feet; sanctioned 2d October 1843.

11,325 11 3

11,325 11 3

-- Completed season 1846-47.

-- This bridge is stated to be a handsome and durable structure, leading the road over two very awkward nullahs, and bringing it up to a horizontal level with the heights east and west.

ROADS AND BRIDGES, LOWER PROVINCES:

Resohar Ghat to Mozufferpore in Tirhoot.

-- Length 23 miles 7 furlongs; sanctioned 22d November 1838.

Mozufferpore

63,201 - -

-- Completed season 1839-40.

ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:

Rajpore Dhoodlee: Widening of the Road.

-- Length 14 miles; sanctioned 12th January 1842.

Dhoodlee

1,485 11 1

-- Completed season 1843-44.

(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:</b>							
<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 - - -	Rs. a p. 7,056 8 5	Rs. a p. 6,739 10 6	-- Completed season 1844-45.	-- The new gaol will be surrounded by a pukka wall 12 feet high, and will consist of one d-wanny ward and three soujdarce 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 - - -	5,064 16 9	6,071 6 8	-- Completed season 1841-42.	-
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<i>Rungpore Gaol</i> : Additions to -	-- To improve the salubrity of the gaol.	-- Sanctioned season 1841-42.	- - - - -	619 6 2	619 6 2	-- Completed season 1841-42.	-- Much sickness had existed at this gaol.
<i>Rungpore</i> : Conversion of an old Judicial Cutcherry into a Gaol Hospital.	- - - - -	-- Sanctioned 28th 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' Cutcherry, &c.	-- To provide accommodation for the Judges' records, and the property of persons dying intestate at Rungpore.	-- Sanctioned 3d April 1843.	Rungpore - - -	7,728 - -	6,701 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 Rs. 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 350 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.	8,851 6 1	- - - - -	-- The Board solicited the orders of Government to be allowed to call for tenders for the execution of the work by contract.

987.

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CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—REVENUE:

Ransea in the Dhuttee Territory: Construction of a Tehsildary Cutcherry.

- - - - - Sanctioned 7th November 1840.

6,014 14 -

5,668 15 1

- Completed season 1842-43.

EMBANKMENTS, LOWER PROVINCES:

Sarun and Tirkoot Bunds: Construction of a new Bund, about 1,000 yards from the old Bunds.

- - For the protection of the country between the villages of Nowkurrah and Purasdee from encroachments of the Gunduck River.

- Length 23 1/2 miles; sanctioned October 1841.

4,877 4 5

5,091 4 9

- - Completed season 1842-43.

- - The length of these bunds is 140 miles, and the estimate for their annual repair, Rs. 26,205. 11. 2; the executive officer has been directed to adopt the standard section, making the bunds three feet above the highest known rise of the river, three feet wide at the top, and giving a slope of three to one towards the river, and two to one in the rear.

Construction of some new inner Bunds at Sarun, and strengthening of part of the main Bund.

- - Owing to encroachments of the River Gunduck.

- Length four miles; sanctioned 4th April 1845.

5,512 7 -

9,151 4 3 1/2

- - Completed season 1843-49.

Construction of new Bunds -

- - In parts where the main bund is encroached on by the River Gunduck.

- - Sanctioned 29th April 1845.

2,781 9 3

3,351 - -

- - Completed season 1843-49.

CANALS, NORTH-WESTERN PROVINCES:

Scharanpore: Construction of a Corn-mill House.

- 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:

Sandoway: Reconstruction of the Thoo's Bridge at -

- - To keep open the communication between his outcherry 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.

- - A saving of Rs. 408. 2. 6. was effected by a reduction in the rate for carpenters' work.

Sowrah Bridge: Repairs to -

- This bridge crosses the Sowrah River.

- - Length of the bridge 300 feet, width 20 feet; repairs sanctioned seasons 1845-46 and 1848-49.

- - Crosses the public road between the station and town of Purneah.

1,594 8 -

- - - - -

- - Completed season 1845-46.

- - This bridge was built in the year 1822, and the woodwork had become decayed, and required to be replaced.

Shaikpore: Construction of two Bridges on the Grand Trunk Road.

- - - - -

- - Sanctioned 1st July 1846.

- Between Burdwan and Gyretty.

- - - - -

18,458 15 8

- - - - -

- - One bridge of three openings of 36 1/2 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.

Satgong to Muggra, on the Grand Trunk Road: Widening of the Road.

- - The metalled portion has been widened and the road straightened.

- - Length two miles and 100 yards; sanctioned 24th March 1847.

Muggra - - -

7,118 10 -

7,400 11 1

- - Completed season 1847-48.

- - Both khod and gaojing have been used in the repairs and extension of the metai.

(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	Estimated Amount for	Probable Time of Completion.	REMARKS.
				Expense Incurred.	Completion.		
				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
<b>ROADS AND BRIDGES, LOWER PROVINCES:</b>							
Seebaugor to Jypore in Upper Assam.	- - - - -	Length 56 $\frac{1}{2}$ miles -	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
Seebaugor to Borahaut, in Upper Assam; Repair of an Old Road.	- - - - -	Length 50 miles.	Borahaut - - -	- - - - -	3,765 - -	- - - - -	- - This work has been executed by the political officers of Government.
Seebaugor to Debrogbar	- - - - -	Length 17 $\frac{1}{2}$ miles.	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
Seebaugor to Chokey Haut, on the Booree Dehing River.	- - - - -	- - Sanctioned 21st June 1841.	Chokey Haut.	- - - - -	- - - - -	- - - - -	- - - - -
Saikrah 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 $\frac{1}{2}$	1,100 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 Beema River.	- - - - -	- - - - -	- 10 miles east from Saugor.	86,177 6 -	- - - - -	Constructed in 1832	- - This bridge was constructed in 1832 by Major Presgrave. 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: 0.
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 1848.	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>							
Schagur River; Bridge over the	- - To keep open the communication between Futtighur and Etawah.	- - Sanctioned 25th July 1840.	Schagur River - -	2,513 - -	2,513 - -	Season 1840-41.	- - - - -
Scharunpore; Bridge over the Dholla 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.	Scharunpore - - -	2,753 4 0	2,753 4 0	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.

987.	<i>Seharunpore</i> : Repairs to the Dumolah 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 84 miles; width 40 feet; sanctioned 21st February 1845.	Shikarpore - - -	- - - - -	52,008 2 8	-	-	
	<i>Sombre River</i> : Works on the	-- 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 Koujar Nuddle.	-- Sanctioned 28th December 1840.	At the Koujar Nuddle	- - - - -	4,940 3 11	Season 1840-50.	-	
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—JUDICIAL:</b>									
	<i>Soory</i> : Construction of a Catcherry for the Native Judge.	-- The accommodation afforded in the magistrate's catcherry being quite unfit for holding his court.	-- Sanctioned 20th June 1842.	- - - - -	659 - 11	1,176 7 7	-- Completed season 1843-44.	-	
03	<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 26th 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 Thansah of Pucan 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 Arracca	- - - - -	-- 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 1838-39.	Sandoway - - -	2,347 9 0	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>				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
Beihpore, in Assam	- - - - -	-- Catcherry, 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 23 feet; sanctioned 20th February 1839.	- - - - -	- - - - -	2,535 2 10	- - - - -	
Shahabad: Purchase of a School-house.	-- For a catcherry for the magistrate.	-- Sanctioned 4th February 1841.	- - - - -	8,000 - -	- - - - -	Season 1843 - -	-- This building had been newly constructed.
Improvement of the Drainage of the Gaol.	- - - - -	-- Sanctioned 20th January 1842.	- - - - -	1,105 12 6 1/2	1,246 6 6	-- Completed season 1842-43.	
Seebsaugor, in Upper Assam: Construction of a Catcherry.	-- For the magistrate, in lieu of a catcherry which was destroyed by fire on the 25th August 1840.	-- Sanctioned 20th January 1841.	- - - - -	1,418 15 10 1/2	1,529 9 -	-- Completed season 1842-43.	-- The building consists of a room 80 x 20 feet, with a wing 50 x 20, and a 10 feet verandah all round.
Seebsaugor: Construction of a new Gaol Hospital, with a new Bamboo Stockade to the Gaol.	- - - - -	-- Sanctioned 18th February 1840.	- - - - -	887 13 3	- - - - -	- Constructed season 1842-43.	-- The building consists of one centre room 84 x 20, with an eight feet verandah all round.
Seebsaugor, Lower Assam: Construction of a Gaol at.	-- 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.
Bilchar: Construction of a new Mohafes Thana and Treasurer's Room.	-- For the security of the records and treasure.	-- Sanctioned 6th November 1844.	Bilchar - - -	2,072 1 7	2,239 4 7	-- Completed season 1840-47.	
Seebsaugor: Construction of a new Treasury and Thanah.	-- In lieu of similar buildings blown down in a storm in May 1843.	-- Sanctioned 21st August 1843.	Seebsaugor - -	618 3 1	-		
Provision of a new Gaol	-- 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 1/2	-- Completed season 1845-46.	
Sylhet: Improvements to the Gaol Hospital.	-- 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 1840-50.	-- The estimate provides for raising the roof 6 1/2 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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Seesaugor:							
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>							
Shajehanpore: Construction of a new Pucca Gaol Hospital and Buildings.	-- In lieu of inferior buildings built by the civil officer.	-- Sanctioned 15th September 1843.	Shajehanpore	- -	5,378 8 7	5,307 13 3	-- Completed season 1845-46.
Sirsa: Construction of a Wall at	-- For the use of the Judicial Department.	-- Depth 113 feet, diameter 8 feet; sanctioned 20th March 1841.	Sirsa	- -	1,198 10 10	1,193 10 10	Season 1841-42.
Sharanpore: Construction of a Pucca Guard-room at the Gaol.	-- Owing to the insufficiency of the existing guard-rooms.	-- Sanctioned 8th December 1843.	Sharanpore	- -	930 1 10	930 1 10	Season 1843-44
Shikarpore: Conversion of the Fort into a Gaol.	- - - - -	-- Sanctioned 3d April 1845.	Shikarpore	- -	4,531 8 8	4,531 8 8	Season 1845-46.
Shikarpore Gaol: 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>							
Saugor Gaol: Enlargement of the	-- In consequence of the removal of 100 prisoners from the district of Dumoh.	-- Sanctioned 16th April 1846.	- - - - -	- - - - -	47,386 - -	45,528 9 8	-- Completed season 1847-48.
Seonoe Gaol: 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 20th August 1840.	Seonoe	- -	9,124 4 8	- - - - -	-- Completed season 1850-51.
							-- 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.
							-- 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 Expenditure Incurred.	Estimated Amount for Competition.	Probable Time of Completion.	REMARKS.
<b>CIVIL BUILDINGS, EASTERN SETTLEMENTS—JUDICIAL:</b>							
<i>Singapore:</i>							
New Police-office		-- Sanctioned 13th November 1839.	Singapore	Rs. a. p. 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	- - - - -	25,038 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 52 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 Golaha.	-- Orders of Government, 5th July 1837.	Sulkea	50,901 5 10	57,244 8 4	-- Completed season 1838-39.	-- These golaha, 11 in number, are of pucca masonry, and have been well constructed by Captain Fitzgerald at a cost of Rs. 6,343, 2. 6. less than the sanctioned estimate.
Construction of Division Walls in 27 Salt Golaha.	-- In consequence of the loss resulting from the present plan of separating salt of different quantities by mats, in these golaha, as the mats frequently rot, and the salt becomes mixed.	- Sanctioned 19th August 1840.	7,879 4 3	8,008 9 - 1/2	-- Completed season 1841-42.	
Renewal of the roofs and Improvements to some of the Salt Golaha.	-- In consequence of the great wastage of salt occasioned by leakage.	- Sanctioned 23d December 1840.		10,470 9 -		
<i>Secundrabad:</i> Erection of a Staging Bungalow and Out-offices.		- Sanctioned 19th August 1843.	-- Situated on the Grand Trunk Road between Allypbur and Delhi.	2,072 13 5	2,133 4 4	-- Completed season 1843-44.

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

<i>Shehnabad:</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>Syree, in the Hill District of Subalho:</i> Construction of a Staging Bungalow.	-- To replace an old bungalow, which did not afford sufficient accommodation to travellers.	Sanctioned 1839-40			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	4,643 14 -	-- Completed season 1842-43.	-- The excess was owing chiefly to the erection of out-offices, which were not included in the estimate.
<i>Subathoo:</i> Construction of a Protestant Church.	-- This building is to be calculated to hold 500 persons.	- Sanctioned 7th February 1845.	Subathoo	-- This work was suspended; <i>vide</i> paragraphs 323 and 323 of Report of 1845-46.	10,798 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 trusses.
Proposed construction of a House.	-- To serve for the performance of Divine Service on the Sabbath, and for a school-room on other days.				5,408 16 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>Eyree</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.	Eyree - - - -	Rr. a. p. - - - - -	Rr. a. p. 1,276 12 4	- - - - -	
<b>CIVIL BUILDINGS, CENTRAL PROVINCES—REVENUE:</b>							
<i>Secundra</i> : Construction of a Tuhaldarry Cutcherry.	- - - - -	-- Sanctioned season 1839-40.	- - - - -	986 14 8	1,304 13 9	-- Completed season 1841-42.	-
<i>Sumnerpore</i> : Construction of a Bungalow and Out-offices at the Cotton Farms.	- - - - -	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. 1,587. 12. -- had been incurred by the executive engineer in the collection of materials.
<i>Secundra, in Zilloh Cawnpore</i> : Construction of a Tuhaldarry Cutcherry at.	-- In consequence of the lapse of the Secundra Jagheer, and the annexation of the Pergunnah to the Cawnpore District.	- Sanctioned 4th November 1842.	Secundra - - -	5,401 2 - 1/2	5,139 13 8	-- Completed season 1844-45.	-
<i>Sheerajpore</i> : Construction of a Tuhaldarry Cutcherry at.	-- To replace the present cutcherry, which is represented to be very confined and insecure, being surrounded by and connected with the houses of the village.	- Sanctioned 9th May 1844.	-- Sheerajpore, in the Cawnpore District.	5,024 2 1	5,070 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. 1,508. 14. 10., was paid by subscription.
<b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—REVENUE:</b>							
<i>Donepat, in the Northern Division of the Delhi District</i> : Construction of a Cutcherry.	- To replace a cutcherry built by the late Baba Bhuc, which was in a state of disrepair, and in an objectionable situation.	-- Sanctioned 18th December 1838.	- - - - -	0,405 1 4	-	-	

<p><i>Shahjehanpore</i>: Additions and alterations to the Collector's Cutcherry.</p>	<p>-- Rendered necessary by the union of the offices of Collector and Magistrate of the district.</p>	<p>-- Sanctioned 16th September 1846.</p>	<p>Shahjehanpore -</p>	<p>7,304 11 6</p>	<p>7,700 - -</p>	<p>-- Completed season 1844-45.</p>	<p>-- The old cutcherry was disposed of, for a sum of 2,100 rupees, to Captain Ludlow.</p>
<p><b>CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—POLITICAL:</b></p>							
<p><i>Shikarpore</i>: Repairs to the Old Agency Buildings.</p>	<p>- - - - -</p>	<p>-- Sanctioned 22d July 1844.</p>	<p>Shikarpore -</p>	<p>7,000 - -</p>	<p>7,000 - -</p>	<p>Season 1844-45.</p>	<p>- - - - -</p>
<p><i>Scinde</i>: Construction of an Office.</p>	<p>-- For the Secretary to the Government of Scinde.</p>	<p>-- Sanctioned 9th November 1844.</p>	<p>Scinde -</p>	<p>- - - - -</p>	<p>2,160 4 5</p>	<p>- - - - -</p>	<p>-- The walls will be of brick and mud, and the roof tiled.</p>
<p><b>EMBANKMENTS, SOUTH-EASTERN PROVINCES:</b></p>							
<p><i>Twenty-four Pergunnahs</i>: Construction of a new line of Bunds from Kalkapore towards Moneergong, and back to Harreenbaugh, to include the Village of Gillarchut.</p>	<p>- - - - -</p>	<p>-- Sanctioned 1st June 1841.</p>	<p>-- Twenty-four Pergunnahs.</p>	<p>5,398 14 -</p>	<p>8,338 14 4</p>	<p>-- Completion reported season 1844-45.</p>	<p>-- A considerable saving on the estimate was effected by dispensing with a portion of bund where the damming of a khall had sufficed. The estimate for annual repairs of 1850-51 amounts to Rs. 15,842. 14. 2.</p>
<p>Construction of 11 Bungalows on these Embankments.</p>	<p>-- For the use of the superintending engineer and the superintendent while on inspection duty.</p>	<p>-- Sanctioned 24th May 1843.</p>	<p>- Ditto -</p>	<p>1,070 1 -</p>	<p>- - - - -</p>	<p>-- Constructed season 1844-45.</p>	<p>-- 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.</p>
<p><b>EMBANKMENTS, LOWER PROVINCES:</b></p>							
<p><i>Twenty-four Pergunnahs</i>: Bunds</p>	<p>- - - - -</p>	<p>-- The reconstruction of these bunds was sanctioned on the 1st November 1843. Their entire length is 300 miles; the cost of their annual repair is estimated at Rs. 18,751. 14. 6.</p>	<p>- - - - -</p>	<p>1,30,000 - -</p>	<p>65,160 14 9 1/2</p>	<p>-- Completed season 1843-44.</p>	<p>-- The estimate for effecting annual repairs of these embankments for season 1849-50 amounted to Rs. 14,328. 0. 7.</p>
<p>Ditto</p>	<p>-- The construction of a bund has been authorised for the protection of an estate situated on the verge of the Boonderband Forest, near the Channel Creek.</p>	<p>-- Length 11 miles; commenced in season 1839-40.</p>	<p>- - - - -</p>	<p>6,008 - -</p>	<p>6,008 - -</p>	<p>Season 1840-41</p>	<p>-- 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.</p>

(continued)

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.
<b>EMBANKMENTS, LOWER PROVINCES—continued.</b>							
<i>Twenty-four Pergunnahs—continued.</i>							
New Line of Bunds from Calcutta towards Moneergong, and back to Borebough Khal, to include the Village of Gillsachat.	- - - - -	- - Length 14 miles, 3 furlongs; sanctioned 1st June 1841.	- - - - -	Rs. a. p. 8,333 14 4	Rs. a. p. 8,333 14 4	Season 1841-42.	
Construction of Husses Bunds, and Dam across the Khas Mehal Nunnoraj.	-- With a view to the improvement of the mehal.	-- The Bhoorda Khall has been excavated to the length of 3,000 feet, and Husses three feet in height, with a dam, has been constructed, under orders 19th October 1841.	- - - - -	1,248 6 3	- - - - -	-- Completed season 1843-44.	-- It is expected that the returns from this estate (8,000 rupees per annum) will be almost doubled, when a proper system of drainage has been established.
<b>CANALS, SOUTH-WESTERN PROVINCES:</b>							
Tully's Nullah: Strengthening Banks opposite to the Kidderpore Tollhouse.	- - - - -	- Sanctioned 10th May 1847.	Kidderpore - -	317 10 -	501 5 -	-- Completed season 1847-48.	-- The banks have been protected by piling, and with stone ballast.
<b>CANALS, NORTH-WESTERN PROVINCES:</b>							
Tajawalra 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 - - -	1,030 1 2	Season 1844-45	-- This cut was originally excavated by Colonel Colvin, immediately below the junction of the two canal heads.
<b>ROADS AND BRIDGES, SOUTH-EASTERN PROVINCES:</b>							
Tamlook 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 Paunchcoorah to Narrainpore Khaul.	3,128 8 1	3,602 11 8	-- Completed season 1844-45.	-- Such of these drains as it may be desirable to adapt to purposes of irrigation, will have sluice-gates attached to them at the cost of the landholders.

<b>Topchanchas:</b>							
97	Construction of a Bridge two miles east of.		-- Sanctioned 10th October 1843.		8,083 11 7	6,000 7 8	-- Completed season 1840-47.
	Construction of two Masonry Bridges, one three miles and one four miles east of.		-- Sanctioned 10th October 1843.			7,018 1 8	
<b>ROADS AND BRIDGES, LOWER PROVINCES:</b>							
	<i>Tempora Bridge, in Lower Assam.</i>	-- To complete the communication between the station and the gaol.	-- Sanctioned 12th January 1841.		716 19 7	841 - -	-- Completed season 1840-44.
	<i>Tilliga Ghaut: Across the Cuseyah Hills to Panocong, in Assam.</i>		-- Length 44 miles; sanctioned in season 1838-39.	Panocong	8,888 1 6		-- Completed in season 1841-42.
<b>ROADS AND BRIDGES, NORTH-WESTERN PROVINCES:</b>							
53	<i>Tangra to Goona: Straightening the Road from, and Construction of a Bridge across a Nullah at Lockwas.</i>		-- Sanctioned 1st August 1845.	Goona	1,003 18 11	1,008 18 11	-- Completed season 1840-47.
	<i>Umbrella to Pinjora: Construction of a Military Road.</i>	-- With reference to Government general orders of 17th November 1842, relating to the opening of roads adapted for all military purposes in the North-western frontier.	-- Length 84 miles and 7 furlongs; sanctioned 20th November 1844.	Pinjora		01,081 8 0	-- The estimate provides for the construction of two bridges across the Labrew Nullah and the Choor, near Moolshampore, and 75 drain bridges of shorts.
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES--JUDICIAL:</b>							
	<i>Twenty-four Pergunnahs: Construction of a New Insane Hospital.</i>		-- Sanctioned 20th January 1844.	-- Situated between the Budder Dewannee Court-house, and the Iron Bridge-yard.	47,847 15 5	47,329 8 10	-- Completed season 1848-49.

The bridge has two semicircular arches, 22 feet in span. The saving is owing to a great reduction in the quantity of masonry-work, and in the rates generally.

The whole line, as it exists now, may be traversed in every part by troops and laden cattle. The bridges are of wood, and being built of large trees, they will answer even for laden elephants.

(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>Tavoy:</i> Construction of New Buildings.	-- A new house for the gaoler and gaol cooking-sheds; the former required to replace the gaoler's house, which had decayed; the latter in lieu of the present sheds, which, from their objectionable position, affords means of escape to prisoners.	-- Sanctioned 20th March 1845.	Tavoy - - -	Rs. a. p. 1,253 10 9	Rs. a. p. 1,751 3 -	-- Completed season 1846-47.	-
Construction of Circuit-Houses and Out-offices.	- - - - -	-- Sanctioned 17th September 1845.	Tavoy - - -	-- Rs. 3,893. 6. 8. was incurred in the construction of the Circuit-house.	7,527 13 6	-- The completion of the Circuit-house was reported in season 1847-48.	-
<b>CIVIL BUILDINGS, LOWER PROVINCES—JUDICIAL:</b>							
<i>Tézipore, in Lower Assam:</i>							
Construction of a Treasury and Record-rooms.	-- To secure the records of the magistrate's office.	-- Sanctioned 30th March 1841.	Tézipore - - -	4,580 14 4	2,563 2 4 Exclusive of convict labour.	-- Completed season 1846-47.	-
New Gaol - - -	-- The existing gaol building being in a very dilapidated state.	-- Sanctioned February 1841.	Tézipore - - -	13,023 1 5	13,805 12 6 This amount, it is expected, will be considerably reduced by the employment of convict labour.	-- Completed season 1846-47.	-- This consists of four criminal, one nazut, one civil, one female, and one hospital ward, with dead-house and out-offices. The whole of the buildings are of kutcha pucca masonry, with thatch roof, with the exception of the cook-rooms, which have tiled roofs.
Construction of a Thatched Roof Cutcherry.	-- At the requisition of the Commissioner of Assam, in lieu of the present cutcherry, which is in a dilapidated state.	-- Sanctioned 24th June 1841.	Tézipore - - -	4,290 15 4	4,402 - -	-	-
Additions of Kutcha Pucca Walls to the Circuit Bungalow.	-- In lieu of the present temporary walls, which are liable to be destroyed by storms.	-- Sanctioned December 1845.	Tézipore - - -	- - - - -	2,008 - -	-	-
<b>CIVIL BUILDINGS, SOUTH-EASTERN PROVINCES—GENERAL:</b>							
<i>Tavoy:</i> Construction of a New Wharf.	-- In lieu of the old wharf, which is in a decayed state, and of little use except at high water, owing to there being a space of 73 feet of soft mud between it and the stream.	-- Sanctioned 9th September 1844.	Tavoy - - -	1,778 11 2	1,778 11 2	Season 1844-45.	-

CIVIL BUILDINGS, LOWER PROVINCES—GENERAL:							
<i>Titalya</i> : Construction of a Staging Bungalow and Out-offices.	-- To provide accommodation to travellers to and from Darjooling.	22d September 1847	Titalya	3,317 4 9	-- An advance of 2,000 rupees was made. An estimate, amounting to Rs. 3,230, 14, 8, was subsequently (5th September 1848) sanctioned.		-- Will supply the place of an hotel which existed at the spot, but was burnt down in 1847. In season 1849-50 a sum of Rs. 148, 7, 7, was expended in furnishing this bungalow.
CIVIL BUILDINGS, CENTRAL PROVINCES—REVENUE:							
<i>Toshnam, in the District of Hissar</i> : Construction of a Tahsildary Cutcherry at.		Sanctioned 1839-40	Toshnam	8,568 8 7	8,568 8 7	Season 1839-40.	
CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—REVENUE:							
<i>Tiroach</i> : Construction of Buildings.	-- For the accommodation of the Tubaeel and Thannah establishments.	-- Sanctioned 18th February 1840.			7,127 --		-- The execution of this work was entrusted to the civil officer.
CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—GENERAL:							
<i>Umballah</i> : Staging Bungalow at	-- For the convenience of travellers proceeding to or from Sitwa.	Sanctioned 1839-40	Umballah	1,645 4 5	1,645 4 5	Season 1840-41.	
<i>Umballah Church</i> : Purchase of the Private Church.		-- Sanctioned 8th December 1844.	Umballah	3,000 --	--	-- Purchased season 1846-47.	-- The sum of 3,000 rupees provides also for alterations and purchase of church furniture.
<i>Umballah</i> : Construction of a Dak Bungalow.	-- To provide good accommodation for travellers at the station, through which many of the servants of Government are continually passing.	-- Sanctioned 3d October 1849.	Umballah	8,801 4 9	0,806 10 7	-- Completed season 1849-50.	-- The contemplated outlay, although large, is not considered incommensurate with the object in view.
Construction of Bathing-house and Pucka Wall.	-- For the accommodation of travellers passing through Umballah.	-- Sanctioned 20th October 1840.	Umballah	1,158 13 0	--	-- Completed season 1850-51.	-- The number of travellers passing through Umballah is very great, and the private accommodation is limited to four suites of apartments.
CIVIL BUILDINGS, NORTH-WESTERN PROVINCES—JUDICIAL:							
<i>Umballah</i> : Construction of Buildings.	For the police battalion	-- Sanctioned 13th June 1844.	Umballah	8,034 14 10	--	-- Completed season 1846-47.	-- These buildings consist of a bungalow, with out-offices for the adjutant, a magazine, eight bells of arms and a rear-guard, and are constructed of permanent materials.

## 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 Chitwail, 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 Bowany 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 Goomdipoondy, 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 Moberla to Tungatoor. The road from Madras to Goomdipoondy will be bridged, also three streams between Goomdipoondy 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 Hydrabad.

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 Combacorum 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.—*Proposed Road from Madras through Chittoor, Palnanar, Balsamoodram, to Bellary.*

The principal works under construction are, roads from Raneepett 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 Cavetrajpett, 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 Bangalore, 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. 9.

MADRAS DISTRICT ROADS.

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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 158 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.

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## 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.
<p>No. 16. Absanagram Tank, repair of the Bank of.</p> <p>24. Arbyle Ghaut, and line of Road from Yellapoor to Meerjan.</p> <p>32. Agoomby Ghaut, Road from the foot of the, at Somaishwar to Bujjay.</p> <p>33. Agoomby Ghaut, Road from the foot of the, at Somaishwar, to Halandee.</p> <p>41. Araselaur River, Bridge over.</p> <p>82. Annamully Teak Forest, examination of.</p> <p>94. Ambasamooduram Bridge, flooring to six of the Arches of.</p> <p>7. Cocanada, Lattice Bridge at.</p> <p>18. Construction of Sluices to different Tanks.</p> <p>23. Coloor Ghaut.</p> <p>27. Cassergode and Solea Road.</p> <p>35. Cauvery Pauk Tank repairs.</p> <p>38. Calavaye Tank Calingulah.</p> <p>47. Corayaur River, Bridge over the.</p> <p>48. Cuddaveysaur River, Bridge over the.</p> <p>59. Covellay Surplus Channel, extending the.</p> <p>67. Cauvery River, Bridge over, at Trichinopoly.</p> <p>72. Coleroon River, repairs of the Banks of.</p> <p>78. Calicut Canal (Malabar).</p> <p>89. Coonoor Annicut, restoration of the.</p> <p>100. Cunnadien Channel, from an Annicut across the Tambrapoorny.</p> <p>5. Dhowlaisweram, permanent Railroad to.</p> <p>22. Davamunny Ghaut and Road.</p> <p>87. Dindigul and Pulney, repairs to Road No. 2, between.</p> <p>11. Ellore and Masulipatam, Road and Bridges on the Road between.</p> <p>1. Godavery Annicut.</p> <p>8. Godavery Guttoo Annicut.</p> <p>36. Goonamadee Calingulah.</p> <p>31. Honore Jetty.</p> <p>80. Hassanoor Ghaut.</p> <p>12. Kristnavarem Limekiln.</p> <p>14. Kundlairoo, Annicut across the.</p> <p>75. Khansaibs Channel, Bridge across the.</p> <p>74. Laulpett, improving the Road from, through Manargoody, to Wemampillioor.</p> <p>21. Munjarabad Ghaut and Road.</p> <p>25. Mangalore and Agoomby Road.</p> <p>45. Mercalcurry River, improvement of.</p> <p>51. Moodecondaun River, Bridge over.</p> <p>73. Manargoody and Chellumbrum, improving the Road between.</p> <p>83. Madura, New Sepoy Lines in the Town of.</p> <p>84. Madura, improvement of Drainage in Town of.</p> <p>95. Madras to Quilon, repairing High Road, No. 4, from.</p> <p>104. Madras to Quilon, repairs on the High Road from, in several Talooks.</p> <p>105. Mailaul Channel, from the Murdoor Annicut.</p> <p>6. Narsipoor, Road from, to Cakarapurroo.</p> <p>19. Nellore Tank, completion of new Channel of supply to.</p> <p>37. Notairy Otairy Calingulah.</p> <p>40. Narasinga Cauvery River, improving the.</p> <p>49. Nundalam River, Bridge over the.</p> <p>58. Negapatam, improving the Port of.</p> <p>60. Nydookurray Main Channel, improving the.</p> <p>76. Nondimungalum Oopenaur River, Bridge across the.</p> <p>93. Nully Oday, Bridge across the.</p> <p>99. Nenmany Annicut Channel and Tank.</p> <p>28. Oopenungady and Pootoor Junction Road.</p>	<p>No. 85. Oopaur River, improvement of Road to, and construction of Bridge over the.</p> <p>9. Poolapurty Annicut.</p> <p>10. Pedda Oopalem Channel, Annicut across the.</p> <p>15. Pennair, opening of a new Channel from the.</p> <p>52. Pootaur, Bridge over the.</p> <p>53. Paumany River, Bridge over the.</p> <p>54. Point Calimere, Beacon Column at.</p> <p>64. Peravully Channel, improving the.</p> <p>65. Pungoopy Channel, improving the.</p> <p>77. Perambaddy Pass, Line from the frontiers of Coorg to the Coast at Cannanore.</p> <p>88. Panlaur River-Wagganies.</p> <p>106. Paupancaul Channel, from the Carapanuddee.</p> <p>61. Rettenagoody Annicut, extending the, and widening the Nutud Nullah Channel.</p> <p>3. Samulcottah Channel.</p> <p>13. Survapully Channel.</p> <p>17. Survapully Talook and Bodelingumpaud Cutcherries.</p> <p>26. Sirey and Darwar Road Bridges.</p> <p>44. Shembu Cauvery River, head Sluice of the.</p> <p>92. Shevacauses, Cotton Gin House at.</p> <p>103. Streevigoontam, Talook Revenue and Police Cutcherry in.</p> <p>2. Thoolia Bagah Channel.</p> <p>42. Trimulrajen, Bridge over the.</p> <p>50. Trimulrajen, Bridge over, on the road from Combaconum to Negapatam.</p> <p>55. Tranquebar, Beach Defences at.</p> <p>62. Trichinopoly, improving the Road from, along the right bank of the Cauvery.</p> <p>63. Trichinopoly, Gaol at.</p> <p>68. Trichinopoly, new Road from, to Towagoody, the first stage to Tanjore.</p> <p>69. Trichinopoly, constructing part of Road from, to Arrialoor.</p> <p>70. Trichinopoly, improving the Road from, to Laulgoody.</p> <p>81. Teppacandoo Bridge.</p> <p>86. Thiroopovanum Channel, Bridge across head of.</p> <p>96. Thimmarajasamoodrum Cootical Annicut, reconstruction of.</p> <p>97. Thirtangul Peracolum, restoration of the.</p> <p>98. Thentherpairs Head Sluice, repair of the.</p> <p>101. Tinnevely Channel from the Sootamullay Annicut across the Tambrapoorny.</p> <p>102. Teutacorin, New Sea Custom-house and Masta Attendant's Office at.</p> <p>39. Uddavaur River, improving the.</p> <p>43. Veersaholen River, Bridge over the.</p> <p>46. Valavansur River, improvement of the.</p> <p>66. Vitticutty Main Channel, improving the.</p> <p>71. Uddavaur River, widening the, and forming a Dike on its left bank.</p> <p>90. Vigay River, rebuilding Causeway across.</p> <p>91. Vaddakurray Tank, supplying Channel of.</p> <p>30. Wullabapoor Annicut, reconstruction of.</p> <p>34. Wotairy Nullah, Embankment Channel and Bridge across the.</p> <p>57. Weyacoondaun Channel, improvement of the.</p> <p>58. Weyacoondaun Channel, rebuilding of Dark's Bridge across.</p> <p>4. Yanam Embankment.</p> <p>29. Yellapoor and Moondagode Road.</p> <p>80. Yellapoor and Halliaul Road.</p> <p>79. Yenudmuckle Apron.</p>

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; 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			Rs. a. p. - Total expenditure to end of 1849, 6,50,344 - -			-- The opening of the quarries, laying railroads, building stone dams, construction of the Dhowlaisweram and Maddoor Branch anicuts, and lock and sluices at various places.
(2.) Thoola Begah Channel	-- Clearing the old channel, and unbanking.	Commenced in 1846	Cocanada River	16,020 - -			-- Average collections: 1840 to 1846 = 34,541 rupees. 1849 = 58,233 " Increase = 17,501 "
(3.) Samalcottah Channel	For irrigation	27 miles in length		4,544 - -			-- 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 30,486 rupees in 1846-47, and 38,093 rupees in 1847-48, and 47,010 rupees in 1849.
(4.) Yanam Embankment				8,120 - -			-- This embankment, carried along the eastern side of the Godavery, was utterly inefficient previous to 1846.
(5.) Permanent Railroad to Dhowlaisweram.	-- 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 Cakrapurroo.	-- To connect Narsipoor with Rajahmundry.	Length, 24 miles	Cakrapurroo	9,407 - -			-- Expenditure incurred in the erection of bridges and tunnels, and repairs to the roadway.
(7.) Lattice Bridge at Cocanada		-- Length, 240 feet between the abutments, in three bays of 80 feet each, and two of 40 feet.		1,068 - - 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 Guttee 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 15,000 rupees.	Length, 324 feet		8,187 - -		-- Completed; date not given.	-- Constructed across the Shadah Nuddee, near Cassimcotta.
(9.) Pochpurty 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 Survasiddy Talook, assessed at 11,600 rupees.			1,712 - -			Constructed across the Pandaroo 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.
<b>FIRST DIVISION—continued.</b>							
<i>Vizagapatam District—continued.</i>							
(10.)	Aricut across the Pedda Copakam Channel.	-- For turning the River Pundaroo into its right course.	- - - - -	830 - -	- - - - -	- - - - -	- - - - -
<i>Masulipatam District:</i>							
(11.)	Road and Bridges on the Road between Ellore and Masulipatam.	-- For making the passage of irrigating channels practicable for handies 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.)	Kristnaream Lime Killa.	-- For supplying lime for all the contemplated bridges on No. 6 Trunk Road.	- - - - -	143 - -	- - - - -	- - - - -	- - - - -
<b>SECOND DIVISION:</b>							
<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 12,500 rupees.
(14.)	Aricut across the Kundisiroo.	-- To afford a better supply of water to the tanks of Baulvole, Collecodooro 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 9 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 capacious reservoir, capable of irrigating 2,143 goorrees of land, the average revenue of which is 32,167 rupees, but of late years the average revenue derived from it is only about 18,000 rupees.
(16.)	Repair of the bank of the Abaanagram Tank in the Calagherry Talook.	- - - - -	- - - - -	2,065 - -	- - - - -	- - - - -	-- In 1847, this tank was breached in several places; this expenditure was therefore necessary to protect existing revenue.
(17.)	Survapully Talook and Bodelingumpand Cutcherries.	- - - - -	- - - - -	4,194 - -	- - - - -	- - - - -	-- Constructed of brick in chunam, with beams of teak wood, and palmynah rafters and reapers.

(18.) Construction of sluices and calingulals to different tanks.				6,234			
(19.) Completion of the new channel of supply to the Nellore tank.				2,316		Completed 1849	-- The revenue, which in 1844-45 was 10,883 rupees, was, in the season of its completion, 1848-49, 18,234 rupees.
THIRD DIVISION.							
Bellary:							
(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.
Canara:							
(21.) Munjerabad Ghaut and Road.	-- Constructed in lieu of the Bisy Ghaut Road.	-- Length, 30 miles; commenced 1842-43.		62,481		-- 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.
North Canara:							
(22.) Davamunny Ghaut and Road.		Length, 30 miles		42,819		June 1851	-- This line leaves the old Siroce and Neelcoond road in the Badghat of North Canara, about nine miles from Siroce, 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 complete, the roads above the ghaut will lead to it from the foot of the ghaut to Cooodapoor 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 Gurgawally. A branch line to Ancola, about 15 miles in length, is being surveyed.
(25.) Mangalore and Agoomby Road.		Length, 60 miles	-- Southern parts of the Nugger district of Mysore.	5,891			-- 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.				15,068	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.

(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.
<b>THIRD DIVISION—continued.</b>							
<i>North Canara—continued.</i>							
(27.) Cassergode and Soolea Road.	- - - - -	-- Length, 20 miles; commenced 1849-50.	Jaulsoor - - -	Rs. a. p. 1,845 - -	Rs. a. p. - - - -	Next working season	-- This is a branch line from the sea coast at Cassergode to Jaulsoor, near Soolea, about 12 miles from the foot of the Sirmupaje Ghaut; nearly half the road work has been completed. Like most of the other lines leading from the coast towards the ghauts, a good deal of thick jungle has to be cleared away, and many precipitous hills surmounted.
(28.) Oopenungdy and Pootoor 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 Oopenungady, and the rocky bed at other parts, carts will not be able to cross without being unloaded.
(29.) Yellapoor and Meondagode Road.	-- To connect the Darwar and Sirey lines with the top of the Arbyle Ghaut.	-- Length, 25 miles; commenced season 1849-50.	- - - - -	1,269 - -	- - - - -	- - - - -	-- The main obstacle on this line is the Baidi nullah, which will be bridged.
(30.) Yellapoor and Hallisai Road.	-- To connect the northern parts of the Soopan Talook with the head of the Arbyle Ghaut.	Length, 30 miles -	- - - - -	- - - - -	4,625 - -	-- Expected time of completion, and of April 1851.	-- The line twice crosses a large nullah, over which wooden bridges will be erected.
(31.) Honore Jetty - - -	-- As a breakwater to protect the custom-house and adjoining warehouses from encroachments of the sea.	- - - - -	- - - - -	1,706 - -	- - - - -	Completed 1848-49 -	-- 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 Ghaut at Somaiishwar to Bujjay.	-- Completed for the purpose of connecting the Agoomby Ghaut with the head of the navigation of the Nullah (Savourna Nuddy) which runs into the backwater two miles south of Bramahwar.	Length, 18 miles -	Bujjay - - -	4,479 - -	4,483 - -	-- Completed; date not given.	Estimates for bridges are being prepared.
(33.) Road from the foot of the Agoomby Ghaut, at Somaiishwar, to Halandee.	-- For the purpose of connecting the foot of the Agoomby Ghaut with the head of the navigation of the large nullahs running into the broad backwater east of Coondapeer.	Length, 15 miles -	Halandee - - -	2,274 - -	2,239 - -	-- Completed; date not given.	-- This road has been made practicable for carts throughout.
<b>FOURTH DIVISION.</b>							
<i>Chingleput:</i>							
(34.) Embankment, channel, and bridge across the Wotairy Nullah.	-- To divert the waters of the nullah into the Coum River, to prevent them, as hitherto, overflowing 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	<i>North Arcot:</i>									
(35.)	Cauvery Pank Tank repairs.		Length, 3½ miles							-- The bank of the tank is 3½ miles in length, reveted throughout, and is 12 feet high in the fields. The revenue collected from cultivation for the last 20 years amounts to 804,208 rupees; the repairs to 17,006 rupees.
(36.)	Goonemades Calligulah	-- 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 Otairy Calligulah.				2,009	2,400	-- Completed; date not stated.			-- The work has been almost entirely rebuilt; the wing wells are 28 feet high; the apron is entirely of dressed granite.
(38.)	Calavays Tank Calligulah.				1,589					-- The surplus water from the calligulah of this tank has an overfall of 11 feet; the apron, which is 5 feet thick of solid stone and shunam, with a good rear retaining wall, and covered with dressed granite, has been rebuilt in a most substantial manner.
SIXTH DIVISION.										
<i>Tanjore:</i>										
(39.)	Improving the Vaddavur River in the Paupansem and Manargoody Talooks.	For irrigation			5,905	6,408	-- Completed; date not stated.			-- The Vaddavur branches from the Ven- near River about 10 miles west of Tanjore, and irrigates an extent of land equal to 7,014 acres, bearing a revenue of 25,000 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 Narsinga Cauvery River in the Puttascottah Talook.	For irrigation purposes			2,100	2,100	Completed			-- This river branches from the Vellaur, and irrigates a great extent of land, principally on shrotrium tenure, but of which 1,123 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 Arnsalur River, on the road from Madras to Negapatam, and Mayaveram and Shealey.				5,032	6,505	Finished 1848-49			-- The bridge is of five oval arches of 30 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 shunam. The road is 24 feet wide, including the parapets.
(42.)	Bridge over the River Primulrajan on the same road.				6,785	7,044	-- Completed; date not given.			-- This bridge is of five oval arches of 26 feet span, and resembles the Arnsalur 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 Veerasholen River, on the road from Combaconum 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.

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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, &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.							
Tanjore—continued.							
(44.) Head sluice of the River Shemba Cauvery.	To regulate the supply of water-	Commenced 1849	- - - - -	Rt. a. p. 3,106 - -	Rs. a. p. 3,143 - -	Completed 1849	- - The Shemba Cauvery branches from the left bank of the Vennaar, four miles from Tanjore, and irrigates 3,993 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 superstructure are of brick in chunam.
(45.) Improvement of the Mercalcurry River.	- - To prevent the overflow of its banks in the rainy weather.	Commenced 1849	- - - - -	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 Valavanaur River.	- - For deepening and embanking its channel.	- - - - -	- - - - -	3,672 - -	- - - - -	- - - - -	- - The Valavanaur 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 Adrapatam. 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 Corayaar, 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 Cuddaveynur, 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	- - - - -	7,530 - -	7,867 - -	Completed 1849	- - The bridge is of three segmental arches of 35 and 39 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 Trimurajen, 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.	- - - - -	- - - - -	5,202 - -	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.

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(51.) Bridge over the River Moodicoondaun, on the same road.	- - - - -	- - - - -	- - - - -	5,841 - -	4,584 - -	Completed - -	- - Of similar construction with the former bridge, except that it is partly founded on walls.
(52.) Bridge over the River Poolour, in the Cadavaasal Talook, on the same road.	- - - - -	- - - - -	- - - - -	5,030 - -	5,844 - -	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.
(53.) Bridge over the Paumany River, on the road from Combaconum to Dinargody.	- - Constructed to complete the communication between these two very large towns.	Commenced 1849 -	- - - - -	5,842 - -	6,280 - -	Completed 1849 -	- - This bridge is of five oval arches of 30 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 main roads, subserves materially to the convenience of Government.
(54.) Beacon Column at Point Calimere.	- - To distinguish this important position, where the shoals render navigation peculiarly unsafe.	Commenced in 1848 -	- - - - -	2,733 - -	2,733 - -	Completed 1849 -	- - At this point the shoals render navigation peculiarly unsafe. The structure consists of a plain Doric shaft 80 feet high, but hollow, in order to be converted, if necessary, into a lighthouse; the foundations are of walls, and the material is brick in chunam, 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.
(55.) Beach defences at Tranquebar.	- - To protect the town of Tranquebar from encroachments of the sea.	- - - - -	- - - - -	5,059 - -	5,155 - -	Completed - -	- - This work is effected by means of groins and planking and pile work.
(56.) Improving the Port of Negapatam.	- - - - -	Commenced in 1840 -	- - - - -	9,000 - -	9,500 - -	Completed 1840 -	- - The work consisted of the excavation of a new channel for the Cuddavagur River to bring its whole volume of water to the sea at Negapatam, and the construction of a small and rude 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.
<i>Trichinopoly:</i>							
(57.) Improvement of the Weyacoondaun Channel.	- - Clearing 23 miles of the bed of the channel.	Length, 33 1/2 miles -	- - 17 1/2 miles eastward of Trichinopoly.	13,748 - -	14,090 - -	Completed - -	- - The channel is led off from the River Cauvery, 10 miles west of Trichinopoly, and flows, including sinuosities, 33 1/2 miles; it irrigates land to the extent of 9,281 acres. The channel has been deepened and widened, and the result is highly satisfactory.
(58.) Rebuilding of Dark's Bridge across the Weyacoondaun Channel.	- - In lieu of old bridge, destroyed.	- - - - -	Trichinopoly - -	2,656 - -	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 28 feet span; the width of the roadway is 40 feet. The effect on the channel has been highly beneficial.
(59.) Extending the Covellay Surplus Channel.	- - For increasing the facility of irrigation.	Commenced in 1848 -	- - - - -	2,718 - -	2,900 - -	Completed 1849 -	- - The drainage of 1,455 acres of irrigated land was much impeded by the high level at which it was discharged through the Covellay Channel into the Vennaur. The channel was prolonged a mile and a half, by which a fall of nearly four feet was gained; a dam was also constructed for the irrigation of the lands of Killloor.

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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, &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>SIXTH DIVISION—continued.</i>							
<i>Trichinopoly—continued.</i>							
(60.) Improving the Nadookuray Main Channel.	-- To prevent its being over-supplied from the Cauvery River.	- - - - -	- - - - -	8,701 - -	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 1/4 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 Rettenaguddy Anicut, and widening the Nattud Nullah Channel.	-- To facilitate the flow of water for irrigation.	- - - - -	- - - - -	10,048 - -	11,278 - -	Completed	-- This anicut is a work of native construction, (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 Nottud 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 anicut was much too confined and the nullah too narrow for the vast flood of water that occasionally passed. The addition to the anicut is a solid brick in ebunam 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 Kistnarayapoorum irrigating channel; another of one arch, 12 feet span, across the Chintalwady 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 Muddoor channel, near Wuddium; another, of 14 feet, over the same channel near Kottitullay; 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.	- - - - -	- - - - -	4,004 - -	5,113 - -	Completed	-- This channel branches from the north side of the Cauvery above the upper Coleroon Anicut, 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 Pungoony Channel.	- - For widening and deepening its channel.	Commenced in 1849 -	- - - - -	2,535 - -	2,581 - -	Completed 1849 -	- - The Pungoony Channel is a branch of the Peruvully, and acts both as a draining and irrigating channel. The land dependent on it is about 6,201 acres, producing a revenue of 22,162 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 9,000 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, 1,889 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 1,889 feet; the material throughout is brick in chunam. Average daily traffic in October 1850, foot passengers, 9,001; carts and carriages, 229; bullocks and cows, 484; horses, 30.
R 3	(68.) New road from Trichinopoly to Towagoody, the first stage to Tanjore.	- - - - -	- - April 1849; length, nine miles.	Towagoody - -	17,578 - -	- - - - -	- - - - -	- - The old line was very circuitous, and in bad order; a considerable extent of the land to be traversed is under irrigation; and the Wayscondann 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 20 feet span, across the Wayscondann; one bridge, of three arches, 20 feet span; one of three arches, of 16 feet, across the Coveily surplus channel; one bridge of three arches, of 12 feet, over the Killy Volkal (irrigating channel); a single arch of 24 feet span over the Retta Volkal; 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 Arrialoore.	- - - - -	- - - - -	- - - - -	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 Coolyaur, and one of three arches over the Pungoony. 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 Laulgoody.	- - 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.				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
(71.) Widening the Vuddavaur River, and forming a dike on its left bank in Manargoody Talook.	-- To improve the means of irrigation.	- - - - -	- - - - -	3,050 - -	3,050 - -	Completed - -	-- The Vuddavaur River branching from the Coleroon, supplies the great Veeranum tank, and irrigates about 40,000 acres, yielding a revenue of 2,00,000 rupees. The channel has been widened for a distance of 8½ 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 Goodalpaandy, in Chellumbrum Talook.	-- To force back a due proportion of the current into the southern branch.	- - - - -	- - - - -	3,230 - -	3,984 - -	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 Manargoody 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 Manargoody to Womampilloor.	-- 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 Khasai's channel, on the road between Manargoody and Chellumbrum.	To enlarge the waterway - -	Commenced in 1849 -	- - - - -	3,239 - -	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 Nundimangalum Ooposur River, on the road between Chellumbrum and Sheally.	-- To obviate the difficulty caused to the traffic.	Commenced in 1848 -	- - - - -	10,077 - -	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.

987.

## SEVENTH DIVISION.

(77.) Perambaldy 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 handies 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 Poylee Canal, to enable boats passing down the Cottiadly 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 18 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 parambes, 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. Tannour Canal. The work is progressing, but has been delayed by a bed of sand of the finest description, 30½ feet in depth, having been met with.

B 4

(79.) The Yemudmuckle 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 calingulah 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 1840, 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.		
<b>SEVENTH DIVISION—continued.</b>							
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 Neilgherries, 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 Hoosoor, 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 Annamullay 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.
<b>EIGHTH DIVISION.</b>							
<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 houses 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 fort stones (granite), backed and covered with brick in chunam.
85.) Improvement of road to, and construction of a bridge over the Ooparr River on Road No. 5.		-- Commenced 1846-47.			2,903 - -		-- The bridge is of three arches; centre arch 15 feet, and side arches each 12 feet.
86.) Bridge across the Head of Thiroopoovanam Channel.		Commenced 1846			2,316 - -		-- This bridge is of three arches, but was not quite completed.
87.) Repairs to Road No. 2, between Dindigul and Palney.				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 Chautrapetty and Causcumputty. The road is put in very good order.
89.) Panlaur River Waggonies.	-- With a view of straightening the course of the stream, and thereby preserving the tops and cultivation on the right bank of the Panlaur from injury during high freshes.	Commenced in 1847		1,990 - -			



(89.) 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.
(90.) 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 sand being removed from under it; the spaces filled up with rubble in cement.
(91.) Supplying channel of Vadukurray Tank from the Peracanal on the Vigay River.	- - - - -	Commenced in 1849 -	- - - - -	1,720 - -	- - - - -	- - - - -	-- 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.
(92.) Cotton Gin-house at Shevacusee, in the Sautoor Talook.	-- To accommodate two (2) 60 saw-gins worked by cattle, and three (3) hand-gins.	- - - - -	- - - - -	2,085 - -	2,000 - -	Completed - -	-- The materials and workmanship were favourably reported on.
(93.) Bridge across Nully Oday, on the high road from Madras to Quilon.	- - - - -	Commenced in 1840 -	- - - - -	2,987 - -	4,001 - -	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 bands.
(94.) Floorings to six of the arches of the Ambasamooduram bridge across the Tambrapourney river.	- - - - -	- - - - -	- - - - -	1,223 - -	1,205 - -	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.
(95.) Repairing high road No. 4, from Madras to Quilon, in the Octapadarum 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.
(96.) Reconstruction of the Thimmarajasmoodrum Cooteculanicut across the Monaccmoolanr.	-- Its reconstruction appeared likely to be less expensive in the long run than partial repairs.	- - - - -	- - - - -	2,480 - -	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.
(97.) Restoration of the Thirtangul Peracolum, in Sautoor 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.
(98.) Repair of the Thentheraparee Head Sluice, in Streevigoontum Talook.	- - - - -	- - - - -	- - - - -	2,700 - -	2,709 - -	-- Completed; date not given.	-- This work serves to supply water from the Tamtrapeor River to 1,070 cotays of land, yielding a revenue of 23,031 rupees annually. The foundations are of brick in chunnam, laid at the depth of nine feet on stiff clay.
(99.) Newmany anicut channel and tank in Sautoor Talook.	- - - - -	- - - - -	- - - - -	1,070 - -	1,272 - -	-- Completed; date not given.	-- The anicut was breached by freshes in 1847, to 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 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.
<b>EIGHTH DIVISION—continued.</b>							
<i>Madura—continued.</i>				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
(100.)	Cunnadieu Channel, from an annicut across the Tambrepoorny, in Shalmadevy Talook.	- - - - -	- - - - -	2,185 - -	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 Sootamullay Annicut, across the Tambrepoorny.	-- With the view to the preservation of existing revenue, which, in Fussy 1258, amounted to 63,943 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 Tentacorin.	-- The former Sea Custom-house having been found insufficient for the wants of the port of Tentacorin.	- - - - -	2,338 - -	2,339 - -	Completed	-- The former Sea Custom-house having been found insufficient for the wants of the port of Tentacorin, 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 Streevigoontam.	-- The want of a good cutcherry at Streevigoontam 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 Hindoovee 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 - - 5,868 - -	- - - - -	-- 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 Mardoer Annicut, on the Tambrepoorny 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.)	Faupancul Channel, from the Carspanuddee.	- - - - -	- - - - -	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 Sankermarcovil 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 :

YEAR.	BY CIVIL ENGINEER'S DEPARTMENT.	BY DEPARTMENT OF SUPER-INTENDENT OF ROADS.	TOTAL.
	<i>Rs.</i>	<i>Rs.</i>	<i>Rs.</i>
1848 - - - -	* 13,17,192	1,54,627	14,71,819
1849 - - - -	* 9,94,603	2,57,519	12,52,122

\* Exclusive of expenditure on the Godavery 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.

YEAR.	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 Secroor -	- - - - -	Length, 16 miles	Secroor - - - - -	<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 superintendance of the Road and Tank Department.
Ahmednugger to Mallignam -	- - - - -	Length, about 10 miles	Mallignam - - - - -	-- Executed by convict labour.	- - - - -	-- Finished in 1830, with the exception of drains and bridges, but including a very difficult and extended ghaut.	-- Constructed under the superintendance of the Road and Tank Department.
Akoordie New Road and Junction Lines.	-- The Ounde and Panowlie and Bhojapoor 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, 8 1/4 miles; sanctioned 25th November 1847.	- - - - -	-- Executed under contract.	For Roadway, 18,432 For Bridges } 28,420 and Nullahs } <u>Rs. 46,858</u>  Or, 5,612 rupees per mile.	- - - - -	-- The rate of cost of this road may be accounted moderats 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 Dapoorie 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 8,938 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 Wakes 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 5 1/2 or 6 feet. The parapet is 3 1/2 feet high, and the length of parapet from end to end, 71 feet. The top is coped with chupam 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.
Agra and Bombay Road—continued.				<i>Rs. a. p.</i>	<i>Rs. a. p.</i>		
The Wakee Nullah Bridge, No. 2.	- - - - -	- - - - -	- - - - -	4,120 - -	- - - - -	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 1845-40	- - - - -	3,004 10 8	- - - - -	-- Completed season 1846-47.	-- This bridge is composed of two semi-elliptical arches of 13 feet span each, and 8 feet rise. The breadth of the roadway between the parapets is 18 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 420 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 - - - -	- - - - -	1,33,991 - -	- - - - -	-- 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 Pharscherry 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, 43 miles; commenced 1840.	Nerbudda River	3,705 13 5	- - - - -	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 1840	-- It was satisfactorily completed shortly after the commencement of the past official year.



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Bombay, <i>via</i> Tannah and Bhowndy, to Nasrick, and Tully Ghant, on the Great Northern Road.	-- For the furtherance of trade with Candesh.	-- Length, Bombay to Bhowndy, 33 miles; Bhowndy to Nasrick, 78 miles. This road was constructed previously to 1836, and provision made for annual repairs.	Nasrick	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 Nasrick to Chandore.	-- Ditto -- ditto --	-- Length, 40 miles, which completes the line as far as the Candesh Collectorate. Sanctioned season 1835-36.	Chandore	--	-- See Nasrick 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. 2,354. 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 Kullum Bund.	-- Ditto -- ditto --	-- Sanctioned 15th February 1838.	-- ditto --	--	9,122 11 --	-- Completion not reported.	--
Bhore Ghaut Road	--	--	--	--	--	--	-- This road runs in a single line as far as Poona, where it receives, as in a centre, 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 Chimbhor; the Chimbhor 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 Chimbhor Causeway, and of the Trombay and Chimbhor 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.
Bhadre, repairing the Bundarah and Watercourse of.	For Irrigation	Season 1847-48	Bhadre	Rs. 2,903. 1. 11.	--	-- Completed season 1849.	-- The work was completed satisfactorily shortly after the commencement of the official year.
Basar, Peera, Sattara: constructing a tunnel at.	-- To connect the town of Sattara with the valley of the Oomoores River, a high ridge having previously interposed an effectual barrier to communication between them without a long detour.	Length, 192 feet	Oomoores Valley	--	Rs. 31,500. 14. 9., of which Rs. 13,709. 14. 9. were to be subscribed by the natives.	--	-- This tunnel was completely driven through the range joining Enteshwar and the port of Sattara into the Oomoores 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.—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>Rs. a. p.</i>	<i>Rs. a. p.</i>		
Chandore Ghaut Road	- - - - -	-- Length, 5 miles; was laid out, and provisions made for annual repairs, previously to the formation of the Road and Tank Department in 1836.	- - - - -	8,009 - -	- - - - -	- - - - -	-- This ghaut into the plain of Candish 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	Callian - -	-- 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 Pernu 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 3,118 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 26th December 1845.	-- Situated on the west of the town of Bapaln.	569 - -	569 - -	-- Completed season 1845-46.	- - - - -
Carrings: Construction of a Mamuldar's Cutcherry.	- - - - -	-- Sanctioned 30th April 1847.	At Oorun - -	- - - - -	-- 1,367 rupees by contract.	- - - - -	- - - - -
Chowdanah Bunderrah, 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 Bunderrah wall, and the supply of water has enabled the villagers to bring under wet cultivation land previously yielding monsoon crops only.
Cunnaasee Watercourse, improvements to the.	For purposes of irrigation -	Sanctioned 1848-40	Cunnaasee - -	4,061 - -	- - - - -	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 - -	- - - - -	- - - - -

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Chinch Khind, constructing a Bullock Track over the.	- - - - -	Length about 2½ miles	- - - - -	- - - - -	7,140	- - - - -	- - This khind is situated on the direct line of road between Neera and Wasee; and a line was marked out with a slope of 1 in 91, 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 Naggur, when the Bhogapoor line shall have been abandoned.	- - Sanctioned 25th November 1847.	- - - - -	- - - - -	- - Under contract for 6,360 rupees.	- - - - -	- - It is believed that during the fair season the greater portion of the traffic between these places will proceed by Poona and Kurradoos.
Daharoo Patna Bundarrah, improvement of the.	- - For a supply of water to the villagers.	Sanctioned in 1847-48	- On the Girna River bank.	8,719 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 Daharoo 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 Mahim Causeway, without incurring the delay often attendant upon the navigation around the southern extremity of the island.	- - - - -	- - - - -	- - - - -	84,230 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 1836-39,	- - In the Northern Concan.	5,058 3 4 of which sum 3,000 rupees were subscribed by the inhabitants.	- - - - -	- - Completed, season 1896-37.	- - This work was undertaken on petition of the inhabitants.
Gokhirwa Bridge, repair of the	- - Connects the island of Bassain with the main land.	- Sanctioned 31st March 1840.	- - - - -	- - - - -	Supplementary } 5,702 Estimate } 876 Rs. 6,578	- - - - -	- - This bridge was represented to be much required on account of its being on the high road from Bassain to Bhowndy, 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 Expense Incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
Jhorrah and Nusseerabad, completing the road between.	- - - - -	-- Length, 63 miles; sanctioned season 1847-48.	Nusseerabad - -	Rs. a. p. 15,161 - 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.
Kesseelee Bunder - - - -	- - - - -	-- Completed prior to 1840.	Kesseelee - - -	-- Actual cost of materials, and all the labour executed by convicts in 1839, Rs. 10,004. - 6.	-- By free labour, Rs. 45,653. 12.	-- Completed prior to 1840.	-
Kesseelee Tank, in the Poona 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 a 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.
Kesseelee; 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 1,020 rupees.	- - - - -	- - - - -	-- In the event of the junction between the new line by Akoorde and the Nuggur Road being effected across the Dapoorie and Holkar bridges, the newly constructed piece now reported on will also form part of the connecting line.

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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 - -	250 - -	-- Completed season 1845-46.	-- The outlay exceeded the estimate by 30 rupees, chiefly in consequence of work having been used instead of jungle-wood in the construction of the doors and windows.
Karlee, on the Panwell and Poona Mail Road: construction of new works.	-- For a travellers' bungalow, and a public wall.	-- Sanctioned season 1845-46.	Karlee - - - - -	-- For bungalow, 2,289 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.
Kandaneb Bundarrah, improvements to the.	For irrigation - - - - -	Sanctioned 1847-48 - - - - -	Kandaneb - - - - -	1,130 - 1	- - - - -	-- Completed season 1848-49.	-- This outlay has been lost to Government, as it appears that no work 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.
Khatghar Watercourse, improvements to the.	- - - - -	- - - - -	In Candelaish - - - - -	1,220 7	- - - - -	-- Completed season 1848-49.	- - - - -
Moral Bunder to Carangah - - - - -	- - - - -	Length, five miles - - - - -	- - - - -	- - - - -	- - - - -	- - - - -	-- This line existed previously to the formation of the Road and Tank Department in 1830, 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 ghaut on the line is the Kuondalbarree Ghaut, between Dhywell and Beoursurwarree, the slopes of which are in some parts 1 in 5.
Mhar: Clearing out of the Chowdar Tank.	For supply of water - - - - -	-- Commenced season 1846-47.	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.
Moodee Bundarrah, improvement to the.	For supply of water - - - - -	-- Commenced season 1846-47.	In Candelaish - - - - -	2,003 5 0	2,028 5 0	-- Completed season 1848-49.	-- The excess of expenditure was occasioned by modifications of the original plan.
Menadapoor Tank, prolongation of the retaining wall to the.	To strengthen it - - - - -	Length, 630 feet - - - - -	In Sattara - - - - -	- - - - -	8,540 - -	- - - - -	-- This will complete the retaining wall to a length of 630 feet, averaging from 6 to 43 feet high, and with the other repairs tend to the preservation of this old Mohammedan work.
Nagitora to Malibleshwar 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 6,325 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.

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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 Expense incurred.	Estimated Amount for Completion.	Probable Time of Completion.	REMARKS.
Chowdennare Tank, at Mhar	- - - - -	- - Sanctioned season 1844-45.	- - - - -	Rs. a. p.	Rs. a. p.	- - - - -	- - - - -
Nassick to Chandore, on the Great Northern Road.	- - Undertaken in continuation of the road which already existed from Bombay to Nassick, to open the flourishing district of Candesh.	- - Length, 43 miles, 2 furlongs, 91 yards; commenced in season 1837-38.	- - - - -	Rs. 37,884. - 10., viz. Road - 27,512 13 2 Bridges, 10,371 9 8  Average, } per } 874 14 2 mile - }	- - - - -	Completed in 1839	- - This road, in connexion with the one constructing through Candesh, reaches from Bombay to the Sindwar Pass in the Saut-poora range, and forms the whole Bombay portion of the road to Agra, while the traffic of Berar flows into it by the line of Oomergutty and Mulkapoor; 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 indiffer-ent order.
Nassick and Sinnur Road	- - To connect the towns of Nassick and Sinnur.	- - - - -	Sinnur - - - - -	- - Expended on the road, Rs. 15,832. 11. 11.	- - - - -	- - - - -	- - The portion between Sinnur and Sinda 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.
Narrungoon: Repairs to a Bridge across a nullah, between Scroor and Soopah.	- - - - -	Erected in 1842	Narrungoon - - - - -	- - - - -	- - - - -	- - - - -	- - This bridge was designed by Major Pent; 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.
Poona to Panwell Road, via Dhaporee, with old Branch, via Cund and Panowlee.	For traffic over the ghauts	- - Length, 88 miles; constructed, and provision made for annual repairs, previous to the formation of the Road and Tank Department in 1830.	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 ghauts between the Tull Ghaut on the north and the Parr 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 1830-40); 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 18,629 rupees, and of 1840-41 to 27,741 rupees, being an increase of 9,112 rupees. On this line is the Dapoorce 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. 13. 10.

987.			Miles. Poona to Seroor, 44 Seroor to Ah- } 31 } mednuggur - } Miles - - 75 }	Ahmednuggur -				
	Poona to Ahmednuggur -	-- In continuation of the Poona and Panvel lines to the northern stations.	This line had been laid out previously to 1836, but no provision had been made for annual repairs.		-- 30,181 rupees had been laid out on about 17 1/2 miles of the road prior to 1836, but the total expenditure on the line is not known.		-- 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.	-- Partly to 1836 this line had been laid out and kept up, partly under civilians, partly under contract, and partly under engineers; the Shikrapora bridge was completed in season 1842-43, at an expenditure of Rs. 22,433. 9. 6.; the Muragaoon bridge, which had been washed away, was rebuilt in season 1843-44, at a cost of 1,700 rupees; it has four waterways, 12 feet each.
	Penn to Kussoolee Road, at the bottom of the Bore Ghaut.	-- Is expected to advance in an extraordinary degree the salt trade carried on from Penn with the interior of India, by introducing the use of carts instead of bullock commerce.	-- Length 17 1/2; commenced in October 1836.	-- From Penn, in the Northern Concan, to Kussoolee, at the foot of the Bore Ghaut.	6,700 9 5	8,025 - -	-- Completed in June 1837.	
	Poona to Sholapoor	-- To open out the valuable Basee, cotton trade, and to insure communication for troops and guns with that military station during the rainy season.	-- Length, 149 miles; surveyed in season 1835-36.			1,27,806 8 8		-- The portion of this road through the cantonment of Poona was specially, in 1845-46, repaired by contract, for 8,336 rupees; estimates were also prepared for extending this road for some distance towards Hunsceseer, crossing the Nulla which flows past the horse artillery lines by a bridge.
	Patus and Indapoor Road	-- Undertaken for the purpose of furnishing food and employment to the distressed population of the Bheemturry and Indapoor Districts, who were represented to be suffering severely, in consequence of a succession of unfavourable seasons.	-- Length, 44 miles, 3 furlongs; sanctioned season 1845-46.		-- 1,42,284 rupees expended to 1847, of which 1,23,208 rupees solely on labour and its superintendence.			-- The superintendence of this work was entrusted to Serjeant Overseer Armistead, whose constant and severe attacks of ill-health at the Thull Ghaut had incapacitated him for further employment in that neighbourhood, except at the risk of life; the number of people daily employed on the line averaged, in June 1846, six thousand four hundred and seventy (6,470); the workmanship on this line was reported in 1847 to be inferior to none in the Bombay Presidency.
	Poona to the Neera Bridge		-- Length, 40 miles 6 furlongs; this line was in existence previously to the formation of the Road and Tank Department in 1836, but no provision had been made for annual repairs.		-- The expenditure of Rs. 2,075. 12a. 10p. was reported to season 1843-44.			-- (1830). 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.
	Poona to Narrangaum		-- Length, 45 miles 7 furlongs; this road existed previously to the formation of the Road and Tank Department in 1836, but no provision had been made for annual repairs.	Narrangaum				-- In 1840-41 this road was represented to be in good repair, but as it crossed so many unbridged 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 Belgauun and Nassick.

(continued)





987.	Ratangherry Collectorate: Construction of road leading into Chiploon.	-- To perfect the communication between the town of Chiploon and the Koombharce Ghaut.	-- Length, 3 miles; sanctioned season 1845-46.	Chiploon	2,700		-- Completed season 1845-46.	This cross road was very defective.
	Rawere and Dhurungam Road		Length, 54 miles					-- This is a fair-weather road, passing mostly over black soil; it crosses the Taptee and Geerna, both large rivers with very high banks.
	Ratras 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 1840-47	Poona		40,705		-- The work to be performed includes the removal of 2,000,000 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 end Colsetta Hunder, of 21 1/2 miles between Bandors and Gherabunder and Sauksee, and an area of 5 1/2 miles between Trombay and Sion Chowkile; 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 Parwell 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; wherens with such material, the inclination should have been as much as 6 to 1 to ensure stability.
	Salsette: Construction of a bridge across a nullah near the 21st mile on the road to the Chimboor 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 Eria Paria.	-- In lieu of one which was represented by Sir Jamesjee Jejeebhoy 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 Jejeebhoy 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 Candeleish.	Rs. a. p. 683 3 5	- - - - -	- - 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.
Seerwarra: Repairs, &c. to the centre Bundarrah and Watercourse.	For irrigation purposes - -	Season 1848-49 -	In Candeleish - -	- - - - -	- - - - -	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.
Seerumcesee Bundarrah, constructing the.	For purposes of irrigation - -	Season 1847-48 -	In Candeleish - -	9,047 12 2	- - - - -	Completed May 1849	- - It is the first bundarrah constructed entirely by the Engineer Department. The arrangement of the masonry &c. was much the same as in modifications of old existing bundarrabs, 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 1/2 miles.	- - This is a part of the Sattara and Wace Road, a direct Sattara and Poona Road.	- - Season 1850-51; length from Sattara to the Limb Khind four miles, beyond the Limb Khind 3 1/2 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 Nuthoo, Inamdar of Pancharwar, at his own expense; the second part has been bridged and drained, the inamdars of the Wace 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 Khirana River, the Kamalkee Ghaut, the Neera River, the Katriz Ghaut. Travellers' bungalows have been erected and finished at Punderpoor, Wangi, Poesusnoice, and Kurar; other bungalows are much required, and will be constructed.
Sattara, improvements in the town of.	- - The road in the Pratab 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 Samvar and Pratab 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 Shukarwar Petta and the Genda Mall lines. A vegetable market formed out of the old engineers' stores, yielding a yearly rent of 375 rupees, and every stall rented and occupied.						

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Tannah Causeway	-- To unite the island of Balsetta to the continent of India.	Suggested 1836-37			-- Original estimate, 30,000 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 1845-40, 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 1,16,783 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.	1,38,500	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."
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 un-
						answerable 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 1845-40. It has been found that the entire distance requiring to be so defended is about 8 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 in toto, 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	5,070	-- Completed in March 1846.	
Toka: Construction of a new rafter, or decked double boat.	-- For crossing the Odavery River.	-- Sanctioned season 1845-46.	-- Toka on the Nag-poor dawk line.	2,434	2,112	-- Completed season 1845-46.	

(continued)

No. 12.—TABULAR STATEMENT of the Principal Works executed by the Dombay 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.
Tannah; Construction of a new hospital.	For a detachment hospital	- - Sanctioned 19th 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 dispensa rooms and out-offices.
Wargzon Bundarrabs in the Ahmednaggar district.	For irrigation - - -	- - These bundarrabs are three in number; sanctioned 1836-37.	- - In the Sunour Pargannah.	- - Two bundarrabs, 64 rupees.	236 - - The Gaom was to contribute 150 rupees, and a Jagheerdar 100 rupees.	- - - - -	- - 377 beegahs and four pands are watered from these bunds, assisted by a few wells.
Werrunder Ghant to Mhar, constructing a bullock track over the.	- - - - -	Commenced 1850-51	Mhar - - - - -	- - - - -	17,600 - - has been raised for the purpose of this work.	- - - - -	- - As a great part of the proposed line would pass through the Suchew 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 35,000 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, Candelah.			By Civil Engineer, Settara.			TOTAL.						
	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.	Rs.	a.	p.				
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*	-	-	1,07,037	8	10	1,64,091	14	6	64,709	5	5	3,76,200	5	8	54,439	11	2	-	-	-	-	-	-	-	10,82,354	10	5
Season 1846-47	3,14,795	13	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3,09,179	15	8
Season 1847-48	3,09,179	15	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5,87,210	14	8
Season 1848-49	2,83,158	8	1	42,582	15	8	1,60,466	12	-	51,002	10	11	-	-	-	-	-	-	-	-	-	-	-	-	-	6,80,124	8	5
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	8	5	
Season 1850-51	3,81,893	4	4	50,315	10	2	3,99,559	11	5	43,293	10	7	4,610	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																						40,83,276	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.
Bengal - -	- - Known expenditure on works under the general management of the Military Board, as per Preparatory Report, dated 8th September 1840 - -	<i>Rs.</i> 1,39,64,099
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 -	1,25,56,293
Bombay - -	- - Amount of expenditure reported by the Road and Tank Department, from its formation in 1836-37 to 1850-51, inclusive - -	49,88,277
	<i>Rs.</i>	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 - }	<i>Rs.</i> 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 Godavary Anicut.

Considerable progress has been made in the several works alluded to at page 208 of the Printed Parliamentary Paper, No. 622 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 subsoil 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 reprojecting, 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

- \* 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
10th May (No. 1) 1849	- p. 22 to 53	29th July (No. 2) "	- p. 23 to 66
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 PUNJAB.

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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. 232 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 Shahpooor, 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 Sheikapooora (between which place and Lahore a road was previously in course of construction) to meet the above road at Shahpooor, 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 Kur-  
rachee.

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 Chinny 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 Annicut; 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.

Cochrane's Canal. 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 Doogoorauzapatam. The subject is placed more fully before us in the letters from the Government of Fort St. George, noted in the margin.

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.

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 Doogoorauzapatam, 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 Doogoorauzapatam, 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, &amp;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 1,30,094 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 Sindé 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 Sindé, 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.

#### PROGRESS OF THE HINDOOSTAN AND THIBET ROAD.

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.

London, 18 February 1853.

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

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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  $3\frac{1}{2}$  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 25th February (No. 13) 1851.

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

Expenditure of 2,000 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 Tunkariá, 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 depot 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.)

East India House,  
17 August 1853.

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

**PUBLIC WORKS (INDIA).**

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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.

(*Mr. Bright.*)

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

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[*Price 1s. 10d.*]

987.

*Under 16 oz.*