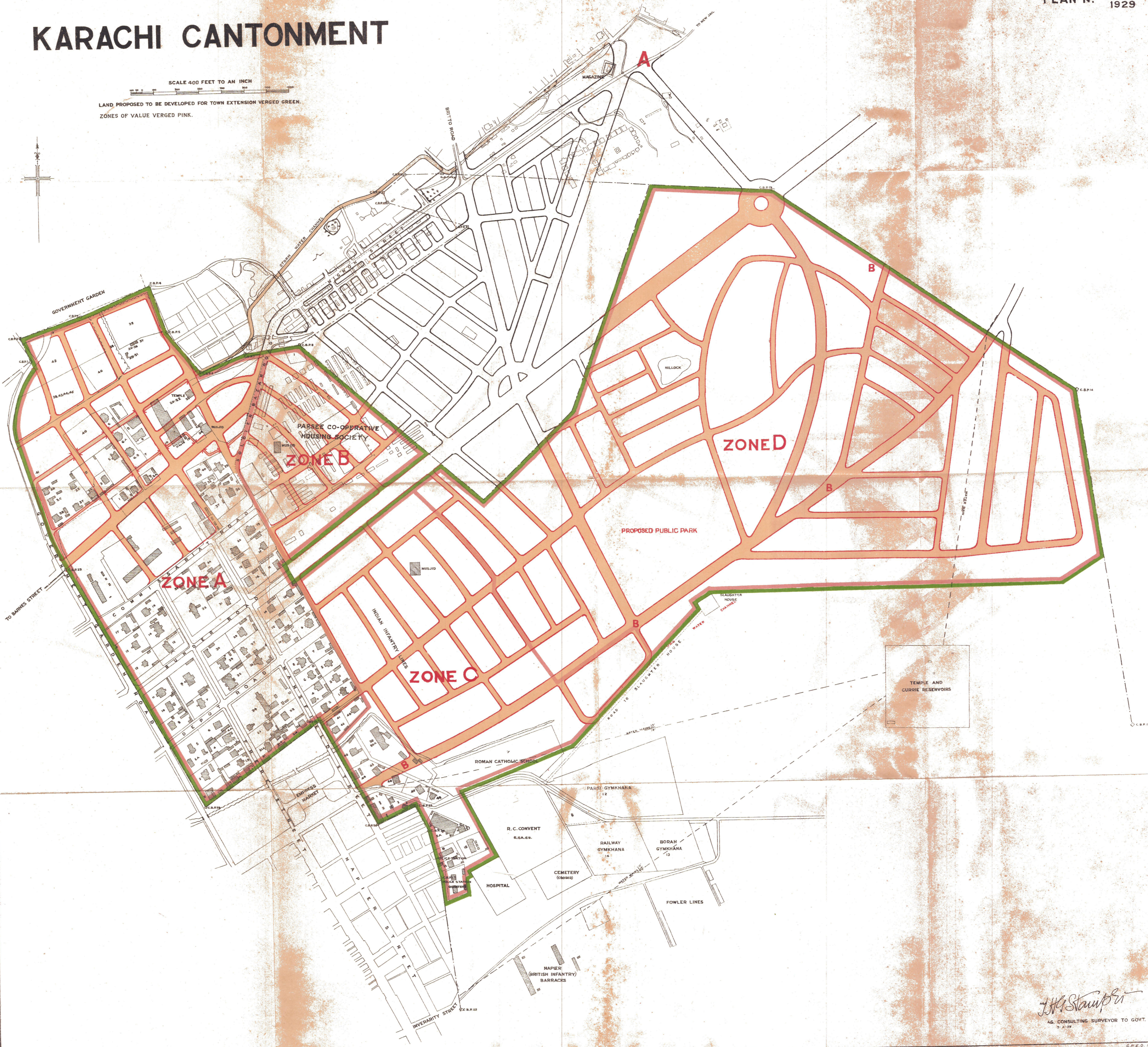


KARACHI CANTONMENT

SCALE 400 FEET TO AN INCH
LAND PROPOSED TO BE DEVELOPED FOR TOWN EXTENSION VERGED GREEN.
ZONES OF VALUE VERGED PINK.



TEMPLE AND
CURRIE RESERVOIRS

J.H. Stamp
AG. CONSULTING SURVEYOR TO GOVT.
S. 2-29



Government of Bombay

Report
on the
Extension of Karachi

Proposal to take over 650 acres of
Cantonment lands

[For official use and free distribution]

BOMBAY
PRINTED AT THE GOVERNMENT CENTRAL PRESS
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**Extract from that portion of the Supplementary Report on the
Development of Karachi, dated 1st September 1924, which relates
to Cantonment lands**

Since the publication of the above report a large area of the land which was then proposed to be taken over from the Military Department has been excluded as the result of a revision of boundaries agreed to at a conference between representatives of the Government of Bombay and the Government of India, held at Government House, Karachi, on 8th December 1924, at which H. E. the Governor of Bombay presided.

The exclusion of this area reduced considerably the anticipated proceeds from the sales of land, but at the same time a considerable reduction in the amount payable to the Army Department for reinstating military buildings was effected, as also a proportionate reduction in the costs of development.

Since the estimates included in the original report were made there has been a decline in land values in Karachi, as elsewhere, which may be accounted to trade depression. It cannot however be anticipated that the present stagnant conditions will endure indefinitely and the trade returns for last year are very encouraging. It is further to be hoped, and expected, that with the completion of the Barrage at Sukkur and the consequent opening out of large tracts of land producing wheat, rice, and cotton in the hinterland of Karachi the trade of the port and town will receive great impetus. The estimates of the proceeds from sales of land now included in the report have however been revised in the light of conditions obtaining to-day. They may therefore be taken as the very lowest prices and inasmuch as the period of disposal is taken at from 10 to 20 years it may reasonably be expected that they will be exceeded.

When the original estimates were made there were no facilities capable of supplying the area with drainage and water supply services, and it was anticipated that special water supply reservoirs, and a special drainage pipe line with pumping plant from the area to the sewerage farm would be required. These items added enormously to the estimates of those services. The progressive policy of Municipality outlined in their drainage and water supply reports of 1921 and 1925 has already effected a great improvement in these services, which will be further enhanced in the future. The Superintending Engineer, Public Health, by whom the estimates for these services were prepared, has therefore been able to make very considerable reductions in his figures.

Five years ago when the reports were printed the rate of interest obtaining was 5½ per cent. and the estimates were accordingly based on that figure. Interest on Government securities has now fallen to 5 per cent. and in consequence that rate has been adopted in arriving at the revised figures included in this report.

The figures in the extract from the report hereunder have therefore been revised and brought up to date in the light of the changed conditions of to-day.

**Extract from pages 17-18 of Mr. Mirams' General Report on the
Development of Karachi, 1923**

THE CANTONMENT AREA

(Plan No. 9)

The cantonment area appears to be at the present time perhaps the only reasonable outlet for the Indian community. None of the difficulties which stand in the way of building in the other unbuilt upon areas adjoining the town apply to it. It is conveniently situated and has tramway communication

up to its boundary. It is adjoining the water storage reservoirs, and that area which is not above the level of supply by gravity, can therefore be supplied with water at a minimum cost. It rises gradually and would have an easy and natural fall for drainage. The main roads out of the town run right up to its boundary and can be extended straight into the area, the cost of road construction per unit of land developed would be therefore low. It requires no expenditure on filling. It is higher than any land adjoining the town. It has consequently in addition to being the most suitable land for residential purposes the great advantage of possessing capabilities of development at low cost, an important matter, at the present time when the cost of works is high and money difficult to obtain.

The opening up of this area of 650 acres would provide all the building land necessary to meet the present requirements of the middle classes and, in addition, would be capable of absorbing the increase of population of those classes for 15 or 20 years. Further it would connect with the Garden Quarter, and allow the town an area of suitable width for extension, and the placing of this land in the market would undoubtedly tend to reduce the price of land in the Garden Quarter. It must be remarked, however, that nearly half the area is above the level of supply by gravity from the water storage reservoirs and installation of a high pressure system will be necessary; this however, entails neither engineering difficulty nor great expense. A high pressure system of supply for the general convenience of the town should moreover be one of the next improvements to be undertaken, for in most parts of the town the pressure is insufficient to make the present supply available on any but the ground floor.

The plan of development for the cantonment area was primarily made with a view to forming a decision as to the extent of land required for the expansion of the town and to assist the estimation of the value of building land which might be realised and the cost of development. The main roads are of such alignment as would be essential in any scheme for development of the area to connect up with existing and projected main arteries and the subsidiary roads; although the layout is not elaborated in any way it is economically planned. It must be remembered that in the planning of a suburban area, an aesthetic effect should be aimed at by an avoidance of ugly, and an encouragement of attractive vistas, and will be largely directed by the character and judicious siting of building and the planting of trees, etc., rather than by a geometrically beautiful design which may easily miss the effect aimed at.

The alignment and width of the main roads may be definitely fixed, but latitude should be allowed in the siting of the residential roads so that they may be adjusted to comply with such popular demand as to depth of plot which may evince itself during the process of development.

In preparing a scheme for the general extension of the town through the cantonment area, I have endeavoured to connect up with those schemes which have received the approval of the Municipality and sanction of Government. The fact that the Indian population very far outnumbers the European and that housing difficulties which exist in the European community are very greatly multiplied and aggravated in the Indian community, and that the necessity of providing land for residential expansion is mainly for the Indian population must be the determining factors in planning this area. It must, however, be kept continually in mind that the Indian population is a comparatively poor one and that therefore if land is to be available at cheap rates such as would be within their reach, elaborate and expensive layout, with highly finished roads and pavements, and the most complete modern forms of surface water drainage, cannot be expected at the present time as it would place too great a burden on the building land. Easy and cheap communication must however be available, and endeavour has therefore been made to provide for main roads of such width that they will be able to bear without congestion the traffic for many years to come. The setback of building lines should be insisted on, so that if and when widening is necessary, there will be ample space. Provision is made for residential roads of suitable width to safeguard public health, with setback of building frontages but without elaborate planning, so as to avoid awkward angles where possible and badly shaped plots

with long road frontages compared to the area of the plot. It is further suggested that the thickness and width of metalling be kept at the smallest limits necessary and that murrum or other cheap forms of footpath be adopted in suburban areas. In future years when these areas become more central and traffic demands it and the wealth of the town is greater, it will be time enough to make up and finish roads and pavements in a manner suitable to the then requirements.

**Extracts from pages 1-11 of Mr. Mirams' Supplementary
Report on the Development of Karachi, 1924**

CANTONMENT LANDS

The proposals herein made are generally based on suggestions for an interchange of military and civil lands which connote the surrendering of an area of approximately 650 acres of the present cantonment, and the taking over by the military authorities of additional land in the direction of Drigh Road. It should be understood that of this 650 acres about 142 acres represent the area under residential development and held on cantonment tenure by private persons. The balance of about 508 acres is considered as being immediately available for development. Of this area, 128 acres, are required for development purposes, *i.e.*, roads, public open spaces, etc., leaving a net area available for building of nearly 380 acres. The details are shown in the valuation statement attached.

Three small plots are excluded from the proposed transfer as they contain military staff bungalows which are required by the Military Department. Prolonged negotiations of an informal character have taken place between the civil and the military authorities extending over several years. The negotiations may be said to have taken a definite shape in the formation of a committee of military officers known as the Nanton Committee. This committee defined the limits of a cantonment, which would be suitable for military requirements, the boundaries of which are shown on plan No. 7 in the general report on the development of Karachi. Further discussions, still of an informal character, continued after the issue of the Nanton Committee's report, and at a joint meeting of both the civil and military authorities held on the 27th of April 1921, approval was given to the principle of the relinquishment of a certain portion of the existing cantonment in accordance with the boundaries proposed by the Nanton Committee, subject to such adjustments of the southern boundary as might be necessary to co-ordinate the development schemes of both the civil and military lands. The boundaries of the area which the Army Department are prepared to transfer is shown by green verging on plan No. 9 attached hereto. This being the position, there is no need for me to labour the question for the necessity of the extension of Karachi in the north-eastern direction, and the subject-matter of this report is therefore generally confined to the financial aspects of the proposals and deals with the estimates of:—

1. sale-proceeds likely to be derived from the land which it is proposed to resume from the military authorities;
2. the cost of development necessary to ensure the receipt of the said proceeds; and
3. the period within which the said proceeds may be expected to be realised.

It should be remarked, however, that since the joint meeting of both the civil and military authorities on the 27th of April 1921, before mentioned, the military authorities have indicated that their attitude towards the construction of a new cantonment in the direction of Drigh Road, has been materially changed; in fact, it is understood that His Excellency the Commander-in-Chief has decided that it will not probably be necessary to have what may be called a full dress new cantonment in that area; but it must not be assumed that this involves any idea of curtailing the area which the

military authorities are prepared to hand over to the civil Government. During the current year it is gratifying to find that the position has been distinctly clarified, and there is every reason to believe that the military authorities are prepared to co-operate with the civil Government in every possible way. This being the position, the time which has elapsed and the consideration of the *pros* and *cons* has not been wasted, and it is now possible to devote attention to the question of ways and means.

There is only one practical method of attempting to arrive at an approximate estimate of the net return likely to be made available from the development of the said 508 acres; and that is by the preparation of some scheme of development which would indicate the main and subsidiary roads as well as building plots of such an area as experience would show to be required by those persons likely to purchase lands for residential or other purposes.

The Development plan

The penetrative and fusing insight into the relationship between man and the land need not be very highly developed to appreciate the importance of anticipating the future requirements of the people who will be the citizens of Karachi in a generation or two. Those who expect to find in the plan however those distinctive qualities which enchant the casual observer by the fancifulness of its design, by the variety of its curves or the symmetry of its roads as seen on paper, will be disappointed, for no attempt to attain these objectives has been aimed at, but it can be safely expected that a development carried out on the lines foreshadowed, and subject to such building provisions as would be hereafter made, will give to Karachi a suburb which will adequately provide for the expansion of the city on sound hygienic lines, commensurate with the requirements of the people who will live in it, and at the same time, create a common atmosphere of pleasure and appreciation, and lay the broad foundations of happy and healthy homes. It will provide those distinctive features in a natural way which tend to elevate the mind and brighten the lives of those persons whose daily avocations will bring them in contact with the area referred to. The art of creating an atmosphere approaching the supernatural and heightening the glamour, by an intense realism of detail, is not one that can be indulged in with a short purse, by a designer with an eye to utility as well as ornament. It is the actualities of contemporary life which must form our guide in preparing for the future.

Plan No. 9 accompanying this report indicates in general lines the proposed layout. It will be seen that there are what may be designated two main longitudinal roads which traverse the area from end to end and these roads may be extended if and when such extension will become necessary and are given a width of 80 and 60 feet respectively in the first instance and are proposed to be metalled to a width of 40 and 25 feet respectively. The road B running from the Empress Market bifurcates; the northern branch continuing round to the north to connect with a new road now partially constructed by the Municipality, leading from an important road junction in the Municipal Bunder Road Scheme to Lawrence Road. This road will provide a good suburban circular route. The second longitudinal road is intended to serve as an artery for traffic for a portion of the area only, and I consider that 60 feet will be a sufficient width for it.

A road to provide a more direct access to the Cantonment Station would eventually be necessary to obviate congestion in the Sadar Bazar. Such a road will be so aligned as to avoid parade grounds, and would be of mutual convenience both to the new cantonment and the residential area.

The main road from the Empress Market being the principal arterial thoroughfare of the whole area is the most convenient route for an extension of the existing tramway which at present terminates at the Empress Market. The tramway along this road from the Empress Market connecting with the proposed tramway along the Bunder Road at point marked A on plan No. 9 would provide a highly desirable means of communication with the tramway centre at Sadar, and from thence to the Cantonment Station or the city.

I have thought it necessary to reduce every item of expenditure as much as possible with a view to enabling the land to be sold or leased at prices, which, in my opinion, the majority of the prospective occupiers can afford. It is proposed that the by-roads should be metalled to a width of only 20 feet, and to provide curbs with murum footpaths. In the case of those roads on which through traffic may be expected, the metalling has been increased to 25 feet for 50 and 60 feet roads. All these roads allow for building development on both sides.

Public gardens and open spaces have been provided for, and have a total area of 20 acres. This provision is much smaller than I should have liked and is much below the average usually provided in a Town Planning Scheme of this description. I have however had regard to the fact that the area will be flanked by the cantonment which will have a very open type of development, with parade grounds and large open spaces.

Value of lands

I estimate the present gross value of all the building plots at Rs. 62,61,538.

In estimating the amount which is likely to be recovered from the sale of land, much depends upon the policy which the civil Government is proposing to adopt in disposing of it. If the land is put into the market in small blocks, from time to time, and sold to the highest bidder, either rent-free or at a nominal ground rent, without restriction, it will obviously fetch the highest possible price; but such a method of disposal cannot be considered for a moment for it would, beyond question, result in an undesirable development. The land is sure to get into the hands of speculators with an inevitable repetition of the partial deadlock which has occurred in the Garden Quarter where it was vainly hoped that the marketing of large areas of land would induce rapid building.

The estimates are based on the assumption that in taking over this area, Government are mainly concerned to provide for an extension of the town, and that their object will be to sell, or lease, or dispose of the land as rapidly as possible without attempting to maintain a monopoly value, and at such a figure that buildings suitable for residence of the classes which mostly require them, can be erected thereon at such a capital outlay as will enable the buildings to be let at a rent which those classes can afford to pay.

The simple law of demand applies equally to lands as well as any other commodity—the greater the amount to be sold the smaller must be the price at which it is offered in order to find purchasers. But the ratio is by no means constant and varies greatly according as the ownership of a plot of building land ranks as a luxury, a conventional necessity, or an absolute necessity and we must expect some of each class to be in the market.

It might be well to recapitulate the statement made in the General Report that of a total population of 216,000 only 3,092 persons are officially known to be in receipt of an income of over Rs. 166 per month. Taking the average family to consist 4.5 persons, it follows that of the resulting 49,000 heads of families 46,000 are in receipt of an income less than Rs. 166 per mensem. It is recognized that while this statement is true of the individual, it is possible and even probable that in some cases the income of a family might easily exceed the income tax bar of Rs. 166. It is reasonable to assume for purposes of these calculations that the average family for whom we will have to provide is in receipt of an income of a little more than Rs. 100 per mensem and that these persons form a majority of the classes to be catered for. Economists in pre-war days used to allow one-tenth of a man's income for rent; but things have changed and it is a reasonable assumption that a fifth of the income would represent the maximum rent which a man can afford to pay. It would thus appear that the average man would pay Rs. 20 per mensem as rent which sum must include:—

1. Rates and taxes,
2. Repairs and insurance,
3. Contingencies, and
4. Interest on capital and sinking fund.

Items 1 to 3 account for about one-fifth of the total which leaves Rs. 16 as representing the investor's interest and sinking fund on the property. It is a fair assumption that the land value amounts to one-fifth of this remainder. Thus the average man desirous of living in a house with his family cannot afford to pay more than say Rs. 3 per mensem as ground rent or Rs. 36 per annum, which capitalized as a secured income at 5 per cent. gives Rs. 720 as the possible limit of expenditure for a building plot; which sum has to bear a proportion of capital expenditure on road making, draining, lighting and laying water mains. Given a plot with 20 feet of frontage and hundred feet of depth, containing about 220 square yards the maximum that an average investor could afford to pay for the land would be about Rs. 3-10-0 per square yard. As however only Rs. 13 a month or Rs. 156 per annum remains for the rent of the building and assuming that the builders are content with as low a return as $6\frac{1}{2}$ per cent., he cannot incur a greater capital expenditure than Rs. 2,600 on a single tenement. If the rental of land and tenement exceeds Rs. 20 per month the average tenant will have to live in part of a house, but this is not a serious matter.

This then is an important side of the Karachi housing problem, and I have discussed it in order to show that it is quite useless to offer to the large majority of people in Karachi high priced lands as they simply could not afford to live on them. It must not be thought that I am ignoring the several factors which go to show that the above calculations are not absolute, but they certainly serve as a very excellent guide.

Coming to those persons receiving over Rs. 166 per mensem numbering just over 3,900. Some of these people would no doubt be in the market for better plots. Furthermore the land having many advantages over the site at present occupied by Europeans might easily be sought after for European residence. Again there is that wealthy class of person who has not given a correct return of his income but sufficient has been said to make the position clear. Taking the area as a whole the majority of the land cannot be expected to realise more than Rs. 3 to 4 a square yard of net building area. Some of the better sites will naturally fetch much more.

Zone development

Plan No. 9 shews the area proposed to be resumed, which for purposes of calculation is divided into four zones. These zones are marked A, B, C, D on the plan. They are assumed to be developed in succeeding periods of five years. In the first place the estimates are based on the assumption that the development—and by development in this respect is meant the disposal of all the building plots—has been estimated to take from 10 to 20 years. I am quite aware that this estimate is an arbitrary one, but at the same time it has been arrived at after a very careful consideration of all the facts such as present requirements, normal growth of population, etc., and very little credit has been taken for any abnormal growth and it might reasonably be accepted that in the course of another 10 or 15 years the increased trade, due to the coming into play of the Sukkur Barrage, will begin to be felt in Karachi. I shall deal with this question of disposal of land in subsequent pages of this report.

General scheme of development

The estimates are based on the assumption that the main roads, viz., 80 feet roads, 60 feet roads and the remaining roads in zones "A" and "B", and 5 per cent. of the remainder as shewn on Plan No. 9, are constructed within the first five years. The remaining subsidiary roads are assumed to be constructed in three further periods of five years each. It is also assumed that immediately after the construction of the main roads previously referred to, a demand will arise for building plots in each of the 4 zones and that the purchasers in the market will be prepared to pay the highest rates, apart from special cases, for land in Zone "A" which I have valued on the average at Rs. 4'86 per square yard of building plot.

Zone "B", it is estimated, will realize Rs. 4'51 per square yard, and Zone "C" Rs. 4 per square yard. Zone "D" being the most remote has been estimated

to produce Rs. 1.98 per square yard, all these prices being on the assumption that the land will be sold subject to a ground rent of one anna three pies per square yard for Zones B, C and D, which is the same as that levied by the municipality in the adjoining Bundar Road Extension Area, and one anna six pies per square yard for Zone "A", it being more valuable land.

The net building area in each of these zones is as follows :—

Zone A	approximately	55 acres.
Zone B	"	15 acres.
Zone C	"	70 acres.
Zone D	"	240 acres.

The prices previously mentioned as applicable to each of these zones have naturally had to be deferred, for it is obvious that the whole of the land cannot be taken up at once. For example Zone "A", it is anticipated, will be developed within a period of 15 years, but the calculations of value have been further split up into three periods, and a third of the land has been assumed to be disposed of during the first five years; the second third during the period of five years after the first five years, and the remainder during the period of five years after ten years.

The detailed calculations under this head are not very complicated. One simple illustration will suffice to explain the position clearly.

Take Zone "A".—The estimated total value of all the building plots in the zone, assuming an immediate market, is Rs. 18,80,380. An annual receipt of an equal amount during each of 15 years is assumed, and with a view to making the calculation as nearly mathematically accurate as is reasonable, the period of 15 years has been sub-divided into three periods each of five years.

In the first five years Rs. 1,21,225 will be received annually. The present value of these annual receipts at 5 per cent. is Rs. 5,24,904. Similar calculations are made for the second period and the present value of annual realisations receivable at the end of five years at 5 per cent., represents Rs. 4,10,953. So also for the third period in which however the annual sums are not to be received until the end of 10 years and the present value of which is Rs. 3,22,458. The present value of all lands in Zone "A" comes to Rs. 12,58,315.

Zone "B" has been treated on a similar basis, *viz.*, the period of development is taken as ten years. For Zone "C" the period of disposal has been taken as 15 years in three periods and in Zone "D" 20 years in four periods of five years, because the lands are remote.

In this way I have arrived at my estimate of Rs. 53,87,478. It would not appear out of place if I give some explanation of the reasons which have guided me in fixing my data for the before-mentioned calculations.

Period of disposal.—The periods over which the realisation of the sale proceeds may be expected to be spread have been fixed after a careful consideration of :—

- (a) the present demand for building sites,
- (b) the increase in population which will supply the future demand,
and
- (c) the area which is at present available and is likely to become available.

A further factor is the class of people who may be expected to buy lands and ultimately to live in the area under consideration. I am of opinion that practically all classes with the exception of the labouring classes, may reasonably be expected to be in the market for building sites. The labouring classes under existing conditions, or those anticipated during the next generation, are not likely to be attracted by housing accommodation provided for them in land, which is somewhat remote from their work, for the work of the labouring classes is generally to be found in the city and the docks, and they would, unless special facilities are offered to them, not be able to afford the tram fare to and from their work.

The density and distribution of population in Karachi has been considered in detail in the General Report and from this it is apparent that a very serious congestion exists.

Eliminating the Lyaree Quarter to the north-west of the city, and the European area to the east as well as the railway and port quarters, the average density of population is 105 persons per acre, the maximum being reached in the Old Town Quarter, in which it is 296.

The average number of persons per building occupied including factories, shops and offices, *viz.*, 12, does not appear to be very high but it should be remembered that there are no large chawls as in the case of the City of Bombay. The total population in the quarters from which it may be anticipated that the class of persons likely to live in the cantonment area would be drawn as enumerated in Appendix A to the Supplementary Report is 1,04,182.

The number of persons who would vacate congested areas

The task of arriving at any estimate of the number of persons who would be prepared to migrate to less congested and more congenial surroundings, if accommodation is available at reasonable rates, is a formidable one, and at its best can only be expected to give approximate results. It might be reasonable to assume that such a number of persons would seek more suitable environments as would reduce the existing congestion to approximately nil; but in my opinion this might be taken as too optimistic a view; for even if one-fourth of the population of the area under consideration were to be removed there will still be much congestion remaining. I think it is a reasonable assumption however that at least 10 per cent. of the population of this quarter might be expected to remove elsewhere if given suitable facilities. Ten per cent. represents approximately 10,000 persons or in other words 2,222 families on the basis of 4.5 persons per family.

Number of persons requiring accommodation as a result of normal increase of population

Coming now to the question of increase in population. During the last decade the increase was 63,878 whilst the average of the last two decades shows 50,000. Taking this lower figure as the basis and as before stated 4.5 as the family unit, 11,110 families will require accommodation during the next ten years. This averages out to 1,110 families per annum.

Future annual demand for housing accommodation

It follows that the 2,222 families from the congested area *plus* the before-mentioned 11,110 families making a total of 13,332 will require accommodation during the next ten years. Divide this by ten, and we get 1,333 families per annum, but it must not be assumed that the whole of these people will go *en bloc* to the area of cantonment land under consideration.

There is no data available which indicates in what proportion the various classes of persons have increased, but the classes given in the before-mentioned Appendix A, number roughly half the existing population in the whole of Karachi.

It might incidentally be mentioned that a scheme has been proposed for providing housing accommodation for a certain number of Government clerks and peons. From a return made to the Commissioner in Sind about the year 1923 it was estimated that some 1,340 families were desirous of having housing accommodation provided, and it is worth while remembering this fact when considering the disposal of the various areas.

Here it may be noted merely as a matter of interest that on the basis of slightly over 60 persons per acre, 30,000 persons could be accommodated on the whole of this area and here we are speaking gross area; if the net area of 380 acres is taken, the number of persons to the acre on the 30,000 assumption comes to 80.

Costs of development

I estimate the cost of development to be Rs. 19,06,246. In arriving at these costs of developing the area an estimate of the cost of road construction, lighting, planting trees, main drainage and water service has been made, details of which are given in Statements Nos. 8, 9 and 10. There will in addition be the cost of maintaining an establishment to undertake the sale, leasing and auctioning of plots and survey and estate management, and accountancy, which figure is taken at 3 per cent. on the gross proceeds spread over a period of 20 years, and there will be legal charges to be taken into account (*vide* Statement No. 11 attached).

The cost of water mains which is estimated by the Sanitary Engineer to Government to be Rs. 3,50,000 has been included as being borne by the Government. It is laid down in section 68 of the Bombay City Municipalities Act, XVIII of 1925, that it is the duty of every municipality to make reasonable provision for constructing drains and sewers and also for obtaining a supply of water proper and sufficient for preventing danger to the health of the inhabitants from the insufficiency or unwholesomeness of the existing supply. The municipal duties as to the supply of water in the area are therefore clear, but in order that no possible item of expenditure be excluded, the scheme has been debited with the cost in these estimates. A large portion of the area is above the level of supply from the existing storage reservoirs. The municipality are now undertaking a scheme for very greatly augmenting the water-supply of Karachi, by means of which the necessary volume will be available to supply this area, and should be early advised of the demand which will arise so that they may make provision for 'pumping or high level tanks so that the supply can be delivered to house holders, as demand arises.

The estimate made by the Sanitary Engineer to Government of the cost of main drainage to Government is Rs. 6,50,000. The total estimate for drainage and water supply is therefore Rs. 10 lakhs, but this amount will not be spent immediately, and assuming that the drainage and water mains will be laid concurrently with road construction, the present value of the cost is Rs. 7,30,000.

Cantonment lands in private occupation

The total area of the lands in private occupation which are previously referred to is 122 acres and includes 147 plots, 135 of which are built on, the remaining 12 being undeveloped and let for short terms for agricultural or accommodation purposes. The necessity for including these in the lands to be resumed from the Military Department will be readily appreciated. If they were to be left in the cantonment area they would form a barrier separating the extension area from the remainder of the city, controlled by an authority which is not in any way responsible to the city and having its own systems of local Government, lighting, drainage, road repairs, etc. The area is never likely to be required for the cantonment and is within the boundary of the land which the Nanton Committee recommended should be abandoned by the Military Department. It is obvious that when the area of extension into the Cantonment is resumed by Government this area should be included, and after the roads have been made up and lighted according to municipal rules it should be included in the area under municipal jurisdiction.

In endeavouring to arrive at the compensation which should be paid to the Military Department for the exclusion of this area from cantonment limits, the real consideration is the value of the benefit or loss to the Military Department by its exclusion, but a further consideration is the value of the benefit or loss to the civil Government by taking over from the Military Department its interest in the land. These two values are very different for whereas the Military Department are bound by the rules under the Cantonment Code and Act in their relations with existing lessees, the civil Government would be under no such obligations, and would be in a position to confirm the lessees in their leases for a long term at such rents as might be agreed with the lessees. In arriving at an estimate of these rents, they cannot however, be considered on the assumption that the land is ready for disposal in the open

market to the highest bidder. Regard must be had to the limitations which the circumstances place on Government in dealing with the present occupiers of the land, and also to the fact that in every case a building the value of which is the property of the occupier stands on the land, and that many of the buildings fully develop their plots. These circumstances combined with the fact that a large area is affected reduce the value to a figure very far below the price which single plots of vacant land offered for competition in the open market would realise.

In each plot in the area excepting in a few cases specially noted there is a building standing on the land and these buildings may be expected to have a useful life varying from 35 to 50 years. In arriving at the rental value of the land I have therefore taken into account the existing user of the plot only, and have not considered the use to which it could be put were it vacant. In each street or locality I have arrived at the annual rental value of the properties and have then proceeded to determine what proportion of land rent the rack rent could reasonably bear by taking typical buildings standing on suitably sized plots, and in order to err on the side of liberality to the lessees, I have deducted from the gross rent one-third for outgoings. I have then taken one-fifth of the remainder as the economic rent of the land for its present use during the life of the existing building and an economic rent at 5 per cent. on the value of the land thereafter. Having then arrived at a rental value per square yard I have applied that basis for the whole of the street or locality, having regard however to sites exceptionally favoured by position or access.

I have accordingly arrived at the estimate of the value of the lands to the civil Government on that principle having regard however to special amenities of position or access possessed by particular sites. The resultant annual rental values to Government amount to Rs. 34,703. One can however clearly foresee that the path of Government in dealing with the existing lessees will not be an easy one and that protests may be expected from them. That would only be but human nature. The figures above quoted and which are shewn in detail in the said schedule are far from excessive in consideration of putting the present occupiers in possession of a secure lease in exchange for their existing occupancy under the Cantonment Code with its liability to resumption and its restrictions on building. But in view of the fact that the occupancies are of long standing and that no annual rent is payable it is reasonable to assume that the occupiers may object to the payment of an annual rent, Government could then take possession or they might conceivably in the circumstances feel constrained to make further concessions on confirming the lessees.

Present value of the land

The estimate of the present gross value of the 508 acres (*i.e.*, excluding lands held on cantonment tenure by private persons) having regard to the factors enumerated in the preceding part of this Supplementary Report has already been stated to amount to Rs. 53,87,478. The estimate of the cost of development is Rs. 19,06,246, leaving a balance of Rs. 34,81,232. To this must be added the capitalized value of the ground rents from the areas held on cantonment tenure by private persons, and the land granted to the Parsee Co-operative Housing Society, which totals Rs. 8,74,060—making a balance of Rs. 43,55,292. Deducting therefrom the sum payable to the Army Department for resiting existing buildings Rs. 32,48,000, the present value of which is Rs. 28,98,976, a net balance of Rs. 14,56,316 remains. (For details see Statement No. 1.)

APPENDIX

REVISED ESTIMATES OF RECEIPTS AND EXPENDITURE IN 650 ACRES OF CANTONMENT
LANDS PROPOSED TO BE TRANSFERRED TO GOVERNMENT OF BOMBAY
BY THE ARMY DEPARTMENT

The following revised estimates, the originals of which were published in the Supplementary Report on the Development of Karachi dated 1st September 1924, have been brought up to date and amended in the light of present day conditions, and the areas have been amended consequent on alterations of boundaries agreed since the original estimates were framed.

The gross area of the land now proposed to be transferred is about 650 acres and the area available for sale after deducting those areas which are held by private persons on cantonment tenure, and the areas to be given up for roads, open spaces, etc., is 380 acres as shewn in the statement hereunder :—

	Area.
Gross area	650
Lands in occupation of private owners or used for public purposes, and excluded military buildings	122
Parsee Co-operative Housing Society	20
Proposed roads	105
„ nalas	3
„ park and open spaces not to be built on	20
Area available for building	380
	650

Sale proceeds

The gross estimated sale proceeds from the area including the capitalized value of land rent at 1 anna 6 pies in Zone A and 1 anna 3 pies in Zones B, C and D is Rs. 90,19,943 which amount being received over periods of from 10 to 20 years gives a present value of Rs. 62,61,538, the details of which are shewn in the Statements appended. These figures are based on the values of land obtaining during the last 2 or 3 years when land values have been at their lowest ebb. Although periods of from 10 to 20 years have been allowed within which to dispose of the area, during which it may confidently be expected that trade in Karachi will greatly improve with a consequent revival of the land market no account has been taken in these estimates of the enhanced values which should accrue thereby and they may therefore be considered to be the very lowest figures.

Due account has been taken of all sales of land in the vicinity and of lands which are comparable in the Garden Quarter. Those in the Bunder Road Extension area are particularly illuminating, ranging as they do from Rs. 2-1-0 to Rs. 5-4-0 per square yard subject to a ground rent of 1 anna 3 pies per square yard the capitalized value of which is Re. 1-9-0 per square yard, making a total sale price of from Rs. 3-10-0 to Rs. 6-13-0 per square yard. Much of the land in the cantonment area is better situated than that above quoted, being nearer to the Empress Market, the tramways and the Sadar Bazar.

Those in the Garden Quarter in the area adjoining the Cantonment range from Re. 1-3-0 to Rs. 7-2-0 per square yard and it should be remembered in making a comparison that these rates are for lands with no made up roads or drainage, whereas the lands in the cantonment area are to be provided with good roads, lighting, drainage and water supply.

In order that the prices at which the lands have been valued may be easily compared with those obtained in the vicinity, it has been assumed that a land rent of anna 1 pies 3 per square yard for all excepting Zone A will be charged which is the same rate as that charged on the municipal lands adjoining. The rent adopted for Zone A is anna 1 pies 6 per square yard, it being slightly more valuable land.

The estimates of recoveries from lands in the occupation of private persons holding under cantonment tenure is given in Statement No. 7 attached. These amounts being dependant on negotiation are not susceptible of estimate by the method adopted for the remainder of the area. They are accordingly based on proposals adopted by the Karachi Estate Board in their Resolution No. 5(a) of 31st July 1928.

The land held by the Parsee Co-operative Housing Society is valued at a ground rent of anna 1 pies 6 per square yard, the grant of the land being made subject to this rate after its transfer by the Army Department.

In calculating present values 5 per cent. which is the prevailing rate of interest on Government securities is adopted.

Estimates of expenditure

These have been revised by deducting the cost of those works which have been deleted by revision of boundaries and the abstracts of remaining works have been revised at to-day's prices.

The estimates of the cost of drainage and water supply services have been revised by the Superintending Engineer, Public Health, in the light of improvements in those services effected by the Karachi Municipality and of their future policy as outlined in their reports published since the former estimates were made.

Although the claim for Rs. 2,50,000 in compensation for loss of revenue by the Cantonment Authority is not admitted, it is included so that no possible item of expenditure be excluded. Compensation will only be paid on proof being furnished of actual loss by the exclusion of the area from the administration of the Cantonment Authority.

The items of management and conveyancing and legal charges being based on the gross sale proceeds have been reduced and these items together now come to about Rs. 19,000 per annum payable over the period of disposal, *viz.*, 20 years.

STATEMENT No. 1

Valuation

Assets		Liabilities	
	Rs.		Rs.
1. Estimated present value of building land available for sale.	59,87,478	1. Payment to Army Department for cost of re-instatement.	28,99,976
2. Capitalized ground rent from the areas in private occupation including land granted to the Parnce Co-operative Housing Society.	8,74,060	2. Compensation for extinguishing rights of Cantonment Authority.	2,50,000
		3. Roads	8,62,447
		4. Culverts and Channels	1,08,510
		5. Cutting and Embankment	28,690
		6. Lighting	40,000
		7. Trees	21,000
		8. Water supply	7,80,000
		9. Drainage	
		10. Management	1,17,000
		11. Conveyancing and Legal charges	1,19,603
		12. Contingencies 10 per cent. on cost of works.	1,29,059
	62,61,538	Total	48,05,222

Estimated assets

	Rs.
Present value of proceeds from sales and rents	62,61,538
Do. payment to Army Department and cost of development.	48,05,222
Present value of balance of receipts over payments	14,56,316

STATEMENT No. 2

Abstract of receipts from building land available for sale including capitalised value of ground rents

Zone	Area : Square yards	Total amount receivable	Present value
		Rs.	Rs.
A	2,70,000	18,18,380	12,58,315
B	70,500	4,25,125	3,28,193
C	8,22,500	17,98,985	12,41,437
D	11,58,500	41,08,393	25,59,593
Total	18,21,500	81,45,883	53,87,478

Present value ... Rs. 53,87,478

STATEMENT No. 3

Rates of valuation of building land

Zone A

	Rs.
92,800 Square yards of building land fronting Government Garden Road, Commissariat Road and New 80' Road at Rs. 5-8-0 per square yard...	5,10,400
8,660 Square yards fronting new 60' road at Rs. 5 per square yard	43,300
1,68,540 Square yards remaining building land at Rs. 4-8-0 per square yard	7,58,430
2,70,000	13,12,130
Add capitalized value of land rent at 1 anna 6 pies per square yard at 5 per cent. ...	5,06,250
	18,18,380

Rs. 18,18,380 receivable over a period of 15 years. Average annual receipts Rs. 1,21,225.

	Rs.
<i>1st period of 5 years—</i>	
Present value of Rs. 1,21,225 per annum for 5 years at 5 per cent. Y. P. 4-33	5,24,904
<i>2nd period of 5 years—</i>	
Present value of Rs. 1,21,225 per annum for 5 years at the end of 5 years at 5 per cent. Y. P. 3-39	4,10,953
<i>3rd period of 5 years—</i>	
Present value of Rs. 1,21,225 per annum for 5 years at the end of 10 years at 5 per cent. Y. P. 2-66	3,22,458
Total	12,58,315

STATEMENT No. 4

Rates of valuation of building land

Zone B

	Rs.
16,000 Square yards of building land fronting on Bunder Road at Rs. 6 per square yard	96,000
7,500 Square yards of building land fronting on Soldier Bazar Road at Rs. 4-8-0 per square yard ...	33,750
46,500 Square yards remaining land at Rs. 4 per square yard.	1,86,000
<hr/>	
70,000	3,15,750
Add capitalized value of land rent at 1 anna 3 pies per square yard per annum at 5 per cent.	1,09,375
	<hr/>
	4,25,125

Rs. 4,25,125 receivable over a period of 10 years. Average annual receipts Rs. 42,512.

1st period of 5 years—

Present value of Rs. 42,512 per annum for 5 years at 5 per cent. Y. P. 4'33	1,84,077
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2nd period of 5 years—

Present value of Rs. 42,512 per annum for 5 years at the end of 5 years at 5 per cent. Y. P. 3'39	1,44,116
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	3,28,193

STATEMENT No. 5

Rates of valuation of building land

Zone C

	Rs.
23,127 square yards of building land fronting on Bunder Road at Rs. 6 per square yard	1,38,762
35,825 square yards of building land on 60' road at Rs. 4 per square yard	1,43,300
57,066 square yards of building land on 80' road at Rs. 5 per square yard	2,85,330
2,06,482 square yards remaining building land at Rs. 3-8-0 per square yard	7,22,687
<hr/>	
3,22,500	12,90,079
Add capitalized value of land rent at 1 anna 3 pies per square yard per annum at 5 per cent.	5,03,906
	<hr/>
	17,93,985

Rs. 17,93,985 receivable over a period of 15 years. Average annual receipts Rs. 1,19,599.

1st period of 5 years—

Present value of Rs. 1,19,599 per annum for 5 years at 5 per cent. Y. P. 4'33	5,17,864
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2nd period of 5 years—

Present value of Rs. 1,19,599 per annum for 5 years at the end of 5 years at 5 per cent. Y. P. 3'39	4,05,440
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3rd period of 5 years—

Present value of Rs. 1,19,599 per annum for 5 years at the end of 10 years at 5 per cent. Y. P. 2'66	3,18,133
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	12,41,437

STATEMENT No. 6

Rates of valuation of building land

Zone D

	Rs.
3,000 sq. yds. of building land on Bunder Road opposite Parsee Colony at Rs. 6 per sq. yd....	18,000
17,226 sq. yds. of building land on Bunder Road to the east of Ida Rieu Poor Welfare Association at Rs. 3-8-0 per sq. yd.	60,291
43,333 sq. yds. of building land on Bunder Road at east end of area at Rs. 2-8-0 per sq. yd. ...	1,08,332
1,23,154 sq. yds. of land adjoining 80 ft. cross road and park at Rs. 3 per sq. yd.	3,69,462
1,62,019 sq. yds. at Rs. 2-8-0 per sq. yd.	4,05,048
2,22,695 sq. yds. high land to the east of Balooch Maidan at Rs. 1-8-0 per sq. yd.	3,34,042
4,15,989 sq. yds. at Rs. 2 per sq. yd.	8,31,978
1,71,084 sq. yds. to the east of Conduit Line at Re. 1 per sq. yd.	1,71,084
<hr/>	
11,58,500	22,96,237
<i>Add capitalized value of land rent at 1 anna 3 pies per sq. yd. per annum at 5 per cent. ...</i>	18,10,156
Total ...	<hr/> 41,08,393 <hr/>

Rs. 41,08,393 receivable over a period of 20 years. Average annual receipts Rs. 2,05,420.

	Rs.
<i>1st period of 5 years—</i>	
Present value of Rs. 2,05,420 for 5 years at 5 per cent. Y. P. 4'33.	8,89,468
<i>2nd period of 5 years—</i>	
Present value of Rs. 2,05,420 for 5 years at the end of 5 years at 5 per cent. Y. P. 3'39	6,96,374
<i>3rd period of 5 years—</i>	
Present value of Rs. 2,05,420 for 5 years at the end of 10 years at 5 per cent. Y. P. 2'66	5,46,417
<i>4th period of 5 years—</i>	
Present value of Rs. 2,05,420 for 5 years at the end of 15 years at 5 per cent. Y. P. 2'08	4,27,274
	<hr/> 25,59,533 <hr/>

STATEMENT No. 7

Estimate of recoveries from the areas held on cantonment tenure

Serial No.	Quarter	Area in occupation Sq. Yds.	Estimated ground rent per Sq. Yd.	Total estimated rent	Remarks
			Rs. a. p.	Rs.	
1	Depôt Lines	185,299	0 1 8*	19,302	} Schools, clubs, maternity homes and churches occupying 64,565 sq. yds. have been excluded.
2	N. I. Lines	79,986	0 1 10*	9,096	
3	Four Sadar Bazar Plots ...	7,877	0 2 4*	1,149	Within the cantonment limits.
4	Commissariat Lines ...	55,000	0 1 6*	5,156	About 1,100 sq. yds. occupied by temples and mosques have been excluded.
5	Parsee Co-operative Housing Society.	96,000	0 1 6†	9,000	
			Total ...	48,708	
			Capitalized at 20 Y. P.	=8,74,060	

N.B.—*These rates are on the basis of one-fifth of net rental for the whole property for the future life of the building and economic rent at 5 per cent. on land value for the balance of 99 years thereafter, *vide* Resolution No. 5(a) of the 7th meeting of the Estate Board held on 31st July 1928.

† The grant of this land to the society by the Military Department is subject to payment of ground rent at this rate after its reversion to civil Government.

STATEMENT No. 8

*Estimates of expenses to be incurred in development**I Roads.*

Width	Length	Rate per Rft.	Total	Remarks
Ft.		Rs. a. p.	Rs.	
180	2,485	17 8 0	42,618	As per section now constructed by the Municipality.
80	13,515	8 6 0	1,14,878	40' metalling with kerbs and gutters and moorum footpaths.
60	8,985	6 6 0	56,402	25' } Do. do.
50	22,580	5 6 0	1,19,690	25' }
40	36,880	3 8 0	1,27,155	20' }
20	640	1 8 0	1,000	10
	64,985		4,61,738	

Rs. 4,61,738.

	Rs.	Rs.
Rs. 4,62,000 to be spent in a programme of 17½ years.		
<i>1st 5 years—</i>		
80 ft. road in Commissariat Lines about ¼ of total length	28,719	
60 ft. road 2,000 Rft.	56,469	
All roads in Zone B—		
50 ft. road 1,500 Rft.	8,000	
40 " 2,270 "	7,945	
Commissariat Lines—		
50 ft. road 3,065 Rft.	16,347	
40 " 6,500 "	22,750	
Zone C—		
40 ft. road 5,500 Rft.	19,250	
50 " 2,000 "	10,670	
	1,70,150	
Rs. 1,70,150 deferred for 2½ years at 5 per cent. × 0.885	...	1,50,582
Remainder at end of 7½, 12½ and 17½ years—		
Add cost of making up existing roads in Depot, N. I. and Commissariat Lines	...	50,000
		2,00,582
At each period $\frac{2,92,000}{3} = 97,333$		
97,333 deferred 7½ years at 5 per cent. × 0.694	...	67,549
97,333 " 12½ " " × 0.543	...	52,852
97,333 " 17½ " " × 0.426	...	41,464
		1,61,865
Total for roads	...	3,62,447
<i>II.—Culverts and Channels—</i>		
Estimates for culverts at current rate are 30 per cent. less than the original estimates.		
Original estimate	1,51,837	
Less reduction due to lands excluded, about 200 acres at 25 per cent.	37,960	
	1,13,877	
Less 30 per cent.	34,164	
	79,713	79,713
<i>III.—Channels—</i>		
As per detailed statement No. 9	...	77,547
		1,57,260
1,57,260 deferred 7½ years at 5 per cent. × 0.69	...	1,08,510
Total for culverts and channels	...	1,08,510
<i>IV.—Cutting and Embankment—</i>		
As per original estimates	...	28,630
<i>V.—Lighting—</i>		
As per original estimates	...	40,000
<i>VI.—Trees—</i>		
On all roads excepting 40 feet and below—		
Total length 48,000 feet		
Trees at 50 feet apart... 1,000 × 2 = 2,000 per tree	Rs. 5 plus	
maintenance for five years at Rs. 10 per tree	...	30,000
		30,000
Rs. 30,000 deferred for 7½ years at 5 per cent. = 2 × 0.694 = 20,820	say	21,000

STATEMENT No. 9

Channels

Width	Earth work			Masonry walls			Bottom, soling, metal and cement concrete			Total per 100 feet	Rate per feet	Total Rit.	Amount
	Quantity Cft.	Rate	Amount	Quantity Cft.	Rate	Amount	Quantity Cft.	Rate	Amount				
			Rs.			Rs.		Rs. a. p.	Rs.		Rs. a. p.	Rs.	
30	4,500	1	45	1,230	25	312	8,000	0 2 6	500	597	0 8 8	2,060	26,010
15	3,375	1	34	1,250	25	312	1,500	0 2 6	250	596	0 6 0	930	5,520
12	2,700	1	27	1,250	25	312	1,200	0 2 6	200	539	0 5 6	3,400	18,375
8	2,400	1	24	1,250	25	312	800	0 2 6	133	469	0 4 10	1,275	5,835
6	1,350	1	14	1,250	25	312	600	0 2 6	100	426	0 4 4	3,350	14,337
5	750	1	8	...	...	...	...	...	...	...	0 0 8	4,720	2,360
2	600	1	6	...	...	...	...	...	...	...	0 0 8	14,000	5,280
													77,547

STATEMENT No. 10

DRAINAGE AND WATER SUPPLY

Approximate estimates supplied by the Superintending Engineer, Public Health

	Rs.
Net works outlay	
(a) Providing and laying CI distribution mains for water supply	3,50,000
(b) Providing s. w. sewers	6,50,000
	<u>10,00,000</u>

On the assumption that the above will be laid concurrently with road construction—

	Rs.
Expenditure in 1st 5 years Rs. 4,00,000, deferred 2½ years at 5 per cent. = × '885	3,54,000
Remainder in each period of 5, 10 and 15 years	
Rs. 2,00,000 after 5 years at 5 per cent. × '7835	1,56,700
Rs. 2,00,000 after 10 years at 5 per cent. × '614	1,22,800
Rs. 2,00,000 after 15 years at 5 per cent. × '481	96,200
Present value of deferred cost	<u>7,29,700</u>
Say	<u>7,30,000</u>

STATEMENT No. 11

Cost of management and estate establishment

	Rs.
Gross sale proceeds	62,62,000
At 3 per cent.	1,87,860
Annual equivalent for 20 years	9,393
Present value of 9,393 payable yearly for 20 years at 5 per cent. Y. P. 12'46	1,17,036
Cost of management, say	<u>1,17,000</u>

Conveyancing and legal charges.

	Rs.
Rs. 9,600 per annum for 20 years, at 5 per cent. Y. P. 12'45.	1,19,616
Conveyancing and legal charges, say	<u>1,19,600</u>

STATEMENT No. 12

Payment to the Military Department

Rs. 32,48,000 to be paid in 4 years.

	Rs.
<i>1st Payment—</i>	
Immediately on transfer	6,00,000
<i>2nd Payment—</i>	
Rs. 6 lakhs deferred 1 year at 5 per cent. $6,00,000 \times 0.952$...	5,72,000
<i>3rd Payment—</i>	
Rs. 10,24,000 deferred 3 years at 5 per cent. $10,24,000 \times 0.8638$...	8,84,531
<i>4th Payment—</i>	
Rs. 10,24,000 deferred 4 years at 5 per cent. $10,24,000 \times 0.8227$...	8,42,445
Present value ...	<u>28,98,976</u>