

APPENDIX IX.

EXTRACTS FROM REPORT OF MR. J. LANGMUIR, INSPECTOR OF SURVEYS.

STANDARD SURVEYS.

IN addition to 23 miles of new work, an exceptional amount of reinstatement work has been done in the City of Auckland during the year. This is always a rather complicated work. Under the most favourable circumstances, when due notice of the proposed disturbance is given, and the block can be short-fixed, then the cost is minimized, but if the blocks are disturbed before they are fixed, then the cost is frequently heavy. The Auckland City Council authorities now, however, appreciate the necessity of working with the Department to maintain the usefulness of the survey which has been executed at such a large cost. Other local bodies are also for the most part alive to the importance of this class of survey, and are doing their best to assist in every way, and pay the cost of the reinstatement of the blocks when the necessity arises owing to street or road improvements. A considerable amount of work of this class both in the city and suburbs of Auckland is still in hand unfinished.

PROPOSED WORK FOR THE YEAR 1915-16.

The Auckland City Council is desirous of having a complete standard and alignment survey made of Remuera, Grey Lynn, and Arch Hill, three local districts which have lately joined the city. It will also ask that the survey be taken in hand as soon as possible. The Borough of Onehunga, Mangere Road Board, and the Manukau County Council have all agreed to bear the cost of the standard blocks with cast-iron surface boxes, and it will be a matter for regret if this work cannot be carried out at an early date, but to do so assistance in the field will be required. In regard to alignments, I myself have so far taken the responsibility for all so far determined, and if the surveys of Remuera, Grey Lynn, and Arch Hill are taken in hand there will be a large amount of this work to undertake as the work proceeds, some of it complicated and difficult. The office is in arrears with standard plans, and unless further assistance is given in the office progress will, of necessity, be slow.

SECONDARY TRIANGULATION.

Large signals were built at thirty-four stations extending over country from Whakarara, about 8 miles east of Whangaroa Harbour, to Pohokura, on the boundary between the Auckland and Hawke's Bay Land Districts. Building is now going on about Lake Taupo, but other parties have ceased work for the present. There are still nine stations in the southern part of the district, including White Island, which require signals, and sixteen stations in the northern part; these latter will be taken in hand about August. The building of thirty-four signals does not, perhaps, appear a big turnout, but the parties were not engaged continuously, and a large amount of track and other clearing had to be done, much of it in difficult country and during bad weather. A considerable number of the signals are made of jarrah, but in all other cases the timber has been cut and pit-sawn or axed out on the ground. At one station, "Huruiki," which is built on the top of a rock, over 1,000 superficial feet of totara was sawn on the ground for the signal required.

Mr. H. F. Edgecumbe started observations on the 14th May, and continued same to the 17th November, when he was granted twenty-eight days' sick-leave, but did not take the field again until after Christmas, and little success was obtained when he had to leave the work again on the 1st March owing to a return of his illness. The total number of stations observed at were twenty-two, of which eleven were secondary triangulation, six were old major stations the angles of which were reobserved, and five were extra stations in the vicinity of Auckland for the purpose of a standard triangulation connection to the North Shore.

REVISION OF OLD MAJOR AND MINOR TRIANGULATIONS.

This is a work which should be started at once—in fact, the secondary triangulation will not be of any practical use until this is done. I have had a number of permanent signals erected at such stations as seemed desirable, but at many stations temporary signals will be quite sufficient, and there is no necessity for these to be erected until the observer is on the ground. The old work is disconnected also in many places, and new stations are required to complete polygons, &c. Again, new stations will sometimes be required to take the place of stations destroyed or closed in by plantations.

Taking the three classes of survey which I have been permitted to supervise during the last few years—viz., secondary triangulation, standard surveys, and revision of major and minor triangulation—much more assistance is required if any practical results are to be obtained within a reasonable time. Two observers are required for the secondary triangulation, one extra standard surveyor, one surveyor to start the revision of the old major and minor triangulations where required, and, if possible, a start should be made with the precise levelling of the district. Dealing with all classes of work in hand, the requirements, in order, appear to be as follows:—

- (1.) Final determination of the values of the new secondary base-lines measured.
- (2.) Continuation of the observation of secondary triangles by two observers for the Auckland District. Extra observations for true meridian are required.