1939.

VICTORIA

COUNTRY ROADS BOARD.

TWENTY-SIXTH ANNUAL REPORT

FOR YEAR ENDED 30TH JUNE, 1939.

PRESENTED TO BOTH HOUSES OF PARLIAMENT PURSUANT TO ACT No. 3662.

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COUNTRY ROADS BOARD.

TWENTY-SIXTH ANNUAL REPORT.

Exhibition Buildings,
Carlton, N.3,
10th November, 1939.

The Honorable Sir George L. Goudie, K.B., M.L.C.,
Minister of Public Works,
Melbourne.

SIR,

In accordance with the requirements of Section 96 of the Country Roads Act (No. 3662), the Board has the honour to submit to you for presentation to Parliament the report of its proceedings for the year ended 30th June, 1939, together with the report of the Chief Engineer on matters of technical interest.

FINANCE.

From the total amount of £500,000 authorized for expenditure from loan funds under Acts Nos. 4188, 4414 and 4498, £57,866 was expended during the year on metropolitan roads and bridges, leaving a balance of £249,552 of the total authorization as at 1st July, 1939.

The gross revenue from motor registration fees and fines paid into the Country Roads Roads Board Fund was £1,800,575, representing an increase of £81,584 over the amount received during the previous year. The cost of collection and refunds totalled £109,613, so that the nett revenue was £1,690,962, a nett increase of £82,083 over last year's figures.

The total expenditure on the maintenance of State highways, main roads, tourists' roads and Murray River bridges and punts amounted to £1,205,069, compared with £1,132,492 for the year ended 30th June, 1938, representing an increase of £72,577.

Under the Federal Aid Roads Agreement, which was renewed in November, 1937, a sum of £716,109 was received, of which £166,424 represents expenditure on main roads, £434,928 on works of a developmental character, £35,268 on the construction of tourists' roads, and the balance of £131,147 on the maintenance of roads previously constructed from Federal Aid funds, restoring and rebuilding bridges and assisting municipalities in the maintenance of main and developmental roads constructed from loan and Federal funds.

The sum of £10,390 was set aside from funds available under the new Federal Aid Roads and Works Agreement, together with £7,297 brought forward from the previous year, for the maintenance and repair of public roads adjoining or approaching properties of the Commonwealth within the State of Victoria ; of this £13,321 was expended during the year and the balance of £4,366 was carried forward to the new financial year.

Many important works were carried out in various parts of the State from the provision of £42,020 made from Unemployment Relief funds, supplemented by an amount of £5,595 from the Country Roads Board Fund and Federal Aid funds. The total expenditure for the year was £60,256, and £8,680 was carried forward to the next financial year.

By the adoption of a continuous policy of controlling expenditure, a firm basis for the improvement of the road system has been established and expenditure on unimportant roads regardless of cost or their relation to the main system has been avoided.

STATE HIGHWAYS.

Owing to abnormally dry weather conditions up to February last, and subsequent bountiful rains which ended a long period of severe drought in pastoral and agricultural districts of the State, certain works on State highways, particularly the sealing of pavements, were restricted.

Last year's work comprised reconditioning and surfacing with bitumen of 59·2 miles as against 76 miles during the previous year. Out of a total length of 2,633 miles of highways, 1,541 miles have now been sealed with bitumen, but much remains to be done in improving sections, particularly on the Henty Highway which was recently declared a State highway.

The new highway extends from Mildura, through Warracknabeal, Horsham, Hamilton to Portland, for a distance of 263 miles. This highway will in the near future be a very important means of communication, connecting as it does with the Prince's Highway, the Western Highway, the Calder Highway and the Murray Valley Highway, besides a number of important main and feeder roads running east and west. The highway also connects with important roads in New South Wales and is destined to carry a large amount of interstate traffic.

The new highway was declared in August, 1938, and despite weather conditions, good progress was made in improving it. Unmade sections totalling 6 miles were constructed, and 41 miles were reconditioned and placed in trafficable order. A total amount of £18,219 was expended on this highway to the 30th June.

Other roads which were also declared as State highways during the year were the main road extending from Morwell through Boolarra to Welshpool, and now known as the Midland Highway, and an extension of the South Gippsland Highway from Yarram to Foster. The recently declared Midland Highway is intended to be linked up in the future with the existing highway between Benalla and Mansfield.

In conformity with the scheme laid down in previous years, last year's works formed part of the stage construction programme, by which system lower types of construction are first carried out, with a view to their being gradually developed in stages to higher types of surfacing as increase in traffic demands. The organized maintenance operations assure reasonably good upkeep of the highways even though traffic is considerably increased. This policy allows of the annual forecast of expenditure being made with some degree of accuracy.

The Board followed its usual practice of taking a census of traffic on all State highways and certain main roads, with a view to securing accurate data relating to traffic. The census was obtained for a period of seven days from the 10th to the 16th March, 1939, and represented a normal count for the summer months, with the exception of that taken on Sunday, the 12th March, when wet weather greatly affected the count for the day, particularly in the metropolitan area and on the Main Healesville and Point Nepean Roads.

Traffic on State highways which is the highest on record showed an increase of 18·3 per cent. on the figures for 1938, but horse drawn vehicles whilst reflecting the general increase of traffic on State highways again showed a very small percentage decrease, namely 0·6 per cent., as compared with 1938.

The percentage of solid tyred vehicles is still very low, only 113 or 0·8 per cent. being recorded on State highways.

Both heavy and light trucks increased in number, the increase in heavy trucks far exceeding in number the increase in light trucks, as shown by the following figures :—

—	1938.	1939.	Increase.	Percentage Increase.
				%
Heavy trucks	18,190	21,730	3,540	19·5
Light trucks	10,607	11,220	613	5·8
Total Number of trucks	28,797	32,950	4,153	14·4

A heavy truck is defined as one having a load capacity of over 2 tons and a light truck as one having a load capacity of 2 tons or less.

The following figures show a comparison between heavy and light trucks recorded on State highways during the last six years:—

—	1934.	1935.	1936.	1937.	1938.	1939.
	%	%	%	%	%	%
Heavy trucks	43·3	47·1	58·1	61·3	63·2	65·9
Light trucks	56·7	52·9	41·9	38·7	36·8	34·1

The change in the type of truck now being used is very apparent. In 1934, the percentage of light trucks far exceeded that of heavy, whilst in 1939 the position is reversed, the difference being 13·4 per cent. in favour of light trucks in 1934, and 21·8 per cent. in favour of heavy trucks in 1939.

The number of trucks recorded in 1939 is more than twice that of 1934, and apparently light trucks are rapidly being replaced by vehicles having a much higher rated capacity.

The taking of the census disclosed the fact that during the past five years, general traffic has increased by 350 per cent.; and that a considerable proportion of the traffic travels at night particularly in the inlying areas.

It is interesting to record that one of the greatest intensities of traffic ever noted by the Board was recorded on the Point Nepean Road at Edithvale on the evening of January 30th, 1939, when at 7 p.m. vehicles were travelling towards Melbourne at the rate of 2,400 per hour. A high rate was maintained throughout the evening, having dropped only to 2,100 per hour at 9 p.m.

The following figures obtained from the Motor Registration Branch of the Police Department show the increase or decrease in the registration of all types of motor vehicles:—

—	For Twelve Months ended 31st January, 1938.	For Twelve Months ended 31st January, 1939.	Increase.	Decrease.	Percentage Increase.	Percentage Decrease.
Private cars	139,017	147,948	9,831	..	6·4	..
Commercial vehicles	74,635	80,038	5,403	..	7·2	..
Hire cars	2,029	2,225	196	..	9·7	..
Motor cycles	27,117	27,049	..	68	..	·03
Total (all vehicles)	242,798	257,260	15,530	68	5·8	·03

An important phase of highway work is the reconstruction of worn out or obsolete sections. The Board is faced each year with an extensive mileage of pavements which must be either repaired, resurfaced or completely reconstructed. This work, which involves the employment of a trained organization and the use of considerable machinery and plant, is the largest activity on the highways. Employment is greater and more permanent, and more equipment and materials are used, than for new construction.

Owing to the existence of severe drought conditions throughout Victoria during the major portion of the year, increased maintenance of sealed pavements was found necessary, even on sections which had not given any trouble for many years. In addition, the dry weather conditions caused considerable delay in carrying out the full programme of sealing, and in consequence of heavy rains since February last, much of the work had to be held over till next season.

For this reason the general programme of resheeting the highways has proceeded rather slowly, but during the current year it is proposed to resheet those sections which cannot be longer delayed without serious detriment.

Owing to the increase in the number of motor vehicles and the tendency to greater speed, it can be said that the traffic burden on the highways is not less than three times that of five years ago. It is stated that the modern motor car travels at approximately 20 per cent. greater speed, develops 24 per cent. more horse power and gives 50 per cent. greater mileage per gallon than the car of even 10 years ago. For roads of adequate width and surface sealed, the effect

of this increase in traffic and speed on maintenance costs is not high, but on the unsealed roads and on sections of highways sealed to a narrow width, this extra traffic burden undoubtedly necessitates much higher maintenance costs, particularly as the growing speed of traffic has a very marked effect.

The mileage of sealing completed during the year was 164·0, including 59·2 miles of first seal and 104·8 miles of reseal. The total expenditure on first seals was £24,483 and on resealing £47,180.

The extensions of the first seal were on sections of the highways where it was undoubtedly economical to seal to save maintenance costs and loss of material. Owing to the cheapness of limestone, it was possible to maintain lengths of the Calder Highway in fair order without sealing. However, owing to the increasing traffic and the difficulty of maintaining limestone in good condition, the Board proposes to proceed with sealing during the present financial year.

The mileages treated on the several highways were as follows:—

Prince's Highway West between Footscray and the South Australian border	27·5	miles
Prince's Highway East between Oakleigh and the New South Wales border	20·7	,,
Western Highway between Footscray and the South Australian border	47·1	,,
Calder Highway between Essendon and Mildura	24·9	,,
Hume Highway between Coburg and Albury	1·0	,,
Omeo Highway between Bairnsdale and Tallangatta	0·8	,,
Murray Valley Highway between Corryong and Echuca	11·1	,,
Murray Valley Highway between Echuca and Swan Hill	9·6	,,
South Gippsland Highway between Dandenong and Nyora	4·1	,,
South Gippsland Highway between Sale and Orbost	3·3	,,
Midland Highway between Geelong and Ballarat	0·5	,,
Midland Highway between Shepparton and Mansfield	4·6	,,
Henty Highway between Portland and the Murray Valley Highway	8·8	,,
Total	164·0	,,

With the completion of the above work the total mileage of bitumen surfaced State highways is now 1,541 of the total length of 2,633 miles.

The value of sealing as a safeguard against damage by flood water was exemplified during the floods which occurred during the latter part of the year. Little or no damage was caused to sealed sections of State highways subject to floods, even where severe flooding occurred such as on the Calder Highway south of Charlton, which was first sealed in December, 1933, and has had no further reseal since that date, in spite of the fact that this section of highway was covered to a depth of up to 2 feet 6 inches of water for approximately 48 hours.

With the improved highway system that has been created, it is imperative that adequate and organized maintenance be carried out continuously. It must be realized that the highways are subjected daily to the wear and tear of ordinary usage by thousands of motor vehicles and the need of constant maintenance activity to repair the damage thus caused is now generally appreciated. The construction in recent years of many miles of the lighter, low-cost type of pavements calls for continuous maintenance.

Many sections of the improved highways of to-day which have been built up by the Board from year to year over the past twelve years require partial reconstruction, as the originally constructed mileages are now too light for present traffic requirements. In the initial stages, the work on certain of the State highways consisted of light construction for the reason that it met the requirements of traffic at the time, but as the traffic grew it became necessary to strengthen and widen the pavements as funds were available. In that way adequate service was given and at a later date opportunity was taken to extend the mileage as quickly as possible. To meet modern demands and to promote safety and economy, the necessity now exists for certain annual reconstruction as traffic loading increases and a considerable length of heavy maintenance work of this character extending over a distance of 61.7 miles of the highways was completed during last financial year. The highways are thus being kept up to a reasonable standard of utility and safety.

In previous reports of the Board attention has been called to the need of preserving the natural rights-of-way on each side of the road pavement. Although general improvement has taken place on the more important roads, there is still a lack of appreciation of the necessity of

avoiding scarring of the roadsides by unsightly borrow pits and excavations which may subsequently cause erosion. It is not yet fully realized that the problem of roadside improvement involves the preservation of the natural landscape which should not under any circumstances be allowed to become an eyesore through neglect to exercise reasonable care.

From time to time, as funds are available, expenditure is incurred in clearing scrub and dead timber from the highways. This work is a valuable contribution in providing suitable passages for stock, so keeping them off the pavements, and thereby increasing the safety of the highways. In addition, fire risk to adjoining properties is reduced. The major portion of these funds are expended on labour and allow of much needed work being done.

By stage construction 61·7 miles of highways were reconditioned, existing surfaces improved, and general maintenance by constant patrolling was carried out over 2,633 miles at a cost of £118,111.

Progressive improvements by realigning, widening, improvement of curves and reconstruction to meet modern traffic requirements have added considerably to the utility and safety of the highways.

Continued attention has been given to the shoulders on either side of the highways as a means of introducing greater safety into the roadway and coping with the growing volume of traffic. By widening the shoulders and surfacing them with gravel, crushed rock, or other suitable materials the traffic capacity of the highway is being considerably increased.

By re-organization of the patrols on the Western Highway and the establishing of a new truck patrol at Nhill to eliminate the separate patrolmen in the Shires of Lowan and Kaniva a considerable saving in maintenance costs was effected. Although the scheme was not brought into operation until the end of September, 1938, a total saving of £1,500 per annum will be effected over the average expenditure of the three previous years.

The full length of the highway extending from Ballarat to the South Australian border has now a sealed pavement, the last section of the work having been completed during the past financial year.

Re-arrangement of the truck patrols' sections on the Murray Valley and Calder Highways was also made with a view to economy and more effective maintenance, whilst on the newly declared sections of the Henty Highway, the Midland Highway between Morwell and Port Welshpool and the extension of the South Gippsland Highway between Yarram and Foster, maintenance truck patrols were established.

The elimination of dangerous curves on State highways was among the major works completed during the year with a view to meeting the requirements of present day traffic and introducing further safety into the highways.

Owing to the presence of wandering stock on many of the highways the Board has been compelled to take action against the owners for allowing the stock to remain on the highways without some person being in attendance. Several accidents have been caused through this practice, particularly at night, and in spite of proceedings having been taken the practice still continues, especially on the Western Highway.

In addition to presenting considerable danger, straying stock have caused damage to guide posts and mile posts, necessitating frequent attention by the patrolmen in keeping them in position and repainting.

Following a period of dry weather serious floods occurred in April last, resulting in considerable damage to roads and bridges in the central, northern and north-western districts of the State. In consequence of the dried-up condition of the streams and watercourses, large quantities of debris were carried downstream by the flood waters, causing obstruction in the streams with resultant scouring. The flood waters of the Avoca River, Yeungroon Creek, Marmal Creek and Tyrell Creek, near Charlton, crossing the Calder Highway over a long length, caused considerable damage to the shoulders and drains. The cost of repairing the damage amounted to £641, portion of which was expended during the current financial year. The Calder Highway at Kyneton and near Culgoa was rendered impassable. The Hume Highway one mile north of Seymour, and between Wangaratta and Wangaratta North was blocked by the flood waters, and the Murray Valley Highway near Nathalia was closed to traffic.

During floods constant watch is kept by the Board's patrolmen and measures are taken as far as possible to prevent damage to roads and bridges. As a result very little damage is caused to culverts and bridges, most of those affected being old structures due for renewal.

The total expenditure on repairing flood damage on State highways during last year amounted to £1,461.

To facilitate traffic and avoid the present delays at the level crossing, an overhead bridge was commenced last year over the railway on the Hume Highway at Broadford. The Railways Construction Branch will erect the bridge and the construction of the approaches is being carried out by the Board with modern earth removing plant, the total estimated cost of the work being £19,685, of which £9,685 will be borne by the Board and £10,000 by the Railways Department. With the completion of the new structure a bad alignment in the road will be eliminated.

A number of bridges on State highways was widened so that the roadway width of the structures carrying heavy traffic is 4 feet wider than the road pavement. The more important of these structures are referred to under the heading of "Bridges." Other narrow bridges and culverts are being widened from time to time as funds permit. In addition handrails are being set back from the kerbs to avoid as far as possible the possibility of being damaged by motor vehicles.

During last financial year continuous traffic lines were extended on State highways to a total distance of 280 miles. The object of these lines is to indicate to the drivers of motor vehicles that they are to keep to the left of the single line excepting when overtaking another vehicle travelling in the same direction, and in the case of the double lines on curves that the traveller must not in any circumstances cross these lines.

Regulations have now been made by the Governor-in-Council under Act No. 4585 for regulating traffic on State highways, main roads and tourists' roads in relation to the lines and prescribing penalties for breaches of the regulations.

In addition to general maintenance which included attention to drainage, bridges and culverts and patching with suitable materials, the more important works of improvement and restoration carried out on the several State highways under the Board's District Engineers were as follow :—

Bairnsdale District.

A section of the Prince's Highway comprising 209·36 miles under the jurisdiction of the District Engineer at Bairnsdale was maintained throughout by continuous patrol. The highway has been sealed from Rosedale to Nowa Nowa and a strip of 12 miles is being reconditioned in preparation for bitumen sealing to connect up with the sealed surface as far as Orbost.

On the Omeo Highway the alignment was improved and a gravel surface prepared for bituminous treatment from Sarsfield towards Bruthen. In the Omeo Shire important improvement works were carried out, the principal work being south from Doctor's Flat where 3 miles of crooked, narrow roadway was brought up to the desired standard.

The surface of the Bonang Highway was improved by widening, super-elevating and top-dressing, and a survey was completed for a new high level bridge at Sardine Creek.

Improvements were carried out on the South Gippsland Highway by reconditioning and sealing southerly from Longford for a distance of 3 miles and continuing improvements to the gravel surface in preparation for further bituminous treatment.

Benalla District.

Besides continuous patrol maintenance, general improvements were carried out on the Hume Highway, including 4·79 miles of road-mix seal, the construction of a reinforced concrete bridge between Violet Town and Baddaginnie, widening of the bridge over Castle Creek at Euroa, and the reconstruction of curves near Seymour and Avenel. The widened bridge over Castle Creek is illustrated in plate No. 1.

Plate No. 1.—Showing widened bridge over Castle Creek on the Hume Highway.

Three narrow concrete bridges were widened between Benalla and Winton and a stock route provided between Wodonga and Albury, which involved the construction of two timber bridges, one over the Wodonga Creek and the other over Flannagan's Creek.

A footbridge was erected on the bridge over the Frying Pan Creek at Barnawartha.

To check erosion which had taken place on the roadsides a considerable amount of work was carried out during the year.

The section of the Murray Valley Highway between Wodonga and the Upper Murray Shire boundary was maintained by a truck patrol and power grader, as well as the section between Barnawartha and McCoy's Bridge.

Considerable improvement was effected by placing 4·39 miles of roadmix seal, constructing two new curves west of Rutherglen, widening of the bridge over the Indigo Creek and forming and gravelling Telford Street, which forms part of the Murray Valley Highway through the town of Yarrawonga.

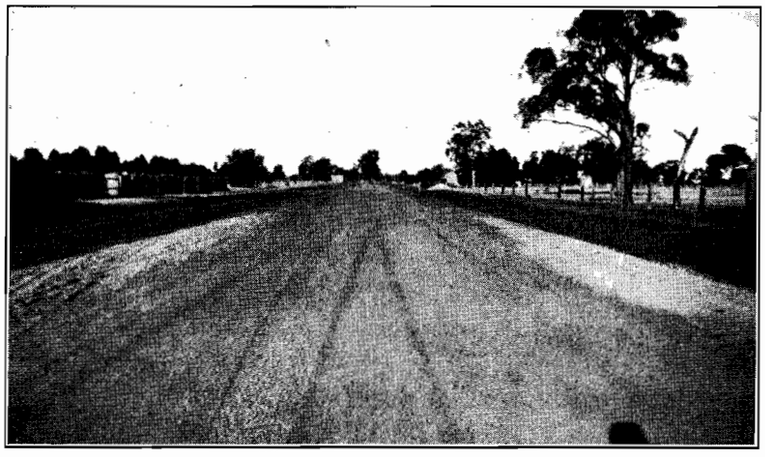


Plate No. 2.—Showing improvements to Telford-street in the Shire of Yarrawonga.

Sealing was completed over a length of ·92 miles through the townships of Granya and Strathmerton.

In addition to continuous maintenance between Shepparton and Maindample turn-off, marked improvement was effected on the Midland Highway by a roadmix seal over 8·18 miles and by reconstructing and resheeting with sand 3·70 miles.

Bendigo District.

On the Calder Highway, west of Mittyack, a length of 1·32 miles of limestone sheeting completed the surfacing of the highway to Ouyen. Light sheeting with limestone was completed on the only unsurfaced sections of the Murray Valley Highway between Boundary Bend and Lake Powell. The whole length of the highway in the Bendigo district is now an all-weather road.

On the Murray Valley Highway, east of Echuca the old narrow and roughly sealed water-bound macadam was resheeted and sealed.

On the newly declared Henty Highway improvements to the riding qualities of the limestone lengths and to the unformed track were carried out between Lascelles and Nunga.

The existing sealed pavements on the Calder Highway were extended from Berriwillock to Sea Lake over a distance of 10 miles, and southerly from Yatpool for a length of 8¼ miles.

Of the 357·49 miles between Melbourne and Mildura, the pavement is now sealed for a length of 247·99 miles.

On the Murray Valley Highway, the seal was extended 7·56 miles easterly from Echuca towards Wyuna and 7·4 miles northerly from Nyah. This highway is now sealed for a length of 127·71 miles between the Goulburn River at McCoy's Bridge and the turn-off to Tooleybuc near Piangil.

Of the 650 miles of highways in the Bendigo District 339 miles have been sealed.

Roadmix seals were carried out on the Calder Highway over a length of 2·28 miles near Redcliffs, and on the Murray Valley Highway over 13·92 miles between Echuca and Turrumberry, 17.80 miles between Kerang and Tresco, and over 12·45 miles from Swan Hill northerly.

Owing to the volume of traffic on the Calder Highway between Castlemaine and Bendigo, he white traffic line was extended to cover this length of the highway. Guide posts were erected on curves on all highways, with the exception of some curves on the Henty Highway, Sturt Highway and the Murray Valley Highway, and these will be dealt with as soon as possible. On sealed sections of highways, guide posts have been erected at 500 feet intervals.

Curves of short radius with inadequate super-elevation were replaced by improved curves on the Calder Highway near the Taradale cemetery, on the approaches to Bul Bul Creek north of Bridgewater, and at the railway crossing near Inglewood.

Owing to the proposed early extension of sealing north of Sea Lake, curves with safe alignment and super-elevation were constructed to replace those short radius curves between Sea Lake and Nyarrin turn-off. Realignment of the four worst curves south of Hattah was completed.

As the vertical visibility over many sandhills on the Calder Highway north of Sea Lake was restricted, regrading was carried out on ten of the sandhills south of Nandaly, and on four sandhills south of Trinita. With the completion of regrading of 30 sandhills in the spring of 1939, 92 sandhills out of a total of 119 between Nyarrin turn-off and Trinita will have been completed.

In the township of Taradale on the Calder Highway, a footbridge was constructed over Back Creek to enable the crossing of the creek to be made in safety without approaching near to the highway formation.

On the Murray Valley Highway, reconstruction on improved alignment was carried out at the turn-off to Kyabram, west of Cohuna, and at curves between Swan Hill and Nyah, with a view to sealing in the near future.

By the construction of drains and culverts between Pyramid Creek and Kerang on the Murray Valley Highway, drainage of low-lying portions of the road reserve was effected with benefit to the landowners and the appearance of the highway.

Central District.

Patrol maintenance was carried out over all highways within the central district.

Reconstruction of 2 miles of the Calder Highway between Gisborne and Woodend was completed with a view to providing a bituminous surface and improving many dangerous bends.

On the Hume Highway, in conjunction with the Railway Department, the construction of an overhead bridge in place of the existing railway level crossing at Broadford was commenced.

A length of 1½ miles of section of the Prince's Highway West was greatly improved by the application of a drag spread seal coat and on the Prince's Highway East, a length of 1·80 miles west of Drouin was reconstructed and sealed.

A section of the Western Highway near Deer Park and Melton was resurfaced with premixed drag spread bituminous screenings and a sharp curve near Pyke's Creek reservoir was re-aligned.

On the South Gippsland Highway, the bituminous surface was extended to the 56-mile post from Melbourne, and from this point to the turn-off to Loch, the highway was regraded, widened and sheeted with sand preparatory to sealing with bitumen during the ensuing season.

Stawell District.

Near Ballarat a length of 9·8 miles of the Western Highway was resurfaced with a roadmix seal, various gradings of aggregate and binders being used experimentally. The result of this work is being carefully watched with a view to the adoption of the most satisfactory type of treatment.

The bridge over the Mount Emu Creek, near Trawalla, was widened to give a clear width of 22 feet.

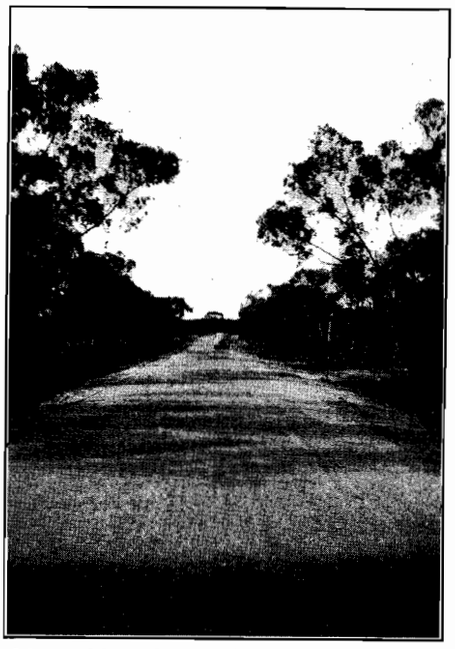
Sections of the Western Highway between Beaufort and Ararat were resurfaced with a roadmix seal and a new bridge erected over the Concongella Creek between Ararat and Armstrong to replace an old worn-out timber structure.

Near Burnt Creek, Horsham, a very rough and narrow section of the highway was widened and reconstructed, and between Horsham and Pimpinio, a length of 4·7 miles was resealed by roadmix seal process, together with a length of 4·5 miles west from Gerang.

By sealing 5·8 miles of limestone and gravel, a bituminous surface has been completed on the Western Highway from Melbourne to the South Australian border for a distance of 239·65 miles.

The Henty Highway was continuously maintained by patrolmen from the Glenelg River at Cherrypool to the township of Lascelles. North of Horsham, a length of 1·3 miles was resurfaced with a roadmix seal and a length of 1.05 miles of crushed rock was reconditioned and resheeted.

An unconstructed section between Horsham and Warracknabeal was formed for a length of 3·5 miles; between Galaquil and Goyura, approximately 5 miles of limestone was reconditioned with a view to surface sealing next spring, and from Hopetoun to Lascelles approximately 12½ miles of rough limestone pavement was reconditioned, reshouldered and strengthened, where necessary.



Plates Nos. 3 and 4.—Showing Henty Highway between Hopetoun and Lascelles before and after reconstruction.

Warrnambool District.

On the Prince's Highway West, 3·74 miles of reconstructed pavement were sealed. A further length of 5·76 miles near Tyrendarra and 7·29 miles between Heywood and Dartmoor were widened and reconstructed in gravel, the alignment and grading being improved where necessray, preparatory to sealing next financial year.

With the completion of this sealing, the length of unsealed pavement on the Prince's Highway between Melbourne and the South Australian border will be reduced to 19 miles.

Between Allansford and Warrnambool, 3·57 miles of rough narrow pavement were reconstructed in scoria and sealed.

15·7 miles of maintenance roadmix sealing were completed near Colac and Camperdown, and patrol maintenance work was carried out over the full length by truck patrols stationed at Colac, Warrnambool and Heywood.

On the newly-declared Henty Highway, 1·87 miles of gravel sealing were completed near anxholme and 3·3 miles of roadmix sealing near Hamilton and Cavendish.

With a view to economy, a re-arrangement was made in the truck patrol by placing the maintenance of the Henty Highway between Heywood and Branxholme under the control of the patrol stationed on the Prince's Highway at Heywood, whilst a truck patrol has also been established at Cavendish to take charge of the Henty highway from Branxholme to Cherrypool, 50 miles north of Hamilton.

Owing to the intensity of traffic and to the exceptionally dry conditions prevailing for most of the year, considerable difficulty was experienced in maintaining in satisfactory order the Henty Highway from Heywood to Branxholme. This section consists of old worn-out waterbound macadam for a distance of 23 miles and it is proposed to reconstruct and seal this length at an early date.

MAIN ROADS.

During the past year 79·48 miles of new construction works in country districts outside the metropolitan area were added to those completed in previous years. The expenditure incurred on this work amounted to £200,251, of which £166,424 was provided from funds derived from the State's share of petrol taxation under the terms of the Federal Aid Roads and Works Agreement, £26,636 from contributions made by municipal councils to supplement the amount provided from petrol taxation, and £7,191 from unemployment relief funds.

The works generally were carried out by municipal councils, but the Board itself undertook construction works on several roads forming connexions between important towns in the north, north-eastern and central districts.

For the construction of roads and erection of new bridges in the metropolitan area, an amount of £57,866 was expended from loan funds during the twelve months, as compared with an expenditure of £58,286 during the previous year. The balance of the loan authorization under Acts No. 4188, 4414, and 4498 was £249,552 at the 30th June last.

The amount estimated by municipal councils as necessary for the maintenance of declared main roads for the year was £1,052,792, but as the sum available from the Country Roads Board Fund was £870,709 only, it was necessary to supplement that amount by the sum of £61,650 from petrol taxation funds, so that the total amount available was £932,359 or £120,433 short of the estimated requirements.

The expenditure incurred on the maintenance, improvement and restoration of 6,815 miles of declared main roads was £769,162 for the year from the Country Roads Board Fund and Federal aid funds, compared with an expenidture of £731,479 from the same source during the previous year, representing an increase of £37,683. This expenditure, however, represents the amount that municipal councils are prepared to expend on maintenance rather than the expenditure necessary for the adequate upkeep of the roads, as in many instances the sum expended is governed by the amount the Council is required to contribute during the following year in respect of expenditure from the Country Roads Board Fund.

For the maintenance of metropolitan roads £13,547 was expended during the twelve months as compared with £10,922 during the year ended 30th June, 1938.

Details of the reconstruction and maintenance works carried out on main roads during the year are set out in Appendix " D."

Roads maintained by the Board were through roads carrying traffic not of local origin, previously restored on behalf of councils which were unable to do the work owing to their not possessing the necessary plant.

Owing to the exceedingly dry winter of 1938, followed by drought, bush fires and floods, a considerable amount of unforeseen expenditure was incurred in restoring and maintaining main roads and in consequence the normal programme of work could not be proceeded with, particularly in the north, north-western and north-eastern parts of the State.

In spite of the frequency of sand storms in the north-west, sand drifts on main roads on which moneys provided by the Board had been expended were not excessive, the total cost of the removal of sand drifts from the Calder Highway and Henty Highway being £292. It was observed by the Board that on a highway carrying sufficient traffic to warrant regular patrol maintenance, the cost of removing sand, even in a bad year, is not heavy and that the sand drift was not serious on sections of the Calder Highway protected by the railway reserve and embankments.

Considerable damage was, however, caused by subsequent floods, involving inconvenience and delays to traffic. With direct routes closed by floods it was necessary to arrange detours, to make arrangements for towing motor cars across flooded areas and for transporting pedestrians over sections of roads affected by flood waters.

A number of bridges was affected by the flood waters which were responsible for the collapse of the bridge over the Bullock Creek on the Bendigo–Serpentine road, Stewart's Bridge over the Goulburn River and many structures on shire roads, whilst minor damage to bridge approaches, handrails, &c., occurred on many other bridges. In the Wangaratta, Benalla, Euroa, Numurkah, Shepparton and Cobram districts extensive flood damage also occurred making many of the roads impassable until repairs could be effected.

The amount provided by the Board for repairs was £22,660, but owing to the floods continuing, particularly in the northern and north-eastern districts, it was not possible for the work of restoring roads and bridges to be undertaken until the current financial year. The amount provided was supplemented by municipal contributions totalling £11,330.

Up to a few years ago most of the less important roads were more or less improved by municipal councils using such funds and employing such methods as were available to them, but there was no co-ordinated scheme of making these roads a component part of the highway system. With the assistance given by the Board municipalities have during recent years made marked headway in the construction and improvement of lateral roads forming connexions with State highways and main roads, and serving valuable areas of country which were severely handicapped on account of lack of adequate road facilities. As a result these lateral roads have assumed a much greater importance than hitherto.

With a programme of works prepared at the beginning of each financial year, the building of roads leading from the State highways and main raods into farming districts is gradually being extended and linked up. In this way road improvement is being broadened to the benefit of the primary producer and road user, by making tributary roads an integral part of the road system.

Whilst the tributary roads constitute the greatest mileage, they form an important part of the road plan, although it is not necessary from an economic standpoint to improve them to the same standard as the State highways or declared main roads carrying a much greater volume of traffic.

These tributary or feeder roads which for the most part carry light traffic are being constructed or improved at a low cost, but, where traffic increase demands, more durable surfaces have been laid down.

Although the allocation of funds for the construction and maintenance of roads is made by the Board early in the financial year, many councils fail to submit plans and specifications for carrying out the works until towards the end of the year.

Delays may have been justified in some cases during last year on account of the exceedingly dry weather conditions, but in other instances there was no apparent reason. In consequence, contracts which should have been completed during the year were only commenced towards the end of June and the work could not be proceeded with until the beginning of the next year.

As insistent demands are made on the Board for additional funds for urgent works and many of these demands are met from unexpended balances in hand, the councils responsible for delaying their works are penalizing themselves in as much as the late contracts have to be provided for from next year's funds.

It has been observed with gratification by the Board that municipal councils are now giving closer attention to the maintenance of roads. During the past year a number of councils purchased power graders or light pneumatic-tired graders drawn by patrol motor trucks, resulting, in conjunction with the patrol system, in more efficient and economical maintenance work being carried out. The amount expended on maintenance of main roads was £769,192, the largest sum in any one year since the Board's inception, but the increase was in part due to the fact that 130 miles of roads were declared as main roads during the previous year, and additional expenditure had to be incurred in maintenance during an exceedingly dry period and repairs due to flooding were necessary towards the latter part of the year.

Maintenance of roads constructed with crushed rock or gravel, as low cost roads, is a problem requiring the close attention of the municipalities and the Board, as neglect of continuous maintenance ultimately involves a large expenditure to restore the roads, out of all proportion to the cost of proper maintenance.

Numerous requests were received during the year from municipal councils for the declaration of additional roads as main roads under the provisions of the Country Roads Acts. Whilst it is recognized that, owing to the increase of traffic, many of the roads are now considered to be of sufficient importance to be declared main roads, the funds at the disposal of the Board allowed only of the most urgent to be declared. Recommendations were accordingly made to the Governor-in-Council that the following roads be declared and the necessary Orders-in-Council to give effect to the recommendations were passed :—

Municipality.	*Road.*	*Mileage.*
Talbot	Talbot–Avoca	9¾
,,	Talbot–Eddington	1
Alberton	Albert River	14
,,	Tarra Valley	12¾
Hampden	Lismore	4¼
Frankston and Hastings	Tyabb-Mornington	4¾
Wimmera	Grampians	25
Charlton	Charlton–Durham Ox	16½
Gordon	Charlton–Durham Ox	27
Korumburra	Loch–Bena	5
Maryborough Borough	Natte Yallock	1
Melbourne and Richmond Cities	Hoddle Bridge	¼
Brighton, Moorabbin and Caulfield Cities	Point Nepean	4
Mornington	Tyabb	3½
Benalla	Tolmie–Whitfield	2¾
Oxley	Tolmie–Whitfield	19
,,	Tatong–Tolmie	1¾
,,	Wangaratta–Greta	12½
Bet Bet	Bridgewater–Dunolly	17½
Korong	Bridgewater–Dunolly	6
Charlton	Wycheproof–Wooronook	8
Wycheproof	Wycheproof–Wooronook	1¼
Hampden	Ayresford	3½
Healesville	Don	¾
Upper Yarra	Don	5
Belfast	Warrnambool–Caramut	34
Werribee	Duncans	6
Creswick	Creswick-Smeaton	5¾
Mansfield, Narracan and Upper Yarra	Walhalla–Matlock	19
Kowree	Minimay–Apsley	16½
Phillip Island	Ventnor	3¼
Footscray City	Napier Street	¼
Cranbourne	Kooweerup–Longwarry	5
Deakin	Undera–Wyuna	3¼
Rodney	Undera–Wyuna	6½
Kara Kara	Marnoo–St. Arnaud	18½
Stawell	Marnoo–St. Arnaud	4
Yackandandah, Chiltern, Wodonga and Beechworth	Beechworth–Wodonga	14
Cranbourne	Baxter–Tooradin	9½
Frankston and Hastings	Baxter–Tooradin	2½
Tambo	Metung	6
Collingwood and Kew Cities	Johnston Street Bridge	¼
Bright	Buffalo River	12¼
Oxley	Buffalo River	7
Buninyong	Navigators	6
Cohuna	Cohuna–McMillans	5¾
Rodney	Shepparton–Elmore	7½
Waranga	Shepparton–Elmore	25½
	Total	426

Twenty-six miles of sealing was completed by the Board under its own supervision on main roads carrying traffic through and between the more important country towns. The mileage of work done is as follows :—

District.	*Miles.*
Bairnsdale	
Benalla	5.9
Bendigo	2.3
Central	17.8
Stawell	..
Warrnambool..	..
Total	26.0

In addition, 503.9 miles of sealing was carried out on main roads under the supervision of Shire Councils, for which purpose the Board's plant was hired to the municipalities.

As the sealing extends from year to year, great improvements are being effected to the main roads, and at the same time maintenance costs are being reduced.

It was noticed, however, that in some instances municipal councils have carried out sealing with funds provided by the Board on roads which carry very little traffic, and on which it would appear difficult to justify the economy of surface sealing against normal methods of maintenance. It has been impressed on Councils that surface sealing should only be carried out where economy can be achieved by sealing and municipalities have been notified that, in future, before specifications can be approved for sealing on roads, information must be furnished indicating the average traffic on the road in question, and a statement submitted showing the cost of maintenance as a sealed road and an unsealed road, with a view to deciding as to whether sealing is a justifiable proposition.

In carrying out the surface treatment of main roads with funds provided by the Board, the pavement is being constructed one foot wider than the sealed width, except where the shoulders of the road are capable of carrying the maximum traffic which will traverse the pavement in any weather. If, however, the material making up the shoulders is of poor quality, the pavement is being constructed 2 feet wider than the sealed width.

This practice is considered essential in order that adequate support may be given to the edges of the sealed pavement, that the outside edges of the sealed road may be adequately compacted and that the edge maintenance may be kept within reasonable bounds.

In last year's report, reference was made to experiments carried out by the Board by the use of common salt. This form of treatment was continued on the Kaniva–Edenhope Road in the Shire of Kaniva, as a result of which it was found that the surface of buckshot gravel was better consolidated and fully justified the treatment. Plate No. 5 shows a section of the road treated in the manner described.

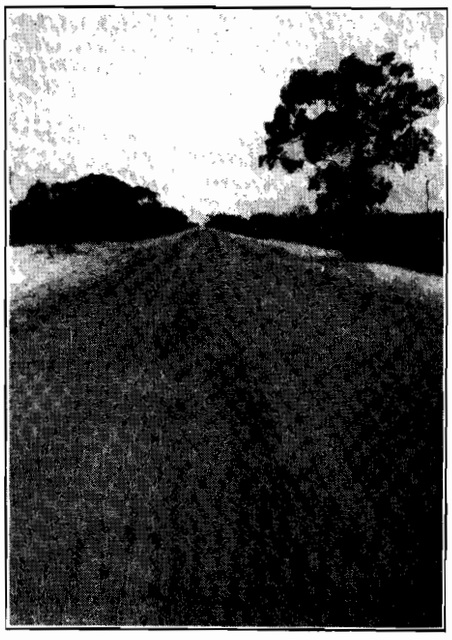
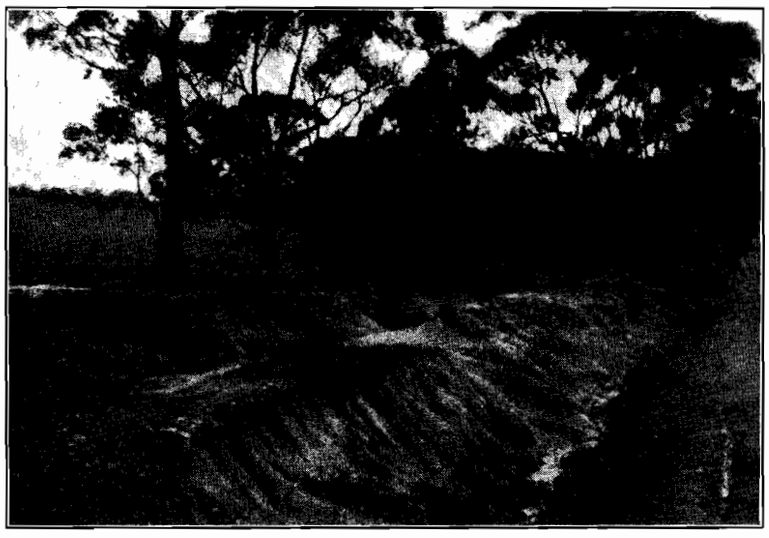


Plate No. 5.—Kaniva-Edenhope-road after treatment with common salt.

During its inspections of country roads, the Board observed that the practice of excavating borrow pits on the roadsides for the purpose of obtaining material for road formations was being continued in several municipalities. The Councils concerned were again communicated with, bringing the matter under their notice with a view to the Shire Engineers being instructed to discontinue these methods, which in the past have caused erosion as well as presenting an unsightly appearance. Plates Nos. 6 and 7 show the effect of excavations made on important main roads in the northern district of the State.



Plates Nos. 6 and 7.—Showing result of excavating on the roadsides for borrowing soil for road formation.

Under the powers conferred on the Board under the Country Roads Act, municipal contributions towards the cost of maintenance were reduced below one-third of the total cost in the case of declared main roads carrying traffic not of local origin. The extent of the assistance given to Councils in this way amounted to £51,996 for the year.

Owing to the limited funds available after providing for its commitments in respect of loan expenditure and liabilities for maintenance of State highways and gazetted main roads, the Board was only able to deal with the most urgent requests for declaration of additional main roads and a number of applications has, in consequence, been held over for consideration when additional funds are available.

Following the declaration of these new main roads, provision will be made by the Board for their maintenance from year to year, and the Councils concerned will in future be required to contribute only one-third of the amount expended during the year following that in which the expenditure is incurred.

To replace a number of worn-out structures 40 new bridges were erected during last year on main roads, 26 under the supervision of municipalities and 14 under the direct supervision of the Board. For the more important main roads new bridges are designed to provide a width to conform to the width of the pavement, with the object of securing increased traffic safety and reducing the risk of damage to the hand-rails.

The more important of the bridges erected are described in detail under the heading of "Bridges," as well as in the appended report of the Chief Engineer. The total expenditure involved during the year was approximately £38,000.

Besides general maintenance, major works of construction carried out directly by the Board on main roads during the past year are given hereunder, those completed under municipal councils being shown in Appendix D.

Benalla District.

The Goulburn Valley Road was further improved by the completion of the reconstruction and sealing of 5.85 miles between Hughes Creek and Nagambie in the Shire of Goulburn. In the Nagambie township .4 miles of roadmix seal was placed and a commencement made with the reconstruction and gravelling of ·70 miles south of Murchison.

In the Shire of Wangaratta improvements on the Beechworth Road were extended by reconstructing, sanding and sealing 1·75 miles in the Shire of Wangaratta.

To protect the Chiltern–Howlong Road in the Shire of Rutherglen from erosion by the River Murray, a diversion of the river was made across the bend upstream from Simmond's Bridge near Howlong.

Bendigo District.

On the road from Bendigo to Kerang *via* the Bendigo–Serpentine Road and on to the Loddon Valley Road, reshaping and gravelling was extended from Myers' Flat to Campbell's Forest, with sealing of flood crossings. A length of 1·43 miles of sanded formation, north of Serpentine, which had a high crown, was reshaped and sanded.

The Bridgewater–Serpentine Road, immediately south of Serpentine, was formed and sanded under contract on an improved alignment. The old formation was slippery after rain, narrow and wandered from one side to the other of the road reserve.

On the Elphinstone–Harcourt Road, between Elphinstone and Faraday, the old road was reshaped and resheeted for 4 miles preparatory to sealing in the spring.

Between Mooroopna and Shepparton, the formation and pavement on the Shepparton–Tatura Road was too narrow to carry the large volume of traffic which used the road, and a contract was let for widening the formation to 40 feet to provide for a 30-foot pavement and footpath. Owing to frequent flooding of the Goulburn River the work was delayed but will be completed during the current financial year.

On the Loddon Valley Road, near Bear's Lagoon, improvements were effected to the grading of the approaches to and the riding surface on the bridge over the Waranga channel.

Central District.

Bituminous sealing of the Geelong–Portarlington Road in the Shire of Bellarine was completed throughout and on the Portarlington–St.Leonard's Road a section of 1.4 miles east of Portarlington was reconstructed and sealed. A further length of ·9 miles was realigned and gravelled preparatory to sealing.

A further length of 2 miles of the main Healesville Road in the Shire of Blackburn and Mitcham was widened to a 30-foot formation and surfaced with crushed rock preparatory to sealing.

In the Shire of Seymour a section of the Upper Goulburn Road extending 2·25 miles easterly from the Hume Highway at Tallarook was reconstructed with gravel.

The Main Warburton Road was maintained by patrolmen and improvements in the riding surface carried out over various sections. Near Warburton new guard fencing was erected on the roadway alongside the river.

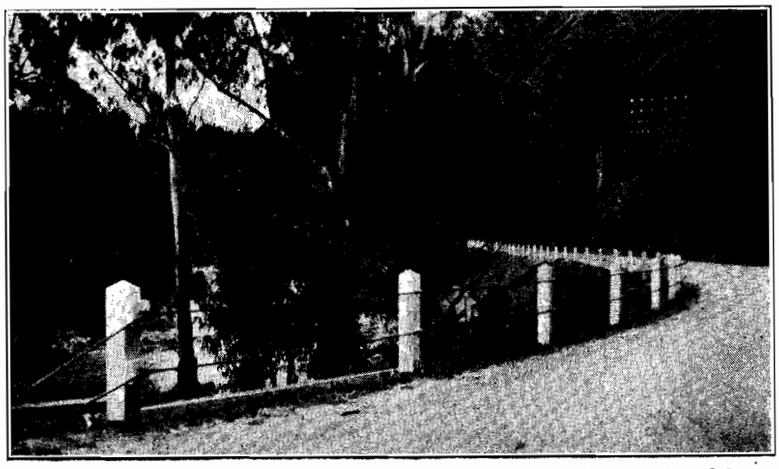
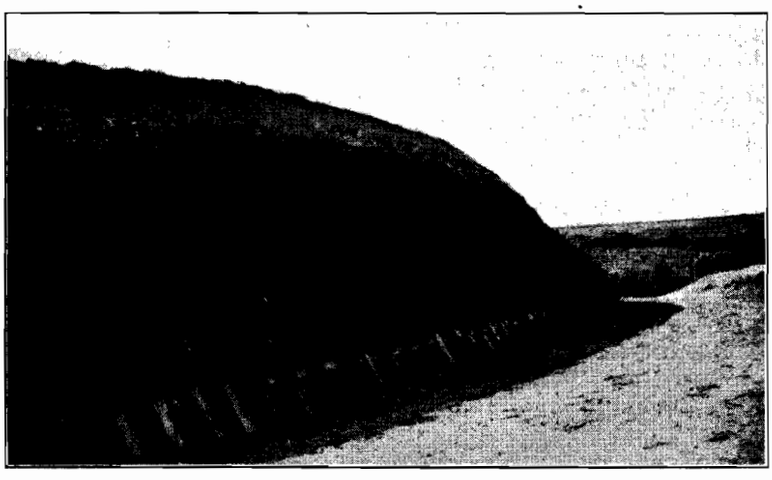
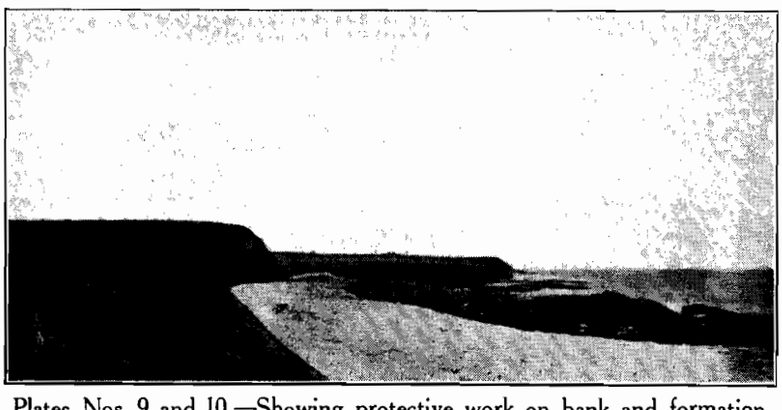


Plate No. 8.—Showing new guard fencing erected on the Main Warburton Road near Warburton.

On the Cape Patterson–Eagle's Nest Road in the Borough of Wonthaggi and the Shire of Woorayl, surfacing with burnt sandstone was carried out over a length of 1·61 miles and a further length of 1·0 miles was cleared, formed and graded.

A rough track was graded between those sections previously formed and drained, in order to provide access in good weather for tourist traffic between Cape Patterson and Inverloch.





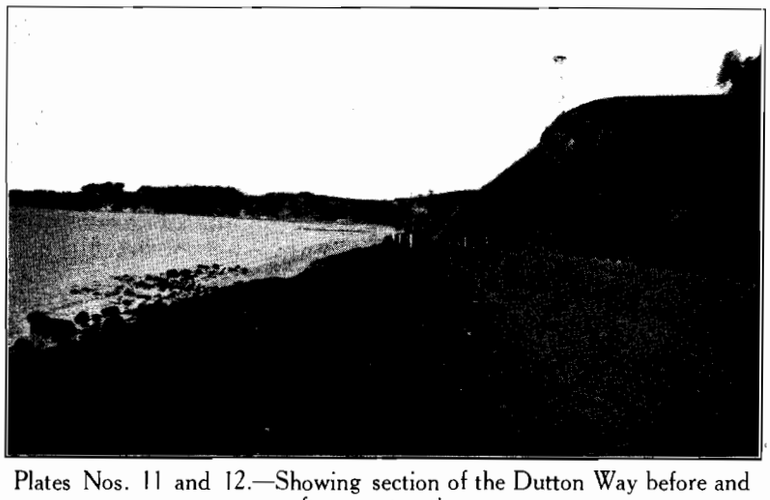
Plates Nos. 9 and 10.—Showing protective work on bank and formation carried out on the Cape Patterson–Eagles Nest Road.

Warrnambool District.

Sealing of the Mount Gambier Road in the Shire of Glenelg, between Casterton and the South Australian border completed the bitumen surfacing of the road from Melbourne to Mount Gambier via Ballarat and Hamilton.

At Timboon in the Shire of Heytesbury, an area in the centre of the township was levelled off, the various main roads joined by sealed pavements and the remainder of the area gravelled.

At Portland a commencement was made with the forming and gravelling of a road (now known as the Dutton Way) along the coast from Allestree on the Prince's Highway—a length of 1·66 miles being completed. This road, which was impassable for many years due to erosion by the sea, serves some rich flats, as well as providing access to a fine stretch of ocean beach for tourists and campers. The construction of a new formation around the cliffs where the sea had completely washed away the old road, was carried out with a trail builder.



Plates Nos. 11 and 12.—Showing section of the Dutton Way before and after construction.

DEVELOPMENTAL ROADS.

During last year the construction and improvement of roads not included in the system of roads improved and maintained under the provisions of the Country Roads Acts was continued under a plan of road extension laid down by the Board some years ago with the object of developing a system which will ultimately connect up with the State highways and main roads constructed under earlier legislation.

As regards the majority of country roads where so many tracks are in urgent need of improvement to render them even passable for ordinary farm traffic during the winter months, any special treatment for the modern form of traffic would be out of the question in view of the limited funds available. It would not only be wasteful to construct roads in outlying districts to a standard above the present traffic requirements, but an injustice would be done to many outback settlers who would welcome a gravel or metalled road of any description as a luxury. For this reason, developmental roads are being constructed with such materials as are locally available and adequate service is being given at comparatively low cost.

With the progressive construction and improvement of these roads which are largely of a developmental nature, they are assuming considerable importance as they form are liable means of communication with the larger towns and enable farm produce to be conveyed to the markets and railways at any season of the year.

Of the total amount of £489,955 expended during the past twelve months on roads of this type, £380,648 was provided from Federal aid funds, supplemented by contributions totalling £69,142 from municipal councils, and £40,165 from the provision made under Act No. 4097 for the relief of unemployment.

The expenditure was distributed amongst 134 municipalities on 1,073 separate projects.

The total mileage of new works completed or partially completed for the twelve months was 1,151·68 miles. The work comprised the extension and linking up of existing sections and the construction of new roads.

Unemployment relief schemes financed from funds provided under Unemployment Relief Act No. 4097 were responsible for an addition of 118.72 miles of constructed roads and provided rationed employment for 725 men.

The total amount for which application was made during the year by municipal councils for the construction of developmental roads, apart from roads to serve isolated settlers, was £1,192,469 to provide for the carrying out of 1,401 projects. As, however, the amount available was £564,818 approximately one half only could be allotted. With municipal contributions totalling £98,789, the total amount available for expenditure was £663,607, of which £449,540 was expended to the 30th June, the unexpended balance representing commitments and amount carried forward to the following year.

To assist councils in the maintenance of developmental roads previously constructed from funds provided by the Board, the sum of £41,141 was allotted to municipalities from Federal aid funds. £33,095 was expended to the 30th June.

With the exception of those roads for which unemployment relief funds were provided, construction work was generally carried out by contract, under the supervision of shire councils, whilst most of the relief works were done under the direct supervision of the Board.

As a result of the improvement of many of the developmental roads they have now attained a much greater importance and should be classified as main roads. Owing, however, to the fact that the funds at the disposal of the Board will not allow of its taking over any further responsibilities at present, the Board has not been able to declare these roads as main roads, as requested by the councils concerned.

In the construction of developmental roads the usual practice was followed of using gravel, crushed rock or other suitable materials whenever obtainable in the district in which the work was situated.

Thirteen bridges were erected on developmental roads to replace old structures, the total expenditure for the year being approximately £5,200. Reference to a number of the projects is made under the heading of " Bridges."

The more important of the developmental roads constructed or partially constructed were in continuation of works commenced during previous years.

On the Buchan–Orbost Road clearing and forming was carried out in continuation of works done during previous years, and similar work was done on the Sydenham Inlet–Cape Conran Road, linking up with the Marlo-Cape Conran Road on which a considerable amount of work has been completed. These works were done under the Board's direct supervision.

Much needed improvements in the way of widening and surfacing the Benambra–Corryong Road were made by the Shire Council of Upper Murray, the sum of £1,357 having been expended during the year.

Construction works were also extended on the Suggan–Buggan Road in the Shire of Orbost, directly under the Board, with the object of serving an area of land proposed to be thrown open for settlement.

Grubbing and clearing on the Orbost–Buchan Road in the Shire of Tambo was extended for a length of 17,000 feet and forming and grading 14,800 feet under the direct supervision of the Board. The expenditure for the year, including bridge works was £9,934.

On the Upper Rose River Road in the Shire of Oxley a timber bridge 30 feet long was erected over Basin Creek to provide access for settlers in the locality.

The first section of the Upper Kiewa Valley Road in the Shire of Bright was cleared, formed and graded for a length of 5·5 miles together with the construction of a steel and timber bridge over the west branch of the Kiewa River.

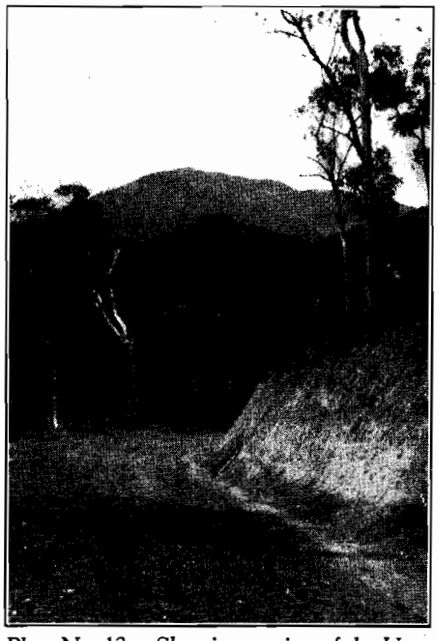


Plate No. 13.—Showing section of the Upper Kiewa Valley Road above referred to.

On the second section, similar work was well advanced as far as 10 miles from the west branch of the river. The work on this road is being carried out by the Board on behalf of the State Electricity Commission for the purpose of providing access to the Hydro-Electric Works to be established by the Commission.

The use of trail builders has enabled the work to be carried out at a very economical cost as compared with the use of plant ordinarily employed on this type of work.

In the Shepparton fruit-growing area, extension of surfacing was carried out on the Channel Road and the Racecourse Road, and bitumen surfacing was completed on 6 miles of roads constructed during previous years. This work was done under the supervision of the Shepparton Shire Council.

Under the direct supervision of the Board, the Newington–Ocean Grove Road was completed in the Shire of Bellarine, and the Lower Gellibrand Road was extended for a length of 3 miles in the Shire of Otway. This latter road when completed will provide access to valuable properties adjacent to the Gellibrand River and form a direct means of communication between Princetown and Colac.

The Noojee–Erica Road which was formed last year as far as the Tanjil River was surfaced with crushed rock. This road serves a large area of timber country in which a considerable extension of milling has taken place since the severe bush fires.

The construction of the Maintongoon Road in the Shires of Alexandra and Mansfield was completed and direct connexion is now available between Bonnie Doon and Alexandra.

In the Warrnambool Shire, the Naringal Road was formed and gravelling was almost completed. In the Heytesbury Shire, the road to South Ecklin was commenced, and the remaining unformed section of 2·7 miles was cleared and ·4 miles formed. With the completion of these works, this road will form a direct route from Warrnambool and Allansford to South Ecklin, Glenfyne and Cobden and provide a much needed outlet to an extensive area of dairying country.

In the Heytesbury Settlement, a further 7·47 miles of roads were surfaced with gravel, 93 miles of roads were maintained and 18 miles strengthened by lightly resheeting with buckshot gravel. Nearly every settler in the settlement has now a gravelled road to his block.

To serve recent settlement to the east of Port Campbell, a commencement was made with the extension of the Eastern Creek Road, one mile being formed and loamed.

2·63 miles of road were cleared, formed and gravelled to give access to the prison camp being established in the Heytesbury Forest.

The construction of a new timber and steel bridge over Scott's Creek with approaches completed the construction of the Glenfyne–Digney's Bridge Road. The road formation was widened on the sharp curve at the Glenfyne end to facilitate the passing of vehicles.

FEDERAL AID ROADS.

Construction works of considerable importance to the municipalities and the State were carried out during the year with funds provided under the Federal Aid Roads and Works Agreement. These works mainly comprised the building of developmental roads and roads to serve isolated settlers.

Under the agreement the sum of £616,109 was made available to the State of Victoria. Including an amount of £87,124 brought forward from the previous year, a total amount of £703.233 was, therefore, available.

From this sum an expenditure of £621,157 was incurred and commitments totalling £82.076 were carried forward to the financial year 1939–40.

From the proceeds of the extra ½d. per gallon duty on petrol provided for under the new agreement between the Commonwealth and the States, the sum of £100,000 was allocated to the Board. With an amount of £64,241 brought forward from 1937–38, a total amount of £164,241 was available. Of this sum, £146,611 was expended on the construction of main and developmental roads.

Of the amount of one-twelfth to be expended on roads adjoining or approaching properties of the Commonwealth for which £10,390 was made available in addition to £7,297 brought forward from the previous year, £13,321 was expended during the year under review by the Board on maintenance and repairs.

A considerable mileage of roads was made possible under the progressive construction programme, the total length of roads completed and put in hand, not including roads to isolated farms, being 1,384·68 miles, 415·78 miles on main roads and 968·9 miles on developmental roads.

The total expenditure on roads of a developmental character to the 30th June was £434,929, including £54,279 on isolated farm roads. In the case of developmental roads, the expenditure was supplemented by contributions from municipal councils totalling £69,142, and in the latter case, the estimated value of contributions in money, materials and work was £6.730, so that the actual work completed represents an aggregate expenditure of £510,801.

The number of projects put in hand from Federal funds was 1,377, of which 1,073 were on developmental roads, apart from roads to isolated farms, and 304 on main roads. The work was spread over various parts of the State in 156 municipalities.

On main roads an expenditure of £166,424 was incurred, the work done following on the lines of that completed in previous years, namely, the construction and restoration of trunk roads carrying traffic from developmental and other roads to the railways and distributing centres. Three hundred and four projects were undertaken over a length of 415·78 miles and 117 municipalities participated.

To assist municipal councils in maintaining main and developmental roads previously constructed from loan funds or from moneys provided under the Federal Aid Road Agreement, an allotment of £64,495 was made. From this amount £55,973 was expended to the 30th June, £22,878 on main roads and £33,095 on developmental roads.

During the year, the section of the Keilor–Melton Road between the Calder Highway and Sydenham, in the Shire of Keilor, was reconstructed. As this road carries all outward traffic from the Melbourne City Council's quarry at Sydenham, it was necessary to build it to a rather higher standard than the remainder of the road. Accordingly, the Melbourne City Council co-operated by supplying the metal required. With the completion of this section, there is now an alternative route to the Western Highway, via Keilor, from the north-eastern suburbs of Melbourne.

An amount of approximately £59,000 was expended on the construction of 81 bridges, the more important of which are referred to under the heading of "Bridges."

UNEMPLOYMENT RELIEF WORKS.

An amount of £42,020 was provided during the year for the relief of unemployment under Act No. 4097. Supplemented by the sum of £21,321 carried forward from the previous year, and an amount of £5,595 from Federal Aid road funds and the Country Roads Board Fund for the purchase of materials, making surveys, &c., the total sum expended was £60,256.

The works comprised the construction of new roads for assisting settlers, and the extension or improvement of existing roads.

During the twelve months ended 30th June last, rationed employment was made available for 906 men, 650 having been employed under the supervision of the Board and 256 under the supervision of the municipal councils.

The money expended was distributed over various parts of the State, and enabled roads to be constructed which, under the usual programme of works could not have been put in hand for some time, either by the municipalities or the Board. As the works were mainly of a developmental nature, improved facilities for the transport of produce were made available.

Particulars of the expenditure are set out in the following statement.

	Relief Grant.	Supplementary.		Total.
		Country Roads Board Fund. State Highways.	Federal Grant.	
	£	£	£	£
State Highways	2,215*	2,311	..	4,526
Developmental Roads	40,165	..	2,311	42,476
Main Roads	7,191	..	973	8,164
Forest Roads	3,478	..	..	3,478
Roads for Isolated Settlers	1,507	..	..	1,507
Tourists' Roads	105	..	..	105
Total	54,661	2,311	3,284	60,256

* Includes £1,439 from Unemployment Relief Taxation.

The expenditure was distributed over 95 roads and 53 municipalities participated.

The work done, comprising mainly grubbing, clearing and earthworks, provided the maximum of employment without sacrificing any of its advantages from the use of such plant as was required on the work.

The provision of £6,000 for the continuation of the work on the Noojee–Erica Road allowed of the erection of a bridge, formation and surfacing works to be carried out. This road will provide facilities for the cartage of timber from the Noojee area where intensive milling operations are now being carried out following the disastrous bush fires in January last. The amount expended to the 30th June was £5,337.

On the Promontory Road in the South Gippsland Shire construction work in continuation of that completed during the previous year was carried out under grants totalling £14,000, the the whole of which was expended by the 30th June. This work has given access to the Chalet at Darby River and on completion will open up an extensive tourists' area at Wilson's Promontory.

In the Alexandra Shire earthworks were extended on the Maintongoon Road from a grant of £2,500, of which £2,492 was expended by the end of the year.

From a grant of £3,420 for the reconstruction of roads on the Hallam Valley Estate in the Shire of Berwick £1,851 was expended to the 30th June under the direction of the Shire Council. The work will benefit a number of settlers in this area.

Clearing, forming and widening of the Upper Kiewa Valley Road in the Shire of Bright was carried out from a grant of £2,000, of which £1,835 was expended during the year. The new road will ultimately connect with the road under construction by the Board for the State Electricity Commission.

On the South Gippsland Highway in the Cranbourne Shire £776 was expended during the year from a grant of £2,000 for flood prevention works, and on the Mount Lyall Road in the same Shire £281 was expended to the 30th June on clearing, grading, &c., from a grant of £600. On completion, this work will serve a number of settlers carrying on dairying operations.

Widening and re-aligning of the Licola Road in the Shire of Maffra was carried out with a grant of £2,500. The work done will be of great benefit to the settlers as the completed works have made the road safe for vehicular traffic.

In addition to work done in previous years, the Elphinstone-Harcourt Road was re-aligned, &c., and a new bridge erected at a total cost of £1,000.

With the provision of £5,000 from unemployed relief funds and £7,000 from Federal Aid road funds, the erection of a new bridge was commenced between San Remo on the mainland and Newhaven on Phillip Island. On completion this structure will form a permanent link between the points mentioned, communication at present being maintained by means of a punt. The amount expended during the year was £2,381.

From a grant of £3,000 for extending clearing and earthworks on the Orbost–Buchan Road, £2,215 was expended to the 30th June. When completed this road will serve a large extent of country suitable for dairying and grazing.

ROADS FOR ISOLATED SETTLERS.

Country residents have long since awakened to the fact that, in addition to the limited mileage of State highways and main roads, there are many miles of local roads—largely unmade —on which farmers must depend in order to have access to markets, railways and schools, and that roads of this type must be included in the general road scheme.

Since the policy of providing roads for isolated settlers was instituted some ten years ago a great deal has been done to overcome the handicaps under which many farmers were labouring through lack of road communication. The increasing demands made by municipalities and ratepayers now educated to the advantage of good roads are being met, year by year, as far as funds will permit, and much assistance has been given to settlers by the provision of suitable road access.

During the past year the sum of £55,786 was expended compared with an expenditure of £44,722 during the previous year. Owing to the stipulation made that the grant for each road was to be supplemented by a contribution from the local Council or the settlers, either in money, materials or work, the value of the completed work is considerably in excess of that represented by the expenditure, in many instances the value obtained being as much as 20 per cent. above the amount of the grant.

In carrying through these works the settlers have shown a commendable spirit of self-help. Roads which, in ordinary circumstances would not have been completed for some time to come, have been constructed, thereby fulfilling an economic necessity, fostering and encouraging settlement, and assisting to make production more profitable.

By the expenditure of £54,279 from Federal Aid road funds together with £1,507 from unemployment funds, 830 roads were constructed or partially constructed as against 634 roads constructed during the previous year.

The policy of building low cost roads to isolated farms by utilizing suitable local materials in the form of crushed rock or gravel, and the employment of local labour was followed, and in this way employment was given to a number of local men during a period of drought and low prices.

The insistent demands for the provision of more funds for the construction of roads to farms isolated from the main road system are being met from time to time by judicious expenditure, as funds become available.

DAMAGE BY FIRES AND FLOODS.

The most disastrous bush fires in the history of the State occurred in January last, resulting in loss of life, destruction of buildings and other property, damage to roads and bridges, and the blocking of roads to traffic.

The fires, which raged mostly in the forest and other timbered areas of the State, caused damage to roads and bridges under the jurisdiction of the Board, as well as total loss of buildings and plant. The damage to roads was not, however, extensive, the principal damage being to the Warburton–Wood's Point Road, the Mansfield–Wood's Point Road, Walhalla–Matlock Road, the loss of two bridges on the Traralgon Creek Road, the Alpine Road, Omeo–Swift's Creek Road and the Murray Valley Highway. In addition, minor damage was caused to a number of roads in the Alexandra, Healesville, the Grampians and Tolmie districts.

The total cost of restoration amounted to £3,658 not including the cost of replacing tools, equipment and motor trucks, &c., which amounted to £3,295.

For the relief of settlers from the bush fires, road works were put in hand in the districts in which the fires occurred, and a total amount of £42,875 was expended. The prompt action taken by the Government in authorizing these works was much appreciated by the settlers and the residents of the districts affected by the fires.

Following the fires exceptional floods occurred during the latter part of the year and damage was caused to roads and bridges in the northern, north-western and eastern parts of the State. The flooding of the Avoca River and the Campaspe River caused heavy damage and considerable inconvenience to traffic. On the Midland Highway between Benalla and Shepparton, extensive damage was caused to the pavement at Nalinga.

Plate No. 14.—Showing flood damage to Midland Highway at Nalinga.

Flood waters from the Avoca River at Charlton reached a level of approximately 12 inches above any flood of the last 30 years and crossed the Calder Highway to a depth up to 2 feet 6 inches. Flood waters from the Tyrell Creek crossed the Calder Highway north and south of Culgoa and the Sea Lake to Swan Hill Road.

Plate No. 15.—Showing scour at flood crossing caused by floods in the Shire of Charlton.

The Northern Highway was affected by flood waters crossing the highway north and south of Rochester, and floods were responsible for the collapse of part of the bridge over Bullock Creek on the Bendigo–Serpentine Road, Stewart's Bridge over the Goulburn River, and many structures on shire roads. Minor damage to bridge approaches, &c., occurred at many other bridges.

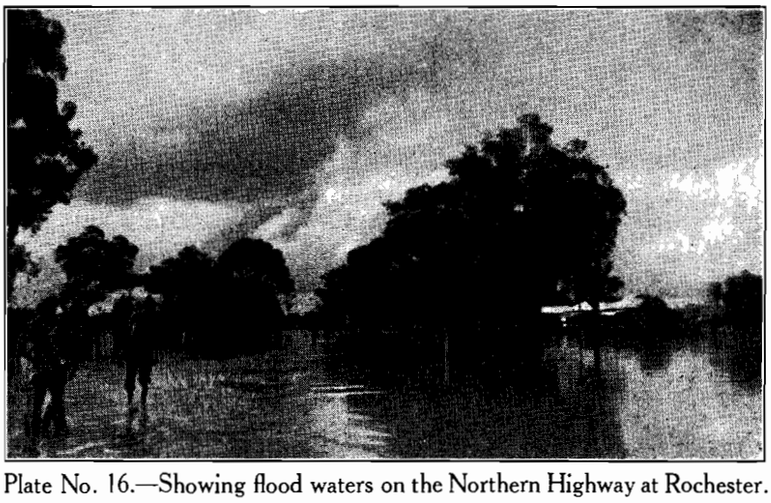


Plate No. 16.—Showing flood waters on the Northern Highway at Rochester.

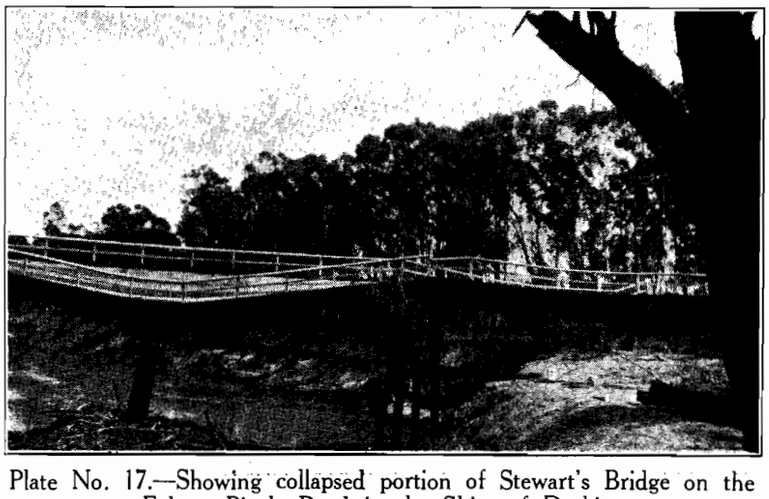


Plate No. 17.—Showing collapsed portion of Stewart's Bridge on the Echuca–Picola Road in the Shire of Deakin.

TOURISTS' ROADS.

The total expenditure for the year on declared tourists' roads, covering a total length of 350 miles was £66,729. The work consisted of construction, improvement and maintenance, and a marked improvement is now noticeable in the condition of these roads.

18·22 miles were progressively improved with moneys totalling £42,427 provided from the Country Roads Board Fund. £24,302 was expended from Federal-aid funds on construction works over a length of 37·75 miles. Patrol maintenance was carried out on 291·21 miles.

The Acheron Way, from its junction with the Marysville main road to the Warburton Road was maintained throughout the year, with the exception of a period following the disastrous bush fires in January last, during which it was necessary to incur unforeseen expenditure in clearing fallen trees from the roadway. A section of 2½ miles between Narbethong and Somers' Park was constructed with crushed rock and sealed with bitumen.

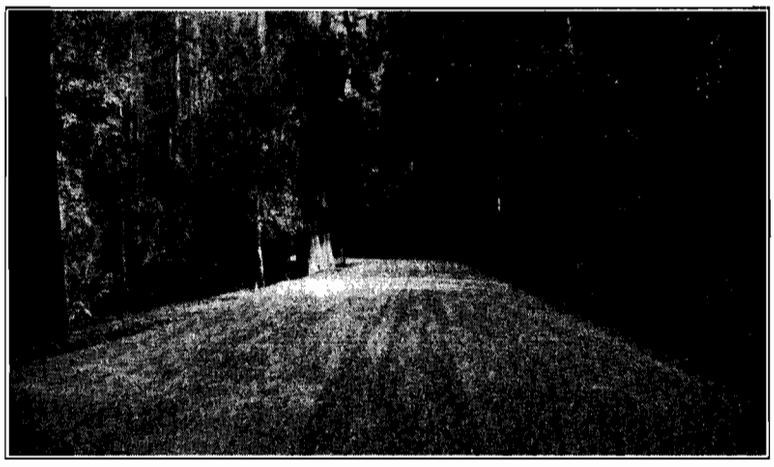


Plate No. 18.—Showing improved section of the Acheron Way at Cement Creek.

On the Donna Buang Road, between Ben Cairn and Donna Buang, where the formation was very narrow, the road was widened to 20 feet over a length of 1½ miles. This work was carried out with funds made available for the relief of mill workers who lost their employment through the bush fires.

Besides general maintenance 4 miles of the Ocean Road, between Sherbrook and Glenample, were strengthened by resheeting with buckshot, and a sharp turn approaching Port Campbell from Princetown was reconstructed to a safe radius. Between Jan Juc and Lorne the bituminous surface was completed, thereby connecting Lorne with Melbourne by a bitumen sealed pavement. A new bridge and approaches over Skene's Creek were constructed in place of an old structure which was subject to frequent flooding.

The Alpine Road in the Shire of Bright, between Harrietville and Mount Hotham was improved by the widening of 1·51 miles. This section was also maintained by a full-time patrolman. A shelter shed between Mount St. Bernard and Mount Hotham which was destroyed by bush fires was replaced, and a deviation was constructed at Mount Hotham to enable tourists to drive around snow drifts.

The Mount Buffalo Road was improved by widening and gravelling ·88 mile, together with the sealing of 3·88 miles between Porepunkah and Eurobin Falls. The total length of 18 miles of road was kept in good order by a truck patrol.

The Bright–Tawonga Road in the Shire of Bright was improved by widening narrow sections over a distance of 3·95 miles, including the reconstruction and widening of six sharp curves, resulting in a much improved connexion between Bright and Tawonga.

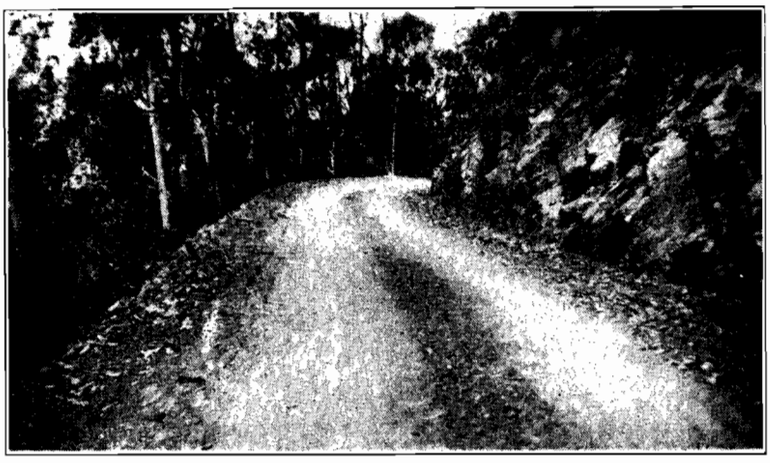


Plate No. 19.—Widened section of the Bright–Tawonga Road in the Shire of Bright.

The Mount Buller Road was improved by clearing, forming and grading a distance of 2·16 miles and widening ·47 mile, thus completing the formation as far as the Chalet.

Tourists' roads in the Grampians were continuously maintained by a motor truck patrol. In addition, 6·72 miles of sealing was completed from the Western Highway to Hall's Gap, a four-span timber bridge was constructed over Fyan's Creek, and 7 miles of grubbing and clearing completed between Fyan's Creek and Jimmie's Creek at Mirranatwa Gap. Considerable improvements to curves at Mirranatwa Gap were also effected.

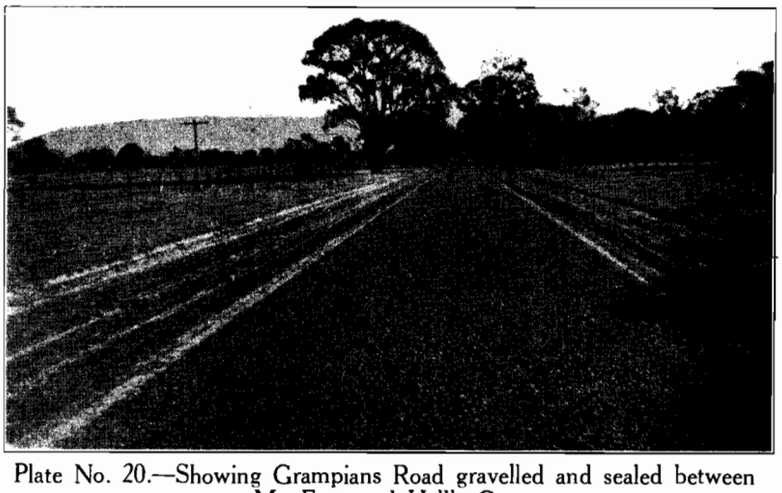


Plate No. 20.—Showing Grampians Road gravelled and sealed between Mt. Emu and Hall's Gap.

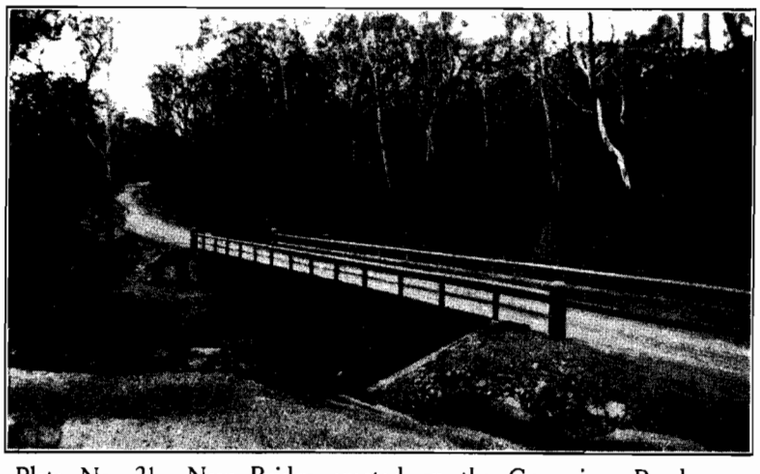


Plate No. 21.—New Bridge erected on the Grampians Road over the Fyan's Creek.

Sections of the Mount Victory Road between Hall's Gap and McKenzie River were widened to improve visibility and provide a wider carriageway, and similar work was carried out between McKenzie Falls and Zumstein's Crossing, over a length of 11·1 miles. Five miles of sheeting was included in this work.

The formation of the Wartook Road was completed by the construction of ·7 miles at the Lake end.

The Mount Arapiles Road, from the Horsham–Natimuk–Edenhope Road to the top of the mount was completed by 1·68 miles of formation and track improvement.

From Unemployment Relief Funds an expenditure of £14,000 was incurred in extending the work previously commenced on the Promontory Road in the South Gippsland Shire. The road has now been completed as far as the Chalet on the Darby River. A length of 5 miles has been constructed beyond the Chalet, and by using an existing track this section of the road can be traversed for a total distance of 8½ miles to a point just beyond the Tidal River. On completion this road will provide access to a large tourist area at Wilson's Promontory, which is unrivalled for scenic beauty.

BRIDGES.

During the year plans and specifications were prepared for 183 bridges, of which 124 were prepared by shire councils and the remainder by the Board's staff. Fifty-seven new structures which were completed or in course of erection at the 30th June replaced old bridges which had become unsafe for traffic on account of inadequate load carrying capacity or narrow width.

Some time ago the State Rivers and Water Supply Commission agreed to a schedule based on the life and type of culverts and small bridges on State Highways and main roads over the Commission's channels. This schedule provided for the cost of widening or reconstruction to be divided between the two bodies in certain proportions. Following this agreement the Board has provided funds in a number of cases for the widening of culverts, frequently involving regrading and alignment of dangerous bumps, but in most cases the Commission has not been able to meet its share of the cost, and consequently the works have been held up. In the interests of safety it would appear that some action will need to be taken in the near future in a number of the more urgent cases.

The estimated cost of the bridges for which plans and specifications were prepared by the Board was £95,000, whilst those submitted by municipal councils were estimated to cost £55,000.

With the number of bridges erected for the twelve months ended 30th June, 2,378 projects had been completed by the Board and the municipalities on that date, since the inception of the Board.

A new stock bridge in course of erection on the foundations of the new weir at Yarrawonga during the previous year was completed last financial year. This work was carried out by the State Rivers and Water Supply Commission at the joint expense of the Board and the Department of Main Roads of New South Wales.

In accordance with an agreement between the Governments of Victoria and New South Wales, the Department of Main Roads, New South Wales, and the Board are co-operating in the erection of a bridge over the Murray River at Nyah. This will replace a punt which for many years has been in use to take traffic across the river. A contract for the work was recently let by the Main Roads Department providing for the erection of a structure 342 feet in length and having a width of 20 feet between kerbs. A lift span will also be provided.

Three narrow concrete bridges were widened on the Hume Highway between Benalla and Winton and two timber bridges erected on a new stock route between Wodonga and Albury.

Plate No. 22.—Widened bridge on the Hume Highway between Benalla and Winton.

The old timber bridge on the Calder Highway immediately north of Charlton was replaced by a reinforced concrete structure, and two old timber bridges on the Northern Highway, one in Huntly, with an effective road width of 30 feet, and one south of Echuca, were replaced by reinforced concrete bridges. A roadway of 40 feet was provided at the latter structure to provide for numerous horse-drawn vehicles.

On the Echuca–Cohuna Road near Echuca, the last of the five old timber bridges across the river flats was replaced by a reinforced concrete structure.

In the Shire of Kerang a new bridge in reinforced concrete was erected on the Koroop Road under the supervision of the Shire Engineer to replace an old worn-out structure. With the completion of the new bridge and the surfacing of the new road, traffic is now able to traverse the road at any time of the year. Plates Nos. 23 and 24 depict the old bridge and the new structure.

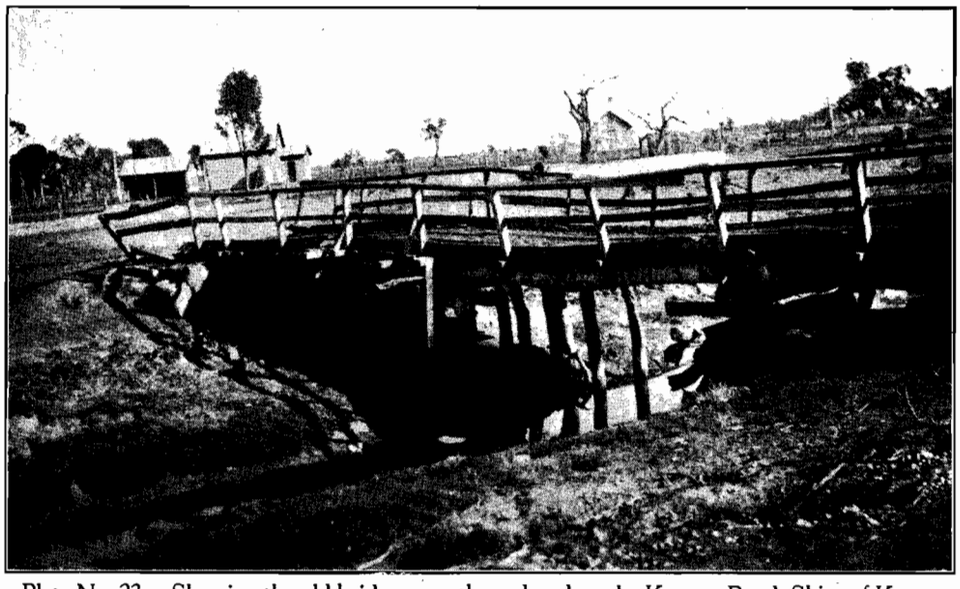


Plate No. 23.—Showing the old bridge recently replaced on the Koroop Road, Shire of Kerang.

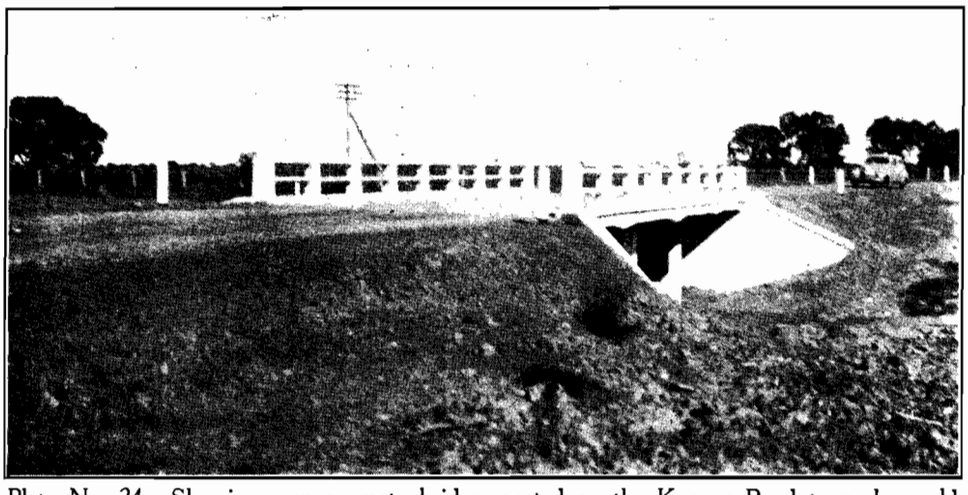


Plate No. 24.—Showing new concrete bridge erected on the Koroop Road to replace old structure shown above.

Owing to the weak condition of a large majority of the deck planks on the bridge over the Loddon River on the Castlemaine–Daylesford road at Guildford, a temporary low level bridge was erected, 80 feet long, using rolled steel joists which will be used in the new high level bridge when constructed.

On the Creswick road a new bridge was constructed at Foy's to replace the old timber bridge, and two short radius and dangerous curves on the approaches were eliminated.

Early in the present calendar year a contract was let for the construction of the river piers at McCoy's Bridge over the Goulburn River on the Murray Valley Highway, as the first stage towards replacing the old bridge, which is very narrow and unsafe for heavy loads. Owing to the frequent flooding of the river the works had to be closed down temporarily after completion of approximately half the river piers. The new bridge will provide 40 per cent. more waterway than in the old structure and will have an overall length of 1,073 feet.

A contract was let for the reconstruction of the old low level timber bridge over the Campaspe River on the Goornong–Colbinabbin Road, known as Ferguson's bridge, and opportunity has been taken to improve the very poor alignment on the eastern approach to the bridge.

In the Heytesbury Shire a new steel and timber bridge over Scott's Creek, together with approaches, was completed on the Glenfyne–Digney's Bridge Road. The new structure replaces an old dilapidated structure which was no longer fit for use.

On the Prince's Highway East, widening of the concrete bridge at North Arm at Lakes Entrance was commenced to meet the increasing demands of traffic. Concrete piles were cast and driven to provide for the foundations and the existing design of reinforced concrete beams and decking enlarged.

At Cabbage Tree Creek and the Wingan River, on the same Highway between Orbost and Genoa, the creek and river crossings were improved by providing high level bridges and approaches. This work will overcome the inconvenience experienced in the past during floods, and traffic will not be interrupted.

On the South Gippsland Highway the old timber bridge on the Longford Causeway was replaced with a modern concrete structure.

On the Prince's Highway East between Lakes Entrance and Nowa Nowa a new bridge was erected on a deviation of the highway over the Toorloo Arm. The structure consists of four spans each of 40 feet length with a roadway of 22 feet between kerbs. The bridge has four steel joists with timber piles and structure. The total cost was £1.600.

Plate No. 25.—Showing new bridge erected on the Princes Highway East over the Toorloo Arm.

The widening of the bridge over the Broken River on the Hume Highway at Benalla which was constructed 30 years ago was put in hand during last year. This work became necessary owing to the existing roadway width of 20 feet being too narrow for present day traffic, which was being retarded, and the congested area on the bridge was liable to cause accidents. It was, therefore, decided to widen the traffic way to 30 feet and provide a footway of 6 feet at each side. The work which is being carried out under the supervision of the Benalla Shire Council is estimated to cost £8.000, and should be completed by the end of the present calendar year. Details of the work are described in the report of the Board's Engineer and progress of the work is shown in Plate No. 26.

Plate No. 26.—Showing work in progress for the widening of the bridge over the Broken River on the Sydney Road at Benalla.

The erection of a bridge over the channel between Newhaven on Phillip Island and the main land at San Remo was commenced last year. The structure will span a channel width of 1,800 feet, and to meet the conditions it is proposed to erect a bridge consisting of a suspension span of 550 feet over the deep water channel together with 24 relieving spans over the shallow waters. The estimated cost of the work is £37,500. Sketch plan of the new structure is shown in plate No. 27, and plate No. 28 depicts the progress of the work as at the 30th June. Details of the work being carried out are given in the appended report of the Chief Engineer.

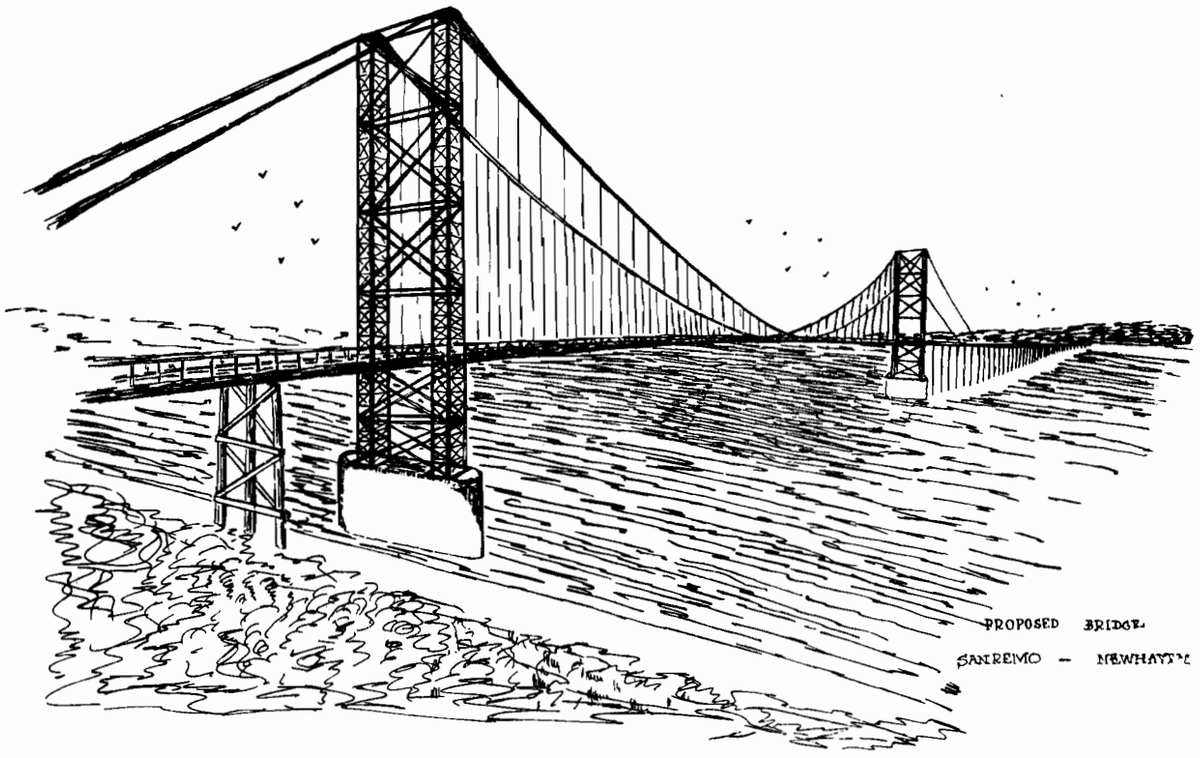


Plate No. 27.—Sketch of proposed new bridge over the channel between Newhaven and Phillip Island.

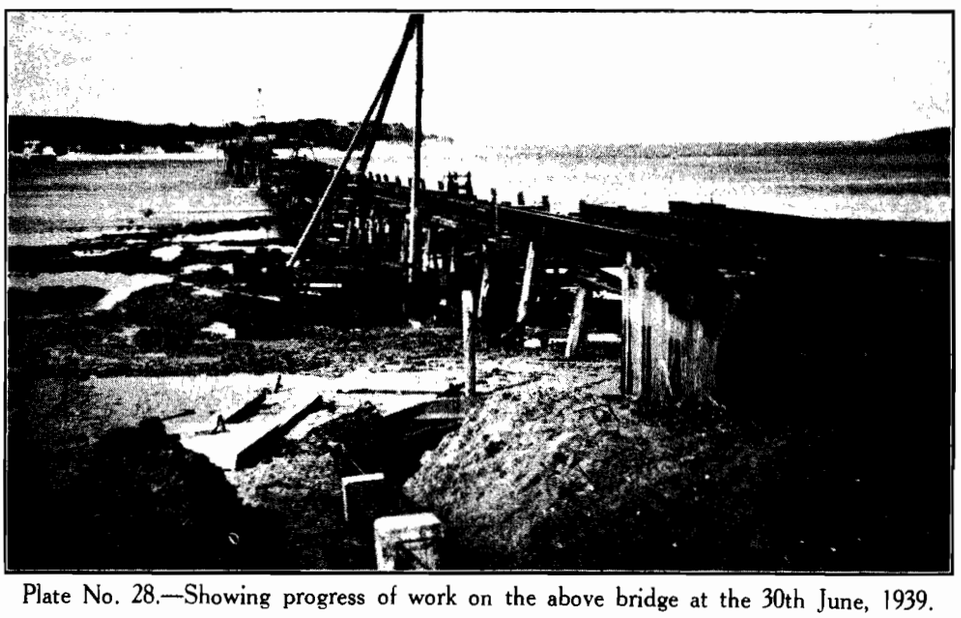


Plate No. 28.—Showing progress of work on the above bridge at the 30th June, 1939.

In the Shire of Warrnambool a bridge over the Hopkins River was erected near the Hopkins Falls under the supervision of the Shire Engineer by direct labour. This structure, which is 312 feet long and 18 feet in width, was erected in steel and concrete and consists of five spans. The total cost of the work was £4,088.

Plate No. 29.—New bridge erected over the Hopkins River in the Shire of Warrnambool.

To replace the old bridge over the Tarwin River on the Main South Gippsland Road, a new structure was designed by the Board. The new bridge will be of a semi-low level type at the site of the present bridge, and will be above all normal winter floods. The structure will consist of timber piles, steel joists and timber decking. A contract was entered into for the erection of a bridge 440 feet long and 22 feet wide at a cost of £3,750, including supervision. Particulars of the work are set out in the Chief Engineer's report.

Plans were prepared for extending and widening the North Arm bridge on the Prince's Highway at Lakes Entrance. The original bridge, which is 124 feet long and 16 feet wide and was erected by contract in 1917, developed a number of defects due to the action of salt water. These defects are being remedied, a footway constructed to cater for pedestrians, the structure widened and the abutment wingwalls replaced at a total cost of £5,000.

In the town of Horsham on the Hamilton Road, a new reinforced concrete bridge was erected over the Wimmera River. The new structure which is shown in plate No. 30 consists of five spans each of 40 feet and of two relieving spans concealed within the curtain wall of the end supports. The width is 30 feet, of which 25 feet is for vehicular traffic and five feet for pedestrian traffic. The new structure is in keeping with the large number of modern buildings erected in this progressive town. The cost including approach roads was £9,250.

Plate No. 30.—Showing new bridge over the Wimmera River in the Town of Horsham.

A new bridge at Goomalibee over the Broken River in the Benalla district which is 200 feet long and 16 feet wide was erected last year at a cost of £2,400. The end span is cantilevered out by 15 feet by extending the joists through. This type of structure overcomes the problem where there is doubt as to the stability of the banks of a river in flood times, and obviates the necessity for a deep and costly abutment.

The bridge known as Speir's Bridge, similar in type to that at Goomalibee, was erected over the Mount Emu Creek on the Garvoc-Laang Road in the Shire of Warrnambool. The structure is 228 feet long and 18 feet wide and cost £2,700. The completed bridge is shown in plate No. 31.

Plate No. 31.—Showing bridge erected over the Mount Emu Creek on the Garvoc-Laang Road in the Shire of Warrnambool.

The old bridge over the Nicholson River on the Prince's Highway between Bairnsdale and Lakes Entrance, which was erected many years ago, became too weak and narrow to take modern traffic and plans and specifications were prepared for a new structure having four spans of 70 feet each and two relieving spans each of 30 feet. As no satisfactory tenders were received for the work, it was decided to carry out the work by direct labour. The work is now well in hand and should be completed before the end of the present calendar year. The total cost including approaches was estimated at £15,000. Progress of the work is shown in plate No. 32.

Plate No. 32.—Showing progress of work on the Nicholson River bridge to the 30th June, 1939.

METROPOLITAN ROADS AND BRIDGES.

Roads.

The principal works carried out during last year were the construction, reconstruction and improvement of outer metropolitan roads in continuation of similar work done during the previous year. These roads are situated between declared main country roads leading to the metropolis and tramway termini, or connect with through metropolitan roads.

The total expenditure on these roads since the *Country Roads (Borrowing) Act* 1933 (No. 4188) was passed is £250,448 to the 30th June last, leaving a balance of £249,552 from the existing authorization of £500,000. The sum of £57,866 was expended from loan funds on construction works, and £13,547 from the Country Roads Board Fund on maintenance during the twelve months ended 30th June, 1939.

In the outer metropolitan area work on main roads has progressed considerably.

The Burwood Road, in the City of Box Hill, has been under construction for some time, and this year the portion between Elgar Road and Middleborough Road was sealed, thus completing the section.

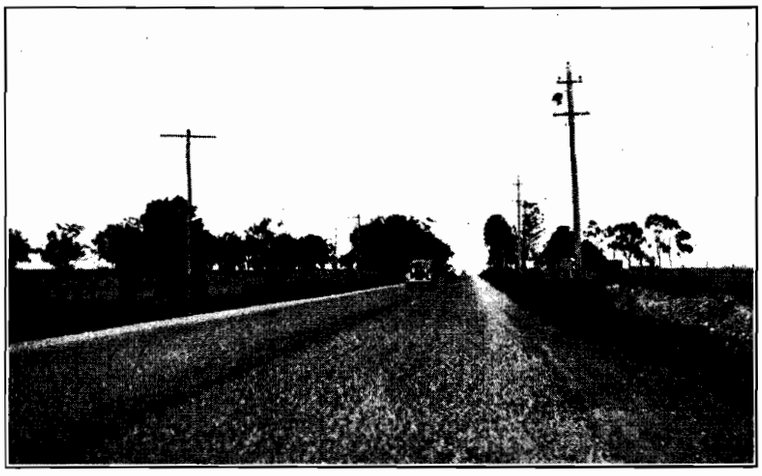


Plate No. 33.—Showing widened section of Burwood Road in the City of Box Hill.

On Warrigal Road also there has been considerable work. Between Riversdale Road and Burwood Road and between Highbury Road and Gardiner's Creek Bridge, the road was completely reconstructed with fine crushed rock, and primed and sealed for a width of 30 feet between channels over the greater portion of the length. At Gardiner's Creek the new concrete bridge was completed and traffic allowed across on the 25th October, 1938. Particulars of this structure were given in the Board's report of last year.

Further south, between Holmesglen railway station and the Prince's Highway, it had been intended to reconstruct the pavement completely, but this was not possible on account of the shortage of loan funds. Conditions were, however, greatly improved by laying a plant mix surfacing course. Further south again, in the City of Moorabbin, a considerable improvement was made by strengthening the sandy shoulders with quarry waste.

In Camberwell City work was done on Doncaster Road east of Balwyn Road, approximately half a mile being widened with fine crushed rock on the south side. This will be primed and sealed next financial year.

In Footscray City ·22 miles of Napier Street, between Moreland Street and Hyde Street, was declared a main road, and a rolled concrete base constructed by the City Council. A fine graded hot mix bituminous surface was then laid by the Board, this being the first occasion in Melbourne when sheet asphalt was satisfactorily spread with a drag.

In Preston City reconstruction of Epping Road progressed, a commencement being made with the section between Southerhay Street and the Reservoir railway crossing, which consisted of an old macadam pavement with high cross fall and deep channels. Concrete kerbs and channels were built at a satisfactory level and the shoulders constructed in modified macadam. The work will be completed subsequently by surfacing with a drag spread seal coat over the whole width.

The remaining length of narrow, old-fashioned pavement on Beach Road was removed when the section between Royal Avenue and Bluff Road, Sandringham, was widened. The work included the construction of channels, underground drains and, finally, a drag spread seal coat. The whole of Beach Road from South Road to Mordialloc is now 30 feet wide from the kerb to the edge of the pavement.

On Point Nepean Road in the City of Mordialloc, the old section between Warrigal Road, Mentone, and the overhead railway bridge was widened to 30 feet with fine crushed rock, particular care being taken with the layout of the curves. The section was primed and sealed early in July, 1939. A commencement has been made with the work of improving a poor curve at Mentone but this cannot be completed until the Postal Department undergrounds the telephone lines and removes two poles.

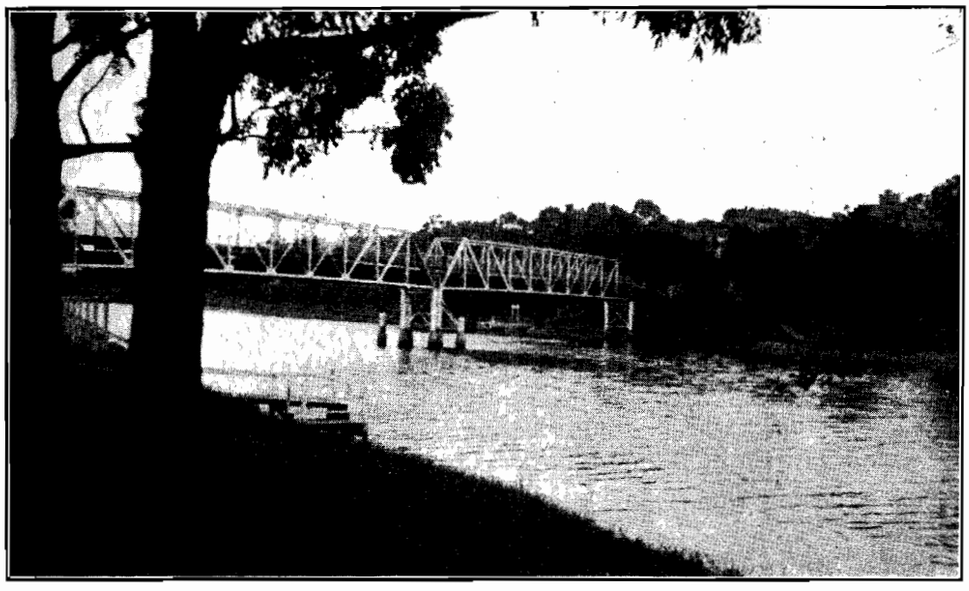
On the Prince's Highway in the City of Oakleigh, the old experimental concrete section which was constructed in 1922 was surfaced with a drag spread plant mix seal coat. The work was carried out by the Oakleigh City Council and arrangements were made for three kinds of aggregate to be used. Measurements of wear on these sections will be taken at intervals in an attempt to correlate laboratory tests with field results.

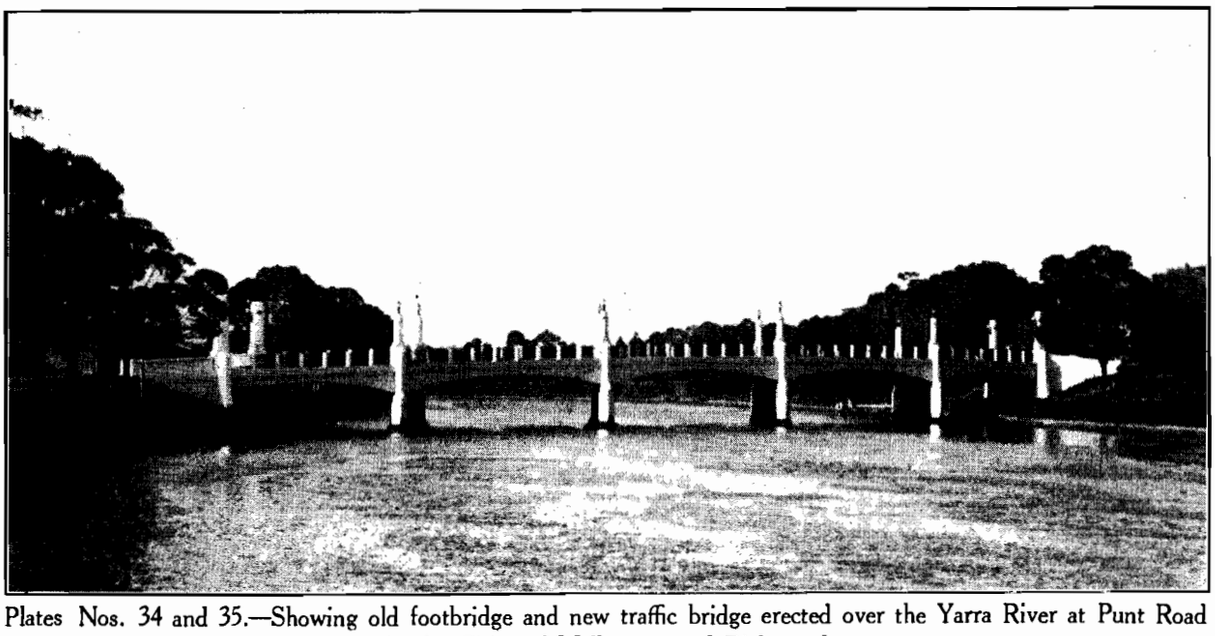
Bridges.

The completion of a new bridge over the Yarra at Punt Road was a feature of the year's work. The structure which is now known as Hoddle Bridge, in honour of Mr. Robert Hoddle, the surveyor who planned the City of Melbourne, was officially opened by the Honourable the Premier on the 22nd December last.

Five spans of 65, 85, 85, 85 and 65 feet carry a roadway of 50 feet and two footways each of a width of 8 feet, the beam span of 85 feet being the longest yet built in Australia. The quantity of concrete required was 4,600 cubic yards and the weight of the reinforcement was 600 tons. A total of 190 men were employed on the work of construction, divided into three shifts. Full details of the work are given in the appended report of the Chief Engineer.

The cost which was defrayed out of loan funds under the provisions of the Country Roads Act, was £77,009 and half of this amount was apportioned to the City Council and immediately paid by that body. Plates Nos. 34 and 35 show the old footbridge and the new structure.





Plates Nos. 34 and 35.—Showing old footbridge and new traffic bridge erected over the Yarra River at Punt Road in the Cities of Melbourne and Richmond.

TREE PLANTING ON ROADSIDES.

The judicious planting of trees on State highways and main roads during the past few years has had the effect of considerably improving the appearance of the roadsides. No hard and fast rules have been adopted for the beautification of the roadsides because of varying local conditions requiring variation in treatment. Generally, however, on long strips of roads various species of trees suitable for the locality have been planted under a definite plan, and the system of planting has been diversified by the planting of clumps of trees wherever possible, or by planting groups of trees with adequate openings where vistas would otherwise be obscured. On main roads of short length, avenue planting has been done by municipal councils resulting in pleasing effects being introduced.

The objective of the Board is to plant stretches of highways rather than plant on scattered sections. A definite outline of the work to be done is prepared each year and is being carried out in a progressive manner.

The preservation of indigenous trees growing on the roadsides has engaged the close attention of the Board, and the action taken in removing dead timber and clearing scrub from areas of growing native timber has not only enhanced the appearance of the surroundings, but has eliminated a source of danger from fire.

The efforts made by the Board for the improvement of the roads have been supported by municipal councils, progress associations, the League of Youth and the Country Women's Association, resulting in 81 miles of State highways being planted during last year and 29 miles of main roads.

On main roads the cost of supplying and erecting tree-guards or fencing was paid under the maintenance provisions of the Country Roads Act, whilst the preparation of the ground and the planting of the trees was arranged by the municipal councils. The greater number of the trees was supplied by the Forests Commission, but in many cases trees were provided by the Councils or progress associations.

As an instance of the fruitful efforts of municipal councils, the planting done by the Alexandra Shire Council might be mentioned.

Mahogany gums (*Eucalpytus botryoides*) were planted in October, 1938, on the Upper Goulburn Road. The trees were planted in holes (18 inches in diameter and 24 inches deep; top soil was first placed in the hole and then under soil along with two 3-inch agricultural pipes placed on end. The trees were then planted and mulched with old decayed peas stock. Watering was done through the agricultural pipes and remarkable growth resulted in spite of the very dry season and the fact that the trees were in ground of poor clayey material.

Plate No. 36 shows the development of one of the trees up to the middle of February last.

Plate No. 36.—Example of tree planting in Alexandra Shire.

The primary object of the Board in improving the roadsides is to conserve and develop the natural growth of trees on either side of the pavement. To prevent the destruction of indigenous trees, the Board's officers exercised constant vigilance. Under no circumstances is growing timber allowed to be removed without the permission of the Board, but in several instances growing trees were destroyed without the Board's knowledge, and where satisfactory proof against offenders was obtainable, proceedings were instituted and fines inflicted.

From the proceeds derived from the sale of dead timber on main roads and State highways additional trees were planted, and trees which had been cut on account of their interference with telephone and electric transmission lines were replaced. The amount collected from the sale of timber was £31.

The Postmaster-General's Department and the State Electricity Commission closely co-operated with the Board and municipal councils with a view to avoiding the destruction of trees as much as possible. In all cases, officers of the Board traversed the proposed routes of the lines to be erected in company with the officers of the other departments, with the object of deciding on the most suitable location of the poles and thus avoiding unnecessary cutting or destruction of trees. In cases where the destruction or serious disfigurement of trees would have been necessary, the Electricity Commission avoided that course by acquiring easements through private property.

The total number of trees planted during the 1938 season was 15,550 over a distance of 180 miles.

The amount expended by the Board in erecting tree guards and fencing, &c., on State highways and main roads during last year was £7,662, whilst £3,960 was expended in maintaining trees already planted on State highways, such work being carried out under the supervision of the Board's patrolmen. A total amount of £6,223 was paid from the Country Roads Board Fund on account of planting and £1,439 from Unemployment Relief funds.

The following statement sets out the number of trees planted on State highways and main roads during 1939:—

—	Number of Trees Planted.	Approximate Mileage Planted.
State Highways—		
Prince's Highway West	167	12·1
Prince's Highway East	430	1·7
Western Highway	1,029	6·1
Calder Highway	192	1·5
Hume Highway	236	17·6
Omeo Highway	215	2·0
Murray Valley Highway	550	15·9
South Gippsland Highway	50	1·0
Midland Highway	1,612	20·1
Northern Highway	90	2·1
Henty Highway	21	·2
Main Roads	5,490	29·0
Total	10,082	109·3

EMPLOYMENT AND WAGES.

On works carried out under the direct supervision of the Board, 7,750 men were employed during last year over varying periods, compared with 7,245 men during the previous year. Of this number, 650 men were engaged under unemployment relief conditions as against 2,211 for the year ended 30th June, 1938, the large reduction being due to the decrease of unemployment relief funds allotted to the Board. On the Board's ordinary works, 7,100 men were employed, 690 of whom were regularly engaged on patrol maintenance work, &c.

An amount of £435,014 was paid in actual wages to men employed directly by the Board, which represents 42 per cent. of the total wages paid, namely £1,029,323, in respect of all road works carried out by the municipalities and the Board. On works undertaken by contract under the supervision of the municipalities and the Board, an expenditure of £564,699 was incurred, of which it is estimated that £338,820 was expended on wages. The total amount expended on wages during the year was, therefore, £1,368,143, or 65 per cent. of the total expenditure incurred on actual road works.

On 1st November, 1938, a new Arbitration Court Award came into operation covering the Australian Workers' Union. The Board, together with various other Government departments and instrumentalities is a respondent to the award which covers in general, the industry of road construction and maintenance.

No serious or costly variations of the previous award were made. The court, however, considered that owing to the permanent or semi-permanent nature of the employment in certain divisions of the industry, as for example, patrol maintenance work, the new award should provide for employment on either a weekly or casual basis.

Employees on a weekly basis are now granted six days constant service leave per annum; they are paid for nine award holidays and are entitled to claim up to four days' sick leave each year. Men employed on a casual basis are in general paid only for time actually worked, but the hourly base rate is loaded to compensate for the loss of privileges granted to weekly employees. The new award also granted to the employer the option of working its employees a five-day or six-day week of 44 hours.

SAFETY OF THE ROAD.

The growing demand for an efficient road service free from unnecessary hazards is being met by the Board within the limits of the funds available and much progress has been made towards the building of wider and safer roads to meet the expanding requirements of traffic.

Year by year every endeavour is being made to build a maximum of safety into the roads, but in spite of the improvements made the loss of life on the roads of the State is appalling. It would, therefore, appear that faulty human nature is more responsible than faulty roads.

Year by year many of the difficult driving sections of State highways and main roads are being improved by the elimination of unnecessary curves. Whilst the straightening of these curves is a problem in so far as the cost is concerned, much has been done by either deviating or straightening, and where funds do not permit of all horizontal turns being dealt with immediately, they have been marked by warning signs fitted with reflectors, white posts have been erected, and on narrow mountain roads guard fencing has been provided, with a view to promoting safety and giving confidence to the drivers of motor vehicles, more particularly at night when any danger that may exist is not so obvious as in the day time.

In the designing of highways the object that the Board has kept in view has been to make them safe for traffic travelling at reasonable speed, and in this connexion much has been accomplished over the past few years by superelevating, widening, easing of curves, and strengthening of shoulders. It is neither practical nor economical to construct highways for excessive speeds, unless special service roads are built at high cost, which is not justified.

Another matter that enters into the road safety problem is the caravan trailer drawn by the private motor car, which has considerably increased in numbers during the past few years. Although it is of light construction, its wheels are fitted with pneumatic tires and the vehicle causes little or no damage to the roads, it is considered that this type of vehicle should be regulated as regards equipment such as adequate couplings for attachment to the motor cars, height, width, braking, &c.

With a view to ensuring greater safety on the roads the Board extended the marking of lines on the pavements of State highways, main roads and tourists' roads having a pavement width of not less than 20 feet. On State highways 280 miles of continuous lines are now marked and on main roads 125 miles.

Under the provisions of the *Country Roads (Traffic Regulation) Act* (No. 4585) which was passed by Parliament in November, 1938, power is given to the Governor in Council to make regulations for regulating traffic in relation to marks, lines or indications upon the roadway of any State highway, main road or tourists' road and regulations under that authority were made by the Governor in Council and gazetted on the 22nd February last.

These regulations prescribe that the driver of any vehicle on any State highway, main road or tourists' road shall keep his vehicle to the left-hand side of a longitudinal line placed on the roadway and when he is about to overtake any vehicle proceeding in the same direction he may, when it is safe to do so, drive the vehicle to or on the right-hand side of the line and when crossing from the left-hand side of the roadway to the other side for the purpose of turning to the right into another road or street, the driver may when it is safe to do so, drive the vehicle across the line.

Where double lines are marked on the roadway the driver of a vehicle must keep to the left-hand side of the lines and not cross same under any circumstances, and no vehicle is allowed to stop or remain stationary on any part of the roadway on which double lines have been placed nor within a distance of 1 foot of the edge of the roadway.

With a view to uniformity, the Traffic Advisory Committee has since recommended that similar regulations be included in the traffic code.

The experience already gained by the Board and the police has proved that the use of traffic lines on country roads has been very successful. The lines confine traffic to the proper lanes and enable drivers of vehicles to see the line until the oncoming vehicle is almost opposite and at the same time keep such vehicle sufficiently in view to ensure that is it not advancing across the line. In fog, in particular, the centre line on the drivers' side has proved a great advantage.

Records kept by the Board indicate that during the past year 373 accidents occurred on State highways, of which 47 were fatal. Returns furnished by the Government Statist show that during the twelve months ended 30th June, last there were 3,823 accidents on roads outside the city and suburban radius, resulting in injury to 1,973 persons; 194 persons sustained fatal injuries compared with 204 during the previous year. Comparing these figures with those of the corresponding period of the previous year, it is observed that the number of accidents decreased by 347, equivalent to 8·34 per cent., whilst the number of fatalities decreased by 10, equal to 9·51 per cent.

The following statement prepared by the Government Statist relating to traffic accidents which occurred on public thoroughfares throughout the State during the twelve months ended 30th June last is of interest:—

Place of Occurrence.	Number of Accidents in which Persons were Killed or Injured.	Number of Persons Killed.	Number of Persons Injured.	Number of Accidents in which no Person was Killed or Injured.	Total Number of Accidents.
City of Melbourne	1,470	47	1,593	4,161	5,631
Metropolitan Area (including City of Melbourne)	3,508	177	3,862	5,534	9,042
Total Metropolitan Area	4,978	224	5,455	9,695	14,673
Remainder of State	1,558	194	1,973	2,265	3,823
Grand Total	6,536	418	7,428	11,960	18,496

The following statement also prepared by the Government Statist indicates the causes of accidents attributable to drivers or riders, vehicles, passengers, pedestrians and other causes:—

Stated Cause.	Number of Accidents.		
	Fatal.	Non-fatal with Injured.	Total.
Driver or Rider—			
Skidding on roadway	33	279	312
Failure to exercise care at intersection	17	511	528
Excessive speed	23	127	150
Not keeping to left	24	229	253
Swerving to avoid vehicle or other object	..	135	135
Stopping or turning in front of other vehicle or leaving kerb without warning	10	270	280
Level crossing	8	8	16
Obscured vision	6	142	148
Dazzled by sun or light	9	119	128
Breaking traffic regulations or failing to obey traffic officer's signal ..	5	85	90
Careless, negligent or inefficient driving	68	1,018	1,086
Hit and run motorist	4	89	93
Error of judgment	6	497	503
All other	10	305	315
Total	223	3,814	4,037
Vehicle —			
Defective mechanism and tires	12	190	202
No lights	3	37	40
Total	15	227	242
Passenger—			
Alighting from moving vehicle	..	24	24
Falling from moving vehicle	..	3	3
Total	..	27	27

Stated Cause.	Number of Accidents.		
	Fatal.	Non-fatal with Injured.	Total.
Pedestrian—			
Walking or running on roadway or crossing without care	63	1,010	1,073
Alighting from or boarding vehicle in motion	3	53	56
Stepping on to road without care	6	43	49
Other	31	462	493
Total	103	1,568	1,671
Other—			
Horses shying, bolting or stumbling	4	33	37
Other (including not known)	45	477	522
Total	49	510	559
Grand Total	390	6,146	6,536

Under the powers conferred under Act No. 4332, the Board is empowered to impound cattle grazing or found wandering on State highways without the consent in writing of the Board and without some person in attendance. The number of offences reported to the Board by its ranger was 132 ; 1,021 cattle and horses were impounded during the year ; 36 persons were cautioned by letter or personally warned by the ranger. Prosecutions were launched against 94 persons who ignored the caution given. The action taken to rid the highways of unattended stock has had the effect of greatly diminishing dangers to traffic, but constant vigilance is required to prevent owners of stock turning them out on to the highways, particularly at night.

The ready co-operation of municipal councils and the efforts of municipal officers have been of great assistance to the Board's officer in carrying out his work.

PLANS AND SPECIFICATIONS.

Since the inception of the Board, it has been the practice for plans and specifications for road and bridge works to be prepared by the engineers of municipal councils and submitted to the Board for its approval before the works are commenced, but in cases where councils have not sufficient staff to carry out and supervise extensive works, and have not the necessary plant, the Board with the approval of the Governor-in-Council has done the work under its supervision.

On submission of plans and specifications by municipal councils, they are immediately examined and checked by the Board's Examining Engineer and if satisfactory, are returned to the Council with a view to tenders being invited, except when it is considered it would be more economical and circumstances justify the work being done by day labour, such as in the case of a council possessing efficient plant and employing its own skilled gang of workmen.

During the past year, plans and specifications for 2,769 separate projects were submitted by municipal councils and dealt with by the Board, whilst plans and specifications for 243 projects were prepared by the Board's staff and carried out under the Board's direct supervision.

Works carried out under municipal councils involved an expenditure of £1,309,847, and those under the Board £788,937.

RESEARCH WORK.

In the road testing laboratory, routine testing of materials used on road construction and maintenance is carried out to determine their suitability and to ensure their compliance with the specifications with the object of obtaining durability in the roadways, bridges and culverts. The greater part of the time of the staff in the Board's laboratory was occupied in testing samples submitted by Councils before works progressed, but close attention was given to solving various technical problems arising from time to time during the course of construction works and in making special investigations.

The total expenditure incurred on testing and research, including the purchase of new equipment and the salaries of officers engaged exclusively on this work was only £2,313 or ·11 per cent. of the total expenditure on work carried out under the Board's control during the financial year.

During the year a considerable volume of investigation work was put in hand so as to elucidate some of the technical problems which arise in various sections of the Board's work.

In construction of pavements throughout the State, the Board has for many years made use of local gravels, cementitious sand, limestone rubble, or other local materials, the stability of the pavements being achieved by the dense mechanical grading of the materials and by the presence of cohesive binder. In a previous report, the Chief Engineer referred to the inauguration of an investigation of samples of materials throughout the State, of which the field behaviour with seasonal variations was known. This investigation, which is naturally one which must extend over several years, was continued during last year, and some relation has been observed between laboratory tests and field behaviour. In drawing up specifications for supply of materials in a given locality, reference is made to test results of known materials and the work done has been of considerable assistance in securing the use of satisfactory material. In this way, the Board is enabled to use a wide variety of local materials, to profit by occasional failures, and to avoid the excessive cost of cartage of materials from long distances. Where local materials are not ideal, it may be possible from field trials and a study of laboratory test results, to add some other local material which will produce a satisfactory pavement. A typical instance of this has been the marked success of adding selected marl as a binding agent to the rather poorly graded buckshot gravels with which the Ocean Road in the vicinity of Port Campbell is surfaced, the resulting pavement having been rendered stable in both summer and winter, whereas previously the gravel corrugated very badly in summer.

The Australian climate is a severe one, the very dry summer conditions tending to result in disintegration of roads, making them dusty, rough and difficult to maintain. Reference was made in a previous report to the use of common salt and other cheap chemicals in minimizing the dust nuisance, particularly during the construction period.

Further investigations have been carried out to ascertain how long an application of chemicals to a buckshot gravel pavement would be effective in assisting maintenance, and how rapidly the soluble salt is dissipated during a winter. Great improvement was noticeable immediately after application of salt and other chemicals, but as the gravel was of a porous nature, the subsequent loss of chemicals was quite rapid. With the continuous rural development of Victoria, and the ever increasing mileage of paved roads, in many of which gravel is used, and with increasing traffic density, the problem of making the best use of the natural materials and improving them so as to conserve them as far as possible, and to avoid wastage, is one which will demand further investigation.

Throughout the period of expansion of bituminous work, the Board's Engineers have been engaged in an immense amount of investigation work, directed towards the development of economical methods, the designing of suitable equipment, and studying in the field and in the laboratory means for improving the quality and durability of the work. Many of the field trials are done in conjunction with the annual maintenance and reconstruction programme, and an especially large mileage was devoted to investigations during the season under review. For instance, on the Western Highway near Burrumbeet, in the resealing of 10 miles, aggregates of three different gradings were tried out, half being gravel and half basalt screenings, whilst bituminous binders of three types were employed with varying rates of application. As a result of observations already made on this length, the Board's specification for covering aggregates for roadmix sealing has been slightly revised. Examination of this experimental length, which contains altogether 89 different sections, will be made from time to time, enabling other factors to be studied and suitable amendments and perfections of the Board's practice adopted.

A parallel experimental work is being carried out on the Midland Highway between Benalla and Shepparton under hotter climatic conditions, where a length of resealing of 8 miles was required. This length was divided into 59 different sections, of which 27 sections will enable comparisons to be made with the results at Burrumbeet where the climate is colder, the thickness of resealing of both works being $\frac{3}{4}$ inch. The remaining 32 sections are, however, devoted to a similar study, with a resealed thickness of $\frac{1}{2}$ an inch.

Early in the season a length of 1 mile of roadmix seal on the Healesville Road in Lillydale Shire was carried out as an experimental work, in order to try out varying rates of application of binder and certain alternative methods of procedure. Elsewhere in the State, new extensions of seal coats have been similarly conducted as experimental work, two miles on the Murray Valley Highway near Echuca, in a hot climate, and one mile on the Geelong–Portarlington main road, in a cooler climate, being devoted to studying variations in the viscosity of binder and the relative values of dehydrated tar and fuel oil as a fluxing medium. On the Calder Highway between Berriwillock and Sea Lake, 6 miles of extension of surface treatment was carried out on the limestone rubble pavements which are extensively used in that area, the best available local limestone being also used as covering aggregate. As other and harder types of stone are not found in the north-west of the State, the primary object of this experiment is to discover the suitability and best method of use of the local material.

In the course of its bituminous work, the Board has used increasing quantities of tar products, the lighter tars being especially suitable for priming new surfaces in preparation for extension of seal coats, and during the last season 6,273 tons of cold tar were used in this way. To a lesser extent, the Board has made use of heavier grades of tar, but since asphaltic bitumen has been available, the Board has discontinued the application of tar on the surface of the road, owing to its very rapid deterioration under the conditions of exposure obtaining on a road surface. In an endeavour to assist local industry, and to reduce the amount of material being imported into Australia, the Board for several years continued the use of tar as a fluxing material to mix with the asphaltic bitumen and bring it to a consistency suitable for application. The tar replaced fuel oil which has, however, remained in use in some localities for special reasons. The Board's experience has generally been that a seal coat in which fuel oil is used as a flux will last without a reseal for eight or nine years. It has found that seal coats in which tar has been used as a flux, in many cases showed signs of distress at a comparatively early age. A laboratory investigation was undertaken during the year to recover for comparative tests, samples of binder obtained from roads of various ages, where the two materials had been used as fluxes during the last five or six years. The results of tests on the binders are given in detail in the Chief Engineer's report, and show very clearly the undesirable hardening which has occurred in the binder where tar has been used. In consequence of this investigation, the Board's use of tar as a flux must in future be confined to new seal coats applied to very sound pavements, where any appreciable yield of the pavement under traffic is unlikely.

During the year, the Board has had in hand several important bridge works, and the method for the design of concrete mixes mentioned in the last report, has been used with very gratifying results, consistently high strength of concrete being obtained.

Special researches have also been carried out on bridge foundations to determine the safe loads which can be applied. The Board's laboratory is equipped with special apparatus for this type of work and advantage has also been taken of this by other Government authorities, for whom the Board carried out special soil investigations during the year.

A summary of laboratory tests carried out during the year is as follows :—

—	Number of Samples.	Number of Tests.
Soil, gravel, concrete aggregates	1,368	2,100 (approx.)
Bituminous and tarry materials	702	1,323
Lubricating oil	32	89
Traffic marking lacquer	73	146
Miscellaneous	10	22
Totals	2,185	3,680

PLANT.

For the more economical maintenance of State highways, the Board entered into a contract during last year for the construction and mounting of an aggregate loader on a Ford truck chassis. The loader has a normal output of $2\frac{1}{8}$ cubic yards per minute and has a travelling capacity of 20 miles per hour.

By the use of two large scoops which were purchased by the Board, considerable savings have already been effected in the cost of works. One of the units which is carried on two wheels has a 5–6 yards capacity, whilst the other which is carried on four wheels has a capacity of 7–9 yards. These scoops have proved very effective and economical in their operation. Full details are set out in the appended report of the Chief Engineer.

Prior to the commencement of the Board's activities, and in the early years of its work pavements of a waterbound type were general, i.e., either waterbound macadam or natural gravel. Waterbound road surfaces require very close and continuous maintenance under the action of weather and traffic, and in recognition of this the responsibility for maintenance of the main roads of the State was from the outset, a most important duty. Prior to 1912, some use had been made of tar and bitumen as a means of reducing surface maintenance, and also improving the conditions of travelling, but the use of these materials had not been extended beyond urban areas. However, the Board at once purchased two tar sprayers and the necessary heaters, which were used for the first ten years of its work in carrying out sealing and resealing of from 50 to 100 miles per annum. The great advantages of bituminous surface treatment became so apparent by 1924, that additional spraying plant was purchased, and this

section of the Board's work has increased in importance until in last financial year, 14 sets of plant were in use, each consisting of a mechanical sprayer and a large number of attendant plant units, the length of road sealed or resealed being 847 miles during last season.

CONFERENCE OF ENGINEERS.

A conference of the Board's District Engineers was held in Melbourne in January last, when matters pertaining to scouring and soil erosion on roads, supply of materials, maintenance of roads and bridges, direct labour and contract works, testing of materials and other subjects relating to the work of the Board were discussed. At the conclusion of the conference, opportunity was taken of inspecting works in progress in the central district.

At this conference, valuable information of much benefit to the District Engineers is obtained and this in turn is transmitted to the Shire Engineers with whom the District Engineers are in close contact. In addition, closer co-operation is established between members of the Board's staff which is essential for the more efficient conduct of the Board's operations.

With a view to discussing road problems of mutual interest to the Board and municipal councils, it is intended to convene a conference of municipal engineers and the Board's engineers in one of the road districts, to be followed later by similar conferences in other districts so that all municipal engineers will have an opportunity of taking part in the discussions.

OFFENCES UNDER ACTS AFFECTING THE BOARD.

A number of offenders was proceeded against under the provisions of the Motor Car Act for exceeding weight and speed limits for motor cars carrying goods for hire or in the course of trade on State highways and main roads. Fines were inflicted in 348 cases for travelling at speeds in excess of the limits allowed, and in 125 cases for carrying excessive weights.

Action was taken against 178 drivers of motor vehicles for carrying loads in excess of the carrying capacity of the vehicle as shown by the certificate of registration, and fines and costs were imposed. Three drivers were convicted for carrying on their vehicles loads in excess of the regulation width.

The total number of prosecutions during the year was 774, the total fines imposed amounted to £2,035 and costs, £214.

Particulars of the cases dealt with are given in the following table :—

List of Offences Reported and Action Taken.

Nature of Offence.	Warned.	Convicted and Fined.	Fines Imposed.	Costs.
			£ s. d.	£ s. d.
Motor Car Acts.				
Speeding (freight)	5	348	1,011 0 0	95 6 1
Exceeding six (6) tons	9	33	121 0 0	14 18 7
Exceeding eight (8) tons	7	32	80 0 0	6 1 0
Exceeding thirteen (13) tons	2	60	179 10 0	11 14 3
Exceeding carrying capacity	12	178	489 0 0	44 18 10
Exceeding eight (8) feet in width	1	3	5 0 0	0 12 6
Exceeding twelve (12) feet in height	..	1	2 0 0	0 2 6
Tare not marked on vehicle	..	1	0 10 0	..
Refusing to allow truck to be weighed	..	2	5 10 0	0 5 0
Failing to comply with conditions of special permit	5	4	15 0 0	0 15 6
Stating false name and address	..	1	3 0 0	0 2 6
Total	41	663	1,911 10 0	174 16 9
Country Roads Act.				
Using trailer on closed road without permit	1	1	2 0 0	0 12 0
Removing sand	..	2	1 0 0	0 14 0
Carting on closed roads without permit	4	6	11 10 0	1 0 0
Destroying or removing timber	1	5	7 0 0	1 6 0
Total	6	14	21 10 0	3 12 0
Justices Act.				
Aiding and abetting	..	1	2 0 0	0 8 9
Damage to Roads, By-law No. 3.				
Traction Engine	..	2	7 0 0	1 17 9
Country Roads (Impounding of Cattle) Act.				
Wandering stock	36	94	93 5 0	32 15 4
Grand Total	83	774	2,035 5 0	213 10 7

STORES AND WORKSHOPS.

At the Board's central storeyard, established at Montague-street, South Melbourne, the whole of the Board's plant is maintained in working order for use on the roads. The value of the plant as at the 30th June was £108,899.

Besides maintenance of plant, the Plant Engineer, who is directly responsible to the Chief Engineer, supervises the design and development of new types of equipment and plant. The storeyard is also utilized as a central distributing depot for tools, stores and equipment to direct labour camps and patrol gangs.

During the past year it was decided that the No. 2 storeyard in Normanby-street, South Melbourne, was too small and quite unsuitable for storing and handling plant which has considerably increased over the last few years. To meet requirements a block of land at the corner of Ford and Brady-streets, South Melbourne, was leased from the Lands Department, and this has since been fenced in and levelled and a suitable building, with an area of approximately 15,000 square feet, erected for stores and sprayer auxiliary equipment. In addition a small building for use as an oil and petrol store, a mess and wash room, a small repair shop, together with crane and gantry for use in the repair of heaters, loading and unloading plant and rolled steel joists have been erected.

The new accommodation will enable plant to be systematically stored and will be the means of saving time and reducing handling costs.

The removal of stores from the No. 1 storeyard has made possible the extension of the carpenter's shop where additional floor space was urgently needed.

The book values of the major units of plant in operation at the 30th June, 1939, are as follows :—

Unit of Plant.	Number.	Value.
		£
Air compressors	11	2,825
Bitumen heaters	131	7,922
Bitumen sprayers	16	5,530
Horse graders	99	5,302
Motor trucks	60	16,552
Power graders	32	25,440
Rollers—power	46	6,245
Rotary brooms	36	2,395
Scoops—carry all	2	2,250
Spreaders—belt	14	7,430
Tractors	12	3,030*
Trail builders	2	3,600

* In the 1937–38 figures Tractors included an amount of £1,789, which was the value of Tractor No. 19. As this unit is a portion of Trail Builder No. 1, the revised valuation of £1,500 is included in the trail builder's figures.

To provide for depreciation the original cost of the plant has been written down from time to time to the above values.

AMENDED LEGISLATION.

During the year the following acts affecting the Board were passed by Parliament :—

Country Roads Board Fund Act 1938 (No. 4570).

Provision is made in this Act for—

(1) Fees for licences to drive motor cars paid under the Motor Car Act during the financial year 1938–39 not to be paid into the Country Roads Board Fund. Similar provision was made in previous enactments in respect of the years 1933–34, 1934–35, 1935–36, 1936–37, and 1937–38.

(2) Suspension of annual payment of £50,000 from consolidated revenue into the Country Roads Board Fund for the year 1938–39.

In the original Act £10,000 was to be used for the maintenance of main roads and State highways, and £40,000 for distribution amongst certain municipalities towards the construction, renewal and maintenance, &c., of streets or roads.

Country Roads (Traffic Regulation) Act 1938 (No. 4585).

This Act authorizes the Country Roads Board to place and maintain marks, lines or other indications on any part of any carriageway on any State highway, main road, or tourists' road, the cost to be paid out of the Country Roads Board Fund.

The Governor in Council is empowered, from time to time, to make regulations for regulating traffic on State highways, main roads and tourists' roads in relation to such marks, lines, &c., and to prescribe penalties for breaches of the regulations. Any member of the Police Force, any officer appointed, either generally or in writing by the Chairman of the Country Roads Board, or any officer appointed by the council of the municipality in which the breach occurs may institute proceedings for any breach of the regulations made under this Act.

Tourists' Reserves Development Act 1938.

This Act authorizes the expenditure of loan moneys totalling £100,000 on permanent works chiefly comprising the provision of access roads, sanitary conveniences, camping reserves, &c., for the encouragement and use of tourist traffic, and for the expenditure of a revenue of approximately £10,000 per annum to meet interest and sinking fund charges of approximately £6,000 per annum in respect of loan expenditure, to pay administrative charges and permit of the carrying out of maintenance works to keep tourists' reserves and facilities (other than proclaimed tourists' roads) in good order, any balance from the revenue funds to be applied to developmental permanent works.

The loan moneys are to be raised by the sale of Victorian Government stock or debentures, whilst the revenue funds are to be provided by an annual levy of 1 per cent. on the net annual revenue of the Country Roads Board Fund, providing on that basis a revenue fund of approximately £10,000 per annum.

Provision is made for the Minister of Public Works to authorize expenditure for the carrying out of permanent works after consideration of a report from the Tourists' Resorts Committee.

STATEMENT OF ACCOUNTS.

Statement of accounts for the year ended 30th June, 1939, of the Country Roads Board Fund and balance as at that date appear in Appendix " A."

The statement shows that the gross revenue of the Fund amounted to £1,800,575, including fines totalling £19,663 imposed under the Motor Car Act, whilst the cost of collection and refunds totalled £109,613, made up as follows :—

	£	£
Motor Registration Branch—		
Salaries and wages	33,722	
Number plates, &c.	5,183	
Rent of offices	1,246	
Office equipment	697	
Miscellaneous	1,343	
		42,191
Police Patrol—		
Wages and travelling allowances	23,763	
Motor expenses, purchase of motor cars and cycles	8,974	
		32,737
Postage, printing and stationery		12,470
Registration fees and fines refunded		22,215
Total cost of collection and refunds		109,613
The net revenue under the Motor Car Act was, therefore		1,690,962
Add amount contributed by municipalities towards maintenance and sundry receipts from other sources		174,427
Leaving a total amount available for meeting interest and sinking fund charges and maintenance of State highways, main roads and tourists' roads of		1,865,389

The following statement sets out the payments made from the Country Roads Board Fund during the financial year ended 30th June, 1939, to meet interest and sinking fund charges, including an amount of £240,170 by which country municipalities were relieved in respect of loan expenditure of £11,219,625 on declared main and developmental roads :—

	£ s. d.	£ s. d.
Main Roads—		
Interest	191,012 4 5	
Sinking Fund contribution..	10,322 19 10	
Exchange	17,028 12 10	
Loan Conversion	796 15 6	
Recoup to National Debt Sinking Fund on London Loan conversion	433 18 9	
		219,594 11 4
Developmental Roads—		
Interest	229,641 4 1*	
Sinking Fund conversion	14,454 15 11	
Exchange	22,634 12 11	
Loan conversion	1,069 1 1	
Recoup to National Debt Sinking Fund on London Loan conversions	582 4 5	
		268,381 18 5
State Loan Repayment Fund		29,541 14 0
Developmental Railways Account, Section 83 of Act 3662 ..		2,198 3 8
Total		519,716 7 5

* An amount of £26,000, being portion of interest on Developmental Roads Loan Expenditure was temporarily borne by Consolidated Revenue, and will be repaid during the year 1939–40.

After meeting these payments and making provision for plant, administration and other expenses, the amount available for maintenance improvement, and restoration of main roads, State highways, tourists' roads and Murray River bridges and approaches was £1,206,913, of which £1,205,069 was expended during the year. The balance, £1,844 represents commitments carried forward to the present year. In addition, the sum of £131,147 was expended from funds available under the Federal-aid roads agreement for the maintenance and reconstruction of roads, making the total expenditure on maintenance, &c., £1,336,216.

For the maintenance, improvement and restoration of main roads and State highways the estimated requirements totalled £1,778,226 for the year, but as the municipal contribution is governed by the amount expended the expenditure incurred by certain councils on main roads was insufficient to meet requirements. On the basis of the estimates submitted the funds fell short of requirements by £392,383.

The total amount expended during the year from loan was £57,866, all of which was spent on declared main roads in the metropolitan area ; the proportion of interest and redemption charges to the 30th June last totalled £3,230.

The relief granted to country municipalities on account of interest and sinking fund payments in respect of main and developmental roads for the year under Act 4415 was £240,170.

The municipal liability in the metropolitan area on account of expenditure incurred out of loan on the construction and reconstruction of main roads and bridges was £125,224 as at the 30th June last, to which they will be required to contribute 6 per cent. per annum, including 4½ per cent. interest and the balance sinking fund, over a term of 31½ years.

Statement of expenditure on road construction and maintenance including expenditure under special appropriations, is set out below in summarized form, from which it will be noted that the total for the year was £2,098,784 9s. :—

—		Under Board's Supervision.			Under Councils' Supervision.			Total.		
		£	*s.*	*d.*	£	*s.*	*d.*	£	*s.*	*d.*
1. State Highways—										
Maintenance and reconditioning		385,730	18	7	67,976	13	8	453,707	12	3
2. Main Roads—										
Construction and restoration ..	224,289 18 3	..			..			..		
Maintenance and reconditioning ..	802,920 9 0	200,248	7	4	826,961	19	11	1,027,210	7	3
3. Developmental Roads—										
Construction, &c.	413,842 14 8	..			..			..		
Roads for Isolated settlers ..	54,279 2 0	87,307	0	9	380,814	15	11	468,121	16	8
4. State Unemployment Relief Works—										
Main and Developmental Roads, &c.		42,309	8	2	12,352	7	8	54,661	15	10
5. Tourists' Roads—										
Construction, &c.	35,267 19 1	..			..			..		
Maintenance and reconditioning ..	42,426 11 3	63,908	3	0	13,786	7	4	77,694	10	4
6. Murray River Bridges and Punts—										
Maintenance		3,833	2	6	233	14	8	4,066	17	2
7. Roads adjoining Commonwealth Properties—										
Maintenance		5,600	4	4	7,721	5	2	13,321	9	6
Totals		788,937	4	8	1,309,847	4	4	2,098,784	9	0

Towards the expenditure on the construction, reconstruction, maintenance, &c., of main and developmental roads an amount of £781,089 was expended under the provisions of the *Federal Aid Roads Act* 1931 and the *Federal Aid Roads and Works Act* 1937.

Owing to the fact that the grants from Unemployment Relief Funds in certain cases could be used for labour only, it was necessary for the Board to contribute the sum of £5,595 from the Country Roads Board Fund and from funds provided under the Federal Aid Roads Agreement for the supply of equipment, pipes, making of surveys, &c., in order to make the work effective.

The expenditure by the Board of funds from various sources is indicated by percentages in the diagrams on page 48.

Diagram No. 1 shows the percentage of expenditure under the several headings for the year ended 30th June last, and Diagram No. 2 gives similar information since the inception of the Board to the end of the financial year.

Apportionment of Costs.

In accordance with the provisions of Section 287 of the *Country Roads Act* 1928, the cost of permanent works and maintenance was apportioned for the year ended 30th June, 1938; £28,103 was apportioned to municipalities in respect of permanent works and £170,209 on account of maintenance.

There were no arrears of municipal contributions at the 30th June last, every Council having paid the amount owing by it.

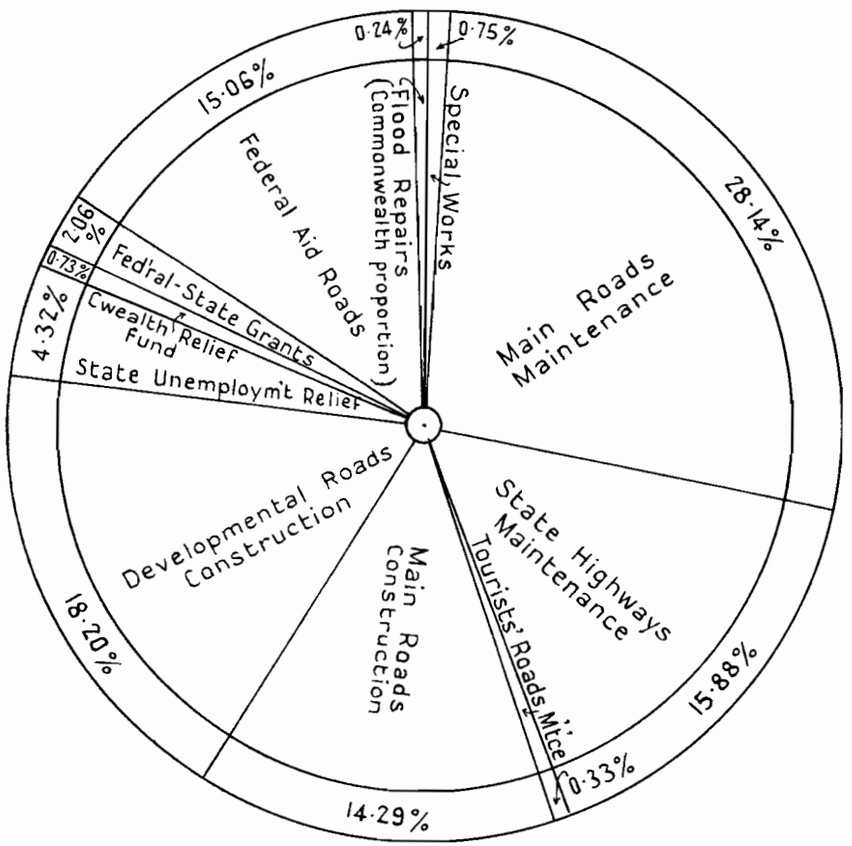
MOTOR REGISTRATION.

During the year 266,862 motor cars were registered, the following classes of vehicles being included in the total :—

Private cars	151,130	
Commercial motor vehicles	33,901	
Primary producers' vehicles	47,427	
Hire cars	2,261	
Licensed under Omnibus Acts	438	
Trailers	4,668	
Traction engines, &c.	339	
		240,164
Motor cycles		26,698
Total		266,862

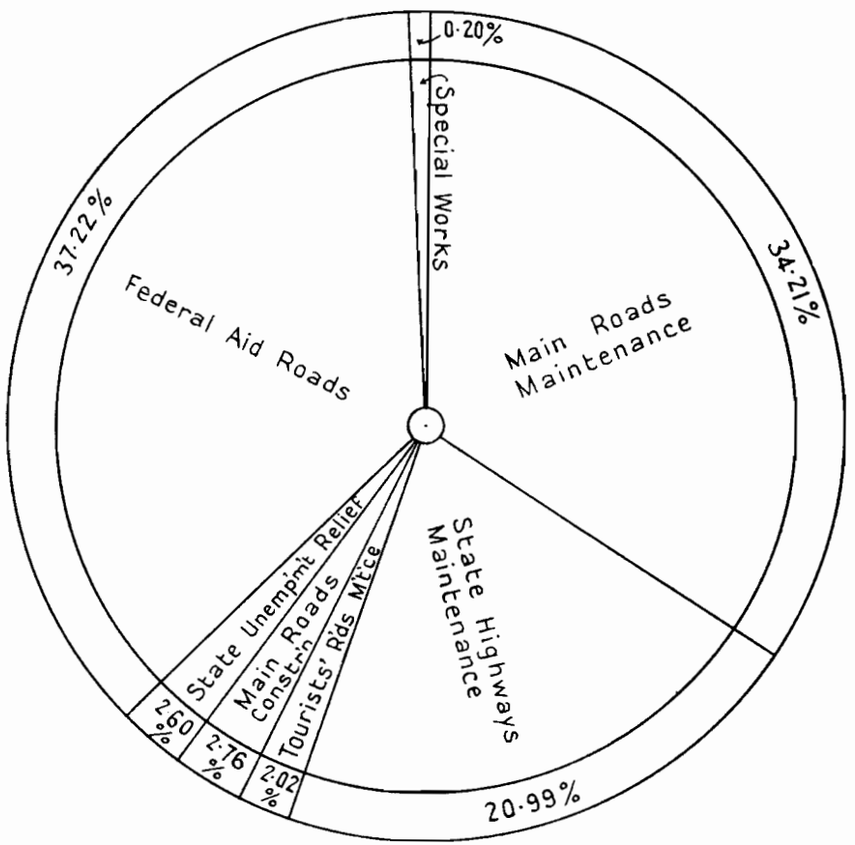
Diagrams showing comparative sectional total Expenditure on Road Works.

No. 1.



Percentages of
Total Expenditure since inception of Board
to 30·6·1939.

No. 2.



Percentages of
Expenditure for Financial Year
1938-39.

Registrations for the year increased by 11,852 in comparison with those of the previous year. The increase is equivalent to 4·65 per cent. as compared with an increase of 7·5 per cent. for the year ended 30th June, 1938.

The number of registered private cars increased by 8,115 or 5·67 per cent.; commercial vehicles increased by 906 equivalent to 2·74 per cent.; whilst the number of primary producers' vehicles shows an increase of 2,848, or 6·39 per cent.

Motor cycles decreased in number by 635, equal to 2·32 per cent., and hire cars increased by 97, or 4·48 per cent.

The total amount allowed on account of payment of concessional registration fees on primary producers' vehicles under Act No. 4285 was approximately £95,000 for the year.

The number of trailers used for the carriage of goods increased by 451 during the financial year, equivalent to 10·69 per cent. A large increase in the number of caravan trailers was noticeable on the roads, but no record is kept of the number used as these vehicles are not required to be registered.

The net revenue from motor registrations during the year was £1,690,962, as compared with £1,608,879 for the previous year.

Under Act No. 4570 an amount of £89,948 representing fees for licences to drive motor cars was paid into the consolidated revenue instead of being credited to the Country Roads Board Fund as was done prior to July, 1932, when the amount was used in maintaining main roads and State highways.

The amount of revenue collected from the weighbridge installed in the vicinity of the Motor Registration Office at the Exhibition Building during the past year was £556 as against £531 for the previous year. The cost of operating and supervision was £331 so that the net amount received was £225 for the 12 months.

APPENDICES.

The following statements appear in the Appendices :—

(*a*) Showing the amounts received and expended during the year under the Country Roads Acts.

(*b*) Apportionment of expenditure in connection with the construction and maintenance of main roads for the year ended 30th June, 1938.

(*c*) Expenditure on the construction and maintenance of main roads, tourists' roads and State highways during the year ended 30th June, 1939.

(*d*) Mileage, locality, &c., of main roads constructed and maintained during the past year.

(*e*) Mileage, locality, &c., of State highways reconstructed and maintained.

(*f*) Mileage, locality, &c., of tourists' roads reconstructed and maintained.

(*g*) List of unemployment relief works put in hand during the year ended 30th June, 1939.

We have the honor to be, Sir,

Your Obedient Servants,

F. W. FRICKE, Chairman.

W. L. DALE, Member.

A. D. MACKENZIE, Member.

R. JANSEN,

Secretary.

13588/39.—4

CHIEF ENGINEER'S REPORT.

Country Roads Board,
Exhibition Buildings,
Carlton, N.3.
13th November, 1939.

The Chairman,
Sir,

I have the honour to submit herewith a brief discussion of points of technical interest occurring in the work carried out by the Board during the year ended 30th June, 1939.

GUARD FENCES.

The Board has, for many years, adopted the principle, on important Main Roads or State Highways, of erecting guard fencing on the edges of high embankments, on bridge approaches, or in other situations, such as along the edges of deep scours, where there is danger of serious accident if a vehicle should leave the formation. The type of fence adopted some years ago when traffic was generally much slower than it is to-day, and when individual loads were also smaller, was a type of fence having a top rail and a hub rail supported on 5-in. x 5-in. strutted posts. With the increase in speed and unit loads of traffic, these fences were found to be inadequate to prevent vehicles leaving the road when they were struck at high speed. In addition, they were costly. An investigation was therefore made of the various types of fences used, including those using steel hub rails, laminated board hub rails, so-called "traffic tape," and similar types. In particular, an extensive series of investigations carried out by the Highways Department of the State of Pennsylvania, U.S.A., was studied. At this investigation, loaded trucks were run down hills at the various types of guard fence. As a result of these investigations, and after constructing and observing several different types on the State Highways, the type shown in Plate 37. has been adopted. Details are shown in Fig. A. It will be seen that this type uses two $\frac{3}{4}$-in. steel cables, supported at such a distance from the posts that if a vehicle hits the fence a glancing blow it can slide along the cable without the hub hitting the post. These fences have already given evidence of their effectiveness as they have been struck in a number of cases at a fairly high speed and have returned the vehicle to the pavement with little or no damage to either vehicle or fence. In a recent case, a heavily-loaded truck ran backwards on a steep grade and struck a cable guard fence. The only result was that four posts were pushed somewhat out of line, and the truck and driver were quite uninjured. Had it not been for this fence, a serious accident would have occurred. The cost of this type of fence is lower than for other practicable alternatives.

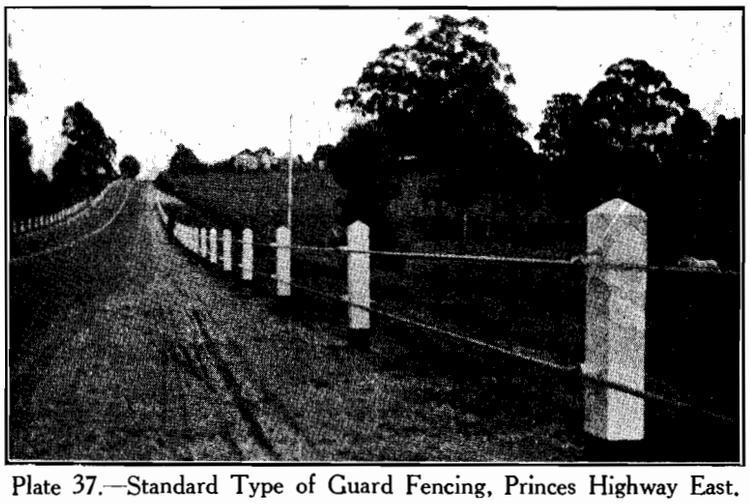


Plate 37.—Standard Type of Guard Fencing, Princes Highway East.

BITUMINOUS MATERIALS.

As pointed out in the last Annual Report, some trouble that had been experienced with road-mix seals, using certain hard aggregates, led to the abandonment of the use of dehydrated tars as a flux for road-mix sealing and the substitution of, or rather the reversion to, the use of fuel oil, as it had been found that a smaller total quantity of binder using fuel oil had been more effective in road-mix seals than larger quantities using dehydrated tar as a flux. As a result, and with a slight increase in binder content from .30 gallons per square yard to .33 gallons per square yard as a basic application, very little trouble has occurred with road-mix seals carried out during the past season. However, in order to obtain further information about the relative effects of oil and dehydrated tar, and to study other variables in road-mix seal work, comprehensive experimental sections were laid down during the year on the Main Healesville-road, on 10 miles of the Western Highway beyond Ballarat, and on the Midland Highway near Benalla, and details are given later, under the heading of "Bituminous Surface Treatment."

In order to further pursue the effect of tar flux as compared with asphaltic oil, a number of samples of seal coat of varying ages were taken from roads on which single seals had been laid over the past six or seven years. In these cases, the absence of any primer coat allowed a seal coat sample to be obtained free from dilution by the primer coat material. The viscosity at varying ages of the extracted bituminous material, which consisted originally of a fairly light road oil, made by fluxing 80–100 penetration bitumen with either asphaltic oil or dehydrated tar, is shown graphically in Fig. B. The much greater hardening of the binder where tar flux has been used is clearly shown, and indicates further the considerable difficulty that is experienced in making effective use of local vertical retort tars in bituminous surfacing work. Ductility was similarly affected. It would appear that this rapid hardening explains some of the cracking that has been found on some of the more flexible pavements, and it would appear that where there is any doubt as to the rigidity of the sub-grade and pavement, tar fluxes should be avoided.

Weathering Tests of Bituminous Materials.

For many years attempts have been made to devise a satisfactory weathering test for bituminous materials, and none so far have been very satisfactory, particularly those in which it has been desired to get a reasonable result in not more than a few days. Tests have recently been carried out in the laboratory where air is blown through the heated binder (in the case of road oils,

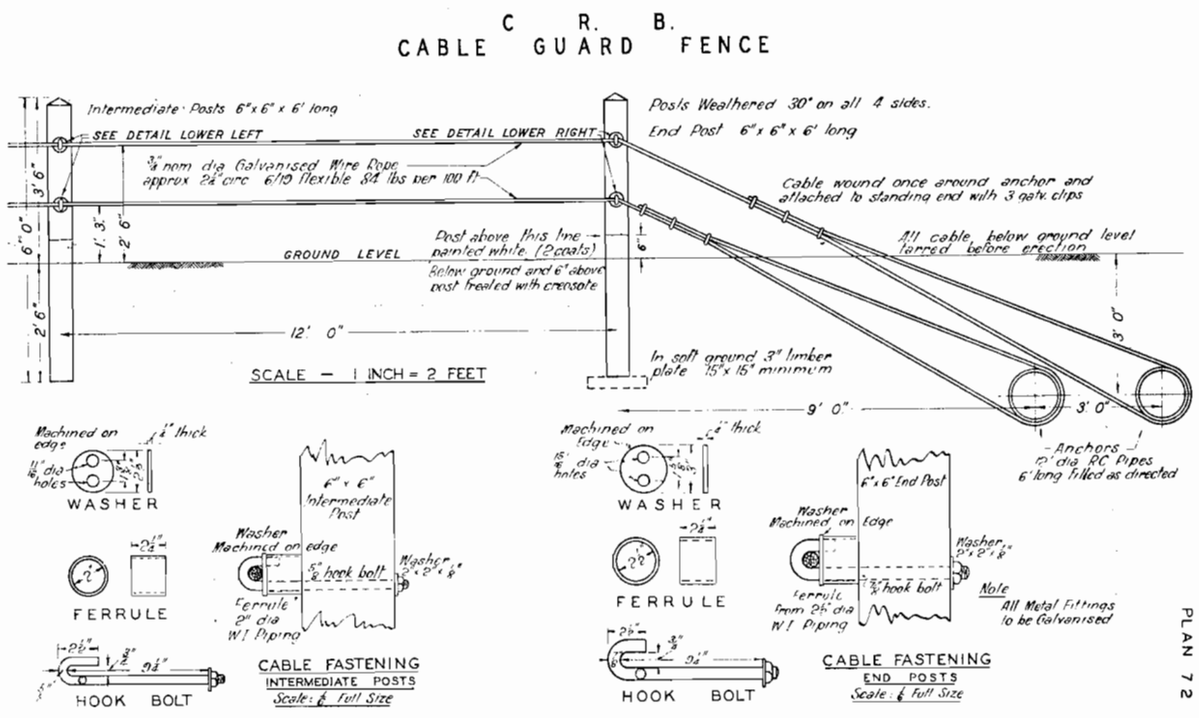


Fig. A.—Details of Standard Cable Guard Fence.

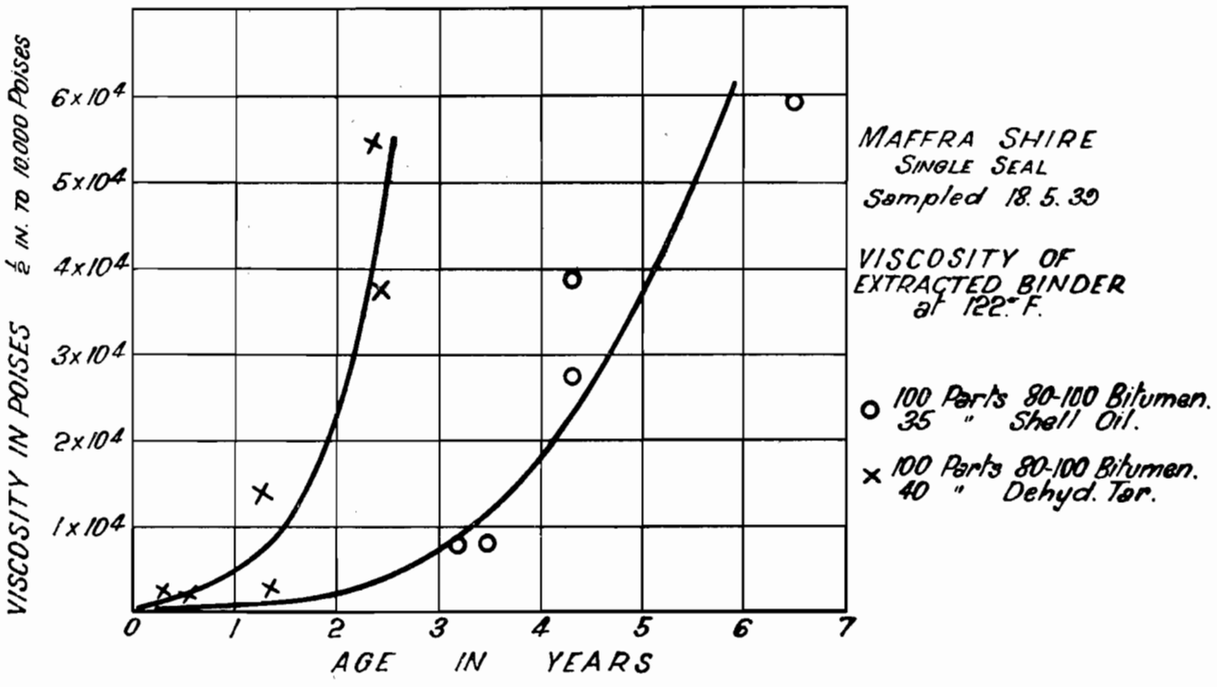


Fig. B.—Viscosity at varying ages of an extracted binder.

temperature of 350°F. is used) for a specified time. The standard adopted at present for this test is to blow air through the bitumen at the rate of 1.5 litres per minute for two hours. The following table shows results which have been obtained by the use of this test, and it will be seen that they give fairly parallel results to the result of the field tests of materials which have been weathered from four to six years in the field, and which are shown in Fig. B.

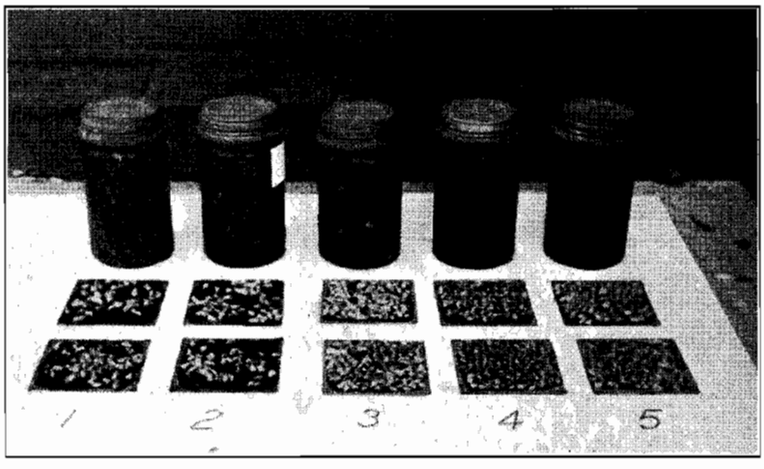
In other cases, where no such definite qualitative evidence is available, the general results are in line with observations, and indicate again the deleterious effect of tar fluxes on the weathering qualities of asphaltic bitumen, particularly where this material is to be used on flexible bases. Even on rigid bases, Hubbard and others have shown that the life of bituminous pavements is a function of the rate of cracking which was found to be a function of the rate of hardening of the bituminous binder. On all counts, therefore, it would seem that it is highly desirable to use a flux which will not result in early hardening and loss of ductility.

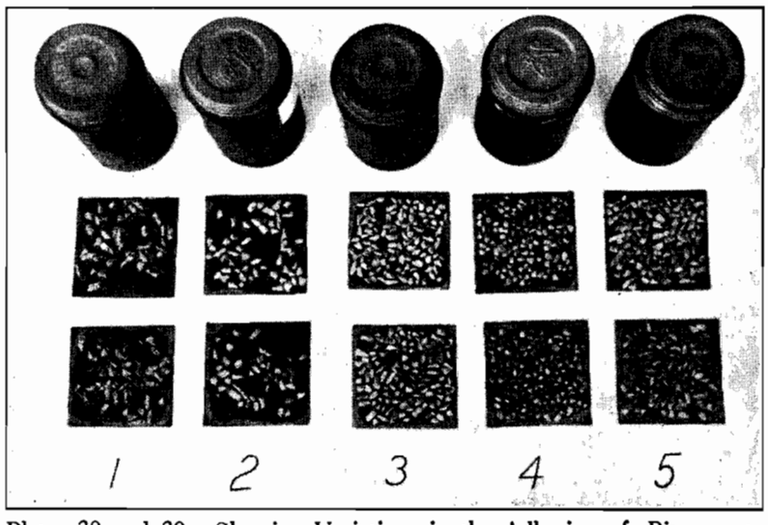
TABLE SHOWING RESULTS OF WEATHERING TESTS ON BITUMINOUS MATERIALS.

Material.	Viscosity at 50° C.	Penetration, 100 g., 5 sec., 25° C.		Ductility, 15° C.
		Original.	After Blowing.	After Blowing.
				cm.
Venezuelan bitumen	..	189	116	110+
Californian bitumen	..	183	126	110+
Bitumen/pitch mixture	..	Over 300	62	8·5
Bitumen/pitch mixture	..	245	54	4·3
100 parts R90 Mexican bitumen; 20 parts fuel oil	200 poise	..	136	66
100 parts R90 Mexican bitumen; 26 parts dehydrated tar ..	250 poise	..	61	11
100 parts R90 Mexican bitumen; 35 parts fuel oil	37 poise	..	232	100+
100 parts R90 Mexican bitumen; 40 parts dehydrated tar ..	85 poise	..	66	10·8
100 parts R90 Mexican bitumen; 15 parts fuel oil; 20 parts power kerosene	10 poise	..	101	36
100 parts R90 Mexican bitumen; 26 parts dehydrated tar; 20 parts power kerosene	13 poise	..	56	8
100 parts R90 Mexican bitumen; 26 parts dehydrated tar; 20 parts power kerosene. Check Test	13 poise	..	59	10

ADHESION OF BINDERS TO STONE.

A good deal of research work has been done in recent years in overseas laboratories on the subject of the adhesion of bituminous materials to stone. Fundamental research has so far produced little of immediate value to practising engineers in this respect, but two empirical tests recently devised give promise of being useful to us. The first, which was devised in England, is known as the plate test. In this test, a film of bitumen is poured on to a zinc plate to the thickness of about 1 millimeter, and stone to be tested is screened to a uniform grading, generally passing $\frac{3}{8}$-in. and retained on $\frac{1}{4}$-in. sieves. These small stones are then pressed into the bituminous film in one of the standard surface conditions, e.g., "as received," "wet and surface dried," or "surface wet." The plate with the aggregate adhering is then immersed in water for 24 hours, and at the end of that time the stones are removed with a pair of tweezers, and those stones which are found to have bitumen adhering to them are replaced on the plate. The value of the adhesion





Plates 38 and 39.—Showing Variations in the Adhesion of Bitumen to Various Aggregates.

between the stone and bituminous binder used is expressed in the percentage of stones which have stuck to the bitumen.

In another test, known as the jar test, originating in America, stones of a uniform and similar grading are mixed with about 4 per cent. of the bituminous binder concerned until all stones are uniformly covered. The stones are then placed in a jar which is filled with water, and at the end of 24 hours the stones are inspected to see what percentage of the stone is covered with bitumen. Considerable variation between aggregates has been found with both these tests, and Plates 38 and 39 give some indication of the variation. It has been found that, generally speaking, the jar test and the plate test place the stones in the same order of value, and this order is quite closely related to the observed field characteristics of a number of stones of which we have had considerable experience.

MODIFIED MACADAM PAVEMENTS.

Some nine or ten years ago, the Board built very many miles of modified macadam pavements in rural areas where gravel was not available, and these pavements have proved structurally very sound. The stability of these pavements has also been well demonstrated on the Prince's Highway in the City of Footscray, where very heavy industrial and quarry traffic has been using a modified macadam pavement for some years with every satisfaction.

This type of construction has, in rural areas, generally been replaced by the use of fine crushed rock on the grounds, firstly, of a slight decrease in first cost under favorable weather conditions, but more generally because of the higher standard of riding quality produced in the pavement. However, in outer metropolitan areas and on heavily trafficked rural roads in the vicinity of the metropolis, an objection to the use of fine crushed rock is the difficulty of avoiding dusty conditions during construction. Modified macadam, of course, is free from this defect.

In order to meet the requirements of good riding quality, reasonable cost, and adequate stability, it was decided that the approaches to Hoddle Bridge be constructed with modified macadam, but to substitute for the normal seal coat on the heavily primed macadam, a drag spread plant mix seal coat of ¾ inch consolidated thickness. The modified macadam, after 0.4 gallon of tar had been allowed to soak in in the normal manner, was trafficked for a few days, and was then given a tack coat of 0.1 gallon per square yard of cut-back bitumen, and then an open-graded plant mix was spread by drags to give a finished thickness of ¾ inch average consolidated thickness. The result on this road, which carries over 6,000 vehicles per day, has been quite satisfactory, the road having shown no sign of any instability, and riding qualities, due to the drag spreading of the seal coat, are remarkably good. It is felt that this type of construction has considerable possibilities under the circumstances mentioned above. In order to improve the riding qualities of this type of road without the use of a drag spread plant mix, it is proposed in the coming year to construct some sections using a smaller size stone for the macadam, and to spread this stone either with a drag or drag broom.

COLD PLANT MIXES.

For a number of years the Board has constructed in the metropolitan area, cold-mix pavements, using cutback bitumen as a binder. The normal cutback consists of 100 parts R.90 asphaltic bitumen, 7½ parts fuel oil, and 12½ parts power kerosene, the proportion of power kerosene being varied according to temperature.

While pug-mill mixers have been used where available, a considerable mileage has been satisfactorily constructed using concrete mixers, and during the last financial year considerable extensions of this type of construction were made in rural areas where it was possible to get adequate supplies of aggregate delivered from day to day by the local quarries. The difficulty with this simple type of plant is that there is no economical method of drying aggregate once it has become wet, and regular supplies *ex* quarries are therefore essential. For this reason it has been possible only to use this to a limited extent in rural areas. Where it has been used, it is found that it is possible to use a more densely-graded aggregate than that used for road-mix seals without segregation, thus getting a somewhat denser surface. It is also generally possible to get a better riding surface and greater uniformity of surface texture than with road-mix seal. A typical grading of material used is shown below, and the amount of cutback generally used has been 10¼–10¾ gallons per cubic yard (about 4 per cent.). It would seem that somewhat more binder than this could be used without the probability of the pavement becoming slippery, and this will be increased next year to a minimum of 11 gallons per cubic yard.

Percentage Passing Square Mesh Screens or Sieves (by Weight).

Sieve ..	⅜″	¼″	3/16″	No. 8	No. 18	No. 36	No. 200
Percentage passing ..	100	97	77	30	5	1	0·5

Approval has been given to the construction, this financial year, of a portable drier to work in conjunction with a cold-mix plant, in order to see whether such a unit could be operated sufficiently economically to make it practicable to replace some of the road-mix seals in areas where dry stone cannot be obtained. This, of course, applies to most parts of the State where the aggregate has to be put on the road many weeks before the plant arrives. The output of this plant is designed to be 100 cubic yards per day. This, of course, is generally much less than that of a normal roadmix seal plant consisting of a 400-gal. sprayer with three heaters and ancilliary equipment, and roadmix seal attachment on a power grader, which can comfortably put out 250 cubic yards per day total aggregate.

ROAD-MIX SEALS.

Attention has been drawn in the foregoing to certain experimental work carried out during the year to obtain further information about the relative effects of different types and viscosities of bituminous materials. One of the major problems associated with the Board's surface sealing programme is the task of making all units sufficiently portable to deal with the widely scattered, comparatively small, lengths of road which require treatment in each financial year. For road-mix seal work the type of mixing units now used is that which was described in the Annual Report for the year ended June, 1938, and is carried on a large Diesel-engined power grader. This machine is portable, and very simple to operate, and appears to give quite as good mixing as any other type of mixer which is reasonably portable and capable of handling ¾-in. loose thickness of material. All portable mixers, however, suffer from the fact that it is not possible to get any great length of blade, with the result that it seems to be impossible to avoid some segregation of coarse and fine particles of the aggregate. For most materials this is of no practical importance, and is difficult to see in the finished road. With stones which are "difficult," that is, their adhesion to the binder is low, and they tend to hold only a very thin film of binder, the effect of this segregation is to cause ravelling in certain places after a year or two. It has been found that certain gradings of aggregate are much better than others in

this respect, and in the experimental sections detailed under the heading of "Bituminous Surface Treatment," particularly on the sections at Ballarat and near Benalla, a number of various types of grading were used with different types of aggregate, in order to assess the optimum gradings.

It has been the practice for some years to apply the binder for road-mix seals in two applications. The first application is a tack coat at the rate of 0.1 gallon per square yard, and in a separate application the balance of the binder is sprayed over the spread aggregate, and this is followed by mixing, rolling, covering with toppings, and rolling in. The resulting mix has a very non-skid surface, and has also a good non-reflecting surface for night driving. For certain hard stone, however, there appears to be ground for believing that some of the difficulties experienced are due to the fact that the "glassy" surface of these stones holds only a comparatively thin film of binder on the surface, and even an increase in the total amount of binder has little effect in increasing this surface film. There is thus a tendency to lose toppings, and in any sections where there is slight segregation, a tendency to ravel has been noted as described above. In the experimental sections described in detail, much interest is being taken in the results of those where the binder has been applied in three applications. The third application is at the rate of .1 gallon per square yard, and is somewhat in the nature of a very light seal. A typical procedure is as follows:—Tack coat .1 gallon per square yard, second spray .13 gallon per square yard, then mix and spread, third spray .1 gallon per square yard, then roll and spread and roll in toppings as before. By this means a thicker film is obtained at the surface of the seal coat where ravelling usually commences, so that more toppings are retained and more bitumen is also retained in the surface of the seal, thus preventing ravelling. It was felt that this might possibly reduce the non-skid and non-glare characteristics of the pavement, but results, which are promising, to date indicate that this method might completely overcome the difficulties associated with certain aggregates, without losing the valuable characteristics of this type of re-seal. The slight extra cost of the three applications, and the extra toppings required, is approximately offset by the fact that the third spray omits kerosene, and thus is a cheaper binder. Details are given in the experimental section on the Healesville-road and at Ballarat.

PLANT.

Aggregate Loader.

A contract for the construction and mounting on a normal Ford truck chassis of an aggregate loader, which is shown in Plates 40 and 41 was completed during the financial year. This loader was designed by the Board's staff, and has a normal output of $2\frac{1}{4}$ cubic yards per minute, and is capable of travelling from job to job at 25 miles per hour with safety. This output is quite high for any type of portable loader, and as far as is known no loaders available can be travelled at any comparable speed.

Plate 40.—Showing Aggregate Loader mounted on Ford Chassis and in travelling position.

Plate 41.—Showing Aggregate Loader in Operating Position.

The plates show the machine in travelling and in the operating position, the time taken to change from travelling to operating position being only ten minutes. Very briefly the operation of the machine may be described thus:—

A power take-off on the normal truck gear box operates the elevator buckets and the spiral feed to the buckets. Between the rear of the normal truck gear box and the rear end of the propellor shaft is placed a special reduction gear box; this gear box gives a considerable reduction in the drive for "crowding," and in the alternative "straight through" position allows the truck to be driven in the normal way. The machine has operated very satisfactorily indeed, and it is hoped to gradually equip each of the Board's spraying units with one of these loaders. The only variation of moment which might be made in future designs is the use of an auxiliary gear box giving greater variation in crowding speeds. The cost of this unit, including truck, was £1,375, but if a number were purchased this, of course, would be somewhat reduced.

Large Scoops.

During the year, the Board purchased two large scoops, shown in Plates 42 and 43. The first was a scoop having a "struck" capacity of 5 yards, and heaped capacity of 6 yards, hydraulically operated, and carried on two wheels only. The second, which is a good deal more expensive, is carried on four wheels (six tires), the two rear wheels being duals, and the scoop has a "struck" capacity of 7.3 yards, heaped capacity 9 yards. All wheels are within the width of the bowl, and the scoop is cable operated.

The advantage of the latter type of scoop over the former is that it can cut close up to the batter or edge of the borrow pit; it leaves a very level borrow pit over which even light traffic can operate quite satisfactorily (this is important on certain construction jobs), and for the same tractor power greater loads can be carried per trip. While it is almost double the price of a two-wheeled scoop designed to be operated by a tractor of the same power, nevertheless, on a road

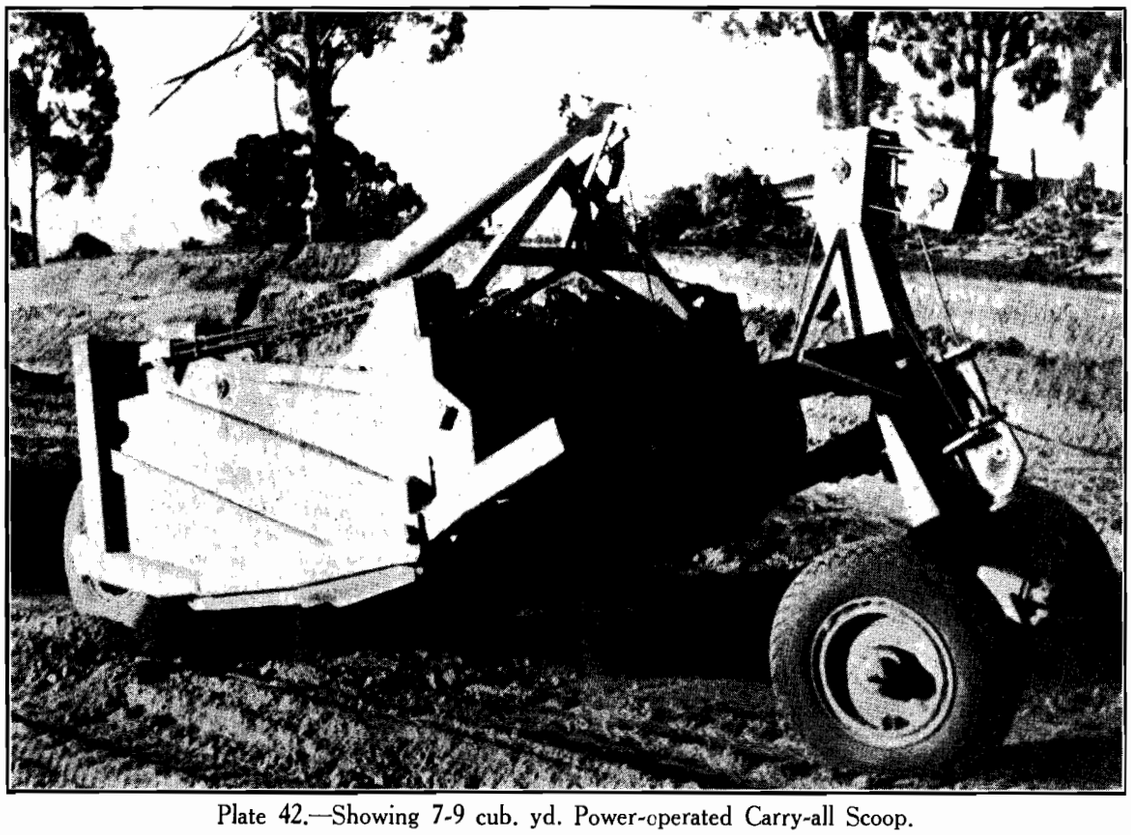


Plate 42.—Showing 7-9 cub. yd. Power-operated Carry-all Scoop.

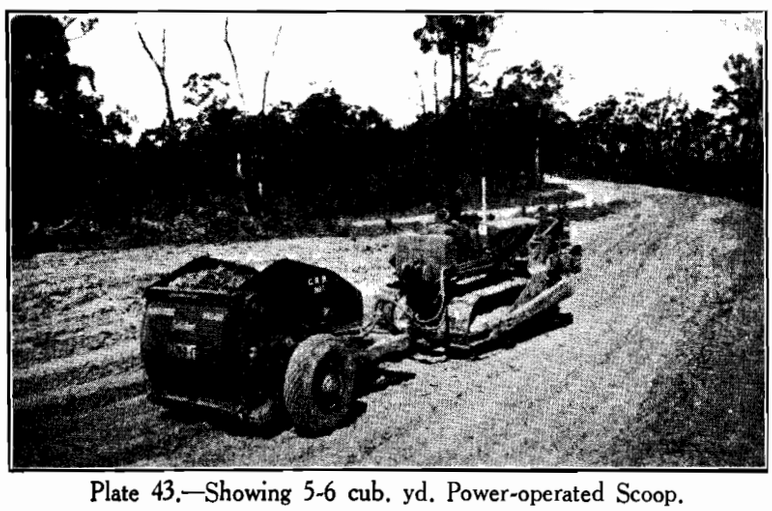


Plate 43.—Showing 5-6 cub. yd. Power-operated Scoop.

job of any magnitude, the four-wheeled type is considered generally more economical. Both scoops, however, have given excellent service during the year. These scoops will load even quite firm clay without ripping or ploughing, and, in fact, will load better without loosening, unless the material is very tight. The four-wheeled type, illustrated, which has a force-out tail-gate, can spread the material in thin uniform layers, and owing to the weight and number of tires, this type gives excellent consolidation of the thinly spread layer. The table below gives some average operation figures on various leads, together with the costs, which will be seen to be remarkably low for the leads in question. In addition, some figures are given of the consolidation achieved by trafficking with tractor and scoop alone with the larger scoop working at Broadford.

Table Showing Some Average Scoop Operation Figures.

Unit.	Lead (Lineal Feet).	Cubic Yards per 8-Hour Day (Solid Measure).	Cost per Cubic Yard (Solid Measure).	Locality.	Conditions.
			d.		
7–9 cubic yard scoop (four-wheeled) ..	1,400	240	7·0	Broadford ..	Good
	800	300	5·6	Broadford ..	Good
	650	560	3·0	Mallee ..	Good. Drift sand
	250	540	3·0	Mallee ..	Poor to fair. "Tight" sand
5–6 cubic yard scoop (two-wheeled)	1,300	120	11·0	Broadford ..	Good
	800	150	8·8	Broadford ..	Good

Cost of loading, hauling, and dumping only, including all costs other than supervision, &c., and freight to the job.

These units, together with the trailbuilders described in the previous Report, make it feasible to provide safe alignment and visibility at quite moderate costs. As an indication of this, it is pointed out that on a recent job of regrading a number of very dangerous "sharp crested" rises on the Henty Highway, north of Ouyen, the cost of the earthworks, despite some unfavorable factors, was only one-third of the estimated cost of methods using plant normally available.

600-gallon Sprayer.

Some of the Board's older 400-gallon sprayers equipped with gear pumps are reaching the end of their useful life, being now ten years' old. It was decided during last financial year to gradually replace these old units with 600-gallon units. This size was chosen as being about the maximum that could easily be mounted on any of the lighter types of truck units used as a semi-trailer or as a rigid six wheeler, and in particular it would be difficult to design readily transportable heater units of capacity greater than this. In considering the sprayer design, thought was given to either the semi-trailer or the rigid six-wheeler type, three axles being necessary to carry the required total loads. The rigid six wheeler was chosen, as it was desired to keep the unit as compact as possible for use on roads of fairly tortuous alignment, such as in the hill country, and in particular it was felt that driving on the two rear axles would be an advantage when spraying uphill on loose screenings, as for road-mix seals or when pulling out from the heaters under poor surface conditions. Designs were completed during the financial year, and it is proposed to put one unit only into operation next season, and as a result of the experience gained with this unit, the design of which is generally based on the quite satisfactory 400-gallon units which have now been in operation for five years, final design can be completed for replacing the balance of the older sprayers as conditions may require.

A six-way valve is used with a Kinney pump with a capacity of 350 gallons per minute, driven by a Ford V8 engine mounted behind the cab.

BITUMINOUS SURFACE TREATMENT.

1. Type of Work Carried Out During the Season of 1938–39.

(*a*) first seals.

The types of work, gradings of aggregate, and the types and viscosities of binders reported in the twenty-fifth annual report were again used.

(*b*) retreatments.

(i) Road-mix sealing.—The use of a medium curing, field produced, cut-back binder remained unchanged. The use of a dehydrated tar as the heavy flux oil was discontinued. The oil used as a heavy flux was an asphaltic oil having a viscosity of 0.03–0.07 poise at 122°F.

The initial viscosity of the binder and its rate of application were varied to meet the following conditions:—

Type of aggregate.

(i) Screenings.

(ii) Gravel.

(iii) Scoria (volcanic ash).

Grading of the aggregate.

In particular, with regard to the presence of more fines and dust than is present in a normal aggregate.

Weather conditions.

(i) Shade temperature.

(ii) Wind.

The variations of binder, and its rate of application with temperature, and class of aggregate shown in the tables, make no allowance for the effect of wind and excess of fines and/or dust in the aggregate on the rate of increase of the viscosity of the binder after application.

Where is was found that with the mixture set out for any particular temperature range, the binder became too stiff for proper spreading before thorough mixing had been completed, the original viscosity of the binder was reduced by further additions of power kerosene to the mixture. When this was done, the rate of application of binder was increased accordingly to maintain the correct rate of application of 80/100 bitumen and heavy flux oil in the work after the power kerosene had gone off.

Binders Used.

Aggregate.—Screenings.

If the No. 3B or 3C aggregate was *screenings*—

Aggregrate—Screenings.

Bitumen—80/100 penetration.

Heavy oil—Asphaltic oil.

Light oil—Power kerosene.

Range of Shade Temperature.	Binder.			Rate of Application of Binder in Gallons per Square Yard.		
				Loose Thickness of Aggregate in Inches.		
	Bitumen, 80/100.	Asphaltic Oil.	Power Kerosene.	½ inch.	¾ inch.	1 inch.
Over 95° F.	100	12½	12½	0·23	0·31	0·38
85–95° F.	100	12½	17½	0·24	0·32	0·39
75–85° F.	100	12½	22½	0·25	0·33	0·41
65–75° F.	100	12½	27½	0·26	0·35	0·43
60–65° F.	100	12½	32½	0·27	0·36	0·44
	100	12½	35	0·28	0·37	0·45

Aggregate.—Gravel.

If the No. 3B or 3C was *gravel* (screened or crushed and screened gravel)—

Aggregate—Gravel.
Bitumen—80/100 penetration.
Heavy oil—Asphaltic oil.
Light oil—Power kerosene.

Range of Shade Temperature.	Binder.			Rate of Application of Binder in Gallons per Square Yard.		
				Loose Thickness of Aggregate in Inches.		
	Bitumen, 80/100.	Asphaltic Oil.	Power Kerosene.	½ inch.	¾ inch.	1 inch.
Over 85° F.	100	10	10	0·23	0·31	0·38
80–85° F.	100	10	15	0·24	0·32	0·39
70–80° F.	100	10	20	0·25	0·33	0·41
65–70° F.	100	10	25	0·26	0·34	0·43
60–65° F.	100	10	30	0·27	0·36	0·44
	100	10	35	0·28	0·37	0·45

Aggregate.—Scoria (Volcanic Ash).

Aggregate—Scoria.
Bitumen—80/100 penetration.
Heavy oil—Asphaltic oil.
Light oil—Power kerosene.

Range of Shade Temperature.	Binder.			Rate of Application of Binder in Gallons per Square Yard.		
				Loose Thickness of Aggregate in Inches.		
	Bitumen, 80/100.	Asphaltic Oil.	Power Kerosene.	½ inch.	¾ inch.	1 inch.
Over 95° F.	100	20	10	0·23	0·28	0·35
85–95° F.	100	20	15	0·24	0·29	0·36
75–85° F.	100	20	20	0·25	0·30	0·37
65–75° F.	100	20	25	0·26	0·31	0·38
60–65° F.	100	20	30	0·27	0·32	0·39
	100	20	35	0·28	0·33	0·40

(ii) *Plantmix sealing.*—A start was made with the extension of drag spread cold laid plantmix work from the metropolitan area to rural roads.

(*c*) GENERAL.

GRADING OF AGGREGATES USED.

Number and Nature of Material.	Percentage Passing Square Screens or Sieves (By Weight).									
	¾ inch.	⅝ inch.	½ inch.	⅜ inch.	¼ inch.	3/16 inch.	No. 8 B.S.I.	No. 18 B.S.I.	No. 36 B.S.I.
1. Coarse gravel or screenings. Maximum size, ⅞ inch ..	100	..	0–50	0–10	..	0–5	..	..	..	..
2. Coarse gravel or screenings. Maximum size, ¾ inch ..	..	100	90–100	..	0–30	0–7	..	0–2	..	..
3A. Graded gravel or screenings for first seals. Maximum size, ⅝ inch	..	..	100	..	30–70	10–40	..	0–5	0–2	..
3B. Graded gravel or screenings for road-mix seal. Maximum size, ½ inch	..	..	100	..	55–80	25–55	18–40	0–5	0–2	..
3C. Graded gravel or screenings for road-mix seal. Maximum size, ⅜ inch	..	..	..	..	100	50–85	30–60	5–20	0–2	..
4. Coarse sand or toppings (for use with aggregate 3B)	..	..	..	..	100	97–100	75–95	30–40	0–10	0–5
5. Fine toppings	..	..	..	..	..	100	90–100	30–60	0–10	0–5
Fine sand (for use with aggregate 3C)	..	..	..	..	..	100	90–100	30–60	0–20	0–10

2. Plant Development.

(*a*) AGGREGATE SPREADERS.

Twelve aggregate spreaders of the type described in the last annual report were put into service. Their performance under service conditions was quite satisfactory. Given an adequate supply of motor trucks, each spreader can put out 60 cubic yards of aggregate per hour.

For working on poorly-bonded surfaces the road wheel pressure is too high, and steps are being taken to reduce it.

(*b*) AGGREGATE LOADER.

The type of light portable mechanical aggregate loader reported in the Twenty-fourth Annual Report has not been persisted with. In its stead, a mechanical aggregate loader mounted on a short wheelbase truck has been designed, built, and put into service.

The unit can make a cut of 8 feet in width, load at the rate of 2¼ cubic yards per minute, and travel from job to job under its own power at 25 m.p.h.

The field behaviour of this unit has been quite satisfactory.

(*c*) ROLLER CARRIERS.

For the transport of 6-ton road rollers, a number of non-automotive, pneumatic tired, roller carriers have been put into service. The field behaviour of these units has been up to expectation.

The limiting factor in the development of this type of plant under the Board's conditions is the tractive effort of the usual 3–4 cubic yard motor truck.

3. Plant Used.

The undermentioned C.R.B. plant was in operation for the whole or part of the season.

(*a*) FOR FIRST SEALS AND RETREATMENTS BY THE ROAD MIX-SEAL PROCESS.

Sprayers—

	No.
(i) 300 gallon (Non-automotive) ..	1
(ii) 400 gallon (Old type) ..	4
(iii) 400 gallon (New type) ..	9
Total	14

(*b*) FOR RETREATMENTS BY THE PLANT MIX PROCESS.

	No.
Cold laid, drag spread plant mix units	3

4. Work Executed.

(*a*) WORK CARRIED OUT BY C.R.B. PLANT.

(i) *Length of work carried out.*—For the last five years, the total annual mileage of bituminous surface treatment work on C.R.B. roads, and the average, is as follows:—

Season.	*Miles.*
1934-35	574
1935-36	740
1936-37	793
1937-38	837
1938-39	891
Total	3,835

Average for 5-year period, 767 miles.

Total work carried out during 1938-39—

	Miles.	
C.R.B. plant on C.R.B. roads ..	829	
C.R.B. plant on Municipal roads	18	
		847
Municipal plant on C.R.B. roads		62
Total work on C.R.B. roads ..	891	
Grand total		909

Total work carried out by C.R.B. plant for the last three seasons—

	Miles.		
	Season.		
	1936–37.	1937–38.	1938–39.
1. C.R.B. plant on C.R.B. roads. First seals and retreatments by the road-mix process ..	..	837	789
2. C.R.B. plant on C.R.B. roads. Retreatments by the plant-mix process	..	..	40
3. C.R.B. plant on municipal roads. First seals and retreatments by the road-mix process ..	..	27	18
Total	793	864	847

Details of the length of jobs, &c.

C.R.B. plant.—First seals and retreatments by the road-mix seal process.

All Sprayers.	Season.		
	1936–37.	1937–38.	1938–39.
Number of jobs	502	527	520
Longest job—miles	12·5	23·7	14·3
Shortest job—miles	0·04	0·02	0·03
Average job—miles	1·57	1·64	1·60
400-gallon Sprayers Only.			
Total number of spraying dumps ..	209	279	241
Miles of work done from each dump (average)	3·3	3·1	3·5

(ii) *Nature of the work carried out by C.R.B. plant on C.R.B. roads.*

Type of Plant.	Length in Miles.			
	Nature of the Work.			
	First Seals.		Retreatments.	
	D.C.	S.S.	R.M.S.	P.M.S.
400-gallon sprayers ..	551·7	4·5	216·6	..
300-gallon sprayers ..	14·1	..	2·1	..
	565·8	4·5	218·7	..
	570·3		218·7	
Plant-mix units	..		..	40
Total	570·3		258·7	
Grand total ..	829			

(*b*) WORK CARRIED OUT ON C.R.B. ROADS BY MUNICIPALLY-OWNED PLANT.

Length in Miles.				
Nature of the Work.				
First Seals.		Retreatments.		Construction.
D.C.	S.S.	R.M.S.	P.M.S.	M.M.
18·6	6·3	27·6	5·9	3·6
24·9		33·5		3·6
58·4				3·6
62·0				

(*c*) TOTAL MILEAGE OF EACH CLASS OF WORK CARRIED OUT BY ALL PLANTS ON C.R.B. ROADS.

Length in Miles.				
Nature of the Work.				
First Seals.		Retreatments.		Construction.
D.C.	S.S.	R.M.S.	P.M.S.	M.M.
584·4	10·8	246·3	45·9	3·6
595·2		292·2		3·6
887·4				3·6
891				

5. Analysis of Operations.

The following three tables show for C.R.B. 400-gallon sprayers the proportion of the time spent in various operations, or in idleness.

(Work.—5-day, 44-hour week.)

Daily rating.

RATED DAILY OUTPUT FOR AN 8¾-HOUR DAY.

Work.	Number of Loads.
Primer	12
Binder for first seals	10
Binder for road-mix seals	8

(*a*) ANALYSIS OF THE OPERATIONS OF EACH UNIT.

Operation.	400-gallon Sprayer No.—													
	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	Average.
Spraying	45·9	39·1	33·5	54·0	31·0	44·2	41·6	53·6	43·5	55·3	41·3	44·6	38·8	43·6
Moving	16·3	21·5	19·9	11·4	18·7	17·6	11·3	10·8	15·5	14·8	17·2	20·8	15·9	16·3
Weather	11·5	17·6	15·7	7·3	9·8	11·4	10·6	11·6	11·7	8·6	13·1	6·9	18·9	11·9
Holidays	6·3	7·6	8·1	4·9	6·1	8·3	9·6	6·5	9·3	7·4	8·0	8·2	9·2	7·6
Mechanical delays	2·2	1·8	1·0	2·9	1·9	0·4	4·8	2·1	1·4	2·0	0·5	3·2	2·1	2·0
Avoidable delays	18·1	12·9	22·0	20·4	32·5	19·7	22·1	16·2	18·6	12·9	20·1	16·5	15·4	19·0
	100·3	100·5	100·2	100·9	100·0	101·6	100·0	100·8	100·0	101·0	100·2	100·2	100·3	100·4

(*b*) ANALYSIS OF THE OPERATIONS OF ALL 400-GALLON UNITS FOR THE FOUR-YEARLY PERIOD COMMENCING SEASON 1935-36.

Operation.	Season—			
	1935–36.	1936–37.	1937–38.	1938–39.
Spraying	39·9	41·9	45·4	43·6
Moving	13·6	13·6	15·6	16·3
Weather	14·0	19·1	14·3	11·9
Holidays	7·6	8·7	7·6	7·6
Mechanical delays	2·4	2·4	1·6	2·0
Avoidable delays	24·1	14·6	15·9	19·0
Total	101·6	100·3	100·4	100·4

(*c*) AVOIDABLE DELAYS SET OUT IN (*a*) AND (*b*) ABOVE FOR 1938-39 ARE GIVEN IN DETAIL ON THE TABLE BELOW.

Delay.	400-gallon Sprayer No.—													
	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	Average.
Poor organization	..	1·9	0·6	2·2	1·4	1·6	2·1	1·0	0·4	..	1·1	0·3	0·2	1·0
Long leads	1·0	1·7	3·9	1·2	2·5	2·3	4·0	2·4	4·8	1·3	3·8	2·0	2·1	2·5
Short sections	7·3	4·6	3·1	4·0	9·1	6·6	8·5	5·3	8·7	4·6	10·5	11·0	9·2	7·1
Road not ready	3·1	3·6	11·2	11·5	14·6	8·6	6·6	1·6	3·8	6·4	4·7	3·2	3·9	6·4
No aggregate	0·3	0·6	1·7	..	2·2	0·2	0·4	..	0·4	0·6	..	..	..	0·5
No bituminous materials ..	0·3	..	0·6	0·6	..	..	..	..	0·5	..	..	..	..	0·1
Special	6·3	..	..	..	..	..	..	..	..	..	..	..	..	0·5
Labour and equipment ..	0·1	0·5	0·9	0·9	2·7	0·4	0·5	5·9	..	..	..	..	..	0·9
Total	18·1	12·9	22·0	20·4	32·5	19·7	22·1	16·2	18·6	12·9	20·1	16·5	15·4	19·0

AVOIDABLE DELAYS FOR THE FOUR-YEAR PERIOD COMMENCING 1935-36.

Delay.	Season—			
	1935–36.	1936–37.	1937–38.	1938–39.
Poor organization	2·8	0·2	1·7	1·0
Long leads	0·9	2·3	1·8	2·5
Short sections	8·2	7·1	7·1	7·1
Road not ready	6·3	3·1	3·2	6·4
No aggregate	1·3	0·6	0·6	0·5
No bituminous materials	0·7	0·4	0·3	0·1
Special materials	0·8	0·3	..	0·5
Labour and equipment	2·4	0·6	1·2	0·9
Total	23·4	14·6	15·9	19·0

6. Costs.

(*a*) AVERAGE COST OF FIRST SEALS BY THE DOUBLE COAT METHOD.

Cost in Pence per Square Yard.

Item.	Season.			
	1935–36.	1936–37.	1937–38.	1938–39.
Area costed in square yards ..	3,061,286	3,750,966	4,770,668	4,446,662
Materials ..	6·40	5·49	6·23	5·94
Labour	1·33	1·38	1·32	1·33
Stores	0·26	0·24	0·22	0·23
Plant charges ..	0·60	0·61	0·84	0·97
Total ..	8·59	7·72	8·61	8·47

(*b*) AVERAGE COST OF RETREATMENT BY THE ROAD-MIX SEAL METHOD.

Cost in Pence per Square Yard.

Season 1938–39.			
Loose thickness of aggregate	½ inch	¾ inch	1 inch
Area costed in square yards	89,751	1,931,939	23,400
Materials	6·08	7·45	10·19
Labour	2·02	1·55	2·17
Stores	0·26	0·25	0·36
Plant charges	1·39	1·15	1·78
Total	9·76	10·40	14·50

AVERAGE COSTS FOR THE FOUR-YEAR PERIOD COMMENCING 1935-36.

Total Cost in Pence per Square Yard.

Year.	Loose Thickness of Aggregate.		
	½ inch.	¾ inch.	1 inch.
1935–36	6·84	8·23	9·46
1936–37	..	8·53	..
1937–38	7·87	9·96	12·92
1938–39	9·76	10·40	14·50

(*c*) AGGREGATE.

Total quantity costed 127,182 cubic yards.

Average price .. 12s. 10d. per cubic yard.

AVERAGE PRICE PER CUBIC YARD FOR THE FOUR-YEAR PERIOD FROM 1935-36.

—	Season.			
	1935–36.	1936–37.	1937–38.	1938–39.
Quantity costed in cubic yards	111,559	130,250	148,394	127,182
	s. d.	*s. d.*	*s. d.*	*s. d.*
Average cost per cubic yard	12 11	12 3	13 5	12 10

(*d*) BINDER.

Purpose.	Material.	Supplier.	Contract Number.	Tons.	Basic Price per Ton Net— Bitumen, f.o.w.; all other *ex* Store, Melbourne.	
					Including Drums.	Excluding Returnable Drums.
					£ *s. d.*	£ *s. d.*
Basic	Bitumen, 80–100 ..	Shell Co. Ltd.	00/516A	9,750	8 4 0	..
	Bitumen, 80–100 ..	Vacuum Oil Co. ..	00/516B	999	8 10 0	..
Heavy flux ..	Dehydrated tar ..	Albion Quarrying Co. ..	00/513A	522	4 2 0	2 17 7
	Dehydrated tar ..	J. Forbes Pty. Ltd. ..	00/513B	713	4 2 0	2 18 0
	Dehydrated tar ..	Duratar Pty. Ltd. ..	00/513C	644	4 2 0	2 18 3
	Asphaltic oil ..	Shell Co. Ltd.	00/515	741	8 11 5	5 17 0
Patching	Bitumen emulsion ..	Neuchatel Asphalt Co. ..	00/514	524A	9 16 8	7 6 8
				114B	10 5 2	7 15 2
	Cut-back bitumen ..	Country Roads Board ..	00/517A	237	13 12 9	11 13 0
	Cut-back bitumen ..	Texas Co. Ltd. ..	00/517D—R.C.1	180	9 10 7	
			R.C.2	194	9 9 2	
Light flux oil ..	Power kerosene ..	Various oil companies ..	00/520	840	..	10½d. per gallon

(*e*) PRIMER.

Purpose.	Material.	Supplier.	Contract Number.	Tons.	Basic Price per Ton Net—Bitumen f.o.w.; all other *ex* Store, Melbourne.	
					Including Drums.	Excluding Returnable Drums.
					£ *s.* *d.*	£ *s.* *d.*
Light grade primer	Cold tar	Metropolitan Gas Co. ..	00/511	6,273	2 15 6	1 10 11

(*f*) MISCELLANEOUS.

Purpose.	Material.	Supplier.	Contract Number.	Tons.	Basic Price per Ton Net—Bitumen, f.o.w.; all other *ex* Store, Melbourne.	
					Including Drums.	Excluding Returnable Drums.
					£ *s.* *d.*	£ *s.* *d.*
Oil fuel	Fuel oil	Atlantic Union Oil Co. ..	00/512	259	8 13 7	5 17 0
Cleaning sprayers ..	Cleaning oil ..	Albion Quarrying Co. ..	00/518A	117	8 2 6	6 16 2
	Cleaning oil ..	Duratar Pty. Ltd. ..	00/518B	33	8 15 4	7 8 8
Timber preserving ..	Creosote	Albion Quarrying Co. ..	00/519	50	11 5 0	9 18 11

(*g*) TOTAL MATERIALS USED.

Nature of Material.	Tons.	
	Petroleum Products.	Tar Products.
Binder	13,282	1,879
Primer	..	6,273
Miscellaneous	259	200
	13,541	8,352
Percentage	61·9	38·1
Total	21,893 tons	

Total Materials Used Per Annum Since 1936-37.

Season.	Tons.		
	Petroleum Products.	Tar Products.	Total.
1936–37	8,463	7,340	15,803
1937–38	11,833	7,174	19,007
1938–39	13,541	8,352	21,893

7. SPRAYERS.

(Operation figures. C.R.B. 400-gallon sprayers only.)

(*a*) GENERAL.

Number in operation	13
Total number of working days ..	1,612
Total miles run	90,361
Total number of loads sprayed ..	7,672

(*b*) TRUCK ENGINES.

Miles run per gallon of petrol ..	7.31
Miles run per load sprayed ..	12.1
Miles run per working day ..	56.2
Miles per gallon of lubricating oil	485

(*c*) PUMPING ENGINES.

(i) Ford 8 and 10 h.p.—

Loads sprayed per gallon of petrol	2.9
Loads sprayed per pint of lubricating oil	10.4

(ii) Lister 6-h.p.—

Loads sprayed per gallon of petrol	3.4
Loads sprayed per pint of lubricating oil	11.5

(*d*) CLEANING OIL.

Gallons per load sprayed ..	1.8

(*e*) HEATING.

Gallons of oil fuel per load ..	5.7

For size of load and ratio of primer to binder see (*f*) below.

(*f*) GALLONAGE, ETC., OF LOADS.

—	Sprayers, 11 to 15 and 20 to 23.	Sprayers, 16 to 19.	All 400-gallon Units.
Total gallons of primer ..	608,517	214,164	822,681
Gallons per load	396	334	378
Total gallons of binder ..	1,434,260	559,500	1,993,760
Gallons per load	380	326	363
Total gallons, primer and binder	2,042,777	773,664	2,816,441

EXPERIMENTAL ROAD-MIX SEAL WORK.

Four lengths of experimental road-mix seal work were put down:—

(1) *Western Highway.*—¾-in. road-mix seal.
Location.—72.7–82.6 miles, Ballarat toward Burrumbete.
Length.—51,523 feet.
Width.—18 feet.
Number of sections.—89.
Details of the actual work carried out is set out in Schedule A., and details of the grading of the aggregate in Schedule B.

(2) *Midland Highway North.*—¾-in. road-mix seal.
Location.—29 miles, between Benalla and Opie's Bridge.
Length.—15,345 feet.
Width.—18 feet.
Number of sections.—27.
Details of the work are set out in Schedules C. and D. Schedule C. sets out grading limits for the aggregate, and general information relative to binders. Schedule D. sets out details of each experimental section.

(3) *Midland Highway North.*—½-in. road-mix seal.
Location.—13,666–18.366 miles.
Length.—4.7 miles (24,814 feet).
Width.—18 feet.
Number of sections.—32.
Schedule E. sets out the details of each section. Schedule F. sets out the location of each section. Schedule G. sets out the grading of the aggregate used.

(4) *Main Healesville Road* (Shire of Lilydale).—¾-in. road-mix seal.
Location.—From 1,440 feet on the Melbourne side of the Croydon turn-off toward Melbourne.
Job No. 94M260.
Number of sections.—10.
Schedule H. sets out the general arrangements of the work. Schedule I. sets out the details of each load.

Experimental First Seal (Double Coat Work).—
Geelong-Portarlington Road, Shire of Bellarine.
Location.—Saltworks section, 7,795 feet of road.
Experimental work.—Ten sections were put down to ascertain the relative quantity of a No. 2 Aggregate held by Road Oil Binders of various viscosities. A second object being to observe any difference in behaviour of Road Oils of the same viscosity but produced by the fluxing of the same bitumen with an asphaltic oil and a dehydrated tar as the heavy flux oil.
Schedule J. sets out the details of each section.

SCHEDULE "A."

WESTERN HIGHWAY, SECTION 2.

EXPERIMENTAL ¾-in. ROAD-MIX SEAL.

Job No. 522 H 448; 51,523 *lin. ft.*; 18 *feet wide*; 103,046 *sq. yds.*; 72.7–82.6 *miles. Ballarat towards Burrumbeet.*

DETAILS OF SECTIONS AS ACTUALLY CONSTRUCTED.

For loads numbered 1 to 82, the aggregate marked "S" is Basalt screenings from Gong Quarry, Ballarat; and the aggregate marked "G" is Quartz gravel from Snake Valley.

Location.			Binder.				Aggregate.				
Load Number.	Between Pegs.	Side of Road.	Material.	Gallons per Square Yard.			Material.	Grade.	Application, 1 Cubic Yd. to —	Application of No. 4.	Area in Square Yds. = Length in Feet.
				Tack.	Bind.	Seal.					
			B.–A.O.–P.K.			B. & A.O.					
1	1–2	S.	100–12½–30	·10	·155	·10	G	3B1	47½	1–130	917
2	2–3	S.	100–12½–30	·10	·117	·10	G.	3B2	48	1–150	918
3	3–4	S.	100–12½–30	·10	·14	·093	G.	3B2	48	1–150	1,173
4	4–5	S.	100–12½–30	·10	·173	·091	G.	3B2	48	1–150	1,006
5	5–6	S.	100–12½–22½	·10	·122	·091	G.	3B3	48	1–130	1,173
6	90–91	N.	100–12½–35	·10	·166	·093	S.	3B1	48	1–130	917
7	89–90	N.	100–12½–35	·10	·15	·085	S.	3B2	48	1–150	918
8	88–89	N.	100–12½–35	·10	W·225 E·155	·085	S.	3B2	48	1–150	1,173
9	87–88	N.	100–12½–35	·10	·167	·096	S.	3B2	48	1–150	1,006
10	86–87	N.	100–12½–35	·10	·152	·096	S.	3B3	49	1–130	1,173
11	6–7	S.	M.C.2	·10	·20	..	G.	3B1	48	1–180	1,173
12	7–8	S.	M.C.2	·10	·15	..	G.	3B2	48½	1–250	1,408
13	8–9	S.	M.C.2	·10	·21	..	G.	3B2	48	1–210	1,173
14	9–10	S.	M.C.2	·10	·245	..	G.	3B2	48	1–180	1,006
15	10–11	S.	M.C.2	·10	·20	..	G.	3B3	48½	1–250	1,173
			B.–D.T.–P.K.								
21	11–12	S.	100–26–30	·10	·19	..	G.	3B1	49	1–250	1,130
22	12–13	S.	100–26–35	·10	·216	..	G.	3B1	49·3	1–210	1,430
23	13–14	S.	100–26–35	·10	·276	..	G.	3B1	48·5	1–180	994
24	14–15	S.	100–26–30	·10	·158	..	G.	3B2	49·5	1–250	1,392
25	15–16	S.	100–26–25	·10	·198	..	G.	3B2	48·3	1–210	1,160
26	16–17	S.	100–26–20	·10	·245	..	G.	3B2	48·6	1–180	994
27	17–18	S.	100–26–17½	·10	·135	..	G.	3B3	49·7	1–250	1,392
28	18–19	S.	100–26–17½	·10	·196	..	G.	3B3	49·2	1–250	1,160
29	19–20	S.	100–26–35	·10	·267	..	G.	3B3	49	1–210	994
30	80–81	N.	100–26–35	·10	·182	..	S.	3B1	48	1–250	1,392
31	79–80	N.	100–26–35	·10	·225	..	S.	3B1	48·4	1–210	1,160
32	78–79	N.	100–26–40	·10	·264	..	S.	3B1	58	1–180	994
33	77–78	N.	100–26–40	·10	·187	..	S.	3B2	48·5	1–250	1,392
34	76–77	N.	100–26–35	·10	·20	..	S.	3B2	49	1–210	1,160
35	75–76	N.	100–26–35	·10	·276	..	S.	3B2	48	1–180	994
36	74–75	N.	100–26–20	·10	·17	..	S.	3B1	49	1–250	1,392
37	73–74	N.	100–27–37	·10	·239	..	S.	3B1	48·3	1–250	1,160
38	72–73	N.	100–26–32½	·10	·28	..	S.	3B3	48	1–210	994

Location.			Binder.				Aggregate.				
Load Number.	Between Pegs.	Side of Road.	Material.	Gallons per Square Yard.			Material.	Grade.	Application, 1 Cubic Yd. to —	Application of No. 4.	Area in Square Yds. — Length in Feet.
				Tack.	Bind.	Seal.					
			B.-A.O.-P.K.								
39	20–21	S.	100–12½–30	·10	·151	..	G.	3B1	47	1–250	1,336
40	21–22	S.	100–12½–25	·10	·185	..	G.	3B1	46½	1–210	1,113
41	22–23	S.	100–13–35	·10	·266	..	G.	3B1	48	2–160	954
42	23–24	S.	100–12½–23¾	·10	·13	..	G.	3B2	48	1–250	1,336
43	24–25	S.	100–12½–22½	·10	·196	..	G.	3B2	48	1–210	1,113
44	25–26	S.	100–12½–20	·10	·231	..	G.	3B2	48	1–180	954
45	26–27	S.	100–12½–25	·10	·14	..	G.	3B3	48	1–250	1,336
46	27–28	S.	100–12½–25	·10	·198	..	G.	3B3	48	1–250	1,113
47	28–29	S.	100–12½–25	·10	·235	..	G.	3B3	48	1–210	954
48	71–72	N.	100–12½–23¼	·10	·16	..	S.	3B1	48	1–250	1,336
49	70–71	N.	100–12½–20	·10	·186	..	S.	3B1	48	1–210	1,113
50	69–70	N.	100–12½–28¾	·10	·264	..	S.	3B1	48	1–180	954
51	68–69	N.	100–12½–28	·10	·157	..	S.	3B2	49	1–250	1,336
52	67–68	N.	100–12½–35	·10	·20	..	S.	3B2	49½	1–210	1,113
53	66–67	N.	100–12½–35	·10	·248	..	S.	3B2	47½	1–180	954
54	65–66	N.	100–12½–35	·10	·170	..	S.	3B3	47½	1–250	1,336
55	64–65	N.	100–12½–35	·10	·217	..	S.	3B3	48	1–250	1,113
56	63–64	N.	100–12½–35	·10	·248	..	S.	3B3	48	1–210	954
			B.-D.T.-P.K.								
57	29–30	S.	100–10–35	·10	·218	..	G.	3B1	48	1–180	1,093
58	30–31	S.	100–10–35	·10	·155	..	G.	3B2	48	1–250	1,312
59	31–32	S.	100–10–35	·10	·218	..	G.	3B2	48	1–210	1,093
60	32–33	S.	100–10–35	·10	·27	..	G.	3B2	48	1–180	937
61	33–34	S.	100–10–35	·10	·21	..	G.	3B3	47	1–250	1,093
62	62–63	N.	100–10–35	·10	·208	..	S.	3B1	48	1–180	1,093
63	61–62	N.	100–10–35	·10	·17	..	S.	3B2	48	1–250	1,312
64	60–61	N.	100–10–35	·10	·21	..	S.	3B2	47½	1–210	1,093
65	59–60	N.	100–10–35	·10	·251	..	S.	3B2	47	1–180	937
66	58–59	N.	100–10–35	·10	·216	..	S.	3B3	48	1–250	1,093
			B.-A.O.-P.K.								
67	34–35	S.	100–7½–35	·10	·222	..	G.	3B1	48	1–180	1,073
68	35–36	S.	100–7½–30	·10	·154	..	G.	3B2	48	1–250	1,288
69	36–37	S.	100–7½–25	·10	·195	..	G.	3B2	50	1–210	1,073
70	37–38	S.	100–7½–25	·10	·26	..	G.	3B2	48	1–180	920
71	38–39	S.	100–7½–30	·10	·20	..	G.	3B3	50	1–250	1,073
72	57–58	N.	100–7½–35	·10	·21	..	S.	3B1	48	1–180	1,073
73	56–57	N.	100–7½–40	·10	·162	..	S.	3B2	48	1–250	1,288
74	55–56	N.	100–7½–40	·10	·222	..	S.	3B2	48	1–210	1,073
75	54–55	N.	100–7½–40	·10	·289	..	S.	3B2	46½	1–180	920
76	53–54	N.	100–7½–40	·10	·218	..	S.	3B3	48	1–250	1,073
77	39–40	S.	100–12½–30	·17	·227	..	S.	3B1	48	1–180	1,403
78	40–41	S.	100–12½–35	·162	·235	..	S.	3B2	48½	1–210	1,403
79	41–42	S.	100–12½–35	·165	·220	..	S.	3B3	48	1–250	1,403
			B.-A.O.-P.K.			B. & A.O.					
80	52–53	N.	100–12½–35	·11	·117	·095	S.	3B2	47	1–140	1,404
82	51–52	N.	100–12½–35	·10	·079	·096	S.	3B2	48	1–130	1,404
			B.-A.O.-P.K.								
81	50–51	N.	100–12½–30	·10	·234	..	B.	3B2	48	1–210	1,403
83	42–43	S.	100–12½–33	·10	·218	..	A.	3B2	48½	1–210	1,113
84	43–44	S.	100–12½–35	·10	·222	..	F.	3B2	48	1–210	1,113
85	44–45	S.	100–12½–35	·10	·205	..	C.	3B2	48	1–210	1,113
86	45–46	S.	100–12½–33¾	·10	·224	..	D.	3B2	47	1–210	1,113
	46–47	N.									
87	47–48	N.	100–12½–17½	·10	·175	..	E.	3B2	48	1–210	1,113
88	48–49	N.	100–14–20	·10	·165	..	G.	3B2	48	1–210	1,113
89	49–50	N.	100–12½–20	·10	·208	..	H.	3B2	48	1–210	1,113

For loads 81 to 89, the aggregates are noted by letters A to H, as follows:—

A. Vesicular Basalt.—Tyrendarra.

B. Basalt.—Madden, Bacchus Marsh.

C. Quartzite.—Snell, Stawell.

D. Quartzite.—McKenzie Creek, Horsham.

E. Crushed Quartz.—Grenville Shire.

F. Toscanite.—Black, Coldstream.

G. Quartz Gravel.—Nunn, Snake Valley.

H. Quartz Gravel.—Robertson, Langi Logan.

SCHEDULE " B."

WESTERN HIGHWAY, SECTION 2.

Job No. 522 H 448.

Gradings of Aggregates Used on Experimental ¾-in. Road-Mix Seal, Between Ballarat and Burrumbeet.

Source of Supply.	Number.	Percentage Passing Square Mesh Screens.							
		⅝ inch.	½ inch.	⅜ inch.	¼ inch.	3/16 inch.	No. 8.	No. 18.	No. 36.
Basalt, Gong Quarries, Ballarat (Symbol " S ")	3B1	100	61	37	10	6	1	..	..
	3B2	100	82	57	24	13	2	..	..
	3B3	100	93	73	37	25	4	1	..
	No. 4	..	..	100	96	70	18	6	4
Quartz Gravel, Snake Valley (Symbol " G ")	3B1	100	92	70	36	6	3	1	..
	3B2	100	85	64	28	15	2	..	..
	3B3	100	92	80	44	27	5	1	..
	No. 4	..	..	100	94	80	23	6	3
Vesicular Basalt, Tyrendarra (" A ") ..	3B	100	82	62	38·6	31	13·8	4·9	..
Basalt, Madden, Bacchus Marsh (" B ") ..	3B	The actual grading is not available.							
Quartzite, Snell, Stawell (" C ")	3B	99	76	51	22	11	1	..	..
Quartzite McKenzie Creek, Horsham (" D ")	3B	100	..	58	28·5	13	1	0·5	..
Crushed Quartz, Grenville Shire (" E ") ..	3B	94	..	57	22	15	2	0·2	..
Toscanite, Black, Coldstream (" F ") ..	3B	100	83	59·4	29	18·8	2·8	..	..
Quartz Gravel, Langi Logan (" H ") ..	3B	97	85	63	18	5	1	..	..

SCHEDULE " C."

¾-IN. EXPERIMENTAL WORK.—ROAD-MIX SEALING.

MIDLAND HIGHWAY NORTH.

Benalla to Opie's Bridge.

Job No. 594 H 128.

(*a*) AGGREGATE.

The grading of the aggregate—

	Percentage by Weight Passing Square Mesh Screens.		
Aggregate No.	3B1.	3B2.	3B3.
Screen or Sieve—			
⅝ inch	100	100	100
½ inch	55–65	70–80	80–90
⅜ inch	15–25	50–60	60–70
¼ inch	5–15	20–30	40–50
3/16 inch	0–5	10–20	25–35
No. 8	0–3	0–4	0–4
No. 18	0–2	0–2	0–2

(*b*) BINDERS.

Medium Curing cut-backs—

100 85/100 pen. Bitumen.
26 Dehydrated Tar;
20 Power Kerosene; and
100 85/100 pen. Bitumen;
12½ Asphaltic Oil.
22½ Power Kerosene.

(*c*) RATES OF APPLICATION.

(1) Aggregate—

Coarse.—3B 1, 3B 2, 3B 3.—1 cubic yard to 48 sq. yards.

Fine.—No. 4.—As set out in the table, according to the grading of the coarse aggregate and rate of application of the binder.

(2) Binder—

0.25 or 0.27 gal. per sq. yd.
0.3 or 0.32 gal. per sq. yd.
0.35 or 0.37 gal. per sq. yd.

SCHEDULE "D."

EXPERIMENTAL ¾-IN. ROAD-MIX SEAL.

MIDLAND HIGHWAY NORTH, SEC. 4.

Part of Job No. 594 H 128.

Benalla to Opie's Bridge.

Width 18 feet; length of experimental work, 15,345 feet of road, 2.90 miles.

Order of applying binder:—Tack coat 0.1 gallon per square yard applied to the road, and the balance applied to the aggregate after spreading and before mixing.

Material.	Gallons per Square Yard.	Gallons Required.	Aggregate. 1-48. Material.	Grade.	C. Yds.	Fine, No. 4 Rate.	C. Yds.	Length in Feet (Half Width).	Area in Square Yards.
100 26–20 Bitumen, dehydrated tar, power kerosene	0·25	348	Ser. ..	3B1	29·0	1–250	5·6	1,392	1,392
	0·30	348	Ser. ..	3B1	24·2	1–210	5·5	1,160	1,160
	0·35	348	Ser. ..	3B1	20·7	1–180	5·5	994	994
	0·25	348	Ser. ..	3B2	29·0	1–250	5·6	1,392	1,392
	0·30	348	Ser. ..	3B2	24·2	1–210	5·5	1,160	1,160
	0·35	348	Ser. ..	3B2	20·7	1–180	5·5	994	994
	0·25	348	Ser. ..	3B3	29·0	1–250	5·6	1,392	1,392
	0·30	348	Ser. ..	3B3	24·2	1–250	4·7	1,160	1,160
	0·35	348	Ser. ..	3B3	20·7	1–210	4·7	994	994
100–12½–22½ Bitumen, asphaltic oil, power kerosene	0·25	334	Ser. ..	3B1	27·8	1–250	5·3	1,336	1,336
	0·30	334	Ser. ..	3B1	23·2	1–210	5·3	1,113	1,113
	0·35	334	Ser. ..	3B1	19·9	1–180	5·3	954	954
	0·25	334	Ser. ..	3B2	27·8	1–250	5·3	1,336	1,336
	0·30	334	Ser. ..	3B2	23·2	1–210	5·3	1,113	1,113
	0·35	334	Ser. ..	3B2	19·9	1–180	5·3	954	954
	0·25	334	Ser. ..	3B3	27·8	1–250	5·3	1,336	1,336
	0·30	334	Ser. ..	3B3	23·2	1–250	4·5	1,113	1,113
	0·35	334	Ser. ..	3B3	19·9	1–210	4·5	954	954
100–7½–27½ Bitumen, asphaltic oil, power kerosene, petrol	0·27	322	Ser. ..	3B1	26·8	1–210	6·1	1,288	1,288
	0·32	322	Ser. ..	3B1	22·3	1–180	5·9	1,073	1,073
	0·37	322	Ser. ..	3B1	19·2	1–180	5·1	920	920
	0·27	322	Ser. ..	3B2	26·8	1–250	5·2	1,288	1,288
	0·32	322	Ser. ..	3B2	22·3	1–210	5·1	1,073	1,073
	0·37	322	Ser. ..	3B2	19·2	1–180	5·1	920	920
	0·27	322	Ser. ..	3B3	26·8	1–250	5·1	1,288	1,288
	0·32	322	Ser. ..	3B3	22·3	1–250	4·3	1,073	1,073
	0·37	322	Ser. ..	3B3	19·2	1–210	4·4	920	920

SCHEDULE "E."

EXPERIMENTAL ½-IN. ROAD-MIX SEAL.

MIDLAND HIGHWAY NORTH, SEC. 4.

Part of Job No. 594 H 128.

Benalla to Opie's Bridge.

Width 18 feet; length of experimental work, 24,814 feet of road, 4.72 miles.

Order of applying binder:—Tack coat 0.1 gallon per square yard. Applied to the road and the balance applied to the aggregate after spreading and before mixing.

Binder.				Aggregate.					Length in Feet (Half Width).	Area in Square Yards.
Materials.	Load Number.	Gallons per Square Yard.	Gallons Required.	Coarse, 1–72.		Fine.				
				Grade.	C. Yds.	Number.	Rate.	C. Yds.		
100–26–20 85/100 bitumen, dehydrated tar, power kerosene	1	0·2	348	3B2	24·1	4	1–250	6·9	1,740	1,740
	2	0·225	348	3B2	21·5	4	1–225	6·9	1,547	1,547
	3	0·25	348	3B2	19·2	4	1–200	6·9	1,392	1,392
	4	0·275	348	3B2	17·5	4	1–175	7·2	1,265	1,265
	5	0·2	330	3B3	23·0	4	1–250	6·6	1,650	1,650
	6	0·225	348	3B3	21·5	4	1–250	6·2	1,547	1,547
	7	0·25	348	3B3	19·2	4	1–225	6·2	1,392	1,392
	8	0·275	348	3B3	17·5	4	1–200	6·3	1,265	1,265
	9	0·2	330	3C1	23·0	5	1–250	6·9	1,650	1,650
	10	0·225	348	3C1	21·5	5	1–225	6·9	1,547	1,547
	11	0·25	348	3C1	19·2	5	1–200	6·9	1,392	1,392
	12	0·275	348	3C1	17·5	5	1–175	7·2	1,265	1,265
	13	0·2	348	3C2	24·1	5	1–250	6·9	1,740	1,740
	14	0·225	348	3C2	21·5	5	1–250	6·2	1,547	1,547
	15	0·25	348	3C2	19·2	5	1–225	6·2	1,392	1,392
	16	0·275	348	3C2	17·5	5	1–200	6·3	1,265	1,265
100–12½–22½ 85/100 bitumen, asphaltic oil, power kerosene	17	0·2	382	3B2	26·6	4	1–250	7·6	1,910	1,910
	18	0·225	369	3B2	22·8	4	1–225	7·3	1,640	1,640
	19	0·25	448	3B2	24·7	4	1–200	8·9	1,792	1,792
	20	0·275	320	3B2	16·2	4	1–175	6·7	1,166	1,166
	21	0·2	367	3B3	25·5	4	1–250	7·3	1,835	1,835
	22	0·225	413	3B3	25·5	4	1–250	7·3	1,835	1,835
	23	0·25	367	3B3	20·5	4	1–225	6·5	1,468	1,468
	24	0·275	378	3B3	19·0	4	1–200	6·8	1,370	1,370
	25	0·2	382	3C1	26·6	5	1–250	7·6	1,910	1,910
	26	0·225	369	3C1	22·8	5	1–225	7·3	1,640	1,640
	27	0·25	448	3C1	24·7	5	1–200	8·9	1,792	1,792
	28	0·275	320	3C1	16·2	5	1–175	6·7	1,166	1,166
	29	0·2	367	3C2	25·5	5	1–250	7·3	1,835	1,835
	30	0·225	413	3C2	25·5	5	1–250	7·3	1,835	1,835
	31	0·25	367	3C2	20·5	5	1–225	6·5	1,468	1,468
	32	0·275	378	3C2	19·0	5	1–200	6·8	1,370	1,370

SCHEDULE "F."

EXPERIMENTAL ½-IN. ROAD-MIX SEAL.

MIDLAND HIGHWAY NORTH.

Job No. 594 H 128.

Shepparton and Benalla Shires.

No. 1 section, 13.666 M. to 18,366 M.

To Benalla

Bitumen, 100; Asphaltic Oil, 12½; Power Kerosene, 22½. Side.				Bitumen, 100; Dehydrated Tar, 26; Power Kerosene, 20. North				
1370′	3B3 0·275	24	3C2 0·275	32				18·366 m. Peg 1
1468′	3B3 0·25	23	3C2 0·25	31				18·106 m. Peg 16
1835′	3B3 0·225	22	3C2 0·225	30				17·828 m. Peg 15
1835′	3B3 0·2	21	3C2 0·2	29				17·481 m. Peg 14
1166′	3B2 0·275	20	3C1 0·275	28				17·133 m. Peg 13
1792′	3B2 0·25	19	3C1 0·25	27				16·912 m. Peg 12
1910′	3B2 0·200	17	3C1 0·200	25				16·573 m. Peg 11
1640′	3B2 0·255	18	3C1 0·225	26				16·211 m. Peg 10
1265′	3B2 0·275	4	3C2 0·275	16				15·90 m. Peg 9
1392′	3B2 0·25	3	3C2 0·25	15				15·661 m. Peg 8
1547′	3B2 0·225	2	3C2 0·225	14				15·397 m. Peg 7
1740′	3B2 0·2	1	3C2 0·2	13				15·104 m. Peg 6
1265′	3B3 0·275	8	3C1 0·275	12				14·775 m. Peg 5
1392′	3B3 0·25	7	3C1 0·25	11				14·536 m. Peg 4
1547′	3B3 0·225	6	3C1 0·225	10				14·272 m. Peg 3
1650′	3B3 0·2	5	3C1 0·2	9				13·979 m. Peg 2
								13·666 m. Peg 1

SCHEDULE "G."

EXPERIMENTAL ¾-IN. ROAD-MIX SEAL.

MIDLAND HIGHWAY NORTH.

Job No. 594 H 128.

Shepparton and Benalla Shires.

No. 1 section, 13.67 M. to 18.366 M.

GRADING OF AGGREGATES.

Section.	Side of Road.	Aggregate Number.	Material.		Percentage Passing Square Mesh Screens.						
					¾ inch.	½ inch.	⅜ inch.	¼ inch.	$\frac{3}{16}$ inch.	No. 8.	No. 18.
		3B2	.. ..	Specified ..	100	70–80	50–60	20–30	10–20	0–4	0–2
14·775 m.–15·90 m.	Left	3B2	Screenings	Sample 1 ..	100	80½	53	24	13	2	1
15·90 m.–17·133 m.	Left	3B2	Screenings	Sample 1 ..	100	86	67	30½	17	2½	1
		3B3	.. ..	Specified ..	100	80–90	60–70	40–50	25–35	0–4	0–2
13·65 m.–14·775 m	Left	3B3	Screenings	Sample 1 ..	100	89	71	42	26½	5	1
				Sample 2 ..	99	86	66	37	22	4	1
17·133 m.–18·366 m.	Left	3B3	Screenings	Sample 1 ..	100	94	79	41	29	5	1½
				Sample 2 ..	100	92	76	42	31	5	1¼
		3C1	Screenings	Specified ..	..	..	100	40–50	10–20	0–4	0–2
13·65 m.–14·775 m. 15·90 m.–17·133 m.	Right	3C1	Screenings	Sample 1 ..	..	..	99½	44	20	1	½
		3C2	.. ..	Specified ..	..	..	100	65–75	45–55	5–15	0–2
14·775 m.–15·90 m.	Right	3C2	Screenings	Sample 1 ..	..	..	99½	75	46	7	1
17·133 m.–18·366 m.	Right	3C2	Screenings	Sample 1 ..	..	..	99½	72	45	8	1½

GRADING OF AGGREGATES.

Section.	Side of Road.	Aggregate Number.	Material.		Percentage Passing Square Mesh Screens.					
					¾ inch.	¼ inch.	$\frac{3}{16}$ inch.	No. 8.	No. 18.	No. 36.
		4	.. ..	Specified ..	100	97–100	75–95	30–40	0–10	0–5
13·65 m.–18·366 m.	Left ..	4	Toppings ..	Sample 1 ..	100	99½	98	39	8	4
		4	Toppings	Sample 2 .	100	99½	98	44	10	5
		4	Toppings	Sample 3 ..	100	99½	96	40	9	5
		5	.. ..	Specified ..	..	100	90–100	30–60	0–10	0–5
13·65 m.–18·366 m.	Right	5	Toppings ..	Sample 1 ..	.	100	100	36	4	2

SCHEDULE "H."

EXPERIMENTAL ¾-IN. ROAD-MIX SEAL.

MAIN HEALESVILLE ROAD.

Shire of Lilydale.

Job No. 94 M 260.

From near Ringwood Borough Boundary to near the Croydon Turn-off.

BINDER 85/100 PEN. BITUMEN. A.O. & P.K.

Load.	Coat.	Binder.		Aggregate.			
				Coarse.		Fine.	
		Rate.	Mix.	Number.	Rate.	Number.	Rate.
1	Tack	0·1	100–10–25	3B	1–48	4	1–200 after rolling
	Mix	0·2	100–10–25				
	Total ..	0·3					
2	Tack	0·1	100–20–20	3B	1–48	4	1–200 after rolling
	Mix	0·2	100–20–20				
	Total ..	0·3					
3	Tack	0·1	100–10–25	3B	1–48	4	1–200 after rolling
	Mix	0·23	100–10–25				
	Total ..	0·33					
4	Tack	0·1	100–20–20	3B	1–48	4	1–200 after rolling
	Mix	0·23	100–20–20				
	Total ..	0·33					
5	Tack	0·1	100–10–25	3B	1–48	4	1–200 after rolling
	Mix	0·25	100–10–25				
	Total ..	0·35					
6	Tack	0·1	100–20–20	3B	1–48	4	1–200 after rolling
	Mix	0·25	100–20–20				
	Total ..	0·35					
7	Tack	0·1	100–10–25	3B	1–48	4	1–100 after sealing
	Mix	0·15	100–10–25				
	Seal	0·1	100–10–10				
	Total ..	0·35					
8	Tack	0·1	100–20–20	3B	1–48	4	1–130 after sealing
	Mix	0·15	100–20–20				
	Seal	0·1	100–20–10				
	Total ..	0·35					
9	Tack	0·1	100–10–25	3B	1–48	4	1–200 after rolling and before sealing. 1–150 after sealing
	Mix	0·15	100–10–25				
	Seal	0·1	100–10–10				
	Total ..	0·35					
10	Tack	0·1	100–20–20	3B	1–48	4	1–200 after rolling and before sealing. 1–200 after sealing
	Mix	0·15	100–20–20				
	Seal	0·1	100–20–10				
	Total ..	0·35					

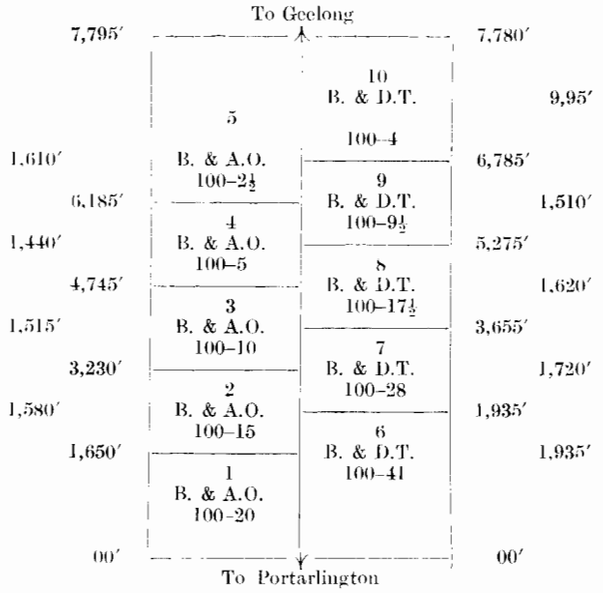
SCHEDULE "J."

EXPERIMENTAL WORK—FIRST SEAL (D.C. WORK).

GEELONG-PORTARLINGTON ROAD.

Shire of Bellarine.

All sections covered at 25 gallons per square yard, 1 cubic yard to 65 square yards. Bitumen 80/100 penetration. Flux Oil—A.O. = Asphaltic Oil. D.T. = Dehydrated Tar.



Covering material:—No. 2 aggregrate, Basalt Screenings, A.L.D. 0.320. Length 7,795 feet of road.

SCHEDULE "I."

EXPERIMENTAL ¾-IN. ROAD-MIX SEAL.

MAIN HEALESVILLE ROAD.

Shire of Lilydale.

Peg 0–Peg 1 (Load No. 1).—
1,240 feet.
Chge. 5015–6245.
Mix 100–10–25.
Tack 0.10 gallon per square yard.
Seal 0.20 gallon per square yard.
Screenings 1:48.
Toppings 1:200.

Peg 1–Peg 2 (Load No. 3).—
1,115 feet.
Tack 0.10 gallon per square yard.
Seal 0.23 gallon per square yard.
Fluxing 100–10–25.
Screenings 1:48.
Toppings 1:200.

Peg 2–Peg 3 (Load No. 5).—
1,070 feet.
Fluxing 100–10–25.
Tack 0.10 gallon per square yard.
Seal 0.25 gallon per square yard.
Screenings 1:48.
Toppings 1:200.

Peg 3–Peg 3A (Load No. 7).—
Fluxing 100–10–25.
Tack 0.10 gallon per square yard.
Seal 0.15 gallon per square yard.
Screenings 1:48.
Mix and roll.
Seal 0.10 gallon per square yard, and cover with toppings at 1:100.

Peg 3A–Peg 5 (Load No. 9).—
Fluxing 100–10–25.
Tack 0.10 gallon per square yard.
Screenings 1:48.
Seal 0.15 gallon per square yard.
Mixed and rolled—left overnight and covered with toppings at 1:200.
Sealed next morning at 0.10 gallon per square yard (100–10–25) and covered with toppings, first half (coming from Healesville) at 1:100, second half at 1:150.

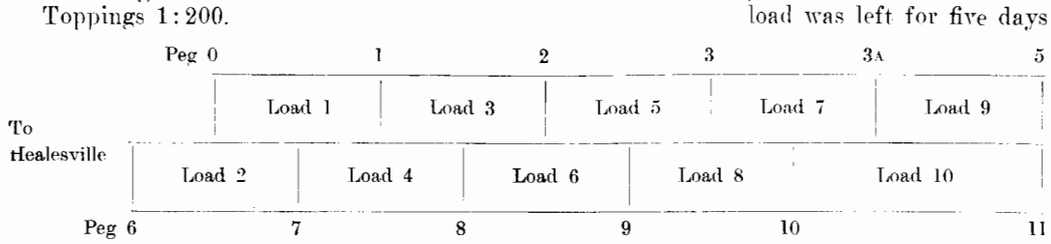
Peg 6–Peg 7 (Load No. 2).—
Fluxing 100–20–20.
Tack coat 0.10 gallon per square yard.
Screenings 1:48.
Seal at 0.20 gallon per square yard.
Mix, roll, and cover the toppings at 1:200, 1,150 feet.

Peg 7–Peg 8 (Load No. 4).—
Fluxing 100–20–20.
Tack coat 0.10 gallon per square yard.
Screenings 1:48.
Seal at 0.23 gallon per square yard.
Mix, roll, and cover with toppings at 1:200. 1,035 feet.

Peg 8–Peg 9 (Load No. 6).—
Fluxing 100–20–20.
Tack coat 0.10 gallon per square yard.
Screenings 1:48.
Seal at 0.25 gallon per square yard.
Mix, roll, and cover with toppings at 1:200, 980 feet.

Peg 9–Peg 10 (Load No. 8).—
Fluxing 100–20–20.
Tack coat 0.10 gallon per square yard.
Screenings 1:48.
Seal 0.15 gallon per square yard.
Mixed and rolled and covered with toppings at 1:130—after resealing top at 0.10 gallon per square yard, about 7 cubic yards of toppings on Healesville end of this load were from Lysterfield Quarries.

Peg 10–Peg 11 (Load No. 10).—
Fluxing 100–20–20.
Tack 0.10 gallon per square yard.
Screenings 1:48.
Seal 0.15 gallon per square yard.
Mixed, rolled, and covered 1:200, and left five days and resealed at 0.10 gallon per square yard covered 1:200. Lysterfield toppings used throughout this load. Rain got onto this load after mixing, and the load was left for five days to dry out.



In all cases the heavy flux was Shell Asphaltic Oil, and the light flux Power Kerosene.

Peg 1 is about 200 feet on the Melbourne side of the Croydon turn-off.

BRIDGES.

Under-water Bridge Foundations.

During the summer of 1938-39, all streams in the State were at a record low level. It was possible to inspect bridge foundations which had been under water for many years. On the Main Healesville road, the foundations of the bridge over the River Yarra were exposed, and it was found that mass concrete which had been placed under water in 1918 was in very bad condition. By means of a screwdriver, it was found possible to dislodge stone after stone from the weak mortar separating the stones, and it appeared to be possible in this manner to have completely pulled out this foundation concrete. Advantage of the low water stage was taken to replace this normally "under-water" concrete with sound new concrete.

Experiences of this nature show that the placing of concrete under water is one of a somewhat risky nature unless procedure is controlled to a very high degree. The same low water conditions showed elsewhere that where concrete had been put in under water with the necessary care, it was in perfect condition. The basic principles necessary to insure a high standard of concrete when placed under water are simple, and should be well understood. However, it appears to be desirable to restate them—

(1) The water must be still water, i.e., a reasonably water-tight form should be provided.

(2) The mix should be very well graded with a surplus of approximately 50 per cent. of mortar over that normally required for placing in air. The maximum size of the coarse aggregate should be kept down to 1 inch.

(3) The mixed concrete must be lowered through the water at very slow speed so as not to cause any washing out of the cement from the surfaces which might be in contact with the water.

(4) The deposition of concrete into its final place should be done very slowly, for the same reason as in (2).

(5) Notwithstanding the care taken in the above procedure, it will be found that a considerable amount of laitance will always form at the top of each day's work.

(6) It is necessary, therefore, either to continue with the whole of the under-water work until it is completed in one continuous operation, or to scabble back the top of the previous day's work before new concrete is placed.

It is generally found that the cost of placing concrete under water is double that of placing similar concrete in air, but that the cost of placing in water is a small fraction of the cost of placing concrete within dewatered cofferdams. The small extra cost of the procedure set out in the previous considerations would probably not add 10 per cent. to the cost of placing concrete under water, and under these circumstances there is such a large cost advantage in the method that its use is well justified, provided that the lessons of the past are remembered.

McCoy's Bridge.

During the year, plans were completed for a new bridge over the Goulburn River where it is crossed by the Murray Valley Highway. The old bridge was 750 feet long by 12 feet wide, and was in bad condition, while the narrow width was a source of danger and inconvenience to traffic. The new bridge provides for a waterway of 40 per cent. more than in the old bridge, and will have an overall length of 1,073 feet. The nature of the flood channel of the Goulburn at this point gives two distinct variations of waterway. In the centre, where the normal summer flow takes place, there is a deep channel approximately 250 feet wide. On either side there is an elevated floodway having an average depth of 12 to 15 feet, and extending to levee banks which parallel the river channel. In the main channel the depth from bed to flood level is 37 feet, and over this section the better hydraulic properties of the channel allow a much higher velocity of flow than at the sides, where the depth is much less. However, because proposals for increasing the waterway by subsidiary channels have been put forward so as to avoid flooding of the adjacent land, and as lateral scour may develop, the whole crossing is to be bridged with a series of long spans. Over the present channel five 56-ft. spans will be provided, and 50-ft. spans will be built on the approaches. Three rows of 24-in. rolled steel joists will be provided, and by means of welded-on steel stirrups, they will be made as one unit with the concrete slab deck. While the plans were not completed at the end of 1938, it was resolved that advantage should be taken of the low water level in the river, and tenders were called for the construction of the river piers. One of the few disadvantages of the break in the drought in February, 1939, was the rise in the water level in this stream, and from that time onwards practically all work in the construction of the river piers was necessarily prevented.

Broken River Bridge, Benalla.

This bridge was constructed 30 years ago for the Benalla Shire Council before the Board's inception. In those days there were practically no motor cars, and the bridge served for foot traffic and local vehicles. It consisted of a bridge 400 feet long, with five sets of 40-ft. spans, each made continuous for half the length of the bridge. A footway 4 feet wide on one side was provided, and the roadway width was 20 feet. At the northern abutment of the bridge there was a deflection angle of 25° in the road alignment and, due to the almost continuous presence of some slow-moving vehicle on the bridge, through traffic on the Hume Highway was retarded, and the congested area was liable to cause accidents. Another defect in the old bridge was that at the time of its design there were certain misconceptions regarding the behaviour of reinforced concrete beams when subjected to loads. It is not contended that even now there is a full knowledge on this matter. Early experiments indicated that concrete was able to take a small amount of shear, and it was thought that, provided the theoretical shear stresses in the reinforced concrete beams did not exceed a small proportion of the experimental values, it was not necessary to provide shear reinforcement in the beams. This misconception, which would have been obviated had the designers visualized shear in the reinforced concrete beam as diagonal tension, was applied to the design of this structure, and over the central sections of each span there was no shear reinforcement provided. Due to the tension in the beam stems which was partly caused by the effect of loads, partly by shrinkage stresses in the setting concrete, and partly by the resistance of the monolithic piers to movement during changes of temperature, certain cracks developed in the stems of the beams within the first ten years of the bridge being built. These cracks became worse as the beam stems were no longer able to carry the applied loads as beams. From time to time these cracked beams have been partially repaired by steel plates bolted through to the deck slab; but with the increasing traffic this important river crossing was not in sufficiently good condition to carry the heavy loads now using it. Because of its narrowness and bad condition, the Board, at the Council's request, provided £8,000 to widen the bridge, together with a footway on each side, a traffic width of 30 feet, and, in addition, the end spans at the northern end were to be flared out to ease the sharp curve on to the bridge. The work was commenced

early in 1939, and despite eight floods in the river between February and June, the whole of the piers were widened, and a start was made with the superstructure of the widened section. When the new widened section has been completed and can be made available for traffic, traffic will be prevented from using the existing bridge width, and the worst of the beam stems will be broken out, provided with extra shear reinforcement, and re-cast. It is anticipated that the work should be completed by the end of 1939.

Goomalibee and Spiers Bridges.

During the year a slight modification for the ends of steel joist bridges was made in certain particular instances. On the Broken River, at Goomalibee, and at Spiers Bridge, on the Mount Emu Creek, on the Garvoc-Laang road, in the Shire of Warrnambool, examples of this treatment may be seen. The end span is canterlevered out by 15 feet by extending the joists through. No end support is provided, and the connexion between the structural deck and the approach bank is made through timber end slabs of from 6 to 8 feet in span. The bank will need protection, and the surface is to be covered with grouted stones, or with a thin reinforced concrete apron. The cost of the new bridge over the Broken River, at Goomalibee, which is 200 feet long and 16 feet wide, was £2,400, which is £12 per lineal foot and 15s. per square foot of surface. This type of bridge overcomes the problem where there is doubt as to the stability of the banks of a river in flood times. It obviates the necessity for a very deep and costly abutment, and has greater safety than an abutment which is only supported by a shallow excavation on top of the creek bank, and it is actually cheaper. The completed bridge is illustrated in Plate No. 44.

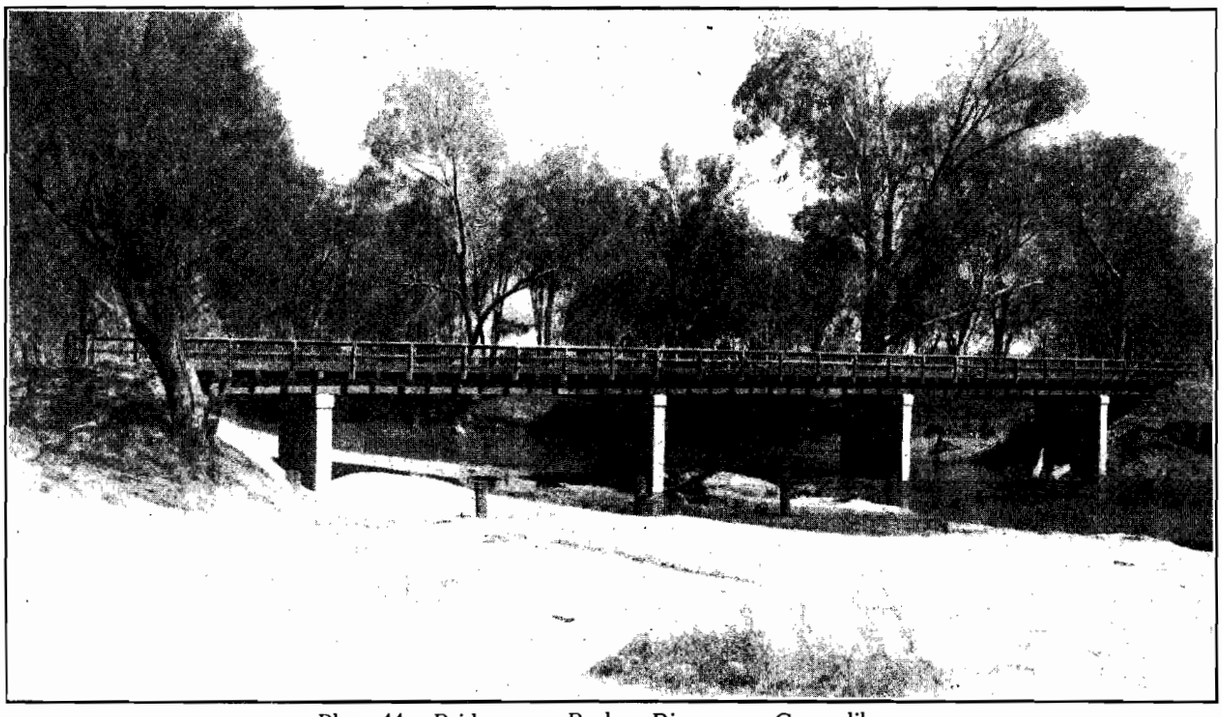


Plate 44.—Bridge over Broken River near Goomalibee.

San Remo Bridge.

In October, 1938, approval was given for the immediate commencement of a bridge to join Phillip Island with the mainland, between Newhaven and San Remo, at the eastern entrance to Westernport Bay. The channel has a width of 1,800 feet, and because of the large expanse of water further north in Westernport Bay, the tidal velocity through this relatively narrow section is very high.

Surveys indicate that there is a deep channel having a depth of 70 feet, commencing almost at the beach on the San Remo side. This deep channel extends approximately one-third of the way across the site, while for 800 feet the depth varies from 22 feet to 10 feet at high tide. The remaining length of approximately 400 feet is above low tide level, and is covered for a depth of 6 to 10 feet at high tide. The underlying strata is clay. Preliminary exploration was made with an earth boring auger, and this churned the clay up to such an extent as to conceal its actual properties. Subsequent excavations show that on the island side the formation consists of decomposed basalt nodules approximately 1 foot in diameter, separated from one another by firm whitish clay. However, by a geological process, the basalt has softened from a hard rock down to such a condition that it can be cut readily with a knife. When tested in compression it was found to have a strength of 800 lb. per square inch at 21 per cent. moisture. It was found that it was very difficult to drive even small timber piles into this material when a 20-cwt. hammer was used. But when $2\frac{1}{2}$ tons of concrete piles were driven with a 4-ton hammer, there was no difficulty at all in driving them. Tests made on the foundation indicate that the probable shear strength is about $\frac{1}{2}$ ton per square foot, and the bearing value about 4 tons per square foot.

The mid-stream anchor which would be required normally for a suspension span over the deep channel would have been in 6 feet of water at low tide, and 16 to 18 feet of water at high tide.

To have spanned this crossing with one suspension span plus two loaded side spans would have been prohibitively expensive. It was considered that the cost of making an anchor at this point, which is right in the middle of the crossing, and is exposed to very rough seas and fast tides, would have been very great. In addition, it is doubtful whether it would ever have been possible to have made the cofferdams sufficiently dry to have been able to place concrete in close contact with firm undisturbed clay. On the other hand, it was not possible, because of the lightness of the structure, for the bridge to be constructed as a self-anchoring type. Because, however, of the relatively light traffic loads to be provided for in the structure, it was found feasible to carry the tension from the suspension cables through the superstructure of the approach spans to an anchor on the Newhaven side. The general arrangement of the approach spans is shown in Figs. C, D, and E, which also give the cross-

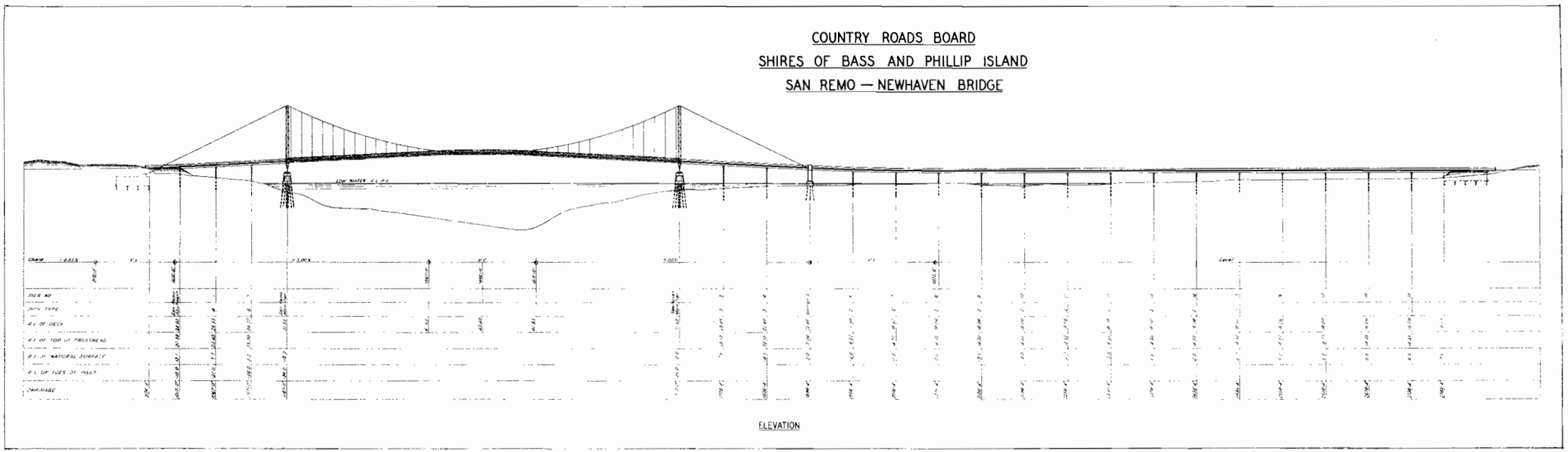


Fig. C.—Showing Elevation, San Remo Bridge.

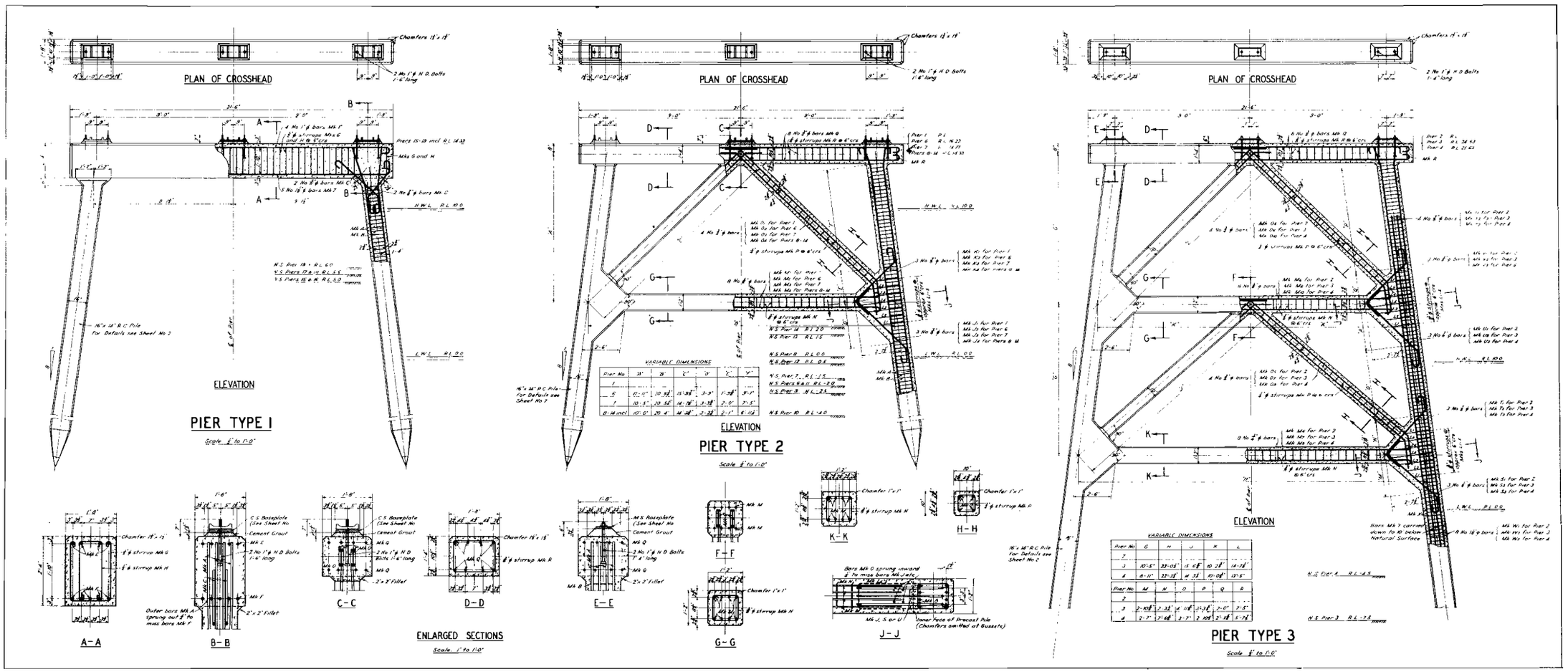


Fig. D.—Showing Details of Piers, San Remo Bridge.

section of the bridge. It will be seen that there are two driven piles supporting 60 feet of bridge. To take lateral forces, each pair of piles is braced transversely. In construction, every member which could possibly be precast will be made in that way, and the only parts of piers to be cast in place are the joints between the precast members which are below high tide and the top members which are above high tide. The three 100-lb. rolled steel joists are completely welded up to take both bending and tension from transverse loads, and from the loads from the main cables.

The loads to be carried by this bridge, which is to have a width of 18 feet, are 250 lb. per foot run of bridge, or alternatively, two 8-ton vehicles passing on the structure. It may be noted that Phillip Island is mainly a tourist resort, but also has agricultural products which may be transported very conveniently in vehicles having a maximum gross weight of 8 tons. This would also provide for the cartage of foodstuffs, petrol wagons, and general merchandise required on the Island. It may appear at first sight that the uniform rate of 250 lb. per foot is rather a meagre allowance, but close studies of holiday touring car traffic on very congested roads showed that it is very seldom that the actual loads caused by passenger cars approach within half of this value. Progress at the end of the year is shown in Plate No. 45.

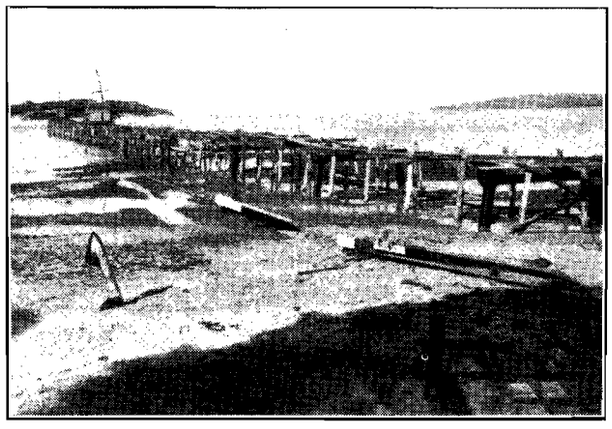
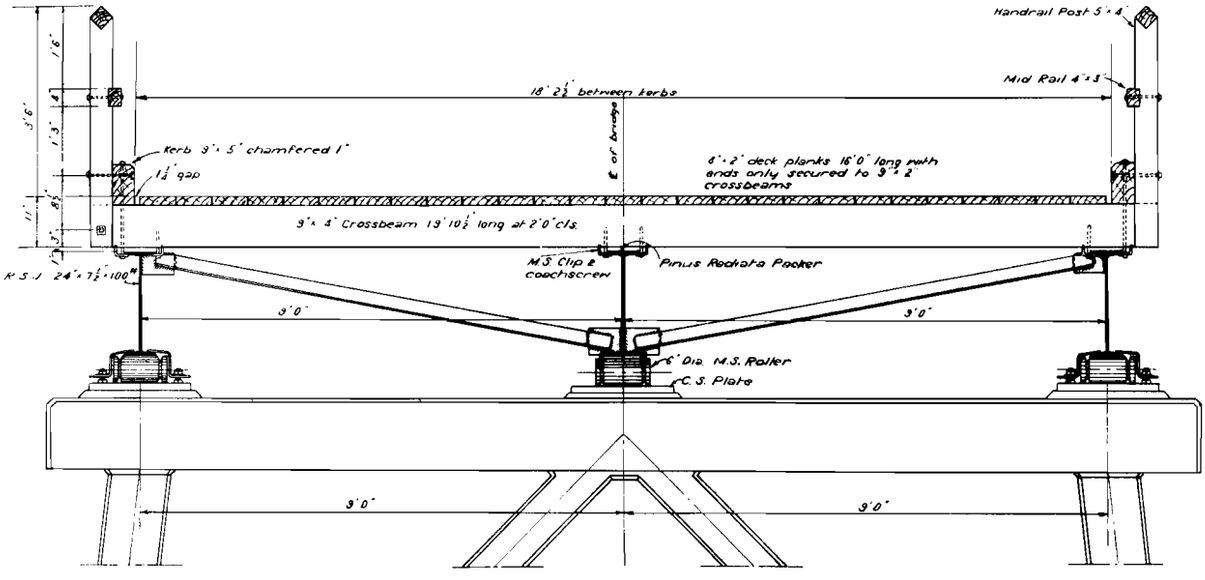


Plate 45.—Showing Progress of Construction of San Remo Bridge.



TYPICAL CROSS SECTION OF DECK

APPROACH SPANS

Fig. E.- Showing Cross Section of Approach Spans San Remo Bridge.

Tarwin River, Main South Gippsland Road.

An interesting example of a cheap structure is found in the recently let contract for a bridge over the Tarwin River in the Shire of Woorayl, at the crossing of the Main South Gippsland road.

Plans were prepared in 1935 for a high level concrete bridge, at an estimated cost of £12,000, the bridge being 600 feet long and 22 feet wide. Spans were of 50 feet. In view of the high cost, nothing was done for a few years, until the Board decided to build a semi low-level bridge of less permanent construction at the site of the present bridge. This bridge, which will be above all normal winter floods, and which would only be impassable at very rare intervals, will consist of timber piles, steel joists, and timber deck. The Board will supply steel joists, iron work, and timber preservatives. The accepted tender, together with the cost of the materials to be supplied, and of supervision, amount to £3,750 for a bridge 440 feet long and 22 feet wide. This is

approximately £8 10s. per foot run of bridge. The details of the bridge shown in the cross section are illustrated in Fig. F. The bridge is heavy enough to take two 10-ton vehicles passing, or for one 15-ton vehicle passing up the centre of the bridge.

Bridge Width.

During the year, several small problems of improving the width of narrow bridges were encountered. Frequently, in an effort to keep the original crossings square to the stream, sharp curves were provided in the immediate approaches, and in some cases long stretches of straight road were connected with reversed curves because of the location of the bridge. The widening of such structures therefore presented the additional problem that the added section would be in the shape of two wedges instead of a parallel widening. In addition, as the improved curve thus extended on to the bridge, it came necessary to provide for a kerb of variable height so as to allow the new curve to be properly developed. An interesting example of such work is the widened bridge over the East Moorabool River.

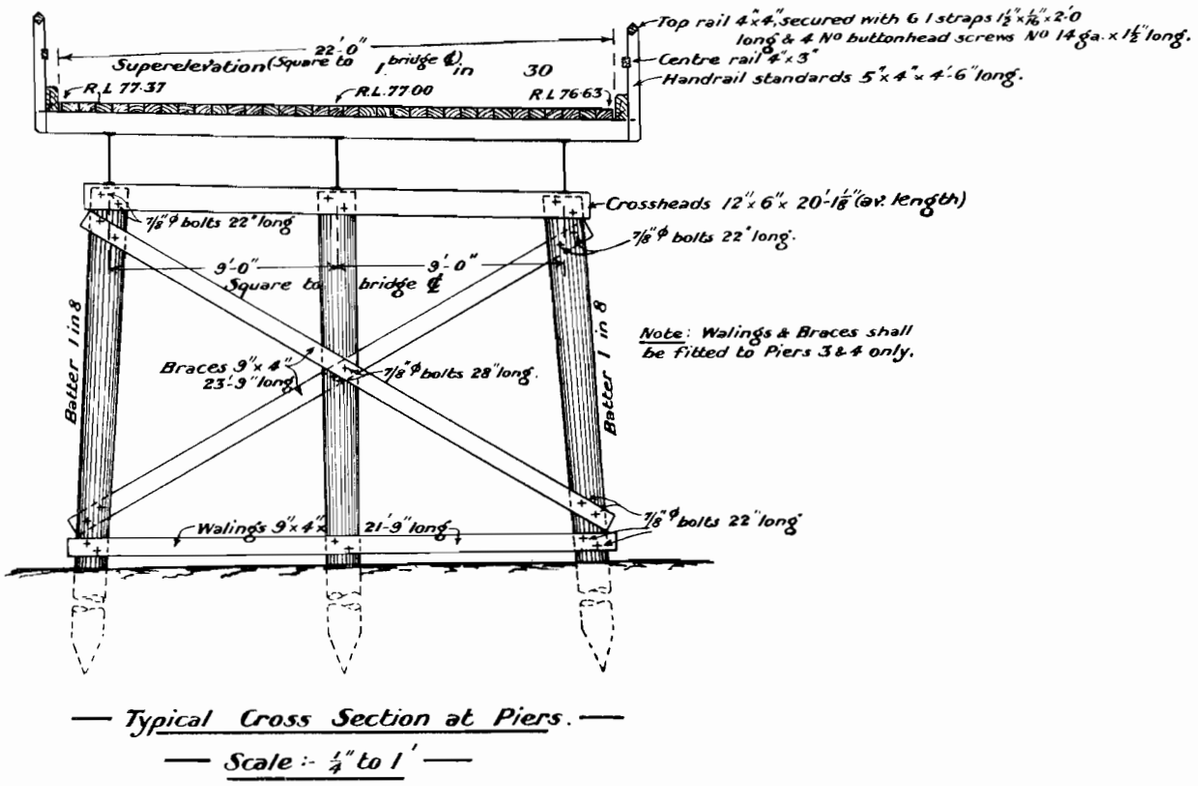
Although the original bridge was made continuous, the substructure is not to be classed as completely unyielding.

The extension to the bridge was therefore made of simple supported spans, and ultimately, when the superstructure of the old bridge requires replacement, it will also be reconstructed as simple spans. The abutments of the old bridge were in 8 feet of water, partly as the result of tidal scour. The widening at these points would have been very costly if a new abutment had been built to a height of 22 feet to retain filling. A relieving span was therefore provided, and filling will be allowed to run to its natural angle of repose above high water level, with a rock toe extending out in front of the new widened abutment. To preserve the illusion of a proper abutment, a drop wall along the side of the relieving span was provided.

The condition of the new work is shown in Plate No. 46.

Hoddle Bridge.

A record of progress in the construction of this bridge, together with a general description of structural details, was set out in the last Annual Report.



— Typical Cross Section at Piers. —

— Scale :- ¼" to 1' —

Fig. F.—Cross Section of Tarwin River Bridge over Main South Gippsland Road.

North Arm Bridge.

This bridge, which is over a salt water channel at Lakes Entrance, on the Princes Highway East, was constructed by contract by the municipal council in 1917. Very soon afterwards, the effects of salt water, salt laden air, and porous concrete became apparent, and the positions of many reinforcing bars could be seen in the face of the substructure concrete by either red rust discolourations, or by actual cracking of the concrete. The bridge, which was 150 feet long and 16 feet wide, was a continuous reinforced concrete structure. In 1924, the defects set out required the reconstruction of the substructure, and this was done while keeping the bridge open to road traffic at a cost of £3,500. Wingwalls were left untouched and, due to further rusting, the narrowness of the bridge, which is situated at the bottom of a long hill, and the desirability of providing for foot-traffic, plans were prepared for widening the bridge, constructing a footway, and replacing the abutment wingwalls, at a cost of £5,000.

The bridge was finally completed in this financial year, and was opened for traffic on 22nd December, 1938. The major item of work done in this financial year was the casting of the concrete deck and beams in one continuous operation. The five spans of 65, 85, 85, 85, and 65 feet respectively, carry a roadway of 50 feet, and two footways each 8 feet wide. The quantity of concrete required was 4,600 cubic yards, and the weight of reinforcement was 600 tons. Because of the large amount of reinforcement required in this continuous bridge, it was impracticable to divide the casting of the deck into a number of separate operations, and it was decided to proceed with the casting as one continuous operation. It was considered that the best means would have been to have started at the centre of the bridge, and with two separate gangs, to have concreted outwards from the centre, using a ½-yd. concrete mixer at each end of the bridge. This would have given the concrete a relatively long time to set, and the initial shrinkage would occur before there was a

very large mass of concrete deposited. However, the rate of casting with such mixers would have been rather slow to have enabled the concrete to be kept alive on the end of the section being cast. Further, the work was to be done in October, and rainfall records showed that it was practically impossible to get five days of reasonably fine weather at any time of this month in one continuous stretch, and therefore the possibility of disturbance to the continuity of the work by interruption from bad weather may have been a serious factor. Such a disturbance might have occurred at night when the concrete was being placed in a deep beam over the piers through the heavy mass of negative reinforcement. In such a case it would have been very difficult to have made an effective construction joint. As the chances of any such disturbance should preferably be minimized, it was finally decided to commence construction at one end of the bridge and to proceed uniformly towards the other end. This scheme gave a longer face of unset concrete adjacent to the section being cast, and therefore allowed for a more accurate longitudinal finish to the set concrete than would have been done otherwise. Actually the weather during the concreting operations

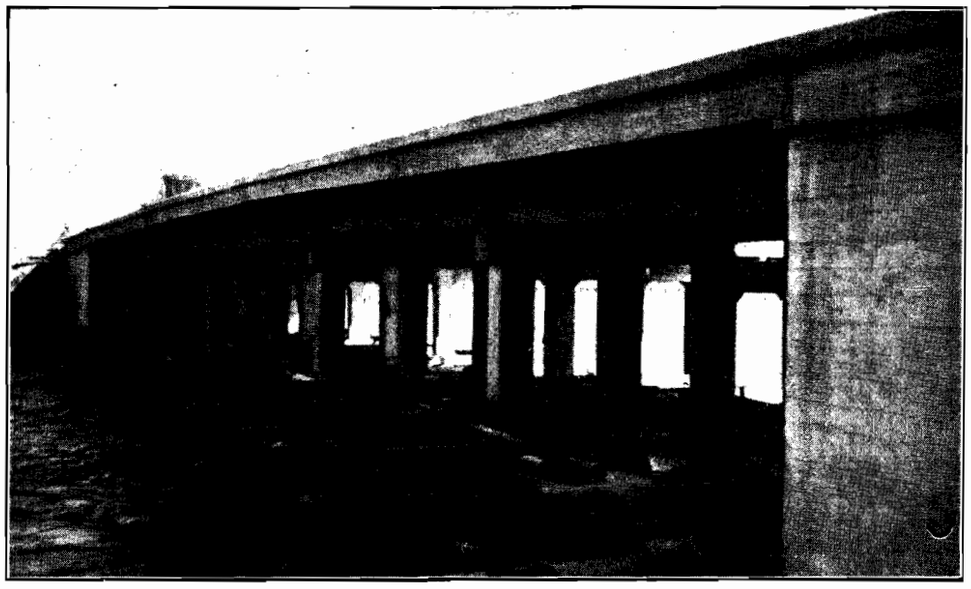


Plate 46.—North Arm Bridge, Princes Highway East, Section 4, Showing Bridge Almost Completed.

was dry, except for a few relatively light showers, which did not stop the work. The plant performed well, and the only major breakdown was that of 17 hours when one of the concrete mixers was out of action. A total number of 190 men were employed, and they were divided into three shifts. The time of actual concreting was 117 hours, and the rate per hour was 15.8 cubic yards. The rate per mixer over this period was 6.3 cubic yards per hour. During the mid-shift stop for meals, the work was carried on by half the shift and one concrete mixer. An important factor in assisting in smooth operation of the concreting, was the use of four internal vibrators for the internal beams, together with light external vibrators on the outer beams. It was found that this avoided an unduly large number of men at the working face who would otherwise have been required had it been necessary to consolidate the concrete by hand tamping. The plant necessary for providing the compressed air consisted of portable compressors operated by internal combustion engine. It appears that the design of such portable compressors has been arrived at from past experience of operating jackhammers and other small types of pneumatic tool which have a high peak demand for air, but which are seldom used continuously at that rate for any great length of time. It is noted that air compressors providing air for such tools are called on to operate to their fullest capacity for a short time, but are given appreciable periods during which the demand is very small. Where internal vibrators are in use, the air demand is practically uniform throughout the 24 hours of each day, and if the number of portable compressors which were provided was on the same basis as that required for the peak demands for intermittent tools, the compressors would necessarily be operating at a maximum capacity continuously. The net effect of this is for the compressors to become much hotter than under normal operation, and the capacity of portable compressors required to operate internal vibrators should therefore be much greater than for more commonly used pneumatic tools. The greatest difficulty in securing the compaction of concrete (where this has been the objective) has been due to the fact that it is not possible by examination of the top surface of concrete to see whether the underlying concrete has been properly compacted. This would result in all cases unless some particular technique were developed whereby the deposition and compacting of concrete would proceed at a proper pace. It would be necessary to deposit the concrete over a certain definite area in a certain sequence so that consolidation could follow such deposition in a regular manner. An internal vibrator might be moved continuously from part to part to follow such deposition, but the difficulty would be that the operator could very easily give certain parts more vibration than those adjacent, and in so doing might almost completely miss a reasonably large volume of concrete. For this reason, it appears to be more reliable practice for the vibrator to be kept moving very slowly up and down at one fairly fixed point while concrete is deposited at that point only.

The surface finish of the external parts of the bridge was given particular care, and the whole of the forms were lined with water-proof three-ply having a thickness of 3-16ths of an inch. This practically obliterated all form marks, and in conjunction with the well-graded mix, and the application of mechanical vibration, produced very smooth surfaces of concrete. In spite of this care, however, the resulting surfaces were not uniform in colour due to irregular proportions of cement over the surface of the concrete. This could not be completely removed even when the surfaces were ground with a pneumatically-operated corborundum stone. As a means of making these surfaces more uniform and protecting them from the large variations of temperature and humidity which cause swelling and

shrinkage on the surface of concrete, thereby producing hair cracks usually referred to as crazing, it was deemed necessary to cover the surface with some form of paint. Two general choices were available, one being water paint, and the other being an oil paint. The ground surfaces of the concrete were too smooth to enable proper adhesion by any sort of paint, and some areas of failure were inevitable. It was considered that this would require patching, and that the water paint could be more easily patched than the oil paint. Water paint was therefore provided, and was somewhat hurriedly applied in order that the bridge should present a uniform appearance on the occasion of its official opening. Unfortunately, at the time of painting the weather was particularly dry and hot, and large areas of macadam were being placed on the approaches to the bridge. This deposited a fine film of dust over the concrete and caused some areas (quite a small percentage) to become loose. The effect of these partial failures became very apparent when the long drought ended and a very wet autumn kept the paint almost continuously wetted. The whole bridge was re-painted, and the defective areas scraped back to the solid concrete face. A photograph of the completed structure is shown on Plate No. 35.

Before the new bridge was contemplated, traffic conditions at the narrow bridge at the foot of Anderson-street was very congested and, in addition, a considerable proportion of the traffic which came down from the north along Hoddle-street was compelled to swing to the west and thence again to the east for an extra mile. Before any work was done at the site of the new bridge a traffic count was made in the immediate vicinity, and this was repeated just before the new bridge was opened to traffic, and subsequently after all the road works in the immediate vicinity, including the complete reconstruction of Punt Hill, South Yarra, had been carried out. The results of these traffic counts show that the general effect of the new bridge, apart from reducing the distance travelled by vehicles and consequently the time taken, induced an increase of 1,290 vehicles per day (twelve hour count) crossing the river at this point, an increase of 17.38 per cent.

The complete cost of the work, including £2,916 for interest charged during construction, was £77,009. Of this sum £58,000 was for the construction of the actual bridge, £6,786 was for the construction of the approach, embankments, and roadways, and the balance for such items as provision of public utilities on the new bridge, demolition of the old footbridge, and land purchase and compensation for the immediate approaches.

Maintenance of Rolled Steel Bridges.

As mentioned in previous reports, it has become increasingly difficult to obtain sound timber for stringers. In consequence increase in the use of steel joists for stringers has necessarily been made, and at the present time there are no fewer than 159 such bridges already constructed in the state, and this number is being added each year. While the climate of most inland areas of Victoria is not very severe on structural steel, it is necessary to give such steel joists regular and proper maintenance. If this is attended to, the joists will last for a very long time without any appreciable reduction in strength. Experience indicates that the following sequence of operations is most satisfactory:—

(1) The joists are to be erected without any preliminary cleaning down or painting.

(2) Those areas of the joist which cannot be afterwards painted because of bearing surfaces, should be given a heavy coat of red lead, and should be protected from the corrosive effects of green timber by the insertion of a piece of bituminous felt.

(3) After one or two years, the mill scale which was originally practically integral with the underlying structural steel, begins to loosen and at some subsequent period may be pulled away from the underlying steel with very little effort. When this condition arises, the whole of the surface of the steel should be brushed with a wire brush so as to remove all dirt, loose scale and rust.

(4) The surface of the steel joist is then given two coats of a paint consisting of 33 lb. of dry red lead mixed into 1 gallon of raw linseed oil without the addition of any driers. The red lead will cause the oxidation of the linseed oil to commence without the addition of any driers, and the use of additional driers is both unnecessary and undesirable, as it tends to harden up the oil to a brittle condition in the course of a few years. The red lead cannot be mixed with linseed oil and kept as a ready mixed paint for any length of time, and hence should always be freshly mixed on each job.

(5) Where the appearance of the bridge is of importance, an outer decorative paint may be applied for the red lead. From the point of view of cheap maintenance an aluminium paint is recommended over the red lead.

Yours obediently,

L. F. LODER,
Chief Engineer.

APPENDIX A.

COUNTRY ROADS BOARD FUND.

Dr. RECEIPTS. *Cr.*

1938.		£ s. d.	£ s. d.	£ s. d.	£ s. d.
July 1.	To Balance				976 7 0
1939.					
June 30.	.. Motor Car Act No. 3741—				
	Registration Fees ..	1,780,912 2 5			
	Less Refunds	22,200 2 3			
			1,758,712 0 2		
	Fines ..	19,663 10 1			
	Less Refunds	15 6 6			
			19,648 3 7		
			1,778,360 3 9		
	Less Cost of Collection		87,397 17 2		
				1,690,962 6 7	
	,, Country Roads Board Acts—Nos. 3662 and 4332—				
	Registration of Traction Engines			682 3 9	
	Fees and Fines			588 1 6	
	Acts Nos. 3662, 3741 and 4332—Costs ..			201 16 8	
	,, Municipalities' Repayments—				
	Permanent Works—				
	Outer Metropolitan Roads ..	3,230 1 6			
	Relief Acts 4140 and 4415—				
	Main Roads	143,668 4 10			
			146,898 6 4		
	Maintenance		171,979 10 11		
				318,877 17 3	
	Hire of Plant		53,724 7 5		
	Stores and materials		233,103 7 8		
	Sundries		115,868 12 2		
				402,696 7 3	
					2,414,008 13 0
					2,414,985 0 0

1939.		£ s. d.	£ s. d.	£ s. d.
June 30.	By Maintenance (Appendix)			1,201,001 17 5
	,, Murray River Bridges and Punts			4,066 17 2
	,, Interest and Sinking Fund— Municipalities' Repayments			118,166 16 0
	,, Interest and Sinking Fund— Great Ocean Road			1,000 0 0
	Recoup to Revenue—Act No. 3944—			
	Interest—Main Roads	105,617 3 11		
	Developmental Roads	135,337 8 11		
	Sinking Fund Contributions	25,793 18 11		
	Exchange	39,663 5 9		
	Loan Conversion Expenses	1,865 16 7		
			308,277 14 1	
	,, Relief to Municipalities— Acts No. 4140 and 4415			240,170 3 8
	,, Stores and Materials	233,096 6 10		
	,, Motor Expenses	6,159 4 1		
	,, Plant Purchase and Repairs	77,235 18 2		
	,, Storeyard	31,869 18 1		
	,, Sundry Debtors	77,811 13 9		
	,, Traffic Administration—			
	Motor Car Acts	3,643 15 3		
	Country Roads Acts	1,561 12 3		
	Act No. 4332 (Impounding of Cattle) ..	703 13 10		
	Act No. 4609 (Tourists' Resorts Fund) ..	1,000 0 0		
	Act No. 4585 (Traffic Line Marking)	6,047 12 2		
	,, General Expenditure—			
	Salaries, &c.	101,327 6 4		
			540,457 0 9	
	Balance			1,844 10 11
				2,414,985 0 0

RECONCILIATION.

	£ s. d.
Balance as per Treasury Books	3,041 10 6
Add Transfers Outstanding	1,578 18 11
	4,620 9 5
Deduct Accounts in Transit	2,775 18 6
Balance as per Country Roads Board Accounts	1,844 10 11

APPENDIX A—*continued.*—REVENUE ACCOUNT, 30TH JUNE, 1939.

1939.		£ s. d.	£ s. d.	£ s. d.
June 30.	To Maintenance Works—General		709,649 12 3	
	Mansfield–Wood's Point Road ..	2,660 2 0		
	Wood's Point Road	3,906 5 6		
	Walhalla Road	1,793 2 11		
	State Highways	440,566 3 6		
	Tourists' Roads	42,426 11 3		
			491,352 5 2	1,201,001 17 5
	,, Murray River Bridges and Punts		.. ..	4,066 17 2
	,, Contribution to Sinking Fund		29,541 14 0	
	,, Interest on Loans		88,625 2 0	118,166 16 0
	,, Recoup to Revenue—Act 3944—			
	Interest—Main Roads ..	105,617 3 11		
	Developmental Roads	135,337 8 11		
			240,954 12 10	
	,, Sinking Fund Contributions		25,793 18 11	
	,, Exchange		39,663 5 9	
	,, Loan Conversion Expenses		1,865 16 7	
	,, Act 4395—Great Ocean Road—			308,277 14 1
	Interest		586 0 6	
	Sinking Fund		413 19 6	1,000 0 0
	,, Tourists' Resorts Fund—Act 4609		.. ..	9,492 13 7
	,, Relief to Municipalities		.. ..	240,170 3 8
	,, Audit Fee		497 13 7	
	,, Experimental Works		4 17 11	
	,, Insurance of Employees		148 1 10	
	,, Gravel Sites and Metal Investigation		950 17 9	
	,, Instruments		54 7 1	
	,, Motor Expenses		6,159 4 1	
	,, Offices—Exhibition Building		115 10 7	
	,, District Storeyard		1,739 16 3	
	,, New Storeyard		10,012 18 6	
	,, Office Expenses		2,911 15 11	
	,, Office Furniture		932 7 6	
	,, Patrolmen's Cottages and Engineers' Residences ..		1,404 14 7	
	,, Patrol Garages		79 3 8	
	,, Plans, Purchase		937 15 9	
	,, Plant Purchase		39,695 0 8	
	,, Postage and Telegrams		1,817 13 3	
	,, Printing and Stationery		2,275 2 11	
	,, Salaries		67,309 18 3	
	,, Storage Sites		47 4 11	
	,, Camp Sites		39 5 10	
	,, Telephones		1,179 0 2	
	,, Testing Materials		863 7 10	
	,, Travelling Expenses		1,295 15 4	
	,, Motor Car Acts No. 3741, sections 11–13 and 3901, sections 24–36		3,643 15 3	
	,, Country Roads Board Acts		1,561 12 3	
	,, Act 4332 (Impounding of Cattle)		703 13 10	
	,, Act 4585 (Traffic Line Marking)		6,047 12 2	
	,, Direction Boards and Warning Signs		3,148 18 1	
	,, Investigation Surveys		72 8 4	
	,, Advertising (Government Printer)		449 18 0	
	,, Legal Work, Crown Solicitor (Annual Fee) ..		300 0 0	
	,, Recoup (T. McDonald)		24 11 10	
	,, Insurance of Hire Trucks (Third-Party Risk) ..		414 13 8	
	,, Traffic Census		497 5 3	
	,, Bush Fire Losses		462 4 11	157,798 7 0
	Balance		.. ..	352,577 2 2
				2,392,551 11 10

1938.		£ s. d.	£ s. d.	£ s. d.
July 1.	By Balance		.. ..	344,167 6 0
1939.				
June 30.	,, Motor Car Act No. 3741—			
	Registration Fees	1,780,912 2 5		
	Less Refunds	22,200 2 3		
		1,758,712 0 2		
	Fines .. £19,663 10 1			
	Less Refunds 15 6 6			
		19,648 3 7		
		1,778,360 3 9		
	Less Cost of Collection ..	87,397 17 2		
			1,690,962 6 7	
	,, Country Roads Board Act No. 3662—			
	Registration of Traction Engines		682 3 9	
	Fees and Fines		588 1 6	
	,, Costs, Acts No. 3662, 3741 and 4332		201 16 8	
	,, Camping Fees		78 6 6	
	,, Plans, Sale of		83 18 6	
	,, Plant Earnings	52,682 18 11		
	Deduct Working Costs ..	37,540 17 6		
			15,142 1 5	
	,, Rents		1,081 7 0	
	,, Royalty on Gravel and Metal		301 4 4	
	,, Old Roads, Sale of		186 8 10	
	,, Storeyard		3,575 6 7	
	,, Timber, &c., Revenue Account		33 1 1	
	,, Explosives, Sale of		0 6 4	
	,, Maintenance Works—			
	Contributions Payable by Municipalities	188,025 3 7		
	Adjustment	580 5 9		
			187,444 17 10	
	,, Permanent Works—			
	Contributions Payable by Municipalities—			
	Outer Metropolitan Roads 4,428 14 0			
	Adjustment 73 19 11			
		4,354 14 1		
	Other Main Roads	143,668 4 10		
			148,022 18 11	
				2,048,384 5 10
				2,392,551 11 10

BALANCE-SHEET AT 30TH JUNE, 1939.

LIABILITIES.	£	s.	d.
Contractors' Deposits	7,861	3	0
Act No. 4609, Tourists' Resorts Fund	8,492	13	7
Sundry Liabilities	4,845	19	2
State Loans Repayment Fund	18	12	0
Revenue Account	352,577	2	2
	373,795	9	11

ASSETS.	£	s.	d.	£	s.	d.
Country Roads Board Fund				1,844	10	11
Maintenance Expenditure—						
Contributions Payable by Municipalities				188,025	3	7
Permanent Works—						
Contributions Payable by Municipalities—						
Outer Metropolitan Roads	4,447	6	0			
Other Main Roads (subject to Relief)	143,668	4	10			
				148,115	10	10
Outstanding Accounts				7,566	8	1
Materials—Stock—						
Storeyard	15,798	13	3			
Branches	4,584	0	3			
				20,382	13	6
Trust Fund				7,861	3	0
				373,795	9	11

SUMMARY OF BOARD'S ASSETS CHARGED TO FUND AS AT 30TH JUNE, 1939.

	£	s.	d.
Patrolmen's Cottages, Garages, Storeyard, &c.	19,436	11	3
Workshop Tools, Fittings, &c.	2,538	17	5
Furniture and Fittings	6,959	10	8
Testing Laboratory Equipment	937	4	0
Works Film	5	0	0
Survey Instruments	445	12	6
Pistols	17	17	0
Cars	6,307	0	0
Motor Car Accessories	30	0	0
Loadometers	600	0	0
Concrete Pipe Tester	7	10	0
Carried forward	37,285	2	10

	£	s.	d
Brought forward	37,285	2	10
Storeyard No. 1	3,925	0	0
New Storeyard	8,699	19	4
Police Motor Cars	3,384	0	0
Police Motor Cycles	1,507	0	0
Motor Registration Branch	7,115	13	9
Motor Testing Branch	24	7	0
Motor Accessories (Police)	30	0	0
Police Sergeant's Office	13	12	0
Police Enquiry Section	11	2	0
Weighbridge	571	18	0
	62,567	14	11
Working Plant at Valuation	108,899	6	3
	171,467	1	2

APPENDIX A—*continued*

COUNTRY ROADS BOARD LOAN ACCOUNT, ACT No. 3662.

RECEIPTS.	£	s.	d.	PAYMENTS.	£	s.	d.
1939.				1939.			
June 30. To State Loans Repayment Fund	58,025	10	10	June 30. By Permanent Works (Appendix)	57,865	12	0
				,, Balance	159	18	10
	58,025	10	10		58,025	10	10

BALANCE-SHEET AT 30TH JUNE, 1939.

LIABILITIES.	£	s.	d.	£	s.	d.	ASSETS.	£	s.	d.
Interest on Permanent Works	..		..	18,720	0	11	Permanent Works	5,044,316	6	1
Loan Securities Issued	4,860,284	9	2				Interest Capitalized on Permanent Works (Act No. 3662)	18,720	0	11
Less Amount Repaid	80,000	0	0				Country Roads Board Loan Account	159	18	10
	4,780,284	9	2				National Debt Sinking Fund (Cash in Hand)	13,809	11	9
Deduct Discount and Expenses	71,416	13	4							
	4,708,867	15	10							
Less Securities Purchased and Cancelled from National Debt Sinking Fund	248,311	13	6							
	4,460,556	2	4							
Less—	£	s.	d.							
Redemption Funds	85,219	1	1							
Main Roads Sinking Funds	285,688	7	7							
Repaid to State Loans Repayment Fund ..	403,277	1	6							
	774,184	10	2							
				3,686,371	12	2				
State Loans Repayment Fund	..		..	335,608	9	1				
Contributions to National Debt Sinking Fund	273,791	13	7							
Less Net Loss on Repurchase of Securities (including Exchange)	11,670	8	4							
				262,121	5	3				
Loan Redemption as Itemized above	..		..	774,184	10	2				
				5,077,005	17	7		5,077,005	17	7

APPENDIX A—*continued.*

DEVELOPMENTAL ROADS LOAN ACCOUNT, ACT No. 3662.

BALANCE-SHEET AT 30TH JUNE, 1939.

LIABILITIES.	£ s. d.	£ s. d.
Loan Securities Issued	6,298,324 3 5	
Deduct Discount and Expenses	112,462 18 7	
	6,185,861 4 10	
Less Securities Purchased and Cancelled from National Debt Sinking Fund	373,813 17 6	
	5,812,047 7 4	
Redemption Funds — 646,386 7 4		
Developmental Roads Sinking Fund — 55,083 0 2		
	701,469 7 6	
		5,110,577 19 10
State Loans Repayment Fund		239,896 6 1
Contributions to National Debt Sinking Fund	412,172 0 10	
Less Net Loss on Repurchase of Securities (including Exchange)	17,568 18 1	
		394,603 2 9
Loan Redemption itemized above		701,469 7 6
Treasury Developmental Railways Act No. 3662 (Sec. 83/16)	2,750 0 0	
Consolidated Revenue Act No. 3662 (Sec. 84/17)	11,000 0 0	
		13,750 0 0
Interest Act 3662 (Sec. 86/1)	77,372 3 10	
Contributions Postponed	16,656 13 7	
		94,028 17 5
		£6,554,325 13 7

ASSETS.	£ s. d.	£ s. d.
Permanent Works Expenditure		6,425,757 10 11
National Debt Sinking Fund (Cash in Hand)		20,789 5 3
Contributions Payable by Municipalities, Act 3662 (Sec. 83/16, Sec. 84/17) (Subject to Relief)		13,750 0 0
Contributions Payable by Municipalities, Act 3662 (Sec. 86/1) (subject to Relief)		94,028 17 5
		£6,554,325 13 7

DEVELOPMENTAL ROADS INTEREST—ACT NO. 3662—(SECTIONS 83/16, 84/17, AND 86/1.)

RECEIPTS.	£ s. d.	£ s. d.
1939. June 30. To Interest on Account of Municipalities Provided by Relief (Acts Nos. 4140 and 4415)—		
Act No. 3662—83/16	4,125 0 0	
84/17	15,125 0 0	
86/1	77,251 18 10	
	96,501 18 10	
		£96,501 18 10

PAYMENTS.	£ s. d.	£ s. d.
1939. June 30. By Payments to Treasury (Relief)		96,501 18 10
		£96,501 18 10

AUDITOR-GENERAL'S CERTIFICATE.

The accounts have been audited and compared with the books with which they agree.

Reconciliations have also been made with the books of the Treasury. Subject to the qualification that the Balance Sheets do not include as assets Permanent Works and improvements resulting from expenditure from Revenue Moneys and extraneous Funds, the several statements, in my opinion exhibit a correct view of the affairs of the Board at the 30th June, 1939.

E. A. PEVERILL,
Auditor-General.
13th November, 1939.

E. J. HICKS, Accountant.
11th November, 1939.

APPENDIX B.

COUNTRY ROADS BOARD.

STATEMENT OF APPORTIONMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE OF MAIN ROADS FOR THE YEAR ENDED 30TH JUNE, 1938.

Name of Municipality.	Permanent Works.		Maintenance.
	Principal.	Interest.	Amount.
	£ s. d.	£ s. d.	£ s. d.
Alberton Shire ..	..	..	2,920 18 9
Alexandra Shire ..	..	..	1,910 0 0
Arapiles Shire ..	..	..	1,045 19 8
Ararat Shire ..	..	..	2,830 10 2
Ararat Town ..	..	..	19 16 6
Avoca Shire ..	..	..	987 9 10
Avon Shire ..	..	..	281 1 10
Bacchus Marsh Shire	..	..	1,549 10 8
Bairnsdale Shire ..	..	..	974 6 8
Ballan Shire ..	..	..	916 5 3
Ballarat Shire ..	..	..	407 18 4
Ballaarat City ..	..	..	1 17 1
Bannockburn Shire	..	..	606 12 3
Barrabool Shire ..	..	..	1,250 12 10
Bass Shire ..	..	..	1,662 11 8
Beechworth Shire	..	..	1,671 18 1
Belfast Shire ..	..	..	649 4 10
Bellarine Shire ..	..	..	573 10 0
Benalla Shire ..	..	..	623 9 1
Berwick Shire ..	..	..	1,127 17 11
Bet Bet Shire ..	..	..	649 4 1
Birchip Shire ..	..	..	264 17 3
Blackburn and Mitcham Shire ..	..	..	1,058 4 5
Box Hill City (O.M.)	362 16 11	..	1,324 8 0
Braybrook Shire .	..	..	108 9 0
Bright Shire ..	..	..	1,173 7 0
Brighton City (O.M.)	..	..	1 5 9
Broadmeadows Shire	..	..	478 9 11
Broadford Shire ..	..	..	49 11 7
Bulla Shire ..	..	..	1,164 4 0
Buln Buln Shire .	..	..	2,015 17 7
Bungaree Shire ..	..	..	174 17 10
Buninyong Shire	..	..	297 10 10
Camberwell City (O.M.) ..	705 1 9	..	367 11 4
Castlemaine Borough ..	..	..	304 6 8
Charlton Shire ..	..	..	742 3 3
Chelsea City ..	..	..	314 15 9
Chiltern Shire ..	..	..	239 13 2
Clunes Borough ..	..	..	4 18 8
Coburg City (O.M.)	3 18 5	0 2 7	..
Cohuna Shire ..	..	..	1,114 9 2
Colac Shire ..	..	..	2,021 19 1
Colac Borough ..	..	..	102 14 4
Collingwood City (O.M.)	97 6 0	4 9 11	532 19 6
Corio Shire ..	..	..	16 17 9
Cranbourne Shire .	..	..	1,347 15 6
Creswick Shire ..	..	..	1,108 0 3
Dandenong Shire	..	..	815 12 2
Daylesford Borough	..	..	431 14 4
Deakin Shire ..	..	..	839 1 5
Dimboola Shire ..	..	..	2,073 12 10
Donald Shire ..	..	..	1,470 4 2
Doncaster and Templestowe Shire	..	..	613 4 11
Dundas Shire ..	..	..	1,269 17 5
Dunmunkle Shire	..	..	2,002 17 11
Eaglehawk Borough	..	..	58 12 8
East Loddon Shire .	..	..	429 14 11
Carried forward	1,169 3 1	4 12 6	48,994 15 10

Name of Municipality.	Permanent Works.		Maintenance.
	Principal.	Interest.	Amount.
	£ s. d.	£ s. d.	£ s. d.
Brought forward	1,169 3 1	4 12 6	48,994 15 10
Echuca Borough .	..	..	223 14 0
Eltham Shire ..	..	..	782 6 2
Essendon City (O.M.) ..	..	..	63 1 8
Euroa Shire ..	..	..	1,658 8 7
Ferntree Gully Shire	..	..	2,449 17 6
Flinders Shire ..	..	..	2,592 4 4
Footscray City (O.M.) ..	9,893 9 11	69 0 10	243 14 3
Footscray City ..	..	..	225 1 3
Frankston and Hastings Shire ..	..	..	3,344 15 2
Gisborne Shire ..	..	..	540 18 5
Glenelg Shire ..	..	..	3,376 13 10
Glenlyon Shire ..	..	..	1,116 17 0
Gordon Shire ..	..	..	..
Goulburn Shire ..	..	..	554 17 2
Grenville Shire ..	..	..	1,038 0 8
Hamilton Town ..	..	..	5 15 2
Hampden Shire ..	..	..	1,914 0 2
Healesville Shire .	..	..	802 13 9
Heidelberg City (O.M.) ..	97 5 11	4 9 10	166 2 5
Heidelberg City ..	..	..	1,519 8 6
Heytesbury Shire	..	..	1,537 17 0
Horsham Town ..	..	..	812 3 6
Huntly Shire ..	..	..	111 18 8
Inglewood Borough	..	..	30 7 7
Kara Kara Shire ..	..	..	1,669 3 6
Karkarooc Shire .	..	..	1,881 0 3
Keilor Shire ..	..	..	53 14 5
Kerang Shire ..	..	..	..
Kilmore Shire ..	..	..	463 9 5
Koroit Borough ..	..	..	315 0 1
Korong Shire ..	..	..	444 0 3
Korumburra Shire	..	..	3,815 8 8
Kowree Shire ..	..	..	2,294 10 2
Kyneton Shire ..	..	..	911 11 9
Lawloit Shire ..	..	..	789 1 5
Leigh Shire ..	..	..	1,064 13 0
Lexton Shire ..	..	..	439 7 0
Lillydale Shire ..	..	..	1,633 7 7
Lowan Shire ..	..	..	952 13 11
Maffra Shire ..	..	..	3,233 19 10
Maldon Shire ..	..	..	481 18 7
Malvern City (O.M.) ..	43 10 0	..	..
Mansfield Shire ..	..	..	2,221 0 7
Marong Shire ..	..	..	364 10 10
Maryborough Borough ..	..	..	359 19 8
Melbourne City (O.M.) ..	9,711 11 1	..	..
Melton Shire ..	..	..	5 14 5
Metcalfe Shire ..	..	..	193 10 3
Mildura Shire ..	..	..	1,194 10 3
Mildura City ..	..	..	1,226 14 10
Minhamite Shire	..	..	1,315 17 1
Mirboo Shire ..	..	..	1,171 13 10
Moorabbin City (O.M.) ..	561 11 3	3 8 3	91 9 0
Moorabbin City ..	..	..	183 13 6
Mordialloc City (O.M.) ..	..	..	13 8 9
Mordialloc City ..	..	..	43 6 3
Carried forward	21,476 11 3	81 11 5	102,934 1 2

STATEMENT OF APPORTIONMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION OF MAIN ROADS, ETC.—*continued.*

Name of Municipality.	Permanent Works.		Maintenance.
	Principal.	Interest.	Amount.
	£ s. d.	£ s. d.	£ s. d.
Brought forward	21,476 11 3	81 11 5	102,934 1 2
Mornington Shire	..	..	1,008 4 8
Mortlake Shire ..	..	..	1,241 17 10
Morwell Shire ..	..	..	1,763 8 5
Mount Rouse Shire	..	..	1,647 7 7
Mulgrave Shire (O.M.) ..	211 2 8	..	..
Mulgrave Shire ..	..	..	431 11 4
McIvor Shire ..	..	..	1,409 12 3
Narracan Shire ..	..	..	3,599 13 6
Newham and Woodend Shire	..	..	550 0 11
Newstead and Mount Alexander Shire	..	..	638 16 6
Newtown and Chilwell Town .	..	..	10 2 4
Numurkah Shire..	..	..	1,044 7 8
Oakleigh City (O.M.) ..	777 1 4	3 8 3	4 0 4
Oakleigh City ..	..	..	90 17 10
Omeo Shire ..	..	..	788 17 3
Orbost Shire ..	..	..	1,019 16 10
Otway Shire ..	..	..	955 3 9
Oxley Shire ..	..	..	1,401 10 7
Phillip Island Shire	..	..	246 9 11
Port Fairy Borough ..	..	..	149 8 7
Portland Shire ..	..	..	2,526 1 7
Preston City (O.M.) ..	3,663 6 8	44 8 3	671 14 9
Preston City ..	..	..	104 17 6
Pyalong Shire ..	..	..	274 5 8
Queenscliffe Borough ..	..	..	62 13 3
Ringwood Borough	..	..	627 2 6
Ripon Shire ..	..	..	926 5 3
Rochester Shire ..	..	..	1,263 16 6
Rodney Shire ..	..	..	2,716 17 10
Romsey Shire ..	..	..	562 18 4
Rosedale Shire ..	..	..	661 19 9
Rutherglen Shire	..	..	460 16 8
Sale Town ..	..	..	161 6 0
Sandringham City (O.M.) ..	1,975 0 11	13 7 5	327 2 9
Sebastopol Borough	..	..	102 4 4
Carried forward	28,103 2 10	142 15 4	132,385 11 11

Name of Municipality.	Permanent Works.		Maintenance.
	Principal.	Interest.	Amount.
	£ s. d.	£ s. d.	£ s. d.
Brought forward	28,103 2 10	142 15 4	132,385 11 11
Seymour Shire ..	..	..	649 17 4
Shepparton Shire .	..	..	1,156 2 11
Shepparton Borough	..	..	78 16 5
South Barwon Shire	..	..	704 7 3
South Gippsland Shire	..	..	2,010 19 7
St. Arnaud Borough	..	..	417 16 6
Stawell Borough .	..	..	130 16 0
Stawell Shire ..	..	..	2,030 3 9
Strathfieldsaye Shire	..	..	747 0 2
Swan Hill Shire ..	..	..	664 4 9
Talbot Shire ..	..	..	495 10 9
Tambo Shire ..	..	..	511 9 5
Towong Shire ..	..	..	274 8 1
Traralgon Shire ..	..	..	1,397 0 0
Tullaroop Shire ..	..	..	1,237 15 8
Tungamah Shire	..	..	868 16 6
Upper Murray Shire	..	..	350 17 11
Upper Yarra Shire	..	..	488 7 2
Violet Town Shire	..	..	277 18 0
Walpeup Shire ..	..	..	538 3 3
Wangaratta Borough ..	..	..	70 18 7
Wangaratta Shire	..	..	549 8 2
Wannon Shire ..	..	..	1,886 3 11
Waranga Shire ..	..	..	3,080 10 10
Warragul Shire ..	..	..	955 6 1
Warracknabeal Shire	..	..	3,632 10 4
Warrnambool Shire	..	..	727 2 8
Warrnambool City	..	..	312 18 0
Werribee Shire ..	..	..	166 19 0
Whittlesea Shire ..	..	..	861 5 9
Wimmera Shire ..	..	..	1,915 12 10
Winchelsea Shire	..	..	672 7 5
Wodonga Shire ..	..	..	928 11 5
Wonthaggi Borough	..	..	52 11 5
Woorayl Shire ..	..	..	3,960 3 4
Wycheproof Shire	..	..	370 11 8
Yackandandah Shire	..	..	1,317 10 1
Yarrawonga Shire	..	..	199 19 3
Yea Shire ..	..	..	1,132 5 7
Totals ..	28,103 2 10	142 15 4	170,208 19 8

APPENDIX C.

COUNTRY ROADS BOARD.

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE OF MAIN ROADS, TOURISTS' ROADS, AND STATE HIGHWAYS FOR YEAR ENDING 30th JUNE, 1939.

Municipality and Road.	Permanent Works (Loan).		Maintenance Works (Country Roads Board Fund).	
	Amount.	Total.	Amount.	Total.
UNDER MUNICIPALITIES.				
ALBERTON SHIRE—	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Albert River Road	..		1,645 19 10	
Albert River–Welshpool Road	..		508 2 7	
Balook–Yarram Road	..		795 19 8	
Carrajung–Gormandale Road	..		2,883 2 6	
Foster–Yarram Road	..		175 10 4	
Tarra Valley Road	..		555 17 1	
Yarram–Boolarra Road	..		1,851 0 10	
Yarram–Port Albert Road	..		918 4 1	
Yarram–Won Wron Road	..		350 19 5	
				9,684 16 4
ALEXANDRA SHIRE—				
Cathkin–Mansfield Road	..		1,292 11 11	
Cathkin–Mansfield Road (Tree Planting)	..		12 19 6	
Healesville–Alexandra Road	..		3,222 6 4	
Healesville–Alexandra Road (Tree Planting)	..		7 19 10	
Terip Terip Road	..		169 12 9	
Upper Goulburn Road	..		3,831 1 8	
Upper Goulburn Road (Tree Planting)	..		49 11 5	
Yarck Road	..		201 19 11	
				8,788 3 4
ARAPILES SHIRE—				
Horsham–Hamilton Road	..		229 4 2	
Horsham–Natimuk–Edenhope Road	..		515 8 5	
Horsham–Natimuk–Edenhope Road (Tree Planting)	..		23 7 6	
				768 0 1
ARARAT TOWN—				
Avoca Road	..		4 5 11	
Avoca Road (Tree Planting)	..		34 16 10	
Ballarat–Stawell Road	..		537 5 5	
Port Fairy Road	..		1 14 6	
				578 2 8
ARARAT SHIRE—				
Ararat–Elmhurst Road	..		2,299 7 8	
Ararat–St. Arnaud Road	..		35 7 1	
Ararat–Warrnambool Road	..		1,517 8 6	
Ballarat–Hamilton Road	..		2,980 16 4	
Ballarat–Hamilton Road (Tree Planting)	..		67 10 6	
Maroona–Glenthompson Road	..		2,509 4 6	
				9,409 14 7
AVOCA SHIRE—				
Ararat Road	..		513 3 4	
Ararat Road (Tree Planting)	..		1 17 0	
Ararat–St. Arnaud Road	..		238 3 7	
Ararat–St. Arnaud Road (Tree Planting)	..		10 10 11	
Ballarat–St. Arnaud Road	..		1,983 5 9	
Ballarat–St. Arnaud Road (Tree Planting)	..		10 11 2	
Bealiba Road	..		408 17 10	
Landsborough Road	..		10 0 1	
Maryborough Road	..		759 13 0	
Maryborough–Natte Yallock Road	..		368 14 8	
Moonambel Road	..		400 0 1	
				4,704 17 5
AVOCA AND BET BET SHIRES (Joint Works)—				
Maryborough–Natte Yallock Road	..		10 3 8	
				10 3 8
AVOCA AND KARA KARA SHIRES (Joint Works)—				
Navarre Road	..		9 12 11	
				9 12 11
AVOCA AND STAWELL SHIRES (Joint Works)—				
Ararat–St. Arnaud Road	..		88 6 4	
				88 6 4
AVON SHIRE—				
Bengworden Road	..		1,262 4 4	
Briagolong–Stratford Road	..		824 7 7	
Dargo Road—Sec. A., £46 3s. 3d.; Sec. B., £623 9s. 2d.	..		669 12 5	
Dargo Road (Tree Planting)	..		0 2 6	
Maffra–Sale Road	..		45 10 0	
Maffra–Stratford Road	..		281 10 3	
Princes Highway	..		5 2 0	
				3,088 9 1
Carried forward	..	..	..	37,130 6 5

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan). Amount.	Permanent Works (Loan). Total.	Maintenance Work (Country Roads Board Fund). Amount.	Maintenance Work (Country Roads Board Fund). Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..		..	37,130 6 5
BACCHUS MARSH SHIRE—				
Bacchus Marsh–Balliang Road	..		2,071 2 2	
Ballarat Road	..		27 11 9	
Geelong–Bacchus Marsh Road	..		902 10 4	
Gisborne Road	..		1,433 5 11	
				4,434 10 2
BACCHUS MARSH AND CORIO SHIRES (Joint Works)—				
Bacchus Marsh–Balliang Road	..		31 2 10	
				31 2 10
BAIRNSDALE SHIRE—				
Bairnsdale–Bengworden Road	..		555 5 2	
Bairnsdale–Lindenow Road	..		257 5 9	
Bairnsdale–Paynesville Road	..		640 9 4	
Bullumwaal–Tabberabbera Road	..		1,006 19 11	
Princes Highway	..		400 2 6	
				2,860 2 8
BALLAN SHIRE—				
Daylesford Road	..		1,073 15 10	
Gordon–Meredith Road	..		592 8 9	
Mount Wallace Road	..		736 14 1	
Spargo Creek Road	..		6 14 1	
				2,409 12 9
BALLAN AND BUNINYONG SHIRES (Joint Works)—				
Gordon–Meredith Road	..		11 2 0	
				11 2 0
BALLARAT SHIRE—				
Ballarat–Lexton Road	..		464 19 9	
Ballarat–Lexton Road (Tree Planting)	..		7 7 8	
Clunes–Creswick Road	..		843 14 7	
Maryborough–Ballarat Road	..		254 12 1	
Maryborough–Ballarat Road (Tree Planting)	..		0 12 0	
				1,571 6 1
BALLAARAT CITY—				
Melbourne Road	..		89 13 2	
				89 13 2
BALLAARAT CITY AND BALLARAT SHIRE (Joint Works)—				
Ballarat–Creswick Road	..		485 14 3	
				485 14 3
BANNOCKBURN SHIRE—				
Gordon–Meredith Road	..		817 6 2	
Inverleigh Road	..		1,723 1 1	
Inverleigh Road (Tree Planting)	..		14 7 8	
Shelford–Bannockburn Road	..		148 16 7	
				2,703 11 6
BARRABOOL SHIRE—				
Anglesea Road	..		2,952 9 1	
Hendy Main Road	..		1,343 17 8	
				4,296 6 9
BASS SHIRE—				
Almurta Road	..		642 11 3	
Almurta–Grantville Road	..		228 9 6	
Anderson–Dalyston Road	..		771 6 5	
Dalyston–Glen Forbes Road	..		263 1 9	
Dalyston–Wonthaggi Road	..		117 3 9	
Inverloch–Wonthaggi Road	..		747 9 9	
Korumburra–Wonthaggi Road	..		372 17 4	
Main Coast Road	..		2,195 15 6	
Wonthaggi Loch Road	..		753 10 9	
				6,092 6 0
BASS SHIRE AND WONTHAGGI BOROUGH (Joint Works)—				
Loch–Wonthaggi Road	..		454 7 2	
				454 7 2
BEECHWORTH SHIRE—				
Beechworth Road	..		1,944 10 6	
Bright Road	..		394 10 1	
Chiltern–Beechworth Road	..		360 16 7	
Everton–Myrtleford Road	..		1,594 9 8	
Myrtleford–Yackandandah Road	..		101 5 9	
Stanley Road	..		954 16 10	
				5,350 9 5
BEECHWORTH AND BRIGHT SHIRES (Joint Works)—				
Bright Road	..		4 0 6	
				4 0 6
BEECHWORTH AND WANGARATTA SHIRES (Joint Works)—				
Beechworth Road	..		50 2 7	
				50 2 7
BELFAST SHIRE—				
Hamilton Road	..		1,766 5 1	
Penshurst Road	..		1,504 9 10	
				3,270 14 11
BELLARINE SHIRE—				
Barwon Head–Ocean Grove Road	..		9 0 1	
Geelong–Queenscliffe Road	..		614 10 10	
Geelong–Portarlington Road	..		492 19 1	
Portarlington–St. Leonards Road	..		273 10 1	
				1,390 0 1
Carried forward	..		..	72,635 9 3

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan).		Maintenance Works (Country Roads Board Fund).	
	Amount.	Total.	Amount.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..		..	72,635 9 3
BENALLA SHIRE—				
Goorambat Road	..		390 1 11	
Goorambat–Thoona Road	..		476 8 7	
Greta Road	..		91 16 0	
Kilfeera Road	..		639 8 6	
Kilfeera Road (Tree Planting)	..		4 5 8	
Lima Road	..		304 15 1	
Sydney Road	..		17 16 3	
Tatong Tolmie Road	..		568 16 1	
				2,493 8 1
BRIGHT SHIRE—				
Beaconsfield–Emerald Road	..		821 2 10	
Cockatoo–Gembrook Road	..		127 10 0	
Emerald–Cockatoo Road	..		50 0 0	
Gembrook Road	..		716 18 0	
Gembrook–Beenak Road	..		3 13 7	
Hallam–Emerald Road	..		143 8 1	
Kooweerup–Longwarry Road	..		95 2 10	
Launching Place–Gembrook Road	..		314 12 0	
Nar Nar Goon–Longwarry Road	..		1,375 12 7	
Woori Yallock–Pakenham–Kooweerup Road	..		3,537 16 11	
				7,185 16 10
BET BET SHIRE—				
Avoca–Bealiba Road	..		319 0 10	
Avoca–Bealiba Road (Tree Planting)	..		2 1 4	
Betley Road	..		83 2 8	
Bridgewater–Dunolly Road	..		1,499 19 3	
Dunolly Road	..		725 6 10	
Dunolly–Eddington Road	..		147 14 6	
Maryborough–Dunolly Road	..		72 5 7	
Maryborough–Dunolly Road (Tree Planting)	..		2 2 11	
				2,851 13 11
BET BET AND TULLAROOP SHIRES (Joint Works)—				
Betley Road	..		0 13 6	
Dunolly–Eddington Road	..		17 19 9	
Maryborough–Dunolly Road	..		19 11 7	
				38 4 10
BIRCHIP SHIRE—				
Beulah–Birchip–Wycheproof Road	..		582 16 3	
Donald–Birchip–Sealake Road	..		743 1 6	
				1,325 17 9
BLACKBURN AND MITCHAM SHIRE—				
Burwood Road	..		1,358 17 3	
Main Healesville Road	..		3,523 14 11	
				4,882 12 2
BOX HILL CITY—				
Burwood Road (O.M.)	..		1,367 9 2	
Healesville Road (O.M.)	..		527 4 2	
Warrigal Road (O.M.)	246 12 3		..	
		246 12 3		1,894 13 4
BOX HILL AND CAMBERWELL CITIES (Joint Works)—				
Warrigal Road (O.M.)	1,965 19 1		199 16 5	
		1,965 19 1		199 16 5
BRAYBROOK SHIRE—				
Ballarat Road	..		68 8 3	
				68 8 3
BRIGHT SHIRE—				
Bright Road	..		3,284 18 10	
Harrietville Road	..		341 2 0	
Kiewa Valley Road	..		338 12 0	
Myrtleford–Yackandandah Road	..		261 10 10	
				4,226 3 8
BROADMEADOWS SHIRE—				
Sydney Road	..		46 0 0	
				46 0 0
BROADMEADOWS AND KEILOR SHIRES (Joint Works)—				
Lancefield Road	..		1,639 4 3	
				1,639 4 3
BULLA SHIRE—				
Melbourne–Lancefield Road	..		2,473 2 0	
Sunbury Road	..		94 6 6	
The Gap Road	..		12 18 5	
				2,580 6 11
BULN BULN SHIRE—				
Bloomfield Road	..		6 1 7	
Drouin–Poowong Road	..		814 15 11	
Fumina Road	..		277 10 2	
Kooweerup–Longwarry Road	..		9 11 7	
Loch Valley Road	..		120 17 1	
Longwarry–Drouin Road	..		856 9 5	
Main Neerim Road	..		1,187 9 4	
Main South Road	..		2,306 16 2	
Carried forward	..	2,212 11 4	..	102,067 15 8

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan). Amount.	Permanent Works (Loan). Total.	Maintenance Works (Country Roads Board Fund). Amount.	Maintenance Works (Country Roads Board Fund). Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	2,212 11 4	..	102,067 15 8
BULN BULN SHIRE—*continued.*				
Neerim East Road	..		1,326 16 7	
Neerim North-Noojee Road	..		125 0 11	
Princes Highway	..		68 4 3	
Westernport Road	..		1,036 11 9	
				8,136 4 9
BULN BULN AND BERWICK SHIRES—				
Koowecrup-Longwarry Road	..		1,203 11 6	
				1,203 11 6
BUNGAREE SHIRE—				
Daylesford-Ballarat Road	..		192 14 8	
				192 14 8
BUNINYONG SHIRE—				
Ballarat-Rokewood Road	..		2,411 2 9	
Elaine-Mount Mercer Road	..		361 3 2	
				2,772 5 11
CAMBERWELL CITY—				
Doncaster Road (O.M.)	..		1,072 14 6	
Warrigal Road (O.M.)	294 14 3		..	
		294 14 3		1,072 14 6
CAMBERWELL CITY AND MULGRAVE SHIRE (Joint Works)—				
Warrigal Road (O.M.)	7,570 13 11		69 12 0	
		7,570 13 11		69 12 0
CASTLEMAINE BOROUGH—				
Castlemaine-Maryborough Road	..		865 12 1	
Castlemaine-Maryborough Road (Tree Planting) ..	..		5 10 3	
Melbourne-Bendigo Road	..		469 1 10	
Melbourne-Bendigo Road (Tree Planting	..		1 2 0	
				1,341 6 2
CHARLTON SHIRE—				
Bendigo Road	..		72 12 7	
Charlton-Durham Ox Road	..		926 14 7	
Donald Road	..		200 6 5	
Donald Road (Tree Planting..	..		15 19 11	
St. Arnaud Road	..		1,603 8 4	
St. Arnaud Road (Tree Planting)	..		9 19 7	
Wycheproof-Wooroonook Road	..		36 8 1	
				2,865 9 6
CHELSEA CITY—				
Edithvale-Springvale Road	..		132 17 3	
Point Nepean Road..	..		1,417 7 6	
				1,550 4 9
CHILTERN SHIRE—				
Barnawartha-Howlong Road	..		774 15 3	
Chiltern-Beechworth Road	..		154 6 8	
Chiltern-Howlong Road	..		592 15 3	
Chiltern-Rutherglen Road	..		97 15 1	
Sydney Road	..		25 13 0	
				1,645 5 3
CLUNES BOROUGH—				
Ballarat-Maryborough Road	..		280 12 6	
Ballarat-Maryborough Road (Tree Planting)	..		10 5 7	
Clunes-Creswick Road	..		152 3 3	
				443 1 4
COHUNA SHIRE—				
Cohuna-Koondrook Road	..		1,603 4 0	
Cohuna-Koondrook Road (Tree Planting)	..		36 2 3	
Cohuna-Leitchville Road	..		834 15 7	
Cohuna-Leitchville Road (Tree Planting)	..		90 15 7	
				2,564 17 5
COLAC SHIRE—				
Colac-Ballarat Road	..		785 19 11	
Colac-Beech Forest Road	..		617 3 3	
Colac-Cororooke Road	..		745 5 8	
Colac-Forrest Road	..		1,563 16 6	
Cressy-Inverleigh Road	..		2,544 1 6	
Swan Marsh Road	..		648 14 11	
				6,905 1 9
COLAC BOROUGH—				
Princes Highway	..		28 17 1	
				28 17 1
COLLINGWOOD CITY—				
Heidelberg Road (O.M.)	..		231 12 7	
				231 12 7
CRANBOURNE SHIRE—				
Baxter-Tooradin Road	..		62 2 2	
Cranbourne-Frankston Road	..		2,478 10 7	
Koowecrup-Longwarry Road	..		1,555 5 11	
Koowecrup-Pakenham Road	..		154 4 5	
Main Coast Road	..		1,748 6 6	
Westernport Road	..		419 14 6	
				6,418 4 1
Carried forward	..	10,077 19 6	..	139,508 18 11

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan).		Maintenance Works (Country Roads Board Fund).	
	Amount.	Total.	Amount.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	10,077 19 6	..	139,508 18 11
CRESWICK SHIRE—				
Castlemaine–Ballarat Road	..		2,813 9 3	
Castlemaine–Ballarat Road (Tree Planting)	..		10 2 5	
Clunes–Creswick Road	..		1,120 11 0	
Creswick–Smeaton Road	..		925 0 3	
Daylesford–Ballarat Road	..		2,903 7 0	
Daylesford–Ballarat Road (Tree Planting)	..		8 15 6	
				7,781 5 5
DANDENONG SHIRE—				
Cheltenham Road	..		191 3 2	
Princes Highway	..		66 17 1	
Springvale Road	..		6,009 7 6	
				6,267 7 9
DANDENONG AND CRANBOURNE SHIRES (Joint Works)—				
Dandenong–Frankston Road	..		307 9 1	
				307 9 1
DAYLESFORD BOROUGH—				
Ballan Road	..		5 15 5	
Ballarat Road	..		44 11 10	
Castlemaine Road	..		1 7 3	
Daylesford–Hepburn Road	..		20 8 6	
Daylesford–Trentham Road	..		6 15 8	
Malmsbury–Daylesford Road	..		5 16 10	
				84 15 6
DEAKIN SHIRE—				
Echuca–Cornella Road	..		127 12 5	
Echuca–Picola Road	..		172 10 10	
Kyabram–Nathalia Road	..		341 11 11	
Kyabram–Tongala Road	..		87 6 7	
Kyabram Tongala Road (Tree Planting)	..		0 1 6	
Rochester–Kyabram Road	..		1,390 4 0	
				2,119 7 3
DEAKIN AND NUMURKAH SHIRES (Joint Works)—				
Echuca–Picola Road	..		437 15 8	
				437 15 8
DEAKIN AND RODNEY SHIRES (Joint Works)—				
Kyabram–Tongala Road	..		9 13 1	
Rochester–Kyabram Road	..		50 3 7	
				59 16 8
DIMBOOLA SHIRE—				
Horsham Road	..		7 0 7	
Rainbow Road	..		3,246 2 9	
Rainbow–Beulah–Birchip Road	..		1,055 12 4	
Rainbow Rises Road	..		110 0 0	
Warracknabeal Road	..		1,478 11 8	
				5,897 7 4
DIMBOOLA AND KARKAROOC SHIRES (Joint Works)—				
Hopetoun–Rainbow Road	..		219 8 3	
				219 8 3
DONALD SHIRE—				
Donald–Charlton Road	..		1,450 10 1	
Donald–Charlton Road (Tree Planting)	..		34 14 0	
Marnoo–Donald Road	..		2,100 9 8	
St. Arnaud–Birchip Road	..		2,414 6 4	
St. Arnaud–Birchip Road (Tree Planting)	..		34 14 1	
				6,034 14 2
DONCASTER AND TEMPLESTOWE SHIRE—				
Doncaster Road	..		801 12 7	
Heidelberg–Warrandyte Road	..		1,519 12 11	
Warrandyte–Ringwood Road..	..		361 13 3	
				2,682 18 9
DUNDAS SHIRE—				
Hamilton–Dunkeld Road	..		1,042 17 2	
Hamilton–Horsham Road	..		315 3 8	
Hamilton–Mount Gambier Road	..		931 15 5	
Hamilton–Port Fairy Road	..		3,061 17 8	
Hamilton–Portland Road	..		344 10 7	
Hamilton–Warrnambool Road	..		1,441 0 6	
				7,137 5 0
DUNMUNKLE SHIRE—				
Horsham–Murtoa Road	..		947 18 1	
Horsham–Murtoa Road (Tree Planting)	..		22 0 11	
Marnoo Donald Road	..		11 16 5	
Marnoo–Rupanyup Road	..		2,716 6 3	
Minyip–Donald Road	..		1,546 17 11	
Minyip–Donald Road (Tree Planting)	..		21 6 8	
Rupanyup–Murtoa Road	..		357 5 6	
Stawell–Warracknabeal Road	..		3,267 11 5	
Stawell–Warracknabeal Road (Tree Planting)	..		80 15 2	
				8,971 18 4
DUNMUNKLE AND STAWELL SHIRES (Joint Works)—				
Marnoo–Rupanyup Road	..		108 16 0	
				108 16 0
Carried forward	..	10,077 19 6	..	187,619 4 1

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan).		Maintenance Works (Country Roads Board Fund).	
	Amount.	Total.	Amount.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	10,077 19 6	..	187,619 4 1
EAGLEHAWK BOROUGH—				
Mount-Korong Road	..		631 11 0	
Mount Korong Road (Tree Planting)	..		32 12 0	
				664 3 0
EAST LODDON SHIRE—				
Borung-Prairie Road	..		25 12 1	
Dingee Road	..		314 12 1	
Dingee Road (Tree Planting)	..		8 12 9	
Mitiamo Road	..		235 19 8	
Prairie Road	..		318 0 9	
				902 17 4
ELTHAM SHIRE—				
Eltham-Yarra Glen Road	..		1,785 10 3	
Hurstbridge-Kinglake Road	..		1,804 5 1	
Kangaroo Ground-Warrandyte Road	..		290 6 0	
Yarra Glen-Glenburn Road	..		660 6 3	
				4,540 7 7
ESSENDON CITY—				
Bendigo Road (O.M.).			8 14 2	
Sunbury Road (O.M.)	..		204 9 4	
				213 3 6
EUROA SHIRE—				
Arcadia Road	..		1,409 4 11	
Avenel-Longwood Road	..		44 0 8	
Euroa-Arcadia Road	..		3,036 2 10	
Euroa-Mansfield Road	..		490 0 10	
Euroa-Strathbogie Road	..		3,589 10 5	
Murchison-Violet Town Road	..		279 6 4	
				8,848 6 0
FERNTREE GULLY SHIRE—				
Belgrave-Emerald Road	..		1,345 4 8	
Burwood Road	..		2,446 2 2	
Emerald Road	..		701 11 8	
Main Ferntree Gully Road	..		5,638 1 2	
Monbulk Road	..		1,780 11 5	
Olinda Road	..		633 16 5	
				12,545 7 6
FLINDERS SHIRE—				
Bittern-Dromana Road	..		1,737 19 6	
Hastings-Flinders Road	..		2,302 15 6	
Mornington-Dromana Road	..		38 12 3	
Mornington-Flinders Road	..		1,129 10 4	
Point Nepean Road..	..		2,826 10 11	
Red Hill Road	..		1,154 17 6	
Rosebud-Flinders Road	..		2,962 15 0	
Stony Point Road	..		88 18 3	
				12,241 19 3
FOOTSCRAY CITY—				
Ballarat Road (O.M.)	27 17 4		608 8 2	
Napier Street (O.M.)	..		5,380 1 10	
Princes Highway (O.M.)	..		72 3 6	
		27 17 4		6,060 13 6
FRANKSTON AND HASTINGS SHIRE—				
Baxter-Tooradin Road	..		500 0 0	
Cranbourne-Frankston Road	..		358 15 9	
Frankston-Dandenong Road	..		88 13 0	
Frankston-Flinders Road	..		5,555 17 11	
Moorooduc Road	..		252 16 10	
Point Nepean Road..	..		629 15 5	
Tyabb-Mornington Road	..		750 0 0	
				8,135 18 11
GISBORNE SHIRE—				
Bacchus Marsh Road	..		657 5 3	
Gisborne Station Road	..		14 15 1	
Mount Macedon Road	..		357 14 11	
				1,029 15 3
GLENELG SHIRE—				
Casterton-Penola Road	..		1,220 2 6	
Coleraine-Casterton Road	..		1,531 8 3	
Dergholm Road	..		2,222 19 9	
Mount Gambier Road	..		3,193 2 10	
Mount Gambier Road (Tree Planting)	..		17 16 0	
Portland-Casterton Road	..		4,288 14 9	
Portland-Casterton Road (Tree Planting)	..		32 11 4	
Wando Vale Road	..		1,495 3 4	
				14,001 18 9
GLENLYON SHIRE—				
Ballan Road	..		310 8 2	
Ballarat Road	..		286 13 5	
Castlemaine-Daylesford Road	..		876 10 4	
Daylesford-Trentham Road	..		250 0 0	
Hepburn-Daylesford Road	..		3 8 6	
Malmsbury-Daylesford Road	..		317 11 2	
				2,044 11 7
Carried forward	..	10,105 16 10	..	258,848 6 3

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan).		Maintenance Works (Country Roads Board Fund)	
	Amount.	Total.	Amount.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	10,105 16 10	..	258,848 6 3
GORDON SHIRE—				
Charlton–Durham Ox Road	..		1,502 17 6	
				1,502 17 6
GOULBURN SHIRE—				
Avenel–Longwood Road	..		91 1 6	
Station Road	..		3 13 4	
Vickers Road	..		1 16 8	
				96 11 6
GRENVILLE SHIRE—				
Ballarat–Hamilton Road	..		1,280 9 8	
Ballarat–Hamilton Road (Tree Planting)	..		82 16 11	
Cressy Road	..		147 17 5	
Lismore Road	..		771 15 1	
Lismore–Pittong Road	..		471 16 2	
Pitfield Road	..		992 7 7	
				3,747 2 10
HAMILTON TOWN—				
Ararat Road	..		7 13 0	
Coleraine Road	..		173 14 11	
				181 7 11
HAMPDEN SHIRE—				
Ayersford Road	..		326 16 10	
Camperdown–Ballarat Road (Section between Grenville Shire Boundary and Skipton)	..		1,760 10 8	
Camperdown–Ballarat Road (Section from Skipton to Camperdown)	..		2,182 6 6	
Camperdown–Ballarat Road (Tree Planting)	..		39 16 2	
Camperdown–Cobden Road	..		135 15 5	
Caramut–Lismore Road	..		1,489 11 6	
Caramut–Lismore Road (Tree Planting)	..		20 6 5	
Cobden–Terang Road	..		1,138 13 1	
Darlington–Terang Road	..		738 3 11	
Lismore Road	..		147 17 6	
Lismore–Cressy Road	..		1,364 5 8	
Lismore–Cressy Road (Tree Planting)	..		40 1 10	
Lismore–Pittong Road	..		602 2 5	
McKinnon's Bridge–Noorat Road	..		30 4 9	
McKinnon's Bridge–Noorat Road (Tree Planting) ..	..		9 19 1	
Princes Highway	..		339 7 6	
Princes Highway (Tree Planting)	..		19 17 2	
Terang–Framlingham Road	..		10 10 10	
Terang–Mortlake Road	..		512 0 11	
Terang–Mortlake Road (Tree Planting)	..		9 18 11	
				10,918 7 1
HEALESVILLE SHIRE—				
Healesville–Alexandra Road	..		38 14 0	
Healesville–Kinglake Road	..		118 17 4	
Healesville–Woori Yallock Road	..		1,025 18 9	
				1,183 10 1
HEIDELBERG CITY—				
Greensborough–Hurstbridge Road	..		441 6 4	
Heidelberg–Warrandyte Road	..		2 18 4	
Main Heidelberg–Eltham Road	..		1,730 3 11	
Main Whittlesea Road	..		56 9 0	
				2,230 17 7
HEYTESBURY SHIRE—				
Camperdown–Cobden Road	..		137 10 10	
Camperdown–Cobden Road (Tree Planting)	..		27 2 1	
Cobden–Port Campbell–Princetown Road	..		2,208 19 10	
Cobden–Port Campbell–Princetown Road (Tree Planting)	..		25 13 4	
Cobden–Scott's Creek Road	..		1,403 10 8	
Cobden–Terang Road	..		1,482 1 0	
Cobden–Terang Road (Tree Planting)	..		26 16 8	
Timboon–Nirranda Road	..		999 19 8	
Timboon–Port Campbell Road	..		137 10 7	
				6,449 4 8
HORSHAM TOWN—				
Dimboola–Horsham Road	..		60 5 0	
Dooen Road	..		227 9 10	
Hamilton Road	..		62 2 1	
Natimuk Road	..		39 15 0	
Western Highway	..		8 8 8	
Western Highway (Tree Planting)	..		27 12 6	
				425 13 1
HUNTLY SHIRE—				
Goornong–Colbinabbin Road	..		55 5 9	
Heathcote–Elmore Road	..		156 4 6	
				211 10 3
INGLEWOOD BOROUGH—				
Bendigo–Charlton Road	..		33 9 3	
Bendigo–Charlton Road (Tree Planting)	..		4 1 11	
				37 11 2
Carried forward		10,105 16 10	..	285,832 19 11

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan.)		Maintenance Works (Country Roads Board Fund).	
	Amount.	Total.	Amount.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	10,105 16 10	..	285,832 19 11
KANIVA SHIRE—				
Broughton Road	..		633 8 3	
Broughton Road (Tree Planting)	..		28 6 6	
Kaniva–Edenhope Road	..		818 13 9	
Nhill–Kaniva Border Road	..		332 17 4	
South Lillimur Road	..		629 14 0	
South Lillimur Road (Tree Planting)	..		10 9 8	
Yearinga Road	..		606 12 1	
				3,060 1 7
KARA KARA SHIRE—				
Avoca–St. Arnaud Road	..		2,593 7 6	
Charlton Road	..		359 7 7	
Marnoo Road	..		37 2 0	
Navarre Road	..		1,269 3 0	
St. Arnaud–Donald Road	..		592 11 6	
St. Arnaud–Marnoo Road	..		71 12 8	
				4,923 4 3
KARKAROOC SHIRE—				
Hopetoun–Rainbow Road	..		823 4 5	
Hopetoun–Warracknabeal Road	..		127 13 2	
Hopetoun–Woomelang–Sealake Road	..		960 2 1	
Rainbow–Beulah–Birchip Road	..		1,853 3 6	
Hopetoun–Ouyen Road	..		175 0 0	
				3,939 3 2
KERANG SHIRE—				
Koondrook Road	..		199 2 1	
				199 2 1
KILMORE SHIRE—				
Heathcote Road	..		59 11 7	
Kilmore–Kilmore East Road	..		333 18 3	
Lancefield–Kilmore Road	..		373 12 9	
Lancefield–Kilmore Road (Tree Planting)	..		8 3 6	
				775 6 1
KILMORE AND PYALONG SHIRES (Joint Works)—				
Heathcote Road	..		591 16 5	
				591 16 5
KILMORE AND ROMSEY SHIRES (Joint Works)—				
Lancefield–Kilmore Road	..		41 9 4	
				41 9 4
KOROIT BOROUGH—				
Koroit–Warrnambool Road	..		1,642 8 1	
Koroit–Warrnambool Road (Tree Planting)	..		3 7 6	
				1,645 15 7
KORONG SHIRE—				
Borung–Hurstwood Road	..		329 19 6	
Bridgewater–Dunolly Road	..		334 18 0	
Charlton–Bendigo Road	..		34 8 11	
Serpentine Road	..		2,393 5 3	
				3,092 11 8
KORONG AND BET BET SHIRES (Joint Works)—				
Bridgewater–Dunolly Road	..		2 12 9	
				2 12 9
KORUMBURRA SHIRE—				
Bena–Kongwak Road	..		807 17 8	
Bena–Korumburra Road	..		1,135 2 5	
Bena–Poowong Road	..		1,862 17 5	
Fairbank Road	..		1,873 4 8	
Jeetho West Road	..		319 13 1	
Kongwak–Inverloch Road	..		1,803 15 1	
Korumburra–Drouin Road	..		241 4 0	
Korumburra–Leongatha Road	..		93 3 3	
Korumburra–Warragul Road	..		1,271 5 5	
Korumburra–Wonthaggi Road	..		1,705 9 11	
Lang Lang–Nyora Road	..		16 8 11	
Loch–Bena Road	..		211 12 3	
Loch–Nyora Road	..		640 10 3	
Loch Nyora Road (Tree Planting)	..		16 3 0	
Loch–Wonthaggi Road	..		556 7 5	
Nyora–Poowong Road	..		142 0 2	
Poowong–Drouin Road	..		338 10 10	
Poowong–Ranceby Road	..		1,012 16 4	
				14,048 2 1
KORUMBURRA AND BASS SHIRES (Joint Works)—				
Loch–Nyora Road	..		31 9 8	
				31 9 8
Carried forward	..	10,105 16 10	..	318,183 14 7

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan).		Maintenance Works (Country Roads Board Fund).	
	Amount.	Total.	Amount.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	10,105 16 10	..	318,183 14 7
KOWREE SHIRE—				
Booroopki Road	..		1,660 12 4	
Booroopki–Frances Road	..		199 3 5	
Edenhope–Goroke Road	..		417 11 2	
Hamilton–Edenhope–Aspley Road	..		6,621 6 9	
Hamilton–Edenhope–Apsley Road (Tree Planting) ..	..		26 11 5	
Harrow–Horsham Road	..		433 13 3	
Harrow–Horsham Road (Tree Planting)	..		18 4 2	
Kaniva–Edenhope Road	..		198 16 7	
Minimay–Apsley Road	..		47 1 10	
Wombelano Road	..		222 17 9	
				9,845 18 8
KOWREE AND WANNON SHIRES (Joint Works)—				
Hamilton–Edenhope–Apsley Road	..		1 12 6	
				1 12 6
KYNETON SHIRE—				
Daylesford Road	..		1 6 5	
Daylesford–Trentham Road	..		215 18 7	
Melbourne–Bendigo Road	..		387 2 1	
Redesdale Road	..		745 9 8	
Trentham Road	..		2,102 4 0	
Trentham Road (Tree Planting)	..		10 5 1	
Tylden–Woodend Road	..		347 10 1	
Tylden–Woodend Road (Tree Planting)	..		9 11 7	
				3,819 7 6
KYNETON AND GLENLYON SHIRES—				
Daylesford–Trentham Road	..		104 13 2	
				104 13 2
LEIGH SHIRE—				
Ballarat–Rokewood Road	..		1,171 2 9	
Bannockburn–Shelford Road	..		16 11 8	
Inverleigh–Cressy Road	..		944 19 8	
Rokewood–Cressy Road	..		967 1 5	
Shelford–Inverleigh Road	..		57 1 3	
Shelford–Rokewood Road	..		1,806 17 0	
Werneth Road	..		118 14 6	
				5,082 8 3
LEIGH AND COLAC SHIRES (Joint Works)—				
Cressy–Inverleigh Road	..		17 13 10	
				17 13 10
LEXTON SHIRE—				
Avoca–Ararat Road	..		823 16 0	
Avoca–Ballarat Road	..		2,184 10 8	
				3,008 6 8
LILLYDALE SHIRE—				
Evelyn–Lilydale Road	..		1,233 0 9	
Main Healesville Road	..		534 2 2	
Main Healesville Road (Tree Planting)	..		10 4 2	
Monbulk Road	..		679 17 10	
Monbulk Road (Tree Planting)	..		10 8 8	
Mount Dandenong Road	..		1,473 9 5	
Mount Dandenong Road (Tree Planting)	..		18 4 0	
Yarra Glen Road	..		175 0 5	
Yarra Glen Road (Tree Planting)	..		10 8 8	
				4,144 16 1
LOWAN SHIRE—				
Dimboola–Kaniva Road	..		368 17 6	
Goroke Road	..		339 13 1	
Goroke Road (Tree Planting)	..		26 14 7	
Lorquon Road	..		302 7 8	
Lorquon West Road	..		529 12 2	
Lorquon West Road (Tree Planting)	..		26 14 6	
Yanac Road	..		1,013 11 0	
Yanac Road (Tree Planting)	..		16 16 0	
				2,624 6 6
MAFFRA SHIRE—				
Boisdale–Briagolong Road	..		889 4 4	
Briagolong–Dargo Road	..		820 6 9	
Briagolong–Stratford Road	..		911 10 8	
Bushy Park–Valencia Creek Road	..		894 3 11	
Licola Road	..		1,800 15 6	
Maffra–Newry Road	..		1,392 13 10	
Maffra–Sale Road	..		787 14 4	
Maffra–Sale Road (Tree Planting)	..		58 10 5	
Maffra–Stratford Road	..		175 18 8	
Maffra–Stratford Road (Tree Planting)	..		3 15 9	
Tinamba–Boisdale Road	..		1,400 10 8	
Tinamba–Boisdale Road (Tree Planting)	..		88 13 4	
Tinamba–Newry Road	..		67 0 3	
Traralgon–Maffra Road	..		1,047 0 8	
				10,337 19 1
MAFFRA AND AVON SHIRES (Joint Works)—				
Maffra–Stratford Road	..		2 1 6	
				2 1 6
Carried forward	..	10,105 16 10	..	357,172 18 4

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan). Amount.	Permanent Works (Loan). Total.	Maintenance Works (Country Roads Board Fund). Amount.	Maintenance Works (Country Roads Board Fund). Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	10,105 16 10	..	357,172 18 4
MALDON SHIRE—				
Baringhup Road	..		734 2 0	
Castlemaine–Maldon Road	..		1,856 18 1	
Maldon–Eddington Road	..		894 0 11	
Newstead–Maldon Road	..		277 4 0	
				3,762 5 0
MALDON AND MARONG SHIRES (Joint Works)—				
Maldon–Eddington Road	..		175 5 5	
				175 5 5
MALVERN CITY AND MULGRAVE SHIRE (Joint Works)— ..				
Warrigal Road (O.M)	194 5 5			
		194 5 5		
MALVERN CITY, MULGRAVE SHIRE AND OAKLEIGH CITY (Joint Works)—				
Warrigal Road (O.M)	..		37 18 10	
				37 18 10
MANSFIELD SHIRE—				
Benalla–Mansfield Road	..		1,652 5 1	
Euroa–Merton Road	..		220 18 0	
Maindample–Benalla Road	..		357 16 7	
Mansfield Road	..		5,484 2 2	
Mansfield–Tolmie Road	..		1,761 19 4	
Mansfield–Woods Point Road	..		1,892 8 9	
Mansfield–Woods Point Road (Tree Planting)	..		17 19 6	
Merton–Strathbogie Road	..		171 4 8	
				11,558 14 1
MARONG SHIRE—				
Bendigo–Eddington Road	..		1,926 1 8	
Bendigo–Bridgewater Road	..		19 7 9	
Bendigo–Bridgewater Road (Tree Planting)	..		0 1 4	
Loddon–Valley Road	..		452 15 7	
				2,398 6 4
MARYBOROUGH BOROUGH—				
Avoca Rosd	..		400 15 6	
Ballarat Road	..		492 9 1	
Castlemaine Road	..		23 9 10	
Eddington Road	..		543 6 10	
Natte–Yallock Road	..		25 19 6	
				1,486 0 9
MELBOURNE AND FOOTSCRAY CITIES (Joint Works)—				
Ballarat Road (O.M.)	..		15 6 9	
				15 6 9
MELTON SHIRE—				
The Gap Road	..		3 1 10	
Toolern Road	..		873 12 0	
				876 13 10
METCALFE SHIRE—				
Elphinstone–Harcourt Road	..		368 18 8	
Elphinstone–Harcourt Road (Tree Planting)	..		24 19 0	
Kyneton–Redesdale Road	..		1,155 11 0	
Kyneton–Redesdale Road (Tree Planting)	..		26 11 11	
				1,576 0 7
MILDURA SHIRE—				
Deakin Avenue	..		206 3 10	
Irymple Road	..		1,541 16 6	
Melbourne Road	..		145 0 5	
Murray Valley Main Road	..		236 19 10	
Wentworth Road	..		1,272 4 2	
				3,402 4 9
MILDURA CITY—				
Bridge Road	..		65 14 10	
Langtree Avenue	..		90 2 3	
				155 17 1
MINHAMITE SHIRE—				
Hamilton–Macarthur–Port Fairy Road	..		1,437 8 8	
Warrnamabool–Hawkesdale–Penshurst Road	..		3,165 6 3	
Warrnambool–Hawkesdale–Penshurst Road (Tree Planting)	..		98 1 4	
Woolsthorpe–Bessiebelle Road	..		3,602 7 7	
				8,303 3 10
MIRBOO SHIRE—				
Grand Ridge Road	..		2,288 6 7	
Grand Ridge Road (Tree Planting)	..		12 15 9	
Mardan Road	..		615 9 10	
Mirboo–Leongatha Road	..		693 4 8	
Mirboo North–Thorpdale Road	..		1,561 6 11	
Mirboo South Road..	..		1,293 19 9	
Mirboo–Yarragon Road	..		224 14 10	
Morwell–Mirboo Road	..		849 17 5	
				7,539 15 9
MOORABBIN CITY—				
Centre Dandenong Road	..		1,001 19 5	
Point Nepean Road	..		211 4 8	
Warrigal Road (O.M.)	..		478 1 4	
				1,691 5 5
Carried forward	..	10,300 2 3	..	400,151 16 9

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan). Amount.	Permanent Works (Loan). Total.	Maintenance Works (Country Roads Board Fund). Amount.	Maintenance Works (Country Roads Board Fund). Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	10,300 2 3	..	400,151 16 9
MORDIALLOC CITY—				
Beach Road (O.M.)	..		12 9 5	
Point Nepean Road	..		2,710 15 7	
				2,723 5 0
MORNINGTON SHIRE—				
Moorooduc Road	..		26 13 7	
Moorooduc Road (Tree Planting)	..		34 17 10	
Mornington–Dromana Road	..		281 9 10	
Point Nepean Road	..		1,638 18 9	
Tyabb Road	..		536 18 9	
				2,518 18 9
MORTLAKE SHIRE—				
Caramut–Lismore Road	..		356 13 10	
Caramut–Lismore Road (Tree Planting)	..		19 14 0	
Darlington–Terang Road	..		472 15 1	
Ellerslie–Framlingham Road	..		454 7 10	
Mortlake–Ararat Road	..		1,226 6 9	
Mortlake–Terang Road	..		2,346 18 6	
Mortlake–Terang Road (Tree Planting)	..		9 4 11	
Mortlake–Warrnambool Road	..		1,210 13 5	
Mortlake–Warrnambool Road (Tree Planting) ..	..		12 10 8	
Terang–Framlingham Road	..		7 11 11	
				6,116 16 11
MORWELL SHIRE—				
Jeeralang West Road	..		2,204 8 7	
Jumbuk Road	..		371 18 0	
Morwell–Maryvale Road	..		1,627 12 8	
Morwell–Mirboo Road	..		213 5 8	
Morwell–Mirboo Road (Tree Planting)	..		43 2 3	
Princes Highway	..		94 12 11	
				4,555 0 1
MOUNT ROUSE SHIRE—				
Ballarat–Hamilton Road	..		1,871 11 9	
Hamilton–Dunkeld Road	..		703 6 2	
Hamilton–Penshurst Road	..		1,621 6 1	
Penshurst–Caramut Road	..		1,868 7 6	
				6,064 11 6
MULGRAVE SHIRE—				
Ferntree Gully Road	..		167 16 3	
Springvale Road	..		1,617 14 7	
				1,785 10 10
McIVOR SHIRE—				
Heathcote–Elmore Road	..		742 0 8	
Heathcote–Redesdale Road	..		515 13 3	
Kilmore–Heathcote–Bendigo Road	..		1,708 10 7	
Kilmore–Heathcote–Bendigo Road (Tree Planting) ..	..		29 19 9	
Mount Camel Estate Road	..		418 9 2	
Tooborac–Lancefield Road	..		116 4 10	
				3,530 18 3
McIVOR AND STRATHFIELDSAYE SHIRES (Joint Works)—				
Kilmore–Heathcote–Bendigo Road	..		1 7 4	
				1 7 4
NARRACAN SHIRE—				
Allambee–Childers Road	..		335 15 0	
Childers–Thorpdale Road	..		196 15 5	
Mirboo–Thorpdale Road	..		255 14 0	
Mirboo–Yarragon Road	..		303 5 6	
Moe–Yallourn Road	..		63 19 11	
Moe–Willowgrove Road	..		170 5 1	
Princes Highway	..		141 13 7	
Trafalgar–Thorpdale Road	..		2,184 1 10	
Walhalla Road	..		2,245 16 6	
Willowgrove Road	..		3,035 13 4	
Yarragon–Leongatha Road	..		2,141 8 8	
Yarragon Shady Creek Road	..		1,311 19 5	
				12,386 8 3
NEWHAM AND WOODEND SHIRE—				
Lancefield Road	..		1,398 8 1	
Mount Macedon Road	..		639 18 6	
Tylden Road	..		84 16 7	
				2,123 3 2
NEWHAM AND WOODEND, AND KYNETON SHIRES (Joint Works)—Tylden Road	..		62 7 0	
				62 7 0
NEWSTEAD AND MOUNT ALEXANDER SHIRE—				
Castlemaine–Daylesford Road	..		557 17 0	
Castlemaine–Daylesford Road (Tree Planting)	..		0 2 8	
Castlemaine–Maryborough Road (Tree Planting) ..	..		14 13 9	
Creswick Road	..		287 9 2	
Maldon Road	..		639 10 0	
				1,499 12 7
Carried forward	..	10,300 2 3	..	443,519 16 5

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan).		Maintenance Works (Country Roads Board Fund).	
	Amount.	Total.	Amount.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	10,300 2 3	..	443,519 16 5
NUMURKAH SHIRE—				
Echuca–Picola Road	..		368 8 7	
Nathalia–Picola Road	..		320 19 3	
Numurkah–Nathalia Road	..		447 3 10	
Numurkah–Tungamah Road	..		88 19 1	
Shepparton–Numurkah–Cobram Road	..		2,202 0 2	
				3,427 10 11
NUMURKAH AND DEAKIN SHIRES (Joint Works)				
Echuca–Picola Road	..		78 0 0	
				78 0 0
OAKLEIGH CITY—				
Ferntree Gully Road	..		20 15 10	
Princes Highway	..		1,400 12 9	
				1,421 8 7
OAKLEIGH AND MALVERN CITIES (Joint Works)—				
Warrigal Road (O.M.)	102 16 9		..	
		102 16 9		..
OAKLEIGH AND MOORABBIN CITIES (Joint Works)—				
Warrigal Road (O.M.)	352 19 6		15 13 0	
		352 19 6		15 13 0
OMEO SHIRE—				
Benambra Road	..		951 17 4	
Day Avenue	..		128 18 11	
Swift's Creek–Omeo Road	..		2,819 14 3	
				3,900 10 6
ORBOST SHIRE—				
Cann River Road	..		1,908 8 2	
Combienbar Road	..		451 10 5	
Marlo Road	..		285 15 2	
Orbost-Delegate Road	..		51 0 2	
Princes Highway	..		146 8 0	
Wangrabelle Road	..		127 19 1	
				2,971 1 0
OTWAY SHIRE—				
Beech Forest–Apollo Bay Road	..		585 2 3	
Beech Forest–Apollo Bay Road (Tree Planting) ..	..		31 5 0	
Beech Forest–Lavers Hill Road	..		1,494 15 8	
Beech Forest–Lavers Hill Road (Tree Planting) ..	..		15 0 0	
Beech Forest–Mount Sabine Road	..		1,265 9 10	
Beech Forest–Mount Sabine Road (Tree Planting) ..	..		8 2 6	
Carlisle–Gellibrand Road	..		653 12 5	
Carlisle–Gellibrand Road (Tree Planting)	..		7 10 0	
Colac–Beech Forest Road	..		1,135 2 10	
Colac–Forrest Road	..		112 17 9	
Forest–Apollo Bay Road	..		2,175 19 4	
Forest–Apollo Bay Road (Tree Planting)	..		11 5 0	
				7,496 2 7
OXLEY SHIRE—				
Bright Road	..		3,765 9 2	
Greta–Glenrowan Road	..		188 15 3	
Kilfeera–Boggy Creek Road	..		169 17 10	
Wangaratta–Greta Road	..		375 13 5	
Wangaratta–Whitfield Road	..		4,352 8 10	
				8,852 4 6
OXLEY SHIRE AND WANGARATTA BOROUGH (Joint Works)—				
Wangaratta-Whitfield Road	..		215 3 2	
				215 3 2
PHILLIP ISLAND SHIRE—				
Newhaven Road	..		180 11 8	
Phillip Island Road	..		15 0 11	
Ventnor Road	..		275 16 6	
				471 9 1
PORTLAND SHIRE—				
Bridgewater Road	..		1,555 11 0	
Heath Road	..		2,027 18 0	
Portland–Casterton Road	..		1,569 3 5	
Portland-Hamilton Road	..		1,927 13 9	
				7,080 6 2
PRESTON CITY—				
Epping Road	..		12 4 7	
Epping Road (O.M.)	17 0 8	..	2,369 15 6	
Whittlesea Road	..	17 0 8	457 7 3	
				2,839 7 4
Carried forward	..	10,772 19 2	..	482,288 13 3

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan).		Maintenance Works (Country Roads Board Fund).	
	Amount.	Total.	Amount.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	10,772 19 2	..	482,288 13 3
PYALONG SHIRE—				
Kilmore-Heathcote-Bendigo Road	..		870 2 6	
Lancefield-Tooborac Road	..		407 6 1	
Lancefield-Tooborac Road (Tree Planting)	..		28 0 10	
				1,305 9 5
PYALONG AND MCIVOR SHIRES (Joint Works)—				
Lancefield-Tooborac Road	..		35 8 1	
Lancefield-Tooborac Road (Tree Planting)	..		28 0 9	
				63 8 10
QUEENSCLIFFE BOROUGH—				
Geelong Road	..		193 16 8	
Point Lonsdale Road	..		167 2 9	
				360 19 5
RINGWOOD BOROUGH—				
Main Healesville Road	..		2,126 7 4	
Main Healesville Road (Tree Planting)	..		5 9 1	
Mount Dandenong Road	..		1,117 12 6	
Mount Dandenong Road (Tree Planting)	..		3 0 8	
Warrandyte Road	..		85 19 10	
				3,338 9 5
RINGWOOD BOROUGH AND DONCASTER AND TEMPLESTOWE SHIRE (Joint Works)—				
Warrandyte Road	..		25 6 6	
				25 6 6
RIPON SHIRE—				
Ballarat-Ararat Road	..		694 13 2	
Ballarat-Hamilton Road	..		1,621 11 7	
Skipton Road	..		3,082 16 8	
				5,399 1 5
ROCHESTER SHIRE—				
Bendigo-Echuca Road	..		114 10 3	
Corop Road	..		982 9 1	
Rochester-Bamawm-Prairie Road	..		3,600 1 1	
Timmering Road	..		153 0 2	
Timmering Road (Tree Planting)	..		0 1 5	
				4,850 2 0
RODNEY SHIRE—				
Kyabram-Nathalia Road	..		66 18 6	
Kyabram-Tongala Road	..		107 3 11	
Mooroopna-Undera Road	..		2,544 16 2	
Mooroopna-Undera Road (Tree Planting)	..		10 11 8	
Shepparton-Tatura Road	..		1,487 13 2	
Shepparton-Tatura Road (Tree Planting)	..		3 1 8	
Tatura-Byrneside-Kyabram Road	..		2,314 12 2	
Tatura-Murchison Road	..		514 0 0	
				7,048 17 3
RODNEY SHIRE AND SHEPPARTON BOROUGH (Joint Works)—				
Shepparton-Tatura Road	..		147 19 1	
				147 19 1
ROMSEY SHIRE—				
Lancefield-Kilmore Road	..		826 12 11	
Lancefield-Tooborac Road	..		171 18 8	
Melbourne-Lancefield Road	..		380 10 0	
Melbourne-Lancefield Road (Tree Planting)	..		70 0 0	
Woodend-Lancefield Road	..		726 4 3	
				2,175 5 10
ROSEDALE SHIRE—				
Princes Highway	..		34 9 1	
Rosedale-Heyfield Road	..		113 17 0	
Seaspray Road	..		1,131 16 2	
Traralgon-Gormandale Road	..		157 11 9	
Traralgon-Maffra Road	..		1,026 14 9	
Traralgon-Maffra Road (Tree Plantnig) ..	..		74 10 9	
Willung Road	..		735 8 6	
				3,274 8 0
ROSEDALE SHIRE AND ALBERTON SHIRE (Joint Works)—	..		11 1 10	
Carrajung-Gormandale Road				11 1 10
Carried forward	..	10,772 19 2	..	510,289 2 3

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued*

Municipality and Road.	Permanent Works (Loan). Amount.	Permanent Works (Loan). Total.	Maintenance Works (Country Roads Board Fund). Amount.	Maintenance Works (Country Roads Board Fund). Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	10,772 19 2	..	510,289 2 3
RUTHERGLEN SHIRE—				
Barnawartha–Howlong Road	..		242 14 3	
Chiltern–Howlong Road	..		162 17 6	
Chiltern–Rutherglen Road	..		314 4 0	
Murray Valley Road	..		121 15 5	
Rutherglen–Wahgunyah Road	..		296 6 7	
Rutherglen–Wahgunyah Road (Tree Planting) ..	..		8 3 10	
Springhurst–Rutherglen Road	..		1,102 12 8	
Springhurst–Rutherglen Road (Tree Planting)	..		1 0 4	
				2,249 14 7
SALE TOWN—				
Princes Highway	..		24 12 5	
				24 12 5
SANDRINGHAM CITY—				
Beach Road (O.M.)	3,797 10 3		824 10 2	
		3,797 10 3		824 10 2
SEBASTOPOL BOROUGH—				
Ballarat–Hamilton Road	..		32 13 1	
Ballarat–Hamilton Road (Tree Planting)	..		24 15 4	
Ballarat–Rokewood Road	..		40 19 9	
				98 8 2
SEYMOUR SHIRE—				
Avenel–Longwood Road	..		404 6 7	
Avenel–Longwood Road (Tree Planting)	..		10 1 7	
Highlands Road	..		872 14 3	
Seymour–Yea Road	..		297 3 11	
Upper Goulburn Road	..		651 1 1	
				2,235 7 5
SEYMOUR AND BROADFORD SHIRES (Joint Works)—				
Upper Goulburn Road	..		105 3 10	
				105 3 10
SHEPPARTON SHIRE—				
Dookie–Nalinga Road	..		1,152 16 8	
Katandra Road	..		295 16 7	
Pine Lodge Road	..		25 9 10	
Shepparton–Nagambie Road	..		717 0 0	
Shepparton–Numurkah Road	..		2,414 6 4	
				4,605 9 5
SHEPPARTON BOROUGH—				
Shepparton–Nagambie Road	..		100 0 0	
Shepparton–Nalinga Road	..		10 10 4	
Shepparton–Numurkah Road	..		102 17 6	
				213 7 10
SHEPPARTON BOROUGH AND RODNEY SHIRE (Joint Works)—				
Shepparton–Tatura Road	..		19 2 5	
				19 2 5
SOUTH BARWON SHIRE—				
Barwon Heads Road	..		2,251 6 6	
Barwon Heads Road (Tree Planting)	..		4 5 11	
Princes Highway	..		174 8 8	
Torquay Road	..		432 8 5	
				2,862 9 6
SOUTH BARWON AND BARRABOOL SHIRES (Joint Works)—				
Torquay Road	..		726 11 0	
				726 11 0
SOUTH BARWON AND BELLARINE SHIRES (Joint Works)—				
Barwon Heads Road	..		25 13 5	
				25 13 5
SOUTH GIPPSLAND SHIRE—				
Albert River–Welshpool Road	..		26 18 4	
Boolarra–Foster Road	..		1,106 13 7	
Boolarra–Foster Road (Tree Planting)	..		8 13 9	
Boolarra–Welshpool Road	..		333 16 9	
Boolarra–Wellshpool (Tree Planting)	..		31 0 9	
Falls Road..	..		637 4 1	
Foster North–Mirboo South Road	..		212 6 7	
Foster–Yarram Road	..		1,306 12 0	
Hazel Park Road	..		35 12 6	
Main South Gippsland Road	..		1,097 18 4	
Stony Creek–Dollar Road	..		205 16 7	
Toora–Gunyah Road	..		525 7 9	
Toora–Wonyip Road	..		462 9 0	
Turton's Creek Road	..		297 12 10	
				6,288 2 10
SOUTH GIPPSLAND AND WOORAYL SHIRES (Joint Works)—				
Dollar–Stony Creek Road	..		158 5 1	
ain South Gippsland Road	..		2 19 1	
				161 4 2
Carried forward	..	14,570 9 5	..	530,728 19 5

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan). Amount.	Permanent Works (Loan). Total.	Maintenance Works. (Country Roads Board Fund). Amount.	Maintenance Works. (Country Roads Board Fund). Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	14,570 9 5	..	530,728 19 5
ST. ARNAUD BOROUGH—				
Avoca–St. Arnaud Road	..		143 9 8	
Charlton Road	..		29 16 0	
Navarre Road	..		156 0 7	
St. Arnaud–Donald Road	..		42 18 8	
				372 4 11
STAWELL SHIRE—				
Horsham–Wal Wal Road	..		5 19 4	
Landsborough Road	..		113 2 9	
Marnoo Road	..		1,900 3 8	
Marnoo–Rupanyup Road	..		698 3 6	
Marnoo–St. Arnaud Road	..		10 5 4	
Navarre Road	..		375 7 0	
Stawell–Glenorchy–Horsham Road	..		2,013 7 3	
Stawell–Warracknabeal Road	..		1,273 0 2	
				6,389 9 0
STAWELL BOROUGH—				
Ararat–Stawell Road	..		417 12 10	
Glenorchy Road	..		68 2 10	
				485 15 8
STRATHFIELDSAYE SHIRE—				
Heathcote–Bendigo Road	..		2,009 9 3	
Mandurang Road	..		1,294 17 2	
Strathfieldsaye Road	..		1,097 0 1	
				4,401 6 6
SWAN HILL SHIRE—				
Annuello–Wemen Road	..		357 13 10	
Euston Road	..		312 11 9	
Nyah–Ouyen Road	..		1,417 13 10	
Piangil Station Road	..		25 19 5	
Swan Hill Road	..		88 19 4	
Ultima Road	..		1,263 14 4	
Ultima–Sealake Road	..		422 10 11	
				3,889 3 5
TALBOT SHIRE—				
Clunes–Creswick Road	..		432 15 0	
Maryborough–Avoca Road	..		2 7 7	
Maryborough–Ballarat Road	..		717 14 10	
Talbot–Avoca Road	..		727 6 8	
				1,880 4 1
TAMBO SHIRE—				
Bairnsdale–Bruthen Road	..		32 8 10	
Basin Road	..		292 11 9	
Bruthen–Omeo Road	..		720 18 8	
Metung–Swan Reach Road	..		99 2 5	
Mossiface Road	..		89 0 5	
Nowa Nowa–Buchan–Gelantipy Road	..		1,216 16 9	
				2,450 18 10
TOWONG SHIRE—				
Omeo Road	..		74 14 9	
Murray Valley Road	..		748 0 1	
Murray Valley Road (Tree Planting)	..		2 15 1	
				825 9 11
TRARALGON SHIRE—				
Princes Highway	..		85 7 9	
Traralgon–Balook Road	..		495 3 11	
Traralgon Creek Road	..		1,497 12 6	
Traralgon–Gormandale Road	..		807 16 1	
Traralgon–Maffra Road	..		115 19 8	
Tyers Road	..		400 4 10	
Tyers Road (Tree Planting)	..		8 8 0	
				3,410 12 9
TULLAROOP SHIRE—				
Avoca Road	..		1,888 16 2	
Ballarat Road	..		80 5 6	
Dunolly Road	..		18 6 9	
Eddington Road	..		1,957 6 3	
Eddington Road (Tree Planting)	..		3 16 8	
Maryborough–Dunolly Road	..		1,103 4 4	
Natte Yallock Road	..		810 16 9	
Talbot–Eddington Road	..		147 19 0	
				6,010 11 5
TUNGAMAH SHIRE—				
Cobram South Road	..		460 4 10	
Cobram–Yarrawonga Road	..		503 9 4	
Katandra Road	..		303 9 1	
Numurkah–Tungamah–Wilby Road	..		1,277 4 4	
St. James Road	..		767 4 11	
				3,311 12 6
Carried forward	..	**14,570 9 5**	..	**564,156 8 5**

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loans).		Maintenance Works. (Country Roads Board Fund).	
	Amount.	Total.	Amount.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	14,570 9 5	..	564,156 8 5
UPPER MURRAY SHIRE—				
Corryong Road	..		400 3 10	
Tintaldra Road	..		539 7 5	
Upper Murray Road	..		738 7 10	
				1,677 19 1
UPPER YARRA SHIRE—				
Don Road	..		420 0 9	
Launching Place–Gembrook Road	..		461 19 11	
Little Yarra Road	..		331 16 0	
Main Warburton Road	..		1,774 6 4	
				2,988 3 0
VIOLET TOWN SHIRE—				
Violet Town–Dookie Road	..		398 8 5	
				398 8 5
VIOLET TOWN AND EUROA SHIRES (Joint Works)—				
Murchison–Violet Town Road	..		236 14 4	
				236 14 4
WALPEUP SHIRE—				
Hopetoun–Ouyen Road	..		1 5 11	
Mildura Road	..		30 9 8	
Ouyen–Pinnaroo Road	..		3,768 19 0	
				3,800 14 7
WANGARATTA SHIRE—				
Beechworth Road	..		445 10 1	
Peechelba Road	..		90 16 6	
Wangaratta–Myrtleford Road	..		330 14 4	
				867 0 11
WANGARATTA BOROUGH—				
Beechworth Road	..		27 17 6	
Sydney Road	..		81 0 8	
				108 18 2
WANNON SHIRE—				
Coleraine–Harrow–Apsley Road	..		2,773 15 2	
Hamilton–Coleraine–Casterton Road	..		1,200 4 1	
Wannon Bridge Road	..		240 7 11	
				4,214 7 2
WANNON AND GLENELG SHIRES (Joint Works)—				
Hamilton–Coleraine–Casterton Road	..		4 11 2	
				4 11 2
WARANGA SHIRE—				
Colbinabbin–Elmore Road	..		670 11 4	
Colbinabbin–Elmore Road (Tree Planting)	..		16 4 4	
Colbinabbin–Moora Road	..		305 15 7	
Colbinabbin–Moora Road (Tree Planting)	..		2 17 10	
Heathcote–Elmore Road	..		1,114 16 3	
Heathcote–Elmore Road (Tree Planting)	..		11 8 5	
Murchison–Rushworth Road	..		2,945 19 9	
Murchison–Rushworth Road (Tree Planting)	..		16 7 4	
Rushworth–Stanhope Road	..		3,831 19 3	
Rushworth–Stanhope Road (Tree Planting)	..		5 12 3	
Tatura Road	..		79 13 5	
Tatura Road (Tree Planting)	..		2 16 10	
				9,004 2 7
WARRACKNABEAL SHIRE—				
Birchip Road	..		1,897 17 6	
Birchip Road (Tree Planting)	..		50 5 0	
Dimboola Road	..		1,201 0 8	
Hopetoun Road	..		166 15 4	
Hopetoun Road (Tree Planting)	..		67 0 0	
Minyip Road	..		1,955 16 10	
Rainbow Road	..		3,954 4 6	
Rainbow Road (Tree Planting)	..		50 5 0	
				9,343 4 10
WARRACKNABEAL AND DUNMUNKLE SHIRES (Joint Works)—				
Minyip Road	..		71 3 10	
				71 3 10
WARRAGUL SHIRE—				
Bloomfield Road	..		196 2 0	
Brandy Creek Road	..		681 2 11	
Darnum–Allambee Road	..		472 17 2	
Princes Highway	..		1,137 17 4	
Warragul–Korumburra Road	..		1,503 5 5	
Warragul–Leongatha Road	..		346 16 9	
				4,338 1 7
Carried forward	..	14,570 9 5	..	601,209 18 1

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan). Amount.	Permanent Works (Loan). Total.	Maintenance Works (Country Roads Board Fund). Amount.	Maintenance Works (Country Roads Board Fund). Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	14,570 9 5	..	601,209 18 1
WARRNAMBOOL SHIRE—				
Allansford–Nirranda Road	..		319 10 10	
Caramut–Lismore Road	..		102 2 0	
Framlingham Road	..		684 10 6	
Garvoc–Laang Road	..		269 2 3	
Mortlake Road	..		679 0 9	
Peterborough Road	..		940 18 3	
Timboon–Nirranda Road	..		499 1 6	
Warrnambool–Caramut Road	..		2,622 5 1	
				6,116 11 2
WARRNAMBOOL AND HAMPDEN SHIRES (Joint Works)—				
Garvoc–Laang Road	..		1,880 13 9	
				1,880 13 9
WARRNAMBOOL CITY—				
Princes Highway	..		998 2 3	
				998 2 3
WERRIBEE SHIRE—				
Duncan's Road	..		908 1 1	
Geelong–Bacchus Marsh Road	..		314 7 1	
				1,222 8 2
WHITTLESEA SHIRE—				
Epping Road	..		1,879 19 6	
Epping Road (Tree Planting)	..		12 2 11	
Main Whittlesea Road	..		4,611 9 9	
Main Whittlesea Road (Tree Planting)	..		9 11 7	
Wallan Road	..		981 15 8	
Wallan Road (Tree Planting)	..		6 10 0	
Whittlesea–Kinglake Road	..		342 15 11	
				7,844 5 4
WIMMERA SHIRE—				
Grampians Road	..		1,765 1 3	
Horsham–Dooen Road	..		111 9 0	
Horsham–Murtoa Road	..		1,866 18 8	
Horsham–Wal Wal Road	..		319 8 9	
Natimuk Road	..		1,205 16 3	
				5,268 13 11
WIMMERA AND ARAPILES SHIRES (Joint Works)—				
Horsham–Hamilton Road (Tree Planting)	..		28 7 11	
Natimuk Road	..		208 19 0	
				237 6 11
WINCHELSEA SHIRE—				
Birregurra Road	..		93 14 3	
Birregurra–Dean's Marsh Road	..		339 7 3	
Birregurra–Forrest Road	..		1,371 3 2	
Lorne Road	..		542 12 4	
				2,346 17 0
WINCHELSEA AND COLAC SHIRES (Joint Works)—				
Birregurra Road	..		9 0 0	
				9 0 0
WODONGA SHIRE—				
Beechworth–Wodonga Road	..		2 15 3	
Kiewa–Wodonga Road	..		334 15 5	
Sydney Road	..		501 12 1	
Tallangatta Road	..		382 3 1	
Wodonga–Yackandandah Road	..		343 19 8	
				1,565 5 6
WONTHAGGI BOROUGH—				
Wonthaggi–Inverloch Road	..		211 7 4	
Wonthaggi–Korumburra Road	..		50 12 6	
Wonthaggi–Loch Road	..		108 4 4	
				370 4 2
WOORAYL SHIRE—				
Fairbank Road	..		81 18 1	
Farmer's Road	..		1,945 19 3	
Inverloch–Leongatha Road	..		2,597 2 6	
Inverloch–Wonthaggi Road	..		953 8 6	
Kongwak–Inverloch Road	..		35 8 4	
Leongatha–Mirboo Road	..		178 17 8	
Leongatha–Yarragon Road	..		1,866 4 6	
Lower Tarwin Road	..		2,001 9 7	
Main South Gippsland Road	..		1,057 8 11	
Mardan Road	..		2,946 4 11	
Mirboo South–Foster North Road	..		176 15 7	
Turton's Creek Road	..		1,005 3 7	
Wild Dog Valley Road	..		1,172 7 7	
				16,018 7 0
WOORAYL AND KORUMBURRA SHIRES (Joint Works)—				
Wild Dog Valley Road	..		38 0 11	
				38 0 11
WOORAYL AND MIRBOO SHIRES (Joint Works)—				
Turton's Creek Road	..		346 16 5	
				346 16 5
Carried forward	..	14,570 9 5	..	645,472 10 7

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works. (Loan).		Maintenance Works. (Country Roads Board Fund).	
	Amount.	Total.	Amount.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	14,570 9 5	..	645,472 10 7
WOORAYL AND SOUTH GIPPSLAND SHIRES (Joint Works)—				
Mirboo South–Foster North Road	..		220 14 1	
				220 14 1
WYCHEPROOF SHIRE—				
Birchip–Sealake Road	..		273 11 9	
Birchip–Wycheproof Road	..		923 19 3	
Birchip–Wycheproof Road (Tree Planting)—	..		28 19 0	
Corack Road	..		32 6 0	
Sealake–Ultima Road	..		324 14 1	
Sealake–Ultima Road (Tree Planting)	..		0 1 11	
Woomelang–Sealake Road	..		184 11 6	
Wycheproof–Sealake Road	..		338 14 11	
Wycheproof–Wooroonook Road	..		33 5 9	
				2,140 4 2
YACKANDANDAH SHIRE—				
Dederang Road	..		1,454 8 4	
Gundowring Road	..		2,072 6 10	
Huon–Kiewa Road	..		171 8 9	
Kergunyah Road	..		189 2 6	
Kergunyah South Road	..		221 3 11	
Kiewa East Road	..		96 14 0	
Kiewa–Wodonga Road	..		609 13 1	
Myrtleford–Yackandandah Road	..		111 15 0	
Yackandandah–Wodonga Road	..		1,234 4 0	
				6,160 16
YARRAWONGA SHIRE—				
Peechelba Road	..		39 6 10	
Tungamah–Wilby Road	..		31 10 9	
Yarrawonga–Wangarratta Road	..		600 15 10	
				671 13 5
YEA SHIRE—				
Highlands Road	..		100 0 0	
Molesworth–Dropmore Road	..		100 0 0	
Upper Goulburn Road	..		3,512 18 6	
Whittlesea–Yea Road	..		1,235 0 7	
Yarra Glen–Glenburn Road	..		502 10 5	
Yea–Glenburn Road..	..		1,262 4 8	
				6,712 14 2
YEA AND BROADFORD SHIRES (Joint Works)—				
Upper Goulburn Road	..		63 8 2	
				63 8 2
		14,570 9 5		661,442 1 0
WORKS UNDER THE DIRECT SUPERVISION OF THE BOARD.				
ALBERTON SHIRE—				
Boolarra–Welshpool Road	..		217 16 2	
				217 16 2
BALLAN SHIRE—				
Melbourne–Ballarat Road	..		362 7 10	
				362 7 10
BALLARAT AND BUNGAREE SHIRES (Joint Works)—				
Ballarat–Creswick Road			570 8 11	
				570 8 11
BELLARINE SHIRE—				
Barwon Heads–Ocean Grove Road	..		20 3 8	
Geelong–Portarlington Road	..		2,895 4 6	
Geelong–Queenscliffe Road	..		152 16 2	
Portarlington–St. Leonards Road	..		1,328 4 6	
				4,396 8 10
BERWICK SHIRE—				
Princes Highway	..		47 9 7	
				47 9 7
BRAYBROOK SHIRE—				
Princes Highway	..		392 14 3	
				392 14 3
BROADFORD SHIRE—				
Sydney Road	..		62 5 10	
				62 5 10
CAMBERWELL CITY, MULGRAVE SHIRE AND MALVERN CITY (Joint Works)—				
Warrigal Road (O.M.)	3,625 15 5		..	
		3,625 15 5		
CHELSEA CITY—				
Point Nepean Road	..		0 6 0	
				0 6 0
COHUNA SHIRE—				
Murray River Valley Road	..		15 9 4	
				15 9 4
COLLINGWOOD AND HEIDELBERG CITIES (Joint Works)—				
Heidelberg Road (O.M.)	37 4 0		50 10 8	
		37 4 0		50 10 8
CORIO SHIRE AND NEWTOWN AND CHILWELL TOWN (Joint Works)—				
Fyansford Road	..		515 8 4	
				515 8 4
Carried forward	..	3,662 19 5	..	6,631 5 9

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan).		Maintenance Works (Country Roads Board Fund).	
	Amount.	Total.	Amount.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	3,662 19 5	..	6,631 5 9
DANDENONG SHIRE—				
Princes Highway	..		460 14 2	
				460 14 2
ECHUCA BOROUGH—				
Echuca–Cohuna Road	..		1,771 9 0	
				1,771 9 0
EUROA SHIRE—				
Sydney Road	..		61 3 6	
Murchison–Shepparton Road	..		141 19 8	
Murchison–Shepparton Road (Tree Planting)	..		2 16 8	
				205 19 10
FOOTSCRAY CITY—				
Princes Highway	..		2,708 4 0	
				2,708 4 0
GISBORNE SHIRE—				
Melbourne–Bendigo Road	..		839 2 8	
				839 2 8
GLENLYON SHIRE—				
Ballan Road	..		3,900 0 0	
Ballarat Road	..		1,002 16 8	
				4,902 16 8
GOULBURN SHIRE—				
Goulburn Valley Road	..		2,778 8 1	
Murchison–Shepparton Road	..		277 0 1	
				3,055 8 2
HEALESVILLE SHIRE—				
Healesville–Alexandra Road	..		2,248 15 2	
Marysville Road	..		324 3 11	
				2,572 19 1
HEIDELBERG CITY—				
Main Heidelberg–Eltham Road	..		2,222 1 11	
				2,222 1 11
HORSHAM TOWN—				
Hamilton Road	..		6,600 14 5	
				6,600 14 5
HUNTLY SHIRE—				
Bendigo–Echuca Road	..		67 12 4	
Bendigo–Echuca Road (Tree Planting)	..		4 0 7	
				71 12 11
KEILOR SHIRE—				
Melbourne–Bendigo Road	..		103 2 3	
				103 2 3
KILMORE SHIRE—				
Sydney Road	..		33 15 11	
				33 15 11
LILLYDALE SHIRE—				
Main Healesville Road	..		1,799 19 0	
Main Warburton Road	..		1,532 4 10	
Mount Dandenong Road	..		1,219 13 6	
				4,551 17 4
MALDON SHIRE—				
Castlemaine–Maryborough Road	..		56 14 0	
				56 14 0
MANSFIELD SHIRE—				
Mansfield–Woods Point Road	..		2,660 2 0	
				2,660 2 0
MELBOURNE CITY—				
Hoddle Bridge Road (O.M.)	39,632 3 2		..	
		39,632 3 2		
MORWELL SHIRE—				
Boolarra–Welshpool Road	..		123 1 5	
Morwell–Mirboo Road	..		472 7 9	
				595 9 2
MORWELL AND WOORAYL SHIRES (Joint Works)— ..				
Boolarra–Foster Road	..		282 7 1	
				282 7 1
NARRACAN SHIRE—				
Walhalla Road	..		1,793 2 11	
				1,793 2 11
NEWHAM AND WOODEND SHIRE—				
Melbourne–Bendigo Road	..		57 8 0	
				57 8 0
NEWSTEAD AND MOUNT ALEXANDER SHIRE—				
Castlemaine–Maryborough Road	..		453 8 7	
Creswick Road	..		1,132 9 1	
				1,585 17 8
ORBOST SHIRE—				
Cann Valley Road	..		521 16 3	
Wangrabelle Road	..		63 10 0	
				585 6 3
PORTLAND SHIRE—				
Portland–Hamilton Road	..		335 19 3	
				335 19 3
Carried forward	..	43,295 2 7	..	44,683 10 5

STATEMENT OF EXPENDITURE IN CONNEXION WITH CONSTRUCTION AND MAINTENANCE, ETC.—*continued.*

Municipality and Road.	Permanent Works (Loan).		Maintenance Works (Country Roads Board Fund).	
	Amount.	Total.	Amount.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Brought forward	..	43,295 2 7	..	44,683 10 5
QUEENSCLIFFE BOROUGH—				
Geelong Road	..		144 4 8	
				144 4 8
SEYMOUR SHIRE—				
Goulburn Valley Road	..		534 0 6	
Sydney Road	..		48 12 3	
				582 12 9
SOUTH GIPPSLAND SHIRE—				
Boolarra–Foster Road	..		470 19 6	
				470 19 6
SOUTH GIPPSLAND AND WORRAYL SHIRES (Joint Works)—				
Boolarra–Foster Road	..		420 18 2	
				420 18 2
TAMBO SHIRE—				
Princes Highway	..		650 18 2	
				650 18 2
TULLAROOP SHIRE—				
Castlemaine–Maryborough Road	..		2,127 15 3	
Castlemaine–Maryborough Road (Tree Planting) ..	..		114 7 5	
				2,242 2 8
UPPER YARRA SHIRE—				
Warburton Road	..		98 16 7	
Woods Point Road	..		3,906 5 6	
				4,005 2 1
VIOLET TOWN SHIRE—				
Sydney Road	..		25 5 2	
Sydney Road (Tree Planting)	..		5 3 8	
				30 8 10
WANGARATTA SHIRE—				
Beechworth Road	..		14 9 1	
Springhurst–Rutherglen Road	..		1,411 13 10	
Yarrawonga Road	..		600 3 8	
				2,026 6 7
WANGARATTA BOROUGH—				
Sydney Road	..		42 8 0	
				42 8 0
WEERIBEE SHIRE—				
Princes Highway	..		978 16 0	
				978 16 0
WINCHELSEA SHIRE—				
Lorne Road	..		200 10 11	
Princes Highway	..		32 13 5	
				233 4 4
WODONGA SHIRE—				
Bonegilla Road	..		55 9 6	
				55 9 6
Total	..	43,295 2 7	..	56,567 1 8
Grand Total	..	57,865 12 0	..	718,009 2 8
STATE HIGHWAY MAINTENANCE.				
Princes Highway West	..		46,148 12 5	
Princes Highway East	..		80,770 11 3	
Western Highway	..		47,574 16 3	
Calder Highway	..		56,655 1 10	
Northern Highway	..		2,329 8 2	
Hume Highway	..		24,649 8 4	
Omeo Highway	..		29,776 7 7	
Murray Valley Highway	..		70,222 18 3	
South Gippsland Highway	..		29,724 5 2	
Midland Highway	..		24,808 17 6	
Bonang Highway	..		8,640 0 6	
Sturt Highway	..		1,046 13 0	
Henty Highway	..		18,219 3 3	
				440,566 3 6
(TOURISTS' ROADS.)				
Acheron Way	..		3,275 12 10	
Alpine Road	..		4,727 4 0	
Donna Buang Road	..		3,498 1 11	
Gypsy Point Road	..		81 3 0	
Grampians Road	..		4,051 4 11	
Mallacoota Road	..		753 8 11	
Mount Buffalo Road	..		3,904 13 8	
Mount Victory Road	..		558 7 6	
Ocean Road	..		16,794 13 1	
Otway Lighthouse Road	..		248 6 1	
Silverband Track	..		202 14 9	
Sydenham Inlet Road	..		1,655 1 10	
Wartook Road	..		130 17 6	
Arthur's Seat Road	..		2,545 1 3	
				42,426 11 3
Total	..	57,865 12 0	..	1,201,001 17 5

APPENDIX D.

COUNTRY ROADS BOARD.

MAIN ROADS.

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, RECONSTRUCTED, AND MAINTAINED UNDER THE PROVISIONS OF THE COUNTRY ROADS ACT 1928 DURING THE YEAR ENDED 30TH JUNE, 1939.

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES.		
ALBERTON SHIRE—			
Albert River Road	Reconditioning, widening and double coat sealing from Keating's Corner to foot of Stacey's Bridge Hill	..	1 14
" " "	Repairs to bridge near MacAuley's and painting five bridges	..	—
" " "	Patrol maintenance throughout, from Keating's Corner to Grand Ridge Road	..	15
Albert River–Welshpool Road	Painting three bridges near Binginwarri	..	—
" " " "	Patrol maintenance throughout, from MacAuley's to South Gippsland Shire Boundary	..	8
Balook–Yarram Road	Improvement to alignment on three sharp curves between Pattinson's Saddle and Balook	..	·2
" " "	Patrol maintenance throughout from Calrossie to Balook	..	9
Carrajung–Gormandale Road	Reconditioning gravel road and double coat sealing from Won Wron Store to Shaw's	..	2·9
" " "	Painting bridges over Tarra River, Greig's Creek, Spring Creek, Bruthen Creek and Reedy Creek	..	—
" " "	Patrol maintenance throughout, from Yarram to Gormandale	..	30
Tarra Valley Road	Patrol maintenance throughout, from Carrajung–Gormandale Road at North Devon to Grand Ridge Road	..	15
Yarram–Boolarra Road	Constructing and double coat sealing, 2-ft. widening strips, from Mason's Corner to Stony Creek bridge	..	4·35
" " "	Double coat sealing approaches to Jack River bridge	..	·15
" " "	Patrol maintenance throughout, from Mason's Corner to Madalya	..	15
Yarram–Won Wron Road	Clearing, forming and gravelling approach curve to South Gippsland Highway	..	·22
" " "	Erection of cable guard fencing at approaches to bridge near May's	..	—
" " "	Patrol maintenance throughout, from the South Gippsland Highway to Won Wron	..	5
ALEXANDRA SHIRE—			
Cathkin–Mansfield Road	Double coat sealing from 5·25 to 6 miles	..	·74
" " "	Patrol maintenance throughout	..	12
Healesville–Alexandra Road	Double coat sealing from 5 to 8 miles and 11 to 13·25 miles	..	5·25
" " "	Patrol maintenance throughout	..	18
Terip Terip Road	Patrol maintenance throughout	..	9·8
Upper Goulburn Road	Double coat sealing in three sections	..	2·13
" " "	Realignment ·75 and 2 miles east of Alexandra	..	·31
" " "	Patrol maintenance throughout	..	27
Yarck Road	Patrol maintenance throughout	..	3·8
ARAPILES SHIRE—			
Horsham–Hamilton Road	Realignment and super-elevation of curve at McKenzie Creek, three curves at Wonwondah, and patrol maintenance throughout, till 17th August, 1938	..	25·4
Horsham–Natimuk–Edenhope Road	Construction of 12-in. diameter pipe culvert at 23 miles	..	—
" " " "	Loam forming at Miga Lake	..	·25
" " " "	Limestone rubble sheeting west of Natimuk	..	·5
" " " "	Gravel sheeting in three sections between Mount Arapiles and Poverty Flat	..	1·14
" " " "	Patrol maintenance throughout	..	23·5
ARARAT SHIRE—			
Ararat–Elmhurst Road	Reconstruction and sealing from 21 to 23 miles	..	2
" " "	Patrol maintenance throughout	..	23
Ararat–St. Arnaud Road	Patrol maintenance throughout	..	3·25
Ararat–Warrnambool Road	Sealing from 16·4 to 19·6 miles	..	3·2
" "	Patrol maintenance throughout	..	34
Ballarat–Hamilton Road	Widening and sealing from 4 to 5·3 miles	..	1·3
" " "	Road mix seal from 4 to 6·3 miles	..	2·3
" " "	Patrol maintenance, including provision of plantations from 14 to 18 miles	..	23
Maroona–Glenthompson Road	Reconstruction and gravelling from 9·8 to 10·6 miles and 17·2 to 19·2 miles	..	2·8
" " "	Road mix seal 6·9 to 8·9 miles	..	2
" " "	Patrol maintenance throughout	..	22·5
ARARAT TOWN—			
Ballarat–Stawell Road	Patrol maintenance throughout	..	3·5
AVOCA SHIRE—			
Ararat Road	Construction of deviation from 1·5 to 2·05 miles	..	·55
" " "	Patrol maintenance throughout	..	7·2
Ararat–St. Arnaud Road	Patrol maintenance throughout	..	15·9
Ballarat–St. Arnaud Road	Reconstruction in preparation for sealing	..	6·43
" " "	Double coat sealing 16 feet wide	..	5·91
" " "	Double coat sealing 18 feet wide through Avoca township	..	·75
" " "	Patrol maintenance throughout	..	23·25
Bealiba Road	Reconstruction in preparation for sealing	..	1·5
" " "	Patrol maintenance throughout	..	9
Landsborough Road	Patrol maintenance throughout	..	1·8
Maryborough Road	Reconstruction and double coat sealing 16 feet wide	..	·95
" " "	Replacement of two timber culverts with 24-in. diameter pipes	..	—
" " "	Patrol maintenance throughout	..	5
Maryborough–Natte Yallock Road	Reconstruction and gravelling of bluemetal section	..	1·5
" " " "	Patrol maintenance throughout	..	6·6
Moonambel Road	Provision of ten relieving culverts at floodways	..	—
" "	Patrol maintenance	..	10
AVOCA AND BET BET SHIRES (Joint Works)—			
Maryborough–Natte Yallock Road	Patrol maintenance throughout	..	1·7
AVOCA AND KARA KARA SHIRES (Joint Works)—			
Navarre Road	Patrol maintenance throughout	..	·34
	Carried forward	—	457·01

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	457.01
AVOCA AND STAWELL SHIRES (Joint Works)—			
Ararat–St. Arnaud Road	Patrol maintenance throughout	..	4·5
AVON SHIRE—			
Bengworden Road	General maintenance, reconstruction and double coat sealing, 16 feet wide	..	2·55
Briagolong–Stratford Road ..	General maintenance, reconstruction and double coat sealing, 14 feet and 16 feet wide	..	1·45
Dargo Road	General maintenance	..	45
Maffra–Sale Road	General maintenance	..	2·96
Maffra–Stratford Road	General maintenance	..	2
Prince's Highway	General maintenance	..	·75
BACCHUS MARSH SHIRE—			
Bacchus Marsh–Balliang Road ..	Widening from 14 feet to 18 feet by construction and sealing, from 1·5 to 3 miles ..	..	1·5
" " " " ..	Road mix seal ¾-in. by 18 feet wide from 0 to 1·5 miles	..	1·5
" " " " ..	Double coat sealing 14 feet wide from 7·5 to 9·5 miles	..	2
" " " " ..	Patrol maintenance throughout	..	15·21
Ballarat Road	Patrol maintenance throughout	..	1·21
Geelong–Bacchus Marsh Road ..	Widening from 14 feet to 18 feet by construction and sealing, from·5 to 2·5 miles ..	..	2
" " " ..	Patrol maintenance throughout	..	7·81
Gisborne Road	Widening from 14 feet to 18 feet by construction and sealing, from 1·5 to 3 miles ..	..	1·5
"	Road mix seal ¾ inch by 18 feet wide, from 0 to 1·5 miles	..	1·5
" "	Patrol maintenance throughout	..	10.22
BACCHUS MARSH AND CORIO SHIRES (Joint Works)—			
Bacchus Marsh–Balliang Road ..	Patrol maintenance throughout	..	1·6
BAIRNSDALE SHIRE—			
Bairnsdale–Bengworden Road ..	Patrol maintenance	..	14·8
Bairnsdale–Lindenow Road ..	Patrol maintenance	..	9
Bairnsdale–Paynesville Road ..	Patrol maintenance	..	10
Bullumwaal–Tabberabbera Road ..	Road mix seal	..	·24
" " " ..	Resealing	..	·21
" " " ..	Patrol maintenance	..	16
Princes' Highway	Road mix seal	..	·4
" "	Patrol maintenance	..	2
BALLAN SHIRE—			
Daylesford Road	Resheeting with crushed rock and double coat sealing between 1 and 2 miles	..	·23
" "	Widening with crushed rock from 12 to 16 feet between 0 and 2.2 miles	..	2
" "	Trimming, filling and levelling old sand pits on road reserve between 0 and 1 mile, .3 mile	..	—
" "	Patrol maintenance throughout	..	12·7
Gordon–Meredith Road	Reconstruction and re-alignment with crushed rock and double coat sealing from 3.8 to 4 miles	..	·2
" " "	Road mix reseal, ½ inch, in two sections between 1 and 3 miles	..	·55
" " "	Patrol maintenance throughout	..	3·6
" " "	Construction of 21-in. diameter pipe culvert near .5 miles	..	—
" " "	Patrol maintenance throughout	..	1·46
Mount Wallace Road	Re-aligning with spiral transitions two sharp curves near 3.5 and 4.5 miles ..	..	·15
" " "	Road mix reseal, ¾-in., from 3 to 4.5 miles	..	1·5
" " "	Patrol maintenance throughout	..	10 7
Spargo Creek Road	Patrol maintenance throughout	..	1·2
BALLAN AND BUNINYONG SHIRES (Joint Works)—			
Gordon–Meredith Road	Patrol maintenance throughout	..	·4
BALLARAT SHIRE—			
Ballarat–Lexton Road	Patrol maintenance	..	18·2
Clunes–Creswick Road	Priming and sealing gravel road with bitumen 16 feet wide	..	2·96
" " "	Patrol maintenance	..	2·96
Maryborough–Ballarat Road ..	Patrol maintenance	..	12·65
BANNOCKBURN SHIRE—			
Gordon–Meredith Road	Widening from 12 feet to 16 feet with gravel, northerly from Meredith	..	·75
" " "	Double coat sealing 16-ft. wide, northerly from Midland Highway	..	1
" " "	General maintenance throughout	..	3
Inverleigh Road	Widening from 12 feet to 18 feet with sealed strips and 1-in. plaut mix seal between Fyansford and Stonehaven	..	1·52
" "	General maintenance throughout	..	16·5
Shelford–Bannockburn Road ..	General maintenance throughout	..	6·5
BALLARAT CITY—			
Melbourne Road	Patrol maintenance	..	·88
BALLARAT CITY AND BALLARAT SHIRE (Joint Works)—			
Ballarat–Creswick Road	Reconstructing and widening existing road, improving curve alignment and premix drag coat	..	·19
" " "	Patrol maintenance	..	·44
BARRABOOL SHIRE—			
Anglesea Road	Reconstruction and double coat sealing, 20 feet wide, at Freshwater Creek ..	..	·38
" "	Reconstruction and double coat sealing, 18 feet wide, south of railway line ..	..	1·13
" "	Patrol maintenance throughout	..	8
Hendy Main Road	Double coat sealing, 16 feet wide, at Paraparap	..	·8
" " "	Double coat sealing, 12 feet wide, at Barrabool	..	1
" " "	Reconstruction, 16 feet wide, at Paraparap	..	·7
" " "	Reconstruction, 16 feet wide, at Moriac	..	·8
" " "	General maintenance throughout	..	14
BASS SHIRE—			
Almurta Road	Widening from 12 feet to 16 feet with granitic sand and double coat sealing 16 feet wide from 68 to 69·5 miles	..	1·5
" "	Patrol maintenance	..	4·95
Almurta Grantville Road ..	Patrol maintenance	..	3·81
Anderson Dalyston Road ..	Widening from 12 feet to 16 feet and double coat bitumen surfacing 16 feet wide from 75 to 76·63 miles	..	1·63
" " " ..	Patrol maintenance throughout	..	6·65
Dalyston–Glen Forbes Road ..	Patrol maintenance throughout	..	10·33
Dalyston–Wonthaggi Road ..	Construction of 4-ft. pipe by 2 ft. 6 in. reinforced concrete box culvert in lieu of timber culvert at 79·1 miles	..	—
" " " ..	Patrol maintenance	..	1·93
Inverloch–Wonthaggi Road ..	Widening from 12 feet to 16 feet and double coat surfacing each outer 6-ft. width from 84·88 to 85·98 miles	..	1·1
" " " ..	Double coat bitumen sealing on transition curve near 84·1 miles	..	·15
" " " ..	Patrol maintenance throughout	..	3·57
Korumburra–Wonthaggi Road ..	Double coat bitumen sealing 12 feet wide from 12·21 to 14·02 miles from Korumburra ..	..	1·81
" " " ..	Patrol maintenance throughout	..	7·72
	Carried forward	—	789.12

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	789·12
BASS SHIRE—*continued.*			
Main Coast Road	Widening from 12 feet to 16 feet, sand sheeting, improving curves and double coat bitumen surfacing 16 feet wide from 66·5 to 68·5 miles		2
" " "	Patrol maintenance throughout		18·66
Wonthaggi–Loch Road	Widening from 12 feet to 16 feet and sheeting southerly from Korumburra Shire Boundary in preparation for bitumen treatment		·95
" " "	Patrol maintenance throughout		16·21
BASS SHIRE AND WONTHAGGI BOROUGH (Joint Works)—			
Loch–Wonthaggi Road	Widening bitumen surface roadway from 12 feet to 18 feet with crushed rock and double coat bitumen surfacing each outer 7-ft. width at easterly end of road		·57
" " "	Patrol maintenance throughout		·7
BEECHWORTH SHIRE—			
Beechworth Road	Sealing three sections near Beechworth		2
" "	Widening road for sealing at the "The Rest"		1·5
" "	General maintenance		24
Bright Road	Preparation for sealing		·5
" "	General maintenance		3·5
Chiltern–Beechworth Road	Reconstruction of timber bridge at Young's Creek		—
" "	General maintenance		8
Everton–Myrtleford Road	Sealing near Brookfield		2·3
" "	Preparation for sealing		1·4
" "	General maintenance		11
Myrtleford–Yackandandah Road	General maintenance		1·5
Stanley Road	Sealing Deep Dreek–Douglan's		1·5
" "	General maintenance		8
BEECHWORTH AND WANGARATTA SHIRES (Joint Works)—			
Beechworth Road	General maintenance		1
BELFAST SHIRE—			
Hamilton Road	Road mix seal ¾-in., 12 feet wide, with bluestone aggregate from 3 to 5·5 miles		2·5
" "	Patrol maintenance throughout		13·5
Penshurst Road	Road mix seal ¾-in., 14 feet wide, with bluestone aggregate from 0 to 2·25 miles		2·25
" "	Patrol maintenance and gravelling of shoulders with basaltic gravel thoroughout		9·5
BELLARINE SHIRE—			
Barwon Heads Ocean Grove Road	Patrol maintenance throughout		1
Geelong–Portarlington Road	Patrol maintenance throughout		17·45
Geelong–Queenscliff Road	Patrol maintenance throughout		14·7
Portarlington–St. Leonard's Road	Patrol maintenance throughout		6·55
BENALLA SHIRE—			
Benalla–Shepparton Road	General maintenance throughout		·9
Goorambat Road	General maintenance throughout		5·6
Goorambat–Thoona Road	General maintenance throughout		11·8
Greta Road	General maintenance throughout		·8
Kelfeera Road	General maintenance throughout		14·79
Lima Road	General maintenance throughout		2·9
Sydney Road	General maintenance throughout		2
Tatong–Tolmie Road	General maintenance throughout		10
BERWICK SHIRE—			
Beaconsfield–Emerald Road	Road mix seal		1·61
" "	Patrol maintenance		6·7
Cockatoo–Gembrook Road	Patrol maintenance from Gembrook to Cockatoo		4·3
Emerald–Cockatoo Road	Patrol maintenance, re-alignment of curve		·2
Gembrook Road	Reconstruction		·85
" "	Patrol maintenance		5·5
Gembrook–Launching Place Road	Patrol maintenance		6·7
Hallam–Emerald Road	Patrol maintenance		4·5
Kooweerup–Longwarry Road	Patrol maintenance		1·6
Nar Nar Goon–Longwarry Road	Road mix seal in Garfield and Tynong Townships		1·41
" " "	Reconstruction and double coat sealing		·83
" " "	Patrol maintenance		11·6
Woori Yallock–Pakenham–Kooweerup Road	Reconstruction		·4
" " " "	Patrol maintenance		23·82
BET BET SHIRE—			
Avoca–Bealiba Road	General maintenance throughout		13·7
Betley Road	General maintenance throughout		4·5
Bridgewater–Dunolly Road	General maintenance throughout		17
Dunolly Road	General maintenance throughout		12
Dunolly–Eddington Road	General maintenance throughout		5
Maryborough–Dunolly Road	General maintenance throughout		4·5
BIRCHIP SHIRE—			
Beulah–Birchip–Wycheproof Road	Patrol maintenance throughout		22
Donald–Birchip–Sea Lake Road	Patrol maintenance throughout		26·75
BLACKBURN AND MITCHAM SHIRE—			
Burwood Road	Resealing with road mix seal, ¾ inch, from 0 to 1·2 miles		1.2
" "	Patrol maintenance throughout		3·8
Main Healesville Road	Reconstruction in crushed rock, widening from 20 feet to 30 feet, and bitumen sealing from 0 to 1·75 miles		1·75
" " "	Patrol maintenance throughout		4·2
BRAYBROOK SHIRE—			
Ballarat Road	General maintenance (mainly shouldering, no maintenance required on rolled concrete section of one mile)		2·3
BRIGHT SHIRE—			
Bright Road	Reforming, re-alignment, gravelling and sealing at Ovens		1·75
" "	Reforming, re-alignment, gravelling and sealing at Porepunkah		1·75
" "	Commencement of construction of 100-ft. span steel and timber bridge over Happy Valley Creek at Ovens		—
" "	Patrol maintenance		20
Harrietville Road	Patrol maintenance		16
Kiewa Valley Road	Patrol maintenance		8
Myrtleford–Yackandandah Road	Patrol maintenance		10·6
	Carried forward	—	1,257·47

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	1,257.47
BROADMEADOWS SHIRE—			
Sydney Road	General maintenance	..	2
BROADMEADOWS AND KEILOR SHIRES (Joint Works)—			
Lancefield Road	Widening pavement to 20 feet between Albion railway and Broadmeadows Road ..	..	·8
" "	General maintenance	..	4·5
BULLA SHIRE—			
Melbourne–Lancefield Road ..	Resheeting with fine crushed rock and sealing northerly from Francis Lane	..	1·44
Sunbury Road	Patrol maintenance	..	2
The Gap Road	Patrol maintenance	..	2
BULLA AND KEILOR SHIRES (Joint Works)—			
Melbourne–Lancefield Road ..	Patrol maintenance	..	14·25
BULN BULN SHIRE—			
Bloomfield Road..	Patrol maintenance	..	·9
Drouin–Poowong Road	Bitumen sealing on sand 13 feet wide	..	2
" " "	Patrol maintenance	..	7·25
Fumina Road	Patrol maintenance	..	9·7
Kooweerup–Longwarry Road ..	Bitumen sealing 12 feet wide	..	2·25
" " " ..	Patrol maintenance, sand sheeting where necessary	..	6·5
Loch Valley Road	Patrol maintenance	..	6·4
Longwarry–Drouin Road	Realignment and resheeting	..	·26
" " "	Patrol maintenance	..	5·7
Main Neerim Road	Patrol maintenance	..	22
Main South Road	Realignment, resheeting and bitumen sealing	..	2
" " "	Patrol maintenance	..	14·75
Neerim East Road	Resheeting and bitumen sealing 12 feet wide	..	2·5
" " "	Patrol maintenance	..	4
Neerim North–Noojee Road ..	Patrol maintenance	..	3·5
Prince's Highway	Patrol maintenance	..	1·06
Westernport Road	Bitumen sealing on sand 13 feet wide	..	1·25
" "	Patrol maintenance	..	8·25
BUNINYONG SHIRE—			
Ballarat–Rokewood Road ..	Bituminous sealing from 2 to 4.1 miles	..	2·1
" " " ..	Reconstruction with gravel from 4.1 to 4.9 miles	..	·8
" " "	General maintenance from 0 to 14 miles..	..	14
Elaine–Mount Mercer Road ..	Reconstruction with gravel from 3.43 to 5 miles	..	1·57
" " " ..	General maintenance from 0 to 5 miles	..	5
CASTLEMAINE BOROUGH—			
Castlemaine–Maryborough Road ..	Reconstruction from railway bridge to Daylesford Road	..	·55
" " " ..	General maintenance	..	1·51
Melbourne–Bendigo Road ..	General maintenance	..	2·96
CHARLTON SHIRE—			
Bendigo Road	Patrol maintenance through township of Charlton	..	1 75
Charlton–Durham Ox Road ..	Double coat bituminous sealing 13 feet wide northerly from Calder Highway ..	..	1·75
" " " ..	Patrol maintenance throughout	..	18
Donald Road	Patrol maintenance throughout	..	12·5
St. Arnaud Road	Gravelling in three sections: West of allotment 8, section 8; west of allotment 2, section 9; and east of allotments 7 and 8, section 9, parish of Charlton East	..	1·11
" "	Resheeting with granitic gravel from 11·8 to 12·18 miles	..	·38
" "	Double coat bituminous sealing 16 feet wide from 9·53 to 11·8 miles	..	2·27
" "	Patrol maintenance throughout	..	15
Wycheproof–Wooronook Road ..	Patrol maintenance throughout	..	6·5
CHELSEA CITY—			
Edithvale–Springvale Road ..	General maintenance	..	·83
Point Nepean Road	Drag spread seal between Carrum and Chelsea	..	1·32
" " "	General maintenance	..	5·66
CHILTERN SHIRE—			
Barnawartha–Howlong Road ..	Patrol maintenance	..	5·9
Chiltern Beechworth Road ..	Patrol maintenance	..	6·6
Chiltern–Howlong Road	Shouldering and reshaping	..	1
" " "	Patrol maintenance throughout	..	7·1
Chiltern–Rutherglen Road ..	Patrol maintenance	..	3·8
Sydney Road	Patrol maintenance	..	1·15
CLUNES BOROUGH—			
Ballarat–Maryborough Road ..	Construction of reinforced concrete superstructure on existing stone abutments of Kilkenny Creek bridge	..	·01
" " " ..	Patrol maintenance throughout	..	3·2
Clunes–Creswick Road	Double coat sealing 16 feet wide on gravel from 0 mile at Ballarat–Maryborough Road towards Creswick	..	·5
" " "	Patrol maintenance throughout	..	2·1
COHUNA SHIRE—			
Cohuna–Koondrook Road ..	Reforming and sheeting with coarse sand from junction with Murray Valley Highway ..	..	3·02
" " "	Patrol maintenance throughout	..	8·5
Cohuna–Leitchville Road ..	Resheeting with fine crushed rock commencing 3·5 miles from Leitchville	..	1·5
" " "	Patrol maintenance throughout	..	10·75
COLAC SHIRE—			
Colac–Ballarat Road	Road mix seal from 4 to 5 miles	..	1
" " "	General maintenance throughout	..	21·4
Colac–Beech Forest Road ..	General maintenance throughout	..	11·25
Colac–Cororooke Road	Road mix seal from 1 to 2·65 miles	..	1·65
" " "	General maintenance throughout	..	7·25
Colac–Forrest Road	Reconstruction of gravelled road with fine crushed rock and double coat sealing from 4·6 to 5·22 miles	..	·62
" " "	General maintenance throughout	..	16·9
Cressy–Inverleigh Road	Reconstruction with fine crushed rock and double coat sealing from 7·17 to 8·7 miles ..	..	1·53
" " "	General maintenance throughout	..	8·7
Swan Marsh Road	Construction of single-span timber bridge 40 feet long over Tirrengower drain at 5·47 miles	..	·01
" " "	General maintenance throughout	..	5·66
	Carried forward	—	1,611·39

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	1,611·39
CORIO SHIRE—			
Geelong–Bacchus Marsh Road ..	General maintenance throughout	..	20
CRANBOURNE SHIRE—			
Baxter–Tooradin Road	General maintenance between Hastings Road and South Gippsland Highway ..	..	4
Cranbourne–Frankston Road ..	Crushed rock surfacing and sealing from the Frankston Shire boundary towards Cranbourne	..	·85
,, ,, ,, ..	Crushed rock surfacing and sealing from end of surfaced road at Brown's towards Frankston	..	·85
,, ,, ,, ..	General maintenance throughout	..	7·5
Kooweerup–Longwarry Road ..	Regrading and surfacing with crushed rock in preparation for sealing	..	·85
,, ,, ,, ..	Construction of 54-in. diameter reinforced concrete pipe culvert to replace old timber bridge at junction with Shea's road	..	—
,, ,, ,, ..	General maintenance throughout	..	11
Kooweerup–Pakenham Road ..	General maintenance throughout	..	5·5
Main Coast Road	Widening gravel to 18 feet and sealing 16 feet wide southerly from the South Gippsland Highway	..	**2·3**
,, ,, ,, ...	Widening gravel to 18 feet in preparation for sealing northerly from the Bass Shire boundary	..	2·5
,, ,, ,, ...	General maintenance throughout	..	8
Westernport Road	General maintenance throughont	..	9
CRESWICK SHIRE—			
Castlemaine–Ballarat Road ..	Widening waterbound macadam road to 20 feet, realigning curves and sheeting with gravel from 10·1 to 12·78 miles at Smeaton	..	2·68
,, ,, ,, ..	Construction of reinforced concrete box culvert and approaches across Stoney Creek at 18·1 miles	..	·14
,, ,, ,, ..	Double coat sealing 16 feet wide on gravel 20 feet wide from 9·35 to 12·78 miles ..	..	**3·43**
,, ,, ,, ..	Widening waterbound macadam road from 12 feet to 20 feet, realigning curves and light gravel sheeting from 20·92 to 23·7 miles	..	2·78
,, ,, ,, ..	Patrol maintenance throughout	..	23·7
Clunes–Creswick Road	Light resheeting of gravel 16 feet wide and double coat sealing from 1·1 to 3·2 miles at Ballarat Shire boundary	..	2·1
,, ,, ,, ...	Double coat sealing 16 feet wide on gravel from Ballarat Shire boundary to Talbot Shire boundary	..	1·07
,, ,, ,, ...	Patrol maintenance throughout	..	4·4
Creswick–Smeaton Road	Double coat sealing 16 feet wide on gravel from ·25 mile to 3·15 miles	..	2·9
,, ,, ,, ...	Patrol maintenance from 0 mile at Creswick to 3·15 miles	..	3·15
Daylesford–Ballarat Road ..	Widening waterbound macadam road to 20 feet, realigning curves, sheeting with gravel and double coat sealing from 6·04 to 9·69 miles	..	3·65
,, ,, ,, ..	Deviation, gravelling and double coat sealing 20 feet wide to re-align curve at 3·7 miles at Scrub Hill	..	·15
,, ,, ,, ..	Patrol maintenance throughout	..	12·4
DANDENONG SHIRE—			
Cheltenham Road	Patrol maintenance throughout	..	6·4
Prince's Highway	Patrol maintenance throughout	..	1·8
Springvale Road	Reconstruction in fine crushed rock 20 feet wide and double coat bituumen sealing northerly from southern Shire boundary	..	4·31
,, ,, ...	Patrol maintenance throughout	..	7·38
DANDENONG AND CRANBOURNE SHIRES (Joint Works)—			
Dandenong–Frankston Road ..	Patrol maintenance throughout	..	6·1
DAYLESFORD BOROUGH—			
Ballan Road	Patrol maintenance throughout	..	1·6
Ballarat Road	Patrol maintenance throughout	..	1·05
Castlemaine Road	Patrol maintenance throughout	..	·65
Daylesford–Hepburn Road ..	Patrol maintenance throughout	..	1·14
Daylesford–Trentham Road ..	Patrol maintenance throughout	..	·9
Malmsbury–Daylesford Road ..	Patrol maintenance throughout	..	1·42
DEAKIN SHIRE—			
Echuca–Cornella Road	Forming and sanding	..	·54
,, ,, ,, ...	Patrol maintenance	..	7
Echuca–Picola Road	Scarifying, widening, shouldering	..	1
,, ,, ,, ...	Patrol maintenance	..	4
Kyabram–Nathalia Road ..	Patrol maintenance throughout	..	7
Kyabram–Tongala Road	Patrol maintenance throughout	..	8
Rochester–Kyabram Road ..	Scarifying, widening, resheeting in preparation for sealing	..	2·5
,, ,, ,, ..	General maintenance	..	11·5
DEAKIN AND NUMURKAH SHIRES (Joint Works)—			
Echuca–Picola Road	Flood damage repairs to Stewart's bridge	..	—
DEAKIN AND RODNEY SHIRES (Joint Works)—			
Kyabram–Tongala Road	Patrol maintenance throughout	..	1
Rochester–Kyabram Road ..	Patrol maintenance throughout	..	3
DIMBOOLA SHIRE—			
Hopetoun–Rainbow Road ..	General maintenance throughout	..	5
Horsham Road	General maintenance throughout	..	·81
Rainbow Road	Limestone rubbling loam formations between 11·9 and 14·9 miles from Dimboola ..	..	2·84
,, ,, ...	Resheeting limestone rubble sections between 14·55 and 15·05 miles from Dimboola	..	·32
,, ,, ...	Double coat bitumen surfacing between Arkona and Antwerp	..	1·32
,, ,, ...	Forming and loaming between 6 and 7 miles south of Rainbow	..	1·13
,, ,, ...	Patrol maintenance throughout	..	42
Rainbow–Beulah–Birchip Road ..	Limestone rubbling between ·3 and 1·3 miles from Rainbow	..	·83
,, ,, ,, ,, ..	Resheeting with limestone rubble from 4·15 to 4·91 miles from Rainbow	..	·76
,, ,, ,, ,, ..	Resheeting with limestone rubble from 7·2 to 7·86 miles from Rainbow	..	·66
,, ,, ,, ,, ..	Limestone rubbling between 8·4 and 10·95 miles from Rainbow	..	·66
,, ,, ,, ,, ..	Resheeting with limestone rubble from 9·8 to 10·35 miles from Rainbow	..	·57
,, ,, ,, ,, ..	General maintenance throughout	..	14
Rainbow Rises Road	General maintenance throughout	..	6
Warracknabeal Road	Double coat bitumen surfacing between ·43 and 1·63 miles from Dimboola ..	..	·38
,, ,, ...	Road mix seal between 0 and 3·28 miles from Dimboola	..	1·7
,, ,, ...	Patrol maintenance throughout	..	9·5
DIMBOOLA AND KARKAROOC SHIRES (Joint Works)—			
Hopetoun–Rainbow Road ..	Limestone rubbling existing loam formations between 3·05 and 3·75 miles from Rainbow	..	·55
	Carried forward	—	1,913.61

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	1,913 61
DONALD SHIRE—			
Donald–Charlton Road	Sealing at slaughter yards	..	1·12
,, ,, ,, ...	Sealing at Salt Flat	..	1·12
,, ,, ,, ...	Resheeting with granite sand northerly from the Water Reserve	..	·95
,, ,, ,, ...	Patrol maintenance throughout	..	13
Marnoo–Donald Road	Sealing at Rich Avon	..	2·27
,, ,, ,, ...	Patrol maintenance throughout	..	12·7
St. Arnaud–Birchip Road ..	Road mix seal south of Donald	..	3·86
,, ,, ,, ..	Patrol maintenance throughout	..	28·7
DONCASTER AND TEMPLESTOWE SHIRE—			
Doncaster Road	Resealing	..	1·5
,, ,, ,, ..	General maintenance	..	6·2
Heidelberg–Warrandyte Road ..	Resealing	..	1·5
,, ,, ,, ..	Double coat sealing	..	·19
,, ,, ,, ..	General maintenance	..	9·8
Warrandyte–Ringwood Road ..	Double coat sealing	..	·38
,, ,, ,, ..	Patrol maintenance	..	4
DUNDAS SHIRE—			
Hamilton–Mt. Gambier Road ..	Road mix seal from 1·3 to 1·7, 3·3 to 4 miles and 6·75 to 7·15 miles in the Parish of Bochara	..	1·44
Hamilton Port Fairy Road ..	Road mix seal from 0 to 3·42 miles, 4·1 to 4·5 miles, 5·4 to 6·9 miles, 7·4 to 7·8 miles, 8·3 to 8·9 miles, 10 to 10·5 miles, 13·2 to 13·6 miles and 14 to 14·3 miles in the Parishes of South Hamilton, Monivae and Byaduk	..	7·56
Hamilton–Warrnambool Road ..	Road mix seal from 2·3 to 2·8 miles, 3·75 to 4·15 miles and 5·9 to 6·8 miles in the Parishes of South Hamilton and Croxton West	..	1·8
,, ,, ,, ..	Modified macadam surfacing from ·85 to 1·15 miles	..	·3
DUNMUNKLE SHIRE—			
Horsham–Murtoa Road	Road mix seal near Shire boundary	..	1·66
,, ,, ,, ...	Patrol maintenance throughout	..	5·34
Marnoo–Donald Road	Patrol maintenance throughout	..	3·5
Marnoo Rupanyup Road	Widening and resheeting near Rupanyup	..	3·17
,, ,, ,, ...	Patrol maintenance throughout	..	10·18
Minyip–Donald Road	Resheeting with fine crushed rock 1 mile from Minyip	..	1·11
,, ,, ,, ...	Widening pavement from 15 feet to 18 feet and sealing extra width at Minyip ..	..	·42
,, ,, ,, ...	Patrol maintenance throughout	..	2·98
Rupanyup–Murtoa Road	Construction of 3-cell reinforced concrete culvert over Dunmunkle Creek	..	—
,, ,, ,, ...	Patrol maintenance throughout	..	9·25
Stawell–Warracknabeal Road ..	Widening from 15 to 18 feet and sealing extra width north of Minyip and south of Rupanyup	..	8·9
,, ,, ,, ..	Bitumen sealing	..	2·24
,, ,, ,, ..	Patrol maintenance throughout	..	28·71
EAGLEHAWK BOROUGH—			
Mount Korong Road	Construction and erection of 280 tree guards and planting sugar gums, 1·4 miles ..	..	—
,, ,, ,, ...	Patrol maintenance throughout	..	4·5
EAST LODDON SHIRE—			
Borung–Prairie Road	General maintenance	..	1·5
Dingee Road	General maintenance, shouldering where necessary	..	7·16
Mitiamo Road	General maintenance, shouldering where necessary	..	5·05
Prairie Road	General maintenance, shouldering where necessary	..	7·98
ELTHAM SHIRE—			
Eltham–Yarra Glen Road ..	Widening curves and gravelling from 1 to 2 miles and 10 to 11·5 miles	..	2·5
,, ,, ,, ..	Construction of double 36-in. pipe culvert at 16 miles	..	—
,, ,, ,, ..	Patrol maintenance	..	21
Hurstbridge–Kinglake Road ..	Widening curves and gravelling from 5·5 to 7·5 miles	..	2
,, ,, ,, ..	Patrol maintenance	..	16
Kangaroo Ground Warrandyte Road	Patrol maintenance	..	3·6
Yarra Glen–Glenburn Road ..	Sealing from 0 to ·8 mile	..	·8
,, ,, ,, ..	Patrol maintenance	..	8
ESSENDON CITY—			
Keilor Road	General maintenance	..	·16
Sunbury Road	Priming, double coat bituminous spraying and binding with premix toppings at junction with Mount Alexander and Keilor Roads	..	—
,, ,, ...	General maintenance	..	·23
EUROA SHIRE—			
Arcadia Road	Double coat sealing	..	2·75
,, ,, ...	Patrol maintenance throughout	..	5·7
Avenel–Longwood Road	Patrol maintenance throughout	..	2·1
Euroa–Arcadia Road	Shouldering and double coat sealing	..	3
,, ,, ,, ...	Patrol maintenance throughout	..	17·2
Euroa–Mansfield Road	Patrol maintenance throughout	..	16·1
Euroa–Strathbogie Road	Resurfacing and double coat sealing	..	2·25
,, ,, ,, ...	Patrol maintenance throughout	..	19·2
Murchison–Violet Town Road ..	Patrol maintenance throughout	..	13·5
FERNTREE GULLY SHIRE—			
Beaconsfield Emerald Road ..	Patrol maintenance	..	·5
Belgrave–Emerald Road	Resurfacing near Emerald and Aura	..	1·62
,, ,, ,, ...	Patrol maintenance	..	6·73
Burwood Road	Regrading, widening and resurfacing at Lower Ferntree Gully	..	·7
,, ,, ...	Patrol maintenance	..	4·5
Emerald Road	Widening near Emerald township	..	·3
,, ,, ...	Patrol maintenance	..	3·25
Main Ferntree Gully Road	Regrading, widening and resurfacing at Lower Ferntree Gully and Scoresby ..	..	1·25
,, ,, ,, ,, ...	Resurfacing near Tecoma, Upwey and Belgrave	..	1·6
,, ,, ,, ,, ...	Patrol maintenance	..	10·8
Monbulk Road	Widening and resurfacing at Kallista	..	·57
,, ,, ...	Patrol maintenance	..	5
Olinda Road	Widening curve and resurfacing at The Ram, Ferny Creek	..	·25
,, ,, ...	Patrol maintenance	..	6
	Carried forward		2,294·81

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
FLINDERS SHIRE—	Brought forward	—	2,294·81
Bittern–Dromana Road	Widening and reconstruction of base course at Dunn's Creek		·93
" " "	Reconstruction and sealing at French's Flat		·5
" " "	Sealing at junction with Mornington–Balnarring Road		·76
" " "	Patrol maintenance throughout		9·5
Hastings–Flinders Road	Widening, sheeting and sealing at Bittern		1
" " "	Widening and sheeting at Flinders		·32
" " "	Patrol maintenance throughout		17
Mornington–Dromana Road	Patrol maintenance throughout		2·5
Mornington–Flinders Road	Construction of deviation and sealing at Bowring's Corner		·25
" " "	Patrol maintenance throughout		12
Point Nepean Road	Realignment, regrading and sealing at White Cliffs		·76
" " "	Widening and sealing at Rosebud		·38
" " "	Patrol maintenance throughout		21·5
Red Hill Road	Widening, sheeting and sealing		·9
" " "	Patrol maintenance throughout		3·75
Rosebud–Flinders Road	Construction of twin 7 feet x 7 feet reinforced concrete culvert and approaches at Stockyard Creek		·25
" " "	Reconstruction at Flinders		·5
" " "	Sealing at Boneo		·35
" " "	Patrol maintenance throughout		13·5
Stony Point Road	Patrol maintenance throughout		4
FRANKSTON AND HASTINGS SHIRE—			
Baxter–Tooradin Road	Premix sealing from Baxter Railway to three cross roads		1·1
" " "	General maintenance throughout		1·9
Cranbourne–Frankston Road	General maintenance throughout		1·5
Frankston–Dandenong Road	General maintenance throughout		5·5
Frankston–Flinders Road	Reconstruction and double coat sealing from Coolart Road to Somerville		1·8
" " "	Reconstruction and double coat sealing southerly from Bungower Road		·71
" " "	Double coat sealing deviation near Hastings		·45
" " "	General maintenance throughout		14
Mooroodue Road	Premix sealing various sections		·2
" "	General maintenance throughout		3
Point Nepean Road	Single and double traffic line marking		6·5
" " "	General maintenance throughout		7·5
Tyabb–Mornington Road	Reconstruction and double coat sealing between Stumpy Gully and Coolart Road		·3
" " "	General maintenance throughout		4·8
GISBORNE SHIRE—			
Bacchus Marsh Road	Reconditioning		2·27
" " "	General maintenance		9·7
Gisborne Station Road	General maintenance		1·2
Mount Macedon Road	Patrol maintenance throughout		6·7
GLENELG SHIRE—			
Casterton–Penola Road	Sheeting with crushed rock six sections between 25 miles and South Australian border		1·21
" " "	Patrol maintenance throughout		28
Coleraine–Casterton Road	Sheeting with crushed rock and double coat sealing approaches to Glenelg River bridge		·31
" " "	Construction of reinforced concrete culvert with two openings each 7 ft. x 6 ft. and 80 feet long at Pierce's bridge		—
" " "	Patrol maintenance throughout		7
Dergholm Road	Sheeting with crushed rock between 5 and 6 miles		·75
" "	Double coat sealing between 5 and 8 miles		2·28
" "	Sheeting with crushed rock from approximately 6 to 7 miles		1·33
" "	Patrol maintenance throughout		22
Mount Gambier Road	Gravel sheeting and double coat sealing from approximately 8 to 12 miles		4·24
" " "	Road mix seal on modified macadam from Casterton Town boundary to golf links		1·21
" " "	Patrol maintenance throughout		30
Portland–Casterton Road	Sheeting with gravel and double coat sealing between Merino and Digby		5·46
" " "	Road mix seal, High Street, Merino		·64
" " "	Patrol maintenance throughout		20
Wando Vale Road	Sheeting with gravel and double coat sealing from approximately 3 to 5 miles		2·18
" " "	Patrol maintenance throughout		6.5
GLENLYON SHIRE—			
Ballan Road	General maintenance throughout		4·45
Ballarat Road	General maintenance throughout		3·5
Castlemaine–Daylesford Road	General maintenance throughout		13
Daylesford–Trentham Road	General maintenance throughout		10
Malmsbury–Daylesford Road	General maintenance throughout		15
GORDON SHIRE—			
Charlton–Durham Ox Road	General maintenance throughout, power grader maintenance, double coat sealing, re-sheeting, widening from 13 feet to 16 feet, and provision of running planks on bridges		26
GOULBURN SHIRE—			
Avenel–Longwood Road	General maintenance, gravelling		9
Vickers Road	General maintenance, gravelling		1·5
GRENVILLE SHIRE—			
Ballarat–Hamilton Road	Patrol maintenance from 0 to 24·1 miles		24·1
Cressy Road	Patrol maintenance throughout		9·5
Lismore Road	Construction of culverts at 1·9 miles		—
" "	Patrol maintenance throughout		10
Lismore–Pittong Road	Patrol maintenance throughout		9·8
Pitfield Road	Gravel reconstruction and double coat sealing between 2·55 and 4·3 miles, omitting section for deviation at 4 miles		1·6
" " "	Patrol maintenance throughout		12·6
HAMPDEN SHIRE—			
Ayresford Road	Reshaping and double coat sealing on basaltic gravel 12 feet wide southerly from Prince's Highway		1·6
" " "	Light sheeting short sections 12 feet wide from 1·6 to 3·3 miles south from Prince's Highway		1·7
" " "	Patrol maintenance throughout		3·3
Camperdown–Ballarat Road	Lengthening five existing pipe culverts from 20 feet to 30 feet and rebuilding masonry end walls between 14·3 and 15·65 miles north from Prince's Highway		—
" " "	Construction of reinforced concrete deck slab at 20 miles north from Prince's Highway		—
" " "	Road mix seal ¾ in. 10 ft. wide, from 22 to 22·25 miles north from Prince's Highway		.25
" " "	Construction by Railways Department of new railway crossing near Lismore at 22·4 miles north from Prince's Highway		—
" " "	Commencement of reforming and gravelling 12 feet wide southerly from Caramut–Lismore Road, 1·2 miles		—
" " "	Road mix seal ¾ inch, 12 feet wide, from 12·51 to 14·95 miles north from Caramut–Lismore Road		2·44
" "	Commencement of construction of deviation and transitioned curves from ·35 to ·55 miles south of bridge over Mount Emu Creek in township of Skipton, ·2 miles		—
" " "	Widening from 10 to 16 feet and reconstruction of curves between ·2 and 3·1 miles north-east of bridge over Mount Emu Creek in township of Skipton, omitting ·17 miles for proposed deviation		2·73
" " "	Patrol maintenance throughout		48·36
	Carried forward	—	2,798·13

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	2,798·13
HAMPDEN SHIRE—*continued.*			
Camperdown–Cobden Road ..	Scarifying and reshaping gravel and double coat sealing 16 feet wide at deviation from 1·75 to 1·85 miles south from Prince's Highway	..	·1
" " " ..	Patrol maintenance throughout	..	3·34
Caramut–Lismore Road	Completion of widening pavement from 10 to 16 feet, and realignment of curve (transitioned); then double coat sealing westerly from Camperdown–Ballarat Road	..	1·25
" " "	Widening with basaltic gravel from 10 to 16 feet, realignment of curves and double coat sealing from 3·75 to 5·95 miles west from Camperdown–Ballarat Road	..	2·2
" " "	Construction of concrete deck slab on existing masonry culvert walls 11·12 miles west from Camperdown–Ballarat Road	..	—
" " "	Patrol maintenance throughout	..	16
Cobden–Terang Road	Double coat sealing 16 feet wide on basaltic gravel from ·12 to ·82 mile south from Prince's Highway	..	·7
" " "	Widening from 10 to 16 feet, scarifying, reshaping and sheeting with basaltic gravel, including deviation and construction of new curve at 1 mile, from ·82 to 1·77 miles south from Prince's Highway	..	·95
" " "	Patrol maintenance throughout	..	2·95
Darlington–Terang Road	Regrading, re-alignment of curves, widening from 10 to 16 feet and sheeting with basaltic gravel northerly from Terang–Mortlake Road	..	1
" " "	Patrol maintenance throughout	..	3·35
Lismore Road " .. "	Light sheeting short sections with crushed rock 10 feet wide north-easterly from Lismore–Cressy Road	..	2
" " "	Patrol maintenance throughout	..	4·45
Lismore–Cressy Road	Completion of construction of 4 feet by 1 foot 6 inches box culvert 30 feet long, 17 miles east from Camperdown–Ballarat Road	..	—
" " "	Completion of construction of double 4 feet by 2 feet box culvert 30 feet long, 17·23 miles east from Camperdown–Ballarat Road	..	—
" " "	Widening basaltic gravel from 10 to 16 feet from 2·3 to 4·2 miles east from Camperdown–Ballarat Road	..	1·9
" " "	Patrol maintenance throughout	..	18·79
Lismore–Pittong Road	Reshaping and sheeting with quartz gravel 12 feet wide in preparation for sealing from 9·76 to 11·06 miles north from Lismore–Cressy Road	..	1·3
" " "	Light sheeting short sections 10 feet wide easterly from 11·06 miles north from Lismore–Cressy Road	..	1·34
" " "	Light sheeting short sections with crushed rock 12 feet wide northerly from Lismore–Cressy Road	..	2·5
" " "	Patrol maintenance throughout	..	12·4
McKinnon's Bridge–Noorat Road ..	Patrol maintenance throughout	..	3·85
Prince's Highway	Road mix seal ¾ inch, 20 feet wide, in township of Camperdown	..	·42
" " "	Road mix seal ¾ inch, 20 feet wide, in township of Terang	..	·42
" " "	Patrol maintenance throughout in townships of Camperdown and Terang	..	2·63
Terang–Framlingham Road ..	Patrol maintenance throughout	..	1·6
Terang–Mortlake Road	Completion of deviation at sharp corner and reconstruction of curve, including removal of house; then double coat sealing from ·55 to ·72 mile north from Prince's Highway	..	·17
" " "	Road mix seal ¾ inch, 15 feet wide, from 2·9 to 3·4 miles north from Prince's Highway	..	·5
" " "	Patrol maintenance throughout	..	7
HEALESVILLE SHIRE—			
Healesville–Alexandra Road ..	Patrol maintenance from south-western township boundary to Doncaster Road ..	..	1·38
Healesville–Kinglake Road ..	Road mix seal easterly from railway level crossing	..	·19
" " " ..	Patrol maintenance from Healesville–Alexandra Road to railway crossing	..	·4
Healesville–Woori Yallock Road ..	Double coat sealing from Badger Creek southerly to Spring Creek	..	1·32
" " " ..	Patrol maintenance from Healesville–Alexandra Road to Shire boundary	..	8
HEIDELBERG CITY—			
Greensborough–Hurstbridge Road ..	Widening and carpeting from 3·46 to 3·58 miles..	..	·12
" " " ..	General maintenance throughout	..	9·15
Heidelberg–Warrandyte Road ..	General maintenance throughout	..	·47
Main Heidelberg–Eltham Road ..	Superelevating and carpeting south approach to Darebin Creek Bridge	..	—
" " " " ..	Reshaping and carpeting intersection at Lower Plenty Road, at 6 miles	..	—
" " " " ..	Superelevating and widening intersection of Lower Heidelberg and McArthur Roads, at 3·36 miles	..	—
" " " " ..	General maintenance throughout	..	7·63
Main Whittlesea Road	General maintenance throughout	..	1·19
HEYTESBURY SHIRE—			
Camperdown–Cobden Road ..	Gravelling shoulders	..	·5
" " " ..	Patrol maintenance throughout	..	5
Cobden–Port Campbell Princetown Road	Double coat sealing at Scott's Creek	..	·37
" " " "	Reconstruction and gravelling southerly from Curdie's River	..	3·65
" " " ..	Patrol maintenance from Cobden to Newfield only	..	19
Cobden–Scott's Creek Road ..	Double coat bitumen sealing	..	4·44
" " " ..	Patrol maintenance throughout	..	7·25
Cobden–Terang Road	Road mix seal at Dixie	..	2·86
" " "	Double coat sealing at Cobrico	..	1·06
" " "	Patrol maintenance throughout	..	12
Timboon–Nirranda Road	Double coat sealing at Curdie's River	..	1·5
" " " ..	Reforming and gravelling old limestone pavement	..	1·28
" " " ..	Patrol maintenance throughout	..	8
Timboon–Port Campbell Road ..	Patrol maintenance throughout	..	5
HORSHAM TOWN—			
Dimboola–Horsham Road ..	General maintenance throughout	..	2
Dooen Road	Widening from 15 to 20 feet from Firebrace Street to Palk Street..	..	·75
" " " ..	General maintenance throughout	..	2
Hamilton Road	General maintenance throughout	..	1·5
Natimuk Road	General maintenance throughout	..	1·5
Western Highway	General maintenance throughout	..	·75
HUNTLY SHIRE—			
Elmore–Heathcote Road	Bitumen sealing in township of Elmore to Campaspe Bridge	..	·21
Goornong–Colbinabbin Road ..	General maintenance of gravel road from Northern Highway to Ferguson's Bridge ..	..	2·23
INGLEWOOD BOROUGH—			
Bendigo–Charlton Road	General maintenance throughout	..	1·5
KANIVA SHIRE—			
Broughton Road	Resheeting with limestone from 4·3 to 4·6 miles..	..	·3
" " "	Patrol maintenance throughout	..	9·9
Kaniva–Edenhope Road	Resheeting with gravel from 5·94 to 6·59 miles	..	·64
" " "	Patrol maintenance throughout	..	12·1
Nhill–Kaniva–Border Road ..	Road mix seal ¾ inch, through township of Kaniva	..	·38
" " "	Patrol maintenance throughout	..	·7
South Lillimur Road	Road mix seal ¾ inch, from ·76 to 1·14 miles	..	·38
" " "	Patrol maintenance throughout	..	6·5
Yearinga Road	Resheeting with limestone from 2·65 to 3·02 miles, 4·75 to 5·02 miles and 5·25 to 5·43 miles	..	·83
" "	Patrol maintenance throughout	..	9·7
	Carried forward..	—	3,046·87

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	3,046·87
KARA KARA SHIRE—			
Avoca–St. Arnaud Road	Sealing between St. Arnaud and Medlyn		3·4
" " "	Construction of two reinforced concrete box culverts each containing three 4 ft. x 3 ft. cells, between St. Arnaud and Carapooee West and between Stuart Mill and Redbank		—
" " "	Patrol maintenance throughout		22
Charlton Road	Patrol maintenance throughout		9
Marnoo Road	Patrol maintenance throughout		2·1
Navarre Road	Sealing between St. Arnaud and Beazley's Bridge		·96
" "	Construction of 10-ft. span reinforced concrete culvert at Tottington		—
" "	Patrol maintenance throughout		22
St. Arnaud–Donald Road	Patrol maintenance throughout		16
St. Arnaud–Marnoo Road	Patrol maintenance throughout		18
KARKAROOC SHIRE—			
Hopetoun–Rainbow Road	Patrol maintenance		24
Hopetoun – Woomelang – Sea Lake Road	Reconditioning and resheeting to 20 feet wide for sealing		·5
" " " "	Patrol maintenance throughout		20
Rainbow–Beulah–Birchip Road	Widening from 12 feet to 16 feet resheeting and reconditioning for sealing		1·5
" " " "	Patrol maintenance		24
KERANG SHIRE—			
Koondrook Road	Shoulder maintenance in township of Koondrook		1
KILMORE SHIRE—			
Heathcote Road	Patrol maintenance throughout		3·56
Kilmore–Kilmore East Road	Double coat sealing from 1·31 to 1·81 miles		·5
" "	General maintenance throughout		2·26
Lancefield–Kilmore Road	Double coat sealing from ·75 mile to Payne's Lane		·54
" " "	Patrol maintenance throughout		1·28
KILMORE AND PYALONG SHIRES (Joint Works)—			
Heathcote Road	Double coat sealing from Boran's to Pearce's		1·2
" "	Patrol maintenance throughout		2·99
KILMORE AND ROMSEY SHIRES (Joint Works)—			
Lancefield–Kilmore Road	Patrol maintenance throughout		2·28
KOROIT BOROUGH—			
Koroit–Warrnambool Road	Road mix seal ¾ in. 16 ft. wide from Koroit to Southern Cross		2
" " "	Patrol maintenance throughout		6·25
KORONG SHIRE—			
Borung–Hurstwood Road	General maintenance throughout		7
Charlton–Bendigo Road	Replacement of timber culvert		—
" " "	General maintenance throughout		1
Serpentine Road	General maintenance throughout		10·5
KORUMBURRA SHIRE—			
Bena–Kongwak Road	Road mix seal, ¾ inch, from ·76 to 1·67 miles		·91
" " "	General maintenance throughout		11·5
Bena–Korumburra Road	Road mix seal, ¾ inch, from ·76 to 1·67 miles		·91
" " "	General maintenance throughout		11·5
Bena–Poowong Road	Road mix seal, ¾ inch, from 1·75 to 2·91 miles and 5·18 to 6·01 miles		1·99
" " "	Double coat sealing from 3·39 to 5·07 miles		1·68
" "	General maintenance throughout		6·01
Fairbank Road	Double coat sealing from 0 to 2 miles		2
" "	Reconstruction and resheeting from 2 to 3 miles		1
" "	General maintenance throughout		5·4
Jeetho West Road	General maintenance throughout		2·84
Kongwak–Inverloch Road	Double coat sealing from 3·44 to 4·44 miles		1
" " "	Reforming, resheeting and construction of concrete culverts from 4·44 to 6·3 miles		1·86
" "	General maintenance throughout		6·3
Korumburra–Drouin Road	General maintenance throughout		4·7
Korumburra–Leongatha Road	General maintenance throughout		4·54
Korumburra–Warragul Road	Road mix seal, ¾ inch, from 0 to ·35 miles and 6·57 to 8·02 miles		1·8
" " "	General maintenance throughout		12·21
Korumburra–Wonthaggi Road	Road mix seal, ¾ inch, on bitumen in three sections from 7·84 to 8·85 miles, 10·18 to 10·71 miles, and 11·16 to 12·21 miles		2·59
" " "	General maintenance throughout		12·21
Lang Lang–Nyora Road	General maintenance throughout		1·44
Loch–Bena Road	General maintenance from 0 to 1·57 miles and 2·78 to 4·7 miles		3·49
Loch–Nyora Road	Road mix seal, ¾ inch, 1·05 to 1·6 miles		·55
" " "	General maintenance throughout		5·2
Loch–Wonthaggi Road	Road mix seal, ¾ inch, from 2·07 to 3·08 miles		1·01
" " "	General maintenance throughout		4·64
Nyora–Poowong Road	General maintenance throughout		6·08
Poowong–Drouin Road	General maintenance throughout		6·71
Poowong–Ranceby Road	Road mix seal, ¾ inch, from 0 to 2·57 miles		2·57
" " "	General maintenance throughout		4·3
KOWREE SHIRE—			
Booroopki Road	Double coat bitumen sealing west of Goroke		1·4
" "	General maintenance throughout		13·5
Booroopki–Frances Road	General maintenance throughout		18
Edenhope–Goroke Road	General maintenance throughout		28·5
Hamilton–Edenhope–Apsley Road	Double coat bitumen sealing between Edenhope and Harrow, Edenhope and Apsley, and from Apsley to the South Australian border		12·1
" " " "	General maintenance throughout		41
Harrow–Horsham Road	Gravelling and culverts near Wombelano		·09
" " "	General maintenance throughout		19
Kaniva–Edenhope Road	General maintenance throughout		14·5
Minimay–Apsley Road	General maintenance throughout		16
Wombelano Road	Forming and gravelling east of White Lake near Douglas		1·89
" "	General maintenance throughout		21
KYNETON SHIRE—			
Daylesford Road	General maintenance throughout at Malmsbury		·7
Daylesford–Trentham Road	Patrol maintenance throughout at Trentham		2·45
Melbourne–Bendigo Road	Reconditioning and double coat sealing at Kyneton		·24
" " "	Road mix seal		·27
" " "	General maintenance throughout		1·75
Redesdale Road	Crushed rock reconditioning and double coat sealing		·53
" "	General maintenance throughout		6·25
Trentham Road	Crushed rock reconditioning		1·62
" "	Patrol maintenance throughout		17·5
Tylden–Woodend Road	Patrol maintenance throughout		3·25
	Carried forward	—	3,603·17

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	3,603·17
LEIGH SHIRE—			
Ballarat–Rokewood Road ..	Double coat sealing through Corindhap township	..	2·04
,, ,, ,, ...	Resurfacing north of Corindhap	..	1
,, ,, ,, ...	Patrol maintenance throughout	..	8
Bannockburn–Shelford Road ..	Patrol maintenance throughout	..	6·5
Inverleigh–Cressy Road	Road mix seal, ⅜ inch, from Warrambine Creek to Shire boundary	..	2·75
,, ,, ,, ...	Patrol mantenance throughout	..	11·5
Rokewood–Cressy Road	Double coat sealing southerly from Ferrer's Creek	..	1·04
,, ,, ,, ...	Patrol maintenance throughout	..	11
Shelford–Inverleigh Road ..	Patrol maintenance throughout	..	6
Shelford–Rokewood Road.. ..	Reconstruction westerly from Shelford	..	3·59
,, ,, ,, ...	Reconstruction easterly from Warrambine Creek	..	2·7
,, ,, ,, ...	Patrol maintenance throughout	..	17
Werneth Road	Patrol maintenance throughout	..	3
LEIGH AND COLAC SHIRES (Joint Works)—			
Cressy–Inverleigh Road	Patrol maintenance throughout	..	2·5
LEXTON SHIRE—			
Avoca–Ararat Road	Reshaping, gravelling and sealing from 7·55 to 8·55 miles	..	1
,, ,, ,, ...	Patrol maintenance throughout	..	9·7
Avoca–Ballarat Road	Construction of bridge and approaches at 16 miles	..	—
,, ,, ,, ...	Reshaping and gravelling from 15·6 to 17 miles at Shire boundary	..	1·4
,, ,, ,, ...	Sealing from 10·6 to 15·6 miles	..	5
,, ,, ,, ...	Patrol maintenance throughout	..	17
LILLYDALE SHIRE—			
Evelyn–Lillydale Road	Re-alignment and reconstruction	..	·78
,, ,, ,, ...	Patrol maintenance	..	3
Main Healesville Road	Plant mix seal	..	·11
,, ,, ,, ...	Patrol maintenance	..	1
Monbulk Road	Plant mix seal	..	·76
,, ,, ,, ...	Patrol maintenance	..	8·2
Mount Dandenong Road	Reconstruction at railway bridge, Croydon	..	·17
,, ,, ,, ...	Reconstruction at Montrose	..	1·32
,, ,, ,, ...	Patrol maintenance	..	11·8
Yarra Glen Road	Patrol maintenance	..	4·6
LOWAN SHIRE—			
Dimboola–Kaniva Road	Patrol maintenance throughout	..	2·2
Goroke Road	Patrol maintenance throughout	..	6·7
Lorquon Road	Patrol maintenance throughout	..	5
Lorquon West Road	Patrol maintenance throughout	..	14
Yanac Road	Patrol maintenance throughout	..	18
MAFFRA SHIRE—			
Boisdale–Briagolong Road ..	Drag seal near 1 mile	..	1·5
,, ,, ,, ...	Drag seal near 6 miles	..	1
,, ,, ,, ...	Patrol maintenance throughout	..	6
Briagolong–Dargo Road	Drag seal near 1 mile	..	1
,, ,, ,, ...	Patrol maintenance throughout	..	3
Briagolong–Stratford Road ..	Gravelling and sealing near 3 miles	..	·75
,, ,, ,, ...	Patrol maintenance throughout	..	3
Bushy Park–Valencia Creek Road..	Gravelling and sealing near 1 mile	..	1
,, ,, ,, ,, ..	Patrol maintenance throughout	..	7
Liccla Road	Gravelling near 5 and 6 miles	..	2
,, ,, ...	Patrol maintenance throughout	..	40
Maffra–Newry Road	Gravelling and sealing near 5 miles	..	1·5
,, ,, ,, ...	Patrol maintenance throughout	..	6
Maffra–Sale Road	Drag seal near 4 miles	..	1
,, ,, ,, ...	Patrol maintenance throughout	..	7
Maffra–Stratford Road	Patrol maintenance	..	3
Tinamba–Boisdale Road	Drag seal near 0 mile	..	1
,, ,, ,, ...	Drag seal near 5 miles	..	1
,, ,, ,, ...	Patrol maintenance balance of road	..	14
Tinamba–Newry Road	Patrol maintenance	..	3
Traralgon–Maffra Road	Gravelling and sealing near 6 miles	..	1·25
,, ,, ,, ...	Patrol maintenance throughout	..	7
MALDON SHIRE—			
Baringhup Road	Patrol maintenance	..	8
Castlemaine–Maldon Road ..	Reconstruction and gravelling	..	2·68
,, ,, ,, ...	Patrol maintenance	..	8
Maldon–Eddington Road	Reconstruction and gravelling	..	1·84
,, ,, ,, ...	Patrol maintenance	..	11
Newstead Road	Reconstruction and gravelling	..	·75
,, ,, ...	Patrol maintenance	..	4·25
MALDON AND MARONG SHIRES (Joint Works)—			
Maldon–Eddington Road	Patrol maintenance	..	4
MANSFIELD SHIRE—			
Benalla–Mansfield Road	Construction of reinforced concrete bridge at ·25	..	—
,, ,, ,, ...	Preparation for bitumen surfacing	..	1·5
,, ,, ,, ...	Bitumen surfacing	..	·5
,, ,, ,, ...	Patrol maintenance throughout	..	9
Euroa–Merton Road	Patrol maintenance throughout	..	4·4
Maindample–Benalla Road ..	Patrol maintenance throughout	..	5·5
Mansfield Road	Construction of reinforced concrete culvert 10 ft. x 10 ft., 2 miles east of Mansfield	..	—
,, ,, ...	Forming and gravelling 7 miles east of Mansfield	..	·9
,, ,, ...	Preparation for bitumen surfacing	..	1
,, ,, ...	Bitumen surfacing from 2 to 3 miles east of Mansfield	..	1
,, ,, ...	Bitumen surfacing from 5 to 6 miles and 12 to 13 miles west of Mansfield	..	2
,, ,, ...	Preparation for bitumen surfacing from 6 to 7·25 miles west of Mansfield	..	1·25
,, ,, ...	Forming and gravelling 10 miles west of Mansfield	..	·17
,, ,, ...	Forming and gravelling 11·25 miles west of Mansfield	..	·28
,, ,, ...	Patrol maintenance throughout	..	42·5
Mansfield Tolmie Road	Bitumen surfacing	..	·5
,, ,, ,, ...	Preparation for bitumen surfacing	..	1·5
,, ,, ,, ...	Patrol maintenance throughout	..	5·5
Mansfield–Woods Point Road ..	Construction of reinforced concrete culvert 8 ft. x 6 ft. at ·6 miles	..	—
,, ,, ,, ...	Preparation for bitumen surfacing from 1 to 2 miles	..	1
,, ,, ,, ...	Bitumen surfacing from approximately 0 to 1 mile	..	·95
,, ,, ,, ...	Patrol maintenance throughout	..	19·5
Merton–Strathbogie Road ..	Patrol maintenance throughout	..	6·6
	Carried forward	—	4,051·6

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	4,051·6
MARONG SHIRE—			
Bendigo–Eddington Road	Preparing and sealing at West Shelbourne	..	1·23
,, ,, ,,	Road mix seal at Laanecoorie	..	1
,, ,, ,,	Reconditioning formations and sheeting pavements	..	3
,, ,, ,,	Patrol maintenance	..	25
Loddon Valley Road	Widening formations and sheeting pavements	..	1·65
,, ,, ,,	Road mix seal on floodways	..	·07
,, ,, ,,	Patrol maintenance	..	10·3
MARYBOROUGH BOROUGH—			
Avoca Road	Road mix seal, ¾ inch, 16 feet wide throughout	..	1·15
,, ,,	Patrol maintenance throughout	..	1·15
Ballarat Road	Realignment, reconstruction and double coat sealing	..	·48
,, ,,	Patrol maintenance	..	1·4
Castlemaine Road	Patrol maintenance	..	1·6
Eddington Road	Road mix seal, ¾ inch, 18 feet wide throughout	..	1·24
,, ,,	Patrol maintenance throughout	..	1·24
Natte Yallock Road	Patrol maintenance	..	·95
MELTON SHIRE—			
The Gap Road	Crushed rock surfacing	..	·75
Toolern Road	Bituminous sealing	..	2·25
,, ,,	Patrol maintenance	..	3·75
METCALFE SHIRE—			
Elphinstone–Harcourt Road	Commencement of realignment of curve at 3·25 miles from Elphinstone	..	·3
,, ,, ,,	Commencement of realignment and regrading at 4 miles from Elphinstone	..	·27
,, ,, ,,	General maintenance	..	8·6
Kyneton–Redesdale Road	Realignment of curves at 6 and 6·75 miles from Redesdale	..	·29
,, ,, ,,	Realignment of curve at 4 miles from Redesdale	..	·11
,, ,, ,,	General maintenance	..	12·25
MILDURA CITY—			
Bridge Road	Scaling from 1·49 to 1·67 miles	..	·18
,, ,,	General maintenance from 1·67 to 2·19 miles	..	·52
Deakin Avenue	General maintenance from 0 to ·99 mile	..	·99
Langtree Avenue	General maintenance from 1·07 to 1·21 miles	..	·14
,, ,,	Plant mix, drag spread seal from 1·21 to 1·49 miles	..	·28
Tenth Street	General maintenance from ·99 to 1·07 miles	..	·08
MILDURA SHIRE—			
Deakin Avenue	General maintenance	..	·81
Irymple Road	Road mix seal between Calder Highway and Irymple Avenue	..	1·4
,, ,,	Construction of curve at 355·4	..	·15
,, ,,	General maintenance and bituminous sealing from Deakin Avenue to Ginquam Avenue	..	4·87
Melbourne Road	General maintenance from main channel south of Red Cliffs to north railway crossing	..	1
Wentworth Road	General maintenance and road mix seal between 15th Street and the Abbotsford Bridge over the River Murray	..	15·5
MINHAMITE SHIRE—			
Hamilton – Macarthur – Port Fairy Road	Widening bitumen surfaced road from 10 to 15 feet, resheeting with crushed rock and bitumen sealing at Orford	..	1·59
,, ,, ,,	Patrol maintenance throughout	..	17
Warrnambool – Hawkesdale – Penshurst road	Widening bitumen surfaced road from 10 to 15 feet, resheeting with crushed rock, and bitumen sealing at Warrong	..	2·17
,, ,, ,,	Patrol maintenance throughout	..	22
Woolsthorpe–Bessiebelle Road	Widening water bound macadam from 12 to 16 feet, resheeting with crushed rock, and bitumen sealing near Woolsthorpe station	..	·83
,, ,, ,,	Forming and gravelling near Portland Shire boundary	..	·85
,, ,, ,,	Construction of reinforced concrete bridge, 49 feet span over Eumeralla River	..	·01
,, ,, ,,	Construction of rolled steel joist and timber bridge, 45 feet span over Back Creek at Daisy Dell	..	·01
,, ,, ,,	Patrol maintenance throughout	..	29
MIRBOO SHIRE—			
Grand Ridge Road	Reshaping and widening near Mirboo North	..	·57
,, ,, ,,	Double coat sealing near Mirboo North and Allotment 111, Parish of Allambee East	..	·94
,, ,, ,,	Road mix seal near Mirboo North	..	1
,, ,, ,,	Realignment at Allotment 87A, Parish of Allambee East	..	·5
,, ,, ,,	Patrol maintenance throughout	..	14
Mardan Road	Road mix seal through Allotments 31 and 34, Parish of Mardan	..	·9
,, ,,	Timbering of land slip at Allotment 30, Parish of Mardan	..	—
,, ,,	Patrol maintenance throughout	..	4·6
Mirboo–Leongatha Road	Road mix seal from junction with Grand Ridge Road	..	2
,, ,, ,,	Patrol maintenance throughout	..	4·4
Mirboo North–Thorpdale Road	Reshaping, widening and double coat sealing from Mirboo North	..	1·5
,, ,, ,,	Patrol maintenance throughout	..	6·5
Mirboo South Road	Realignment through Allotments 37 and 37A, Parish of Mirboo	..	·6
,, ,,	Double coat sealing through Allotments 37 and 37A, Parish of Mirboo	..	·37
,, ,, ,,	Reconstruction of Main Street, Township of Mirboo North	..	·12
,, ,, ,,	Construction of culvert at land slip at Cain's Hill	..	—
,, ,, ,,	Patrol maintenance throughout	..	9·5
Mirboo–Yarragon Road	Patrol maintenance throughout	..	5·7
Morwell–Mirboo Road	Road mix seal near Allotment 34, Parish of Mirboo	..	1·75
,, ,, ,,	Patrol maintenance throughout	..	5·5
MOORABBIN CITY—			
Centre Dandenong Road	Double coat sealing fine crushed rock road easterly from Warrigal Road	..	·3
,, ,, ,,	Reconstruction in fine crushed rock and double coat sealing easterly from ·3 mile east from Warrigal Road	..	·23
,, ,, ,,	General maintenance throughout	..	2·89
Point Nepean Road	General maintenance from South Road to Latrobe Street, Cheltenham	..	3·13
	Carried forward	—	4,298.01

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	4,298·01
MORDIALLOC CITY—			
Point Nepean Road	Widening from 21 to 30 feet from Lower Dandenong Road to railway bridge at Mordialloc, reconstruction of three curves and removal of timber bridge near Carrier Avenue after construction of underground drain		1·47
" " "	Patrol maintenance		2·9
MORNINGTON SHIRE—			
Mooroodue Road	Patrol maintenance throughout		2·71
Mornington–Dromana Road	Painting traffic lines throughout, 6·5 miles		—
" " "	Patrol maintenance throughout		6·5
Point Nepean Road	Resheeting 20 feet wide and double coat sealing between Sunnyside and Oakbank Roads		·57
" " "	Painting traffic lines from northern boundary of Shire to Tyabb Road, 4 miles		—
" " "	Patrol maintenance throughout		9·5
Tyabb Road	Sheeting with crushed rock 16 feet wide and double coat sealing between Allotment 10, Section 23, and Ballanrong P.R., Parish of Mooroodue		·38
" "	Patrol maintenance throughout		3·56
MORTLAKE SHIRE—			
Caramut–Lismore Road	Patrol maintenance throughout		29
Darlington–Terang Road	Scarifying, gravelling and double coat sealing between 5·36 and 6·8 miles		1·44
" " "	Patrol maintenance balance of road		7·81
Ellerslie–Framlingham Road	Scarifying and crushed rock surfacing from 2·49 to 2·89 miles		·4
" " "	Patrol maintenance balance of road		5·35
Mortlake–Ararat Road	Road mix seal from 6·31 to 10·47 miles, from Woorndoo towards Bolac		4·16
" " "	Patrol maintenance balance of road		19·84
Mortlake–Terang Road	Double coat sealing on reconditioned curves between ·5 and 1·12 miles		·27
" " "	Road mix seal from ·21 to 7·08 miles		6·87
Mortlake–Warrnambool Road	Road mix seal from 3·12 to 7·29 miles and 11·06 to 12·87 miles		5·98
" " "	Patrol maintenance balance of road		8·02
Terang–Framlingham Road	Patrol maintenance throughout		11
MORWELL SHIRE—			
Jeeralang West Road	Sealing from 6·35 to 8·35 miles		2
" " "	General maintenance		23·5
Jumbuk Road	General maintenance		12·5
Morwell–Maryvale Road	Sealing from 0 to 4 miles		4
" " "	General maintenance		6·15
Prince's Highway	General maintenance		1·5
MOUNT ROUSE SHIRE—			
Ballarat–Hamilton Road	Road mix seal between Dunkeld and Glenthompson		3·82
" " "	Patrol maintenance throughout		21
Hamilton–Dunkeld Road	Road mix seal between Dunkeld and 3·5 miles to Hamilton		1·79
" " "	Patrol maintenance throughout		4
Hamilton–Penshurst Road	Road mix seal between ·93 and 7·35 miles to Hamilton		1·84
" " "	Scarifying, reforming and double coat sealing between 2·05 and 4·08 miles to Hamilton		1·01
" " "	Patrol maintenance throughout		14
Maroona–Glenthompson Road	Patrol maintenance throughout		1
Penshurst–Caramut Road	Road mix seal between 6·35 and 8·58 miles to Caramut		1·69
" " "	Scarifying, reforming and double coat sealing between 0 and 2·66 miles to Caramut		1·4
" "	Patrol maintenance throughout		15
MULGRAVE SHIRE—			
Ferntree Gully Road	Patrol maintenance from Box Hill Road easterly to Dandenong Creek		5·75
Springvale Road	Double coat sealing between High Street Road and ·5 mile north of Ferntree Gully Road		1·5
" "	Patrol maintenance from Highbury Road to Prince's Highway		4·86
McIVOR SHIRE—			
Heathcote–Elmore Road	Reconstruction at shire boundary		·13
" " "	Reconstruction from end of bitumen towards Heathcote, from 1·85 to 4·29 miles		2·44
Heathcote–Redesdale Road	Patrol maintenance from Heathcote to Redesdale Bridge		12
Kilmore–Heathcote–Bendigo Road	Patrol maintenance from Tooborac to Axedale		20·43
Mount Camel Estate Road	Reconstruction from end of bitumen to shire boundary from 1·27 to 4·45 miles		2·74
Tooborac–Lancefield Road	Patrol maintenance from Tooborac to shire boundary		1·25
NARRACAN SHIRE—			
Allambee–Childers Road	Patrol maintenance		8·5
Childers–Thorpdale Road	Patrol maintenance		1·5
Mirboo–Yarragon Road	Patrol maintenance		6·5
Moe–Yallourn Road	Patrol maintenance		2
Prince's Highway	Patrol maintenance		1·5
Trafalgar–Thorpdale Road	Realigning, resurfacing with sand where necessary, widening and banking on curves, and bitumen sealing 16 feet wide		1·75
" "	Patrol maintenance		9
Walhalla Road	Resheeting where necessary, sand sheeting and bitumen painting 16 feet wide, and banking and widening curves		1·75
" "	Patrol maintenance		32
Willowgrove Road	Sand and loam sheeting, sand sheeting and bitumen sealing 16 feet wide		1·5
" "	Patrol maintenance		22
Yarragon–Leongatha Road	Realigning and resheeting where necessary, widening and banking on curves, and bitumen sealing 12 feet wide		1·33
" "	Patrol maintenance		9
Yarragon–Shady Creek Road	Sand sheeting and bitumen sealing 12 feet wide		·5
" "	Patrol maintenance		6
NEWHAM AND WOODEND SHIRE—			
Lancefield Road	Double coat sealing from Calder Highway		2·15
" "	Reconditioning with crushed rock at Newham		1·23
" "	General maintenance to Shire boundary		4·45
" "	Patrol maintenance from Woodend		4·8
Mount Macedon Road	Reconditioning with crushed rock to Clyde turn-off		1·02
Tylden Road	Patrol maintenance throughout		5·25
" "	Patrol maintenance throughout		3·2
NEWHAM AND WOODEND AND KYNETON SHIRES (Joint Works)—			
Tylden Road	Patrol maintenance throughout		1·2
NEWSTEAD AND MOUNT ALEXANDER SHIRE—			
Castlemaine–Daylesford Road	Road mix seal		1
" " "	Patrol maintenance		6·7
Creswick Road	Reconstruction		·25
" "	Patrol maintenance		11
Maldon Road	Double coat sealing		2
" "	Patrol maintenance		4
	Carried forward	—	4,746·12

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	4,746·12
NEWSTEAD AND MOUNT ALEXANDER AND GLENLYON SHIRES (Joint Works)—			
Castlemaine–Daylesford Road ..	Patrol maintenance	..	·6
NUMURKAH SHIRE—			
Echuca–Picola Road	Forming, loaming and sheeting between Walalla and Deep Creek bridges	..	·42
,, ,, ,, ...	Forming, loaming and sheeting between allotments 11 and 15, section B, parish of Moira	..	·28
,, ,, ,, ...	General maintenance from 6 to 16·2 miles	..	16·2
,, ,, ,, ...	Patrol maintenance from 0 to 6 miles	..	6
Numurkah–Nathalia Road ..	Patrol maintenance throughout	..	15·9
Nathalia–Picola Road	Patrol maintenance throughout	..	7·8
Numurkah–Tungamah Road ..	Patrol maintenance throughout	..	5
Shepparton–Numurkah–Cobram Road	Patrol maintenance throughout	..	20·6
OAKLEIGH CITY—			
Ferntree Gully Road	General maintenance	..	·48
Prince's Highway	General maintenance	..	1·12
OMEO SHIRE—			
Benambra Road	Forming and gravelling from 12·8 to 13·48 miles	..	·68
,, ,, ...	Patrol maintenance, including gravel sheeting, from 0 to 14·45 miles	..	14·45
Day Avenue Road	Repairs to Omeo abutment and erection of guard feneing at the Livingstone Creek Bridge at 1·6 miles	..	—
,, ,, ,, ...	Patrol maintenance from 0 to 1·75 miles	..	1·75
Swift's Creek Omeo Road ..	Reforming and gravelling from ·1 to ·4 miles	..	·3
,, ,, ,, ..	Construction of triple 36-in. diameter reinforced concrete pipe culvert at 1·21 miles	..	—
,, ,, ,, ..	Construction of 2-span timber bridge over Horse Flat Creek at 5·9 miles	..	—
,, ,, ,, ..	Patrol maintenance, including repair of fire damage, from 0 to 18·15 miles ..	..	18·15
ORBOST SHIRE—			
Cann Valley Road	Patrol maintenance throughout, realignment of curves and extensive repairs to bridge over Cann River near Downey's damaged by floods	..	29·8
Combienbar Road	Patrol maintenance throughout and realignment of curves	..	7·7
Marlo Road	General maintenance	..	9·5
Orbost–Delegate Road	General maintenance	..	·48
Prince's Highway	General maintenance	..	1·5
Wangrabelle Road	Patrol maintenance throughout and super-elevating curves	..	15·38
OTWAY SHIRE—			
Beech Forest–Apollo Bay Road ..	Reconditioning of superstructure of bridge over Barham River	..	·02
,, ,, ,, ..	Patrol maintenance from Apollo Bay towards Beech Forest	..	11
Beech Forest–Laver's Hill Road ..	Road mix seal between Weeaproinah and Beech Forest	..	3·54
,, ,, ,, ..	Patrol maintenance throughout	..	12·5
Beech Forest–Mt. Sabine Road ..	Road mix seal for ·73 mile through Beech Forest and between 1·84 and 3·12 miles	..	2·01
,, ,, ,, ..	Widening short radius curves from 6·5 miles to the Forrest–Apollo Bay Road ..	..	—
,, ,, ,, ..	Patrol maintenance throughout	..	12·5
Carlisle–Gellibrand Road	Widening five short radius curves between Charley's Creek and Carlisle River ..	..	—
,, ,, ,, ..	Patrol maintenance throughout	..	11
Colac–Beech Forest Road ..	Widening, super-elevating and resheeting between 2·24 and 2·92 miles	..	·68
,, ,, ,, ..	Patrol maintenance from Shire boundary to Gellibrand	..	4
Colac–Forrest Road	Patrol maintenance from Shire boundary to Forrest	..	3·8
Forrest–Apollo Bay Road ..	Reconstruction, super-elevating curves and resheeting high crowned macadam between 6·63 and 8·14 miles	..	1·51
,, ,, ,, ..	Patrol maintenance throughout	..	25
OXLEY SHIRE—			
Bright Road	Realignment and reconstruction between Bonnie Doon and Milawa	..	3·06
,, ,, ...	Double coat sealing between Shea's and Bonnie Doon	..	3·17
,, ,, ...	Patrol maintenance	..	24·3
Greta–Glenrowan Road	Patrol maintenance	..	5
Kilfeera–Boggy Creek Road ..	Reforming and gravelling	..	·44
,, ,, ...	Patrol maintenance	..	1·1
Wangaratta–Greta Road	Reforming and gravelling between Wilson's and Orr's	..	·47
,, ,, ,, ...	Patrol maintenance	..	12·3
Wangaratta–Whitfield Road ..	Realignment and reconstruction at Oxley	..	3·51
,, ,, ,, ..	Realignment and reconstruction at Gibson's	..	·26
,, ,, ,, ..	Double coat sealing at Whitfield	..	1·5
,, ,, ,, ..	Patrol maintenance	..	31·8
PHILLIP ISLAND SHIRE—			
Newhaven Road	General maintenance throughout	..	7·75
Phillip Island Road	General maintenauce throughout	..	1·25
Ventnor Road	General maintenance throughout	..	9·25
PORTLAND SHIRE—			
Bridgewater Road	Reforming and sheeting near Shelly Beach	..	1·89
,, ,, ...	Patrol maintenance	..	11
Heath Road	Spraying at Borthwick's Freezing Works	..	·95
,, ,, ...	Patrol maintenauce	..	11
Portland–Casterton Road ..	Patrol maintenance	..	21
Portland–Hamilton Road ..	Patrol maintenance	..	3·5
PRESTON CITY—			
Epping Road	General maintenance throughout	..	1·42
Whittlesea Road	Resheeting with premix between Tyler Street and Frier Avenue	..	·05
,, ,, ...	General maintenance throughout	..	2·5
PYALONG SHIRE—			
Kilmore–Heathcote–Bendigo Road ..	Resheeting with granitic sand and double coat sealing from Shire boundary at High Camp to railway crossing	..	1
,, ,, ,, ,, ..	Patrol maintenance throughout	..	11·34
Lancefield–Tooborac Road ..	Tree-planting at Emu Flat	..	—
,, ,, ,, ..	Widening formation between Walsh's and Mollison's Creek	..	·15
,, ,, ,, ..	Patrol maintenance throughout	..	10·8
PYALONG AND McIVOR SHIRES (Joint Works)—			
Lancefield–Tooborac Road ..	Tree-planting northerly from Shire boundary	..	—
,, ,, ,, ..	Patrol maintenance throughout	..	2·04
	Carried forward	—	5,191·57

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	5,191·57
QUEENSCLIFFE BOROUGH—			
Geelong Road	General maintenance throughout		3·5
Point Lonsdale Road	General maintenance throughout		·78
RINGWOOD BOROUGH—			
Main Healesville Road	Widening from 20 to 30 feet and sealing		3·24
Mount Dandenong Road	Sealing newly constructed road 20 feet wide		1·75
Warrandyte Road	Patrol maintenance and shouldering		1·5
RIPON SHIRE—			
Ballarat–Ararat Road	Raising pavement and gravel shoulders from 98·55 to 99·4 miles and 99·55 to 99·95 miles		1·25
" " "	Patrol maintenance throughout		1·4
Ballarat–Hamilton Road	Gravel shouldering for pavement widening from 1·77 to 3·16 miles		1·39
" " "	Patrol maintenance throughout		16·26
Skipton Road	Realignment across bed of Lake Goldsmith from 8·04 to 9·02 miles		·98
" "	Reconstruction from ·55 to ·69 miles		·14
" "	Double coat sealing 16 feet wide, from ·55 to ·69 mile and 8·04 to 9·02 miles		1·12
" "	Gravel shouldering for pavement widening from 3·72 to 4·52 miles and 13·61 to 15·87 miles		3·04
" "	Patrol maintenance throughout		18·67
ROCHESTER SHIRE—			
Bendigo–Echuca Road	Widening approach to railway crossing at Rochester		·08
" "	Patrol maintenance		·88
Corop Road	Double coat sealing		1·89
" "	Patrol maintenance		5·5
Rochester–Barnawm–Prairie Road	Road mix seal		1·7
" " " "	Double coat sealing		8·39
" " " "	Patrol maintenance		27·5
Timmering Road	Patrol maintenance		4·5
RODNEY SHIRE—			
Kyabram–Nathalia Road	Widening bitumen from 12 to 18 feet with gravel from ·21 to ·71 mile		·5
" " "	General maintenance		1
Kyabram–Tongala Road	Forming and gravelling approach turns at Shire boundary		·03
" " "	General maintenance		1
Mooroopna–Undera Road	Double coat sealing over reconstructed State Rivers and Water Supply Commission culvert from 5·08 to 5·12 miles		·04
" " "	Reconstruction of irrigation culverts, at part cost to Country Roads Board Fund, by State Rivers and Water Supply Commission, at 7, 7·43 and 8·1 miles		—
" " "	Regrading and construction in sand clay over reconstructed culverts from 6·98 to 7·04 miles, 7·41 to 7·45 miles and 8·08 to 8·12 miles		·12
" " "	Patrol maintenance		11·6
Shepparton–Tatura Road	Widening bitumen from 14 to 18 feet with gravel from 3·5 to 8·19 miles		4·69
" " "	Reconstruction and sealing over lowered State Rivers and Water Supply Commission culvert from 7·72 to 8 miles		·28
" " "	Shouldering from 6·75 to 8 miles		1·25
" " "	Forming realignment in Mooroopna township from ·18 to ·22 mile		·04
" " "	Reconstruction of irrigation culverts at part cost to Country Roads Board Fund by State Rivers and Water Supply Commission at 3·05, 7·28 and 7·76 miles		—
" " "	General maintenance		10·3
Tatura–Byrneside–Kyabram Road	Widening with gravel from 14 to 18 feet, north of Merrigum, from 8·9 to 11·3 miles		2·4
" " "	Shouldering north of Merrigum, from 9 to 12 miles		3
" " "	Gravelling Wolson's Curve from 0 to ·15 mile		·15
" " "	Reconstruction and sealing over lowered State Rivers and Water Supply Commission culverts from ·63 to ·71 mile, 1·68 to 1·74 miles, 6·04 to 6·08 miles and 8·7 to 8·75 miles		·23
" " "	Reconstruction of irrigation culverts at part cost to Country Roads Board Fund by State Rivers and Water Supply Commission at ·69, 1·71, 6·06, 8·72 and 15·95 miles		—
" " "	General maintenance		17·4
Tatura–Murchison Road	General maintenance		12
RODNEY SHIRE AND SHEPPARTON BOROUGH (Joint Works)—			
Shepparton–Tatura Road	General maintenance		1·8
ROMSEY SHIRE—			
Lancefield–Kilmore Road	Reconditioning and double coat sealing from Lancefield		1·17
" " "	General maintenance throughout		9·71
Lancefield–Tooborac Road	General maintenance throughout		4·31
Melbourne–Lancefield Road	General maintenance throughout		15·7
Woodend–Lancefield Road	Reconditioning with crushed rock		·64
" " "	General maintenance throughout		5·62
ROSEDALE SHIRE—			
Prince's Highway	General maintenance throughout in Rosedale		·91
Rosedale–Heyfield Road	General maintenance throughout and grader work		8·2
Seaspray Road	Sealing		1
" "	Sheeting		1
" "	Patrol maintenance throughout		15·75
Traralgon–Gormandale Road	Patrol maintenance throughout and grader work		4·53
Traralgon–Maffra Road	Sealing		1·52
Traralgon–Maffra Road	General maintenance throughout and grader work		21
Willung Road	Sealing		1
" "	Patrol maintenance throughout		8
ROSEDALE AND ALBERTON SHIRES (Joint Works)—			
Carrajung–Gormandale Road	Patrol maintenance throughout		·75
RUTHERGLEN SHIRE—			
Barnawartha–Howlong Road	Patrol maintenance		1·6
Chiltern–Howlong Road	Patrol maintenance		4·6
Chiltern–Rutherglen Road	Patrol maintenance		6·55
Murray Valley Road	Road mix seal, ¾-in., 16 feet wide		·44
" "	Patrol maintenance		·79
Rutherglen–Wahgunyah Road	Patrol maintenance		5·89
Springhurst–Rutherglen Road	Road mix seal, ¾-in., 16 feet wide		1·89
" " "	Patrol maintenance		7·7
RUTHERGLEN AND CHILTERN SHIRES (Joint Works)—			
Chiltern–Rutherglen Road	Patrol maintenance		**·25**
SALE TOWN—			
Prince's Highway	General maintenance through Town of Sale		1
Sale–Longford Road	General maintenance from Sale Post Office to swing bridge		3
	Carried forward	—	5,499·38

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	5,499.38
SEBASTOPOL BOROUGH—			
Ballarat–Hamilton Road	General maintenance throughout		·84
Ballarat–Rokewood Road	General maintenance throughout		2·34
SEYMOUR SHIRE—			
Avenel–Longwood Road	Scarifying and grading		1
" " "	General maintenance balance of road		5·5
Highlands Road	General maintenance throughout		16
Seymour–Yea Road	General maintenance throughout, scarifying and grading		6·8
Upper–Goulburn Road	General maintenance throughout		11·4
SHEPPARTON SHIRE—			
Dookie–Nalinga Road	Reconstruction and sealing		2·5
" " "	General maintenance		8
Dookie–Violet Town Road	General maintenance		·05
Katandra Road	General maintenance		9
Pine Lodge Road	General maintenance		4
Shepparton–Nagambie Road	Road mix seal		1
" " "	General maintenance		10
Shepparton–Numurkah Road	Reconstruction of macadam surface and sealing		3·5
" " "	General maintenance		12
SHEPPARTON SHIRE AND SHEPPARTON BOROUGH (Joint Works)—			
Shepparton–Nalinga Road	General maintenance		·25
SHEPPARTON BOROUGH—			
Shepparton–Nagambie Road	Reshouldering		·75
" " "	Patrol maintenance throughout		2·05
Shepparton–Nalinga Road	Patrol maintenance throughout		·95
Shepparton–Numurkah Road	Patrol maintenance throughout		·95
SHEPPARTON BOROUGH AND RODNEY SHIRE (Joint Works)—			
Shepparton–Mooroopna Road	Patrol maintenance throughout		·04
Shepparton–Tatura Road	Patrol maintenance throughout		·14
SOUTH BARWON SHIRE—			
Barwon Heads Road	Road mix seal, ¾ inch, 16 feet wide, between 6 and 10 miles		3·78
" " "	Road mix seal, ¾ inch, 16 feet wide, between 5 and 6 miles		·4
" " "	Construction of scoria base, crushed rock surfacing and sealing deviation curve near Marshall School near 4 miles		·17
" " "	Construction and sealing of deviation curve, erection of fencing and warning signs at junction with Hitchcock Avenue in Barwon Heads township		·06
" " "	Patrol maintenance		13
Prince's Highway	General maintenance		1·2
Torquay Road	General maintenance		3·5
SOUTH BARWON AND BARRABOOL SHIRES (Joint Works)—			
Torquay Road	Road mix seal, ¾ inch, 16 feet wide, between 10 and 11 miles		·8
" " "	Construction of scoria base, crushed rock surfacing and sealing deviation at 12 miles		·17
" " "	Patrol maintenance		8·5
SOUTH GIPPSLAND SHIRE—			
Albert River–Welshpool Road	Patrol maintenance		1·7
Boolarra–Foster Road	Patrol maintenance		8
Boolarra–Welshpool Road	Patrol maintenance to 23rd August, 1938		11·8
Fall's Road	Patrol maintenance		5
Foster North–Mirboo South Road	Patrol maintenance		4·55
Foster–Yarram Road	Patrol maintenance to 22nd November, 1938		17·98
Hazel Park Road	Patrol maintenance		4·89
Main South Gippsland Road	Patrol maintenance		13·25
Stony Creek–Dollar Road	Patrol maintenance		6·84
Toora–Gunyah Road	Patrol maintenance		12
Toora–Wonyip Road	Construction of bridge over Tin Creek		—
" " "	Patrol maintenance		5
Turton's Creek Road	Patrol maintenance		5
SOUTH GIPPSLAND AND WOORAYL SHIRES (Joint Works)—			
Dollar–Stony Creek Road	Patrol maintenance		2
Main South Gippsland Road	Patrol maintenance		·74
ST. ARNAUD BOROUGH—			
Avoca–St. Arnaud Road	Patrol maintenance throughout		1·6
Charlton Road	Patrol maintenance		1·5
Navarre Road	Patrol maintenance throughout		·95
St. Arnaud–Donald Road	Patrol maintenance throughout		2·5
STAWELL SHIRE—			
Horsham–Wal Wal Road	Patrol maintenance throughout		3
Landsborough Road	Patrol maintenance throughout		5·5
Marnoo Road	Patrol maintenance throughout		35
Marnoo–Rupanyup Road	Patrol maintenance throughout		3·5
Marnoo–St. Arnaud Road	Patrol maintenance throughout		3·5
Navarre Road	Patrol maintenance throughout		20
Stawell–Glenorchy–Horsham Road	Patrol maintenance throughout		20
Stawell–Warracknabeal Road	Patrol maintenance throughout		8·75
STAWELL BOROUGH—			
Ararat–Stawell Road	Road mix seal		·75
" "	General maintenance		1·5
Glenorchy Road	General maintenance		·75
	Carried forward	—	5,837·57

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	5,837·57
STRATHFIELDSAYE SHIRE—			
Heathcote–Bendigo Road ..	Reforming, gravelling 4-in. consolidated and bitumen sealing	..	2
" " " ..	Patrol maintenance	..	10
Mandurang Road	Reforming, gravelling 4-in. consolidated and bitumen sealing	..	1·34
"	Patrol maintenance	..	6·6
Strathfieldsaye Road ..	Reforming, gravelling 4-in. consolidated bitumen sealing	..	·61
" " ..	Construction of 3-span timber bridge 70 feet long over Emu Creek	..	—
" " ..	Patrol maintenance	..	7·39
SWAN HILL SHIRE—			
Annuello–Wemen Road	Patrol maintenance	..	16
Euston Road	Clear and grub 30 feet wide from Lake Powell–Robinvale	..	6·03
" "	Construction of reinforced concrete culvert 30 feet long over State Rivers and Water Supply Commission Channel, ·5 mile north of Swan Hill	..	—
" "	Patrol maintenance	..	3·5
Nyah–Ouyen Road ..	Preparation for double coat sealing	..	3·6
" " " ..	Construction of reinforced concrete culvert 30 feet long over State Rivers and Water Supply Commission channel, ·5 mile west from Murray Valley Highway	..	—
" " " ..	Patrol maintenance	..	49
Piangil Station Road ..	Erection of treeguards and tree planting, 1 mile	..	—
" " " ..	General maintenance	..	2
Swan Hill Road ..	General maintenance	..	1·25
Tooleybuc Road ..	General maintenance	..	·84
Ultima Road	Construction of extension to State Rivers and Water Supply Commission timber culvert, ·6 mile west from Swan Hill	..	—
" "	Preparation for double coat sealing	..	3·9
" "	Patrol maintenance	..	20
Ultima–Sea Lake Road ..	Patrol maintenance	..	16
TALBOT SHIRE—			
Clunes–Creswick Road ..	Double coat sealing throughout	..	1·6
" " " ..	General maintenance throughout, from Creswick Shire boundary to Clunes Borough boundary	..	1·6
Maryborough–Avoca Road ..	General maintenance throughout	..	·8
Maryborough–Ballarat Road ..	Scarifying, reshaping, sheeting with gravel 16 feet wide and double coat sealing from 6·1 to 7·03 miles south of Talbot	..	·93
" " " ..	General maintenance throughout	..	15
Talbot–Avoca Road ..	Scarifying, reshaping and sheeting with gravel 16 feet wide from 0 miles at Talbot to 1·9 miles	..	1·9
" " " ..	General maintenance throughout	..	10·32
Talbot–Eddington Road ..	General maintenance throughout, including renewal of minor culverts	..	1·06
TAMBO SHIRE—			
Bairnsdale–Bruthen Road ..	Patrol maintenance	..	·6
Basin Road	Patrol maintenance	..	10·2
Bruthen–Omeo Road	Reconstruction and double coat sealing	..	·72
" " " ..	Patrol maintenance	..	·8
Metung Road	Patrol maintenance	..	6·5
Mossiface Road	Patrol maintenance	..	3
Nowa Nowa–Buchan–Gelantipy Road	Patrol maintenance	..	33
TOWONG SHIRE—			
Murray Valley Road	Patrol maintenance from Bethanga Bridge to Murray Valley Highway at Granya ..	..	20·3
Omeo Road	General maintenance in township of Tallangatta	..	1·35
TRARALGON SHIRE—			
Prince's Highway	Patrol maintenance throughout	..	1·1
Traralgon–Balook Road	Replacement of two burnt out subways by concrete pipes	..	34
" " "	Patrol maintenance throughout	..	12·25
Traralgon Creek Road	Pavement widened to 16 feet and resheeted with gravel	..	1·6
" " "	Replacement of burnt timber subway by concrete pipes and regrading	..	·08
" " "	Patrol maintenance throughout	..	16
Traralgon–Gormandale Road ..	Widening to 18 feet and double coat sealing	..	·65
" " " ..	Patrol maintenance throughout	..	6·5
Traralgon–Maffra Road	Patrol maintenance throughout	..	3
Tyers Road	Patrol maintenance throughout	..	7·75
TULLAROOP SHIRE—			
Avoca Road	Widening from 11 to 16 feet and shouldering	..	·67
" "	Construction of two reinforced concrete box culverts, 30 inches by 24 inches, 32 feet long, and 24 inches by 12 inches, 32 feet long	..	—
" "	Road mix seal, ¾ inch, 16 feet wide	..	2·32
" "	Construction of reinforced concrete flat slab bridge over Dunira Creek	..	—
" "	Double coat sealing two bridge approaches	..	·16
" "	Patrol maintenance	..	9·2
Ballarat Road	Double coat sealing over culverts constructed previous year	..	·06
" "	Patrol maintenance	..	3·1
Dunolly Road	Patrol maintenance	..	·8
Eddington Road	Realignment, reconstruction and double coat sealing 16 feet wide	..	3·56
" "	Patrol maintenance	..	13·4
Maryborough–Dunolly Road ..	Realignment, reconstruction and double coat sealing 16 feet wide	..	1·75
" " " ..	Patrol maintenance	..	3·4
Natte Yallock Road	Double coat sealing 16 feet wide, floodway at Wareek	..	·25
" " "	Realignment and reconstruction including transitioning of curves	..	1·75
" " "	Patrol maintenance	..	7·25
Talbot–Eddington Road	Patrol maintenance	..	12
TUNGAMAH SHIRE—			
Cobram–Katamatite Road ..	Patrol maintenance	..	1·02
Cobram South Road	Patrol maintenance	..	4·36
Cobram–Yarrawonga Road ..	Patrol maintenance	..	1·68
Katandra Road	Patrol maintenance	..	9·47
Numurkah–Tungamah–Wilby Road	Patrol maintenance	..	30·7
St. James	Patrol maintenance	..	8·98
UPPER MURRAY SHIRE—			
Corryong Road	Patrol maintenance throughout	..	13·5
Tintaldra Road	Patrol maintenance throughout	..	14·25
Upper Murray Road	Construction of double 4 ft. 6 in. diameter reinforced concrete pipe culvert to replace timber culvert destroyed by fire	..	—
" " "	Patrol maintenance throughout	..	20
	Carried forward	—	6,310·31

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	6,310·31
UPPER YARRA SHIRE—			
Don Road	Widening from 13 feet to 16 feet		·4
" "	Construction of triple cell 4 feet by 4 feet culvert, 22 feet long		—
" "	Patrol maintenance		1·15
Launching Place–Gembrook Road	Sand sheeting		1·7
" " " "	Patrol maintenance		10·2
Little Yarra Road	Sand sheeting		2·5
" " "	Patrol maintenance		10·2
Main Warburton Road	Road mix seal		2·78
" " "	Patrol maintenance		13·75
WALPEUP SHIRE—			
Mildura Road	General maintenance		·76
Ouyen–Pinaroo Road	Patrol maintenance throughout, resheeting, minor realignment and regrading		81·57
WANGARATTA BOROUGH—			
Beechworth Road	General maintenance throughout		1
Sydney Road	General maintenance throughout		2·73
WANGARATTA SHIRE—			
Beechworth Road	Patrol maintenance throughout		11
Peechelba Road	Patrol maintenance throughout		1·5
Wangaratta–Myrtleford Road	Patrol maintenance throughout		6·5
WANNON SHIRE—			
Coleraine–Harrow–Apsley Road	Double coat bitumen sealing from approximately 7 to 9 miles		1·81
" " " "	Double coat bitumen sealing from 14 to 16·91 miles		2·91
" " " "	Double coat bitumen sealing from 28 to 28·187 miles		·19
" " " "	General maintenance throughout		35
Hamilton–Coleraine–Casterton Road	Road mix seal between 2 and 3·5 miles		·5
" " " "	General maintenance throughout		16
Wannon Bridge Road	General maintenance throughout		6
WANNON AND GLENELG SHIRES (Joint Works)—			
Hamilton–Coleraine–Casterton Road	General maintenance throughout		2·15
WARANGA SHIRE—			
Colbinabbin–Elmore Road	Realignment and widening double cell concrete culvert near Kerr's		·17
" " "	Patrol maintenance throughout		11
Colbinabbin–Moora Road	Patrol maintenance throughout		8
Heathcote–Elmore Road	Widening to 16 feet at Myola		·9
" " "	Construction of deviation of corner at Elmore to improved speed value, including double coat sealing 16 feet wide		·17
" " "	Patrol maintenance throughout		20
Murchison–Rushworth Road	Forming, gravelling and double coat sealing between Rushworth and Moora		3·08
" " "	Relocation of railway crossing west of Rushworth		·76
" " "	Patrol maintenance throughout		16
Rushworth–Stanhope Road	Reconstruction of waterbound macadam road to 16 feet width and double coat sealing near Karook		4·57
" " "	Patrol maintenance throughout		11·5
Tatura Road	Patrol maintenance throughout		1
WARRACKNABEAL SHIRE—			
Birchip Road	General maintenance		14·5
Dimboola Road	General maintenance		7·5
Hopetoun Road	General maintenance		1
Minyip Road	General maintenance		13
Rainbow Road	General maintenance		18·5
WARRAGUL SHIRE—			
Bloomfield Road	Patrol maintenance		8
Brandy Creek Road	Road mix seal, ½ inch, 12 feet wide, from 7·2 to 8·2 miles		1
" " "	Patrol maintenance		8·2
Darnum–Allambee Road	Patrol maintenance		8
Prince's Highway	Regrading, surfacing and sealing from ·08 to ·25 mile		·17
" "	Regrading, surfacing and sealing from ·75 to ·85 mile		·1
" "	Patrol maintenance		1·05
Warragul–Korumburra Road	Widening and road mix seal 16 feet wide from 1·5 to 2·5 miles		1
" " "	Double coat sealing on sand 15 feet wide from 9·5 to 12·5 miles		3
" " "	Widening in sand from 12 feet to 16 feet from 1·5 to 2·5 miles		1
" " "	Improving visibility from 4 to 5 miles, 1 mile		—
" " "	Patrol maintenance		14·5
Warragul–Leongatha Road	Sealing on sand 13 feet wide from 0 to ·5 mile		·5
" " "	Patrol maintenance		4
WARRNAMBOOL CITY—			
Prince's Highway	Reconstruction, widening and realignment of existing tar and bitumen sealed bluestone macadam road and surfacing with 3 inches of modified macadam sealed with road oil from 161·76 to 162·33 miles		·57
" "	Patrol maintenance balance of road		2·12
WARRNAMBOOL SHIRE—			
Allansford–Nirranda Road	Patrol maintenance throughout		17
Caramut–Lismore Road	Patrol maintenance throughout		6
Framlingham Road	Road mix seal, ¾ inch		1·84
" "	Patrol maintenance		4·5
Garvoc–Laang Road	Patrol maintenance throughout		7
Mortlake Road	Patrol maintenance throughout		16
Peterborough Road	Road mix seal, ¾ inch		1·71
" "	Patrol maintenance throughout		9
Timboon–Nirranda Road	Road mix seal, ¾ inch		1
" " "	Patrol maintenance throughout		5·5
Warrnambool–Caramut Road	Reconstruction in buckshot gravel		11·86
" " "	Patrol maintenance throughout		32·5
WERRIBEE SHIRE—			
Duncan's Road	Construction in crushed rock		1·06
" " "	Backing with salamander		1·33
" " "	Patrol maintenance		5
Geelong–Bacchus Marsh Road	Bitnminous sealing		1·2
" " "	Patrol maintenance		1·17
	Carried forward	—	6,831·14

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward		6,831·14
WHITTLESEA SHIRE—			
Epping Road	Reconstruction in crushed rock		·85
" "	Patrol maintenance		10·25
Main Whittlesea Road	Sealing		2
" " "	Reconstruction in crushed rock		2
" " "	Patrol maintenance		14
Wallan Road	Sealing		1
" "	Patrol maintenance		6
Whittlesea–Kinglake Road	General maintenance		4·5
WIMMERA SHIRE—			
Dooen road	Resheeting with crushed rock 2 ft. 6 in. wide on either side of bitumen		1·5
Grampians Road	Reshaping, shouldering and resheeting		3
" "	Double coat sealing 16 feet wide		3
" "	General maintenance		25
Horsham–Murtoa Road	Construction in crushed rock 2 feet wide on either side of bitumen		3
" " "	Road mix seal, ¾ inch, 15 feet wide		2·93
" " "	General maintenance		7
Horsham–Wal Wal Road	Construction in gravel		·21
" "	General maintenance		8·2
Natimuk Road	Reshaping, shouldering and resheeting		1·42
" "	Double coat sealing 16 feet wide		1·42
" "	General maintenance		9·4
WIMMERA AND ARAPILES SHIRES (Joint Works)—			
Natimuk Road	Construction of wearing surface on deck of bridge over Wimmera River		·05
WINCHELSEA SHIRE—			
Birregurra Road	Patrol maintenance throughout		2·5
Birregurra–Dean's Marsh Road	Patrol maintenance throughout		7·5
Birregurra–Forrest Road	Widening, resheeting and sealing between Dewing's Creek and railway crossing		·51
" " "	Spall pitching side drains near Fairholm School and Section Hill, 1·15 miles		—
" " "	Patrol maintenance throughout		10
Lorne Road	Patrol maintenance throughout		16
WINCHELSEA AND COLAC SHIRES (Joint Works)—			
Birregurra Road	Patrol maintenance throughout		1·5
WODONGA SHIRE—			
Beechworth–Wodonga Road	General maintenance, construction of culverts and forming at Middle Creek		11
Kiewa–Wodonga Road	Sealing throughout		1·25
" "	Patrol maintenance		1·1
Sydney Road	Gravelling extra width and preparation for sealing same		1·4
" "	General maintenance		1
Tallangatta Road	Gravelling extra width and preparation for sealing same		·4
" "	General maintenance		·4
Wodonga–Yackandandah Road	Widening culverts and general maintenance		3·4
WONTHAGGI BOROUGH—			
Wonthaggi–Inverloch Road	Patrol maintenance throughout		2·32
Wonthaggi–Korumburra Road	Patrol maintenance throughout		·75
Wonthaggi–Loch Road	Patrol maintenance throughout		·81
WOORAYL SHIRE—			
Fairbank Road	General maintenance throughout		2·08
Farmers' Road	General maintenance throughout		13·5
Inverloch–Leongatha Road	General maintenance throughout		16
Inverloch–Wonthaggi Road	General maintenance throughout		2·5
Kongwak–Inverloch Road	General maintenance throughout		2·16
Leongatha–Mirboo Road	General maintenance throughout		6·8
Leongatha–Yarragon Road	General maintenance throughout		13
Lower Tarwin Road	General maintenance throughout		11·75
Main South Gippsland Road	General maintenance throughout		17
Marden Road	General maintenance throughout		10
Mirboo South–Foster North Road	General maintenance throughout		4·25
Turton's Creek Road	General maintenance throughout		6·75
Wild Dog Valley Road	General maintenance throughout		9
WOORAYL AND KORUMBURRA SHIRES (Joint Works)—			
Wild Dog Valley Road	General maintenance throughout		1·25
WOORAYL AND MIRBOO SHIRES (Joint Works)—			
Turton's Creek Road	General maintenance throughout		·45
WOORAYL AND SOUTH GIPPSLAND SHIRES (Joint Works)—			
Mirboo South–Foster North Road	General maintenance throughout		2·75
WYCHEPROOF SHIRE—			
Birchip–Sea Lake Road	Patrol maintenance southerly from Sea Lake to shire boundary		17·5
Birchip–Wycheproof Road	Patrol maintenance westerly from Calder Highway to Tchum Lakes		16·5
Corack Road	Patrol maintenance westerly from Calder Highway		2
Sea Lake–Ultima Road	Patrol maintenance easterly from Sea Lake to shire boundary		10
Woomelang–Sea Lake Road	Patrol maintenance westerly and southerly from Birchip Road		10
Wycheproof–Sea Lake Road	Patrol maintenance through townships of Wycheproof and Sea Lake		1·56
Wycheproof–Wooroonooke Road	Patrol maintenance southerly from Calder Highway		3
YACKANDANDAH SHIRE—			
Dederang Road	Double coat sealing from 0 to ·75 mile		·75
" "	Curve improvement at 23 miles		—
" "	Patrol maintenance throughout		28
Gundowring Road	Double coat sealing from 6 to 10 miles		4
" "	Preparation for sealing from 5·25 to 6 miles and 10·25 to 11 miles		1·5
" "	Realignment and construction of culvert at 12·75 miles		—
" "	Patrol maintenance throughout		20·1
Huon–Kiewa Road	Patrol maintenance throughout, widening cuttings and embankments		2·9
Kergunyah Road	Patrol maintenance throughout		7·7
Kergunyah South Road	Patrol maintenance throughout		11·2
Kiewa East Road	Patrol maintenance throughout		3·2
Kiewa–Wodonga Road	Preparation of sealing from 2·8 to 3·4 miles		·6
" " "	Curve improvement at 1·75 miles		—
" "	Patrol maintenance throughout		6·4
Myrtleford–Yackandandah Road	Patrol maintenance throughout		5·4
Yackandandah–Wodonga Road	Double coat sealing from 8·5 to 9·5 miles		1
" " "	Patrol maintenance throughout		15·7
	Carried forward	—	7,287·96

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out
		Miles.	Miles.
	UNDER MUNICIPALITIES—*continued.*		
	Brought forward	—	7,287·96
YARRAWONGA SHIRE—			
Peechelba Road	Patrol maintenance	..	1
Tungamah–Wilby Road	General maintenance	..	1·25
Yarrawonga–Wangaratta Road	Patrol maintenance	..	10·5
YEA SHIRE—			
Highlands Road	General maintenance	..	2·5
Molesworth–Dropmore Road	General maintenance	..	10
Upper Goulburn Road	Reshaping with power grader	..	14
" " "	Super-elevating, widening curves and building up shoulders in preparation for bitumen surfacing	..	14
" " "	Resheeting with gravel	..	4·25
" " "	Realignment of curve at Gardiner's	..	·12
" " "	Realignment of curve at Box Hill	..	·11
" " "	Realignment of curve at Ellis's	..	·05
" " "	Completion of reconstruction of Goulburn bridge at Molesworth	..	·14
" " "	Patrol maintenance	..	21
Whittlesea–Yea Road	Realignment of section of Junction Hill	..	·2
" " "	Resheeting with gravel	..	2·25
" " "	Patrol maintenance	..	31
Yarra Glen–Glenburn Road	Reshaping with power grader	..	10
" " "	Resheeting with gravel	..	·4
" " "	Patrol maintenance	..	10
Yea–Glenburn Road	Reshaping with power grader	..	13
" " "	Super-elevating curves	..	2
" " "	Resheeting with gravel	..	4·25
" " "	Patrol maintenance	..	18
YEA AND BROADFORD SHIRES (Joint Works)—			
Upper Goulburn Road	Patrol maintenance	..	1·75
	Total, Ordinary Main Roads	—	7,459·73
	METROPOLITAN MAIN ROADS.		
BOX HILL CITY—			
Burwood Road	General maintenance	..	2·04
Healesville Road	General maintenance	..	2·04
BOX HILL AND CAMBERWELL CITIES (Joint Works)—			
Warrigal Road	General maintenance	..	1·88
CAMBERWELL CITY—			
Doncaster Road	Widening with crushed rock from 20 to 30 feet from Balwyn to Tannock Street	..	·64
" " "	Patrol maintenance	..	1·13
Healesville Road	Patrol maintenance	..	·11
Warrigal Road	Patrol maintenance	..	1·27
COBURG CITY—			
Sydney Road	General maintenance	..	·6
COLLINGWOOD CITY—			
Heidelberg Road	General maintenance from Merri Creek bridge to Clifton Hill railway gates, and painting traffic lines	..	·5
FOOTSCRAY CITY—			
Ballarat Road	Single coat sealing from Droop Street to ·49 mile east of Nicholson Street	..	·88
Napier Street	Construction of rolled concrete base and asphalt surface from Maribyrnong Street to Hyde Street	..	·2
MALVERN CITY AND MULGRAVE SHIRE (Joint Works)—			
Warrigal Road	General maintenance	..	·42
MALVERN AND OAKLEIGH CITIES (Joint Works)—			
Warrigal Road	General maintenance	..	·86
MOORABBIN CITY—			
Warrigal Road	General maintenance throughout	..	3·5
MORDIALLOC CITY—			
Beach Road	Patrol maintenance	..	3·15
OAKLEIGH AND MOORABBIN CITIES (Joint Works)—			
Warrigal Road	General maintenance	..	1
PRESTON CITY—			
Epping Road	Construction of concrete kerb, channels and shoulders from Northernhay Street to Reservoir Railway Gates	..	·75
SANDRINGHAM CITY—			
Beach Road	Channelling, widening in fine crushed rock, priming and sealing, and surfacing with cold premixed bituminous material from Royal Avenue to Balcombe Road	..	1·27
" " "	Completion of fencing from McGregor Avenue to Beach View Drive, south of Rickett's Point Kiosk, and from Sparks Street to Keys Street	..	·74
" " "	Single sealing with cut-back bitumen from Linacre Road to Royal Avenue	..	1·32
" " "	Patrol maintenance	..	5·82
	Total, Metropolitan Main Roads	—	30·12
	GRAND TOTAL (Under Municipalities)	—	7,489·85

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER DIRECT SUPERVISION OF BOARD.		
ALBERTON SHIRE—			
Boolarra–Welshpool Road ..	General maintenance—Grand Ridge Road at Ryton to South Gippsland Shire boundary—direct labour	..	8·5
BALLAN SHIRE—			
Melbourne–Ballarat Road ..	Regrading and surfacing in Ballan township—direct labour	·12	..
,, ,, ,, ..	General maintenance at Ballan—direct labour	..	1·02
BALLARAT SHIRE—			
Ballarat–Creswick Road	Road mix sealing between Bald Hill Road turn-off and Creswick Shire boundary—direct labour	1	..
,, ,, ,, ...	General maintenance—direct labour	..	5
BELLARINE SHIRE—			
Geelong–Queenscliff Road ..	Regrading of shoulders from Geelong City boundary to Wallington—direct labour ..	7·8	..
Geelong–Portarlington Road ..	Reconstruction in fine crushed rock, including realignment of two curves and double coat sealing from Coppard's Road to Moolap State School—direct labour	1·46	..
,, ,, ,, ..	Resheeting with gravel and double coat sealing at Bellarine—direct labour	2·27	..
Portarlington–St. Leonard's Road ..	Resheeting with gravel and double coat sealing between Portarlington and the Golf Links—direct labour	1·42	..
,, ,, ,, ..	Reforming and surfacing with gravel including the realignment of two curves between the Golf Links and Hood's—direct labour	·87	..
BERWICK SHIRE—			
Prince's Highway	General maintenance at Berwick—direct labour	..	·3
BRAYBROOK SHIRE—			
Melbourne–Geelong Road ..	General maintenance—Footscray City boundary to State Highway boundary—direct labour	..	1·47
BROADFORD SHIRE—			
Sydney Road	General maintenance at Broadford—direct labour	..	1·45
CORIO SHIRE—			
Fyansford Road	Road mix sealing from Minerva Road to the start of the concrete pavement, and from the Cement Works to the Moorarbool River—direct labour	·5	..
,, ,, ...	General maintenance, Minerva Road to Moorarbool River Bridge—direct labour ..	..	1·35
COHUNA SHIRE—			
Murray River Valley Road ..	General maintenance at Cohuna—direct labour	..	·5
ECHUCA BOROUGH—			
Echuca–Cohuna Road	Reconstruction of bridge No. 1 at Echuca—direct labour	·01	..
,, ,, ,, ...	Repairs to bridge No. 5 at Echuca—direct labour	·01	..
,, ,, ,, ...	General maintenance at Echuca—direct labour	..	1·18
EUROA SHIRE—			
Murchison–Shepparton Road ..	General maintenance in Euroa Shire—direct labour	..	7·3
Sydney Road	General maintenance in Euroa Shire—direct labour	..	1·8
FOOTSCRAY CITY—			
Prince's Highway	Construction of new roadway across Stony Creek at Footscray—direct labour	·42	..
Melbourne–Geelong Road ..	General maintenance—Rising Sun Hotel to Braybrook Shire boundary—direct labour ..	..	1·69
GLENLYON SHIRE—			
Ballan Road	Reconstruction and double coat sealing between Sailor's Falls and Leonard's Hill—direct labour	2·7	..
Ballarat Road	Double coat sealing east of Eganstown—direct labonr	·8	..
GISBORNE SHIRE—			
Melbourne–Bendigo Road ..	Road mix sealing at Gisborne—direct labour	1·33	..
,, ,, ..	General maintenance at Gisborne—direct labour	..	1·33
GOULBURN SHIRE—			
Goulburn Valley Road	Completion of reconstruction and sealing between Hughes' Creek and Nagambie—direct labour	5·85	..
,, ,, ,, ...	Road mix sealing at Nagambie—direct labour	·4	..
,, ,, ,, ...	Reforming and gravelling south of Murchison East—direct labour	8·85	..
,, ,, ...	General maintenance in Goulburn Shire—direct labour	..	21·2
Murchison–Shepparton Road ..	General maintenance in Goulburn Shire—direct labour	..	3·5
HEALESVILLE SHIRE—			
Healesville–Alexandra Road ..	Road mix sealing from St. Fillans towards Buxton—direct labour	4	..
,, ,, ...	General maintenance—Yarra Bridge to Shire boundary beyond Buxton—direct labour ..	..	28
Marysville Road	General maintenance—St. Fillans to Marysville—direct labour	..	6·5
HUNTLY SHIRE—			
Bendigo–Echuca Road	General maintenance at Epsom and Elmore—direct labour	..	2·15
KEILOR SHIRE—			
Melbourne–Bendigo Road ..	General maintenance at North Essendon—direct labour	..	1·08
KILMORE SHIRE—			
Sydney Road	General maintenance at Kilmore—direct labour	..	1·64
LILLYDALE SHIRE—			
Main Healesville Road	Supply and spreading fine crushed rock on earth shoulders between Mooroolbark Road and the Yarra River—direct labour	12·85	..
,, ,, ,, ...	Road mix sealing from Ringwood Borough boundary to Croydon North—direct labour	1·75	..
,, ,, ,, ...	General maintenance—Lilydale to Yarra River—direct labour	..	11·05
,, ,, ,, ...	General maintenance—Ringwood Borough boundary to Lilydale—direct labour ..	..	6
Main Warburton Road	Supply and spreading crushed rock on earth shoulders from junction with Main Healesville Road to Killara Hill—direct labour	8·4	..
,, ,, ,, ...	Premix patching and plant mix sealing from top of Killara Hill to Woori Yallock Creek—direct labour	1·4	..
,, ,, ,, ...	General maintenance—junction with Main Healesville Road to bridge over Woori Yallock Creek—direct labour	..	9·9
MANSFIELD SHIRE—			
Mansfield–Woods Point Road ..	Construction of a timber bridge at Raspberry Creek—direct labour	·01	..
,, ,, ,, ..	General maintenance—Jamieson to Matlock—direct labour	..	38
MORWELL SHIRE—			
Boolarra–Foster Road	General maintenance—Boolarra to Boolarra South—direct labour	..	6
Boolarra–Welshpool Road ..	General maintenance—Morwell–Mirboo Road to English's Corner—direct labour ..	..	9
Morwell–Mirboo Road	General maintenance—Morwell–Mirboo Shire boundary to Whitelaw's Track—direct labour	..	7
NARRACAN SHIRE—			
Walhalla–Matlock Road	General maintenance—Walhalla to Aberfeldie—direct labour	..	28
NEWHAM AND WOODEND SHIRE—			
Melbourne–Bendigo Road ..	General maintenance at Woodend—direct labour	..	1·12
	Carried forward	64·22	213·03

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS CONSTRUCTED, ETC.—*continued.*

Name of Municipality and Road.	Nature and Locality of Works.	Permanent Works Constructed.	Reconstruction and Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER DIRECT SUPERVISION OF BOARD—*continued.*		
	Brought forward	64·22	213·03
NEWSTEAD AND MOUNT ALEXANDER SHIRE—			
Castlemaine-Maryborough Road ..	Beaching of scours between Castlemaine and Joyce's Creek—direct labour	·01	..
,, ,, ,, ..	Reconditioning and double coat sealing at Joyce's Creek—direct labour	·34	..
,, ,, ,, ..	General maintenance at Castlemaine—direct labour	..	1·37
,, ,, ,, ..	General maintenance—Castlemaine to Joyce's Creek—direct labour	..	11·03
Creswick Road	Construction of Fry's Bridge over Green Gully Creek	·01	..
SEYMOUR SHIRE—			
Sydney Road	General maintenance at Violet Town—direct labour	..	·8
,, ,, ...	General maintenance at Seymour—direct labour	..	1·56
SOUTH GIPPSLAND SHIRE—			
Boolarra-Foster Road	Construction of concrete culvert at Little Franklin River—direct labour	·01	..
,, ,, ,, ...	General maintenance—Southern boundary of Woorayl Shire to Turton's Creek Road—direct labour	..	5
SOUTH GIPPSLAND AND WOORAYL SHIRES—			
Boolarra-Foster Road	General maintenance—Gunyah junction to the southern bonndary of Woorayl Shire—direct labour	..	4
TAMBO SHIRE—			
Prince's Highway	Reconditioning through Lakes Entrance township—direct labour	·52	..
,, ,, ...	General maintenance at Lakes Entrance—direct labour	..	·52
TULLAROOP SHIRE—			
Castlemaine-Maryborough Road ..	Reconstruction and double coat sealing between Carlsbrook and Maryborough—direct labour	2·09	..
,, ,, ,, ..	General maintenance—Joyce's Creek to Maryborough—direct labour	..	13·13
UPPER YARRA SHIRE—			
Wood's Point Road	General maintenance—McVeigh's to Matlock—direct labour	..	34
VIOLET TOWN SHIRE—			
Rutherglen Road	General maintenance in Wangaratta Shire—direct labour	..	2·65
WANGARATTA SHIRE—			
Rutherglen Road	Construction of reinforced concrete box culverts at Springhurst—direct labour ..	·01	..
,, ,, ...	Road mix sealing in Wangaratta Shire—direct labour	2·67	..
Yarrawonga Road	General maintenance in Wangaratta Shire—direct labour	..	11·3
,, ,, ...	General maintenance on boundary between Wangaratta Shire and Borough—direct labour	..	·3
Beechworth Road	General maintenance—Avenue section near Wangaratta—direct labour	..	·9
WANGARATTA BOROUGH—			
Sydney Road	General maintenance at Wangaratta—direct labour	..	2·4
WERRIBEE SHIRE—			
Melbourne-Geelong Road ..	General maintenance at Werribee—direct labour	..	·8
WINCHELSEA SHIRE—			
Prince's Highway	General maintenance at Winchelsea—direct labour	..	1·4
WODONGA SHIRE—			
Bonegilla Road	General maintenance in Wodonga Shire—direct labour	..	1·52
	Total, Ordinary Main Roads	69·88	305·71
	METROPOLITAN MAIN ROADS.		
CAMBERWELL AND MALVERN CITIES AND MULGRAVE SHIRE—			
Warrigal Road	Construction of a reinforced concrete bridge over Gardiner's Creek	·01	..
FOOTSCRAY CITY—			
Napier Street	Plant mix surfacing on concrete base between Moreland Road and Hyde Street—direct labour	·22	..
MELBOURNE CITY—			
Hoddle Bridge Road	Construction of Hoddle Bridge over the Yarra River	·01	..
,, ,, ,, ...	Surfacing with plant mix material the concrete deck of the Hoddle Bridge over the River Yarra—direct labour	·21	..
	Total, Metropolitan Main Roads	·45	—
	GRAND TOTAL (Under direct supervision of Board)	70·33	305·71

APPENDIX E.

COUNTRY ROADS BOARD

STATE HIGHWAYS.

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF HIGHWAYS RECONSTRUCTED AND MAINTAINED UNDER THE PROVISIONS OF THE COUNTRY ROADS ACT 1928 DURING THE YEAR ENDED 30TH JUNE, 1938.

Name of Highway and Section.	Nature and Locality of Works.	Works Reconstructed.	Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER DIRECT SUPERVISION OF THE BOARD.		
PRINCE'S HIGHWAY (WEST)—			
Section 1	Plant mix regulation and sealing between mileages 8·61 and 8·76—direct labour	·15	
"	Premix regulation between mileages 9·2 and 13·6—direct labour	4·4	
"	Plant mix regulation and sealing, west of Little River Bridge—direct labour	·5	
"	Plant mix regulation from Hopper's Crossing to Werribee—direct labour	1·65	
"	Plant mix surfacing at Werribee River Bridge—direct labour	·11	
"	Resheeting with gravel and double coat sealing between Waurn Ponds and Mount Moriac—direct labour	·4	
"	Heavy patching and road mix sealing west of Mount Moriac—direct labour	·7	
"	Plant mix regulation sealing and plant mix sealing between Buckley and Winchelsea—direct labour	2·2	
"	Constructing reinforced concrete deck on existing stone culvert at mileage 60·2, and replacing three stone culverts at mileages 49·8, 56·4 and 59·7—direct labour	·03	
"	Replacing old timber culverts between Geelong and Winchelsea—direct labour	·01	
"	Maintenance and repairs to Werribee River Bridge—direct labour	·05	
"	General maintenance		52
Section 2	Resheeting with gravel and double coat sealing near Armytage—direct labour	·25	
"	Sealing crushed rock near Warncoort—direct labour	1	
"	Road mix sealing from Winchelsea-Colac Shire boundary to Colac—direct labour	10·67	
"	Road mix sealing between Pomborneit and Weerite—direct labour	4·61	
"	General maintenance		48·81
Section 3	Reconstruction in scoria and sealing between Allansford and Nirranda—direct labour	3·57	
"	Road mix sealing of curves at Illowa—direct labour	·44	
"	Premix patching prior to road mix sealing between Garvoc and Allansford—direct labour	13·7	
"	General maintenance		52·38
Section 4	Reconstruction in buckshot gravel between Tyrendarra East and Tyendarra—direct labour	5·76	
"	Widening existing steel and concrete bridge over Fitzroy River near Tyrendarra—direct labour	·02	
"	Sealing buckshot gravel between Tyrendarra and Narrawong—direct labour	3·74	
"	General maintenance		49·8
Section 5	Reconstruction in buckshot gravel west of bridge over Fitzroy River at Heywood—direct labour	·22	
"	Reconstruction in buckshot gravel near Lyons—direct labour	2	
"	Reconstruction in buckshot gravel between Lyons railway crossing and Winnap—direct labour	5·07	
"	Provision of footway to existing bridge over Fitzroy River at Heywood—direct labour	·01	
"	General maintenance		44·62
PRINCE'S HIGHWAY (EAST)—			
Section 1	Improvement to shoulders between Oakleigh and Narre Warren—direct labour	12	
"	Construction, surfacing and double coat sealing approaches to new bridge east of Springvale—direct labour	·1	
"	Completion of roadside improvements between Springvale and Dandenong—direct labour	4·1	
"	Plant mix sealing between Springvale and Dandenong—direct labour	3·9	
"	Plant mix sealing west of Dandenong—direct labour	·4	
"	Widening formation west of Harrisfield—direct labour	·04	
"	Major patching and road mix sealing between Berwick and Beaconsfield—direct labour	1·2	
"	Road mix sealing west of Pakenham—direct labour	·2	
"	Emulsion washing east of Beaconsfield—direct labour	·8	
"	Premix sealing at Back Creek—direct labour	·15	
"	Resheeting with sand and double coat sealing near Tynong turnoff—direct labour	·2	
"	Resheeting with sand and double coat sealing at Ti Tree Flat—direct labour	·25	
"	Premix sealing easterly from Picnic Point—direct labour	·8	
"	Maintenance and double coat sealing at Robin Hood—direct labour	·8	
"	Resheeting with sand and double coat sealing west of Drouin—direct labour	1·8	
"	Maintenance and double coat sealing between Drouin and Warragul—direct labour	1·05	
"	General maintenance		49·93
Section 2	Construction of concrete culvert over Sunny Creek near Trafalgar—direct labour	·01	
"	Construction of a drain under stock route at Rosedale—direct labour	·15	
"	Sealing western approach of Pearson's Bridge—direct labour	·2	
"	Sealing eight road junctions between Rosedale and Sale—direct labour	·08	
"	Premix regulation between Rosedale and Sale—direct labour	·05	
"	Premix patching and regulating between Nilma and Darnum—direct labour	2·5	
"	Premix patching, regulating and superelevating curves between Moe River and Trafalgar—direct labour	6·9	
"	Road mix sealing between Moe River and Trafalgar—direct labour	6·9	
"	Premix patching and regulating between Maffra railway crossing and Sheepwash Creek—direct labour	3·1	
"	Forming, gravelling and construction of culverts at junction with Upper Flynn Road—direct labour	·01	
"	Regrading Yallourn Railway Crossing at mileage 88·5—direct labour	·16	
"	General maintenance		66·76
Section 3	Road mix sealing near Providence Ponds—direct labour	·1	
"	Sealing junctions to side roads between Sale and Bairnsdale—direct labour	·05	
"	Premix regulations between Sale and Bairnsdale—direct labour	·3	
"	General maintenance		38·1
Section 4	Reconditioning, gravelling and double coat sealing between Nowa Nowa and Wombat Creek—direct labour	7·86	
"	Replacement of culvert near Johnsonville—direct labour	·01	
"	Clearing new deviation near Toorloo Arm—direct labour	2·15	
"	Construction of bridge over Toorloo Arm—direct labour	·02	
"	Regrading curve and road mix sealing between Mitchell River Bridge and Lucknow turnoff—direct labour	·48	
"	Premix regulating between Bairnsdale and Wombat Creek—direct labour	·05	
"	Widening bridge approach west of Snowy River Bridge—direct labour	·04	
"	Forming, grading, trimming, gravelling and consolidating together with laying of reinforced concrete pipe culverts near Toorloo Arm—direct labour	1·62	
"	General maintenance		58·83
	Carried forward	121·79	82·24

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS RECONSTRUCTED, ETC.—*continued.*

Name of Highway and Section.	Nature and Locality of Works.	Works Reconstructed.	Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER DIRECT SUPERVISION OF THE BOARD—*continued.*		
	Brought forward	121·79	82·24
PRINCES HIGHWAY (EAST)—*continued.*			
Section 5	Construction of bridge at Reed Bed Creek—direct labour	·01	..
"	Scarifying, reshaping and gravelling between Fat Cow Creek and Brodribb River—direct labour	2·3	..
"	General maintenance	..	54·18
Section 6	Replacement of culvert together with approaches at Genoa—direct labour	·11	..
"	Re-alignment at Reedy Creek—direct labour	·25	..
"	Improving three curves west of Genoa—direct labour	·45	..
"	Construction of new bridge at Reedy Creek—direct labour	·04	..
"	Re-alignment and widening west of Genoa—direct labour	·7	..
"	General maintenance	..	41·49
WESTERN HIGHWAY—			
Section 1	Road mix sealing between mileages 13·3 and 14—direct labour	·7	..
"	Resealing between mileages 14 and 15·02—direct labour	1·02	..
"	Plant mix sealing between mileages 15·02 and 17 and between mileages 18·1 and 23·35—direct labour	7·23	..
"	Experimental sealing between mileages 17 and 18·1—direct labour	1·1	..
"	Plant mix sealing between Albion and Deer Park—direct labour	2·31	..
"	Gravelling shoulders between Melton and Pyrete Creek—direct labour	5·4	..
"	Re-alignment of curve at Pyke's Creek Reservoir—direct labour	·27	..
"	Construction of approaches to Werribee River Bridge—direct labour	·12	..
"	Road mix sealing west of Ballan Township—direct labour	·23	..
"	Road mix sealing at Llandeilo—direct labour	·45	..
"	Regrading, re-aligning and resheeting east of Gordon—direct labour	1·35	..
"	Redecking bridge over Korkuperrimul Creek—direct labour	·01	..
"	Widening bridge over eastern Moorarbool River—direct labour	·01	..
"	Construction of a reinforced concrete bridge over the Werribee River approximately 46.5 miles from Melbourne	·02	..
"	General maintenance	..	55·21
Section 2	Resheeting and double coat sealing near Stonyford Bridge—direct labour	·75	..
"	Experimental road mix sealing between Ballarat and Burrumbeet—direct labour	9·8	..
"	Widening bridge over Mount Emu Creek near Trawalla—direct labour	·02	..
"	Road mix sealing at Box's Cutting—direct labour	1·6	..
"	Road mix sealing near Mount Mistake—direct labour	2·54	..
"	Road mix sealing between Dobie and Ararat Borough boundary—direct labour	2·83	..
"	Reconstruction and sealing of curve near the Hopkins River—direct labour	·39	..
"	Premix regulating between Beaufort and Ararat—direct labour	7·44	..
"	General maintenance	..	53·08
Section 3	Construction in concrete of Junction Bridge between Ararat and Stawell—direct labour	·01	..
"	Premix regulating between Armstrong Overhead Bridge and Deep Lead—direct labour	17·57	..
"	Regrading approaches to State Rivers and Water Supply Commission's culvert at 160 mile post—direct labour	·05	..
"	Sealing edges and experimental waterproofing of shoulders between Wal Wal and Burnt Creek—direct labour	7·4	..
"	Widening, resheeting and re-aligning curves on Burnt Creek section—direct labour	1·5	..
"	General maintenance	..	50·36
Section 4	Road mix sealing between Dahlen and Pimpinio—direct labour	4·7	..
"	Waterproofing of shoulders east of Wail—direct labour	·86	..
"	Road mix sealing westerly from Gerang—direct labour	4·5	..
"	Premix regulating near Dimboola—direct labour	3·71	..
"	Light resealing between Horsham and Pimpinio—direct labour	3·8	..
"	General maintenance	..	42·56
Section 5	Waterproofing shoulders near Kaniva—direct labour	·13	..
"	Reshecting with limestone gravel between mileages 271·5 and 272·9—direct labour	1·4	..
"	Double coat sealing over limestone between mileages 269·35 and 269·55—direct labour	·2	..
"	Double coat sealing over gravel between mileages 272·89 and 273·77—direct labour	·88	..
"	Road mix sealing between mileages 263·5 and 264·4—direct labour	·9	..
"	Single coat sealing over limestone between mileage 267·1 and 268·62, 268·92 and 269.35, and 270·1 and 272·89—direct labour	4·74	..
"	General maintenance	..	38·7
CALDER HIGHWAY—			
Section 1	Regrading and re-aligning through Black Forest immediately south of Woodend—direct labour	1·9	..
"	Improvement to shoulders between Spring Gully and mileage 27·3—direct labour	10·5	..
"	Plant mix sealing between Spring Gully and mileage 11·95—direct labour	4·08	..
"	Plant mix sealing between mileages 20·25 and 22·4 and between mileages 23 and 27·3—direct labour	6·45	..
"	Emulsion washing where necessary over road mix seal between Woodend and Kyneton—direct labour	8	..
"	Improving road junctions at Holden, Blackwood and Robert's Road—direct labour	·03	..
"	Re-aligning curve and double coat sealing north of Taradale	·43	..
"	Construction of footbridge at Taradale	·02	..
"	General maintenance	..	58
Section 2	Road mix sealing between mileages 74·93 and 75·14—direct labour	·2	..
"	Premix patching between Big Hill and Kangaroo Flat—direct labour	1·7	..
"	Re-aligning curve and regrading railway crossing south of Inglewood—direct labour	·13	..
"	Improving approaeh to Bulabul Creek between Bridgewater and inglewood—direct labour	·13	..
"	Widening culvert at mileage 78·98 near Harcourt	·01	..
"	General maintenance	..	43·07
Section 3	Construction of reinforced concrete bridge north of Charlton—direct labour	·01	..
"	General maintenance	..	52·23
Section 4	Light resealing at Berriwillock—direct labour	·5	..
"	Road mix sealing between Berriwillock and Sea Lake—direct labour	10·44	..
"	Re-aligning and resheeting at Boigbeat—direct labour	·5	..
"	General maintenance	..	47·16
Section 5	Re-aligning north of Sea Lake—direct labour	·5	..
"	Re-aligning at Sea Lake—direct labour	·25	..
"	Re-aligning at Ninda turnoff—direct labour	·25	..
"	Lifting formation and sheeting west of Mittyack—direct labour	1·32	..
"	General maintenance	..	56·13
Section 6	Regrading sand hills at Trinita—direct labour	1·12	..
"	Re-aligning curves between Trinita and Hattah—direct labour	1·47	..
"	Sheeting marled sections north of Ouyen—direct labour	2·41	..
"	Forming, reforming and sheeting with limestone, south of Nowingi—direct labour	1·52	..
"	Road mix sealing south of Redcliffs—direct labour	2·28	..
"	Replacing State Rivers and Water Supply Commission's culvert south of Redcliffs—direct labour	·01	..
"	Double coat sealing south of Yatpool—direct labour	8·25	..
"	General maintenance	..	62·69
NORTHERN HIGHWAY—			
Section 1	Light emulsion sealing southerly from Echuca—direct labour	8·25	..
"	Replacing culvert at Huntly—direct labour	·01	..
"	Replacing culvert at Echuca South—direct labour	·01	..
"	General maintenance	..	48·5
	Carried forward	296·27	1,527·8

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS RECONSTRUCTED, ETC.—*continued.*

Name of Highway and Section.	Nature and Locality of Work.	Works Reconstructed.	Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER DIRECT SUPERVISION OF THE BOARD—*continued.*		
	Brought forward	296·27	1,527·8
HUME HIGHWAY—			
Section 1	Improving shoulders between Campbellfield and Kilmore—direct labour	27·14	..
,,	Plant mix sealing northerly from Barry's Lane—direct labour	·2	..
,,	Light emulsion resealing south of Somerton—direct labour	·45	..
,,	Plant mix regulating south of Beveridge—direct labour	1·15	..
,,	Regrading and resheeting at Beveridge—direct labour	·23	..
,,	Resealing between Gough's Lane and Manse Hill—direct labour	1	..
,,	Widening existing bridge near Heathcote turnoff—direct labour	·02	..
,,	Painting bridges over Sunday Creek and Goulburn River at Seymour—direct labour	·09	..
,,	General maintenance	..	48·32
Section 2	Construction of a two-cell reinforced concrete culvert between Violet Town and Baddaginnie—direct labour	·01	..
,,	Sealing new curve at Seymour—direct labour	·15	..
,,	Widening reinforced concrete bridge over Castle Creek at Euroa—direct labour	·01	..
,,	Sealing new curve at Avenel—direct labour	·19	..
,,	Improving riding qualities with premix patching between Baddaginnie and Benalla—direct labour	6·6	..
,,	Construction of new curve at Avenel—direct labour	·18	..
,,	Road mix sealing north of Avenel—direct labour	·34	..
,,	Widening existing reinforced concrete bridge, re-aligning approaches and sealing between Euroa and Violet Town—direct labour	·28	..
,,	Road mix sealing between Baddaginnie and Benalla—direct labour	4·45	..
,,	General maintenance	..	55·66
Section 3	Widening three reinforced concrete bridges between Benalla and Winton—direct labour	·03	..
,,	Replacing and widening nine existing culverts between Glenrowan and Chiltern—direct labour	·09	..
,,	Widening reinforced concrete bridge north of Benalla—direct labour	·01	..
,,	Construction of footbridge over Frying Pan Creek at Barnawartha—direct labour	·01	..
,,	Construction of stock route between Wodonga and Murray River—direct labour	·36	..
,,	Reconstruction of curve and sealing at Glenrowan—direct labour	·05	..
,,	General maintenance	..	60·18
OMEO HIGHWAY—			
Section 1	Widening two bridges on Bruthen Flats—direct labour	·01	..
,,	Widening, re-aligning and top dressing from Wild Dog to Double Bridges—direct labour	·85	..
,,	Premix regulating between Bairnsdale and Bruthen—direct labour	·05	..
,,	Widening, re-aligning and gravelling north of Swift's Creek—direct labour	·03	..
,,	General maintenance	..	16·53
Section 2	Construction of a single span timber bridge at mileage 45·05—direct labour	·01	..
,,	Construction of a single span timber bridge at mileage 33·22—direct labour	·01	..
,,	Reconditioning and gravelling north of Swift's Creek—direct labour	1·65	..
,,	Construction of a single span timber bridge at mileage 30·35—direct labour	·02	..
,,	General maintenance	..	45·89
Section 3	Realigning and gravelling south of Glen Wills—direct labour	·54	..
,,	Improvement to dangerous curves between Blue Duck and Glen Wills—direct labour	·72	..
,,	Forming, gravelling and installation of a reinforced concrete pipe culvert at mileage 4·27—direct labour	·14	..
,,	Widening narrow side cutting between mileages 28·2 and 28·3—direct labour	·1	..
,,	Maintenance and repairs to Left Hand Creek bridge—direct labour	·01	..
,,	Sealing in Eskdale Township—direct labour	·29	..
,,	Scaling in Mitta Mitta Township—direct labour	·26	..
,,	Benching Scrubby Creek turnoff at mileage 70·40—direct labour	·04	..
,,	General maintenance	..	80·24
Section 4	Forming, gravelling and sealing highway junction curves at Tallangatta—direct labour	·85	..
,,	Widening side cutting and improving curve at Double Gully—direct labour	·68	..
,,	General maintenance	..	24·15
MURRAY VALLEY HIGHWAY—			
Section 1	Construction of a reinforced concrete culvert between Wodonga and Ebden—direct labour	·01	..
,,	Sealing at Granya—direct labour	·6	..
,,	Reconstruction and sealing at Kiewa River—direct labour	·26	..
,,	Construction and road mix sealing between Wodonga and Ebden—direct labour	2·9	..
,,	Sealing near Jingellic—direct labour	2·76	..
,,	Resheeting between Wodonga and Tallangatta—direct labour	·8	..
,,	Reconstruction of curves and reconditioning between Jingellic and Walwa—direct labour	·6	..
,,	Sealing between Jingellic and Walwa—direct labour	2·76	..
,,	Construction of deviation west of Thologolong School—direct labour	1·15	..
,,	General maintenance	..	109·79
Section 2	Forming and sanding at Yarrawonga—direct labour	·58	..
,,	Widening reinforced concrete bridge east of Rutherglen—direct labour	·01	..
,,	Widening and sealing east of Rutherglen—direct labour	1·1	..
,,	Sealing at Ovens River—direct labour	1·06	..
,,	Reconstruction east of Cobram—direct labour	·25	..
,,	Construction of two new curves west of Rutherglen—direct labour	·58	..
,,	Widening reinforced concrete bridge at Indigo Creek, east of Rutherglen—direct labour	·02	..
,,	Construction of two new approaches at Cobram—direct labour	·02	..
,,	Sealing at Strathmerton—direct labour	·36	..
,,	Emulsion sealing east of Echuca—direct labour	1·31	..
,,	Reconditioning and double coat sealing between Wyuna and Echuca—direct labour	7·56	..
,,	Construction of turnoff to Kyabram at mileage 127·3—direct labour	·1	..
,,	Scarifying and reshaping east of Echuca—direct labour	1·17	..
,,	General maintenance	..	140·5
Section 3	Additional covering material and road mix sealing between Echuca and Turrumberry—direct labour	13·02	..
,,	Premix patching between Turrumberry and Leitchville turnoff—direct labour	14·33	..
,,	Drainage of borrow pits west of Milne's Bridge—direct labour	2·25	..
,,	Reconditioning and sealing at Kerang—direct labour	·19	..
,,	Premix patching and road mix sealing between Kerang and Tresco—direct labour	17·8	..
,,	Reconditioning and sealing at Pental—direct labour	·34	..
,,	Improvements to curves between Lake Boga and Swan Hill—direct labour	·5	..
,,	Widening a State Rivers and Water Supply Commission's culvert south-east of Swan Hill—direct labour	·01	..
,,	General maintenance	..	98·19
Section 4	Construction of curve north of Nyah—direct labour	·2	..
,,	Reconstruction of curves north of Swan Hill—direct labour	·5	..
,,	Re-aligning, resheeting and double coat sealing north-west of Nyah—direct labour	2·36	..
,,	Forming and gravelling boggy section east of Boundary Bend—direct labour	·8	..
,,	Premix patching and road mix sealing north of Swan Hill—direct labour	2·45	..
,,	Resheeting and double coat sealing north of Nyah—direct labour	3·03	..
,,	Elimination of bad curves at Boundary Bend—direct labour	1	..
,,	Widening State Rivers and Water Supply Commission's culverts at Nyah—direct labour	·06	..
,,	Widening ten (10) State Rivers and Water Supply Commission's culverts between Swan Hill and Nyah—direct labour	·1	..
,,	Reforming and limestoning between Boundary Bend and Lake Pawell—direct labour	4·33	..
,,	General maintenance	..	107·41
	Carried forward	433·63	2,314·66

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF ROADS RECONSTRUCTED, ETC.—*continued.*

Name of Highway and Section.	Nature and Locality of Work.	Works Reconstructed.	Maintenance Works Carried Out.
		Miles.	Miles.
	UNDER DIRECT SUPERVISION OF THE BOARD—*continued.*		
	Brought forward	433·63	2,314·66
SOUTH GIPPSLAND HIGHWAY—			
Section 1	Resheeting and double coat sealing easterly from Eumemmering Creek—direct labour ..	1·4	..
,, ...	Premix regulating between Cranbourne and Five Ways—direct labour	3·2	..
,, ...	Resheeting with sand and double coat sealing at Dalmore turnoff—direct labour ..	·2	..
,, ...	Maintenance, surfacing and double coat sealing east of Dalmore—direct labour ..	·36	..
,, ...	Regrading approaches, surfacing and double coat sealing at Main Drain—direct labour	·1	..
,, ...	Maintenance and double coat sealing east of Main Coast Road turnoff—direct labour ..	2·25	..
,, ...	Reconstruction and surfacing with sand between mileage 56 and the Loch turnoff—direct labour	3·03	..
,, ...	General maintenance	..	38·8
Section 2	Widening with crushed rock and double coat sealing from Yarram to Alberton railway crossing—direct labour	3	..
,, ...	General maintenance	..	28·98
Section 3	Double coat sealing from mileage 27 near Giffard Road junction to mileage 28·05 at Morris's Creek—direct labour	1·05	..
,, ...	Double coat sealing on approaches to Cox's Bridge—direct labour	·18	..
,, ...	Re-aligning and gravelling at Longford Hill—direct labour	·39	..
,, ...	Gravelling and double coat sealing between Longford and Seaspray turnoff—direct labour	·76	..
,, ...	Construction of a reinforced concrete culvert at Merriman's Creek floodway—direct labour	·01	..
,, ...	Construction of an eight-span flat slab bridge known as Cox's Bridge in the town of Sale	·02	..
,, ...	General maintenance	..	43·95
MIDLAND HIGHWAY—			
Section 1	Widening and resheeting between Geelong City boundary and Bell Post Hill—direct labour	1·47	..
,, ...	Road mix sealing at Scotsburn—direct labour	1	..
,, ...	Road mix sealing south-easterly from Buninyong—direct labour	1	..
,, ...	Resealing between Mt. Clear and Ballarat—direct labour	2·57	..
,, ...	General maintenance	..	49·59
Section 4	Patching and emulsion surface treatment between Shepparton and Pine Lodge—direct labour	5·5	..
,, ...	Construction of new handrails on bridge at Stockyard Creek—direct labour	·01	..
,, ...	Road mix sealing between Shepparton and Pine Lodge—direct labour	2·45	..
,, ...	Road mix sealing between Cosgrove and Nalinga—direct labour	5·73	..
,, ...	General maintenance	..	36·32
Section 5	Construction of deviation north of Swanpool—direct labour	·45	..
,, ...	Reforming and gravelling between Benalla and Swanpool—direct labour	1·08	..
,, ...	General maintenance	..	28·6
Section 8	General maintenance	..	11·8
BONANG HIGHWAY—			
Section 1	Construction of a single span bridge at Marriott's Swamp—direct labour	·01	..
,, ...	Improvements to six curves at mileages 13·3, 20·1, 20·6, 22, 22·4 and 23·7—direct labour	·6	..
,, ...	Widening and improving curves between Blue Gum Hill and Toney's—direct labour ..	2·5	..
,, ...	Superelevating and improving curves between mileages 2·8 and 4·5—direct labour ..	1·7	..
,, ...	Shouldering and metalling between Little Bill and Bonang—direct labour	5	..
,, ...	Improving ten curves between 24·1 miles and 32·6 miles	1	..
,, ...	General maintenance	..	72·04
STURT HIGHWAY—			
Section 1	General maintenance	..	61·62
HENTY HIGHWAY—			
Section 1	Sealing buckshot gravel near Branxholme—direct labour	1·87	..
,, ...	Road mix sealing south of Hamilton—direct labour	1·6	..
,, ...	General maintenance	..	34·58
Section 2	Road mix sealing between Hamilton and Cavendish—direct labour	1·7	..
,, ...	Supplying, carting and spreading gravel between Cherrypool and McKenzie's Creek—direct labour	3	..
,, ...	Shouldering and improving curves between Cherrypool and McKenzie's Creek—direct labour	9·2	..
,, ...	General maintenance	..	78·23
Section 3	Road mix sealing between Horsham and Dooen—direct labour	1·3	..
,, ...	Reshaping and resheeting north of Dooen—direct labour	1·05	..
,, ...	Road mix sealing north of Warracknabeal—direct labour	1·1	..
,, ...	Reconditioning and double coat sealing south of Galaquil—direct labour	1·35	..
,, ...	Reconditioning and double coat sealing between Beulah and Goyura—direct labour ..	3·65	..
,, ...	Light resealing at Beulah—direct labour	1·23	..
,, ...	Forming and draining between Black Heath and Kellallac—direct labour	3·5	..
,, ...	General maintenance	..	71·9
Section 4	Reconditioning limestone sections between Hopetoun and Lascelles—direct labour ..	12·7	..
,, ...	General maintenance	..	16
	Total (Under direct supervision of Board)	524·9	2,887·07

APPENDIX F.

COUNTRY ROADS BOARD.

TOURISTS' ROADS.

STATEMENT SHOWING MILEAGE, LOCALITY, ETC., OF TOURISTS' ROADS RECONSTRUCTED AND MAINTAINED UNDER THE PROVISIONS OF THE COUNTRY ROADS ACT 1928 DURING THE YEAR ENDED 30TH JUNE, 1939.

Name of Municipality and Road.	Nature and Locality of Work.	Works Reconstructed.	Maintenance Works Carried Out.
		Miles.	Miles.
UNDER DIRECT SUPERVISION OF THE BOARD.			
Acheron Way—			
Section 1	General maintenance—Warburton to Cement Creek—direct labour	..	5·1
Section 2	Widening, reforming, and surfacing with crushed rock from end of constructed road towards Somers Park—direct labour	1·15	..
,, ...	Repairs to bridges between Cement Creek and Somers Park—direct labour	·02	..
,, ...	General maintenance—Cement Creek to Narbethong—direct labour	..	18·05
Alpine Road	Construction of deviation between St. Bernard and Mount Hotham—direct labour ..	·6	..
,, ,, ...	General maintenance throughout—direct labour	..	19·5
Donna Buang Roads—			
Section 1	Reshaping and surfacing with fine crushed rock between Don River and Reid's timber landing—direct labour	·81	..
,, ...	General maintenance—Cement Creek to Donna Buang Tower—direct labour ..	..	7·5
Section 2	Reshaping and surfacing with fine crushed rock between Tower Road and Healesville—direct labour	1·56	..
,, ...	Reshaping and surfacing with fine crushed rock Tower Road section—direct labour ..	1·21	..
,, ...	Preparation of surface and double coat sealing between Healesville and Badger Creek—direct labour	2	..
,, ...	General maintenance—Tower Road to Healesville—direct labour	..	15
Gypsy Point Road	General maintenance—direct labour	..	1·5
Grampians Road	Double coat sealing between Mokepilly Creek and Pomonal Road—direct labour ..	5	..
,, ,, ...	Double coat sealing between Grampians House and Bellfield Hotel—direct labour ..	1·72	..
,, ,, ...	General maintenance—direct labour	..	44·1
Mallacoota Road	General maintenance—direct labour	..	15
Mount Buffalo Road	Priming and sealing near Porepunkah—direct labour	3·8	..
,, ,, ,, ...	Widening and re-aligning near Mount Buffalo Chalet—direct labour	·33	..
,, ,, ,, ...	General maintenance—direct labour	..	18
Mount Victory Road	General maintenance—direct labour	..	19·25
Ocean Road—			
Section 1	Forming, grading, gravelling, and double coat sealing at Airey's Inlet—direct labour ..	·35	..
,, ...	General maintenance—Torquay to Lorne—direct labour	..	28·6
Section 2	Construction of bridge and approaches at Skene's Creek—direct labour	·23	..
,, ...	Placing longitudional decking on three bridges over the George, Wye, and Kennett Rivers between Lorne and Apollo Bay—direct labour	·03	..
,, ...	General maintenance—Lorne to Wild Dog Creek—direct labour	..	26·5
Section 4	Reconstruction of curve near Port Campbell—direct labour	·12	..
,, ...	Resheeting in buckshot gravel between Sherbrooke River and Glenample—direct labour	4	..
,, ...	General maintenance—Laver's Hill to Peterborough—direct labour	..	42·2
Otway Lighthouse Road	General maintenance—direct labour	..	8
Silverband Road	General maintenance—direct labour	..	5·66
Sydenham Inlet Road	General maintenance—direct labour	..	14
Wartook Road	General maintenance—direct labour	..	2·25
	Total (Under direct supervision of Board)	22.93	290·21
UNDER MUNICIPALITIES.			
FLINDERS SHIRE—			
Arthur's Seat Road	Reconstruction and sealing	3·24	..
,, ,, ,, ...	Sealing	·76	..
,, ,, ,, ...	Patrol maintenance	..	4
OMEO AND BRIGHT SHIRES (Joint Works)—			
Alpine Road	Construction of low level crossing at Jim and Jack Creek at 7·1 miles	—	..
,, ,, ...	Reforming, widening and gravelling from 3·55 to 4 miles	·45	..
,, ,, ...	Forming, grading and gravelling from 18·53 to 19 miles	·47	..
,, ,, ...	Forming, grading and gravelling from 28·47 to 29·2 miles	·73	..
,, ,, ...	Patrol maintenance	..	33
OTWAY SHIRE—			
Ocean Road (Apollo Bay to Laver's Hill)	Double coat sealing 12 feet wide from 1·4 to 2·16 miles from Laver's Hill ..	·78	..
,, ,, ,, ,,	Widening, super-elevating and resheeting with crushed rock from 2·16 to 3·86 miles from Laver's Hill	1·7	..
,, ,, ,, ,,	Resheeting with crushed rock from 3·41 to 5·11 miles from Apollo Bay	1·7	..
,, ,, ,, ,,	Patrol maintenance from Apollo Bay to Laver's Hill	..	34
	Total (Under Municipalities)	32.76	71

APPENDIX G.

COUNTRY ROADS BOARD.

UNEMPLOYMENT RELIEF ACT, No. 4097.

STATEMENT SHOWING DETAILS OF UNEMPLOYMENT RELIEF WORKS PUT IN HAND DURING THE YEAR ENDING 30TH SEPTEMBER, 1939.

Municipality and Road.	Particulars of Work.	Grant.	Expenditure.
		£	£ s. d.
ALEXANDRA SHIRE—			
Maintongoon Road	Earthworks	2,500	2,491 13 1
BERWICK SHIRE—			
Closer Settlement Roads	Reconstruction of Roads, Hallam Valley Estate	3,420	1,851 8 4
BRIGHT SHIRE—			
Upper Kiewa Valley Road	Clearing, Forming, and Widening	2,000	1,835 8 3
BULN BULN SHIRE—			
Noojee–Erica Road	Earthworks and Bridge	2,000	2,000 0 0
CRANBOURNE SHIRE—			
Mount Lyall Road	Clearing, Grading, &c.	600	281 0 4
South Gippsland Highway	Flood prevention works	2,000	776 6 9
MAFFRA SHIRE—			
Licola Road	Widening	2,500	2,500 0 0
METCALFE SHIRE—			
Elphinstone–Harcourt Road	Sealing, re-aligning, and bridge	1,000	1,000 0 0
PHILLIP ISLAND AND BASS SHIRES—			
San Remo–Newhaven Road	Construction of bridge and approaches ..	5,000	2,381 8 8
SOUTH GIPPSLAND SHIRE—			
Darby River Road	Completion of clearing and forming to Chalet	4,000	4,000 0 0
Promontory Road	Construction between Chalet and Bad Saddle	10,000	10,000 0 0
TAMBO SHIRE—			
Orbost–Buchan Road	Extension of clearing and earthworks ..	3,000	2,215 9 4
BULN BULN SHIRE—			
Forest Roads	Earthworks and bridge and sanding ..	4,000	3,337 4 11
	Total	42,020	34,669 19 8

By Authority: T. RIDER, Government Printer, Melbourne.