

1928.  
NEW ZEALAND.

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DEPARTMENT OF LANDS AND SURVEY.  
**SWAMP DRAINAGE.**

REPORT FOR THE YEAR ENDED 31st MARCH, 1928, TOGETHER WITH STATEMENT OF ACCOUNTS.

*Presented to both Houses of the General Assembly pursuant to Section 13 of the Swamp Drainage Act, 1915.*

SIR,—

Department of Lands and Survey, Wellington, 30th June, 1928.

In pursuance of section 13 of the Swamp Drainage Act, 1915, I have the honour to forward the report of the Chief Drainage Engineer covering operations on lands proclaimed under the Swamp Drainage Act and amendments. Illustrative plans are also attached.

I have, &c.,

J. B. THOMPSON, Under-Secretary for Lands.

The Hon. A. D. McLeod, Minister of Lands.

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REPORT BY CHIEF DRAINAGE ENGINEER.

SIR,—

I have the honour to submit my annual report on the areas proclaimed under the Swamp Drainage Act, 1915, and amendments.

KAITAIA DRAINAGE AREA (61,430 ACRES), MONGONUI COUNTY.

During the previous year legislative authority was obtained for writing down the capital cost of the works to £125,000, of which £15,000 was to be chargeable against the Kaitaia Town Board area, the balance of £110,000 to be a charge against the county portion of the district. The classification of the district was also completed as required under the Swamp Drainage Act, whilst a revaluation, with the exception of the Town Board area, was carried out by the Valuation Department. Objections having been heard by the Assessment Court, the preliminaries to the striking of the rates were completed, and the rates for 1927-28 were struck in February.

Judging from the butterfat returns of the Kaitaia Dairy Co. this district has made steady progress during the year; but the productivity of the flat lands can be considerably increased provided the necessary financial assistance is available for development work. The very dry summer does not appear to have affected this district as seriously as lands farther south, for, although the rainfall was very light, *paspalum* has been used as the standard grass, and provided good feed when the English grasses were parched up. Owing to the scheme nearing completion the programme of works has necessarily been curtailed. The most important works carried out comprised the maintenance and improvement of drains, natural channels, and other works, erection of flood-gate, dredging in Awanui River, and enlargement of stop banks on the Pairatahi Stream. This latter work was rendered necessary by the decision to increase the carrying-capacity of the Whangatane spillway, and previous to the arrival of the Marion drag-line there was no suitable excavating plant available on the works for carrying out improvements in this locality.

The proposal to divert the river through the school and other properties in the Town Board's area has been investigated. This diversion will be of great assistance in reducing the overflow above the township.

Rainfall records have been kept at Kaitaia, and readings taken daily showing water-level in the Awanui River at Kaitaia.

The total rainfall for the year was 55·97 in., being about 7 in. above the average for the twelve years during which the records have been kept. The schedule and graph attached to this report show that very heavy rain was experienced during the winter months, July being the wettest, when 11·35 in. were recorded. At that time the country was generally in a waterlogged condition, consequently the run-off was exceptionally high, and as a result overflows of the river occurred above the township, causing the inundation of a large area of country for a short period.

The following schedule shows details of rainfall for the past nine years :—

Year.	Rainfall for Year.	Wettest Month and Rainfall.		Driest Month, and Rainfall.	
	Inches.		Inches.		Inches.
1918-19	47·30	Oct., 1918	9·06	Aug., 1918	1·39
1919-20	31·71	July, 1919	7·37	Dec., 1919	0·62
1920-21	53·11	May and Aug., 1920 (each)	8·02	Mar., 1921	1·13
1921-22	49·42	Mar., 1922	5·84	Jan., 1922	2·24
1922-23	44·81	Oct., 1922	7·46	Jan., 1923	2·02
1923-24	49·23	Oct., 1923	7·92	Dec., 1923	1·38
1924-25	48·89	May, 1924	10·34	Mar., 1925	0·51
1925-26	57·90	May, 1925	10·43	Feb., 1926	0·88
1926-27	64·91	Oct., 1926	9·62	Dec., 1926	1·51
1927-28	55·97	July, 1927	11·35	Jan., 1928	0·22

*Awanui River.*—For eight months dredger No. 10 was employed in removing deposits of sand from the lower reaches of this channel, during which time 34,700 cubic yards of spoil, mostly fine sand, was removed. There is a natural tendency for the sand to accumulate in this locality during normal periods of flow, but the deposition is hastened when floods are experienced. The removal of this sand is a very serious problem, and one which affects the whole district, as the continued silting affects the navigation to Awanui, which is the port for the collection and distribution of goods for the western portion of the Mongonui County.

*Whangatane Spillway.*—The enlargement of this channel was commenced last winter after the Marion drag-line (No. 27) was erected at Awanui. The scheme had necessarily to be commenced at the lower end of the Pairatahi Stream, where the stream spreads out into bold water. From this point up to the straight cut of the Whangatane the line of the original bank has generally been followed, although a deviation of 11 chains has been made to improve the channel capacity in this locality. Throughout the above length, a distance of 107·6 chains, the bank has been raised to a point some 5 ft. above the existing flood level, and at the same time considerably strengthened. The raising of these banks has now been completed, giving sufficient channel capacity between the bank and the hills on the eastern side to carry the flood-waters. Spoil for the construction of the banks has been obtained from a continuous borrow-pit inside the banks, which will provide a large storage reservoir for the run-off from the adjoining lands when the automatic gates are closed by flood and tide-water in the stream.

The widening of the previously dredged channel was commenced towards the end of March, and from now on the progress should be more rapid, as the country will become more solid, consequently the working of the machine on pads will be rendered unnecessary.

The work with this machine has been delayed owing to repairs having been found necessary to the boiler, and also to the difficulty in obtaining a good supply of fresh water.

The amount of spoil removed during the year was 33,900 cubic yards.

*Drains.*—34 miles 60 chains of drain was cleared of weeds, and 4 miles 27 chains cleared and deepened. One shingle-trap was placed in position on the Pukepoto Creek and cleared of shingle as required. No new drains were constructed.

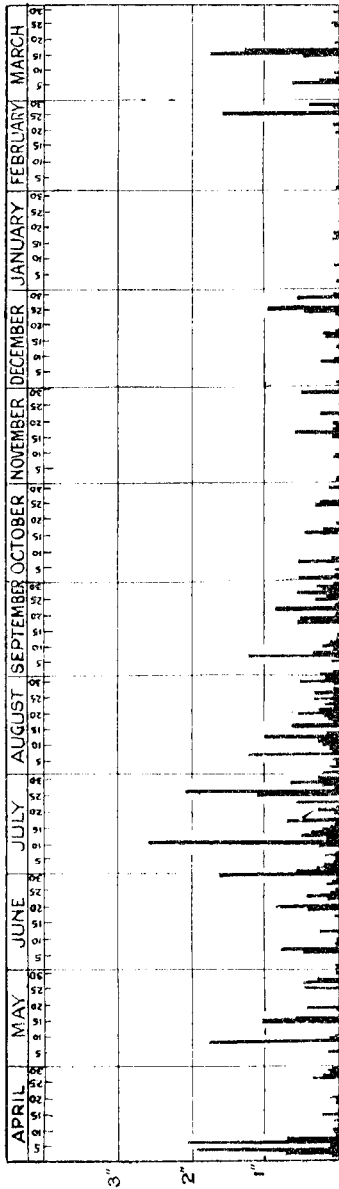
*Stop-banks.*—Ten miles of stop-banks and stop-bank drain, with eighteen flood-gate outlets, were cleared and kept in repair, and four new flood-gates placed in position. Repairs were carried out to existing gates as required. 100 chains of stop-bank drain required on reconstructed Pairatahi bank was opened up.

*Bridges.*—Two sill bridges were erected over drains to give access to properties severed.

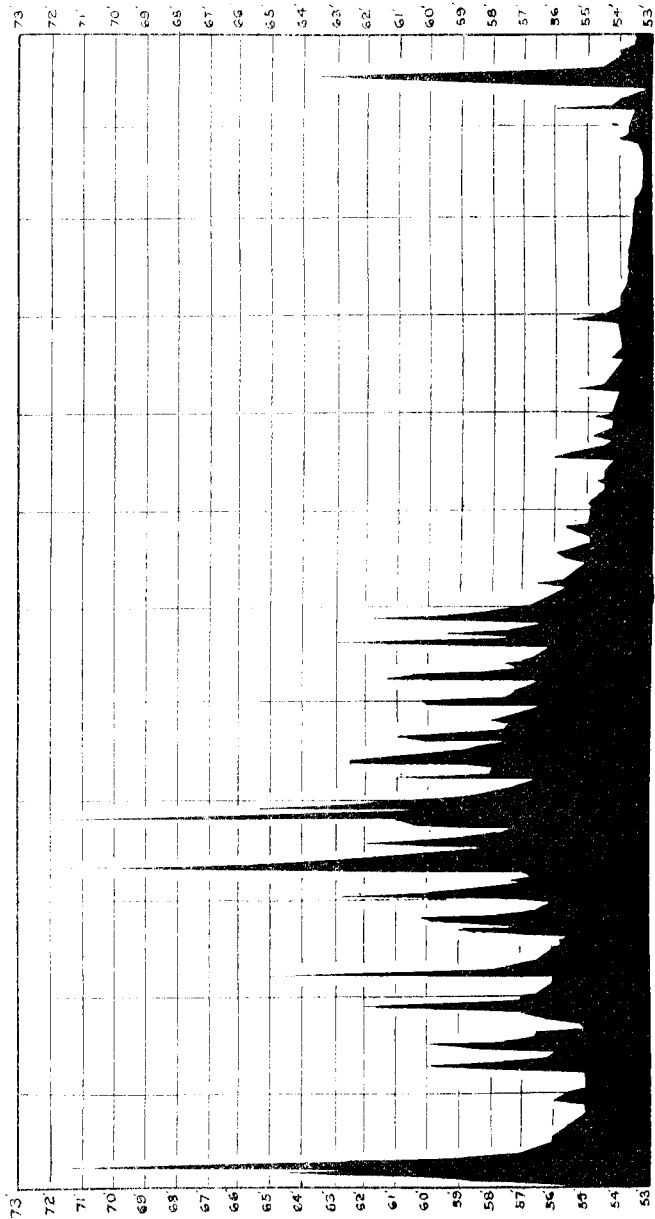
*Buildings, &c.*—Sleeping-accommodation and cooking-quarters for two crews were erected and placed on separate pontoons for dredge crews. A tank was placed in position at sufficient height to gravitate water to points required at the lower end of the Whangatane spillway, pumping-house erected, and two miles of pipe-line laid parallel to the line of work. A summary of the year's operations is as under: Spoil excavated by dredges, 68,600 cubic yards; stop-banks reconstructed, 107·60 chains; outlet drain constructed (Motutangi), 60 chains; drains deepened and improved, 4 miles 27 chains; drains cleared, 34 miles 60 chains; stop-banks kept in repair, 10 miles; flood-gates erected, 4; sill bridges, 2; shingle-trap, 1; small buildings, 3.

The principal work proposed for the ensuing year is the widening of the Whangatane spillway, while the further improvement and extension of certain drains, and installing of flood-gates to prevent backflow, is being considered.

*Works Expenditure and General.*—The sum of £13,770 2s. 8d. was expended during the year, of which £5,536 1s. 11d. was spent on day labour and £1,067 11s. on piecework contract. Some 778 rate demands were sent out at the end of the period.



RAINFALL



RIVER GAUGE

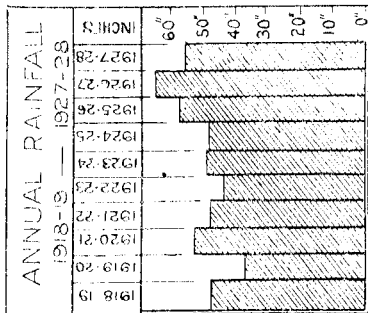
RAINFALL AND RIVER GAUGE

RECORD

AT  
WAIKURUKI BRIDGE (FOSTERS)

KAITAIA RIVER

1<sup>ST</sup> APRIL 1927    31<sup>ST</sup> MARCH 1928



## HIKURANGI DRAINAGE AREA (50,000 ACRES), WHANGAREI COUNTY.

The weather conditions throughout the year have been generally favourable for the vigorous prosecution of excavation work, the only serious hindrance in this direction being the late arrival of low-water-level conditions in the Wairua River, which was necessary to facilitate the rock-excavation operations in the upper portion of the river-diversion at the Rapids.

The gauge at Ruatangata recorded falls of rain on 137 days, the total fall for the year being 48·04 in. The months of June and July were particularly wet, when falls of 7·86 in. and 8·82 in. respectively were recorded, whilst January was the driest month, with a fall of 0·67 in. spread over five days.

The following is a summary of the operations carried out during the year under review :—

*Wairua River Diversions.*—The diversions of the river at the rapids at Ruatangata is the key to the whole scheme, and every endeavour was made to have these diversions completed to the designed grade by the end of the year. There is still a certain amount of work to be completed at the upper end of No. 4 diversion before the ordinary level of the river above can be lowered to 6 ft. above datum, representing a lowering of over 12 ft. from the original summer level. The works completed have already had a most beneficial effect on the discharge of the river, and this effect is felt for a considerable distance above the diversions. During November preparations were put in hand for commencing work again on No. 4 diversion, but it was not until December that the water-level fell low enough to enable the steam-shovel to operate in safety on the low level, the river being diverted meanwhile round the old channel. Since that date long hours have been worked in order to expedite the completion of this work, but a flood in March seriously interfered with the operations. Provided no floods are experienced during April, only the satisfactory opening-out of the ends of the diversion should remain uncompleted at the end of that month.

All the rock from this excavation is loaded by the steam-shovel into trucks, and then dumped along the sides of No. 1 lagoon. The only other work carried out on the main diversions was at the upper end of No. 3, where an accumulation of rock which had fallen into the channel from the batter was removed. The large slip towards the mouth of the No. 2 diversion appears to be stabilized, there having been little movement from the upper side. The toe of the slip is composed of a solid mass of stone which projects into the channel, and it will probably be advisable at a later date to remove part of this as it obstructs the flow of the water.

The construction of the spillways round the diversions, which were authorized during 1926–27, has been proceeded with when work was not possible on the main river work. These spillways are being constructed with a formation level of 6 ft. above datum at No. 2 lagoon, running on an even grade to 9 ft. above datum at the junction with the upper end of No. 4 diversion, the bottom width being 35 ft. throughout.

The stripping of the overburden of clay with the drag-line along the long spillway round Nos. 2 and 3 diversions has been completed, and during the coming winter the excavation of the rock will be continued, the spoil being loaded into trucks and dumped into the western side of No. 2 lagoon. This necessitates the construction of a temporary bridge across the mouth of No. 2 diversion, and this work is now well in hand.

One drag-line convertible to a steam-shovel was retained for this work, and during the first two months of the year the major rockwork was completed in the old channel at No. 4 diversion. Owing, however, to the winter rains this work was stopped, leaving about 2 chains still to complete. The carrying-out of this work will be simplified next summer when the river will be running through the main diversion.

The total amount of spoil excavated on the above works was 37,807 cubic yards, of which quantity 24,536 cubic yards were rock, the balance being rubble, pug, and clay.

*Up-stream Diversions.*—Two drag-lines, each equipped with a 50 ft. boom and a  $\frac{3}{4}$ -cubic-yard bucket, have been employed continuously on these channels, which are being excavated to the full digging-capacity of the machines—namely, 110 ft. on top width, with batters of 1 to 1. Diversions Nos. 1 to 3 were completed during the previous year, and no further work has been carried out on these particular cuttings. During this year diversions Nos. 1B, 4, and 5 have been excavated, although a small amount of work is still required at the mouth of No. 4. No. 6 diversion has been commenced, but difficult country has been encountered, especially for the first 6 chains, where rock, stiff pug, and sandy clay have been met with. The greater portion of the rock has been left in the meantime, and later on this barrier will have to be shot and removed.

The scattered nature of the above works has necessitated the shifting of the drag-lines for quite long distances, and in some cases over rough country for this type of machine. It is worthy of record that during the shifting operations no accidents occurred.

The amount of spoil excavated by the two machines on the above works was 115,635 cubic yards, the average cost of the actual excavation being 1s. 4·48d. per cubic yard. During the latter portion of the year the excavation has been carried out on a piecework-contract basis, and this system has had the desired effect of increasing the output of the machines.

*Ngāraratunua Canal (Block IV, Purua Survey District).*—The excavation of this canal to its junction with the Wairua River was completed by No. 3 Dredge (Priestman) at the end of the year, the spoil dredged amounting to 69,559 cubic yards, covering a distance of 129 chains. The unit cost of the excavation was 10·61d.

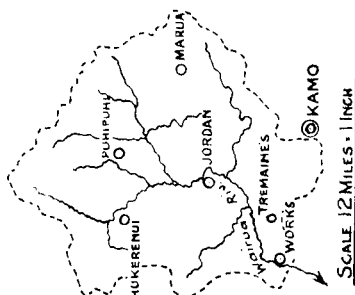
This dredging has been particularly difficult owing to the hard nature of the clay, and for a considerable distance it was found necessary to loosen the clay by shooting with gelignite. Owing to the excessive fall into the Wairua River, the stream had to be dammed in order to keep the dredge afloat. From a point about 40 chains from the river the canal has been increased in width, as the Mangahahuru Stream from the Hikurangi arm of the swamp junctions at that point.

RAINFALL 1927-28

Rainfall for year at Works	.46-02"
"	Elev 260 "
"	" Tremaine's .56-77 "
"	Elev 610 "
"	" Puhipuhi .71-71 "
"	Elev -850 "

ANNUAL RAINFALL  
RUATANGATA WORK  
1923-4 to 1927-8

	50
	40
	30
	20
	10
1923-4	[Shaded]
1924-5	[Shaded]
1925-6	[Shaded]
1926-7	[Shaded]
1927-8	[Unshaded]



A road-bridge which had been dismantled to enable the dredge to pass was re-erected and lengthened; also one access bridge to a severance was erected, necessitated by a bridge having been constructed previously at this spot by the owner of the land.

Owing to the excessive growth of weeds in the greater part of the canal, a gang of men has been employed in removing these obstructions to the free flow of the water. It appears that the maintenance of this canal, as well as other subsidiary channels now under construction, will necessitate the future purchase of a light mobile machine.

*Mangahuru Stream Improvements.*—Satisfactory arrangements having been made with the County Council with regard to the road-bridge on McLeod's Flat, the erection of Dredge No. 26, American steel dipper, was commenced at the point where the stream emerges from the railway-line. This dredge was transferred from the Waihi area, necessitating dismantling and re-erection at point mentioned. The proposed work consists of the straightening of the stream, and the enlarging of the existing channel wherever same is being followed. Following on the completion of the erection and overhaul, the machine commenced operations in November, and to date some 60 chains of the canal has been completed, the amount excavated being 37,570 cubic yards, at an actual cost of 2s. 3.55d. per yard, exclusive of erection charges, but inclusive of all working and overhead charges. The construction of this canal will not only prevent the flooding of a large area of very valuable farming-land, but will also relieve the main road from flooding.

*Okarika Stream Improvement.*—The work in this locality consists of a diversion of the existing stream through lower country. The first 20 chains of this diversion is through the high land along the river-bank, after which the land is at a lower level and swampy. A Bucyrus, working as a drag-line, is excavating the first section of the work, after which the Priestman will be employed in the swampy portion. The excavation was commenced late in the year, with an output to date of 12,750 cubic yards.

*Plant and Machinery.*—With the addition of the American steel dipper, the excavating plant on these works now consists of three Bucyrus caterpillar machines, convertible to either drag-line or steam-shovel, and two floating dredges; the above-mentioned dipper, and a Priestman grab dredge. As far as possible all repairs for the above machines have been carried out in the Department's shop on the works, but, of necessity, all heavy repairs have to be sent to private shops. All the smaller plant necessary on such an undertaking—air-compressors, oil-engines, pumps, locomotives, &c.—has been overhauled in rotation, and is all in good working-order.

*Surveys.*—Both land and engineering surveys have been carried out during the year as circumstances permitted. Land surveys were mainly required in order to obtain data in connection with claims for compensation where areas were severed by diversions of the main stream or its branches. Data was collected for the location of the Mangahuru and Okarika channels, and practically all the location of these works has been pegged on the ground. The preliminary surveys have also been extended to the Mangawhero Stream as far as the Hikurangi Township, as well as to the Waitutu Stream as far as the railway-line.

During the coming year it is proposed to complete the hydrographic survey of the river as far as the Whakapara Junction. In addition the investigation of further up-stream areas will be continued, with a view to the location and design of works in those areas.

*Works Expenditure.*—The expenditure recorded for the year totalled £20,259 12s. 4d., of which £10,307 18s. 7d. was paid in wages.

#### WAIHI DRAINAGE DISTRICT (20,237 ACRES), TAURANGA COUNTY.

During the previous year all preliminaries preparatory to the striking of rates on this area were completed, with the exception of the hearing of objections to the revaluations. This having been completed, rates were struck in February for the year 1927–28. In order to provide assistance for the settlers, provision was made on the estimates for a subsidy of 10s. in the pound, on both capital and maintenance rates.

The work carried out has consisted principally of the maintenance of existing works, the programme having been completed with the exception of the improvements to the Kaikokopu Stream between the main road and the railway, and the enlarging of certain drains in the Kaikokopu Ward. The former will be carried out as soon as a drag-line is available from the Rangitaiki works, probably towards the end of this year, whilst the drain improvements will be carried out as they are considered necessary.

Owing to the scope of the works having diminished, it has been found impossible to have an officer permanently stationed on the area, consequently the reading of the rain-gauge records has been discontinued. The works are now controlled from the Rangitaiki works, Mr. Innis being the officer in charge.

*Dredges.*—Formerly there were three floating dredges operating on the area, but these have now been transferred elsewhere. The Priestman was dismantled and shipped to Auckland, with a view to being used on other works, whilst one American steel dipper was dismantled and shipped to the Hikurangi works. The third machine, an American steel dipper, is still on hire to the Kaituna River Board. It will be possible to carry out all necessary future dredging-work by means of a walking drag-line.

*Flood-gates.*—The erection of a flood-gate which was under construction at the end of last year was completed, making four erected on the low-lying foreshore lands.

*Maintenance.*—This work consists of patrolling the stop-banks, with the flood-gates constructed therein, as well as the periodical cleaning of all drains.

*Crown Lands.*—Practically all the remaining Crown land in the area was recently leased in areas of about 100 acres for flax-growing purposes. The lessees pay rentals on a sliding scale, and are required to plant flax on areas where the same is not growing. Some of the lessees have already commenced clearing and rolling their areas, and this experiment of farming flax in small areas will be watched with interest. On the larger areas leased during previous years the flax has in some cases not developed so rapidly as was expected. Where the rolling of the peat has been carried out the flax, however, appears to be growing more satisfactorily.

*Fires.*—Several fires occurred on the area, destroying temporarily the growing flax, but fortunately they were suppressed before serious damage occurred. Concerted action, as well as control over the lighting of fires, is necessary on these flax areas, and it appears that the extension of the principle of the constitution of fire districts to flax-bearing and adjacent lands is an essential to the success of this industry.

*Buildings.*—These consist of an office, store-shed, and workshop, two cottages, and one hut. Of these the two cottages and the store-shed and workshop are leased, as they are now not required, owing to the works nearing completion.

*Future Works.*—Apart from the proposed dredging of the upper Kaikokopu, work will be confined to the deepening of several hand drains, and the maintenance of all works.

*Works Expenditure.*—The total expenditure during the period under review was £2,085 2s. 5d., day labour accounting for £1,167 13s. 1d. and piecework contracts £478 12s. 10d.

#### POUKAWA DRAINAGE AREA (13,567 ACRES), HAWKE'S BAY COUNTY.

As outlined in report for the preceding year, alternative schemes of drainage have been drawn up, one being a larger scheme to completely drain the swamp for dairying, and the second a smaller one to develop the area as a flax-growing proposition. It has been decided to adopt the latter, and a commencement will be made with the work when opportunity offers.

The expenditure during the year was £239 7s. 1d., which included cost of conveying dredging plant from Waihi drainage-works to Auckland for future removal to Poukawa.

I have, &c.,

R. G. MACMORRAN, Chief Drainage Engineer.

The Under-Secretary for Lands, Wellington.

## SWAMP LAND DRAINAGE ACCOUNT.

RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 1928.

<i>Receipts.</i>			<i>Payments.</i>		
	£	s. d.		£	s. d.
Balance as at 1st April, 1927..	4,388	0 5	Kaitia Drainage District—		
Debentures issued under Swamp Land Drainage Act, 1915, and Appropriation Act, 1918, section 46 ..	60,000	0 0	Drainage-works, &c. ..	7,579	12 2
Temporary transfers from other accounts (Public Revenues Act, 1926, section 40) ..	69,000	0 0	Management and engineering expenses ..	1,065	19 7
Rents from the letting of national-endowment lands in the Waihi drainage area ..	574	4 8			8,645 11 9
Special rate for interest and sinking fund : Swamp Land Drainage Act, 1915, section 5—			Waihi Drainage District—		
Kaitia drainage area ..	3,796	9 9	Drainage-works, &c. ..	1,824	3 9
Waihi drainage area ..	461	10 0	Management and engineering expenses ..	188	12 8
					2,012 16 5
General rate for administration and maintenance : Swamp Land Drainage Amendment Act, 1926, section 3—			Hikurangi Drainage District—		
Kaitia drainage area ..	1,162	8 5	Drainage-works, &c. ..	12,685	3 9
Waihi drainage area ..	661	2 0	Management and engineering expenses ..	1,282	0 9
					13,967 4 6
			Poukawa Drainage District—		
Rents ..			Drainage-works, &c. ..	200	5 6
Dredge-hire ..			Management and engineering expenses ..	24	10 5
Royalty ..					224 15 11
Interest on mortgage ..			Fuel and stores ..		8,567 7 4
Repayment in reduction of mortgage ..			Interest on debentures recouped to Consolidated Fund ..		10,184 5 9
Interest on investments ..			Loose tools ..		3 12 9
Miscellaneous ..			Management charges on consolidated stock ..	30	9 6
			Stamp duty on transfers, consolidated stock ..	13	11 10
					44 1 4
			Plant and machinery ..		4,338 0 11
			Public Revenues Act, 1926, section 4—		
			Interest paid on temporary transfers from other accounts	1,145	11 9
			Temporary transfers from other accounts repaid ..	74,000	0 0
					75,145 11 9
			Balance at end of year—		
			Cash in the Public Account ..		19,262 18 0
					£142,396 6 5
					£142,396 6 5

## WAIHI DRAINAGE DISTRICT.

SPECIAL RATE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 1928, FOR INTEREST AND SINKING FUND ON ALLOCATED COST OF WORKS.

*Pukehina Subdivision.*

	£	s. d.		£	s. d.
Interest on allocated cost of works ..	500	0 0	Rates levied ..	373	4 5
Sinking fund contained in rates levied—transferred to Reserve Account ..	50	0 0	Subsidy from Consolidated Fund towards rates ..	183	0 0
Balance carried forward ..	6	4 5			
	£556	4 5		£556	4 5

*Kaikokopu Subdivision.*

	£	s. d.		£	s. d.
Interest on allocated cost of works ..	750	0 0	Rates levied ..	556	18 3
Sinking fund contained in rates levied—transferred to Reserve Account ..	75	0 0	Subsidy from Consolidated Fund towards rates ..	275	0 0
Balance carried forward ..	6	18 3			
	£831	18 3		£831	18 3

GENERAL RATE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 1928, FOR MAINTENANCE OF WORKS.

	£	s. d.		£	s. d.
Maintenance costs ..	1,054	9 10	Rates levied ..	1,178	2 9
Balance carried forward ..	623	12 11	Subsidy from Consolidated Fund towards rates ..	500	0 0
	£1,678	2 9		£1,678	2 9

## GENERAL REVENUE ACCOUNT—CENTRAL SUBDIVISION.

	£	s. d.		£	s. d.
Rebates ..	34	11 11	Accrued rents ..	553	9 4
Interest on cost of works allocated to area ..	1,968	5 2	Balance carried forward ..	1,449	7 9
	£2,002	17 1		£2,002	17 1



SWAMP LAND DRAINAGE ACCOUNT—*continued.*

## KAITAIA DRAINAGE DISTRICT.

## SPECIAL RATE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 1928, FOR INTEREST AND SINKING FUND ON ALLOCATED COST OF WORKS.

*Rural Subdivision.*

	£	s.	d.		£	s.	d.
Interest on allocated cost of work .. ..	5,500	0	0	Rates levied .. ..	3,055	16	2
Sinking Fund contained in rates levied—transferred to Reserve Account .. ..	550	0	0	Subsidy from Consolidated Fund towards rates ..	3,253	0	0
Balance carried forward .. ..	258	16	2				
	<u>£6,308</u>	<u>16</u>	<u>2</u>		<u>£6,308</u>	<u>16</u>	<u>2</u>

*Town District.*

	£	s.	d.		£	s.	d.
Interest on allocated cost of work .. ..	750	0	0	Rates levied .. ..	548	13	1
Sinking Fund contained in rates levied—transferred to Reserve Account .. ..	75	0	0	Subsidy from Consolidated Fund towards rates ..	275	0	0
	<u>£825</u>	<u>0</u>	<u>0</u>	Balance carried forward .. ..	1	6	11
					<u>£825</u>	<u>0</u>	<u>0</u>

## GENERAL RATE ACCOUNT FOR YEAR ENDED 31ST MARCH 1928, FOR MAINTENANCE OF WORKS.

	£	s.	d.		£	s.	d.
Maintenance costs .. ..	2,284	7	8	Rural subdivision—			
				Rates levied .. ..	882	14	0
				Subsidy from Consolidated Fund .. ..	1,005	0	0
				Town district—			
				Rates levied .. ..	132	19	5
				Subsidy from Consolidated Fund .. ..	66	0	0
				Balance carried forward .. ..	197	14	3
	<u>£2,284</u>	<u>7</u>	<u>8</u>		<u>£2,284</u>	<u>7</u>	<u>8</u>

## BALANCE-SHEET AS AT 31ST MARCH, 1928.

<i>Liabilities.</i>				<i>Assets.</i>			
	£	s.	d.		£	s.	d.
Debentures issued under Swamp Land Drainage Act, 1915 .. ..	536,000	0	0	Kaitaia Drainage District—			
Temporary advances from other accounts (section 40, Public Revenues Act, 1926) ..	10,000	0	0	Allocated cost of works on which rates are levied—			
Consolidated Fund, for loans redeemed under Public Debt Repayment Act, 1925 ..	5,000	0	0	Rural subdivision .. ..	110,000	0	0
Public Works Fund—Land Improvement vote ..	4,563	19	7	Town district .. ..	15,000	0	0
Consolidated Fund—Accumulated interest on amount expended out of Public Works Fund ..	2,538	2	8				
Consolidated Fund—Interest on debentures paid but not recouped from Swamp Land Drainage Account .. ..	29,398	9	10	Excess cost of works not recoverable .. ..	47,746	3	5
Sundry creditors—				Interest Account—Proportion chargeable to district ..	53,277	10	9
Interest on debentures accrued but not due ..	7,930	13	9				
Interest on debentures due and unpaid ..	3	5	9	Waihi Drainage District—			
Miscellaneous .. ..	3,671	18	5	Allocated cost of works on which rates are levied—			
Rates paid in advance .. ..	0	1	1	Pukehina Subdivision .. ..	10,000	0	0
Rent accrued but not due .. ..	129	8	0	Kaikokopu Subdivision .. ..	15,000	0	0
Kaitaia Drainage District—				Cost allocated to Crown lands forming the Central Subdivision on which special rates are not levied .. ..	50,000	0	0
Balance carried forward on special rate account, rural subdivision .. ..	258	16	2				
Waihi Drainage District—				Excess cost of works not recoverable .. ..	4,620	4	0
Balance carried forward on—				Interest Account—Proportion chargeable to district ..	24,397	14	3
Special rate account, Pukehina Subdivision ..	6	4	5				
Special rate account, Kaikokopu Subdivision ..	6	18	3				
General rate account, for maintenance .. ..	623	12	11				
Reserve Account—				Poukawa Drainage District—			
Kaitaia Drainage District—				Drainage-works .. ..	3,757	16	0
Levy for repayment of capital cost—				Interest Account—Proportion chargeable to district ..	1,785	1	4
Rural subdivision .. ..	550	0	0				
Town District .. ..	75	0	0				
Carried forward .. ..	600,756	10	10	Carried forward .. ..	335,584	9	9

SWAMP AND DRAINAGE ACCOUNT—*continued.*KAITAIA DRAINAGE DISTRICT—*continued.*BALANCE-SHEET AS AT 31ST MARCH, 1928—*continued.*

<i>Liabilities—continued.</i>			<i>Assets—continued.</i>		
	£	s. d.		£	s. d.
Brought forward .. .. .	600,756	10 10	Brought forward .. .. .	335,584	9 9
Waihi Drainage District—			Hikurangi Drainage District—		
Levy for repayment of capital cost, Pukehina ..	50	0 0	Drainage-works .. .. .	133,411	4 4
Levy for repayment of capital cost, Kaikokopu ..	75	0 0	Interest Account—Proportion chargeable to district	33,195	13 3
				166,606	17 7
			Mangawai Drainage District—		
			Drainage-works .. .. .	1,877	15 9
			Interest Account—Proportion chargeable to district ..	525	9 0
				2,403	4 9
			Harihari Drainage District—		
			Drainage-works .. .. .	4,354	15 1
			Interest Account—Proportion chargeable to district ..	940	17 10
				5,295	12 11
			Buildings .. .. .	2,611	19 3
			Wharves .. .. .	89	11 3
			Plant and machinery .. .. .	50,344	8 11
			Loose tools .. .. .	622	12 1
			Live-stock .. .. .	40	11 3
			Fuel, &c. .. .. .	3,074	0 6
			Stores on hand .. .. .	6,282	4 0
			Sundry debtors—		
			Advance on mortgage .. .. .	210	0 0
			Interest on mortgage .. .. .	2	12 6
			Hut rents .. .. .	21	14 8
			Dredge-hire .. .. .	234	0 0
			Flax royalty .. .. .	1	17 8
			Rent under section 4 (5), Swamp Drainage Amendment Act, 1926 .. .. .	76	0 9
			Miscellaneous .. .. .	264	7 1
			Sundry debtors for rates: Kaitaia Drainage District—		
			County Subdivisions—		
			Special rates for interest and sinking fund .. .. .	2,795	6 4
			General rates of maintenance .. .. .	792	13 8
				3,588	0 0
			Town District—		
			Special rates for interest and sinking fund .. .. .	518	1 1
			General rates for maintenance .. .. .	125	8 7
				643	9 8
			Sundry debtors for rates: Waihi Drainage District—		
			Pukehina Subdivision—Special rates for interest and sinking fund .. .. .	373	4 5
			Kaikokopu Subdivision—Special rates for interest and sinking fund .. .. .	552	18 8
			General rate for maintenance over whole area .. .. .	1,016	12 4
			Kaitaia Drainage District—		
			Balance carried forward on special rate account—		
			Town District .. .. .	1	6 11
			General rate account for maintenance .. .. .	197	14 3
			Waihi Drainage District—		
			Balance carried forward on General Revenue Account—Central Subdivision .. .. .	1,449	7 9
			Cash in hand of Post Office .. .. .	29	13 11
			Balance at end of year—Cash in Public Account ..	19,262	18 0
				£600,881	10 10

J. B. THOMPSON, Under-Secretary for Lands.  
J. H. O'DONNELL, Controller of Accounts.

I hereby certify that the Statement of Receipts and Payments and Balance-sheet have been duly examined and compared with the relative books and documents submitted for audit, and correctly state the position as disclosed thereby. The following comment is appended:—

The authority for levying rates provided in the Swamp Drainage Amendment Act, 1926, has not been fully exercised, and the deficiency has been made good by a subsidy from the Consolidated Fund.

G. F. C. CAMPBELL, Controller and Auditor-General.






The subsidies were granted by Parliament, and rates were subsequently levied for the net amount payable by ratepayers after crediting the subsidies.

J. H. O'DONNELL, Controller of Accounts.

*Approximate Cost of Paper.*—Preparation, not given; printing (700 copies, including graphs and maps), £60 10s.

## RANGAUNU BAY

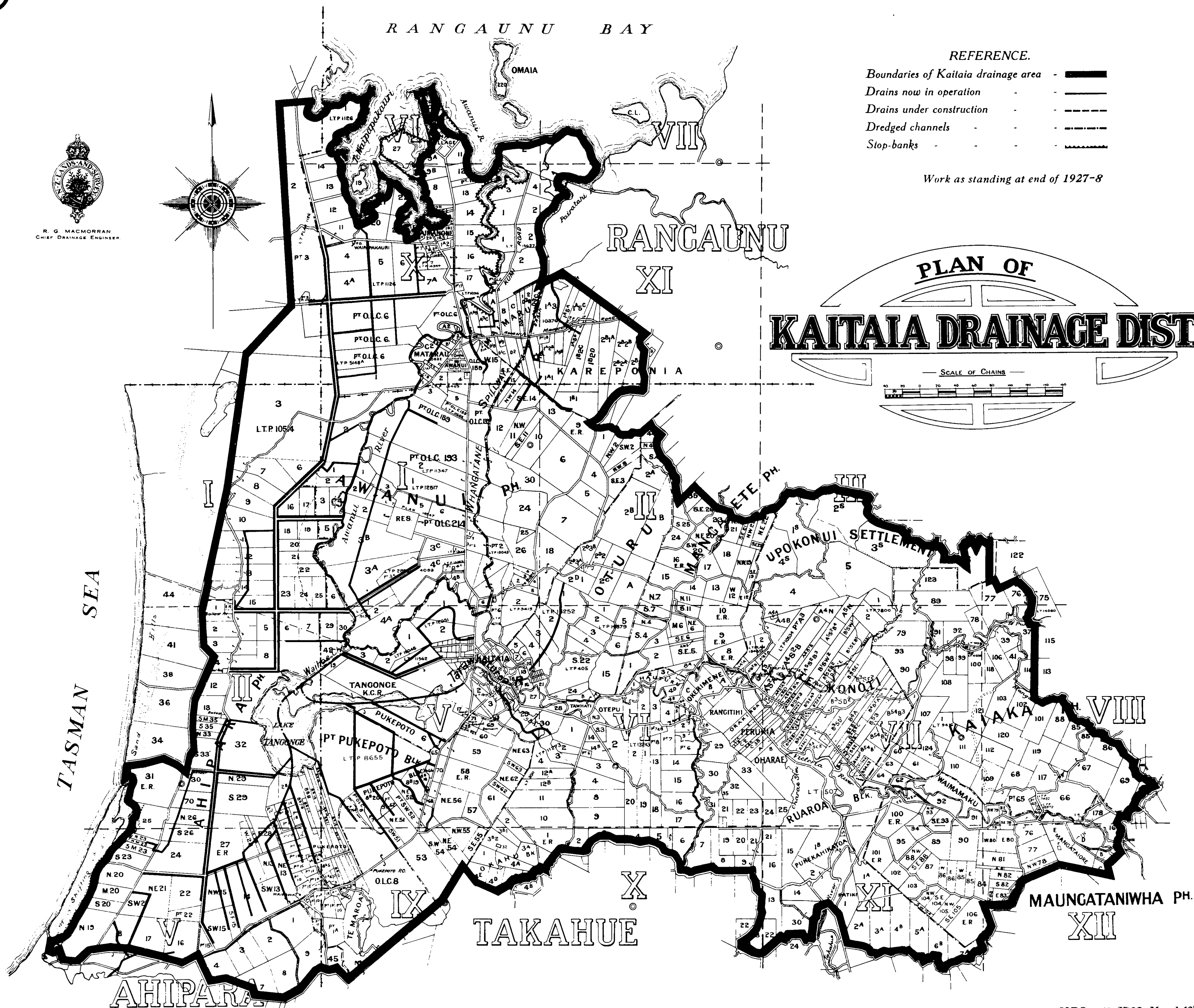
## REFERENCE.

- Boundaries of Kaitia drainage area -   
 Drains now in operation -   
 Drains under construction -   
 Dredged channels -   
 Stop-banks - 

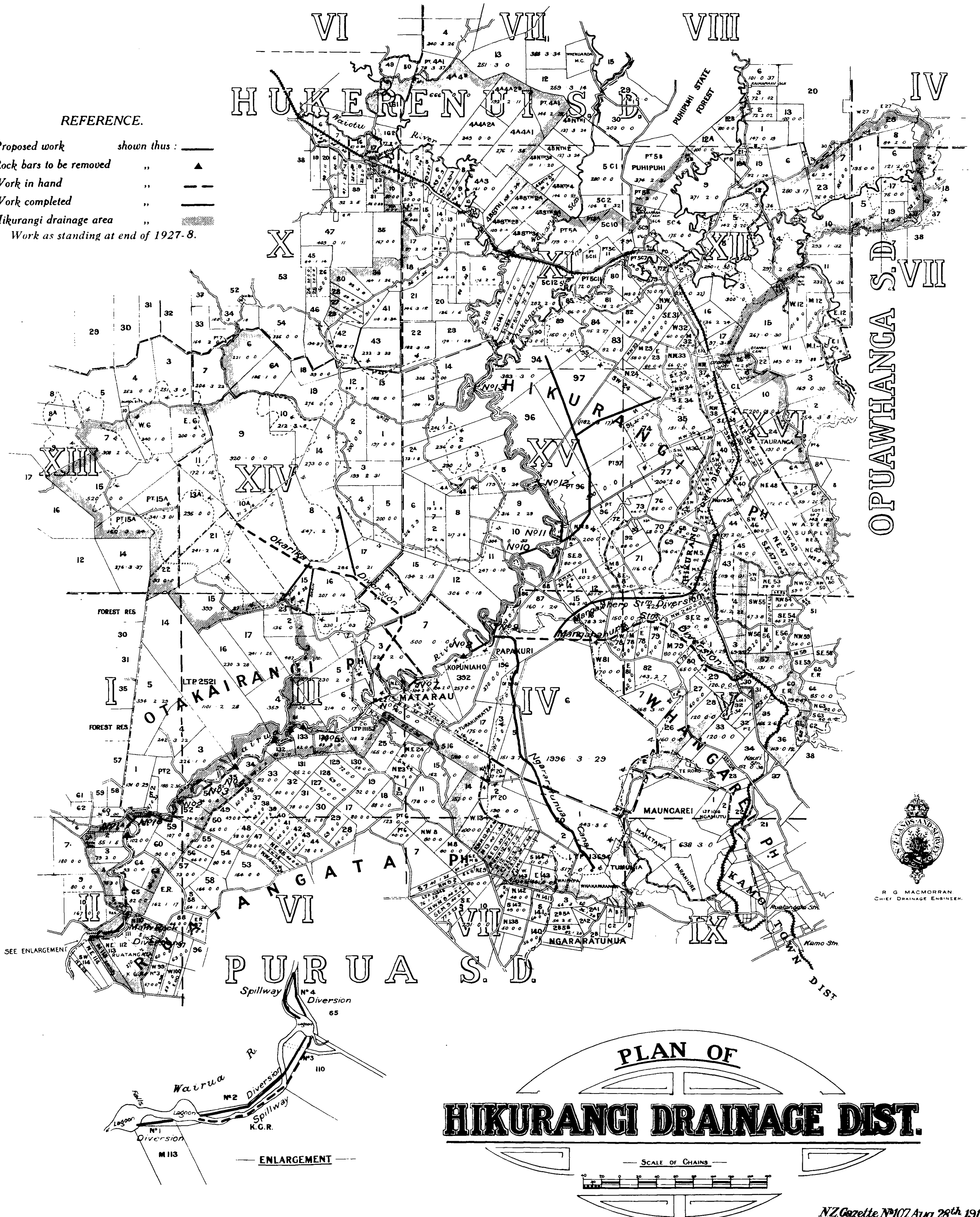
Work as standing at end of 1927-8

# PLAN OF KAITIA DRAINAGE DIST

SCALE OF CHAINS





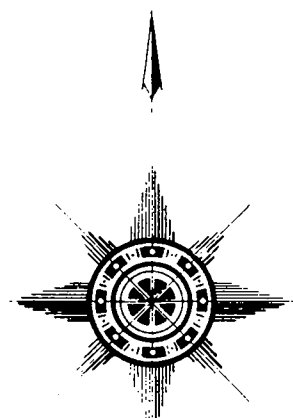








R. G. MACMORRAN,  
CHIEF DRAINAGE ENGINEER.



Maketu

BAY

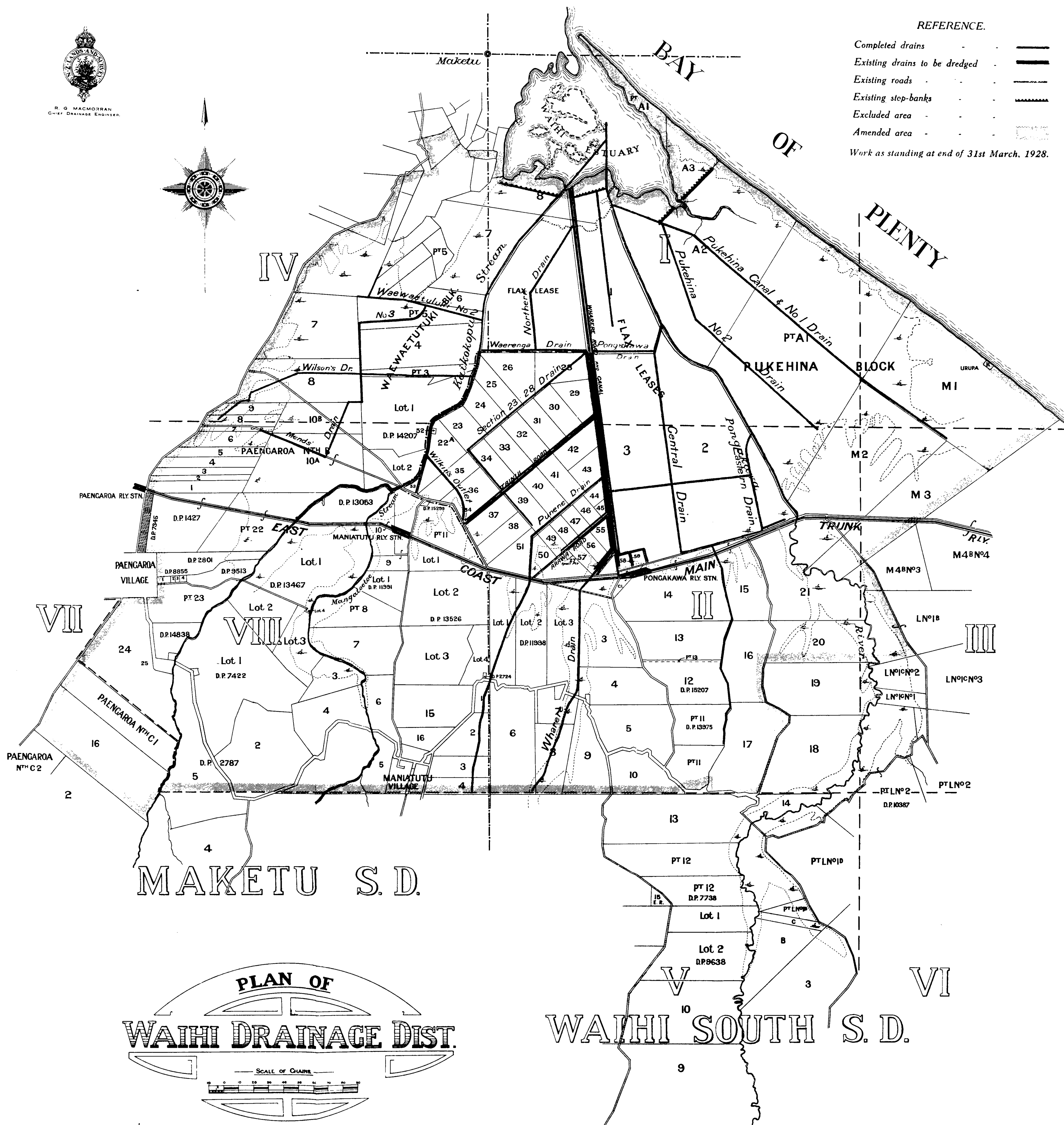
OF

PLENTY

# REFERENCE.

- Completed drains ————
- Existing drains to be dredged ————
- Existing roads ————
- Existing stop-banks ————
- Excluded area ————
- Amended area ————

Work as standing at end of 31st March, 1928.



0 2 4710

121 24

10 3-17

10 3-17