

NOTES ON SURVEY INVESTIGATION

R. W. Willis

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NOTES ON SURVEY INVESTIGATION

**By
R.W. WILLIS.**

Honorary Fellow of the Institute of Surveyors,
Registrar General of the State of New South Wales,
1932-1945

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PREFACE

THESE notes are intended for the use of Draftsmen in the Registrar General's Department. It is hoped that careful study of them and of the cases and statutes mentioned will enable Draftsmen to have a better knowledge of the principles of investigation of surveys made in connection with title to land as well as a wider appreciation of the reasons for and the results of their work.

September, 1945.

R.W. WILLIS.

PREFACE TO 1974 REPRINT

CHANGES in the practice of the Department have necessitated minor amendments and additions to the text of these notes. Opportunity has been taken to include some questions and specimen answers in relation to examinations undertaken in past years by draftsmen in the Registrar General's Department. An additional section, with an appropriate example, concerns the use of aerial photographs.

J.H. WATSON, Registrar General.

PREFACE TO 1982 EDITION

THIRTY-SEVEN years have now elapsed since the first edition of this work was prepared by the late Mr R.W. Willis. In 1974, because of changes in practice of the Registrar General's Office and the introduction of metric measurements, these notes were reprinted with minor amendments and additions together with six added examples.

The format of previous editions has been retained, although Examples 22 and 23 in the prior reprint, illustrating stratum sub-division, have been removed from these notes because of developing criteria.

With amendments to the Real Property Act, 1900, further changes in Office practice and representations by the School of Surveying of The University of New South Wales, Messrs. B.M.F. O'Malley, Examining Surveyor and B.B. Mills, Supervisor, Training Section, both of the Registrar General's Office have made further amendments to these notes and prepared Examples 24 to 30 inclusive to further elucidate the principles of investigation of plans of survey.

B.R. DAVIES,
Under Secretary for Local Government and
Lands and Registrar General.

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I. QUALIFICATIONS OF SURVEY INVESTIGATORS

1. Training

Before survey drafting officers can be employed on survey investigation, they must acquire a thorough knowledge of the technique of their profession. They cannot expect to become competent survey investigators unless they take full advantage of preliminary training. They must be able to plot accurately both by protractor and co-ordinates. They should learn that by the use of protractor and reduction ratios they can often get results which will obviate the necessity for computation to obtain comparisons; Examples 19, 20 and 30 are cases in point. They must, however, be able to make for themselves all the usual calculations which, speaking generally, do not, as a rule, involve much more than the solution of triangles.

Intelligent application of their work as General Scale survey drafting officers through to graded positions should assist in preparing them for higher duties. Diagram and charting work should fit them for plotting and making neat and accurate notations on working plans and illustrative sketches. In Computations Section, they will learn to make the usual mathematical calculations and be introduced to the method of processing plans by automatic data processing. On draft and programme writing, plan registration, creation of qualified folios of the Register and other work they should gain a knowledge of the Registrar General's Office records and systems as well as obtain some experience in simple investigations.

It is the policy of the Public Service Board to provide formal training in the broad field of "Land and Engineering Survey Drafting" at the Certificate level and, extending, if desired, to the Post-Certificate level at the Sydney Technical College. The survey investigation content of this course (which is obligatory for the survey drafting officers of the Registrar General's Office) provides a fundamental introduction to the subject of boundary definition and, when augmented by intense

instruction in this subject in the Office, will fit these officers for their work in the field of investigation.

In-service training in the legislation and practice governing the Plan Investigation Branch, Title Conversion Branch and other Branches of the Registrar General's Office ensures that the survey investigators enjoy a broad knowledge of the law governing their own activities, and of the records and activities of the Office as a whole. The advantage of this knowledge will be realised later in their career.

Survey drafting officers as part of the training programme, also attend a Survey Investigation Training Residential where, over a period of five days, field inspections of selected cases are carried out. Inspection of high rise buildings, old established residentials and terrace houses, with related survey information, are made on a further two day programme. This increases the officers' knowledge of conditions of terrain and at the same time allows them better to appreciate the various conditions which might obtain on the ground in respect of the information presented in a plan.

Vestibule training in all the activities of General Scale survey drafting officers are given in the Office and formal training with a large content of practical instruction in work related to the examination of dealings is provided when officers have reached a standard which allows them to progress to the preparation of drafts for the creation of folios of the Register.

2. Interpretation of Plans

As a part of their training, survey drafting officers should cultivate the art of visualizing what a plan is meant to convey. A plan should be a record of facts found or established on the ground during survey. Often it is not a true record and can be misleading if not read intelligently.

Survey drafting officers who are keen to add to their education will, when opportunity offers, see for themselves on the ground some of the properties represented on the plans put before them. They will then be better able to realize what a difference there can be between the delineation of a fence or other monument on a plan and what actually exists on the ground.

These remarks apply particularly to fences - a subject which is discussed more fully under the heading "Artificial Boundaries".

3. Knowledge of Office Records

While acquiring their technical groundwork, survey drafting officers should also acquire a thorough knowledge of the records in the office together with the means of finding them and using them. They must know and understand the maps and plans that constitute the reference map system which provides the major index to the Torrens Title Register. They should also build their knowledge of the Land Index (Torrens Title) Automatic Data Processing System so that they understand the principles and purpose of the system, the composition of the Land Index (Torrens Title) and the related indexing rules and procedures. Likewise the more they know of the Deeds Register and means of using it, the better for themselves in their later career.

Survey drafting officers should also have a general knowledge of the plans kept in other Government Departments. Further, they need a knowledge of the various Acts, viz. Real Property, Conveyancing, Local Government, Surveyors, Public Roads, Survey Co-ordination, Crown Lands Consolidation and Pipelines Acts which form the basis of the law in this field. They should thoroughly understand the Survey Practice Regulations and be well acquainted with the Conveyancing Act Regulations, Real Property Act Regulations and Pipelines Regulations as well as Ordinance 32 and By-law 20 under the Local Government Act. In addition, they should have some knowledge of the N.S.W. Crown Lands Office Survey Directions, 1981.

4. Report Writing

Having completed their investigations (especially in matters relating to Primary Applications), the survey drafting officers faced with the task of setting out in writing their method of approach and the conclusions they have drawn as well as the requisitions which seem necessary if further information is desirable. Here is the test of their ability to make their case clear as well as of their capacity to save the time of the senior officer who must make the final decision. A report which is consecutive, clearly expressed and leads up naturally to a definite conclusion will gain the confidence and good opinion of the officer receiving it. One that is discursive, indecisive, and lacks an expression of opinion will suggest a careless investigator who is not sure of the facts and must lead to mistrust of the work of the officer who prepares it. The writing of a clear report is a habit which can be acquired by patient effort and it must be acquired if an officer wishes to become a competent and trusted investigator.

5. Requisitions

Requisitions should be made only for the purpose of gaining additional information which is necessary before a decision can be made or for the correction of errors in a plan. Requisitions can become a bad habit and should never be made simply for the sake of making them. Do not become one of those officers who feel that it is their duty to make requisitions if they possibly can. This is a wrong outlook and indicates a failure to appreciate the purpose of survey investigation. Unnecessary requisitions are irritating to surveyors and lead to complaints. Remember that surveyors have their living to earn and are usually busy people.

Let requisitions be clear, concise and courteous. They should be expressed so that surveyors will know exactly what is required and, if possible, so that they will see why further information is necessary. Minor requisitions which might be dispensed with should not be made unless there are essential

requisitions to be sent. Try to make requisitions complete on the first occasion. A second request for information is justifiable only when the result of the first request suggests a new view of the investigation which cannot be settled without further recourse to the surveyor.

This leads to the point that survey drafting officers must not be satisfied merely to see that the surveyor has supplied the information asked for in requisitions. That information should be examined with the same care as was originally taken. Further particulars will sometimes lead to a different view in regard to boundaries which at first seemed satisfactory. In examining connections added to plans in reply to requisitions, remember that in obtaining these measurements the surveyor has not been asked to fix boundaries and generally does not do so, but merely measures to physical objects which may or may not be on boundaries.

6. Imagination

Above all, cultivate that quality of mind which for want of a better term may be called imagination. This does not mean that guessing should be a substitute for patient research or for accurate thoughts. It means the faculty of

envisaging the course of events which has led to a particular situation and the line of investigation which will enable that course to be traced and established. It means also the ability to foresee where a line of action may lead and whether harmful results may later follow that line. There have been many cases in which a decision to pass a plan of survey would not have been taken if the officers had been alert to follow the effect of that decision on other properties or boundaries in the immediate vicinity. This aspect of investigation applies with special force to cases in which, for the first time in a particular locality or section, boundaries defined by improvements are being adopted in place of lines fixed only by measurement. Especially is it to be watched when improved boundaries are first being fixed from alignments which were made after the subdivision and excess measurements or deficiencies are to be taken into consideration. Want of care and imagination at this stage may well result in expensive litigation between owners, cause the office serious embarrassment and become the root of claims for compensation when deficiencies in measurement of adjacent properties caused by the passing of incorrect determinations of boundaries are disclosed later.

II. THE PURPOSE OF SURVEY INVESTIGATION

Investigation of surveys is made –

(a) for the purpose of ensuring that boundaries defined by a surveyor's plan are, in fact, the boundaries of the land comprised in the relevant deeds, whether held under Torrens Title or Old System Title; (The Office is bound to see that it does not create a folio of the Register which includes land of another proprietor and to ensure that land which cannot properly be regarded as being included in an existing folio, is not included in a folio of the Register to be created in lieu.)

(Investigations are made to safeguard against these problems particularly when plans of survey are lodged for the purpose of subdivision, consolidation, acquisition, lease or redefinition. A case of the latter class is, in fact, an attempt to gain official recognition of what are considered to be the original boundaries although the measurements shown in the plan of survey may differ from those in the original plan.)

(b) in connection with Primary Applications for the purpose of furnishing a report to the Legal Officers. This report must contain

information as to whether the land claimed can reasonably be regarded as being comprised in the deeds of the applicants, or whether it appears to include land to which their title is not disclosed; whether the land claimed appears to be affected by easements created by deeds disclosed on search or indicated by what is shown on the plan or on other plans in the possession of the Office; whether there are other matters found on investigation which seem to call for the Legal Officer's consideration.

While the factors which determine the result in the cases mentioned above differ to some

extent, the general principles remain the same, at least so far as actual investigation of survey is concerned. It thus becomes necessary to consider, with due regard to the scope of these notes:

- (i) What is a "boundary"?
- (ii) How may it be created?
- (iii) How is it to be redetermined -
 - (a) if its redefinition is a matter of survey only;
 - (b) if it has been lost or confused?

III. BOUNDARIES

1. Introductory

In Halsbury (2nd Edn), Vol. 3, page 124, the following appears:

"A boundary is an imaginary line which marks the confines or line of division of two contiguous estates. The term is also used to denote the physical objects by reference to which the line of division is described as well as the line of division itself. In this sense boundaries have been divided into natural and artificial, according as such physical objects have or have not been erected by the agency of man."

Apart from natural boundaries, e.g. the seashore, rivers, streams and lakes, most of the original boundaries in New South Wales with which the Office is concerned were first formed by lines laid down by surveyors. Many of the marks of these have been lost and the boundaries must largely be redetermined by measurement or by such evidence as can be got as to where they were in the first place. Many of these surveys were not made to present standards of accuracy. There was a tendency to include excess area rather than less than that to be set out. Furthermore, the descriptions particularly in the very early grants were vague and in many cases do not seem to have been drawn with regard to such

plans of survey as were extant. See *A.G. v. Love* (1898) A.C. 679 at p. 681 (17 N.S.W.R. 16).

As settlement progressed, subdivision of large areas held in private ownership became common and boundaries fixed by physical objects, e.g. walls and fences, or related to them by measurement, were created by description in transactions between parties. All surveys for these subdivisions and descriptions were not, however, made with the same degree of accuracy or care. Chains used were not in some cases kept to reasonable standards and there was some very careless work. Many subdivision plans on which numbers of titles are based were not prepared by surveyors and the lots were not marked on the ground. Some of them were "paper" subdivisions based on measurements which were unreliable to begin with. Others were made by Architects, Civil Engineers or Draftsmen from similar sources. Many of the plans for early Primary Applications were not as accurate as was desirable. One surveyor who prepared a large number of such plans is known to have made mere inspections in some instances. If he found the land fenced, he would prepare a plan showing fences on the boundaries and then insert measurements taken from the relevant

deeds. Many other plans bear distinct evidence of having been prepared in a similar manner.

The Office itself, in many cases in which measurements shown on plans with boundaries defined by walls and fences were in excess of deed measurements, reduced the lengths to those quoted in the deeds and still showed the improvements in the folio of the Register as forming boundaries. This practice has led to many troubles.

It must not be assumed that all early plans are to be regarded lightly. Many of the early surveys done for public and private purposes are surprisingly accurate even by modern standards. The survey investigators must learn to distinguish these by experience as the result of their use of them. The facts set out above are stated merely as a guide to survey investigators that they should be careful in assessing the value of measurements shown on some plans or given in deed descriptions and should not adopt an outlook, which is far too common even amongst surveyors, that measurements are of prime importance. The maxim that measurements must, as a rule, give way to monuments is one that all survey investigators should have firmly fixed in their minds. They must, however, learn also to be clear on the point of what a monument is and when it acquires the character of a monument. Careful study of some of the examples given later of actual investigation problems will assist in this regard.

2. Natural Boundaries

(a) The Seashore and Tidal Waters

On first settlement of New South Wales, all land was vested in the Crown, and, speaking generally, the title to all land now in private ownership is derived from the Crown by grant or by alienation leading to the issue of the first certificate of title for an identifiable parcel. The only exception material for present purposes is where title against the Crown has been secured by possession adverse to the Crown for sixty years or more; by the operation of the Limitation Act, 1969, the period is thirty years or more in the case of

possession commencing subsequent to 1st January, 1970. Any survey investigator interested in this aspect should read the report of *A.G. v. Love* (1898) A.C. 679. The foreshore of the sea, i.e., the shore between high and low water marks is presumed to belong to the Crown. In a tidal river, the Crown is presumed to own the bed up to high water mark.

Where in a grant the land is described as being bounded by the sea, or by tidal water, whether an inlet of the sea or a tidal stream, the rule is that the grant extends to mean high water mark. Mean (or medium) high water mark is the line defining the mean between the high tides at ordinary spring and neap tides. Determination of the position of this line is a matter for observation and survey and Surveyors are required by Reg. 34 of the Survey Practice Regulations, 1933, to obtain the approval of the Crown or any other owner of land below mean High Water Mark to any redefinition.

In the case of land fronting Port Jackson or parts of Botany Bay and Port Hunter or their tributaries, the Maritime Services Board is the owner of land below high water mark. In all other cases the approval of the Under Secretary for Local Government and Lands is required except where the surveyor certifies on the plan that the existing mean high water mark is substantially the same as that shown in (existing plan number to be indicated); nevertheless, the Registrar General's Office may still require the approval in some instances.

Note that in a case where a Crown Grant of land fronting a tidal lake contained a description "by lines along the margin of that lake bearing (giving bearings and distances of measured lines)" the Crown Solicitor advised that "margin" means "high water mark" and the lines along the margin of the lake made the boundary the mean high water mark, the surveyed lines merely showing the position of the margin of the lake at the time of grant. See also *Williams v. Booth*. 10 C.L.R. at p. 349; and see Surveyors' Journal (1915) vol. XXVIII pp. 183-4.

A reservation in a grant of 30.48 metres from high water mark is an exception from the grant of a strip of land of that width on the landward side of mean high water mark as existing at the date of the grant - *McGrath v. Williams* (1912) 12 S.R. 477. Alteration in the position of high water mark by encroachment or recession of the water and the effect of this alteration on a reservation of 30.48 metres from high water mark are dealt with later under the heading "Accretion and Erosion".

(b) Non-tidal Streams

A clear distinction must be kept between tidal streams and non-tidal streams. If there is any doubt whether a river is affected by flow and reflow of tides, evidence on the point must be obtained. The limit of tidal influence in most of the coastal rivers will be found to be noted on the maps or in other records in the Office. The Murray (within New South Wales) and Darling Rivers are not affected by tides.

Where land is bounded by a non-tidal river or stream (whether navigable or not) there is a presumption that the bed of that river or stream belongs to the riparian owner "*usque ad medium filum aquae*", that is to the middle thread of the river or stream. Note that this is a presumption only and that it may be rebutted by, e.g., something in the circumstances of a particular transaction or an expression in an instrument which indicates that it was not the intention of the parties that the presumption should apply.

The presumption applies to a conveyance or transfer of land bounded by a river or stream where the land is described by reference to a plan and/or by area and neither the delineation in the plan nor the statement of area includes any part of the bed; it applies to a description (or plan) which describes the land as bounded by the bank of the river or stream or by lines *along that bank*.

The presumption applies to a Crown Grant; see *Lord v. The Commissioners of the City of Sydney*, 7 N.S.W., Eq. 11, 12 Moo. P.C. 473 (14 E.R., 991) and *A.G. v. White* (1926) 26 S.R. 216, and to instruments registered under

the Real Property Act - see Section 45A of that Act.

Prior to the decision in *In re White* (1927) 27 S.R. (N.S.W.) 129 there were a few isolated instances where title diagrams showed the boundary as being the middle line of the stream. The practice changed as a result of *White's* case, the Registrar General being directed by the Court to insert in the description in a folio of the Register for riparian land created consequential to a primary application, and as part of that description, a statement showing whether the presumption of ownership *ad medium filum* does or does not apply. The direction affects only primary applications in which a claim of ownership *ad medium filum* is expressly made by the applicant.

If a claim to ownership is made and established the plan lodged in conjunction with the application will be accepted showing the boundary of the land in the application as the middle line of the stream. If the boundary leading to the stream meets it obliquely, the extension is made, as a rule, by a line drawn approximately at right angles to the course of the stream: see *Rural Municipality of Portage la Prairie v. Rural Municipality of Cartier* (1924) 1 D.L.R. 775; see also Example 3.

The plan will illustrate the extension *ad medium filum* by including in the total plan area, the area of the part of the bed so claimed. The total parcel will be given a lot number and outlined by dense linework. The particular boundary will be noted "Centre line of creek is boundary", and the correct position of both banks illustrated in finer broken lines. Two areas, one to the bank, and the other to the centre line of the creek (both with offset adjustments) will be shown and side boundary measurements will be quoted to the bank and in full to the centre line unless, of course, special circumstances preclude the adoption of the direct extension of such side lines.

Note carefully, however, in connection with Crown Grants of land within the Eastern and Central Divisions of the State that the presumption may be regarded as having been negated in respect of alienations by the

Crown made since 3rd May, 1918. See Section 235A, Crown Lands Consolidation Act, 1913, and *Gazette* Notices of 3rd May, 1918, page 2116, and 11th May, 1923, page 2253.

It will be noted that the meaning of "alienation" in this section is not limited to the meaning of "Crown Grant", but includes any form of tenure under the Crown Lands Consolidation Act or any other Act relating to alienation of lands: see sub. sec. (11) of section 235A.

The bed of a river is defined for the purposes of Section 235A of the Crown Lands Consolidation Act, 1913, as follows:

"Bed" means the whole of the soil of any (lake or) river including that portion thereof which is alternately covered and left bare as there may be an increase or diminution in the supply of water and which is adequate to contain it at its average or mean stage without reference to extraordinary freshets in time of flood or to extreme droughts.

A general definition given in *Kingdom v. The Hutt River Board* (1905) 25 N.Z.L.R. 145 is as follows:

Where a river has defined banks, but the flow of water between the banks is irregular, being confined to a small channel during the dry months and for the greater part of the year, but greatly increasing during wet weather and extending occasionally, in each year, from bank to bank, whilst in exceptional instances, happening once in every two or three years, when rainfall has been long continued and of great severity, it overflows the banks, the "bed" of the river (in law) extends from bank to bank. It is not confined to the channel in which the water is for the time being flowing in dry weather, nor does it extend beyond the banks to land over which the water flows in time of flood.

A case to which this definition would be applicable is shown in Example 6.

Examples of the application by the Office of the principles briefly set out above will be found later under "Accretion and Erosion" and "Ad Medium Filum."

All survey investigators should make themselves familiar with the provisions of Section 235A of the Crown Lands Consolidation Act, 1913 (Section 4 of the Crown Lands (Amendment) Act, 1931).

(c) Lakes

As to the non-tidal lakes, see section 235A, Crown Lands Consolidation Act, 1913 and *Williams v. Booth* (1910) 10 C.L.R. 341 (*Dee Why Lagoon*).

As to the circumstances in which a coastal lagoon will not be regarded as an inlet of the sea, peruse the reports of *A.G. v. Merewether* (1905) 5 S.R. 157 (*Glenrock Lagoon*), and *A.G. v. Swan* (1921) 21 S.R. 408 (*Lake Illawarra*).

These provisions and decisions are of importance to survey investigators when dealing with surveys of lands fronting, e.g., Narrabeen Lake (*Attorney-General v. Wheeler and anor.* (1945) 45 S.R. 321) or other non-tidal lakes, of which there are several along the coast; also, possibly, Lake George or other similar bodies of water whether permanent or temporary.

For a further explanation of the law relating to riparian boundaries, survey investigators are referred to the article "Land by the Water" (by J.E. Moore) in 41 A.L.J. 532.

3. Artificial Boundaries

In New South Wales, most boundaries (other than roads) falling under this heading would consist of marked lines, walls or fences. In dealing with applications to bring land under the provisions of the Real Property Act, 1900 (especially where the adjoining lands are not under that Act) more weight would attach to the existence of walls or fences on the boundaries sought to be adopted than would normally be attached when dealing with a section or locality where all the lands are under Torrens Title. The reason for this is that possession (other than that under Sections 45B et seq.) will not affect title to land under the

Real Property Act, 1900 (although it may be evidence of where boundaries are) whereas under Common Law (Old System) title may be gained by long continued possession against the documentary owner and enclosure with the land claimed is a matter for consideration. See also Section 50 (2), Conveyancing Act, 1919.

The Real Property (Possessory Titles) Amendment Act, 1979 commenced on 1st June, 1979 and added the new Part VIA to the principal Act. This legislation enables persons to apply to the Registrar General to be registered as the proprietors of certain land under the provisions of the Real Property Act, 1900 on the basis of possession of that land, provided the circumstances are such that the title of the registered proprietor of the land would have been extinguished by the application of the laws relating to the limitation of actions.

The new rules on possessory title to Torrens Title land do not affect boundary definition in any way. This legislation applies to a whole parcel of land as defined in Section 45B (1), Real Property Act, 1900. The rules are specifically designed so that the new principle does not upset the boundaries of Torrens Title land or the land of the Crown or any public or local authority.

(a) Monuments

The term "monument" in the sense of an indication of a boundary does not seem to have been defined judicially. In Funk and Wagnall's Dictionary, it is defined in this aspect as "A stone or other permanent mark serving to indicate an angle, station or boundary"; The Oxford Dictionary gives the following definition: "Any object natural or artificial fixed permanently in the soil and referred to in a document as a means of ascertaining the location of a tract of land or any part of its boundaries."

See also the definition in the Survey Practice Regulations, 1933.

A building, wall or fence may become a monument when it is described in a transaction

between parties as forming the boundary between their respective properties. As an example, if A transfers out of a certificate of title to B a parcel of land shown as having a width of 15 metres between walls of buildings erected on A's land or between a building on A's land and a building on adjoining land which is known to form a boundary of A's land and subsequently it is found that there is more or less than 15 metres between the respective buildings, they, as monuments in that transaction, will govern the boundaries and the measurements of 15 metres must give way and be adjusted accordingly. Similarly, if an applicant to bring land under the Real Property Act describes his land as being bounded on all sides by fences and the measurements given are subsequently found to be incorrect, they must give way, provided it can be established that the fences are the same or have been erected on the lines of the fences existing when the land was brought under the Real Property Act.

Where a building is not a monument defining a boundary, but has clearly been erected out of position so as to cause an encroachment on the land in the certificate of title of another owner, the discrepancy cannot be cured by amendment of a certificate, but should be adjusted by way of transfer. In this regard, the provisions of the Encroachment of Buildings Act, 1922, should be kept in mind.

Fences are not entirely satisfactory as monuments. They have a tendency to move in localities where the soil is light and a paling fence which has been blown over by heavy wind when the soil is wet may be inches out of position when it is straightened.

The position of a fence claimed as a monument of considerable age should be tested carefully as far as possible, either by connection to a known point or by other corroborative evidence. See later under "Fences."

Survey pegs found in course of resurvey are not always to be accepted as conclusive. If they can be established as being the original marking of a survey, they would, of course, carry considerable weight and be strong

evidence of where the lines were fixed by that survey.

The weight to be attached to a peg found would depend largely on the nature and appearance of the peg, its apparent age as compared with the date at which the land was originally marked out and the position in which it was found. This position might suggest so strongly that the peg had been moved that its value as evidence would be depreciated.

If a peg seemed to be new and the marking of the particular parcel of land had occurred many years before, it would be of little value as evidence of boundary.

Unless the facts would enable a strong inference to be drawn that the peg was an original mark and had not been moved, it should not be given much weight.

Probably, of all monuments, the ordinary small survey peg is least likely to remain undamaged or in its original position.

(b) Fences

In considering fenced boundaries claimed for lands under the provisions of the Real Property Act, especially where the title being dealt with forms part of a building subdivision or other division into comparatively small parcels, remember that fences are not always erected with close regard to exact boundary lines, that fences may, under the influence of wind and weather, move appreciably, that in erecting a fence in a subdivision the owner may decide to place the fence entirely on his own land instead of, as is more usual, placing the centre of the fence on the boundary line. The age of fencing is most important and should be shown on plans.

Some survey investigators are too prone to regard the notation "Old post found" or "fence post on corner" as indicating a spot on the ground which can be pin-pointed for the purposes of reproduction of a boundary.

The fallacy of this would be apparent if they realized that some corner posts are as much as

0.5 metres in diameter. Furthermore most corner posts have a tendency to lean in the direction of the straining wires of the attached fences and often their original upright positions cannot be redetermined with precise accuracy - in some cases as close as 0.2 metres.

The notation "post on corner" is particularly misleading when shown in a plan as at a street corner for the simple reason that there is no rule governing the placing of posts or regarding their description in plans. Speaking generally, a surveyor will adopt the intersection of the outside faces of a square post when its use becomes necessary to redefine a street, but may use the measured centre of the post or the intersection of lines along the outside faces of the post which incidentally, if it be a round post, would be a point outside the post. The manner in which corner posts at street intersections are put in the ground when pegs are removed in erecting fences has a great deal to do with what eventually becomes a movement or shift in the position of a street from its original position. Especially is this to be noticed when resurvey discloses excess measurements in the original sections.

There is no established rule as to the point on a fence to which measurement is to be made when defining a boundary between adjoining properties. Whilst most surveyors will measure to the line of the middle thread of the bottom rail where it meets the outside face of the post, this is not a universal practice - some surveyors measure to the centre of the face of the end post if it be square.

There is not much difficulty in making appropriate comparisons when the side fences are erected at or nearly at right angles to the street, but complications arise when the lot boundaries are at an acute angle - *see* Example 2, sketch 2.

Fences are sometimes shown in plans as "old" when in fact they have been constructed comparatively recently of old material. Inspection of the ground around the bases of posts will often disclose this as the surface disturbance will at times remain visible for a

long period. In other cases it will be found that a few posts remain with later material intervening. The old posts may supply sufficient evidence of age to justify the conclusion that there has been a fence on the line claimed for a long period. An old fence (even a post and rail or post and wire fence) which remains undisturbed has a tendency to create a slight mound along its base and this is a useful indication to be looked for. This trace will often remain long after the fence has been moved and will at times support a claim that a fence has been moved from a former boundary. There are other features which can well be gathered by intelligent inspection - some of these will appear in the examples to be given later.

In view of the absence of a fixed rule regarding the point on a fence to which measurement is to be made and the usual slight inaccuracy with which a fence is erected, a survey investigator when making an investigation which depends on measurements between fences should not regard small differences in such measurements as compared with lengths shown on certificates of title as justifying amendment of the certificates. This applies particularly to those cases in which original measurements can be preserved and boundaries can still be kept on the material of the fences - *see* Example 2, sketch 3.

(c) Marked Lines

This subject is dealt with later under sub-headings 1 and 5 of Section IV - Survey Investigation.

(d) Walls

By Act 8 Wm IV, No.6, assented to on 8th September, 1837 (the first Act regulating building in Sydney) provision was made that as from 1st January, 1838, all houses or buildings of certain classes which did not have separate and distinct side walls where they were contiguous to other buildings should have party walls and that such walls might be built so that half of the wall should be on each

of the adjoining properties. Authority was given for the first builder of such a party wall to enter on adjoining property for the purpose of erecting the wall.

This Act was repealed in 1879 by the City of Sydney Improvement Act (42 Vic. No. 25), and is referred to here only because some walls built under its provisions may still be in existence although not acknowledged as party walls. There have been cases in which excess measurements have been claimed in amendment applications in which the applicant has claimed the whole wall when in fact the wall was erected under the provisions of Act 8 Wm IV, No.6, and did not stand wholly on the land in the relevant certificate of title.

A party wall has been defined as follows:

- (1) A wall of which two adjoining owners are tenants in common.
- (2) A wall divided longitudinally into two strips, one belonging to each of the neighbouring owners.
- (3) A wall which belongs entirely to one of the adjoining owners but is subject to an easement or right in the other to have it maintained as a dividing wall between the two tenements.
- (4) A wall divided longitudinally into two moieties, each moiety being subject to a cross easement in favour of the owner of the other moiety.

See *Watson v. Gray* (1880) 14 Ch. D. 192 and *Halsbury Vol. 3* (2nd Edition), page 156.

In New South Wales the use of the term "party wall" most commonly implies the conditions set out in the fourth definition above.

Survey investigators should be familiar with section 181B of the Conveyancing Act, 1919, remembering that this section came into operation on 1st January, 1931.

(e) Boundaries Defined by Occupations

With reference to a boundary, originally in one line, defined in several lines following occupations, each case must, of course, be decided on its own individual merits.

As a matter of expedience, such new boundary lines are accepted, subject to notice to the owner of the adjoining land. It should be noted, however, that it is necessary to restrict the number of new lines to the bare minimum.

Considerable trouble may be caused by a lack of appreciation of the need for this minimum.

In this connection, a boundary was defined in an amendment plan in six lines, following old occupations.

The amount of divergence from the direct line between the ends, to four angles in the boundary, was not greater than 0.05 metres, and this amount related to old dilapidated fences and weatherboard sheds. As a result of this investigation, a satisfactory amended boundary was determined in *two* lines, which were still on the materials of the occupations. It is suggested that this example be kept in mind when defining boundaries partly passing through party walls, as it is not always necessary to adopt the *centres* of the walls.

4. Ad Medium Filum

(a) Roads

There is a presumption (or rule of construction) that a conveyance of land bounded by a road will include half the road "*usque ad medium filum viae*". The presumption may be rebutted if there is something in the terms of the deed or in the circumstances of the transaction which would exclude the application of the presumption.

The presumption applies to a transfer of land under the Real Property Act where the transferor is the owner of the site of the road (*In re Priddle* 16 S.R. 54).

A certificate of title comprising land shown in the certificate as abutting on a road is deemed to include the soil of half of the road (see section 45A, Real Property Act) unless the presumption is rebutted or its application is excluded.

In *Wood v. Mittagong Shire Council* (1977) 35 L.G.R.A. 323 it was held that (1) a description of the land being conveyed as a lot in a

registered plan of subdivision (which shows the land as abutting on the road in question) may be a sufficient indication that the land abuts a road so as to make the *ad medium filum* rule of construction applicable under section 45A: (2) the *ad medium filum* rule of construction applies, under section 45A, to a road left in subdivision where the owner has indicated an intention to dedicate the surface as a public highway, notwithstanding that the intention has not taken effect by reason of non-use by the public.

The plaintiffs claimed ownership of certain lands shown as roads in a plan of subdivision of private land registered about 1884. The claim was limited to the portions of the roads which were shown as lying within the boundaries of the plaintiffs' own land in the subdivision. The court found that those portions had never been used by the public and that they were to be regarded as private land.

It was further held that (1) the fact that the certificate of title when issued did not include the half of the road with the land transferred was not sufficient to rebut the *ad medium filum* rule of construction: (2) nor was the rule rebutted by the fact that the transferor of the allotments in the subdivision intended that they should abut on a road.

The presumption is rebutted by an express grant of right of way (*A. G. v. Wilcox* 54 T.L.R. 985); it does not apply to alienations by the Crown where land has been granted abutting on a road created by the Crown (subsection 9, section 235A, Crown Lands Consolidation Act; *Tierney v. Loxton* 12, N.S.W.R. 308) or to any certificate of title or other instrument relating to such land (section 45A, Real Property Act).

In New South Wales the application of the presumption has been largely restricted by legislation:

(a) Section 235A, Crown Lands Consolidation Act - see above.

(b) Section 232 of the Local Government Act which vests the soil of every public road in the Council in fee simple (saving mineral rights).

(c) Section 336, Local Government Act, which on registration of a plan of subdivision creating a new road vests the soil of that road in the Council in fee simple.

(d) Sections 76B and 307 of the Sydney Corporation Act (now repealed) which had the same effect within the City of Sydney as the sections referred to in (b) and (c) above.

The rule is now chiefly of use in connection with subdivisions made before the Local Government Act, 1919, came into operation in which the streets shown on the plans have not in fact become public roads, and it is desired to "get in" the sites of the streets.

(b) Rivers and Streams

The presumption of extension ad medium filum aquae as applicable to rivers and streams has been discussed earlier in these notes. There are, however, more difficulties in the actual detailed application of the presumption to rivers and streams than occur in its application to roads. Roads are, as a rule, of defined width; there is not, in general, much doubt as to their limits, and boundaries of properties fronting the roads are usually approximately at right angles to the road, or, if not, the angle of approach can be fixed with reasonable certainty.

In the case of rivers and streams the application in detail of the rule or presumption is complicated by the necessity for determining the extent of the bed of the river, by islands in the river, and by the method to be adopted of extending the side boundaries to the centre line of the river.

The determination on the ground of the banks of a river and of the middle thread between those banks (the *medium filum*) is a matter of observation of natural features and application of the rules previously mentioned under the heading "Natural Boundaries". If there is any reason for doubt, the Surveyor concerned should be asked for a report on the method adopted in fixing the bank or limit of the bed of the river.

If there is an island in the river which was in existence at the date of the grant, the *medium filum aquae* would be between the bank on which the land granted abuts and the island - *Great Torrington Commons Conservators v. Moore Stevens* (1904) 1 Ch.347.

If, however, an island arises in the river bed subsequently to the date of the grant, it would seem that the *medium filum aquae* as at the time of the grant remains as the boundary. See Halsbury (2nd Edition) Vol. 3, p. 140, and the cases there cited.

If there should be accretion (natural and imperceptible) to an island which existed at the date of the grant, it would seem that the boundary formed by the middle thread would be adjusted from time to time to accord with the change in the width of the bed of the river caused by the accretion. Otherwise, if the accretion to the island continued until it extended beyond the former middle thread, ownership of part of the island would be transferred to the owner of the opposite shore.

In *Nimmo v. Caledonian Rail Co.* (1903) 5 F (Court of Session) 1,001, it was laid down that where properties were on the convex side of the curved bank of a tidal river, the middle thread of the river being approximately an arc of a circle, the foreshore (i.e., the land between high and low water marks) to which the respective owners of properties adjoining high water were in this instance entitled would be divided between those owners by drawing lines from the ends of the landward boundaries at high water mark to the centre of the circle of which the middle thread was an arc until those lines met the middle thread.

While this decision might be adopted in dealing with the division between adjoining owners of land between the bank and the middle of the stream, probably the method would be unnecessarily cumbersome and expensive in all but a very limited number of cases.

In *Portage La Prairie v. Cartier* (1924) 1 D.L.R. 775 (a Canadian case), it was decided that the common law rule as to ownership of the bed of a stream by riparian owners ... is

that the owner has title to that portion of the bed of the stream bounded at the sides by lines drawn from the limits of his upland, at right angles to the thread of the stream and in front by the thread of the stream. This decision is not binding in New South Wales but would be persuasive should the matter arise for determination here.

It is suggested, however, that this principle should not be carried to excess. The strict application of the rule would in many cases seem to involve unnecessary and unprofitable complication in a matter which generally is of no great practical importance and in some instances may result in an almost ridiculous situation. If the side boundaries of properties approach the bank of the stream at even approximately right angles, the simplest and most practical course would seem to be the extension of those lines direct to the middle thread leaving the rule set out above to be used in those cases in which substantial interest would seem to justify its application or in which the side boundaries approach the banks at such angles as to call for use of the rule to prevent inequitable distribution between owners of riparian properties. *See Example 3, sketch 1.*

5. Accretion and Erosion

(a) By the Sea or Tidal Waters

"Where there is an acquisition of land from the sea (or a river) by gradual and imperceptible means ... the accretion of alluvion is held to belong to the owner of the adjoining land," *Lopez v. Muddun Mohun Thakoor*, 20 E.R. 625, at p. 627.

Properties scheduled or specifically measured but in fact abutting on the seashore are not excluded from operation of the rule which adds to riparian lands the increment which is caused by natural gradual accretion from the sea. There is, however, one condition of the operation of the rule. That is that the accretion should be natural and should be slow and gradual - so slow and gradual as to be in a practical sense imperceptible in its course and progress as it occurs - *Attorney-General of*

Nigeria v. Holt (1915) A.C. 599, at 612, 613; *Verrall v. Nott* 39 S.R. 89.

The general law of accretion applies to a gradual and imperceptible accretion to land abutting on the foreshore brought about by the operations of nature, even though it has been unintentionally assisted by or would not have taken place without the erection of groynes for the purpose of protecting the shore from erosion. It also applies where the natural accretion, gradual and imperceptible, abuts upon land of which the former boundary was well known and readily ascertainable - *Brighton & Hove General Gas Co. v. Hove Bungalows Ltd* (1924) 1 Ch. 372; *Verrall v. Nott* 39 S.R. 89.

The rule applies even when the land gradually left dry by the action of the sea abuts on land of which the former boundary was a sea wall - *Gifford v. Lord Yarborough* 5 Bing. 163, 130 E.R. 1023; *Verrall v. Nott*, 39 S.R. 89.

Perusal of the judgments in *Williams v. Booth* 10 C.L.R. 341 will repay the effort. In this case clear distinction is drawn between what may and what may not be regarded as accretion.

As regards accretion to land fronting Sydney Harbour and its tidal tributaries, see *Verrall v. Nott*, 39 S.R. 89. Under the provisions of the Sydney Harbour Trust Land Titles Act, 1909, a certificate has been issued to the Maritime Services Board including the bed and shores of the Harbour bounded by High Water Mark; held by the Court that notwithstanding that a certificate of title for the lands had been issued the boundary of lands vested in the Maritime Services Board was not fixed, but varied from time to time in accordance with High Water Mark.

If the sea or tidal water gradually and imperceptibly eats away the land the converse of the rule set out above will apply and the land so eaten away will be lost by its former owner - *Re Hull & Selby Railway* 151 E.R. 139.

A Crown Grant of land (in New South Wales) fronting a tidal river contained a reservation of all land within 30.48 metres of High Water

Mark on the sea coast and on every creek, harbour and inlet of the sea. The owner sought to bring the land under the Real Property Act and claimed that part of the 30.48 metres reservation had been eroded. The Crown objected and claimed that it was entitled to maintain the reservation above the existing High Water Mark. It was held by the Court that the reservation operated by way of exception from the Grant (i.e., that when the land was granted there was a strip of Crown land 30.48 metres wide along the river bank) and that consequently the 30.48 metres must be measured from High Water Mark at the date of the Grant (i.e., that the Crown being the owner of the land eroded lost the land), *McGrath v. Williams*, 12 S.R. 477.

Note *carefully* that the test to be applied to all the cases mentioned above is that the change shall be slow and imperceptible. If it is not, but is sudden or, in the case of an accretion, is the direct result of reclamation, the principles quoted do not apply and change in ownership (i.e., between Crown and subject) does not occur. Thus a sudden inroad of the sea due to a storm will not deprive the owner of the lands, bounded by the sea, of title to the land so lost. Conversely a sudden recession of the sea will not entitle the riparian owner to extend his title down to the new High Water Mark. If the land suddenly inundated again becomes dry, it belongs to its former owner - *Attorney General v. Reeve* (1885) 1 T.L.R. 675.

In *Town of St. Peters v. Dangarfield* (1969) 20 L.G.R.A. 275, it was held that the river diversion would not have the effect of altering the local authority's boundary: the original boundary remains regardless of whether the course of the river is moved.

"Imperceptible" as used above means not noticeable from day to day in progress; it does not mean imperceptible after the lapse of a period of time. The doctrine of accretion is based upon the theory that from day to day, week to week and month to month a man cannot see where his old line of boundary was; *Hindson v. Ashby* (1896) 2 Ch. 1 at p. 28.

Survey investigators dealing with accretion should be careful to watch for the existence of

a reservation of 30.48 metres in the Grant or of any other land along the bank to which the registered proprietor is not entitled, e.g., a road along the bank which was reserved out of the Grant or was opened before the accretion began. Accretion becomes the property of the owner of the land to which it is immediately joined.

Note the decision in *Wells v. Mitchell and Brown* (1939) 2 D.L.R. 535, and [1939] 3 D.L.R. 126. The conveyances to purchasers of lots in a subdivision made in 1889 and fronting a beach included grants of undefined right of way over the beach. The acts and statements of the grantor after the sale of the lots indicated that he intended the beach to be used solely as a bathing beach and in fact it was so used thereafter.

In 1936 the beach had been widened by accretion from about 15 metres to about 45 metres. A purchaser of the beach from the heir of the original subdivider, subject to the right of way, attempted to build on and fence off part of the land added by accretion.

Held on the true construction of the Grant, the right of way extended over the entire width of the beach including the accretion, and it was not merely a right of passage, but a right to use the beach as a bathing beach. Note carefully that this was an *undefined* right. The decision would not apply unless the grant were over the whole beach as it existed at the date of the grant.

(b) By Non-tidal Streams

Subject to the same rule of "imperceptibility" the law regarding accretion and erosion applies to non-tidal streams. Thus if a river gradually eats away one of its banks and deposits the soil from that bank on the opposite shore, ownership will conform to the change.

If, however, a stream suddenly breaks through a narrow neck and changes its course so as to cut off a substantial parcel of land from the owner on one side of the former bed, the title will not be affected, i.e. the parcel so cut off

will not go to the owner on the other side of the former bed of the stream.

Special care should be taken in dealing with matters coming under this heading along the Murray River. The whole watercourse of the Murray River from its source to the eastern boundary of South Australia is within the territory of New South Wales - see 18 and 19 Vic., Chapter 54 (16th July, 1855). Any definite change in the course of the river may involve questions of title as between two States and any such matter is to be dealt with strictly in accordance with established legal principles.

Accretion does not apply and is deemed never to have applied to non tidal lakes in New South Wales; see sub-section 6 of section 235A, Crown Lands Consolidation Act. Note, however, subsection 7; ante p. 9.

(c) Division of Accreted Lands between Owners of Adjoining Properties

It does not seem that a hard and fast rule can be adopted with safety as to the interests of owners of lands facing on the accreted lands. Each case should be considered in the light of its own facts.

Three methods of division have been suggested at various times.

(A) Prolong the lines of division between the adjacent lands until they reach the present bank of the new shore. In regard to this method it was said in *Manchester v. Point Street Iron Works*. 13 R.T. 335 - and endorsed in other American decisions - that "One common principle which pervades all modes of division is that no regard is to be paid to the direction of the side lines between contiguous proprietors."

This particular method would manifestly be improper if for example one of the properties affected was triangular in shape with its base on the bank and the apex at the rear. If the shore receded far enough the owner of this land would deprive his neighbours of any

frontage to the new bank. Again, if the frontage of one property to the water were narrower than the back line and the shore receded far enough this owner would lose all frontage to the water.

(B) Run a base line (i.e. through the centre of the new river bed) and draw lines at right angles from the middle line to the boundaries where they intersect the former position of the bank. This may be a satisfactory method in some cases, but in others it would not work fairly. See Example 3, sketch 2.

(C) The mode generally followed in America and adopted in *Riddiford v. Feist* (1902-3) 5 G.L.R. (N.Z.) 43, seems to be most suitable for general adoption in New South Wales where conditions are somewhat similar to those obtaining in America and New Zealand. There does not seem to be any English decision bearing on this matter, but the question has been dealt with frequently in American Courts, and the New Zealand Courts have adopted those decisions. This mode has been stated as follows: - "Give to each owner a share of the new shore line in proportion to what he held in the old shore line and complete the division by running a line from the bounds between the parties on the old shore to the points thus ascertained on the new." In applying this rule, it will be necessary to make allowances for sharp projections or indentations in the old shore line.

For illustrations of actual cases dealt with by the Office in accordance with the principles set out under this heading, see Examples 5 and 9.

Example 2, sketch 1, is an illustration of an attempt by an owner, part of whose land had been eroded, to make good his loss by moving the common boundary between his land and that of an adjoining owner. This, of course, could not succeed. Loss by erosion must be borne by the owner whose land has been eaten away.

Accretion to an island in a river is discussed under the heading "Ad Medium Filum".

IV. SURVEY INVESTIGATION

1. Causes of Difficulty

Many of the difficulties encountered in connection with the investigation of plans of survey can in the final analysis be traced to what may be termed "standard of measurement".

As already indicated in these notes, many of the surveys in earlier years were not made with a degree of exactitude which enables accurate comparison with modern measurement, and many plans on which titles are based were not in fact the result of measurement which could be regarded as even approximately correct.

The difference in standard of the earliest surveys is, of course, due largely to the conditions under which they were made and the instruments available. Land was not then as valuable as it is now and variations in measurement or area did not count to the same degree as they would at present. The instruments used were compass or circumferenter and long bands (or chains) were not available.

It is not possible with compass or circumferenter to prolong a boundary in a straight line and variations in angular value of as much as a half degree must be expected where these instruments were used.

Consequently many boundaries which are shown in plans as straight lines were, in fact, marked on the ground as crooked lines.

Fences, of course, followed these marks and this is one reason why old fenced boundaries on long lines do not always conform to what is shown on the plans. They may, nevertheless, be on the boundaries as originally marked.

The use of the short chain (20.115 metres) did not permit of the accurate measurement of long lines and this must be borne in mind when comparing measurements on old plans with those secured by the use of the more advanced long steel or invar bands, or such modern equipment as Electronic Distance Meters.

The measurements shown on some of the earlier plans (both Government and private)

will not close mathematically. It is a good rule to verify its mathematical accuracy if serious differences with the basic plan are disclosed and cannot be otherwise explained.

Many plans of early private subdivisions omit material bearings. Where this happens or there is doubt about accuracy of bearing (e.g., compass or circumferenter was used in the original survey), it seems that boundaries should be determined between points fixed by linear measurements at each extremity rather than by reliance on angular value or bearing. The occupations in the vicinity will often prove useful guides in cases such as these.

Many cases in which incorrect measurements are evident, particularly in early subdivisions, can be traced to the fact that the measurements were taken with the chain lying along the ground. Where the ground surface was level, the measurements are reasonably correct, but where the ground sloped, measurements are short, the amount of deficiency being governed by the degree of slope. Constant deficiency in measurements between occupations which follow a regular pattern will suggest this source of error. Inspection on the ground will frequently confirm it.

Even at the present time with instruments capable of a high degree of accuracy and with modern steel bands available, differences in measurement occur. These are due, amongst other things, to-

- (1) the personal factor - people are not equally keen and careful, nor is there equality of ability and judgment;
- (2) methods of working - surveyors' methods of chaining may tend to produce long or short measurement. They may put too much or too little tension on their chain or they may not make proper allowance for temperature, sag and slope. They may rely too much on indirect measurement without proper precautions for detecting errors either angular or linear;
- (3) failure to keep gear up to standard - surveyors whose theodolites are out of

adjustment or whose chains are longer or shorter than standard will inevitably show differences in measurement when their plans are compared with those of other surveyors who are more careful of their instruments;

- (4) natural and physical obstacles and conditions which make correct measurement difficult and which are more successfully overcome by one surveyor's methods than by another's.

These matters are referred to in order that survey investigators may realise that, while surveying is properly described as an art or science, its practical application in the form with which they are familiar - plans for this Office - is not uniform in quality, and "standard of measurement" is a matter which has an important bearing on their work.

This leads to the warning that survey investigators, in cases of difficulty, should not be content merely to make comparisons of measurements only, but should determine the standard of the basic plan on which the relevant certificates of title are based or, in other words, investigate the basic plan. Particularly in cases of extensive old subdivisions comparison of the original subdivision with later subdivisions even some distance away from the plan under review will show that the basic plan is unreliable.

Fortunately, the majority of early Government surveyors in marking out their surveys on the ground left more than enough to satisfy the dimensions shown on their plans. This is not, however, the case in early private subdivisions; in many of these, measurements have been overstated, and failure to detect this factor in the basic plan at an early stage has caused many troubles. Any indication of overstatement in a basic plan should be carefully noted.

Understatements of measurements on the basic plan (i.e., the measurements shown are less than those available on the ground) does not cause such serious trouble. The worst feature of understatement is that it is liable to cause spaces between adjacent occupations,

particularly if the surveyors employed to mark out land for building are content or are instructed merely to set out the measurements shown on certificates of title without endeavouring to adjust boundaries to actual measurements available. The ultimate disposition of spaces between buildings due to this cause will, in some cases, involve considerable difficulty and call for patient research which could be avoided by proper approach to the problem in the first instance.

Excess measurement in depths of allotments lying between two parallel streets and having a common back boundary is another source of trouble whether the excess is caused by movement of streets or by understatement of measurements in the original plan. Unless the problem is recognized and dealt with early, the common boundary is liable to become a series of steps and ultimate disposition of the excess measurements will raise questions of difficulty. Any solution of this problem by e.g. the lodgment of a plan of resurvey which limits the depths exactly to the certificate of title or basic plan dimensions regardless of the position of fencing should be regarded as calling for further investigation.

Special care in regard to standard of measurement is necessary when dealing with the residue of the land in an old certificate of title following on a plan of survey in which all the boundaries of the land formerly comprised in the certificate have not been redefined. Many instances have been found in which residue certificates have contained overstated lengths due to deduction of measurements on modern standard from those obtained under less reliable conditions. See Example 14.

2. Collection of Data

While it is not possible to lay down methods of investigation applicable to all cases of redetermination of boundaries, there is one rule which applies in every instance. This is, that officers engaged on survey investigation must begin by acquiring all the available facts. They should endeavour to consider them in chronological order, looking for evidence

which will show how a boundary came into existence and how it may now be related to present conditions if the marks or monuments defining it have disappeared. They should be alert for any sign of difference in standard of measurement between the surveys to be related to each other or for indications which may suggest that changes in the positions of improvements have occurred possibly without survey or without care to ensure that they were actually erected on a boundary. This is the point at which, if survey investigators have succeeded in cultivating the quality of mind or habit previously referred to as "imagination", they will reap the benefit of their efforts in that direction.

3. Starting Point

It may perhaps be said that having gathered the facts the first necessity in an investigation is to find a safe point from which to commence. Obviously comparison of measurements cannot be made nor boundaries redefined by measurement unless the measurements can be related to a common point.

The case of *Turner v. Myerson* (1917) 18 S.R. 133 provides an apt illustration, and the judgment in this case has been of great value in dealing with matters in which the starting point of an old subdivision (which has in fact been occupied in close agreement with the measurements on the subdivision plan) cannot now be ascertained with certainty.

After pointing out that the land actually occupied agreed with the measurements called for by the certificate of title, but, owing to difficulty in relocating the original outer boundaries of the subdivision which had been made 33 years before, there was a dispute as to whether the occupations were actually on lot boundaries (i.e., there was doubt which was the correct starting point for measurement). Harvey, C.J. in Equity, said, "I say unhesitatingly that occupation that has continued uninterrupted for 30 years requires the most positive and direct overwhelming evidence to upset the presumption that the land so occupied is in accordance with the

boundaries as originally plotted. What I am asked to do is to say that on evidence of surveyors at the present time, who only go back to the year 1905, that being more than 20 years after the original deposited plan, the exact position of the eastern and western fences can now be so accurately ascertained as to say that this occupation has for 30 years been in a wrong position. I do not think that the evidence comes anywhere near the certainty which is required to justify the upsetting of such a long continued possession." And again "In that state of circumstances, I think it is especially incumbent on the Court to be certain that long continued possession is not disturbed except by the most cogent evidence - evidence clear to demonstration - that the boundaries of the land so occupied are wrong."

Example 13 illustrates a case to which the decision was applied shortly after it was given. The principle behind this decision was also a determining factor in the case illustrated in Example 11.

Example 12 shows a case in which it was sought to use this decision in circumstances which did not justify its application. The case was rejected.

An extension of the principles laid down in *Turner v. Myerson* is to be found in *Turner v. Hubner* (1923) 24 S.R. 3.

The facts and ground of dispute were similar to those in the earlier case except that in the latter case the streets had been aligned since the subdivision was made. The alignment plans showed differences in measurement as compared with the subdivision plan and most of the monuments defining the outer boundaries of the subdivision had disappeared. Nevertheless, the general occupation of the lots agreed closely with the measurements on the subdivision plan. The surveyor employed to redefine the boundaries of one lot claimed that the buildings encroached on the adjoining lot from 0.075 metres to 0.125 metres. Mr Justice Harvey (C.J. in Equity) held that the alignment plans did not afford any help in fixing the positions shown in the plan of subdivision *except so far as the alignment*

plans showed exact surveyed positions of monuments identifiable with monuments in the subdivision plan. The result of the suit is expressed by the head note of the report: - "Where in a contract for sale of land together with the residences thereon the land is described as having a certain frontage and depth, being the whole of the land comprised in a certain certificate of title and being Lot 30 in a certain deposited plan, and it appears that the land in the certificate is of the dimensions mentioned in the contract, and that it has been uninterruptedly occupied for 42 years, the most positive evidence is required to rebut the presumption that the land occupied is in accordance with the boundaries as originally plotted." "However, mere proof of long and uncontested occupation does not relieve the Court of the duty of inquiry and considering the history of the property and the technical evidence bearing on the dispute." - see *Cable and Anor v. Roche and Ors*, 1961, N.Z.L.R., 614.

Attempts are made to apply the principles laid down in these judgements to cases in which circumstances are entirely different and to extend the rule laid down in them so as to cover clear cases of erection of improvements on incorrect lines. These are to be guarded against.

Where streets have been aligned long after a subdivision was made and occupied, the positions of the streets as fixed by alignment obviously cannot be accepted as starting points to determine internal boundaries unless there is evidence that the alignments are in fact in the positions in which the streets were laid out in the subdivision. Useful evidence on this point can frequently be obtained from the Field Books of the alignment survey (see Examples 7 and 11). The plans do not show detailed measurements between occupations on frontages, but these may be obtained by calculations from the Field Books. Also it is not usual to show on alignment plans marks found which enable the alignment to be related directly to the subdivision. Inspection of the Field Book is useful in this respect. If the position of a street is altered by alignment the

loss or gain will usually be borne by or accrue to the owner of the land immediately affected. There are, however, so many variations due to:

- (1) lapse of time between subdivision and alignment with occupation according to marking of the subdivision of some lots before alignment moves some of the streets;
- (2) alignment before occupations take place with the result that total frontage or depth does not agree with measurement by subdivision plan and actual distribution of excess or deficiency occurs in accordance with the order of erection of occupations;
- (3) re-marking of part of the subdivision for erection of occupations where there are already some occupations in accordance with the original subdivision and the re-making is commenced from alignment without tying up to position of subdivision;

that the statement of a general rule applicable to all cases is impossible. Each case must be dealt with in the light of available evidence and its own facts.

4. Detail Sheets and Field Books

Detail Sheets and their Field Books are also a source of valuable information which should not be neglected. Many of the older sheets furnish evidence of the positions of occupations at dates relatively close to the time of subdivision which will enable problems, which are otherwise extremely difficult, to be disposed of with reasonable certainty.

Those sheets which have been revised from time to time often enable evidence regarding the continuous existence of occupation in certain positions to be tested.

Example 10 will show the use to which detail sheets can be put. There is an article at page 2 of Part 9 of Volume 1 of "The Surveyor" which suggests an important function for the Detail Survey in connection with the work of the Land Titles Office. If this suggestion had been adopted, the Office would have been in a

much better position in regard to boundary definition than it is now.

See also an address reported at page 109 of Volume 26 of "The Surveyor." These books are in the Library.

5. Guiding Principles

Established rules of law, a knowledge of which is essential to survey investigators, are:

(1) A description by abutments will, as a rule, over-ride measurements expressed in figures if there is conflict between description and measurement (*Small v. Glen* (1880) 6 V.L.R. (L) 154).

Instances to which this rule may be applied will frequently be found in northern coastal districts of New South Wales. Owing to the country being heavily timbered and covered with thick scrub at the time of original survey measurements from back boundaries which can satisfactorily be reestablished to streams which form boundaries will often be found to be inaccurate - in some cases the difference is substantial. Subject to evidence that the position of a stream has not altered since the date of first survey, measurements must give way to abutments. Similarly, measurements to streams in older surveys were frequently taken to the top of a high bank which in some cases is found to be a considerable distance from the true bank of the stream using the definition set out earlier in these notes. Large excesses in measurement are often disclosed in such cases and they would probably be dealt with under this rule.

(2) Where boundaries have become lost or confused, they may be fixed by agreement between the owners of the adjoining lands.

In the application of this rule, the important aspect to be remembered is that it must be a joint and specific agreement between both parties who are in doubt where the boundary is. In *Moore v. Dentice* (1901) 20 N.Z.L.R. 128, the head note contains the following statement: - "Where adjoining owners concur in putting up a fence along a certain line, on an erroneous assumption by each that it is the true

boundary, *neither party having made any representation to the other*, neither is stopped from setting up that some other line is the true boundary."

In *Piers v. Whiting* (1923) 3 D.L.R. 879, the head note is: "In order to establish a conventional line as the line dividing two lots of land, it must be shown *that there was an agreement*, not necessarily in writing, between the respective adjoining owners to change the former dividing line, which was afterwards adopted and lived up to by them for some period of time."

Note carefully, that a boundary so fixed cannot be used as a starting point to refix any other boundary. Obviously the agreement can relate only to the actual boundary in respect of which it is made. It cannot affect or influence the position of the boundary of an owner not a party to the agreement.

Usually this rule will be applied only in exceptional cases in dealing with land under the provisions of the Real Property Act. It has been used in cases in which the occupations under a plan of subdivision have persisted for so long a period that they cannot be disregarded as evidence of boundary, but it is impossible to relate them to or reconcile them with the measurements shown in the respective certificates of title. Such cases have been disposed of by requiring all owners affected to agree to a scheme of distribution and to take new certificates in accordance with that scheme.

By Section 9 of the Encroachment of Buildings Act, 1922, provision has been made that where any question arises whether an existing building or a proposed building will encroach beyond a boundary the Court may on the application of either of the owners affected make an order for determining, marking and recording the true boundary. Up to the present, no such order has come under the notice of the Office. There have been orders for transfers of land affected by admitted encroachment of a building erected on adjoining land, but no order defining a lost or confused boundary.

Note. - Survey investigators desiring to go farther into the question of fixing a boundary by agreement should read the reports in (1910-11) 12 C.L.R. 667 and 1914 A.C. 283.

(3) "One of the most settled rules of law for the construction of ambiguities in ancient instruments is that you may resort to contemporaneous usage for the meaning of a deed.

Tell me what you have done under such a deed and I will tell you what the deed means" (per Lord St Leonards in *A.G. Drummond*, 1 Dru. & War, 368).

It was held in *Watcham v. East Africa Protectorate* (1919) A.C. 533, that the principle that where an instrument contains an ambiguity evidence of user under it may be given in order to show the sense in which the parties used the language employed applies to a modern as well as an ancient instrument and where the ambiguity is patent as well as where it is latent. In this case it was held that where in a land certificate issued by the Crown in 1889, there was a variance between the stated area and the area as described by physical boundaries, evidence could be given of user inconsistent with the area intended being that included in the boundaries so as to establish that that description was a *falsa demonstratio*. This principle is of quite common application in ascertaining the boundaries of grants of land in this State which are frequently found to include considerably more land than that expressly stated to be granted.

A certificate of title does not rest upon a pinnacle by itself, but is an ordinary written instrument, and it must be construed in accordance with ordinary rules for the construction of documents of title (per Sir Samuel Griffith in *Overland v. Lenehan* 11 Q.L.J. at page 60).

These rulings are mentioned here because of the tendency to regard measurements shown in certificates of title as conclusive. This view possibly arises from the provision in the Real Property Act that, subject to certain exceptions, the title of a registered proprietor is indefeasible. This provision is not regarded

as extending to the measurements given in a certificate of title. When it is remembered that many certificates are not based on survey, and that, when they are so based, errors in survey and differences in standard of chainage are not uncommon, it becomes obvious that an attempt to treat the measurements given in certificates of titles as being invariably of paramount importance in refixing boundaries must lead to wrong decisions.

The order of importance of mere measurement in settling boundaries may be judged from the following: "In construing instruments relating to land, for the purpose of determining the identity of the subject matter, most weight should be given to those points on which the parties, at the time, were least likely to be mistaken"; per Sir Samuel Griffith in *Overland v. Lenehan*, *supra*, at page 66.

Again in *Donaldson v. Hemmant* 11 Q.L.J. at p. 41, the same Judge said, "Now, for determining the question of parcel or no parcel, a rule to which I referred in the course of argument has been laid down in the American Courts. It is to be found in the fourth edition of *Taylor on Evidence*, p. 1029, s. 1105 (n). I have quoted it many times in this Court, from the Bar, and I now quote it again from the Bench. The object in cases of this kind is to interpret the instrument, that is to say, to ascertain the intent of the parties. The rule to find the intent is to give effect to those things about which men are least liable to mistake. On this principle, the things usually called for in a grant, that is the things by which the land is described, have been thus marshalled in America: (1) The highest regard is had to natural boundaries. (2) To lines actually run and courses actually marked at the time of the grant. (3) If the lines and courses of an adjoining tract are called for, the lines will be extended to them, if they are sufficiently established, and no departure from the deed is thereby required, marked lines prevailing over those which are not marked. (4) To courses and distances, giving preference to one or the other according to the circumstances. Words necessary to ascertain the premises must be retained, but words not necessary for that

purpose may be rejected if inconsistent with the others."

"It appears to be recognized that next to natural boundaries, the highest regard is had to lines actually run and corners actually marked at the time of the grant, and further that, if the description be ambiguous or doubtful, parol evidence of the practical construction given by the parties by acts of occupancy, recognition of monuments or boundaries or otherwise, is admissible in aid of interpretation ... The latter principle appears to be applicable to any case in which the description, though originally unambiguous, has become doubtful by the loss of survey marks" - per Richmond J. in *Equitable &c. Coy v. Ross* N.Z.L.R., 5 S.C. 229.

Where a Crown Grant describes the subject land by reference to the boundaries of a "measured portion," evidence of the measurements which were made and the survey marks which were erected or adopted on such portion by the Crown or its agents on the last occasion (preceding the grant) when such portion was measured as a portion for sale" is admissible for the purpose of ascertaining the boundaries of the Crown Grant - *Currie v. Clarke*, 29 S.R. 215, 46 W.N. 81.

Note that "grant" as used above will include an instrument under the Real Property Act.

(4) Extrinsic evidence (i.e., evidence which is not inherent in the deed itself) is admissible to aid in the construction of the description contained in a document of title.

All such facts relating to the subject matter of the deeds as were within the knowledge of the parties at the date of execution are material, and admissible as evidence for the purpose of ascertaining the intention of the parties. The reason for this is obvious in that where a property is described as Blackacre farm, or the house and land occupied by X, or a reference is made to a fence or hedge, no attempt can be made to set out the boundaries of the land affected without ascertaining the facts at the relevant date as to the boundaries of Blackacre farm, the house and land which were occupied

by X, or as to the position of the fence or hedge referred to which may have been removed.

"The construction of a deed is always for the Court, but in order to apply its provisions, evidence is in every case admissible of all material facts existing at the time of the execution of the deed so as to place the court in the position of Grantor" (per Lord Wensleydale in *Waterpark v. Fennell* 7 H. L.C. at p. 684). Note, however, that extrinsic evidence is not admissible to contradict or vary a description of boundaries where there is no ambiguity.

(5) *Falsa Demonstratio*. Where there is a description, the several parts of which are not reconcilable, it may be necessary to have recourse to the rule "*Falsa Demonstratio non nocet*." The rule has sometimes been stated to be that if there be an adequate and sufficient description with convenient certainty of what was meant to pass, a subsequent erroneous addition will not vitiate it, but in reality in applying the maxim it is not material in what part of the description the *falsa demonstratio* is found.

It must, however, be remembered that where there is a subject matter to which all the terms in the description apply, it is not permitted to reject any of those terms as *falsa demonstratio*. The rule is quite simple; it is when one endeavours to apply the rule to practical cases that difficulties are encountered. In applying the maxim, it must be borne in mind that where there are several descriptions which, when evidence of surrounding facts are considered, are not consistent one with the other, there is no general rule that will declare which description ought to prevail and that the maxim is useless unless and until it is determined which of two conflicting descriptions ought, under the circumstances, to be considered to be the true description. When this is done, the false description may, of course, be disregarded and the maxim merely calls attention to the obvious result: See *Eastwood v. Ashton* (1915) A.C. 900 at p. 912.

For example, if from part of a description, the land to be conveyed can be ascertained with

certainty, an incorrect statement as to part of a boundary will not affect the result - *Francis v. Haywood* (1882) 22 Ch. D. 177 at page 181.

Although, for the purpose of explaining the terms of a description in a deed, a plan which is attached to or endorsed on the deed and is referred to in it may and ought to be used, the description, if it is complete in itself and is not ambiguous, will prevail over the plan - *Horne v. Struben* (1902) A.C. 454; where, however, the description in a deed is indefinite and the plan is necessary to explain it, the plan will prevail - *Eastwood v. Ashton* (cited above).

6. Plans of Redefinition

The powers of amendment (as regards boundaries) conferred by the Real Property Act extend only to correction of errors, or to rectification of any misdescription of land or of its boundaries. Land not already comprised in a certificate of title on the true construction of its boundaries cannot be got in by way of amendment - see *Rourke v. Schweikert* (1888) 9 L.R. (Eq.) 152 - note, however, what *Foster J.*, said, "I wish to guard myself against a general expression of opinion that the 126th section [section 136 of the Act of 1900], where it refers to misdescription of land or boundaries, does not apply to the case of a proprietor seeking to enlarge his holding, but refers only to cases where more land is, by misdescription of land or of boundaries, included in the certificate, than the proprietor is entitled to hold. I do not think the 126th [now 136th] section applies to any case where it is sought by rectification of boundaries to bring within the certificate any land which has not already been brought under the Act, and therefore, which is not included in any certificate then in existence. This would be a means of bringing land under the provisions of the Act, without any of the publicity or precautions provided by the 14th section, which I think is contrary to the intention of the Act, but I am inclined to think that in the 126th [now 136th] section the word certificate may be taken to include the plural as well as the singular; and that where the correction sought includes only land within some existing

certificates, no matter how many, the Registrar General might, by requiring all the certificates in question to be delivered up to him, be in a position to exercise the power given by the 126th [now 136th] section, even though it should have the effect of enlarging the holding of one certificate holder." This opinion seems to support the course of action (mentioned previously under the second heading in the earlier chapter in regard to lost or confused boundaries) followed by the Office in cases in which boundaries which have been occupied for a long period cannot be identified with the original subdivision. Note clearly however, that all the land of which the boundaries are to be adjusted must already be included in the existing certificates of title.

In considering a resurvey for amendment of the measurements shown on the certificate of title, do not overlook what has been said earlier in these notes regarding inaccuracies in survey. The principle to be applied is "Can the boundaries now sought to be adopted fairly be regarded as those of the existing certificate on its true construction, in the light of what is found on investigation of the subject and surrounding properties and the merits of the former survey as now viewed in the light of more recent information and keeping in view the rights of adjacent proprietors under their certificates of title?" The fault of paying too much regard to *mere measurements* and not enough to *evidence of boundary* should be avoided.

Notice to neighbouring proprietors is as necessary when the boundaries of an old certificate are to be amended as when a certificate is issued for the first time - *Hay v. Soiling* (1895) 16 L.R. 60 at page 64. The purpose of notice is to give owners of adjoining properties an opportunity of criticising the boundaries proposed to be adopted and of objecting if they feel that their interests are adversely affected. The giving of notice is a source of protection to the Office as well as to owners as information not already known to the Office may be secured as a result of notice. It has been found that matters which might affect the decision in a particular case

but which have not been disclosed by the Surveyor are brought to light by notice.

The giving of notice is not, however, to be regarded as an easy method of disposing of difficulties in investigation, nor as a full protection against mistakes. Notice is not given until the Office has decided that, subject to what may be brought out as a result of notice, the boundaries sought to be adopted are reasonably correct. It is the duty of the Office to protect its certificates, and notice in cases of amendment is one means of assisting in their protection.

The object of registering a plan of redefinition and the consequential issue of a new folio of the Register on resurvey of the land is to provide that the land comprised in the certificate may be more appropriately defined and the boundaries more readily ascertained. It is, however, most important that the alteration should not in any way prejudicially affect the rights of owners of adjoining land.

7. Use of Aerial Photographs

Survey investigators investigating plans of survey should be alert to the possibility of the use of aerial photographs as an aid to their investigation.

The Office has used aerial photographs on a number of occasions and it is apparent that aerial photography has a definite role to play in the matters of accretion and erosion and possessory title. Uses can also be found for aerial photographs in the definition of natural boundaries generally.

The advantages of examining aerial photographs, taken over a period of years, are obvious in cases involving change in riparian boundaries and it is in matters of this type that the Office has found the most use for aerial photographs.

Example 21 is a particularly good example of aerial photographs proving that the change in the position of a river occurred suddenly and not by gradual and imperceptible means.

Survey investigators, particularly when faced with a problem in survey investigation that has created a real doubt in their mind, should ask themselves whether aerial photographs could help them reach a solution.

It happens from time to time that surveyors simply locate a boundary by measurement from a street or some previously accepted title corner and then offer in support of their definition two or three connections to indicate that the adjoining titles are satisfied. Office investigation, using information from other plans, will sometimes raise doubts as to whether title dimensions are available. The suspicion is that the surveyor originally only connected far enough until he found an occupation that fitted in with his preconceived idea of the boundary position. Because *prima facie* the boundary is reasonably located on the information disclosed, the danger is it will be accepted - and that considerable difficulties could arise later in defining boundaries further afield.

Survey investigators then have to consider whether they should frame requisitions seeking further connections to other existing occupations (if any). An inspection of aerial photographs, particularly through a stereoscope giving a view magnified 3 or 4 times, might prove of immeasurable assistance. At least it would reveal whether occupations do exist in the area and their existence would help them specify to the surveyor the extent of occupations which should be shown on the plan.

The photograph thus helps survey investigators to frame a more specific requisition. It might also establish that additional connections would not affect the result or that additional (and costly) work by the surveyor would not be warranted.

Aerial photographs could also resolve other problems confronting survey investigators. The age and nature of fencing and the existence of monuments can sometimes be determined from such photographs.

Survey investigators should be aware also of the need on occasions to make a stereoscopic examination of two succeeding photographs in the run so that, in effect, they examine the "overlap" which (to comply with National Mapping Standards) must be 60 per cent of the photograph. A single photo can sometimes give a false impression, e.g., a road that appears to have a bend in one photograph may appear as straight in the next. This is the result of such factors as the effects of shadow, the reflection of light, the different positions of the

aeroplane at the time of exposure and variations in the level of the road (which may be partly on the side of a hill that is not apparent from a single photograph).

The technology in this field is rapidly changing as newly developed, highly precise and very costly machines are brought into use to interpret aerial photographs. Thus the use of an aerial photograph as a tool of survey investigators will undoubtedly increase.

V. SURVEY CO-ORDINATION ACT, 1949

The Survey Co-ordination Act, 1949, commenced on 18th June, 1951. It provided for the co-ordination of surveys and for the establishment of a central plan office for the recording of surveys, plans and information relating thereto.

Permanent marks placed, adopted, or established under the provisions of this Act, are extensively used as survey control for engineering and mapping purposes. They will eventually prove of great value in the re-establishment of boundaries and the computerised storage of land information.

Section 11(2) of the Act provides that the Governor may declare an area to be a proclaimed survey area, for the purposes of that Act.

On proclamation, these areas are charted on the relevant maps in the Registrar General's Office.

When dealing with plans of survey, lodged in that Office, which are in, or immediately contiguous to, such proclaimed areas, surveyors are required to connect to prescribed marks.

VI. PIPELINES

1. Pipelines Act

The immediate purpose of the Pipelines Act, 1967 was to meet the pressing need for the speedy and economical transportation of petroleum and natural gas products over long distances; the Act is sufficiently wide to provide for the construction and operation of pipelines to carry any substance, whether in a gaseous, liquid or solid state, suitable for transportation by such means but does not automatically extend to all types of pipelines. See Sections 3 and 5 of the Pipelines Act for definition of "pipeline" and the application of the Act.

Upon the granting of a licence to construct and operate a pipeline the Minister for Energy is required by Section 20 of the Act to cause a plan defining land and easements required for the purpose of the construction and operation of the pipeline and an accompanying instrument listing the identities of lands affected and setting out particulars of the various easements for pipeline, access etc. required, to be lodged in the Registrar General's Office.

For the purposes of this Act, the usual practice in regard to survey work and boundary definition has been varied.

The administration of the Pipelines Act involving the general oversight of the location

and development of the pipeline and acquisition of lands and easements (including the payment of compensation in the case of compulsory acquisition) where necessary in the name of the applicant company is the responsibility of the Minister for Energy acting through the Energy Authority of New South Wales.

The Survey Practice Regulations, 1933, have been varied by the addition of Regulations 61 to 66 inclusive, relating to surveys for sites of easements under the Pipelines Act, 1967.

Regulations 10 to 28 inclusive, Pipelines Regulations, 1968 set out the details for the preparation of plans.

2. Water Supply Pipelines

The Public Works Act, 1912, provides for the acquisition of an easement to use in any manner for the construction and maintenance of works for pipes for the conveyance of water.

The Constructing Authority should advise the Registrar General's Office on lodgment of the plan whether or not the requirements of Regulations 67 to 70 inclusive of the Survey Practice Regulations, 1933 are applicable to the plan.

The Survey Practice Regulations, 1933, have been varied by the addition of Regulations 67 to 70 inclusive, relating to surveys for sites of easements for water supply pipelines to be acquired by the Department of Public Works.

VII. STRATUM SUBDIVISION

"Land" is deemed to extend from the centre of the earth vertically to an unlimited height and, ordinarily, boundaries created in a subdivision extend in this manner. However, it is possible to sever land along horizontal or inclined planes and the term "Stratum" has been used to designate land lying between two such planes or land above or below such a plane.

As an example of subdivision in strata, the State Rail Authority has adopted an involved stratum pattern in defining its underground railway installations. The Government Railways (Amendment) Act, 1965, was enacted for the purpose of confirming at that time the title of the Commissioner for Railways to certain lands (including strata) and to certain easements occupied or used for the purposes of the Sydney City Railway. Subsequent applications were made by the Commissioner under Sections 14 and 46C of the Real Property Act (in respect of Old System Title and Torrens Title respectively), to become registered proprietor of the lands and easements vested in him by the Act of

1965. The applications were supported by plans lodged as Deposited Plans.

Survey investigators of plans providing a stratum need to proceed with caution. They must ensure that the stratum is bounded by regular planes and that the plan shows side elevations or sections sufficient to define the stratum, incorporating all necessary levels related to Australian Height Datum. (Reference to ground surface level is clearly unacceptable as such would be subject to change and not a regular plane.)

Unless complete definition is self-evident in the plan, survey investigators will need to prepare a perspective or isometric drawing of the stratum so that they can check that all levels necessary to fix the stratum have been supplied.

Where easements are shown in the plan, the sites should be defined with the same degree of precision and in accordance with the same principles.

VIII. EXAMPLES

The drawings and the notes attached to each example have been designed to illustrate some of the matters discussed under the various headings. If survey investigators will work out for themselves those which are concerned mainly with actual investigation of plans, they should benefit by the exercise.

Examples 16 to 20, inclusive, are extracted from old examination papers on survey investigation. Model answers are furnished.

Example 21 illustrates the use of aerial photographs in survey investigation.

Examples 24 to 30 inclusive have been added to this reprint to further illustrate the principles of survey investigation which are discussed in the preceding Chapters.

Examples following, pages 22 to 99

EXAMPLES 1 to 21 and 24 to 30

EXAMPLE 1 - EASEMENT

Sketch 1. The Registered Proprietor of the Certificate of Title for A has an easement over the strip shown as a right of way between X.Y.Z. included in Certificate of Title for B and this easement appears in A's Certificate.

The Registered Proprietor for Certificate of Title for C had a similar easement.

These two parcels were originally included in one certificate and the easement as now appurtenant to both of them was created by one instrument.

The Registered Proprietors of Certificates of Title for D, E, F, G, H, have, respectively, easements over the parts of the strip Y.Z. extending in each case from the continuation of the western boundary to the south side of the strip and thence to Blue Street. These easements were created by the transfers of the respective parcels out of a certificate which formerly included B, D, E, F, G, H, and those transfers were considerably later than the transfer which created the easement as appurtenant to A and C.

In 1940, the Registered Proprietor of C purchased the land comprised in B and, in such circumstances (when dominant and servient tenements united in one registered proprietor), it was the practice upon request to cancel the notifications of the easement on the Certificate of Title for Band C. *

The survey drafting officers concerned in the creation of the new folio of the Register to include B and C were careful to carry forward the easements appurtenant to D, E, F, G, H, but in their concern with the merging of the easement appurtenant to C in the fee simple, failed to see and check the possibility that others to the west might have an easement over X, Y, Z. The result is that there is in existence a certificate of title in favour of A with an appurtenant easement over X, Y, Z, and this easement is not noted on the servient tenement B.C.

There are now conflicting interests as between the Registered Proprietors of A and of B.C.

and the servient tenement having been transferred for value the office has been placed in a most embarrassing position by the omission and want of care on the part of the survey drafting officer who prepared the folio of the Register for B.C. - the officer failed to use imagination.

Sketch 2 illustrates the Certificates of Title existing in 1940 for parcels A, B, C, and D. Parcel B had an appurtenant right of way over the strip comprised in parcel A market "Right of Way". Parcels C and D did not have similar rights.

In 1941 a plan of subdivision of parcels B.C.D was lodged in the form shown in *Sketch 2A*. The plan did not contain a note in accordance with section 197 (7) (b), as then applicable, of the Conveyancing Act, in regard to the "Right of Way" lying south of Lots 2, 3, and 4. The Solicitors were asked to instruct the Surveyor to add such a note.

Clearly this was not the correct method of dealing with the case. The proprietor of the subdivision was not able to transfer rights as appurtenant to Lots 1, 2, 3, and 4 over the strip comprised in Parcel A. Lots 5, 6, 7, and 8 already were entitled to have an appurtenant right over this strip but this right could be attached to Lots 1, 2, 3, and 4 only by further grant from the owner of Parcel A.

The proper course at the time was to inform the Solicitors that if it was desired that Lots 1, 2, 3, and 4 should have access of the "right of way" to R street, an appropriate grant as appurtenant to those lots should be obtained from the proprietor of Parcel A before transfers of those lots were tendered for registration.

This case illustrates the necessity for critical examination of all the facts and for the use of imagination in deciding where those facts lead.

The requirement of the abovementioned section 196 (7) (b) of the Conveyancing Act was repealed concurrently with the enactment of a new section 88B (effective from 15th June, 1964) which, in a plan of subdivision

approved by Council, allows the creation of an easement on registration of the plan, notwithstanding that the dominant and servient tenements are held in the same ownership.

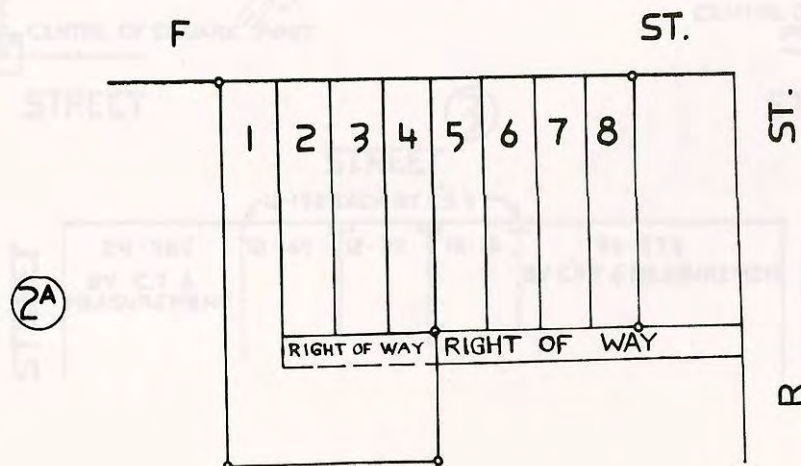
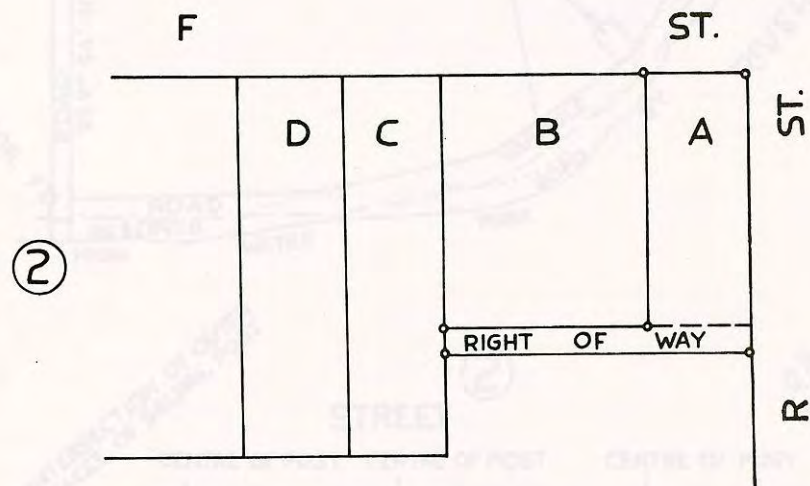
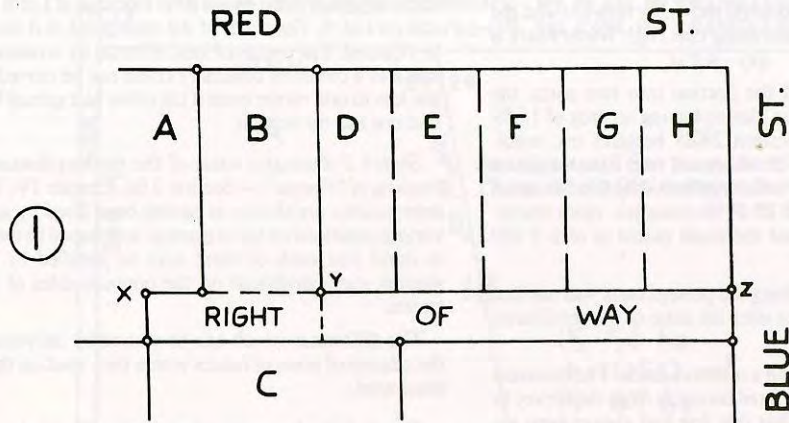
It should be understood that easements may still be created by way of transfer and grant or reservation. Should a plan be necessary to illustrate the site of the easement, the

designation of such site should include the word "proposed" or an abbreviation thereof (e.g., prop'd.), and no written statement of the intention to create the easement is entered on the plan; see Reg. 31 (2) of the Real Property Act Regulations, 1970, and Reg. 52A (2) of the Conveyancing Act Regulations, 1961.

* NOTES: With effect from 1st July, 1970, section 47 (7) of the Real Property Act now prevents the extinguishment of easements solely by reason of the union of tenements.

From 1st July, 1978 pursuant to section 47 (6A) of the Real Property Act, 1900, the registered proprietor of an easement may apply for cancellation of the recording related to the easement.

EXAMPLE I



EXAMPLE 2 - EROSION 1 : FENCING 2 AND 3

Sketch 1 is a composite sketch combining the original survey of Portion 18 with a later survey.

The High Water Mark as at date of Grant and also as at date of survey in 1887 for transfer purposes is shown by firm line and the reserved road 20.115 metres wide along that High Water Mark is indicated by dotted line.

The survey in 1887 divided the portion into two parts, the eastern part being shown on the plan as having an area of 16.59 hectares (ex. road) and the western 23.88 hectares (ex. road). These areas were shown on the certificates of title. Recalculations in 1939 of these areas from the measurements shown on the plan gave 17 hectares (ex. road) and 25.07 hectares (ex. road) respectively. The owner of Lot B sold the small parcel in area 1 050 square metres soon after 1887.

The road of variable width along the present bank was marked out under the Public Roads Act after the issue of the certificates of title above mentioned.

In 1939 the owner of Lot A had a resurvey made. The common boundary between A and B was fixed correctly from the survey in 1887 and there was evidence that this line had always been accepted as the common boundary by the respective owners.

The resurvey, however, showed a considerable reduction in area for Lot B with a much smaller reduction in the actual area of Lot A. Note that the total area by re-survey is close to the total area stated in the certificates.

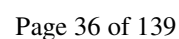
The owner of Lot B on receiving notice objected, claiming that the common boundary should be moved westerly and basing his claim on area only. Investigation disclosed that there had been considerable erosion on the river frontage of Lot B and only slight loss on Lot A. The claim of the owner of Lot B had, of course, to be rejected. The owner of land affected by erosion must bear the loss and a common boundary could not be moved to make good the loss to one owner even if the other had gained by accretion or had not lost by erosion.

Sketch 2 illustrates some of the matters discussed under the heading of "Fences" - Section 3 (b), Chapter IV. The four street intersections are shown as having been fixed by adoption of the various positions on fence posts as mentioned in the text, but bear in mind that each of these may be justified by other circumstances, e.g., conditions on the opposite sides of the respective streets.

The difference which can be caused by universal adoption of the centres of posts of fences where they abut on the street is also illustrated.

Sketch 3 illustrates the final paragraph of the same section. While the measurements given may be correct between the centres of the fences, such small differences do not justify alteration of the lengths on the respective certificates of title. The boundary in each case can be kept on the material of the fence and still preserve the measurements by the deeds.

①



EXAMPLE 3 - DISTRIBUTION OF ACCRETED LAND

Sketch 1 illustrates some of the results which may be caused by universal adoption of the rule set out in *Portage la Prairie v. Cartier* - see under the heading "Ad medium filum."

(a) The road junction shown in the sketch represents an actual case in which it was sought to apply the rule strictly. The result is sufficient answer. Obviously the better method would be to join the terminals of the road boundaries on the banks by lines which would preserve the width of the road and clearly no interest could be prejudiced by such a course.

(b) The properties marked A and B are in one ownership, the presumption of *ad medium filum aquae* applies in each case and the owner desires a consolidated certificate of title. Strict application of the rule to cases such as this would seem to cause unnecessary complication. Straight lines between the terminals of the side boundaries would appear to be more satisfactory and could not appreciably affect the interest of the respective owners.

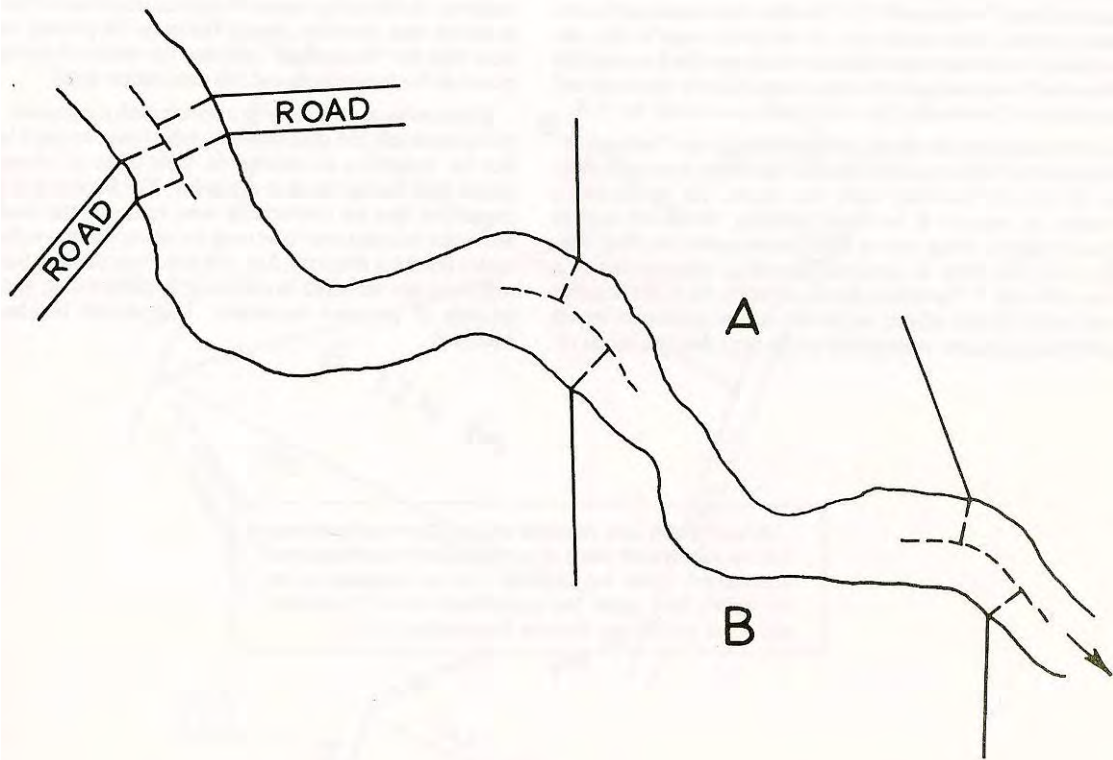
The position may not be so simple if separate properties must be dealt with at different times. It is not sought to suggest that the rule ought to be altered or discarded, but rather that it can in some cases be varied so as to simplify boundaries, without harmful results. It is largely a matter of using discretion and imagination.

Sketch 2 illustrates a possible result of the use of the method set out in Clause (B) under the sub-heading "Division of accreted lands between owners of adjoining properties". The position of the river which formerly constituted a boundary of properties A to E has been changed by erosion and accretion as shown in the sketch. The result on the different properties of the use of this method of distributing the accreted land between the respective riparian owner appears from the sketch.

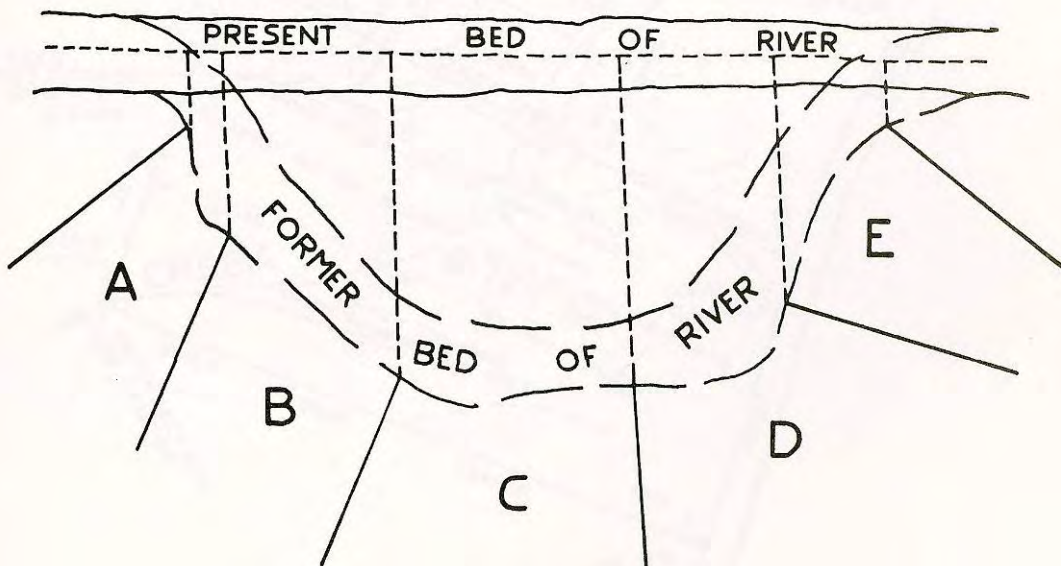
Clearly the more satisfactory method of distributing the accreted land in a case such as this is that set out in Clause (C) under the abovementioned sub-heading.

EXAMPLE 3

①



②



EXAMPLE 4 - EXCESS IN GRANT

H.C. was the owner from 1854 of a parcel of land not under the Real Property Act which was granted as having an area of 24.28 hectares. The area of the land actually contained in the Grant was, in fact, much in excess of 24.28 hectares.

After selling certain parts of this land amounting to about 16 hectares in all, H.C. retained the residue until his death in 1895. By his Will he devised this residue as "the Homestead and about 20 acres [8 hectares] of land which is part of A.B.'s 60 acre [24.28 hectares] Grant" to his son W. E.C. for life with remainder over to certain persons. The residue area in the Grant was, in fact, approximately 16 hectares and this area was in one block around the "homestead" and was, as will appear later, clearly enclosed and used with the "homestead" for very many years prior to 1939.

In 1939, while the life tenant was still living in the "homestead" a trustee of the Will apparently realised that there was much more than 8 hectares enclosed with the house. He instructed a Surveyor to measure 8 hectares including the house and to prepare a plan to bring one or both blocks under the Real Property Act. The plan so prepared (omitting measurements) is shown in *Sketch 1*. The trustee applied to bring the 8.324 hectares parcel under the Act relying on certain acts of possession which he attempted to prove. Apparently he thought that the devise of the

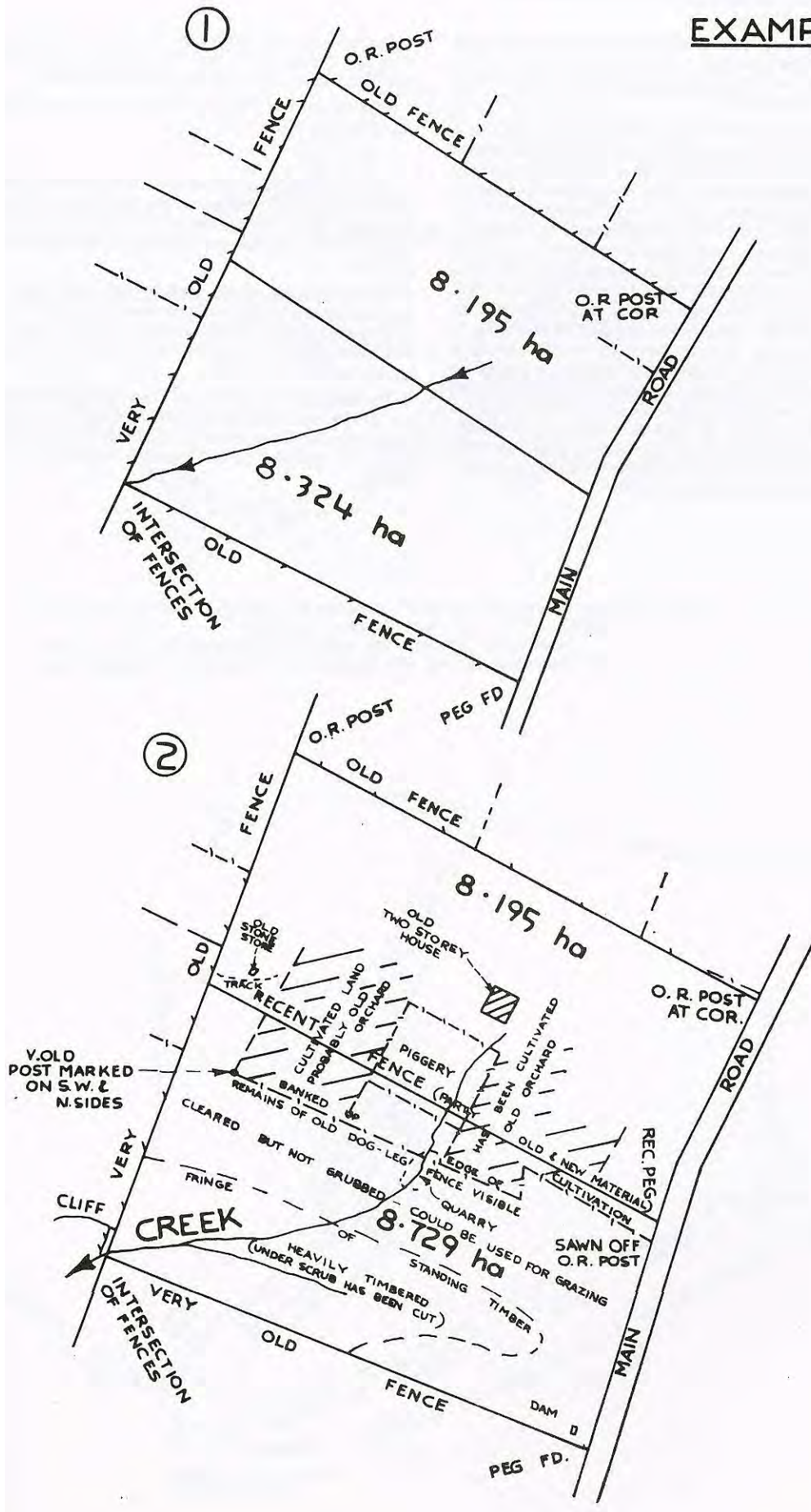
"homestead and about 8 hectares" could be limited to that amount of land.

The evidence of possession produced in the application was unsatisfactory and the question of what was enclosed and used with the "homestead" so as to pass under the devise inevitably arose. An inspection was made in 1940, and the result is shown on *Sketch 2*. The fence on the dividing line fixed by the Surveyor was erected after his survey and the other fences shown on *Sketch 2* removed. Sufficient evidence of their existence and of cultivation as shown was, however, clearly visible on the ground. It became clear that the "homestead" included the whole of the land comprised in the two parcels and the application failed.

This case shows the value of inspection on the ground. It also illustrates clearly the necessity which is always stressed by the office for Surveyors to disclose on their plans all physical facts which they find at the date of survey. The Surveyor in this case contended that his instructions were to divide the land, but he knew that his plan was to be used for an application to bring land under the Real Property Act. His failure to disclose facts might well have put the office in a difficult position which was avoided because of personal inspection. This should not have been necessary.

A surveyor is now required only to show such information on subdivision plans as is relevant to the definition of boundaries. Other information is to be included in the surveyor's field notes. See regulations 47 to 52 inclusive and 57 of the Survey Practice Regulations, 1933.

EXAMPLE 4



EXAMPLE 5 - ACCRETION AND EROSION

Sketch 1 illustrates a case (probably the first dealt with by the Office) in which the principles of law relating to erosion and accretion were definitely discussed and deliberately applied to land under the Real Property Act.

The property concerned was granted as bounded by a river. A resurvey for purpose of road resumption disclosed the alterations shown on the sketch and it was established that the changes were due to gradual process of nature. The Crown claimed the right to take a road through the accreted land on the basis that it was not included in the title of the Registered Proprietor of Portion 15. This was disputed by the Proprietor and the matter was remitted for opinion by Counsel. The Privy Council had just delivered its decision in *Attorney-General of Nigeria v. Holt* (1915) A.C. 599, and this decision formed the basis of an advising in favour of the Registered Proprietor. This advising included the following: "I am of the opinion that the land (shown by broken hatching in *Sketch 1*) does not belong to the Crown and that such land has become an accretion to Portion 15; and in like manner the land (shown by cross hatching) has been lost to that portion. I see no reason why the Grant of the land with this water boundary should not be deemed by the Registrar-General to have included accretions and why a

certificate should not be issued accordingly describing the land as bounded by the River."

See also *Scratton v. Brown* (1825) 4 B & C 485: 107 E.R. 1140 where Mr Justice Bayley said: "As the high or low water marks shift the property conveyed by the deed also shifts."

Read the article on "Accretion under the Torrens System" in 5 A.L.J. at page 328.

Sketch 2 illustrates a case in which an application was made to amend a certificate by eliminating a reservation of 30.48 metres from High Water Mark on the ground that the land comprised in the reservation had been washed away gradually by the action of the River.

An investigation survey made by the Department of Lands disclosed the true position to be as shown on the sketch. The shelf of the former bank was still traceable under the water. The decision in *McGrath v. Williams* (1912) 12 S.R. 477 had been given shortly before this case arose.

The Registered Proprietor was allowed to purchase so much of the 30.48 metres reservation as still remained (A to B on sketch) while from B to C the line of the then existing Mean High Water Mark was accepted as the landward boundary of the 30.48 metres.

EXAMPLE 6 - ACCRETION

Sketch 1 is taken from the Parish Map. The Grant of Portion 43 was issued in the year 1800.

Sketch 2 illustrates an attempt in two Primary Applications for adjoining properties (parts of Portion 43) to apply the *ad medium filum* rule in a manner which was not in accordance with facts and to an extent which would give the owners an advantage which they could not possibly gain under correct application of the rule.

Applications X and Y made in 1883 and 1910, respectively, were limited to the right bank of the River.

Applications A and B were lodged in 1927 and 1929, respectively; each claimed to the centre of the channel (shown by wavy lines) to which the water in the river bed is confined when the river is low. Note the description by the plan in the application of "flood cutting" and "high land timbered, etc."

An attempt was made in each application to give evidence of user of the "flood cutting" and "high land" in such a manner as would show that these were not part of the river bed when it was full, but not overflowing its banks. The applicants endeavoured to show that these parcels were not covered by the river except in full flood. Inspection on the ground showed an entirely different state of affairs.

The first inspections were made by a Senior Surveyor of the Department of Lands in July, 1931, and February, 1932. The result of his inspection is shown on *Sketch 4*.

The inspecting Surveyor reported that the definition of the right bank of the river as shown in his sketch was a fair determination of that bank and for the greater part represented the line where grass and sand met.

An inspection made by officers of the Department in February, 1942, at a time of drought (there was actually no visible flow in the water lying in the western channel) confirmed the view expressed by the Lands Department Surveyor. At the foot of the high bank adjacent to the boundary between

applications A and B there were river oaks, both dead and alive, which might well be 100 years old. The eastern channel presented the appearance of having filled rather than having been cut out of former land.

There were river boulders thick under the sand. These points seem to dispose of the claim that the eastern channel was a flood cutting carved out of land formerly comprised in the Grant of Portion 43. Note also the drawing of the Parish Map which is prepared from original surveys.

In 1931 and 1932 water was seeping through the sand at the upstream end of the eastern channel and was running along the foot of the right bank of that channel. It was clear on inspection in 1942 that a rise of about 2 metres from normal summer level would cause the eastern channel to fill long before the river would overflow its banks. Trees (mostly small river oaks) growing in the eastern channel had a decided lean downstream, indicating frequent flow of water during their growth.

These facts appear to justify the view that the eastern channel is part of the bed of the river in which water would run before the river reached flood line.

The western bank of the island is firm and steep and there is evidence that accretion to the island by way of alluvial soil has raised its level and extended it eastward. The age of some trees along its western side suggests that it has not wholly been formed since the date of the Grant, but was even then in existence though smaller than it is now. The highest point of the island was about 6 metres above the very low level of water in the western channel in February, 1942.

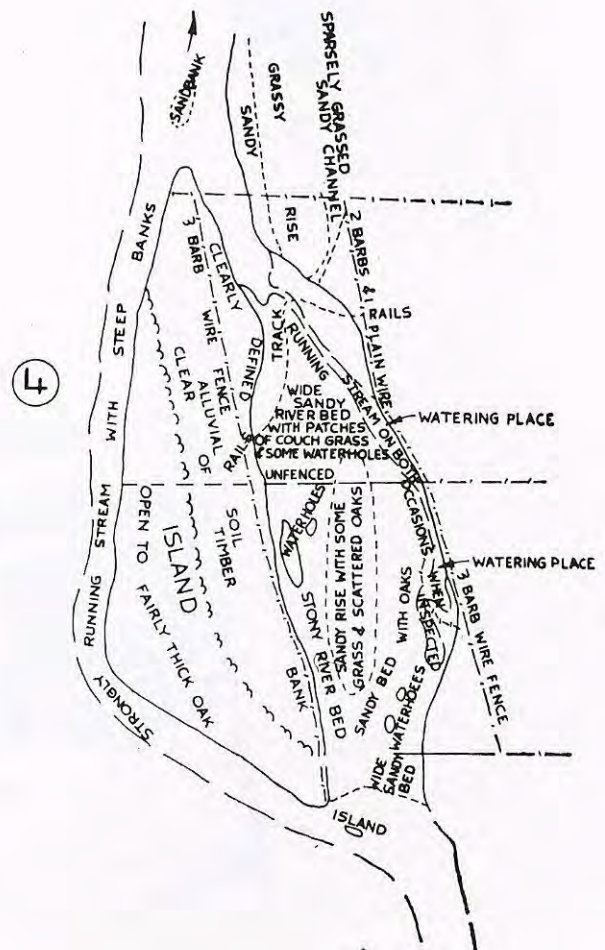
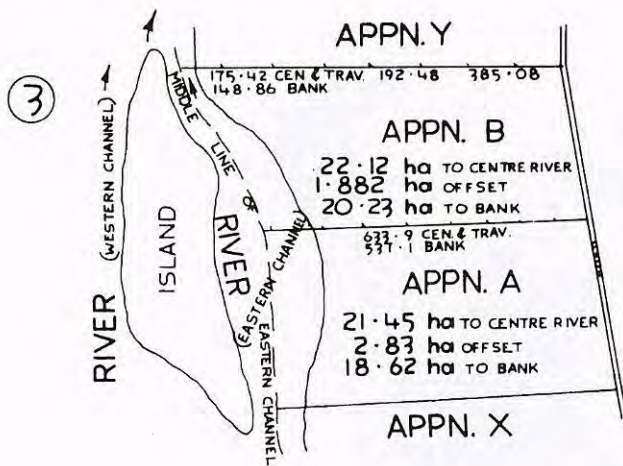
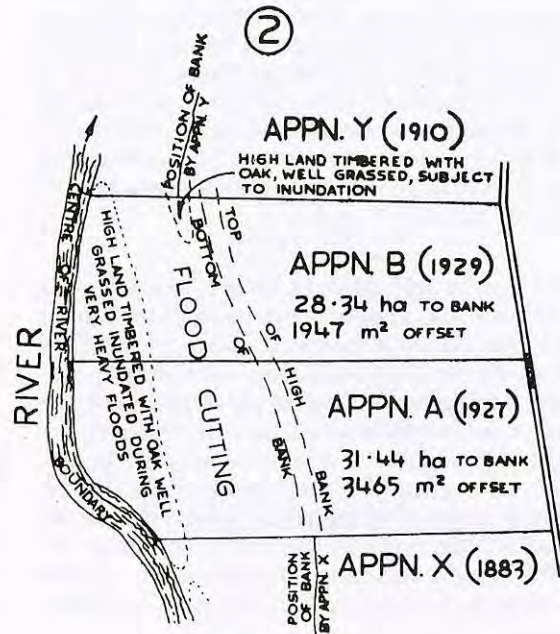
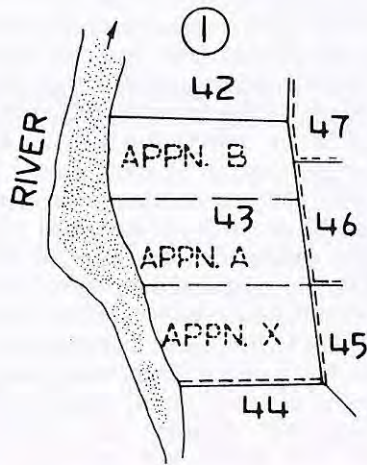
The area of Portion 43 by Grant is 160 acres [64.75 hectares]. Applications A, B, and X include the whole of the grant. If the claims first made in Applications A and B had succeeded, the area claimed for the grant would have been about 81 hectares.

The total area included in Application X and Applications A and B, when limited to the

bank of the river, is approximately 61 hectares. An addition to the area stated in Application X would result if the lower bank were adopted in place of the top of the high bank which the Surveyor in that case evidently followed. These comparisons support the view based on

inspection on the ground that there has not been noticeable erosion along the eastern bank since the date of the grant.

The applicants in A and B were required to amend their claims to include only the land in *Sketch 3*.



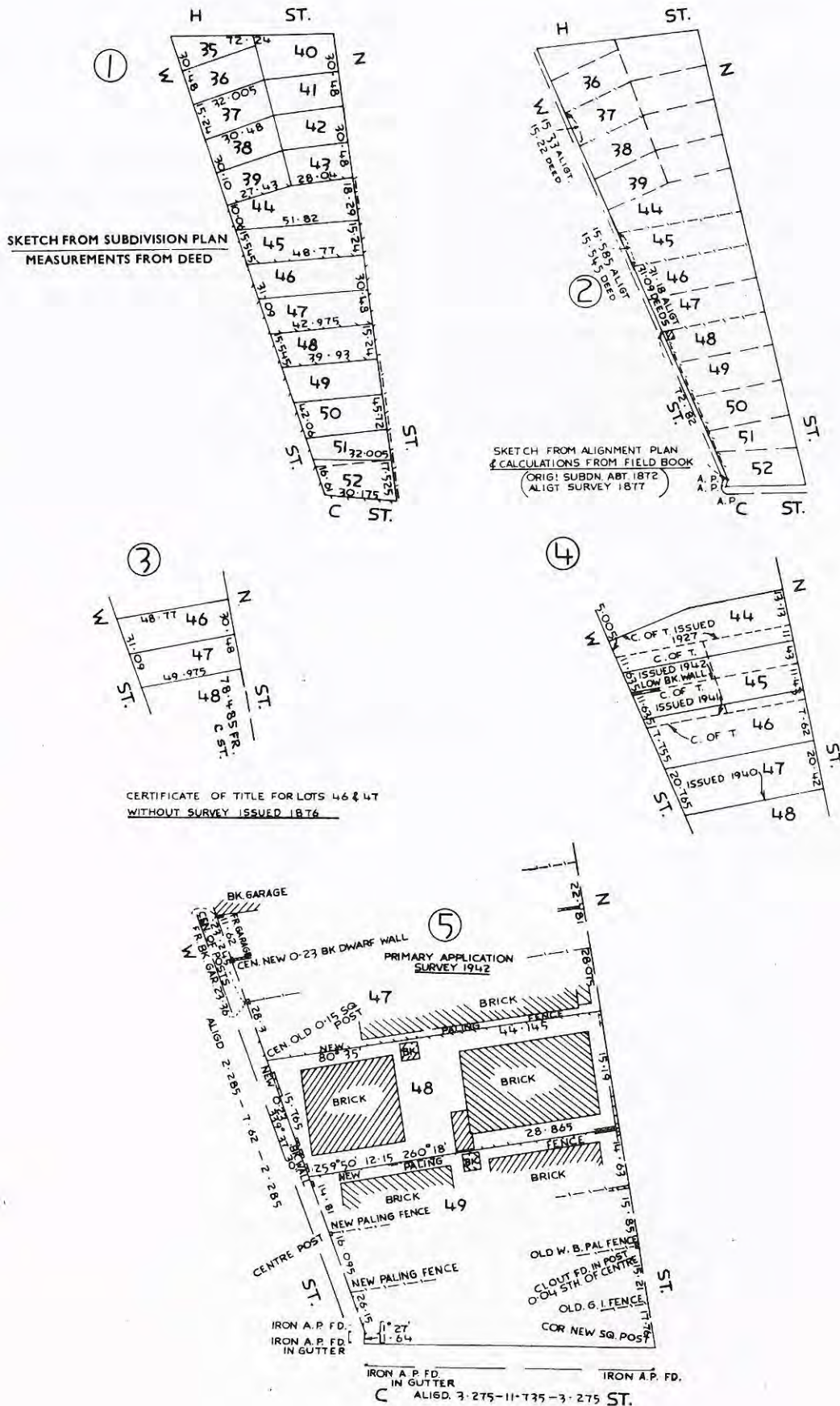
EXAMPLE 7 - MONUMENTS AND UNRELIABLE MEASUREMENTS

Sketch 1 shows a Section of an extensive subdivision of land under common law title made about the year 1872. The fences indicated on the sketch are shown on the copy of the original subdivision plan filed in this Office. Measurements are not shown on the subdivision plan - those shown on the sketch are taken from the descriptions in the conveyances of the various lots. The total length along the northeastern side of W Street by deed measurements is about 3 metres shorter than the measurement available on the ground at the time of subdivision. The difference was settled when Lots 38, 39, 42 and 43 were brought under the Real Property Act, about 1899. The frontage of Lots 38 and 39 to W Street was passed with about 3 metres excess over the length given in deed descriptions as survey showed clearly that the excess lay in the W Street frontage of these lots. The southeastern boundary of Lot 39 was fenced at the correct distance from C Street (to within 0.04 metres).

In 1942, Lot 48 was the only lot in the Section which was not under the Real Property Act. The plan lodged with an application in respect of this lot (see *Sketch 5*) showed an excess in frontage to W Street of 0.22 metres over deed description, with a corresponding shortage in the frontage to W Street of the certificate of title for land adjoining on the North. No question arose regarding the southeastern boundary of Lot 48 which was marked by improvements at the correct distance from C Street. The northwest boundary of Lot 48 was marked by a new paling fence with an old square post at the western end. On these facts the survey investigator reported that the application included a strip of land varying from nothing at N Street to 0.22 metres at W

Street, which was already comprised in the certificate of title for the land adjoining on the north. This report seemed to be correct until the former history of the Section was carefully examined. When this was done, this became a clear case of monuments versus measurements and a good illustration of the rule that old measurements shown on a certificate of title cannot be accepted as conclusive. It also illustrates clearly the valuable evidence which can be obtained from Alignment Plans and their Field Books if used intelligently.

Note first that Lots 46 and 47 were brought under the Real Property Act without survey in 1876 (see *Sketch 3*) and that no redefinition by survey of the common boundary between Lots 47 and 48 had since been made. Note also that that boundary is shown as fenced in the original subdivision plan. Then inspection of *Sketch 2* will show that this fence was picked up in the Alignment Survey in 1877 (i.e., only 5 years after the subdivision) at 72.82 metres from the angle in W Street near C Street - this distance agrees with the total shown on the application plan; moreover, the bearing of this fence computed from the Alignment Survey agrees closely with that given on the application plan. Inspection on the ground showed also that the old post where this fence joins W Street was very old and did not appear to have been moved. The Certificate of Title issued in 1940 for Lot 47 and part of Lot 46 is a consolidation based as to the northern part on survey and as to Lot 47 on the original application and sketches in subsequent transfers (see *Sketch 4*). The measurements are not reliable and must give way to the monuments on the common boundary between Lots 47 and 48 which has been in this position since 1877



EXAMPLE 8 - OCCUPATIONS VERSUS MEASUREMENTS

Sketch 1 shows particulars from a deposited plan of the frontage of L Street.

Sketch 2 illustrates a plan which was lodged by the proprietor of Lots 34 to 39, inclusive (and other lots) for purposes of transfer of part of his land. The Surveyor defined the eastern boundary simply by measuring 207.235 metres from J Street thus making the building on lot 33 encroach from 0.065 metres to 0.09 metres on his client's land. While J Street is not aligned its intersection with L Street can be identified as being in the same position as was fixed in the original subdivision and thus as a correct starting point. The Surveyor apparently assumed that he had only to start from J Street and go westerly to redefine the original subdivision. It is true that his total frontage to L Street is the same as that shown by the original subdivision plan, but his definition of the common boundary between Lots 33 and 34 involves total disregard of the indications of where the subdivision was marked as given by the numerous improvements erected on lots lying between the disputed boundary and J Street.

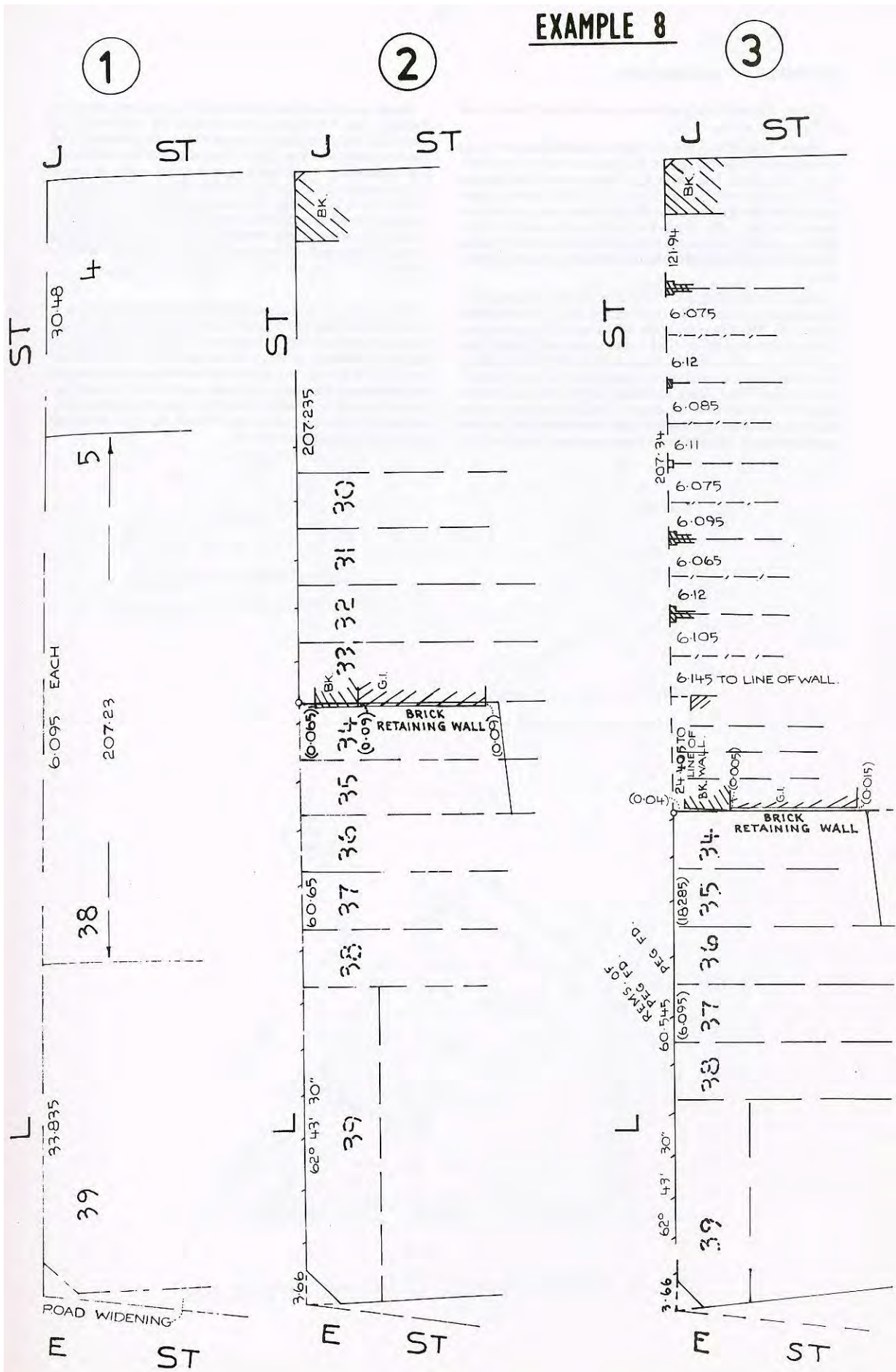
On making inspection on the ground, original pegs of the subdivision were found buried at the northwestern and northeastern corners of Lot 37. These pegs were 6.095 metres apart and from that at the northeastern corner the distance of the face of the building was found to be exactly 18.285 metres. The measurements between occupations easterly from the boundary in dispute to J Street agree closely with the deposited plan, but give a total

measurement of 207.34 metres, i.e., an excess of 0.105 metres. This excess cannot be regarded as unreasonable and should not be accepted as justifying the view that the building encroaches in the light of the indications of the actual marking of the original subdivision. A long connection to an unmarked street without regard to intervening occupations is not a satisfactory method of determining a boundary, particularly one that is occupied by a permanent structure. The Surveyor was required to amend his plan as shown on *Sketch 3*.

There is a shortage of 0.105 metres westerly from Lot 37, and identifying the exact whereabouts of this deficiency could prove troublesome. It should be undertaken only after acquiring information as to the present definition of E Street relative to its original position, as well as details of any occupations (past and present) of the boundary common to Lots 38 and 39. It should not follow that 6.095 metres is available for Lot 38 merely because it can be taken that Lots 1 to 29 inclusive and Lots 34 to 37 inclusive were originally marked at title distance. For the same reasons as resulted in an excess between Lots 30 and 33, the shortage west of Lot 37 could conceivably be found to be in Lot 38 or 39 or partly in both.

The exact location of the excess between Lots 30 to 33 will require similar careful consideration of all the available details of occupation of the side boundaries of each Lot.

EXAMPLE 8



EXAMPLE 9 - ACCRETION

Sketch 1 shows the original survey on which the Crown Grant of Portion 18 was based.

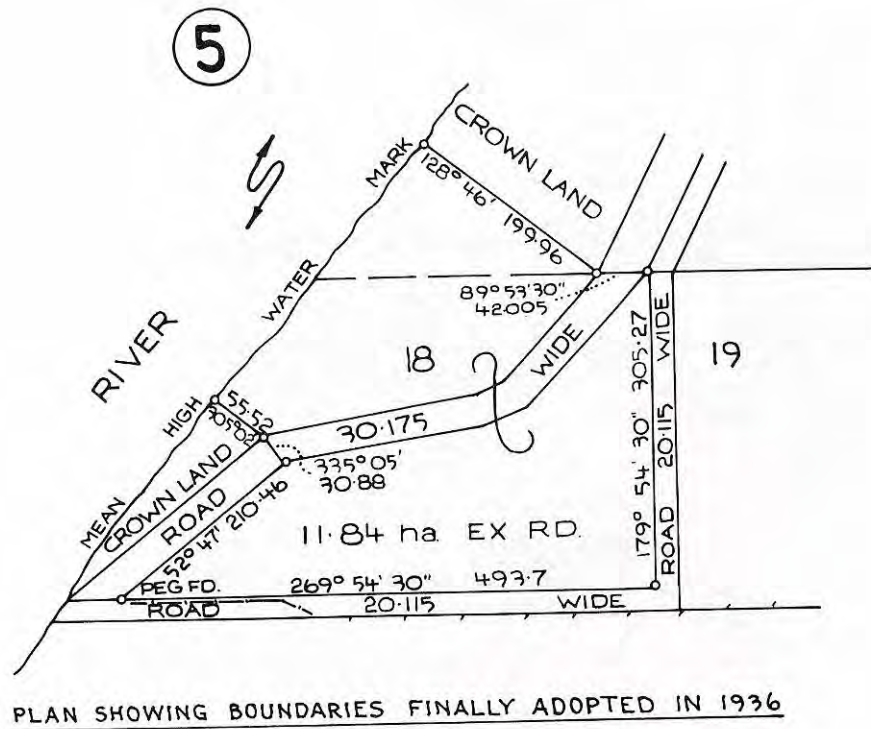
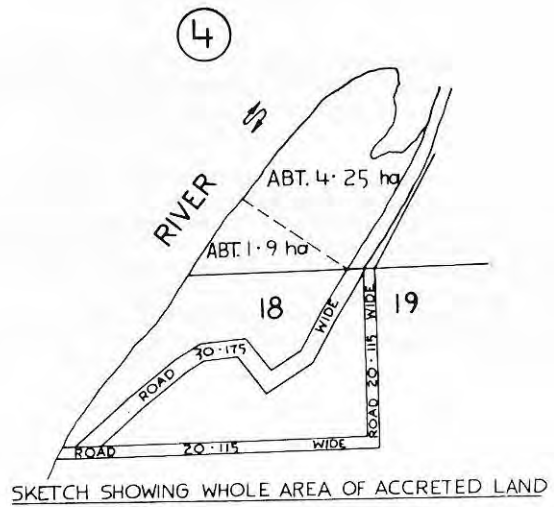
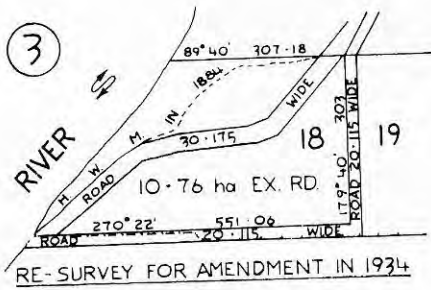
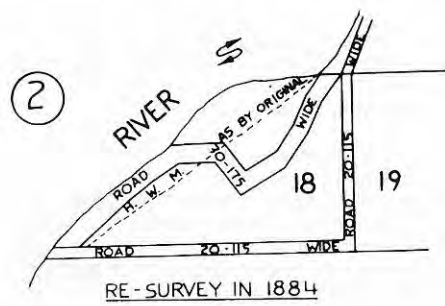
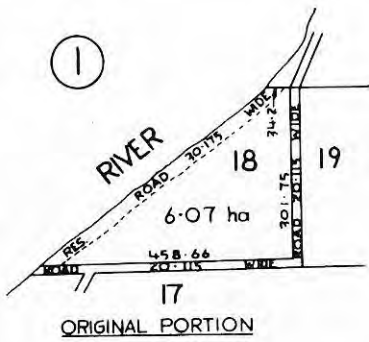
Sketch 2 shows a survey in 1884 for establishment of a road through this portion in lieu of the road reserved in the Crown Grant. High Water Mark of the River as at the date of the original survey is shown by a broken line on this sketch. Note that part only of the new road lies along the river bank and that the road reserved in the Crown Grant has been closed and added to the portion in lieu of the new road thus giving to the owner a partial frontage to the river which he did not have before this change was made.

Sketch 3 illustrates a resurvey made in 1934 for the purpose of an application to amend the Certificate of Title then comprising Portion 18. The difference in the definition of the road as compared with the survey of 1884 is due to the road having been formed in a position other than that laid out in 1884. This position was subsequently adopted as the re-marking of the road. The position of High Water Mark according to the survey of 1884 is shown by broken lines on the sketch. It will be seen that accretion has occurred along the whole frontage of the portion and has continued northerly beyond the northern boundary (see *Sketch 4*).

Notice was given to the Department of Lands and a claim was made by that Department that accretion for the distance for which the road formerly ran along the bank was accretion to the road and therefore Crown land. This claim could not be disputed. The Department of Lands also stated that the Crown was preparing to dispose of the accretion further north (4.25 hectares - *Sketch 4*) and was willing to agree that the area of 1.9 hectares (*Sketch 4*) could be regarded as accretion to the land in the Certificate of Title comprising Portion 18. Following further negotiations a certificate of title was finally issued in the form shown in *Sketch 5*.

While in the circumstances of this case, and particularly in view of the attitude of the Crown, it was agreed to issue the certificate of title including the area shown on *Sketch 4* as about 1.9 hectares the boundary being a line at right angles to the flow of the river, this is not to be regarded as other than a special case and the general rule discussed in the notes under Accretion and Erosion will usually be followed. Under that rule, the registered proprietor in the present case would, it seems, have got somewhat less than was included in the title.

EXAMPLE 9



EXAMPLE 10 - DETAIL SHEETS AND FIELD BOOK

Sketch 3 shows the certificates of title existing in November, 1942, covering part of an old subdivision under the Real Property Act. The measurements in the subdivision plan are known to be inaccurate. They are generally understated.

In 1942 an application was made in accordance with plan shown in *Sketch 4* for amendment of a certificate of title. It will be noted that an increase in frontage of 0.445 metres was sought. *Sketch 5* is a diagram endorsed on the plan and is claimed to represent the occupations as they were found in an earlier survey in 1927. The pegs shown in this diagram were placed in a survey for the widening of U Street and have no authority as regards definition of boundaries between the various certificates of title. If there was a fence as shown in the diagram along the northern boundary of the certificate of title sought to be amended it was certainly not a very old fence as stated. It may have been constructed of old material but had not been in the position in which it was shown for a sufficient period to be regarded as a monument.

It will be noted also that the eaves and gutter of the building erected on the property adjoining on the north are shown to overhang the boundary defined in the plan to the extent of 0.33 metres at the front.

In response to requisitions the Surveyor replied to the effect that the fence along the northern boundary was very old and the peg found at U street was placed by the Surveyor making the survey for resumption in line with the fence. He went on to say, "I have lived in the vicinity of subject property for about 35 years and my earliest recollections are of very old improvements including the fence along the northern boundary. Prior to its removal in 1927 it had probably been in existence for upwards of 50 years."

The Surveyor was no doubt honest in stating his recollections there had been a fence near his boundary for more than 50 years, but it had not for the greater part of the time been in the position claimed.

In 1896 the first detail survey was made in this vicinity; in 1889 the streets were aligned and in 1909 the detail survey was revised. The plans of the two detail surveys are illustrated in *Sketches 1 and 2* respectively. Calculations from the alignment survey fix the fence in question at a distance of 19.305 metres from G street. The detail survey in 1896 showed an allotment post 19.355 metres from G Street and calculation from that survey and the revision fixed the position of this post at exactly 10.06 metres north from the southeastern corner of the wall of the brick building which apparently marked the southern boundary of the relevant certificate of title in 1909 - see *Sketch 2*. It will be seen that the position of the post is in the general line of the boundary fence existing at the time.

The application for amendment failed, as clearly the northern boundary sought to be adopted had not been in the position fixed by the amendment plan for a period sufficiently long to enable it to be regarded as defining where the boundary had been at the date of subdivision. The evidence available showed, on the contrary, that the excess available had always been located between this boundary and G Street.

This case is a useful illustration of the value of detail sheets and their Field Books in supplying evidence of the positions of improvements at dates which are relatively close to the dates of original subdivisions. Improvements so fixed are much more likely to bear a close relation to the actual boundaries of the subdivisions than those erected later and possibly after re-pegging which may be done in accordance only with deed measurements and not having regard to the evidence which shows that those measurements were unreliable.

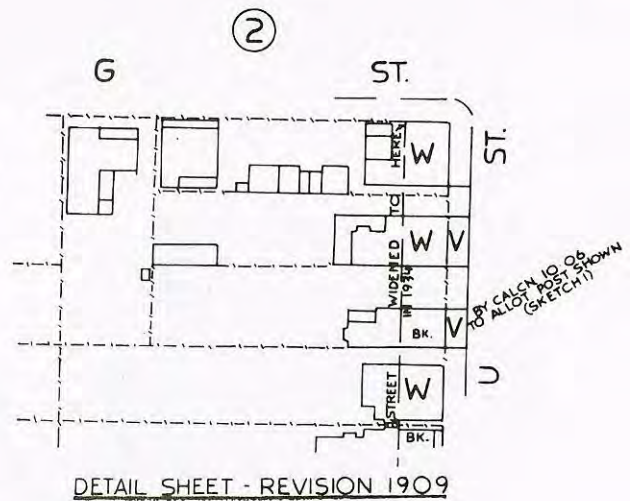
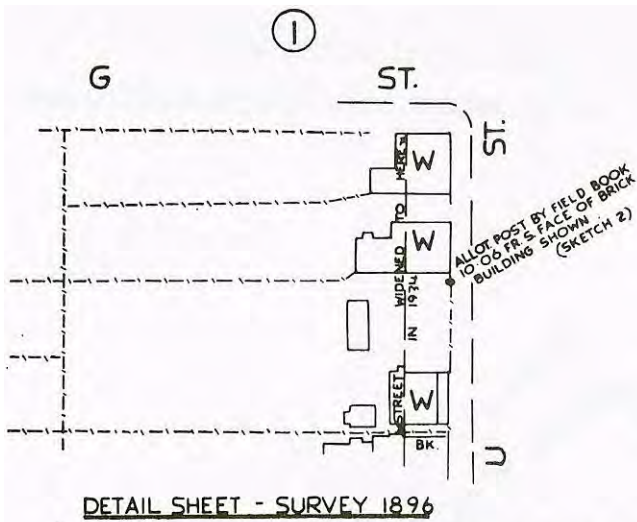
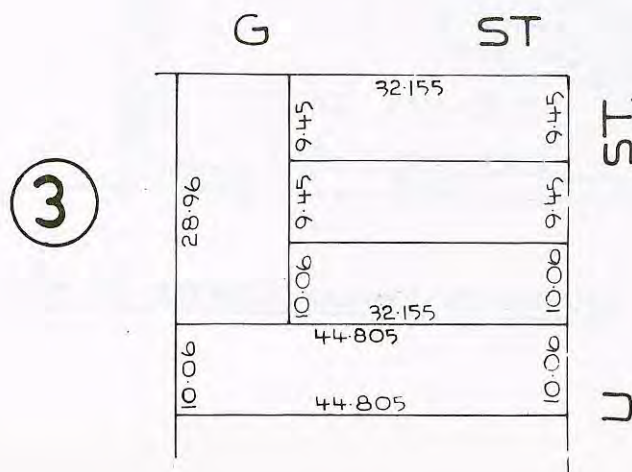
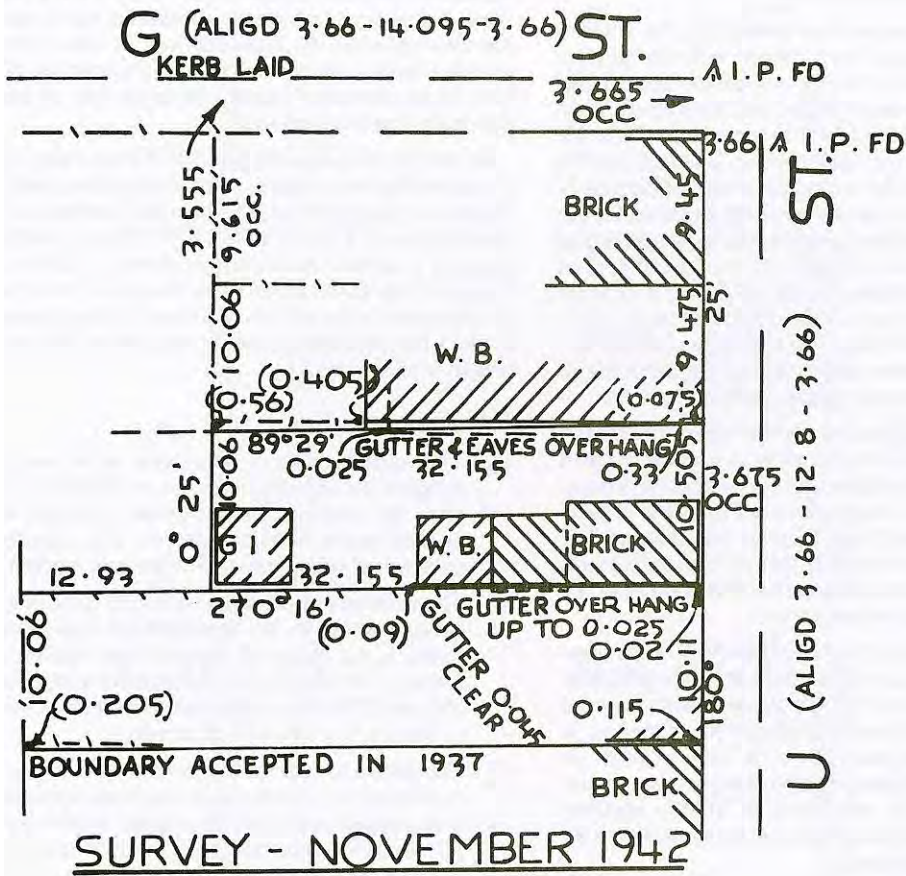


DIAGRAM
SHOWING C.T. MEASUREMENTS
NOVEMBER 1942

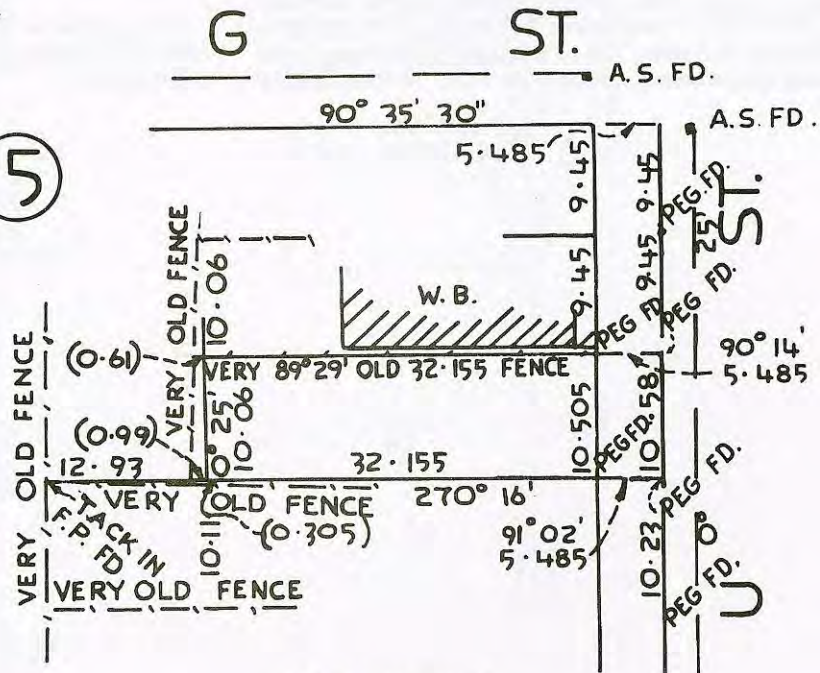


EXAMPLE 10

4



5



DIAGRAM

SHOWING IMPROVEMENTS
& MARKINGS FOUND 16.3.27

EXAMPLE 11 - STARTING POINT

Sketch 1 shows the frontage along G street of Sections 5, 6, 7 and 8 of a Town laid out by Government survey prior to the year 1865. The streets in the Town were aligned in 1909, by which date many substantial buildings had been erected. The alignment survey covered practically the whole town.

The frontages of the various sections throughout the Town as measured for alignment agree very closely with the original survey for laying out the Town, the only notable exceptions being in G Street between S Street and T Street, and between R Street and the western boundary of the Town. In the first case there are excesses of 0.68 metres on the north side of G Street and 0.6 metres on the south side. In the second there are deficiencies of 0.43 metres and 0.56 metres respectively on the north and south sides of G Street. In other sections the difference between original survey and alignment does not exceed 0.305 metres and in most sections the difference is much less. On the north side of G Street 0.15 metres of the excess referred to is accounted for by the alignment of S Street at less width than was originally provided for, leaving an excess of 0.53 metres within Section 6 attributable to difference in survey or movement of the position of streets.

The Surveyor who made the survey for alignment clearly adopted positions for the streets which, as far as possible, avoided causing encroachment on the aligned streets by existing occupations. This decision led to a swing westward from the original positions of the intersections of R and S Streets with G Street. The principal buildings in the Town were in this vicinity and it seems probable that one substantial building erected out of position at a street corner led to the result set out above.

Sketch 2 is a diagram prepared from the Field Book of the alignment survey. It illustrates actual connections to buildings by that survey. Measurements from the Field Book are shown above the line - those by existing certificates of title are below the line. It will be seen from the comparisons above the line - which indicate the running total deficiencies from S

Street when compared with measurements by certificates of title - that the buildings in the centre of the section are in close agreement with the certificate of title measurements.

Sketch 3 is taken from a plan of survey made in 1937 for the purpose of dealing with a property facing G Street about the centre of Section 7. It will be seen that the Surveyor finding the total frontage of Section 7 to be practically in agreement with total deed measurements, attempted to define the boundaries by measurement only without taking into account the fact that the starting point at S Street (or alternatively R Street) had been moved by the alignment survey. This caused a series of encroachments by occupations which could be remedied only by numerous transfers of small strips. It must be remembered that these occupations (principally substantial buildings) were in existence long before the alignment, and, in view of the long period between laying out of the Town and alignment of the streets, were in the absence of original marks the best evidence of where the original subdivision was.

In view of the consistent position of the buildings in the centre of the section as compared with the measurements by the certificates of title and the clear evidence of a swing westward of the intersections of R and S Streets with G Street, the Surveyor was required to amend his survey as shown in *Sketch 4*. The certificate of title at the eastern end of section 7 must bear the deficiency caused by movement of S Street by the alignment while, as a result, the certificate at the western end of the section gets the benefit of the excess.

This case illustrates:

- (1) The valuable evidence which may be obtained from the intelligent use of Field Books of an alignment survey made after the erection of substantial buildings which, if the original marks have disappeared, then constitute the only

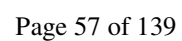
evidence of where the subdivision was marked.

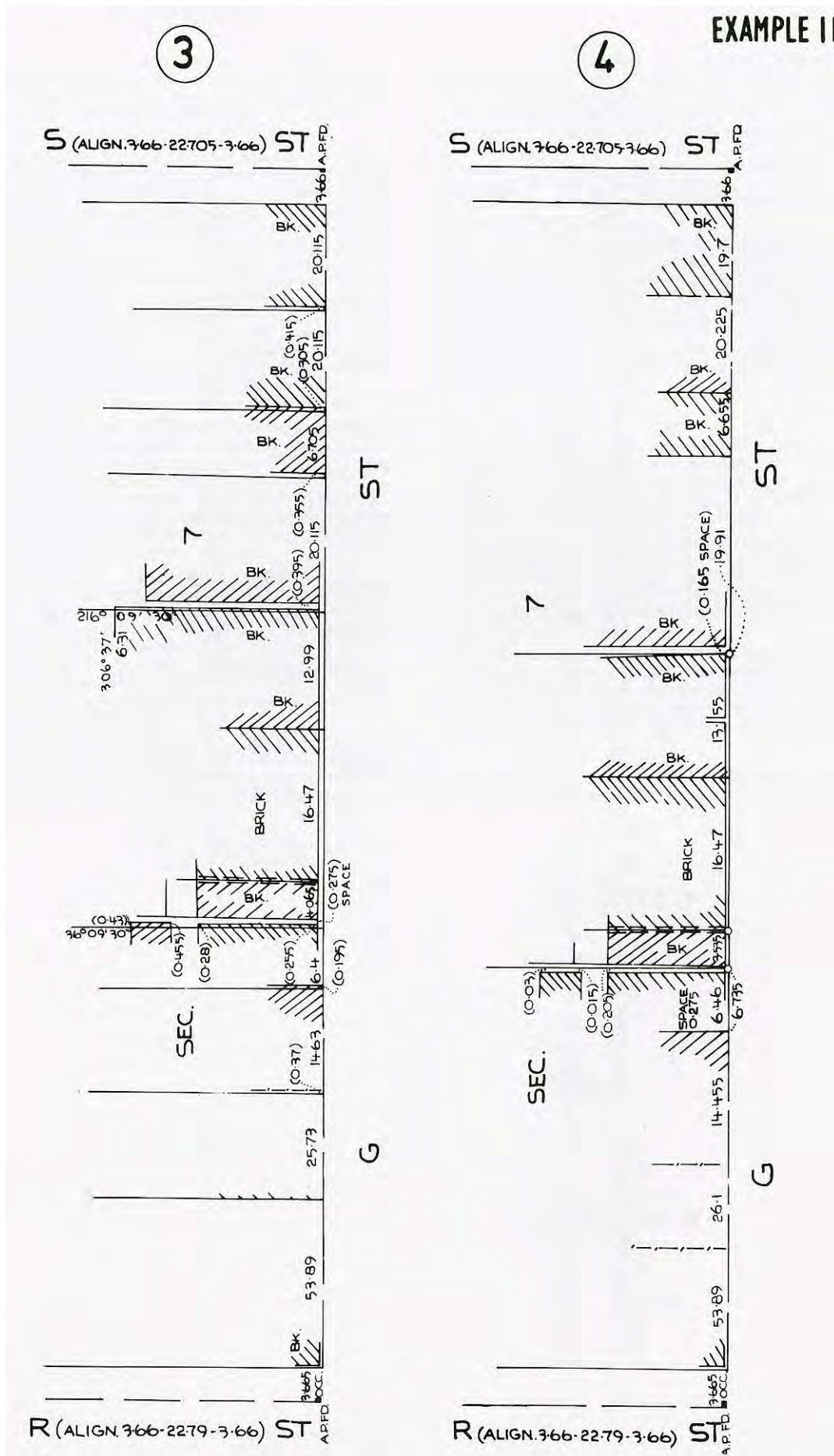
- (2) The weakness of the all-too-common habit of attempting to define boundaries by measurement from a starting point which is not the point at which the original survey commenced. The Surveyor assumed, incorrectly, that the corner of G and S Streets by alignment was identical with the corner of Section 7 in the original survey.

- (3) The failure to appreciate the value of evidence supplied by consistency of measurement between substantial occupations erected soon after the original subdivision.
- (4) The necessity for examining not only the plan under review, but also the plan on which it is based - in this case the alignment plan.

The decision in *Turner v. Hubner* is specially applicable to cases of this character - see under sub-heading "Starting Point" in Chapter IV.

①





EXAMPLE 12 - STARTING POINT AND OLD OCCUPATIONS

Sketch 1 shows section G of a subdivision made about the year 1855. Lots 1, 2, 5, 6, 12, 13, 14 and 16 were sold before 1863. The unsold lots in the subdivision were brought under the Real Property Act in 1864, and a deposited plan was lodged showing the whole subdivision. Of the lots which had been conveyed prior to 1863, Lot 12 was brought under the Real Property Act in 1864 without survey, part of Lot 13 in 1903 (see *Sketch 2*), and Lots 5 and 6 in 1907 (see *Sketch 3*).

Measurements by Certificates of Title comprising Lots 7 to 12 inclusive in the year 1921 are shown in *Sketch 4*. Lots 9, 10 and 11 were comprised in one certificate and in 1921 an application was made to amend that certificate in accordance with the plan shown in *Sketch 5*. It will be seen that the common boundary between 8 and 9 was at the correct distance from M Street on W Street and that there was an excess of only 0.04 metres between this boundary and M Street on O Street - a remarkably close agreement considering that the streets had been aligned some time after the date of the subdivision.

The frontage claimed to W Street was practically correct, and the total distance from M Street along W Street to the north-eastern corner of Lot 12 agreed very closely with the application plan shown in *Sketch 2*. There could, therefore, be no objection to the western boundary as claimed nor to the position of the northern end of the eastern boundary.

However, on the O Street frontage an excess of 0.35 metres was claimed and there was a deficiency of 0.15 metres in the frontage to that street of Lot 12 as occupied - note that the common boundary of Lots 12 and 13 had already been accepted in *Sketch 2*. An attempt was made to justify the inclusion of the excess in Lots 9, 10 and 11 on the grounds (1) that

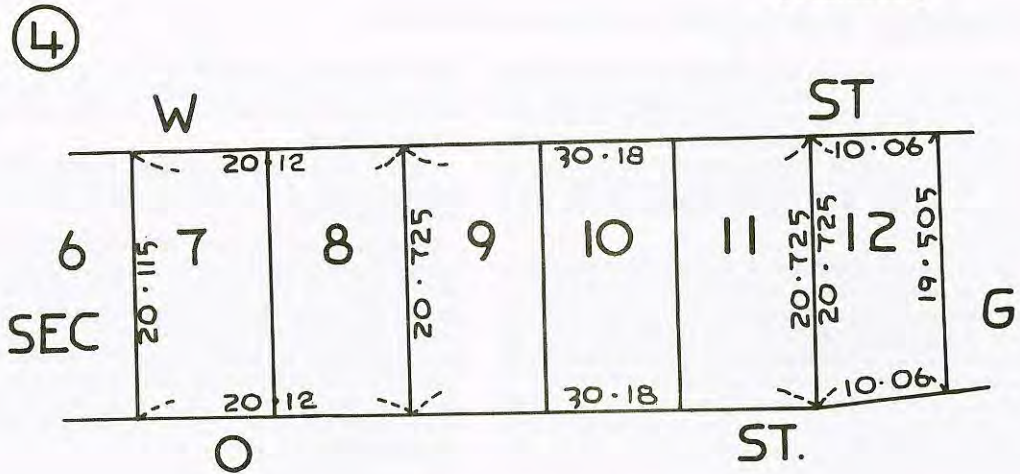
this was an old subdivision and presumably the excess was due to error in the original survey, and (2) that the houses on Lots 9, 10 and 11 had been built for more than 40 years and the case was within the decision in *Turner v. Myerson*.

The first of these grounds is disposed of by the close agreement between the original subdivision and the measurements of the various occupations.

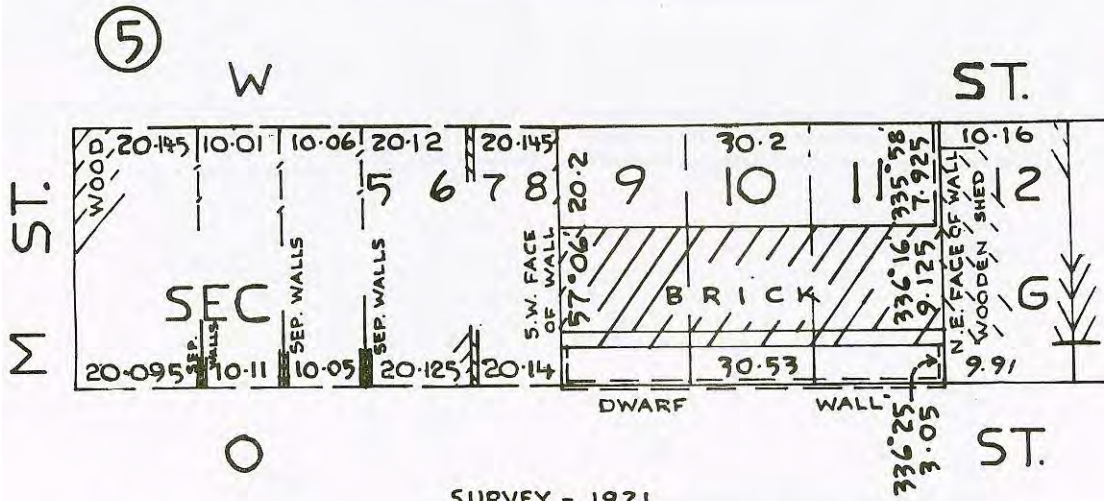
The second ground was rejected for the reasons (a) that there was no doubt regarding the correct starting point - the accuracy with which the various occupations from M Street easterly had been located showed this; (b) that the buildings on the land in the application under consideration had not been erected for more than 25 years after the date of the subdivision when it was unlikely that the marking of the subdivision would be extant; (c) the discrepancy in measurement was far greater than might reasonably be attributed to error in the subdivision and would cause deprivation to the owner of Lot 12.

Probably the explanation of the large excess in Lots 9, 10 and 11 is that the wooden building on Lot 12 which was erected before the houses on Lots 9, 10 and 11 was not on the boundary at O Street. When the houses were built on Lots 9, 10 and 11, the owner probably did not have the boundaries checked, but built up to the adjacent occupation, thus including part of the land comprised in the certificate for Lot 12. This view is borne out by the trend of the bearings along the occupations remembering that the northwestern corner of lot 12 as occupied was correct.

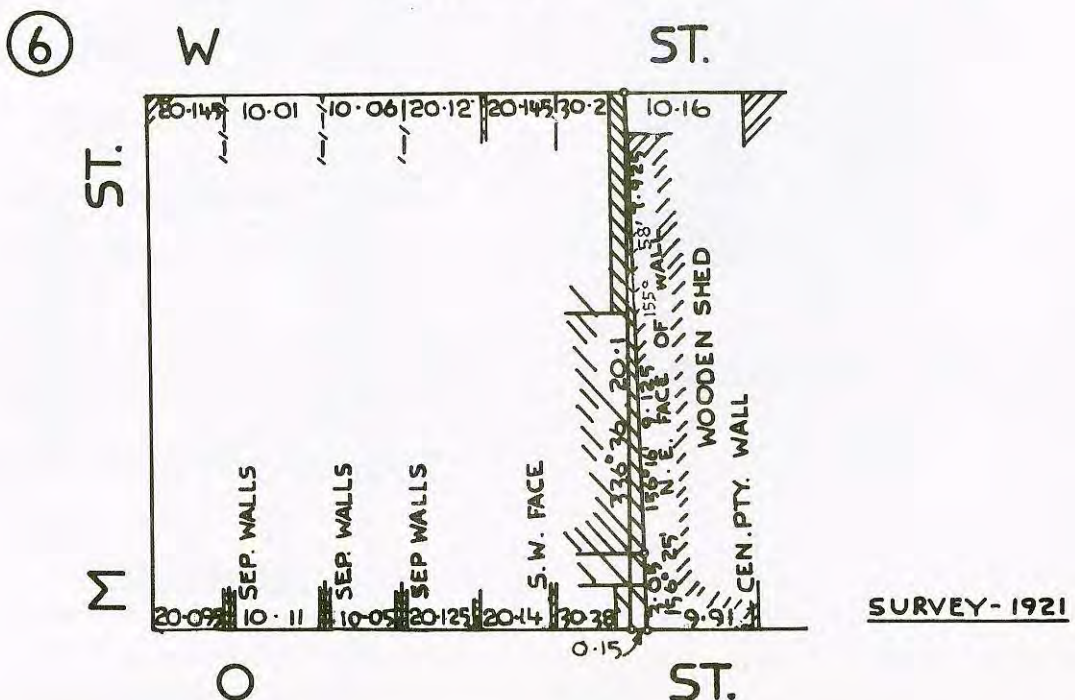
The application for amendment failed and the owner of Lots 9, 10 and 11 purchased from the owner of Lot 12 the strip of land illustrated in *Sketch 6*.



CERTIFICATES OF TITLE AT 1921



SURVEY - 1921



SURVEY - 1921

EXAMPLE 13 - STARTING POINT

Sketch 1 shows part of a subdivision made prior to 1863. Note that some of the lots were already occupied when the plan of the subdivision lodged in the Office was prepared in 1863. Lots 34 to 39 of Section 3 were brought under the Real Property Act in 1872 without further survey.

Sketch 2 is taken from a transfer made in the year 1878 by which the western half of Lot 36 Section 3 was transferred by the owner of that lot. The consideration was £ 900 [\$1800].

Sketch 3 shows the measurements of the certificates of title which comprised Lots 34 to 39 of Section 3 in the year 1924.

Sketch 4 is taken from a survey made in the year 1901 for the purpose of identifying the building and fences on the western half of Lot 38 Section 3 with the boundaries of the relevant certificate of title.

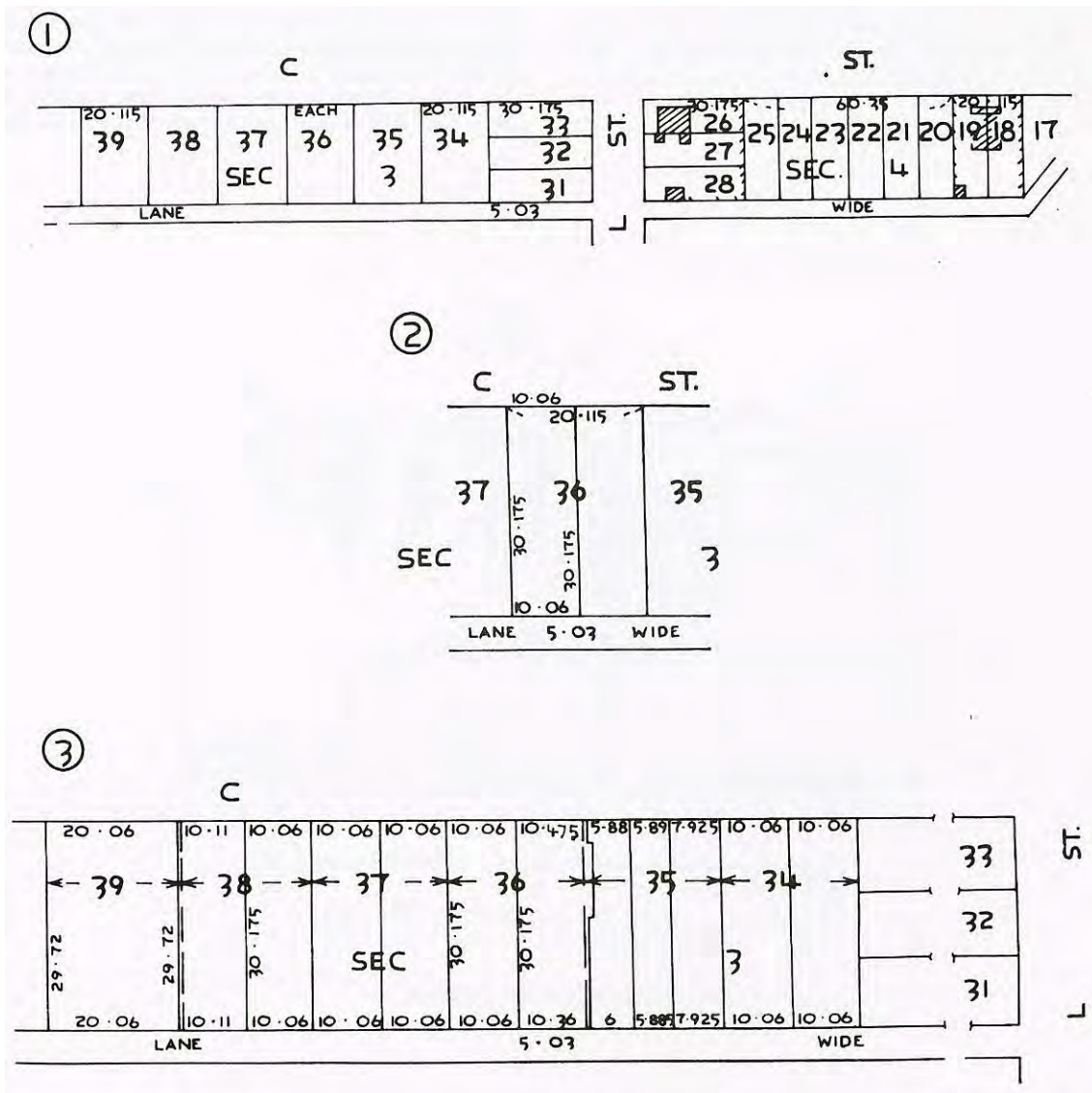
Sketch 5 is from a survey made in the year 1923 and lodged with an application to amend the certificate of title shown in *Sketch 2*.

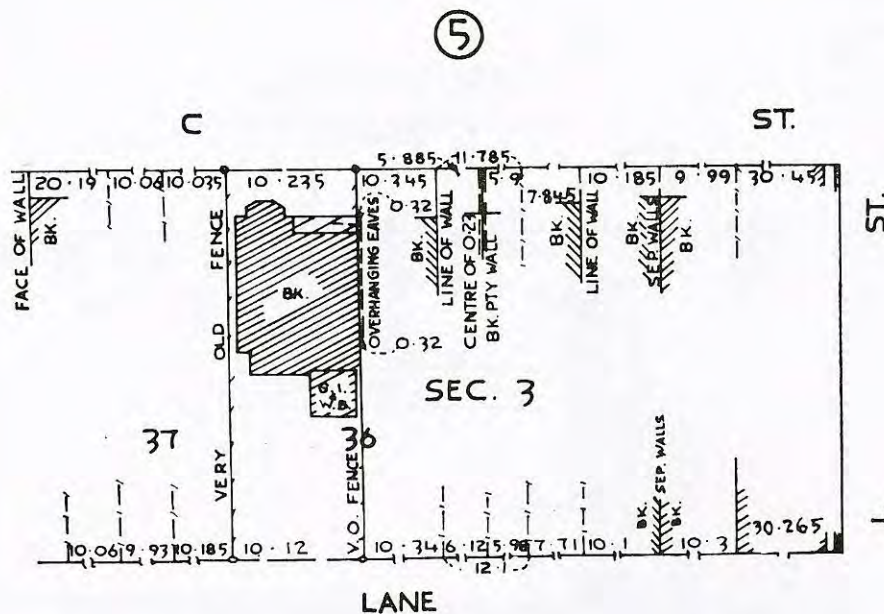
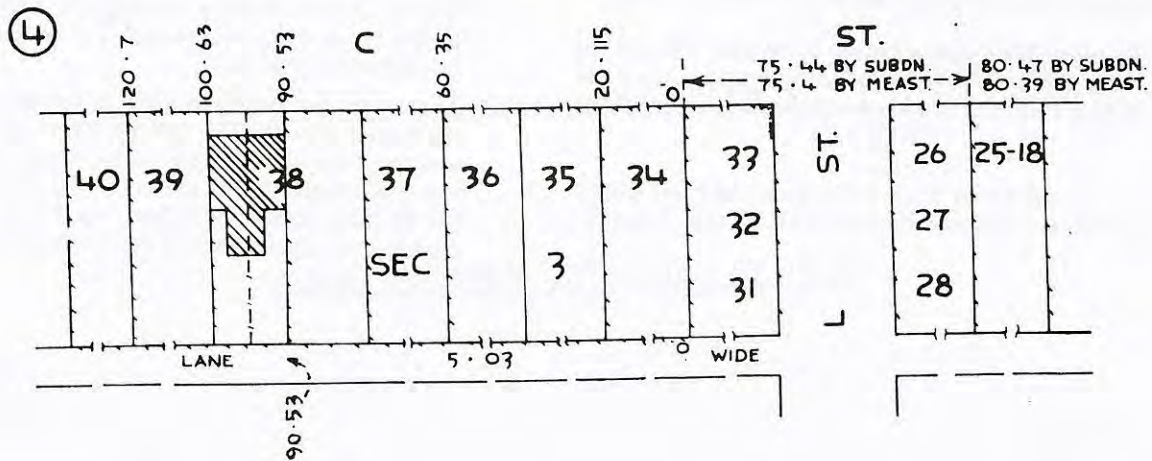
Inspection of *Sketches 4* and *5* and comparison of the measurements shown on them with the measurements of the subdivision and the

relevant certificates of title leave no doubt that the fence on the western boundary of Lot 36 (*Sketch 5*) is correct and must be accepted. The question is then whether the relevant certificate of title should be amended to include an excess of 0.175 metres in the frontage of C Street and an excess of 0.06 metres in frontage to the lane thus causing a deficiency in front and rear measurements for the adjoining certificate on the east.

The amendment was made on the grounds:

- (1) The consideration in the transfer (see above) suggested strongly that the building on the land must have been in existence at the date of the transfer. The building is shown on a detail sheet dated 1892.
- (2) That while the purchasers failed to protect themselves by obtaining a survey before taking their transfer, it should be presumed that the intention of the parties to the transfer was that it would include the whole of the building and that the building should, therefore, not be regarded as encroaching on the land remaining to the transferor.





EXAMPLE 14 - DEFICIENCY AND RESIDUE

In 1863 the land lying between Main Road and the Creek was subdivided by Deposited Plan X. In 1913 Lots 8, 9 and 10 of Deposited Plan X were subdivided by Deposited Plan Y - see *Sketch 1*. The total length of the northern boundary of Lots 6 to 10 in Deposited Plan X was 995.76 metres. Deposited Plan Y showed an excess of 1.55 metres in Lots 8, 9 and 10, but this was available and does not affect what is set out below. When Deposited Plan Y was surveyed the common boundary of Lots 7 and 8 Deposited Plan X was defined by a fence, and it is clear that the deficiency of 29.77 metres referred to later must be regarded as being located in Lots 6 and 7.

In 1895 the land adjoining Deposited Plan X on the north was brought under the Real Property Act. The plan (*Sketch 2*) shows the length of the common boundary as 965.99 metres, i.e., 29.77 metres less than Deposited Plan X. There is no Question of alteration in the position of the Creek. Inspection on the ground shows the western bank as hard and rocky, and it is clear that the Creek has always been where it now is.

In 1908 part of the land adjoining Deposited Plan X on the north was transferred (see *Sketch 3*), the length of the boundary common to Deposited Plan X being shown as 960.86 metres, i.e., 5.13 metres less than the application. This difference is due solely to a different definition of the right bank of the Creek which on this side had narrow swampy patch along the bank which later filled in and became firm.

Lots 6 and 7 of Deposited Plan X were sold together. In 1882 part of Lot 6 was transferred. This land was bounded on the east by a line shown as 237.98 metres from the eastern boundary of Lot 7 and on the west by the Creek. The length along the northern boundary of the land sold was 221.49 metres. No fence nor other monument was shown, and it seems clear that a check measurement to the Main Road was not made as this would have disclosed the deficiency referred to above. Immediately after this transfer, a fence was erected defining the eastern boundary of the

land sold and that fence was still there in 1942. The posts at each end were obviously of great age and it is to be noted that the measurement from this fence to the Creek was 222.81 metres as compared with 221.49 metres by the transfer - a close agreement considering the circumstances.

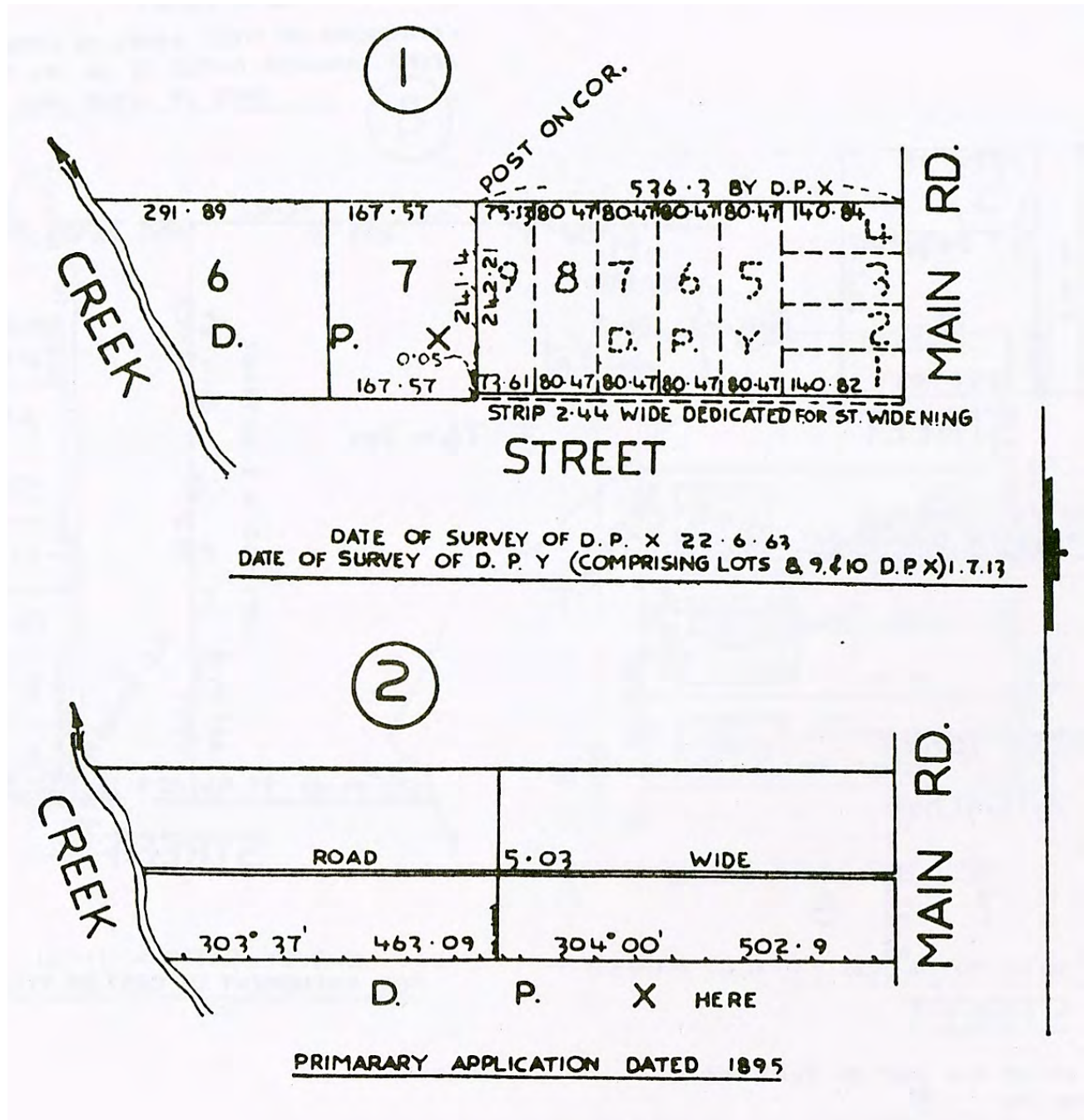
In 1904 the owner of Lot 7 and the residue of Lot 6 after the transfer of 1882 sold the land illustrated in *Sketch 6*. This land is bounded on the east by the fence defining the common boundary between Lot 7 Deposited Plan X and Lot 9 Deposited Plan Y (see above), and on the west by the fence erected by the purchaser under transfer of 1882 (*Sketch 4*). While, by measurement and description, it purported to be part only of the land in the vendor's certificate of title, it was in fact the whole of the land available for his certificate. There is reason to believe that the vendor was informed by the surveyor that the transfer exhausted his land and he did not attempt any further dealing with it. However, his certificate lay partially cancelled from 1904 to 1941 and the local council continued to rate the land shown in *Sketch 7*. This parcel was sold for unpaid rates in 1940 and a certificate issued to the purchaser from the Council. He endeavoured to mark out his land west of the fence erected by the purchaser under the transfer of 1882 (*Sketch 4*). This brought from the registered proprietor of the land to the west of the fence an application for a new certificate of title, accompanied by a plan of survey (*Sketch 8*).

The facts of the case became clear after investigation in the Office and inspection on the ground. The Office was called upon to pay and did pay compensation to a purchaser from the person who bought from the Council.

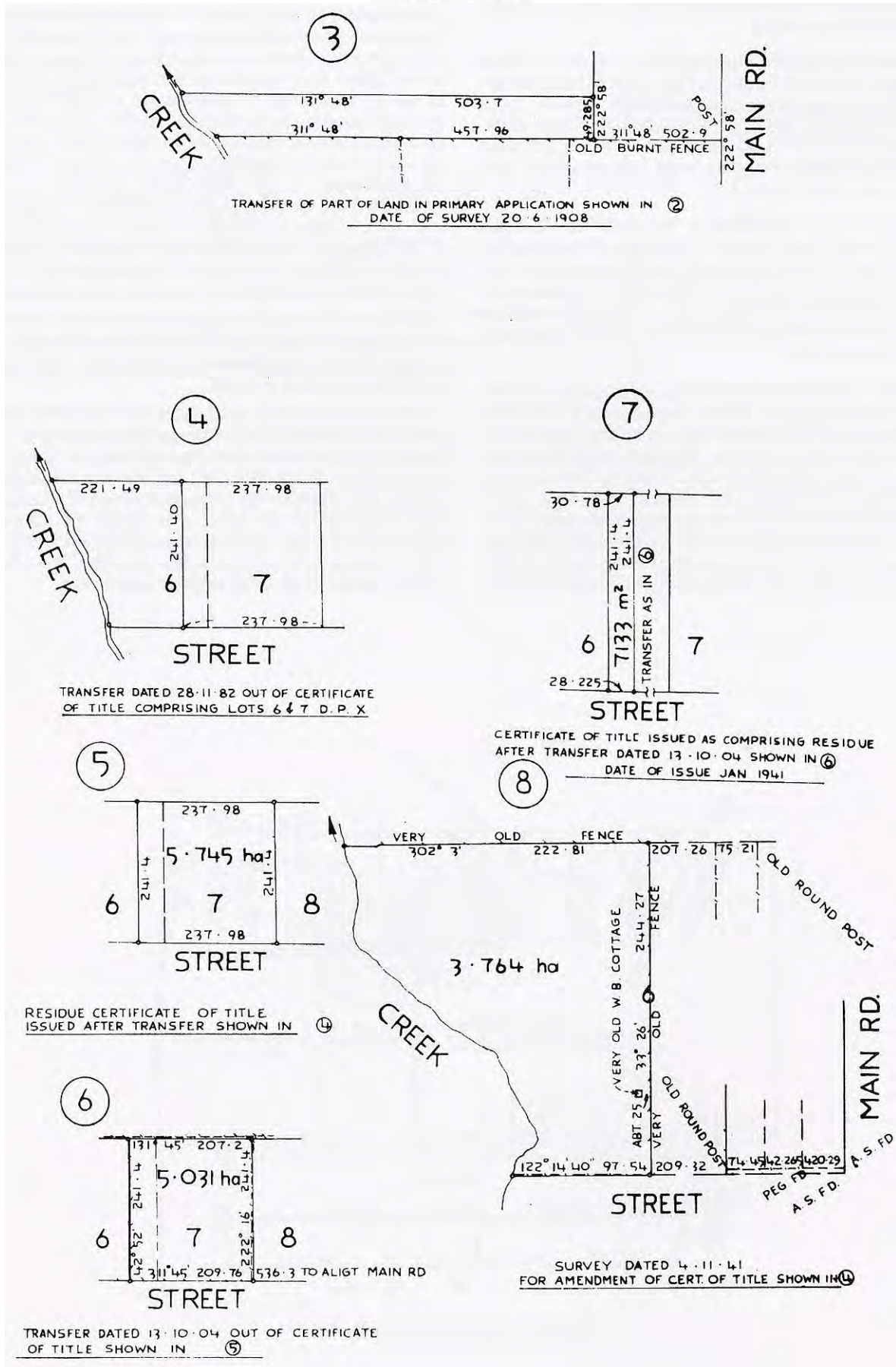
If this case is examined carefully, it will be seen that there were several opportunities to detect the deficiency and to take steps to have the titles corrected down to and including the time of issue of the certificate of title illustrated in *Sketch 7*. All these opportunities were missed by the officers concerned. The lesson is that when discrepancies are found they should be followed and cleared up at

once; and when an old certificate has been lying partially cancelled for a long period a

residue should not be issued without careful check of all available information



EXAMPLE 14



EXAMPLE 15 - ESTABLISHED OCCUPATIONS VERSUS MEASUREMENTS

Sketch 1 shows a section in a town laid out by Government Survey before the year 1850. Later the streets in the vicinity were aligned and apparently the chains used were of about the same standard as the frontage to B Street between E Street and M Street measured the same in each instance. Later surveys, however, show an excess of approximately 0.485 metres in the frontage of the section in B Street. The allotments in this section were sold after 1863 and were all granted under the Real Property Act in accordance with the original survey.

The first resurvey in the section (in 1908) is shown in *Sketch 2*. The later survey in 1921 shown in *Sketch 3* agrees with this to within 0.07 metres to the fence on the boundary at the centre of Allotment 13. The survey of 1921 also shows the southern boundary of Allotment 13 as *occupied* at 80.745 metres from M street - an excess of 0.275 metres - the *occupation* of Allotment 12 as 40.2 metres - practically correct - the next occupation southerly as 20.115 metres, agreeing with certificate of title measurement, and the next occupation as 60.53 metres, giving an excess of 0.175 metres in occupations of Allotments 10 and 11. The occupations on Allotments 11 and 12 were very old. Allotments 8 and 9 had previously been subdivided by a deposited plan and the fence shown in the marginal diagram of *Sketch 3* was clearly the northern boundary of that deposited plan. In spite of these indications of where the actual allotment boundaries were the Surveyor was allowed to place the southern boundary of Allotment 13 at 0.28 metres north of the occupation by fixing it by measurement only from M Street.

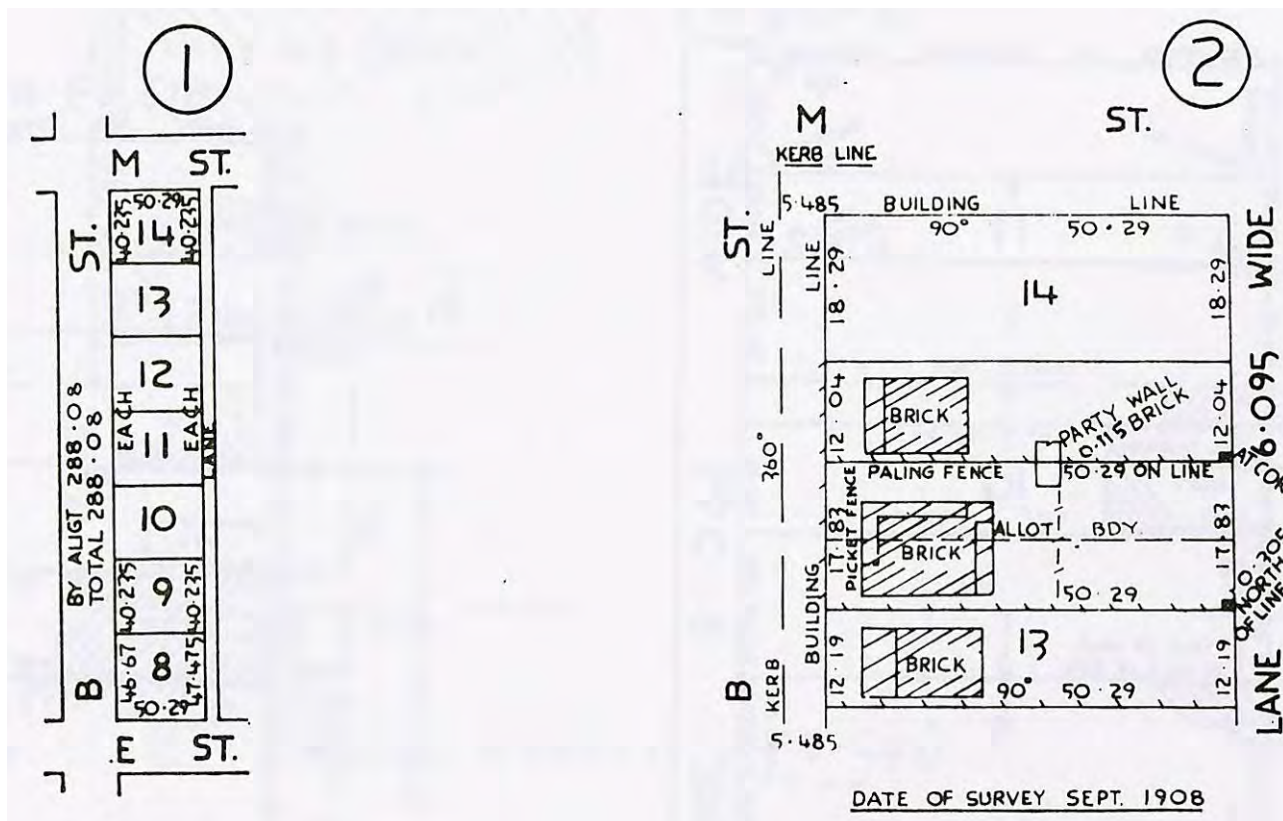
The next survey as shown in *Sketch 4* was allowed to carry on the erroneous fixing by measurement from the northern end only (disregarding the close agreement of intermediate occupations) and was passed showing an excess of 0.355 metres in the southern half of Allotment 10. The pegs and bolts were put in by the Surveyor who did the

surveys in 1921 and 1923. They attempt to fix the boundaries merely by measurement from the northern end of the section, disregarding all evidence to the contrary. These marks have no weight and are the result of an erroneous view of the method to be adopted in refixing boundaries.

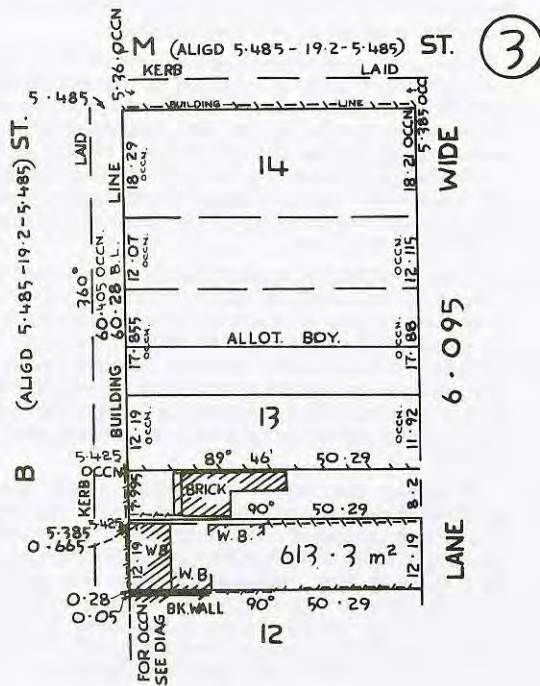
Next in 1923 the survey represented in *Sketch 5* was passed and the certificate for the southern half of Allotment 10 which called for 20.115 metres was allowed an excess of 0.355 metres which was not justified on the facts. This erroneous fixing resulted in the erection of a new concrete building on the southern half of Allotment 11 at least 0.225 metres too far north (and remember that there had been a fence on the correct line in 1921), thus depriving the owner of the northern half of Allotment 11 of 0.225 metres of land.

This was brought directly under notice in 1935 when the plan (*Sketch 6*) was lodged with an order for a new certificate of title for the southern half of Allotment 12. The owner of the adjoining part of Allotment 11 objected to the boundary, claiming 0.225 metres north of his occupation. This claim is not supported by the history of the section and the application for a new certificate of title for the southern half of Allotment 12 is clearly entitled to succeed. The Office will have to compensate the adjoining owner on the south.

This case is a clear example of the futility of trying to refix boundaries by measurement only, particularly when the attempt is to start from one end only, disregarding the evidence of consistent occupations in the centre of the section and transferring excesses so as to cause encroachment when they could be distributed fairly on both sides of the consistent occupations without causing any disturbances of established boundaries which, in the absence of original marks, are the best, and in fact the only evidence of where the original boundaries were.

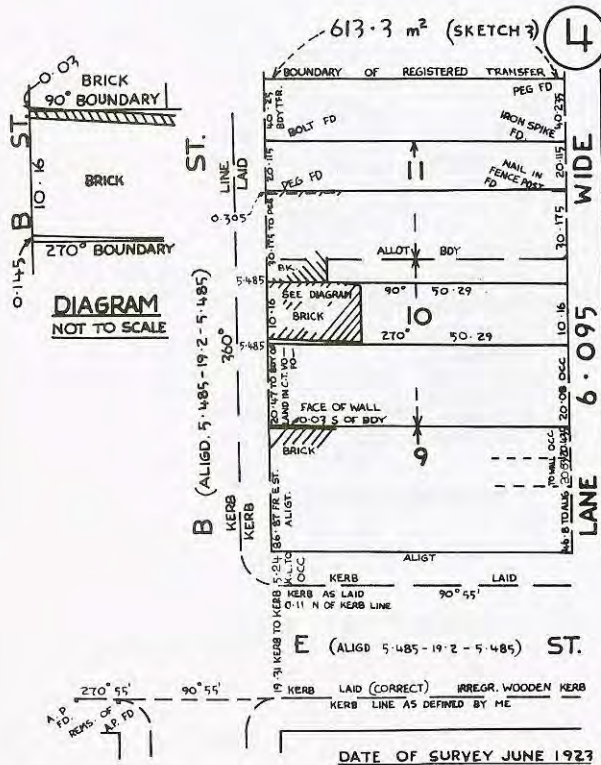
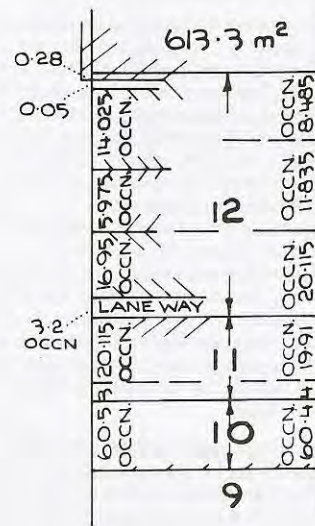


EXAMPLE 15

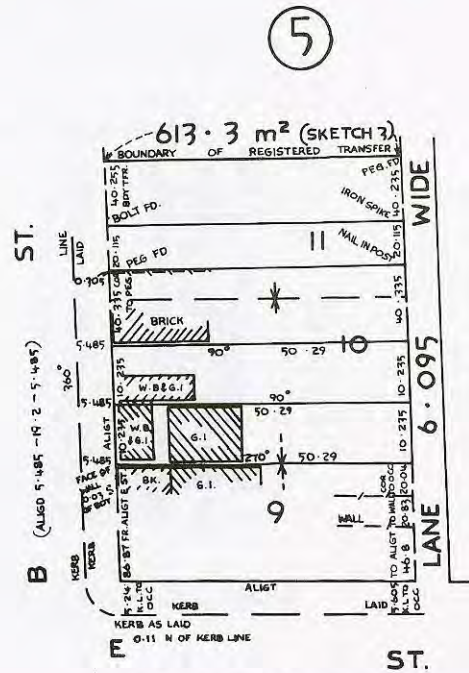


DATE OF SURVEY MAY 1921

DIAGRAM
NOT TO SCALE

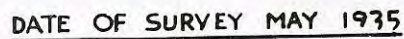


DATE OF SURVEY JUNE 1923



DATE OF SURVEY JULY 1923

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EXAMPLE 16 - REDEFINITION OF PORTION

Question

Sketch 1 shows a plan of survey of redefinition of Portion 81 held under Torrens Title.

Copies of the diagram on the certificate of title (*Sketch 4*), the original plan on which the certificate is based (*Sketch 5*) and of all relevant parts of adjoining surveys are shown in the plan.

The boundaries of the survey are to be investigated and a report prepared as regards any necessary amendments if it is considered that the plan includes land not comprised in the certificate.

The nature and position of the permanent marks placed in the deviation of the reserved road at the points marked X, Y and Z should also be discussed.

It should be noted that -

- (a) the original survey of Portion 81 and all adjoining surveys were made between the years 1859 and 1864 by the same surveyor;
- (b) by Grant description, Portion 81 is bounded on the west, northwest and west by the right bank of the river and the area of 20.23 hectares is exclusive of the areas of the lagoon, of the 30.48 metres reservation and of a reserved road which towards the south passes along the river bank;
- (c) the reserved road through Portion 81 was remarked by the Department of Lands in 1880 (*Sketch 2*) and this survey also determined and marked the landward boundary of the 30.48 metres reservation. Reference to the file of papers in the Department of Lands in connection with the survey disclosed that there had been no alteration in the bank of the river since the date of the Grant. The Surveyor-General was satisfied on that point;
- (d) Portions 56 and 57 were separately brought under the provisions of the Real Property Act. Neither application was

accompanied by a plan of survey and the dimensions on the certificate of title issued on each application were in accordance with the original Crown Grant;

- (e) the Surveyor who prepared the subject plan of redefinition reports -
 - (i) that the bank of the river has been altered by gradual and imperceptible process of nature;
 - (ii) that the bed of the lagoon (1 ½ acres [6070 square metres] by Grant) has shrunk to the dimensions of a small waterhole (404.7 square metres) owing to the building of a dam upstream of the creek which originally flowed into and fed the lagoon;
 - (iii) that a deviation had to be made in the survey of the reserved road to avoid a low lying and swampy patch and to contain the formation of the constructed road;
- (f) the direct measurement between the points A and B is (by calculation) 89° 59' 20", 462.84 metres, and the direct measurement by calculation between the points A and C (30.48 metres reservation) is 179° 06', 167.77 metres.

Answer

1. Investigation of the resurvey (*Sketch 2*) shows that in 1880:

- (a) All the original corners of Portion 81 were in existence.
- (b) The northern, southern and eastern boundaries represented in the plan of the original portion were marked as such on the ground.
- (c) The angular measurements of this survey were in good agreement with the original survey though differences in linear measurements are disclosed on the northern, southern and eastern boundaries.

2. In the subject survey (*Sketch 1*), the marks found of the original survey were a flour-blazed tree near the northeastern corner of the block, two dead blazed trees 1.61 and 1.81 metres west of the recent fence purported to have been erected on the eastern boundary and a double-blazed tree on the southern boundary.

However, numerous pegs were found of the resurvey made in 1880 (*Sketch 2*) and from these and other data the boundaries of the original portion can be re-established.

3. The *northern* boundary shown in the certificate of title as one straight line without improvements is shown in the subject plan as in three lines defined by a very old fence, the offsets at the angles in the fencing being 5.43 metres and 5.4 metres north of a straight line between terminal points.

To the extent that the fenced line is north of a straight line between the broad arrow peg found at the point A and the stump of the four-blazed tree near B encroachment is caused on adjoining Portion 42. The broad arrow peg at A was placed in the resurvey (*Sketch 2*) in which the original corner tree of Portions 42 and 81 was found.

That the fence along this boundary is not on the boundary line is evidenced from the following comparisons along the reserved road:

<i>By resurvey 1880</i>	<i>By plan</i>	<i>Difference</i>
(a) 307.67 metres (between broad arrow pegs placed)	317.79 metres (broad arrow peg to fence)	+ 10.12 metres
(b) 138.85 metres (between broad arrow pegs placed)	128.73 metres (fence to peg)	- 10.12 metres

The plan should be amended by eliminating the area between the fenced boundary and a straight line between the broad arrow peg found at A and the corner tree near B. This area is part of Portion 42 which is not under the Real Property Act.

If the applicants desire to obtain title under the Act to this strip, they should either -

- (1) establish a title by possession in an application to bring the strip under the provisions of the Real Property Act, or
- (2) obtain a conveyance from the owner of Portion 42 and lodge an application to bring the strip under the Act.

4. The *eastern boundary* is defined in the plan by a recent fence which is parallel to and at the certificate of title distance (402.38metres) from a very old fence on the eastern boundary of adjoining Portion 56.

So far as this fence is 1.205 metres east of the four-blazed stump of the dead tree, encroachment is caused on Portion 56.

Other than two dead blazed trees 1.61 and 1.81 metres west of the fenced line, no other marking of the eastern boundary of Portion 81 was found in subject survey. Reference to the copies of the original plans shows that the line originally ran through heavily timbered scrub, and would, therefore, be within 0.905 metres of the blazed trees. (See N.S.W. Crown Lands Office Survey Directions, 1981 as regards this.) It will be obvious from the foregoing that the recent fence has been placed approximately 1.205 metres east of and parallel to the original boundary line of the portion.

Furthermore, investigation of the resurvey (*Sketch 2*) in light of the information in subject plan discloses close comparison in angular and linear dimensions with each other and the resurvey would appear to be reliable.

The original peg and corner tree at the southeastern corner of Portion 81 were found in 1880 at a distance 658.4 metres easterly from a broad arrow peg placed at the road intersection, and it would appear that the corner should now be refixed at that distance.

In the subject plan the recent fence post at the south-eastern corner of the block is 659.84 metres east from the broad arrow peg, an indication that this post is some 1.44 metres east of the true corner.

This is proved when the connections in the subject plan are compared with the measurements shown in the copies of the original plans of Portion 42 and adjoining portions.

It is obvious from the comparisons that the original surveys were laid out with a chain considerably longer than standard, the excess being approximately 1.205 metres in 402 metres and the conclusion is that no less a measurement than 403.54 metres should be assigned to the southern boundary of adjoining Portion 56.

From the foregoing, it will be seen that the plan includes along and within its eastern boundary a strip of land approximately 1.205 metres wide which is part of the land in the adjoining certificate of title and which can be acquired from the adjoining owner only by way of transfer.

5. The *southern boundary* has been correctly established. It is defined by a fence, passes through a double-blazed tree stump and the line produced easterly passes through the corner post of adjoining occupations. At the western corner the broad arrow peg of the 1880 resurvey was found and the angular and linear agreement on this boundary by the subject plan with the resurvey - in which the original corners were found - is very close.

6. The area west and northwest of the reserved road on lines $14^{\circ} 00'$ and $56^{\circ} 58'$ is accretion to the road and should be excluded from the plan. Title to this area can only be obtained by alienation from the Crown.

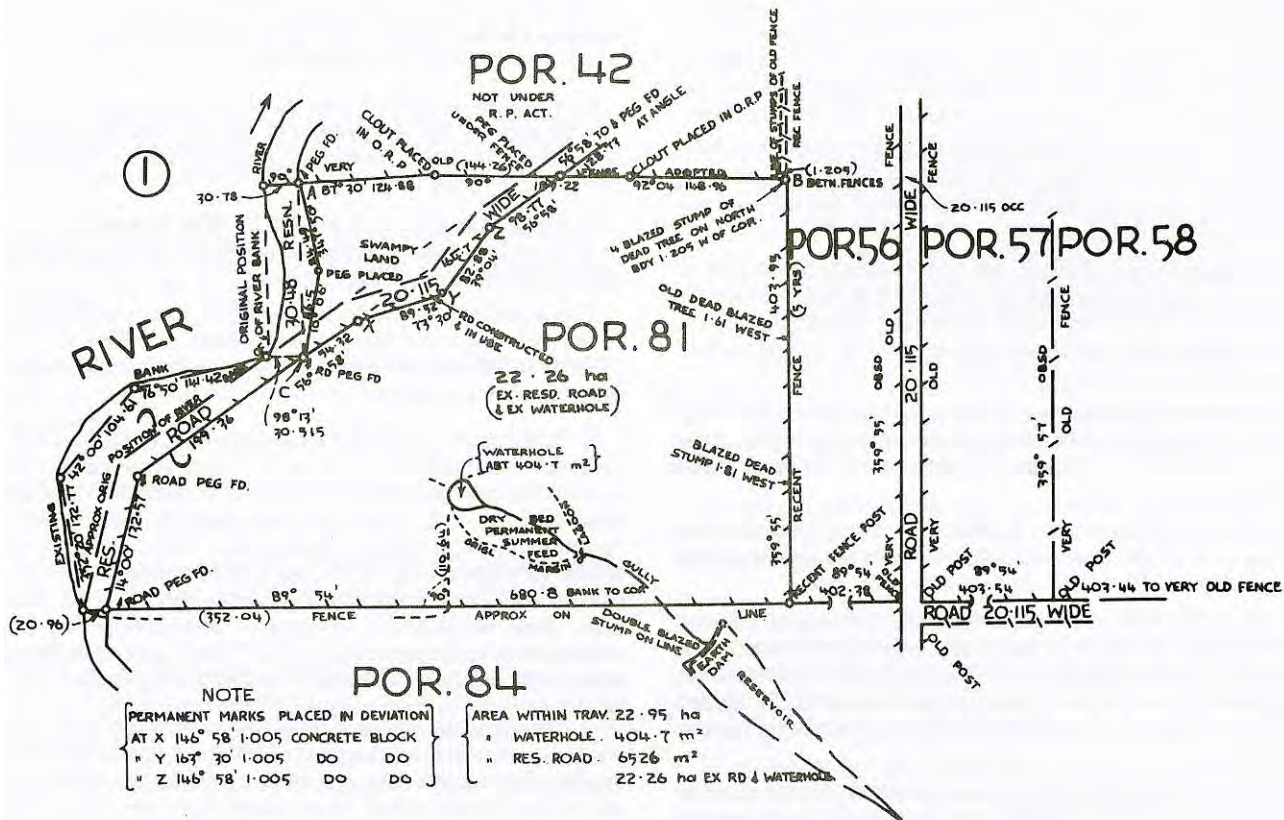
7. The landward boundary of the 30.48 metres reservation has been incorrectly defined in the plan from the existing high water mark which has been altered by erosion.

This boundary should be re-established as a straight line between the broad arrow pegs found at A and C as in the resurvey in 1880 (*Sketch 2*) in which the boundary as at the date of Grant was established and accepted.

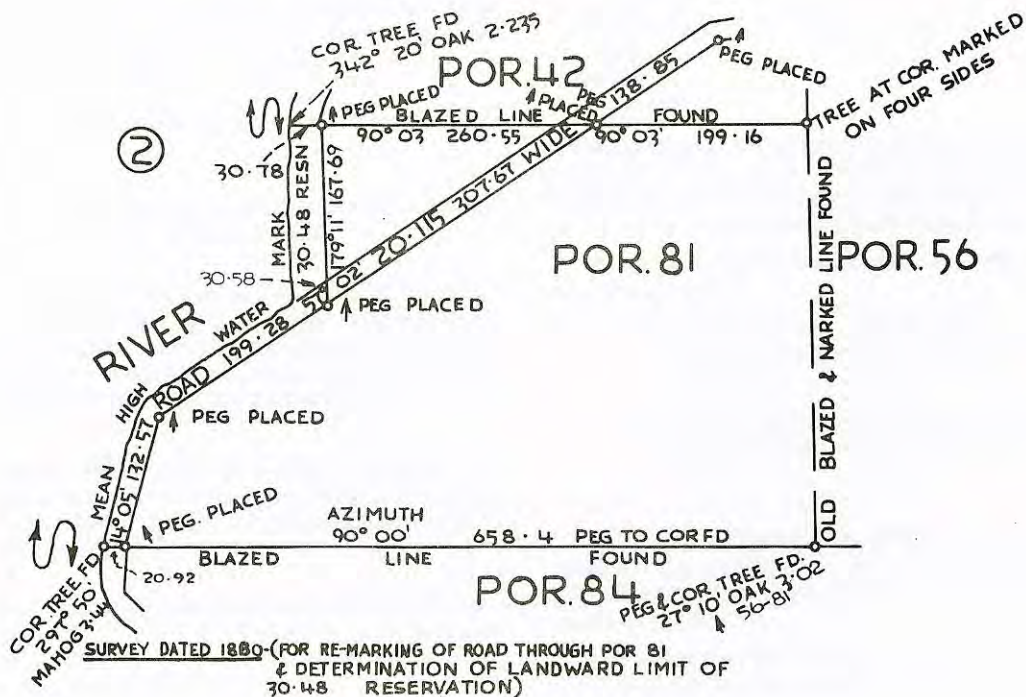
8. With respect to the deviation of the reserved road it will be necessary for application to be made to the Crown Lands Office to have the road established in the altered position. The permanent marks at X, Y, Z have not been placed in the positions required by Survey Practice Regulations, 1933. (Note. - Iron spikes, galvanized iron rods or galvanized iron pipes, if used in place of the concrete blocks which have been inserted, would have been acceptable.) (Following amendments in 1972, reference marks are prescribed by No. 37 Survey Practice Regulations, 1933 and their placement is set out in Regulation 38.)

9. The plan includes part (now dry) of the bed of a lagoon which is excluded from the grant of Portion 81 and to which the applicant has no title. The area 6070 square metres covering the site of the lagoon should be excluded from the plan. In this respect, see Crown Lands Consolidation Act, 1913, Section 235A.

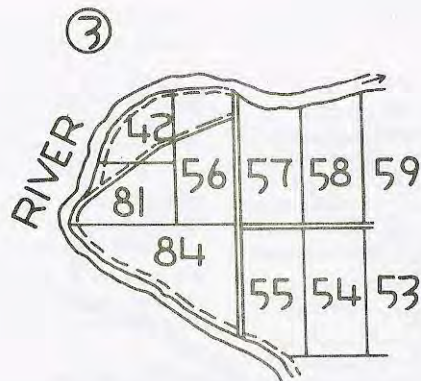
Title to the dry bed of the lagoon can only be acquired by alienation from the Crown.



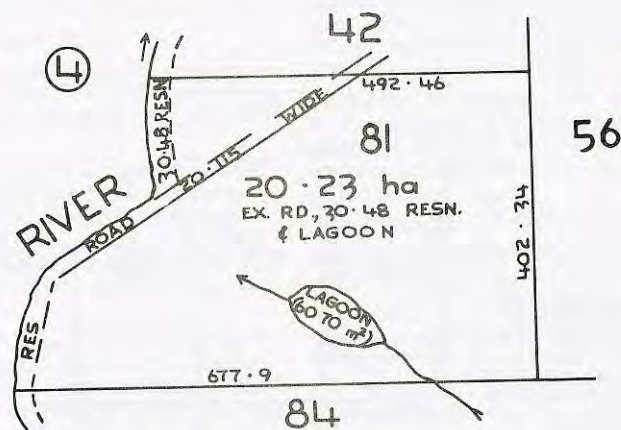
PLAN OF SURVEY DATED 1939



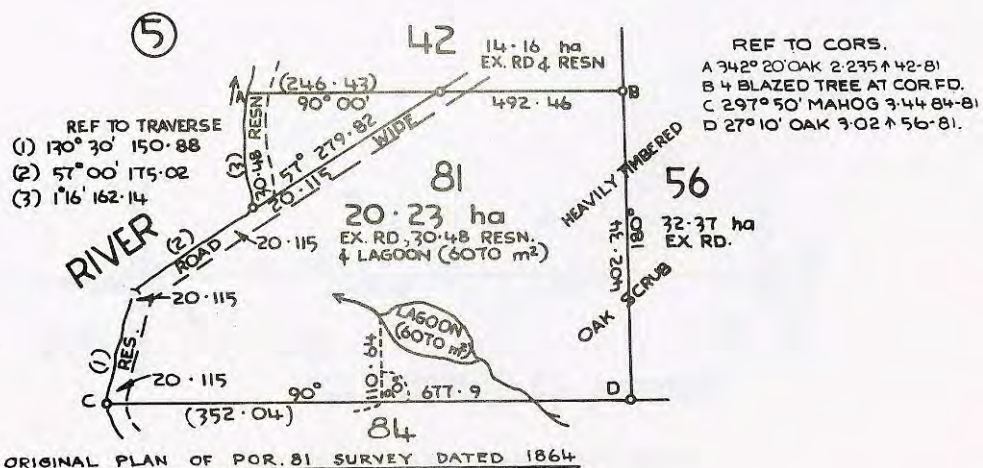
EXAMPLE 16



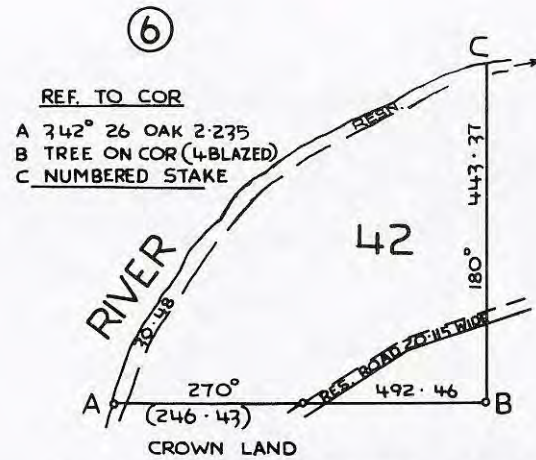
COPY OF PART OF PARISH MAP



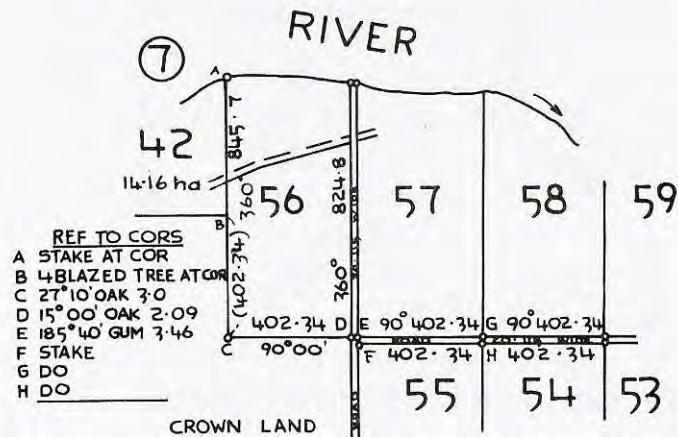
COPY OF PLAN ON CERTIFICATE OF TITLE



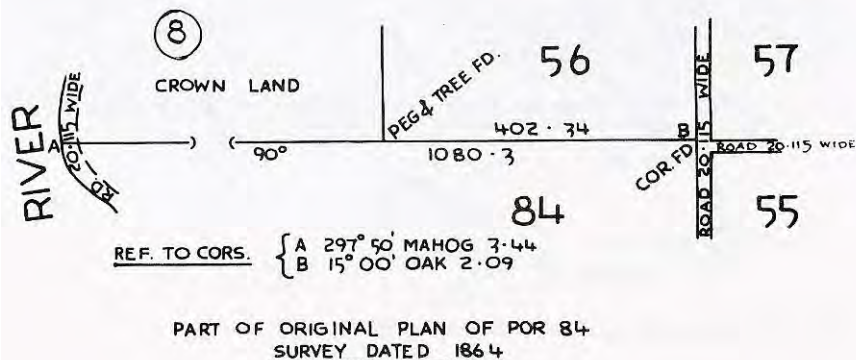
EXAMPLE 16



ORIGINAL PLAN OF POR. 42 - SURVEY DATED 1859



PART OF ORIGINAL PLAN OF PORS 53 TO 59 INCLUSIVE
SURVEY DATED 1860



EXAMPLE 17 - CHAINAGE DIFFERENCE AND STARTING POINT

Question

Sketch 1 is a plan of survey lodged with a Primary Application and purports to delineate Lots 7, 8 and 9 of the old system subdivision shown in *Sketch 2*.

The date of the subdivision is 1899. Bay Street and High Street were aligned in 1900 and a copy of the alignment plan is shown in *Sketch 3*. Military Road was aligned in 1873.

Lots 1 to 6, inclusive, were brought under the Act by an application dated 1899, which was not accompanied by a plan of survey. The dimensions shown in the certificate of title were in accordance with the information in the plan of subdivision.

Out of this certificate of title, a parcel of land was transferred in 1905. The location and measurements of this parcel were shown by sketch plan endorsed on the transfer as shown in *Sketch 4*.

Sketch 5 is compiled from the description in the first conveyance of Lots 7, 8 and 9 (in 1902). There has not been any re-description of this land in any of the documents lodged with the present application.

Sketch 6 is compiled from the description in the first conveyance (dated 1905) of Lot 10, charted on the Estate plan.

You are required to -

- (1) Investigate the plan;
- (2) Frame suitable requisitions for transmission to the surveyor;
- (3) Make a report to the Legal Officer.

Answer

(Survey Requisitions)

1. The subject plan includes part of the land in Certificate of Title, Volume - - Folio - -. This certificate of title is based on a sketch in T. - -, which comprises part of the land included in Application - - (without survey).

As your plan indicates that excesses are available for the frontage of each lot, owing to the difference between the present chainage

standard and that adopted in the survey for the original subdivision, it is considered that the eastern boundary of the land in the certificate of title should be located on a line from the "remains stump posts" at Bay Street to the southern end of the line - $177^{\circ} 40'$, 35.355 metres.

2. The consent of the Under Secretary for Local Government and Lands (or the Maritime Services Board re Port Jackson, Botany Bay or Port Hunter) to your definition of the existing mean high water mark should be furnished.

3. It should be stated whether there are any eaves or guttering attached to the buildings on or adjacent to the boundaries of the subject land.

If so, the necessary information should be added.

4. Notation as to the material of which the new boatshed is constructed should be added.

5. By investigation, the plan includes part of Lot 10 and part only of Lot 9, and the heading should, therefore be amended accordingly.

Answer

(Report)

1. (a) The subject application includes a strip of land, along and within part of the western boundary, varying in width from 0.355 metres at Bay Street to nothing at the southern end of the very old fence. This strip is comprised in Certificate of Title, Volume - - Folio - -, and a requisition has been forwarded to the surveyor requesting the exclusion of this strip.

It is suggested that the (Solicitors for the) applicant be informed of this action.

(b) Applicants' title to the triangular strip of Lot 10 with a base of about 0.2 metres, along and within part of the eastern boundary, between the remains of old fence and the new paling fence, is not disclosed.

By search (incomplete) the documentary title to this strip is in by Deed Book No. page of search, which has accordingly been marked as affecting.

2. (a) The subject application includes a strip of land, from 10.67 metres to 12.19 metres - indicated in the plan as a "Sandy Beach" - between the *original* high water mark of Blue Bay as described in the applicants' deeds and shown in subdivision plan dated 1899, and the *existing* mean high water mark of Blue Bay. This strip may be the result of natural accretion. The surveyor has been requisitioned in this regard.

Attention, however, is drawn to the notation on the plan herein as to the new boatshed and slips at the northeastern corner of subject land and to the "stone walls" which exist beyond the original mean high water mark, a little distance to the west of the subject land.

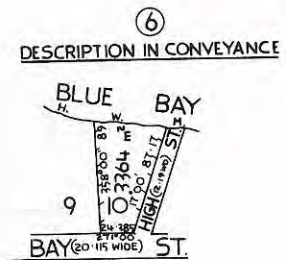
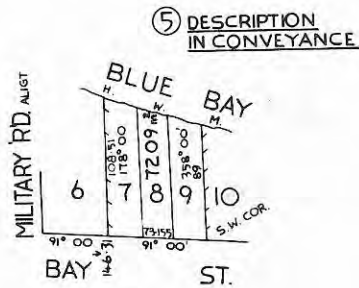
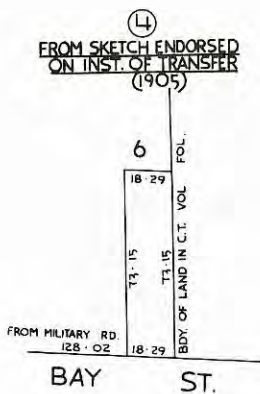
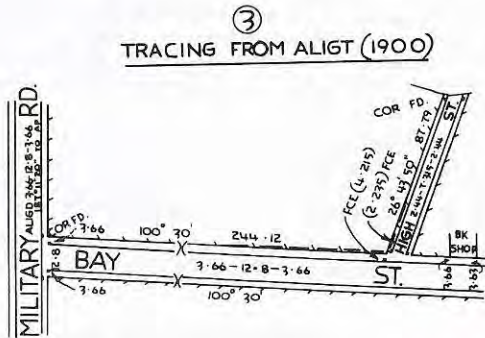
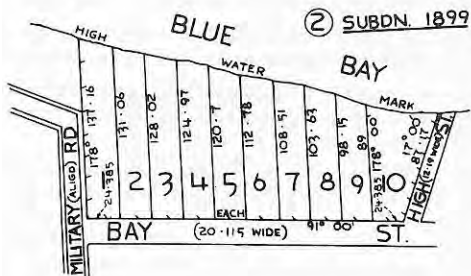
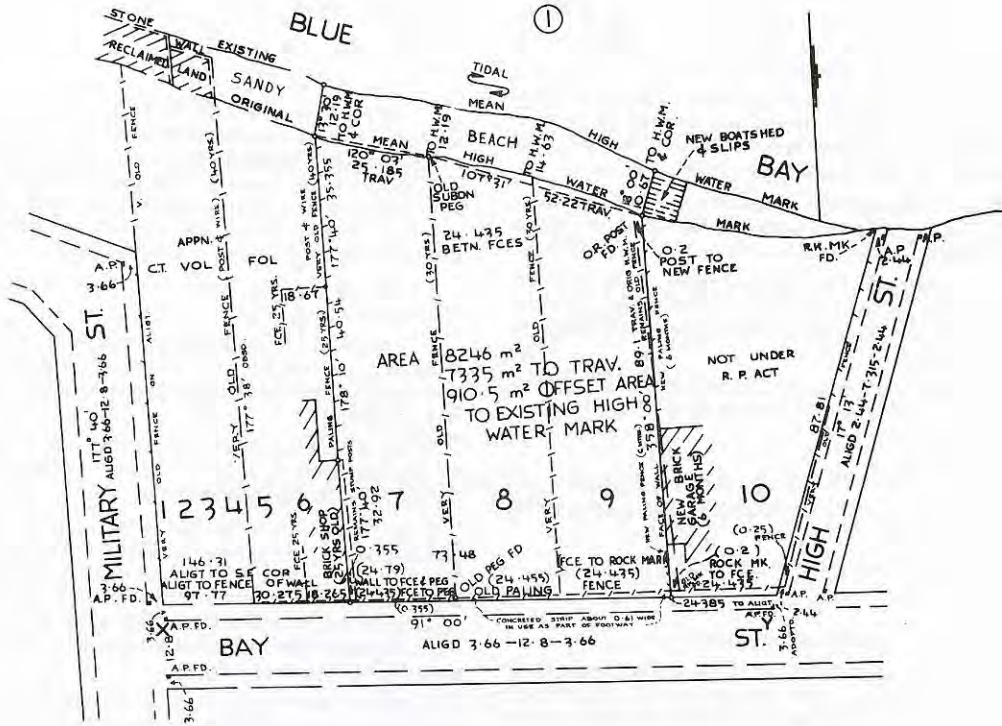
No information is available as to when these were erected.

(b) The Legal Officer's attention is directed to the manner in which the side boundaries of the accreted land are shown.

In this respect, it is noticed that the reclamation work on the common boundary of Lots 4 and 5 appears to be in prolongation of the fenced boundary.

3. According to the plan herein, the subject application includes a concreted strip about 0.6 metres wide (south of the old paling fence) in use as part of the footway of Bay Street which was aligned in the year 1900. The Surveyor has adopted the alignment of the street as the boundary of the land applied for.

EXAMPLE 17



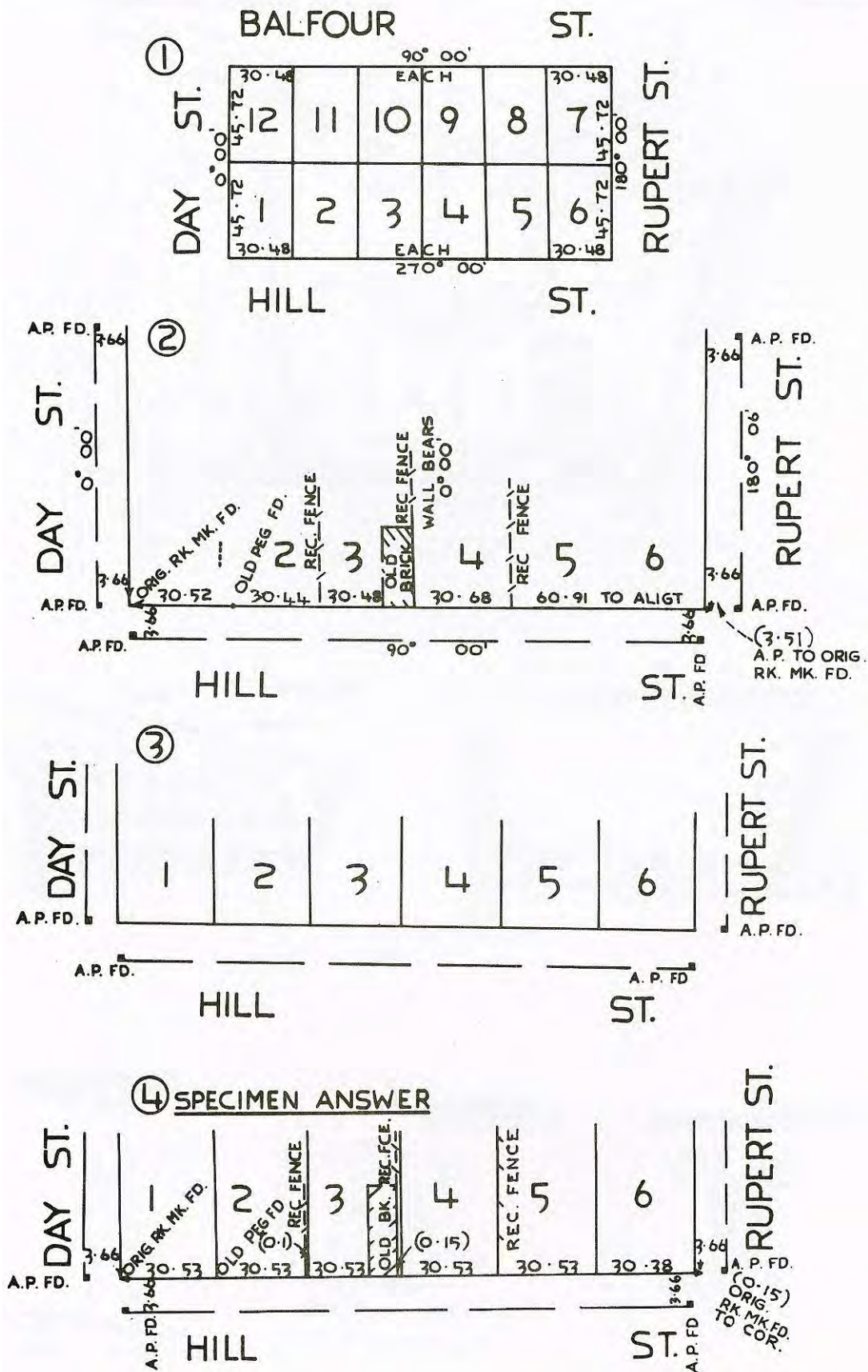
EXAMPLE 18 - ALIGNMENT AND CHAINAGE DIFFERENCE

Sketch 1 is a copy of Deposited Plan A (which was surveyed in 1900). In 1905, lot 3 was brought under Torrens Title pursuant to Primary Application X (unaccompanied by plan of survey). Hill, Day and Rupert Streets were aligned (3.66-12.8-3.66 metres) under section 27 of the Public Roads Act, 1902; the alignment was gazetted in 1910.

Sketch 2 shows the present position of markings and occupations in Hill Street.

You are required to add to *Sketch 3* the length of the Hill Street frontages of lots 1 to 6 inclusive and to show thereon the relationship of existing marks and occupations to side boundaries of those lots, at their intersection with Hill Street.

EXAMPLE 18



EXAMPLE 19 - FENCES

Sketch 1 is a copy of part of a plan of a subdivision made in 1901.

Sketch 2 is a plan for redefinition of Lots 2, 3 and 4. The plan has been approved by Council, and is in order as to close.

Compare *Sketch-2* with the information in *Sketch 1* (showing the comparisons in pencil on *Sketch 2*) and answer the following questions:

- (a) How has the surveyor arrived at his definition of the external boundaries of Lots 2, 3 and 4?
- (b) Is the definition satisfactory ... why?
- (c) If unsatisfactory, show (by diagram below) what the dimensions of the external boundaries of Lots 2, 3 and 4 should be and how a correct definition thereof would relate to that shown in *Sketch 2*.

Specimen Answer

(a) Jones Street is defined from a point 20.115 metres from an original peg found at its western end (A) to a recent peg fd. at its eastern end (B).

Hall Street has been defined by retaining what purports to be original angular relationship with Jones Street through an original peg fd. which marks the angle in the Lot 5 frontage to Hall Street.

The eastern boundary of Lot 4 is a line which is represented as making original angle with Hall Street at a point P.O. distance along Hall Street from the peg fd. The northeastern corner of Lot 4 is the intersection of this line with Jones Street defined as above.

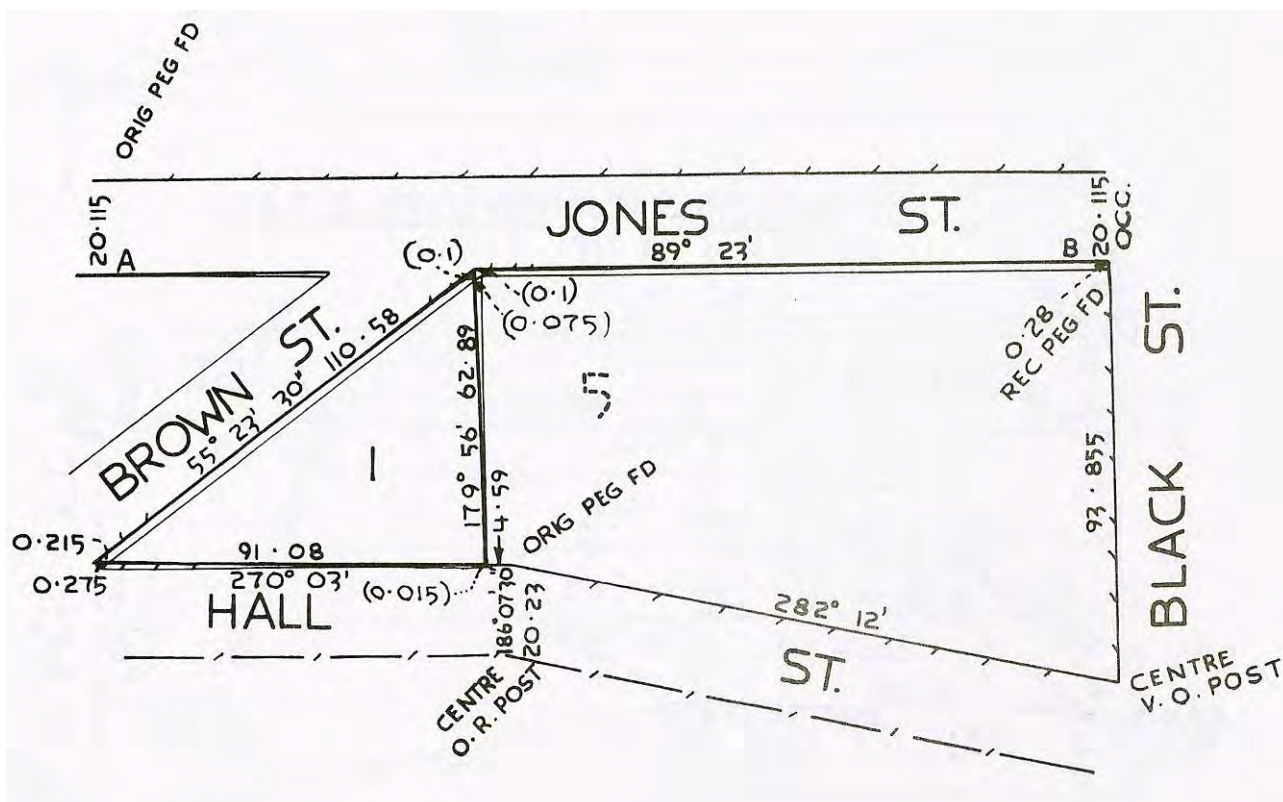
The southeastern side of Brown Street is a line from the said northeastern corner of Lot 4 to a point on the northern side of Hall Street original distance westerly from the original peg fd.

(b) The definition is unsatisfactory because:

- (i) It presumes that N. 89° 53' shown in the 1901 plan as the bearing of Hall Street is N. 89° 53' E. In fact, calculation from the dimensions of Lots 2, 3 and 4 shows that the bearing should be N. 89° 53' W.
- (ii) It rejects occupations which are consistent with original dimensions and adopts a recent unidentified peg fd. at B.
- (iii) Original dimensions can be maintained and, at the same time boundaries created in the 1901 plan can be shown to fall within the material of occupations,
 - (a) on the northern side of Jones Street,
 - (b) on the northeastern and southwestern sides of Hall Street,
 - (c) at the intersection of Jones and Brown Streets,
 - (d) at the intersection of Hall and Brown Streets.

(c) In the sketch below dimensions and heavy lines represent correct relocations of the boundaries shown in the 1901 plan. The bearings are on the same azimuth as in fig. 2 in the question. Compliance with No. 11 of the Survey Practice Regulations would require that these be adjusted by adding 04' to each of them.

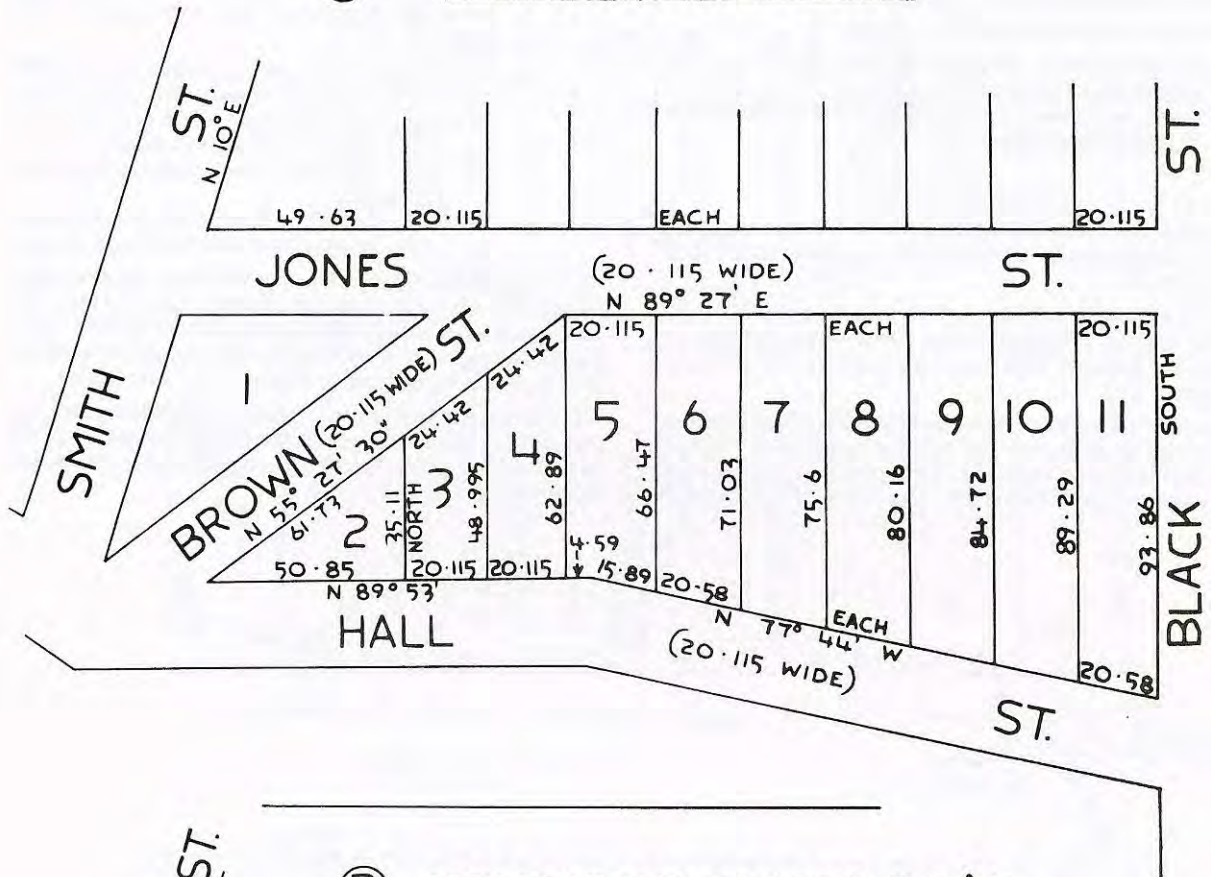
It will be seen that original distances are available, original angles can be maintained and all the occupations shown in the plan fall on boundaries. The only inconsistent object is the recent unidentified peg fd. at B.



EXAMPLE 19

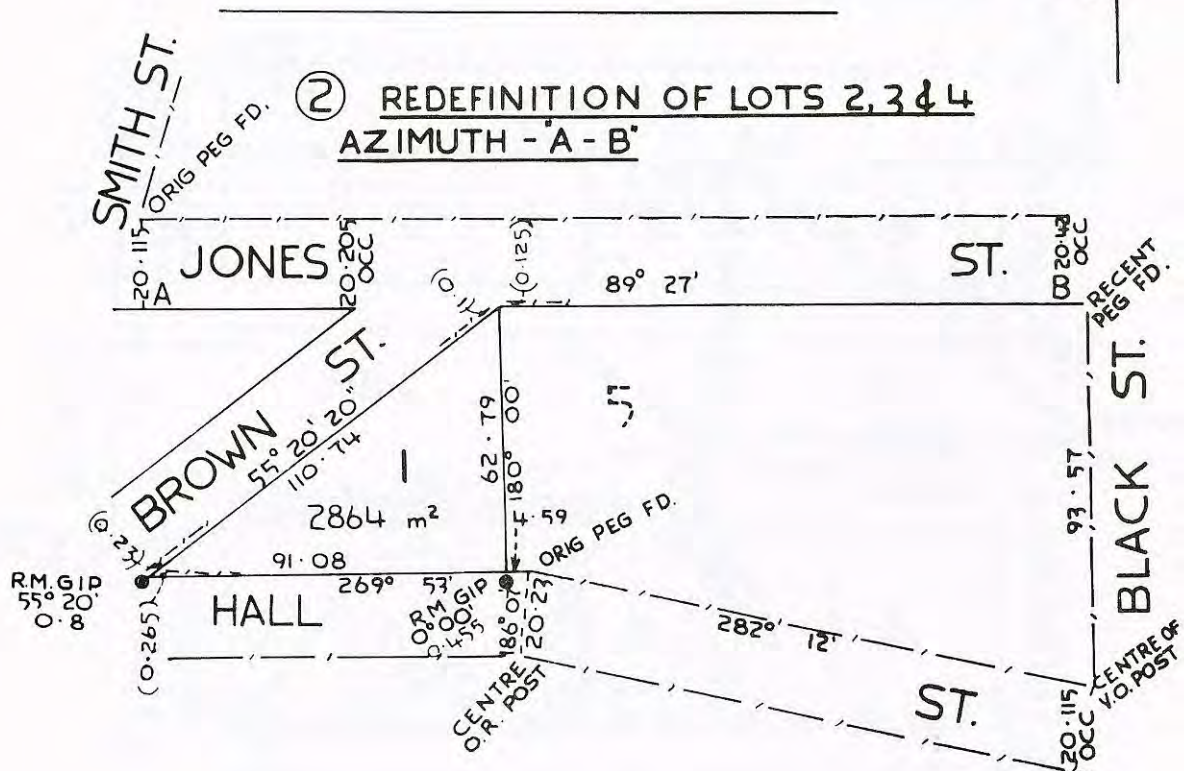
①

SUBDIVISION DATED 1901



②

REDEFINITION OF LOTS 2, 3 & 4 AZIMUTH - 'A - B'



EXAMPLE 20 - OCCUPATIONS ARE NOT MONUMENTS

Sketch 1 is a copy of D.P. A dated 1915.

Sketch 2 is a plan of redefinition of Lot 3.

If you were required to investigate *Sketch 2* to decide as to its acceptability as a redefinition of Lot 3 D.P. A. What requisitions would you send to the surveyor?

Specimen Answer

- (i) The datum line of azimuth, the north point and. meridian of survey should be indicated.
- (ii) A reference mark should be placed in Table Street adjacent to the northwestern or southwestern corner of subject land.
- (iii) The southwestern corner of Lot 3 should be relocated 0.065 metres further northerly along Table Street.
- (iv) The side boundaries of Lot 3 should then be defined by straight lines bearing $71^{\circ} 40'$ from the relocated southwestern corner and the present northwestern corner to points on the rear line respectively 0.22 metres and 0.1 metres northerly from the existing southeastern and north-eastern corners. These boundaries will have the effect of maintaining the original dimensions of Lot 3 and will fall substantially within the material of the brick walls erected on the side boundaries.

Any complete answer would necessarily be accompanied by diagrams of the side boundaries showing offsets from a basic line which are plotted to an exaggerated scale. Specimens of such plots are shown in *Sketches 3 and 4*.

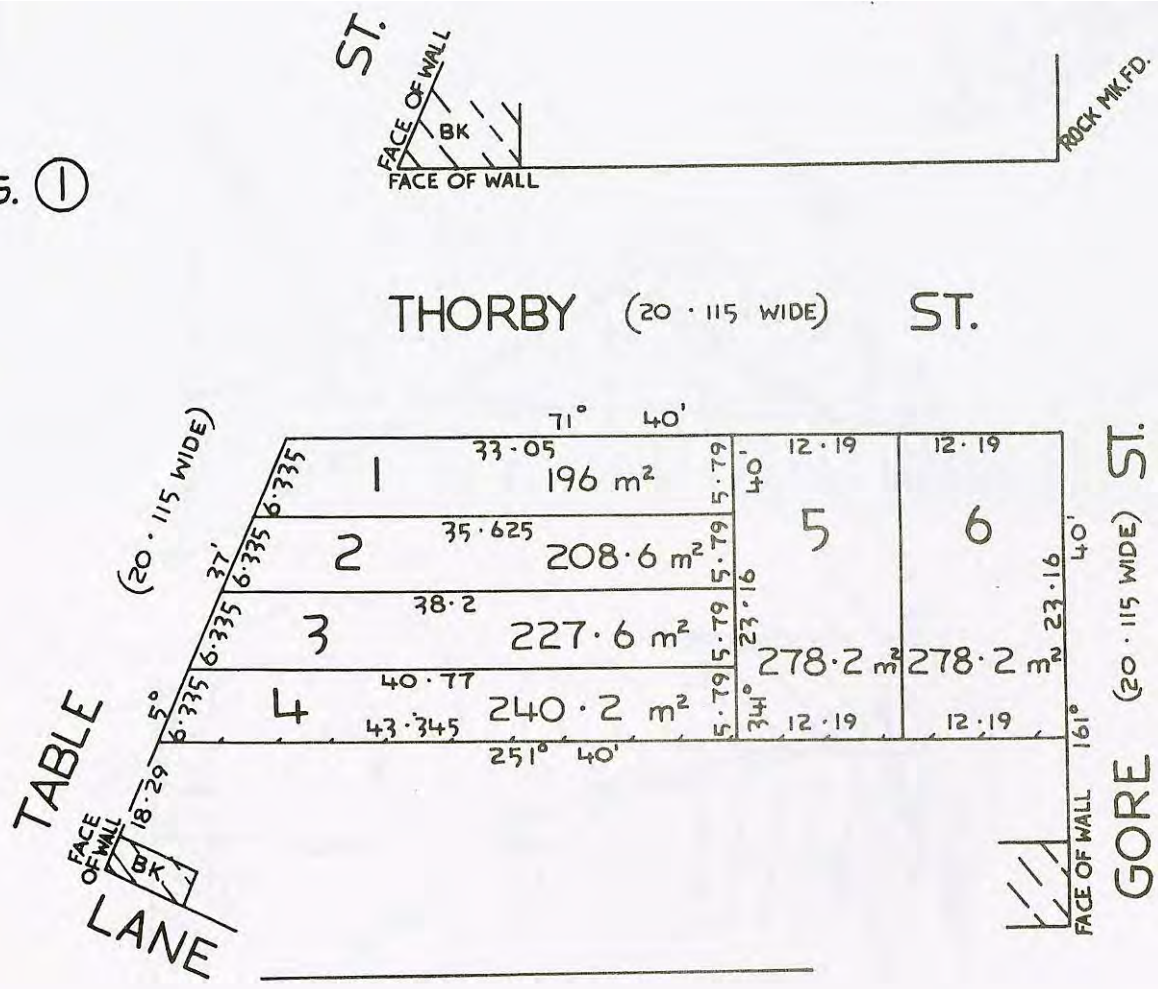
In *Sketch 3* the line A B C D represents the definition "as occupied" of the common boundary between Lots 2 and 3. The line A E represents a basic plotting line and is also in this case the correct redefinition of the boundary.

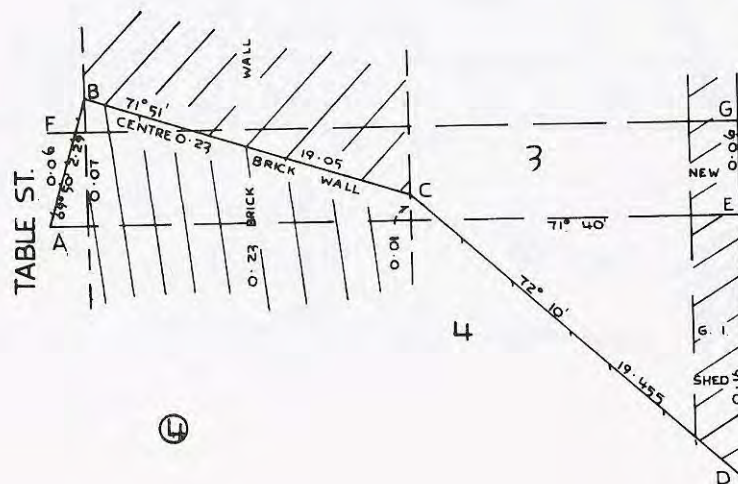
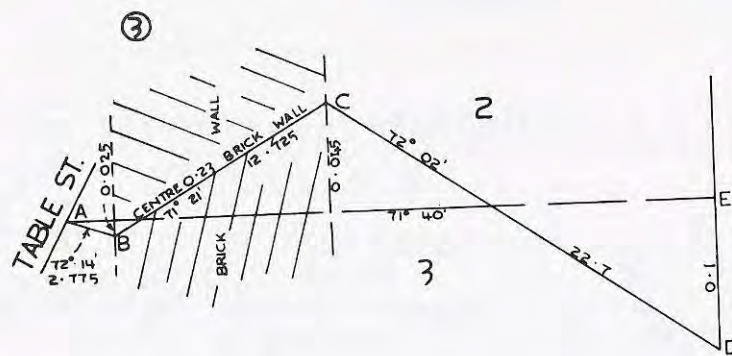
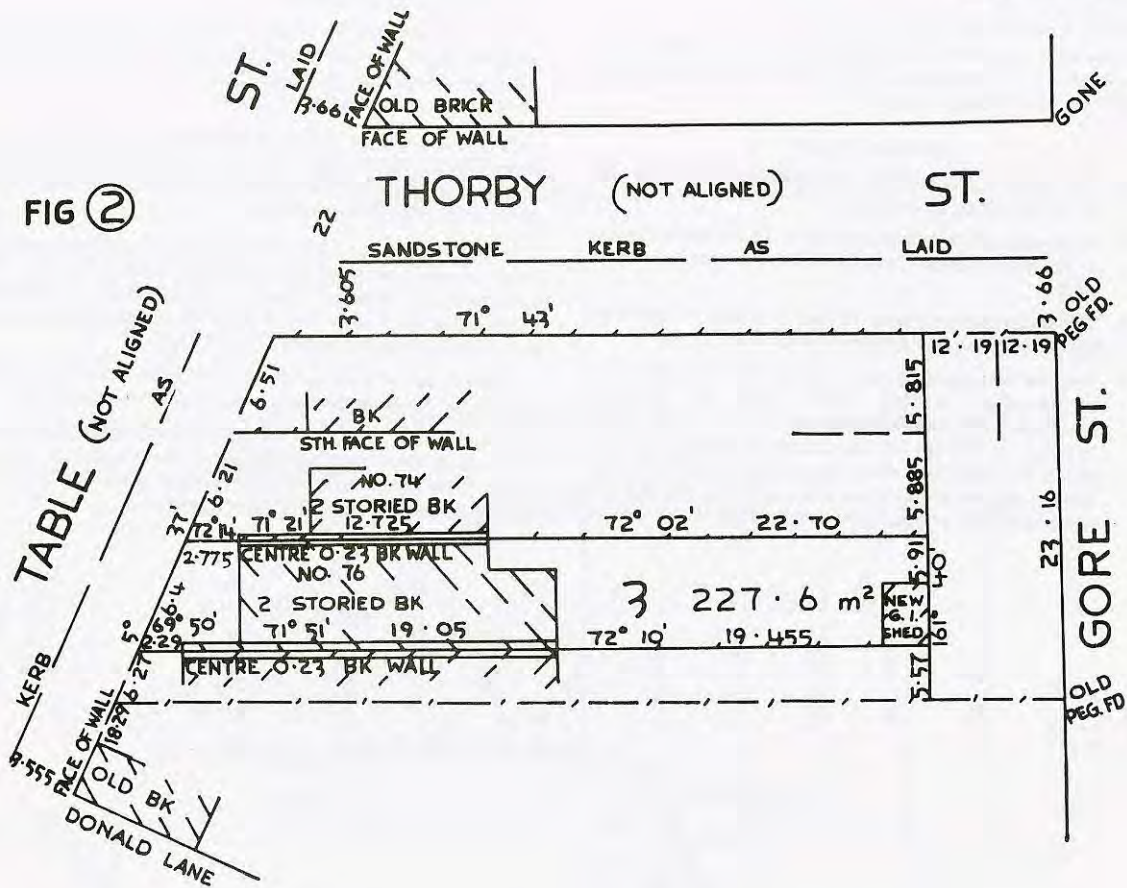
In *Sketch 4* the line A B C D represents the occupied boundary between Lots 3 and 4, and the line A E the basic plotting line. This boundary was relocated from a point 0.065 metres northerly along Table Street from A to a point 0.22 metres northwesterly from D and this is represented by the line F G.

It will be seen that both A E in *Sketch 3* and F G in *Sketch 4* are well within the walls erected on the respective boundaries.

It should also be noted that the plan of redefinition would be rejected since the correct redefinition of the boundaries of Lot 3 results in no alteration to the dimensions of that lot and the lodging party would be informed appropriately.

FIG. ①





EXAMPLE 21 - AERIAL PHOTOGRAPHS: SUDDEN AVULSION

Sketch 1 is taken from the Parish Map and shows part of the frontage of Portion 203 to a Railway and part of its frontage to the River. The position of the River was consistent with that shown in a Miscellaneous Lands Original, based on a survey in 1908.

Sketch 2 shows the relevant part of a survey dated 1957, which was lodged with the application to bring part of Portion 203 under the provisions of the Real Property Act. As each sketch is approximately to the same scale, it is obvious that there has been a considerable change in the positions of the River.

The survey investigator asked the surveyor for "a general preliminary report indicating the nature of the banks and levels of surrounding lands with particular regard to the loop immediately to the west of the railway bridge (as indicated in the Parish Map) which might show how the change in the river bed has occurred since the date of the grant".

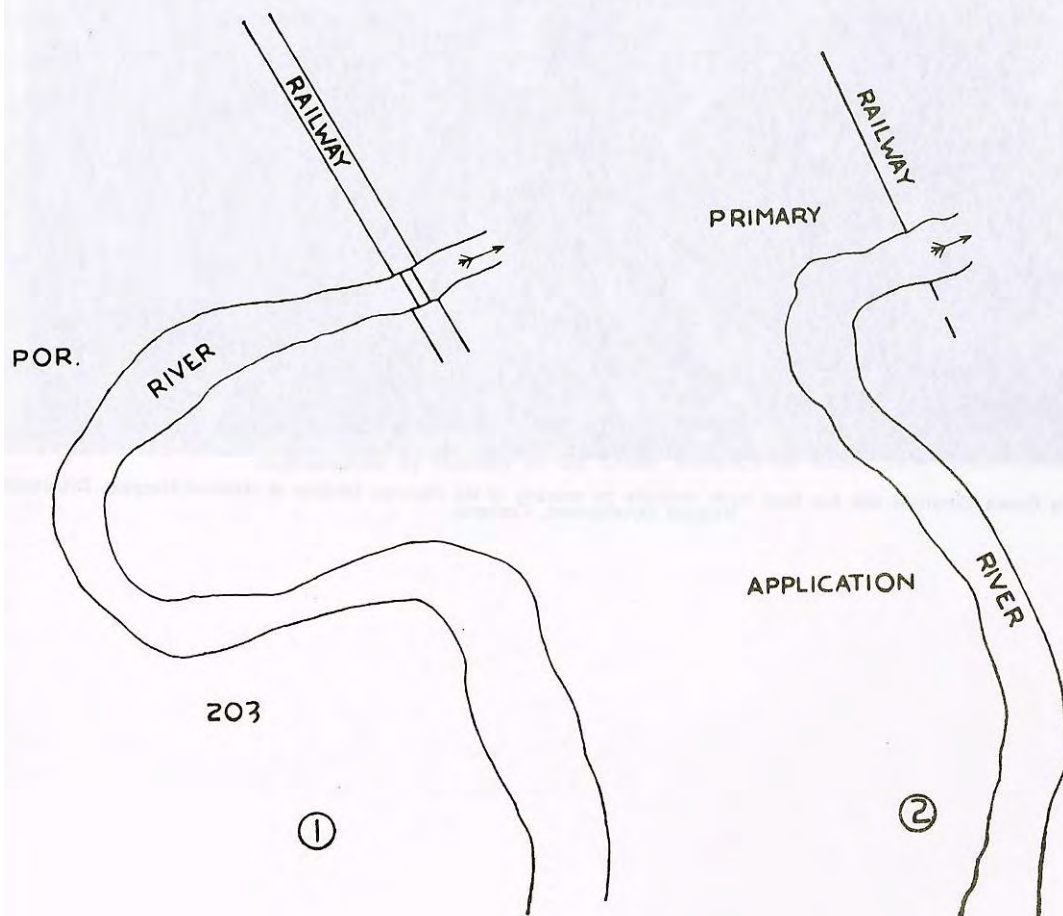
The surveyor's reply was brief. He said: "The land within the loop is slightly lower than surrounding lands but is only covered with water in flood time. At the date of survey, the

river was at an apparent normal height". This would suggest then that the original bed was definable when river heights were normal.

An aerial photograph taken in 1949 shows the River to be in much the same position as that shown in the Parish Map: A, B, C, D on the print. A subsequent aerial photograph taken in 1955 shows a considerable alteration in the course of the River: M, N, O, P on the print. Clearly the change in a mere four years had been sudden - not gradual and imperceptible.

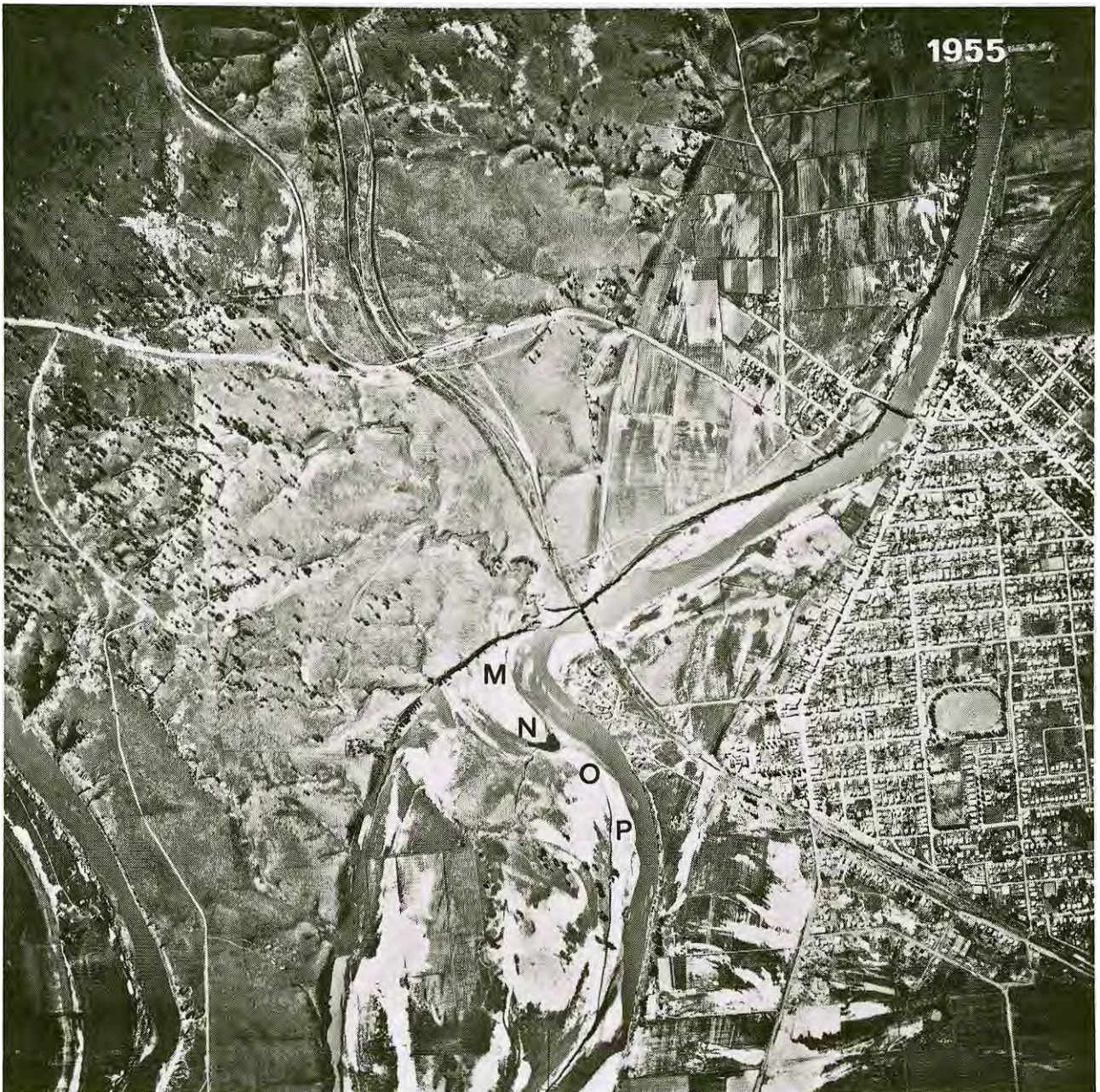
Ultimately, the surveyor amended his plan to revert to the original position of the bank of the River.

In the absence of aerial photographs, the survey investigator as a matter of course, would have pursued the reason for the considerable alteration in the position of the River. Nevertheless, the value of the photographs to the survey investigator is obvious, particularly in the event of a dispute.





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EXAMPLE 22

EXAMPLE WITHDRAWN

EXAMPLE 23

EXAMPLE WITHDRAWN

EXAMPLE 24 - ALIGNMENT AND OCCUPATIONS

Sketch 1 is a copy of the original plan of Section 20 surveyed in 1852. All the Allotments were sold and granted in 1855.

Sketch 2 is a copy of part of the alignment survey of the town made in 1891.

Sketch 3 shows the position of the alignment post at the eastern corner of Section 20 from information from the Field Book. Its position was so located to avoid the watercourse.

Sketch 4 is a copy of a plan of subdivision of the land brought under the provisions of the Real Property Act, by survey in 1899. This is the only Torrens Title land in Section 20.

Sketches 5 to 8 inclusive are copies of the relevant survey information within Section 20.

Sketch 9 is compiled from the description in a conveyance based on a plan of subdivision dated 1946.

Sketch 10 is a plan of subdivision (surveyed in 1972) of the land in the conveyance, *Sketch 9*, and lot 3 in *Sketch 6*.

The alignment survey disclosed angular differences and excesses on all street frontages with the original plan.

In line with the land in the Primary Application, the plan in *Sketch 4* clearly establishes the north western and north eastern boundaries of Allotment 1 Section 20 at 100.58 metres from and parallel to the aligned W Street and at 160.93 metres from and parallel to the aligned B Street. It is to be noted that the alignment posts have been found and old wire fencing is generally on the boundaries with old posts located on the northern and eastern corners of Allotment 1. It also establishes that the excess in the B Street frontage accrues to Allotment 4, the excess in the W Street frontage accrues to Allotment 2 and the brick house with offsets of 0.66 metres and 0.455 metres becomes a monument in determining the common boundary between Allotments 1 and 4.

The surveys in *Sketches 5* and *6* have maintained title distances from B Street.

The survey in *Sketch 7* has acknowledged and has taken the excess disclosed in the alignment plan between M Street and W Street thereby maintaining a straight line for the north western boundaries of Allotments 1 and 2. With the amendment to the bearing of the south eastern boundary of the subdivision and the consequential shortening adjustment of the side boundaries, it is considered, in the light of the information shown in *Sketch 10*, that the pegs as originally placed may not have been shifted to accord with the adjustment.

Report

W Street. The azimuth of the survey, which is taken from the alignment of W Street is satisfactory. The surveyor has located this street from an offset to a fence line at B Street and an A.P. at S Street. The first mentioned point should be confirmed by connection to the brick house which was established as a monument in *Sketch 4*. The total frontage by plans in *Sketches 4* and *10* is 1.59 metres shorter than the alignment plan.

S Street. S street has been satisfactorily located at M Street intersection by the connection established in *Sketch 8*. The total frontage to S Street is 0.3 metres short of the alignment distance between W Street and M Street. The frontage of lot 2 is 0.35 metres short of the land in the conveyance and 0.35 metres inside a fence. The intersection of W Street and S Street should be fixed by the relationship of the A.P. to that intersection as shown in *Sketch 3*. Offsets to the old post and wire fence should have been shown in S Street to provide further evidence for the location of S Street.

North Western Boundary. From the plans shown in *Sketches 4* and *7* the north western boundary should be maintained 100.58 metres from and parallel to the aligned W Street. This will locate the boundary on the fence at the northern corner of lot 2. The pegs found at the rear of lots 6 and 7 adjoining appear to be out of position in view of the alterations made to the plan in *Sketch 7*. The time elapsed since the erection of the paling fence (10 years old) is insufficient for the owner of the land shown

in *Sketch 9* to have lost title by adverse possession.

South Western Boundary. The surveyor has depicted an old post and wire fence as being on the boundary. However, in view of the angular variation compared with *Sketch 4* a common boundary with that plan has not been maintained.

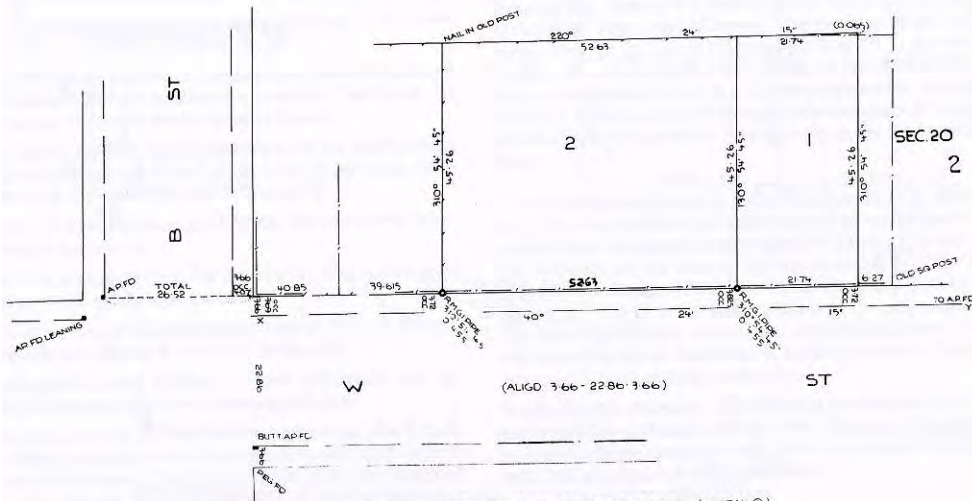
Survey Requisitions

- (1) M Street should be defined from reference marks, G. I. Pipes, placed in that street by plan in *Sketch 7* and distances of 80.47 metres north east and 100.58 metres south west to be left to the intersections of S Street and B Street respectively.
- (2) S Street should be defined from the above fix of its intersection with M Street and by distance off the alignment post in W Street. Field notes of the alignment survey show that the eastern corner of this post was located on the kerb line of W Street at a distance of 8.63 metres from its intersection with the kerb line of S Street.
- (3) W Street should be defined at 3.66 metres from the said alignment post and 100.58 metres south easterly from the relationship of a brick cottage in B Street shown in *Sketch 4*.
- (4) B Street should be defined from the fix of intersection with M Street in para. 1 above 26.52 metres from the A.P. on the south western side of B Street at the W Street intersection.
- (5) The land shown in *Sketches 4* and *6* should be located in accordance with plan dimensions.
- (6) The north western boundary of the subject deed should be defined parallel to and 100.58 metres north west of W Street.
- (7) Offsets to fencing should be shown to the boundaries as adjusted.
- (8) Should a substituted plan be prepared, it should bear evidence of Council's approval and on lodgment will attract extra fees.



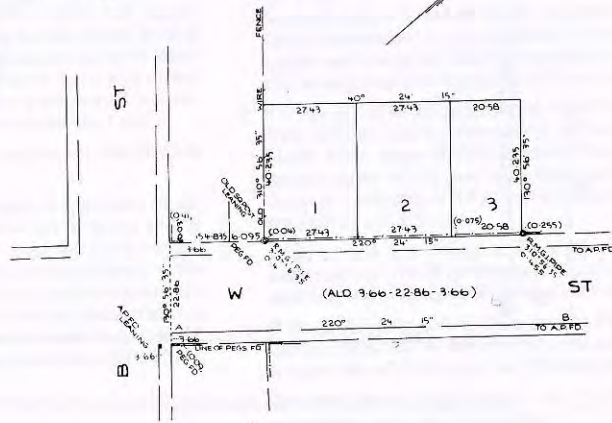
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SUBDIVISION OF LOT C (SKETCH ④)
SURVEY 1959



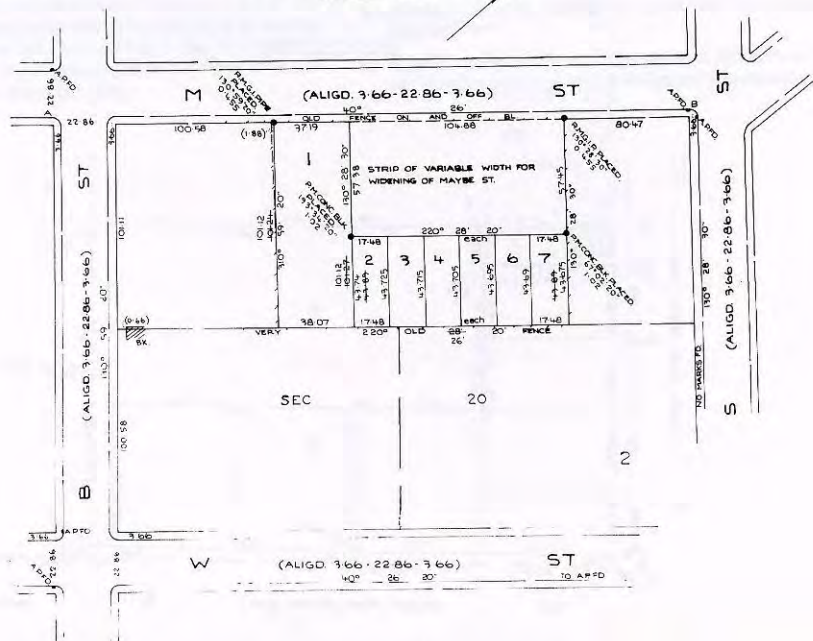
⑥

SUBDIVISION OF PART OF ALLOT 2 SEC 20 (SKETCH ①)
SURVEY 1963



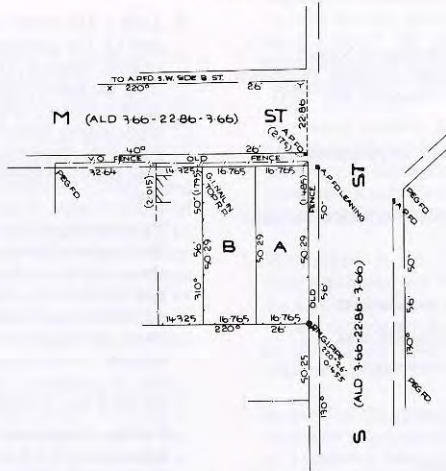
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SUBDIVISION OF
PART OF ALLOTS 3 & 4 SEC 20 (SKETCH ①)
SURVEY 1952



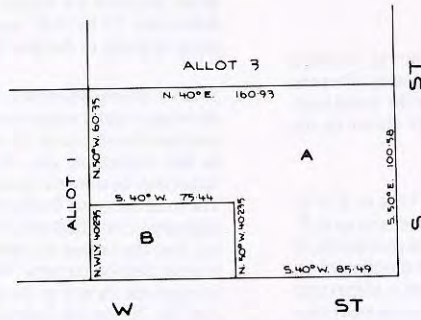
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SUBDIVISION OF
PART OF ALLOT. 3 SEC. 20 (SKETCH ①)
SURVEY 1955



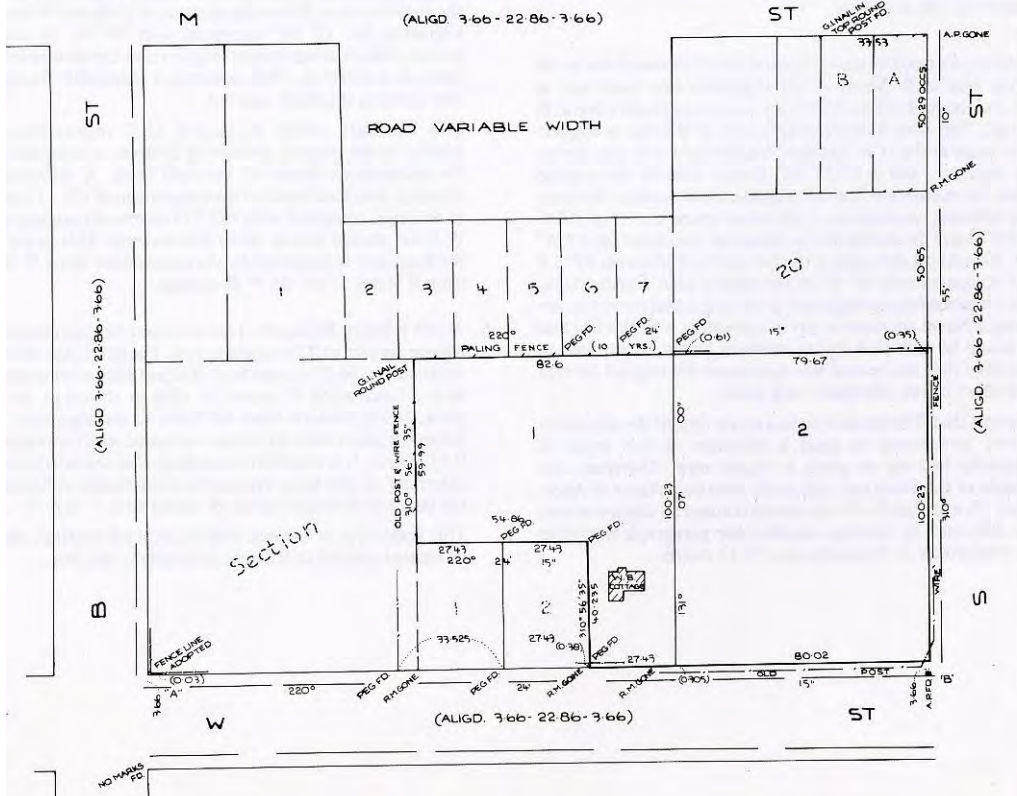
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DESCRIPTION IN CONVEYANCE DATED 1946.



SURVEY 1972.

10



EXAMPLE 25 - ALIGNMENT

Question

Sketch 1 is a copy of the original subdivision of Section 15 in a town surveyed in 1874, and Crown Grants of all the allotments issued under the provisions of the Real Property Act, 1900.

Sketch 2 is a copy of the Crown Grant for Allotment 12.

Sketch 3 is a diagram prepared from the field book of the alignment survey made in 1908.

You are required to -

- ★ investigate the subdivision shown in *Sketch 4*;
- ★ write a report on the boundary definition; and
- ★ frame suitable requisitions to the surveyor.

Specimen Answer

(Report)

- (1) *Azimuth.* The datum line of azimuth of the survey, which is taken from the alignment of W street is satisfactory. There is, however, no apparent reason for the choice of the initial bearing of $135^{\circ} 24' 20''$ compared with $135^{\circ} 23' 30''$ shown on the alignment plan.
- (2) *W Street.* The surveyor has located this street from an A.P. in the north eastern kerb line of W Street at Y Street and an A.P. in the south eastern kerb line of G Street on the production of the north eastern alignment of W Street. The adoption of an alignment mark in a side street to define a street is often open to some doubt. However, in this case the last mentioned point is acceptable in view of the connections shown across W Street at G Street by the alignment field book. The offsets to the old W.B. cottage on Allotment 12 are substantially the same as shown by the alignment.
- (3) *B Street.* Defined by the surveyor at 30.075 metres from an old brick wall at W

Street as per alignment field book and at 25.145 metres from an A.P. in the south eastern kerb line at N Street. This is an acceptable definition of B Street as aligned. The angle at B and W Streets is in agreement with that shown by alignment but is $0^{\circ} 22' 20''$ greater than by the original plan. By calculation from the alignment information the bearing between occupations at the easternmost corner of Allotment 13 and the southernmost corner of Allotment 20, is $226^{\circ} 06' 20''$ making the angle at the first mentioned corner $89^{\circ} 17' 10''$ compared with $89^{\circ} 16'$ by the original plan. Furthermore, such intermediate occupations as the alignment survey shows along B Street are more or less in agreement with this line and it would be seen that strong evidence would be required to disprove that this fenced line represents the original Section boundary before alignment took place.

It seems that B Street as occupied at the time of the alignment survey represented as good a definition of that street as originally laid out as could be found now. Therefore, the lengths of the north east and south west boundaries of Allotment 13, allowing for the movement caused by alignment and the difference in chainage standard (see paragraph 5), should be respectively 33.94 metres and 34.13 metres.

- (4) *Lane 6.035 metres wide south westerly of Allotments 11, 12 and 13.* The north eastern side of the lane has been located at original distance 30.98 metres south westerly along B Street from the south western alignment of W Street and this point has been joined to the centre of a very old round post at the westernmost corner of Allotment 11. Both points are supported by connections south westerly showing slightly more than sufficient land available for Allotments south west of the lane.

By calculation from the original plan of Section 15, adopting the lengths of the north western boundary of Allotment 9 and the south eastern boundary of Allotment 13 as 28.765 metres and 30.98 metres respectively, the bearing of the lane is $134^{\circ} 42' 40''$ compared with $134^{\circ} 44'$ by the original plan. Furthermore, on the plan azimuth, the bearing of the lane fixed in this angular relationship to W Street would be $136^{\circ} 07'$. This fixation is practically identical with the fixation used by the surveyor and is therefore considered acceptable.

Further calculations on this basis reveal that the depths of Allotments 11, 12 and 13 are understated to the extent of 0.2 metres in the original plan. This explains the excess in depth shown in these boundaries in the subject plan. It should be noted that B Street is affected greatly by alignment which in effect increases the length of the south eastern boundary of Allotment 13 by 0.02 metres making the correct distance along B Street to the lane 31 metres.

- (5) *South Eastern Boundary*. This boundary has been fixed by allowing original measurements of 32.59 metres for the front and rear boundaries of Allotment 13 from B Street as aligned. In this respect the plan is considered to be erroneous as B Street may be shown to be considerably affected by alignment. The total occupied frontage to W Street is 178.115 metres by alignment compared with 178.235 metres per original indicating that the corner occupations may possibly represent the original Section corners. The bearing along B Street between occupations shown in the field book at W and N Streets is $226^{\circ} 06' 20''$ on the alignment azimuth and this line more or less follows other occupations existing in B Street at that time. Assuming that W Street is unaffected by alignment, and it is difficult from the available information to prove otherwise, the angle between B Street as occupied in 1908 and W Street as aligned is $89^{\circ} 17' 10''$ compared with $89^{\circ} 16'$ by original survey. This close

agreement suggests that the occupations existing in B Street in 1908 represent a reasonable fixation of that street as originally laid out.

This boundary should be located 32.57 metres from and parallel to the original position of B Street as determined by the occupations shown in the field book. A difference in chainage standard based on the comparison of 178.115 metres as occupied compared with 178.235 metres per original along W Street should also be taken into account. This location of the boundary is supported by the connections along W Street from B Street to the old W.B. cottage.

- (6) *North Western Boundary*. This boundary has been located on a fence parallel to B Street alignment. The fence, age unstated, is situated at 66.51 metres from B Street alignment compared with a fence at 66.47 metres in 1908 as shown in the field book. North westerly from the fence to the alignment of G Street the plan shows an excess, compared with the original of 0.73 metres. It is therefore considered that the north eastern extremity of this fence represents a reasonable definition of the common frontage corner of Allotments 11 and 12.

This boundary, in keeping with original information, should be located parallel to B Street as originally laid out.

Specimen Answer

(Survey Requisitions)

1. The original Department of Lands survey of Allotments 1 to 22 inclusive of Section 15 was completed in 1874, and the Streets containing Section 15 were aligned in 1908. Inspection of the alignment field book indicates quite clearly that the original position of B and G Streets adjacent to Section 15 have been considerably altered by alignment. In the alignment of B Street, the W Street frontage of Allotment 13 was added to by

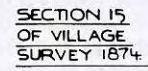
an amount of 1.37 metres and the N Street frontage of Allotment 20 was added to by an amount of 2.59 metres. The W Street frontage by alignment is 2.035 metres in excess of the total measurement by original Section plan; the N Street frontage is 2.375 metres in excess of the total measurement by original Section plan, whilst the G Street and B Street frontages by alignment are practically the same as the total measurements by original Section plan.

Measurements in the alignment survey field book show the lengths of the W Street frontages of Allotments 13, 12 and 11 as fenced to be 31.97, 33.115 and 32.69 metres respectively. The adoption of the fencing as in 1908 for the frontage of Allotment 13 gains only 0.765 metres whereas, by alignment action of B Street the gain is 1.37 metres. The eastern corner of Allotment 12 should be located at 33.94 metres from B Street, (adjusted for chainage standard) and the south eastern boundary pass through the corner of the very old cottage on a bearing of $226^{\circ} 07' 10''$ which has been calculated along the

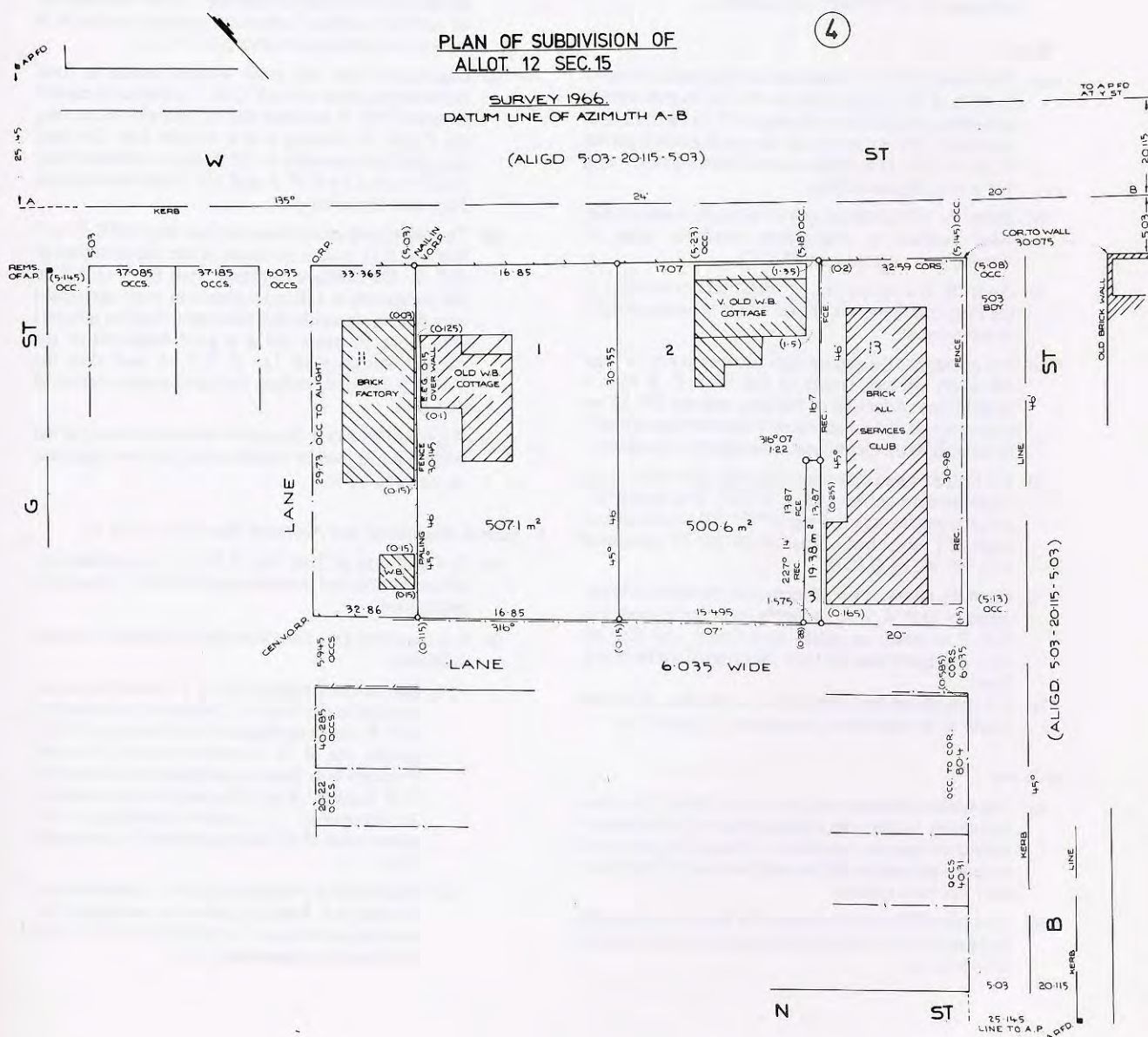
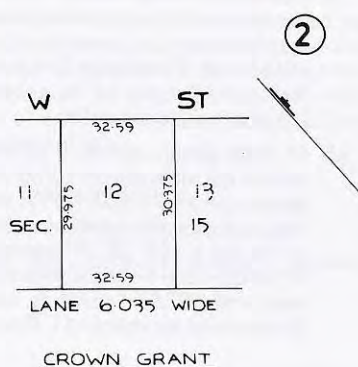
occupations shown in the field book as representing the original Section boundary before alignment took place.

2. The north western boundary of Allotment 12 should be located parallel to the relocated position of the south eastern boundary, as in the above paragraph, in keeping with original information, (adjusted for chainage standard) from the northern corner as presently fixed by you.
3. With regard to No. 11 Survey Practice Regulations, 1933, from which plan was the bearing of your azimuth derived? As the azimuth has been taken from the alignment of W Street, there is no apparent reason for the choice of the initial bearing of $135^{\circ} 24' 20''$ compared with $135^{\circ} 23' 30''$ shown on the alignment plan.
4. In view of the substantial alterations to the plan, it will be necessary to prepare a new plan of survey, obtain fresh Council's approval, have the parties sign the plan and lodge it as a substitute plan which will attract extra fees.

①



③



EXAMPLE 26 - RESIDUE PARCEL AND OCCUPATIONS

Question

The certificate of title, the basic plan and other relevant survey information are shown in *Sketches 1 to 6* inclusive.

You are required to -

- ★ investigate the subdivision shown in *Sketch 7*;
- ★ write a report on the boundary definition; and
- ★ frame suitable requisitions to the surveyor.

Specimen Answer

(Report)

(1) (a) The plan shown in *Sketch 7* is a subdivision of the land in Certificate of Title Vol. X Fol. Y. This certificate of title issued for the residue of Lot 6 D.P. A after transfer of land in D.P. E, a plan of compilation.

(b) Generally speaking, the measurements of D.P. A have been shown by latter surveys to be unreliable. For instance, the north western boundary of Lot 6 D.P. A, is shown as a line bearing $77^{\circ} 00' 150.87$ metres on that plan, but from the other three measurements of Lot 6 it calculates as $76^{\circ} 19' 40'' 153.2$ metres.

(2) *L Road*.

(a) The fixation of the northern side of this road in *Sketch 7* is south of the occupations for the full extent shown, and further, it discloses a shortage of 0.28 metres across the road to the occupation at the north eastern corner of Lot 14 D.P. D at which point a fence was shown on line in that deposited plan.

(b) Point "A" of the datum line of azimuth is acceptable, being verified by connections southerly along C Avenue to occupations on D.P. D.

(c) Point "B" is a recent peg, of which no record exists in the Registrar General's

Office, and is accordingly open to some doubt.

(d) It is noted that the occupations between point "A" and the south western corner of Lot 30 D.P. B form a straight line.

Adoption of this line, bearing $89^{\circ} 52'$ on plan azimuth, would also satisfy the shortage across L Road at B Road mentioned in paragraph 2 (a) above.

(e) It is further noted that a line from the occupation at the south western corner of Lot 30 D.P. B to point "B", which would be on a bearing $90^{\circ} 09' 20''$, would give an angle at T Street and L Road of $90^{\circ} 00' 20''$ compared with $90^{\circ} 00'$ by D.P. B.

(f) From the above, it would seem that the relevant boundaries of D.P. A were probably incorrectly located in D.P. B in which no marks were found, and that the latter deposited plan has been the cause of the bend in L Road.

(g) It is considered that a satisfactory definition of L Road would be as outlined in paragraphs 2 (d) and 2 (e).

(3) *M Street*.

(a) The western boundary of the plan in *Sketch 7* has been located by turning the original angle off what is considered an incorrect location of L Road. The position of occupations relative to the northern end of this boundary has been ignored.

(b) Location of the southern end of M Street is acceptable, being proved by connections both easterly and westerly of that street.

(c) Connections south westerly along E Road show that the fence at the north eastern corner of Lot 10 D.P. C may be accepted as correctly defining the western side of M Street. The plan in *Sketch 7* shows the occupied width of M Street at E Road as being only 0.025 metres less than the correct width.

(d) M Street should apparently be defined by the occupations at the south eastern

corner of Lot 9 and the north eastern corner of Lot 10 D.P. C, thus following the fencing on both sides of the street. The calculated bearing of this line is $359^{\circ} 50' 10''$ making an angle of $90^{\circ} 01' 50''$ at the south western corner of the subdivision compared with $90^{\circ} 00'$ by D.P. A, and further supporting the proposed relocation of L Road in paragraph 2(d).

(4) *North Western Boundary.*

(a) The location of this boundary in the plan is the result of setting out the eastern and western boundaries by original angles and distances from L Road. Again no attention has been paid to occupations.

(b) Adoption of the certificate of title length of 151.88 metres along M Street, as defined in paragraph 3(d) would place the north western corner of the subdivision on the remains of the old fencing. This is considered to be justified without further connections northerly in view of the information shown in D.P. C.

(c) Calculation from the north western corner as fixed above to the centre of the V.O.R.P. at the north eastern corner of D.P. E discloses that the remains of the very old P. and W. fencing is in a straight line. The total length of this boundary is 153.9 metres compared with 150.87 metres by D.P. A and 153.2 metres calculated from that deposited plan.

(d) The calculated square distance from the V.O.R.P. to T Street is 0.33 metres in excess of the requirements of D.P. B. The distance southerly from the V.O.R.P. to the occupation at L Road is almost in exact agreement with D.P. A. It would therefore seem that the post and wire fence 50 years old is a good definition of the eastern boundary of Lot 6 D.P. A and that the V.O.R.P. correctly defines the north eastern corner of that Lot.

(e) It is considered that the north western boundary of the subdivision should be located along the line suggested in paragraph 4 (c).

(5) *Eastern Boundaries and Northern Boundary of Lot 11.*

(a) As Certificate of Title Vol. X Fol. Y is a residue certificate of title, the measurements of D.P. E should be maintained.

(b) It is suggested that these boundaries should be located as follows-

- (i) the eastern boundary of Lot 11 should be set out parallel to the fence on the eastern boundary of D.P. E for the certificate of title distance of 53.53 metres and at 75.71 metres westerly from the Post and Wire fence to maintain title distance for D.P. E along L Road; this results in the residue title distance of 73.13 metres remaining to the eastern side of M Street as defined in paragraph 3(d);
- (ii) the northern boundary of Lot 11 should be run parallel to L Road as defined in paragraph 2(d) and the certificate of title length for D.P. E of 18.29 metres maintained; and
- (iii) the eastern boundary of Lots 1 to 6 inclusive and part of Lot 7 should be set out parallel to the fence on the eastern boundary of D.P. E to intersect the north western boundary as defined in paragraph 4(c).

(c) The above location of boundaries will result in a length for the most northern of the eastern boundaries of 111.8 metres compared with 111.69 metres by the certificate of title, and the length for the north western boundary of 57.14 metres compared with 54.15 metres by the certificate of title.

Specimen Answer

(Survey Requisitions)

The boundaries of the subdivision should be located as follows:-

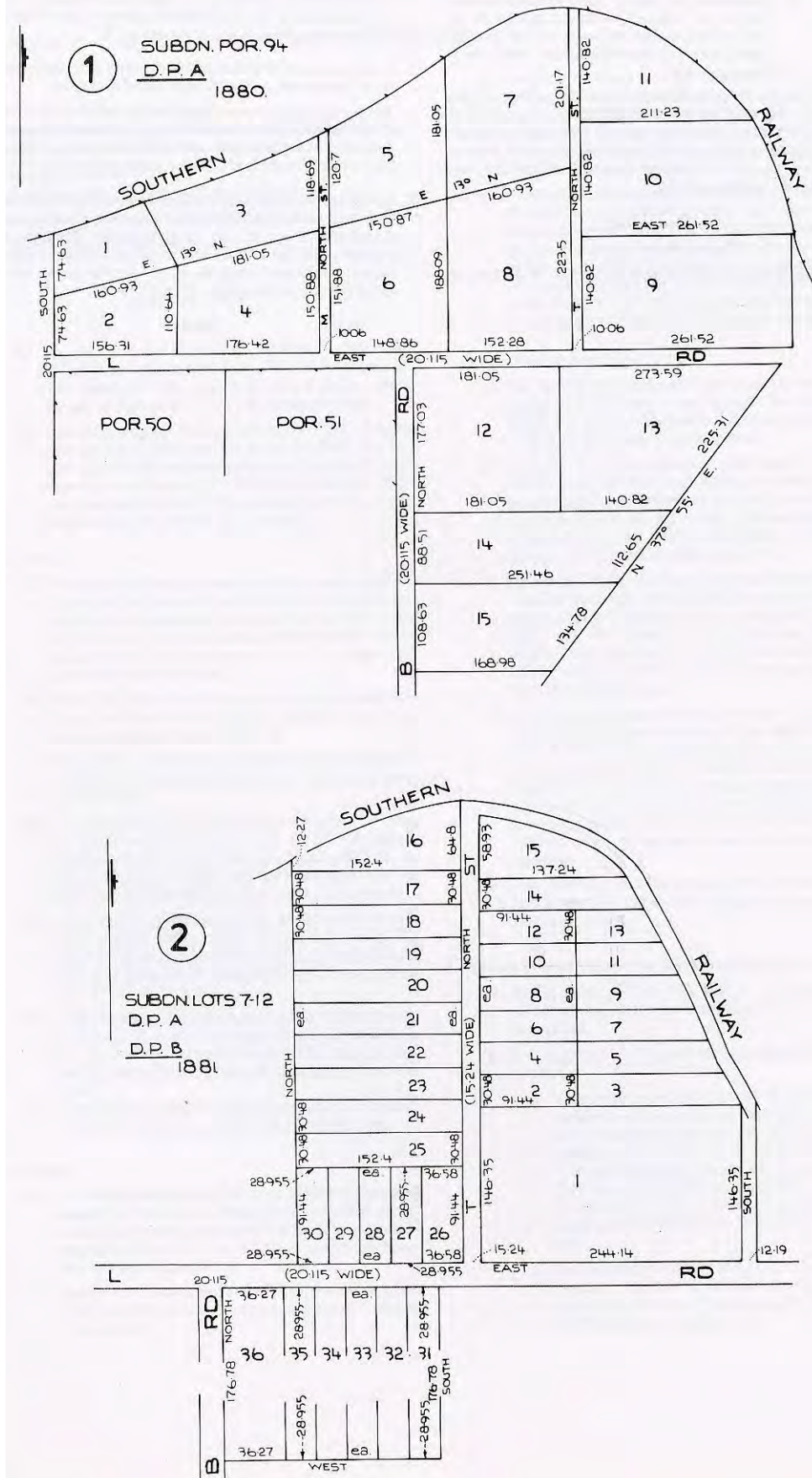
1. L Road should be defined in two lines, viz., from point "A" to the occupation at the south eastern corner of Lot 6 D.P. A,

and from that point to the recent peg at "B";

2. M Street should be located at 10.06 metres from and parallel to the occupation on the western side of that street;
3. The north western corner should be maintained at certificate of title distance from L Road and the north western boundary defined by a line joining the north western corner as re-fixed to the

V.O.R.P. at the north eastern corner of Lot 6 D.P. A;

4. Certificate of title lengths should be preserved for the southern boundary of the subdivision and the eastern and northern boundaries of Lot 11. The latter boundary should be run parallel to the new location of L Road and the remaining two eastern boundaries should be set out parallel to the fencing along the eastern boundary of Lot 6 D.P. A.



EXAMPLE 26

③

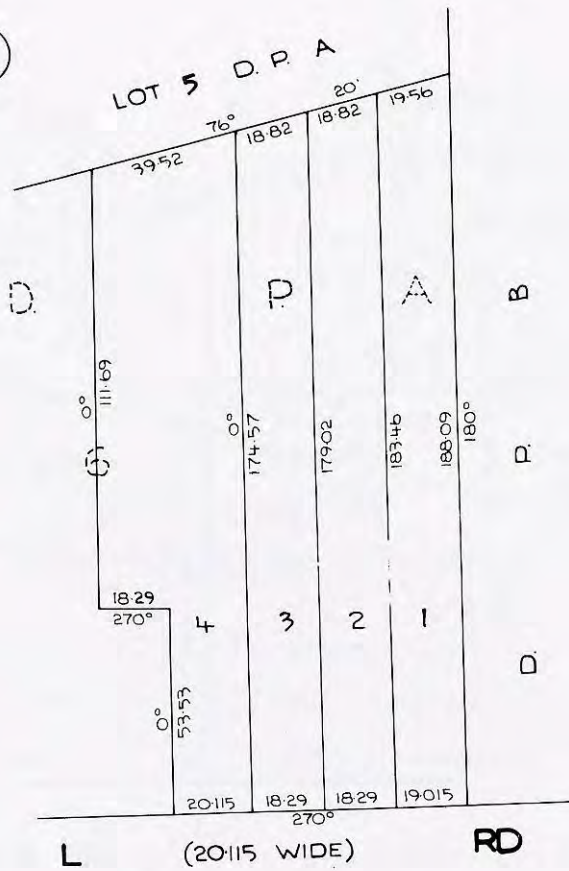
D. P. C 1902.
SUBDN. LOTS 1, 3 & 4. D. P. A

④

SUBDN. PT. POR. 50 & 51.
PT. D. P. D 1913.

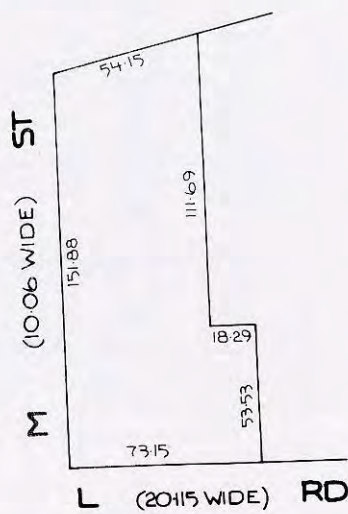
EXAMPLE 26

5



SUBDN. PART OF LOT 6, D.P. A
D.P. E COMPILATION 1928.

6



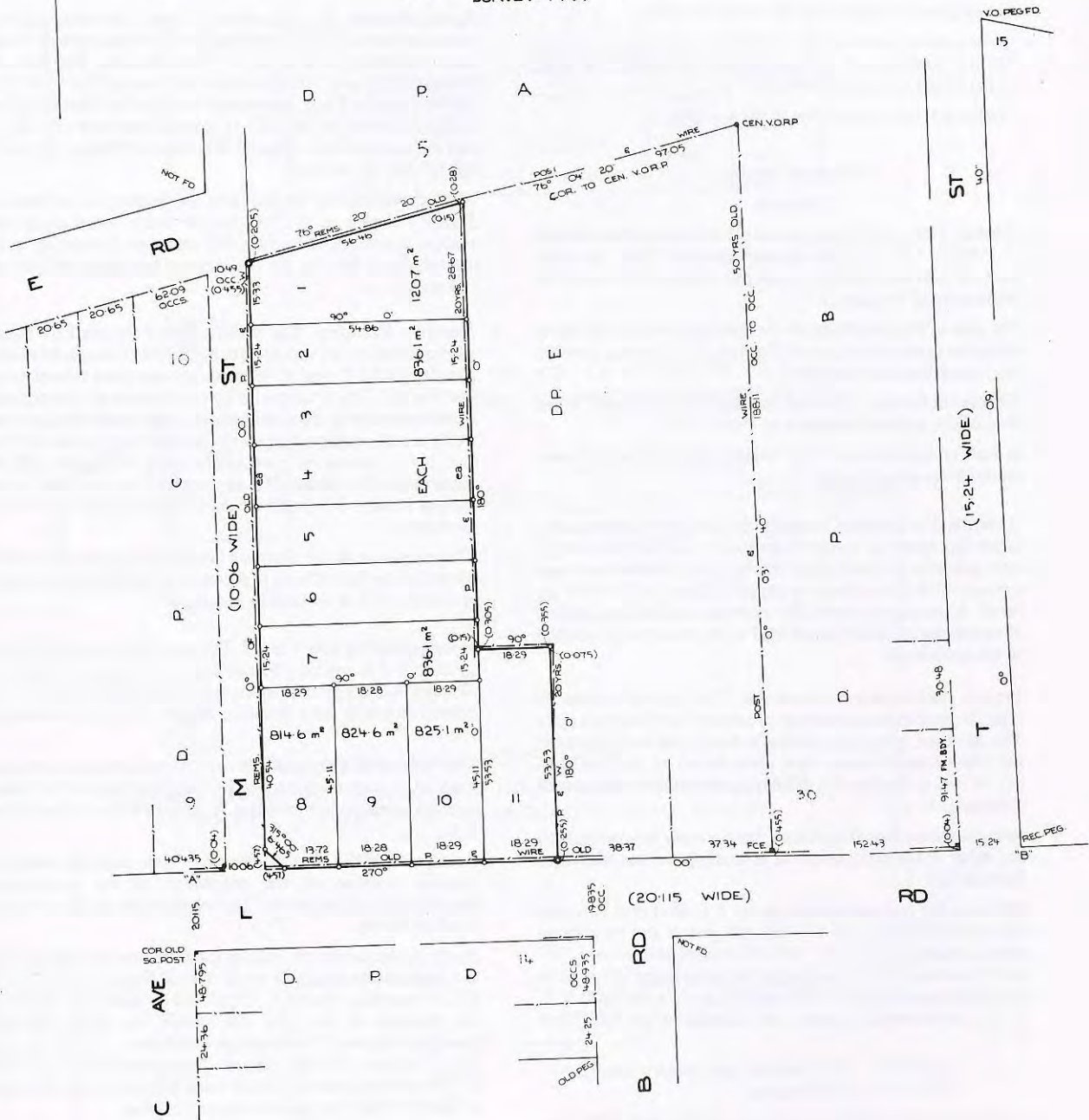
C.T. VOL. X FOL. Y
RESIDUE C.T. AFTER TRANSFER
OF LOTS 1 TO 4 IN D.P. E

PLAN

OF SUBDIVISION OF LAND IN C.T.VOL. X FOL. Y

DATUM LINE OF AZIMUTH : AB
SURVEY : 1959

⑦



EXAMPLE 27 - OCCUPATIONS

Question

Sketches 1 to 8 inclusive are copies of the certificate of title and the relevant survey information.

You are required to -

- ★ investigate the subdivision shown in *Sketch 9*;
- ★ write a report covering the conclusions arrived at in respect of the location of all boundaries, including the road separating Lots 1 and 2; and
- ★ frame suitable requisitions to the surveyor.

Specimen Answer

(Report)

1. *General.* The road plan purported to have found three corners of Portion 123, but, this appears doubtful from the later surveys. It is not possible to use the road plan to locate the boundaries of Portion 123.

The plan of Portion 90 shows the road peg found as not being along the eastern boundary of Portion 123. This was the only road mark found by this plan.

The plan of Portion 100 shows the angle in the road at C to the west of the western boundary of Portion 123.

In view of the absence of any original marks of the Portions, occupations must be used.

2. *Azimuth.* For azimuth purposes the surveyor has adopted a direct line from the corners referenced by trees found which were placed in the road plan. This line only establishes a bearing on which the bearings in the plan shown in *Sketch 9* are based. A precaution should be taken on pursuing the method of extrapolation which could lead to an incorrect relocation of the boundaries.
3. *Eastern and Southern Boundaries.* The plan of Portion 90 failed to establish a

comparison of azimuth with the road plan. The surveyor, therefore, appears to have incorrectly assumed the relationship between these plans (based on the road bearing 74° 46' by Portion 90) in locating the eastern boundary of Portion 123.

Being based on this false premise, the surveyor has disregarded the value of the occupations in relocating the boundaries of Portion 123.

By direct line comparison from point A to Butt of O.R.P., the plan calculates 247° 29' 58" 462.745 metres and by original portion plans, 246 ° 22' 51" 462.491 metres (difference 1°01' 0.255 metres). Thus, by adopting the intersection of fences as the south eastern corner of Portion 123 and the Butt of O.R.P. as the south western corner, the boundaries are then fixed as-

180° 50' 185.37 metres (part eastern boundary)

271 ° 07' 423.89 metres

thereby agreeing with the calculation and the angle of Portion 123 shown in the plan of Portion 100.

At the north eastern corner of Portion 123 is a rough fence 2.01 metres off line of no significant value. For consistency, based on the length, 185.37 metres, and applying similar pro rata increases compared to the plan of Portion 90 a distance of 116.82 metres for the part of the eastern boundary of Portion 123 north of the road can be adopted.

These bearings and distances of the eastern and southern boundaries of Portion 123 are confirmed by a direct comparison between point A and butt of O.R.P. between the plan shown in *Sketch 9* and the plan of Portions 90 and 100.

4. *Western Boundary.* This boundary has been laid in on a bearing adjusted for azimuth from the plans of Portions 100 and 102 for the distance, 311.2 metres as

shown in the plans of Portions 101 and 102.

Again adopting the occupations, a direct line calculated between the butt of O.R.P. and the O.R.P. on the western boundary of Portion 101 is $0^{\circ} 05' 15''$ 498.75 metres. The plans of Portions 101 and 102 calculate this line as $358^{\circ} 58' 50''$ 498.445 metres. Thus, the western boundary of Portion 123 is re-fixed at $359^{\circ} 34' 30''$ 311.39 metres from butt of O.R.P.; and the most southern western boundary of Portion 101 is $1^{\circ} 06' 30''$ 167.27 metres.

With an adjustment for azimuth, the bearing on the plan in *Sketch 9* shown as $181^{\circ} 05'$ for the line of posts along the western boundary of Portion 101 compares favourably with the calculated bearing for the western boundary of Portion 123 above.

5. *Northern Boundary.* The western part of the northern boundary of Portion 123 should be defined 20.115 metres from and parallel to Old P. and R. fence on the southern boundary of Portion 101. This is supported by calculations as in paragraph 4 and maintaining the same angular relationship between the western and southern boundaries as shown in the plan of Portion 101. A similar proportional increase in distance, 208.54 metres should be adopted for the length of the southern boundary of Portion 101 based on the calculation for the western boundary.

The remainder of the northern boundary is determined from the end of the line referred to above to the north eastern corner of Portion 123 as re-fixed in paragraph 3.

6. *Road separating Lots 1 and 2.* The position of the road shown in *Sketch 3* is

contrary to the angles of that road found in *Sketches 4* and *5* relative to the boundaries of Portion 123, the corner of which were found in *Sketch 3* but not connected thereto.

With no marks or occupations to assist in the relocation of the road 20.115 metres wide, *Sketch 9* sets the road at P.O. bearings and distances from point A, based on the azimuth line BA.

Extrapolation has always been regarded as basically unsound practice because of the possibility of the consequent magnification of any errors. The use of this method is very difficult to justify.

By the application of pro rata on the direct line from point A to the angle in the road, *Sketch 5*, west of Portion 123 ($70^{\circ} 04'$ 455.39 metres by *Sketch 9*, $70^{\circ} 04'$ 454.51 metres by *Sketch 3*) the bearings of the road will remain the same with the distances adjusted from point A as follows - 60.07 metres, 152.17 metres, 278.95 metres. The connection, $357^{\circ} 20'$ 21.845 metres shown in *Sketch 5* and adjusted to the azimuth of *Sketch 9* has been used in the calculation.

Specimen Answer

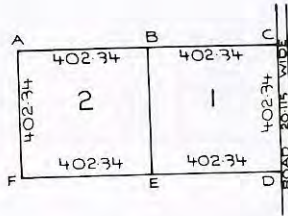
(Survey Requisitions)

1. The boundaries of Portion 123 should be fixed by direct line comparisons to the O.R.P's and the fencing along the boundaries which you show at present as being off line.
2. The road 20.115 metres wide shown in the road plan, *Sketch 3*, should be re-established by interpolation from point A south westerly to the bend west of Portion 123 and using the connection shown in the plan of Portion 100.

EXAMPLE 27

1

PLAN OF PORS. 1 & 2 CIRCUMFERENTER SURVEY 1870

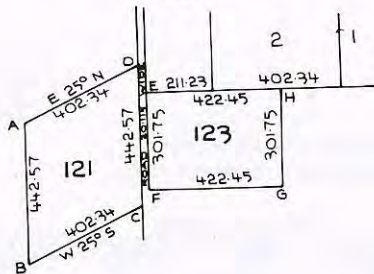


REF. TO COR.

COR.	BEARING	FROM	DISTANCE	NO. ON TREE
A	SOUTH	OAK	4.625	1 & 2
B	S 10° E	"	1.005	1 & 2
C	EAST	"	3.42	1
D	N 74° E	BLACKBUTT	1.61	"
E	S 5° W	"	9.055	1 & 2
F	N 70° W	TURPENTINE	1.81	1 & 2

2

PLAN OF PORS. 121 & 123 CIRCUMFERENTER SURVEY 1873

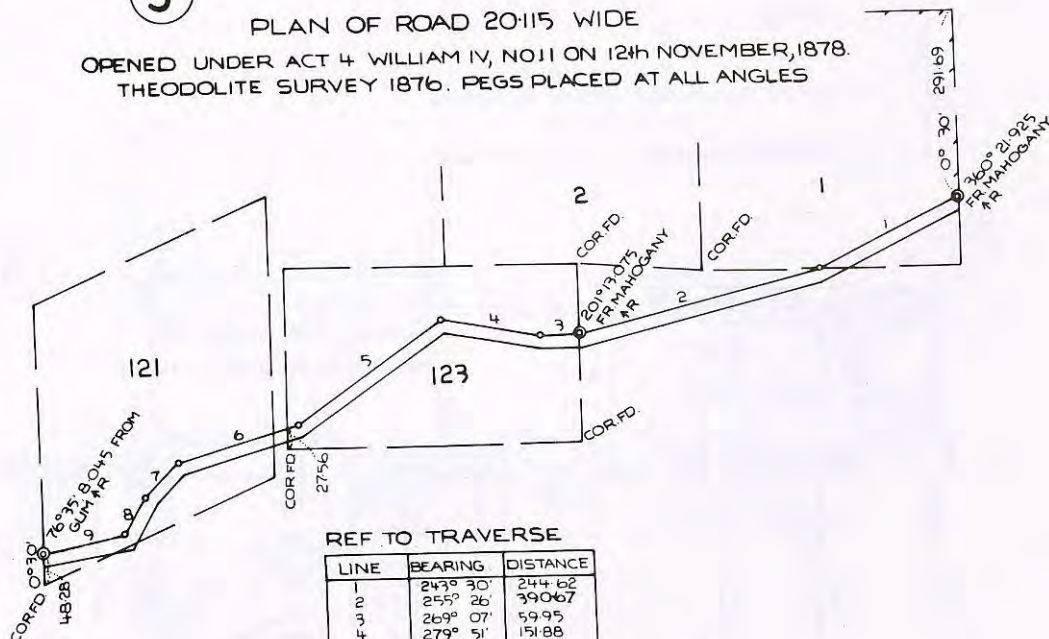


REF. TO COR.

COR.	BEARING	FROM	DISTANCE	NO. ON TREE
A	SOUTH	OAK AT CORNER	2.815	121
B	S 30° E	BLACKBUTT	20.92	"
C	W 25° S	WOLLYBUTT	4.625	"
D	SOUTH	MAHOGANY	2.815	123
E	N 25° E	TURPENTINE	2.815	"
F		BLACKBUTT AT CORNER		"
G	E 25° N	BLACKBUTT	5.43	"
H		BLACKBUTT AT CORNER		"

3

PLAN OF ROAD 20'11.5 WIDE OPENED UNDER ACT 4 WILLIAM IV, NO 11 ON 12th NOVEMBER, 1878. THEODOLITE SURVEY 1876. PEGS PLACED AT ALL ANGLES



REF TO TRAVERSE

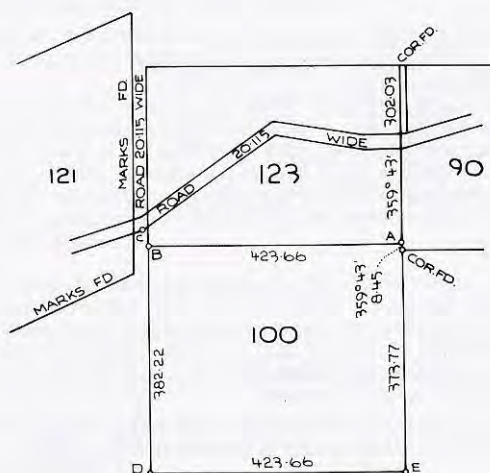
LINE	BEARING	DISTANCE
1	243° 30'	244.62
2	255° 26'	390.67
3	269° 07'	59.95
4	279° 51'	151.88
5	234° 30'	278.42
6	253° 22'	195.94
7	223° 02'	74.43
8	209° 17'	68.2
9	256° 35'	129.95
COR. TREE	360°	21.925
"	201°	13.075
"	76° 35'	8.045

④



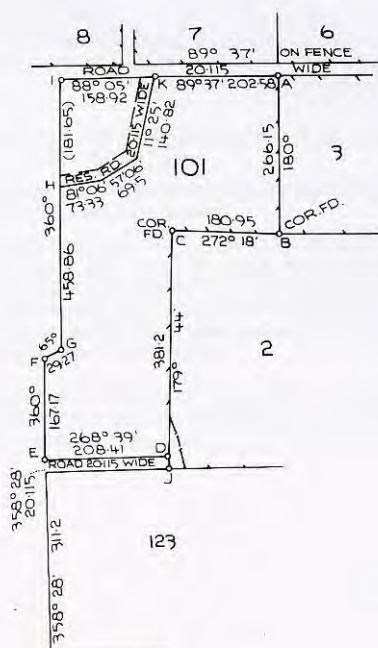
REF. TO CORS.				
COR.	BEARING	FROM	DISTANCE	NO. ON TREE
A	71°	STUMP	1.61	▲ 90
B	142° 10'	GUM	6.64	▲ 90
C	185°	BLACKBUTT	9.055	1 ▲ 2
D		STUMP AT COR. OF	FOR. 123.	▲ 123
E	335° 30'	MAHOAGNY	10.66	R ▲ 90
F		STAKE AT COR.		
G	65°	BLACKBUTT	5.43	▲ 123
H	140°	GUM	4.025	▲ 90
I	45° 40'	"	2.815	"

PLAN OF POR. 90
THEODOLITE SURVEY, 1880.



PLAN OF POR. 100
THEODOLITE SURVEY, 1884.

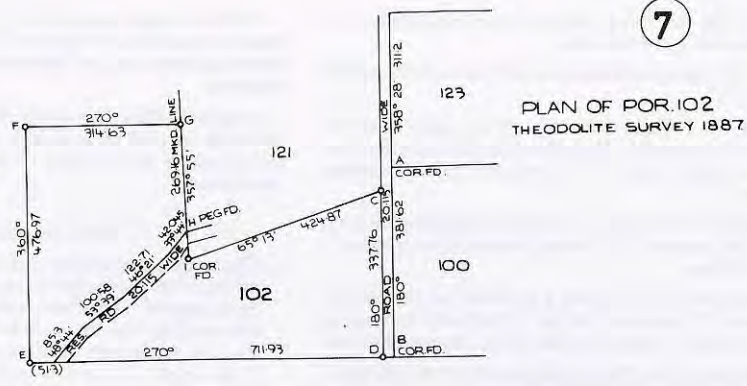
REF TO COR.				
COR.	BEARING	FROM	DISTANCE	NO. ON TREE
A	50°	OAK	3.62	↑100
B	97°	TURPENTINE	1.51	"
C	PEG & LOCKSPITS OF RD. PLAN FOUND AT			ANGLES
D	252° 10'	GUM	2.815	↑100
E	214° 40'	OAK	9.255	"
B TO C 357° 20' 21.845				



PLAN OF POR. 101
THEODOLITE SURVEY 1884.

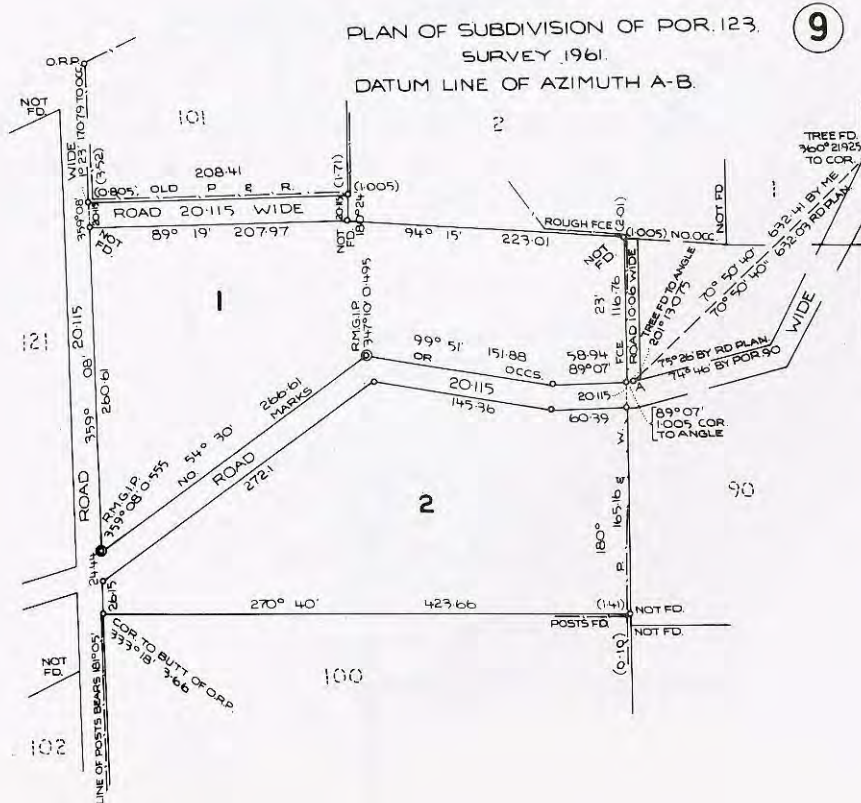
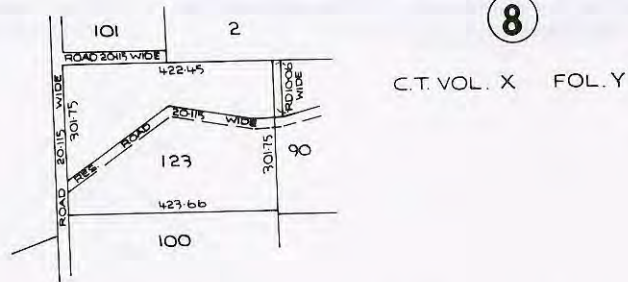
REF TO COR.				
COR.	BEARING	FROM	DISTANCE	NGONTREE
A	273°	GUM	5.885	↑ 101
B	270°	OAK	3.02	3 ↑ 101
C	179°	"	4.625	2 ↑ 101
D	266°15'	GUM	6.98	↑ 101
E		PEG AT COR.		
F	225°	GUM	5.43	↑ 101
G	114°	"	5.43	"
H	263°20'	"	6.98	"
I	112°	STUMP	1.91	"
J	290°	TURPENTINE	1.81	↑ 2
K	282°	GUM	3.12	↑ 101

EXAMPLE 27



REF TO COR.

COR.	BEARING	FROM	DISTANCE	NO. ON TREE
A	97°	TURPENTINE	151	100 (FENCE POST ON COR.)
B	252°	GUM	2815	100
C	104°	"	14405	102
D	248° 16'	IRONBARK	10114	"
E	303°	GUM	1205	"
F	15°	"	1569	"
G	249° 21'	TALLOWWOOD	2415	"
H	77°	GUM	819	"
I	30°	BLACKBUTT	2815	121 + 102
	(530° E po)			



EXAMPLE 28 - INTERPRETATIONS OF PLANS AND OCCUPATIONS

The basic plan and other relevant survey information are shown in *Sketches 1 to 4* inclusive.

Sketch 5 is a plan of subdivision of Allotment 14 Section 64 surveyed in 1977.

The points for azimuth were taken from marks placed in survey dated 1969, *Sketch 4*. The original distance, as in *Sketches 1* and 2 was allowed from "Y" to establish the south eastern corner of Lot 2.

The frontage of Lots 1 and 2 has been maintained at P.O. distance and an excess of 0.12 metres is disclosed between Lot 1 westerly to T Street.

A further excess of 0.075 metres is shown across the end of T Street to point "X"; however, the cut off southern boundary of Portion 566, *Sketch 3* does not appear to have been maintained.

The consistency of the offsets to the fencing at three of the corners of the plan shown in *Sketch 5* should not be overlooked in the light of the fencing shown in *Sketches 2, 3* and 4 (R Street and Lane).

The M Street frontage for Allotment 6 Section 64, *Sketch 1* is mathematically incorrect for a square width of 50.29 metres from R Street. By calculation from the definition of R Street and M Street in *Sketch 4* the length of the frontage of Allotment 6 to M Street is 71.85 metres and calculation on *Sketch 1* is 71.77 metres.

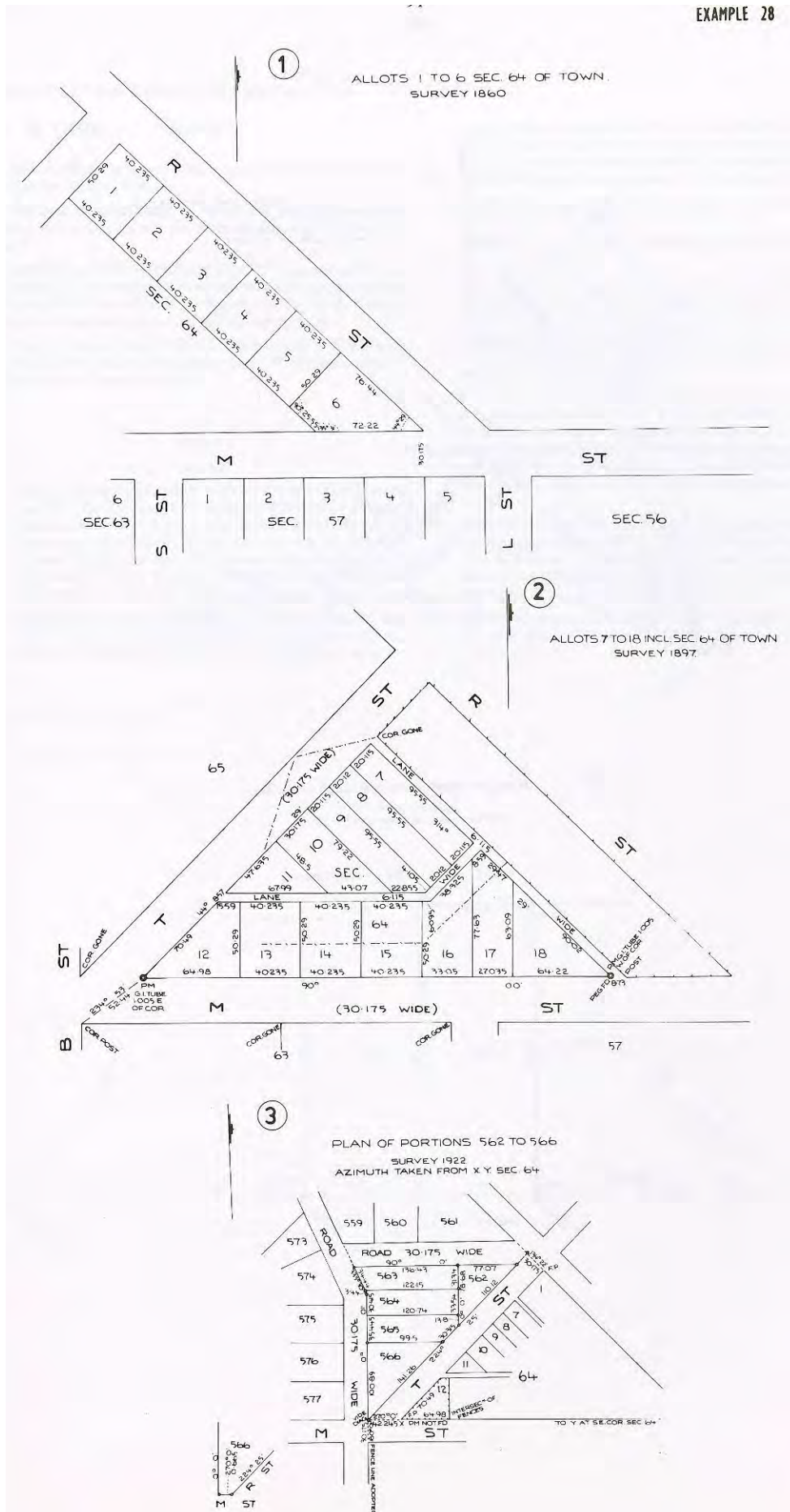
The total distance from point "X" to point "Y" by *Sketches 3* and 2 and the adjusted length in the above paragraph is 433.48 metres and by the plan in *Sketch 5* is 433.37 metres, thereby indicating a chainage difference.

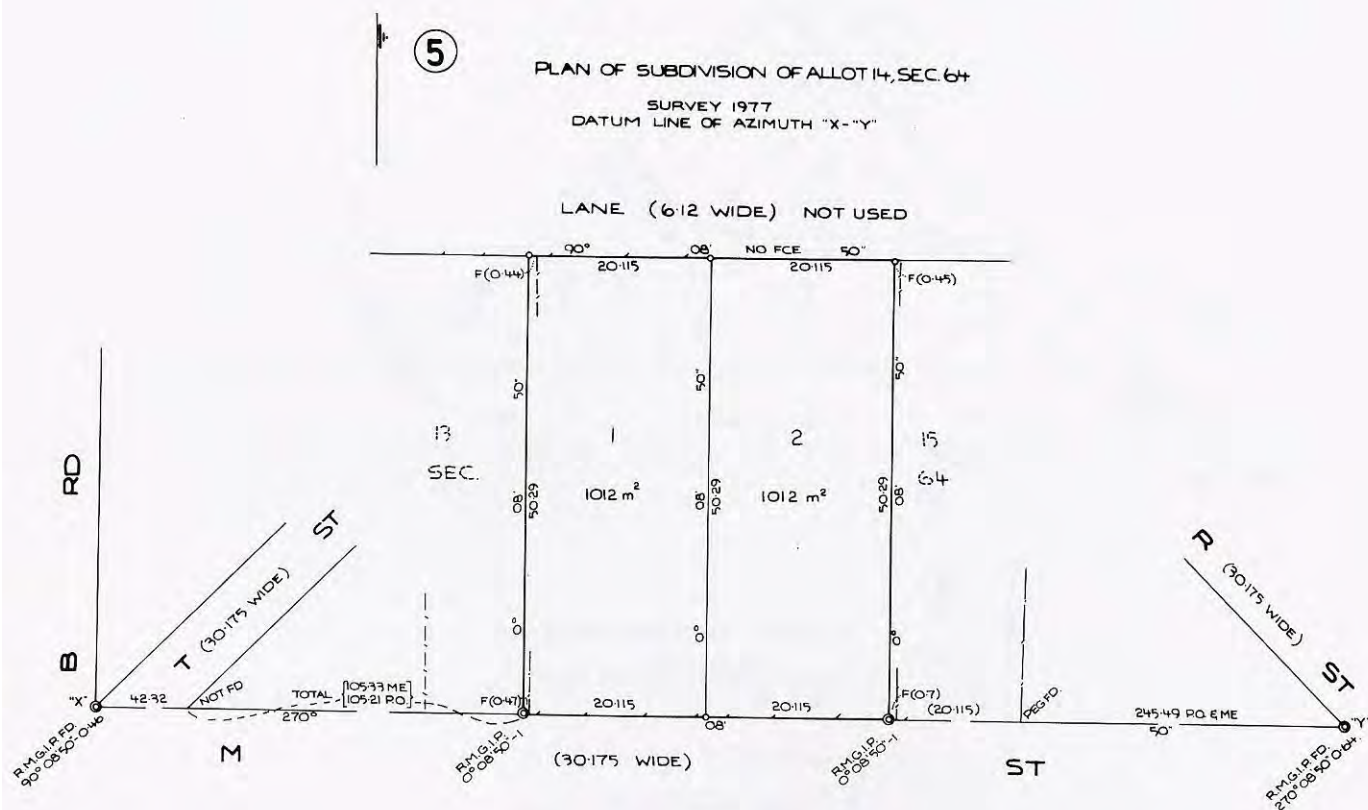
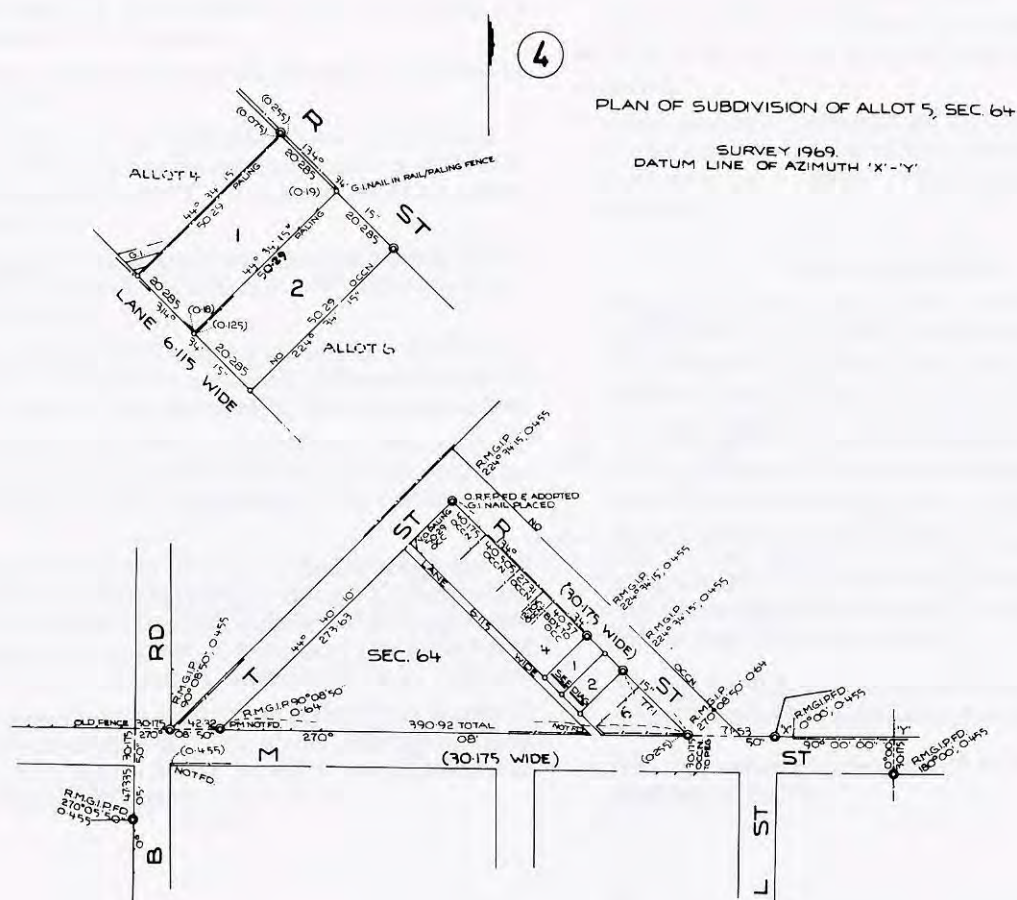
From the above paragraphs it will be seen that the south western corner of Lot 1 in *Sketch 5* should be located 0.44 metres east of its present position, being also in close agreement to the occupations.

A peg found 20.115 metres east of Lot 2, of which no record exists in the Registrar General's Office, is obviously the result of a peg out survey as Allotment 15 Section 64 was subdivided by compilation.

(Survey Requisitions)

1. The south western corner of Lot 1 should be re-located 0.44 metres to the east to allow a total distance of 285.28 metres to the intersection of M Street with R Street. This total distance will satisfy the frontages to M Street of Allotments 6 and 14 to 18 inclusive, Section 64 bearing in mind that a frontage of 71.85 metres (72.22 metres by original) to M Street for Allotment 6 will allow a depth of 50.29 metres for that allotment to R Street and that the plan shows a chainage difference (shortage 0.11 metres) between B Road and R Street. To the west of Lot 1, a total length of 148.09 metres will be available to B Road to satisfy the requirements of Allotments 12 and 13, Section 64 and the southern boundary of Portion 566 subject to the chainage difference referred to.
2. The fact that B Road, T Street and M Street do not intersect at point "X" should be indicated on your plan.
3. The age, nature and condition of all the fencing should be disclosed on the plan.





EXAMPLE 29 - REDEFINITION

Question

Sketch 1 shows a survey plan of redefinition of lot 5 D.P. Y held under Torrens Title.

The plan of subdivision on which the certificate is based, *Sketch 4* and all other relevant plans are shown in *Sketches 2, 3* and *5*.

You are required to investigate *Sketch 1* to decide as to its acceptability as to whether there is sufficient variation to warrant the creation of a new folio of the Register for lot 5 D.P. Y and to prepare a report and advise the parties appropriately.

You are advised that M Street, G Street and U Street were aligned in 1896 and showed a distance of 109.74 metres along M Street from G Street to U Street.

Answer

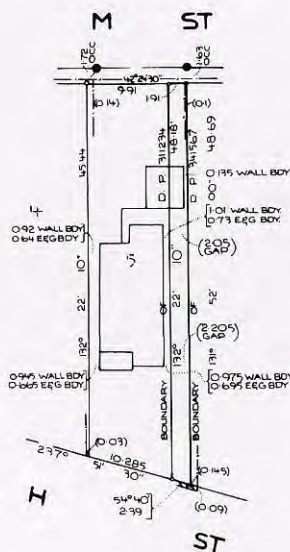
(Report)

1. *Sketch 2* found the alignment marks of the streets and showed that 109.74 metres was available along M Street. The Primary Application attempted to bring all the land from G Street to a fence under the Real Property Act but was refused. The Primary Application was only allowed to go half way, i.e., 54.87 metres, along M Street from G Street, leaving deed distance to the north east along M Street to U Street.
2. *Sketch 3* also found the alignment marks and verified that 109.74 metres was available along M Street. This Primary Application attempted to form a common boundary with the land in Primary Application W. This was refused as the plan included land outside the fence and the land in the Application (*Sketch 3*) was

consequently reduced to the line of the fence with 52.96 metres frontage along M Street from U Street.

3. *Sketch 4* is a subdivision of the land in *Sketch 2* and agrees in the frontage to M Street of 54.87 metres.
4. *Sketch 5* is a compiled plan of subdivision of the land in *Sketch 3*.
5. From the above paragraphs it can be clearly seen that a strip of Old System land, having a frontage of 1.91 metres to M Street has been left between Primary Applications W and X. Therefore, this strip cannot be included in Lot 5 D.P. Y by way of amendment to title: see under heading Plans of Redefinition - Section 6, Chapter IV.
6. From the plan of a field check, *Sketch 6* it can be seen that the cottage erected on Lot 5 D.P. Y is located sufficiently within its boundaries so as to comply with Ordinance 70, under the Local Government Act, 1919 with regard to distances of the wall from the side boundaries. A fibro shed attached at the rear of the cottage was erected much later and extends onto the strip.
7. It should be noted that the plan of redefinition would be rejected since the plan (*Sketch 1*) includes a strip of Old System Title land about 1.9 metres wide along and within the north eastern boundary. The lodging party would be informed accordingly.
8. In order to obtain a Torrens Title for the strip of land, a Real Property Application may be lodged based on a claim of possessory title.

SURVEY 1977
DATUM LINE OF AZIMUTH "A"-"B"



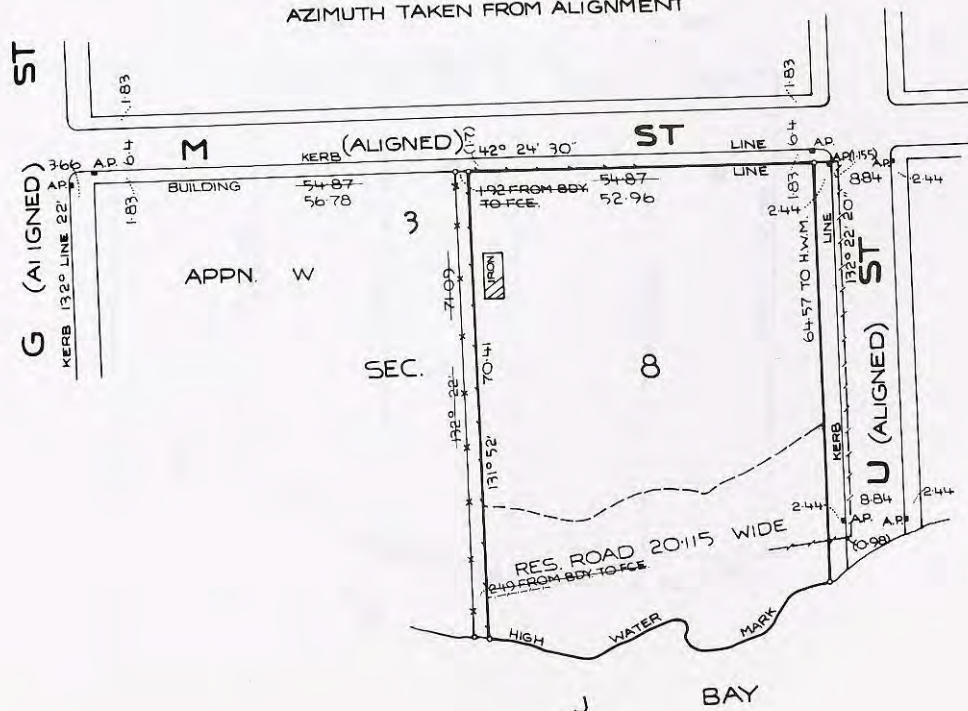
EXAMPLE 29

R.P.A. W
PLAN OF LOTS 1, 2 AND 3. SEC. 8.
SURVEY 1901
AZIMUTH TAKEN FROM ALIGNMENT.

2

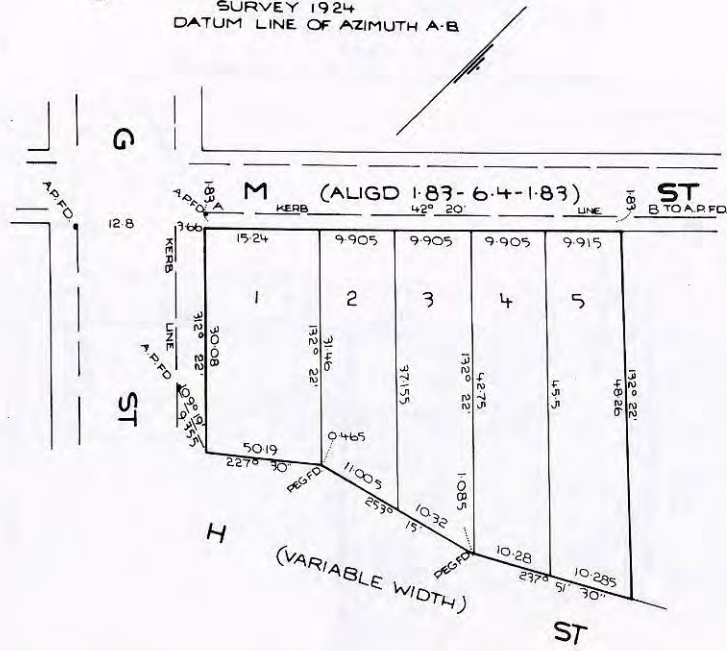


R.P.A. X
PLAN OF PART SECTION 8
SURVEY 1907
AZIMUTH TAKEN FROM ALIGNMENT



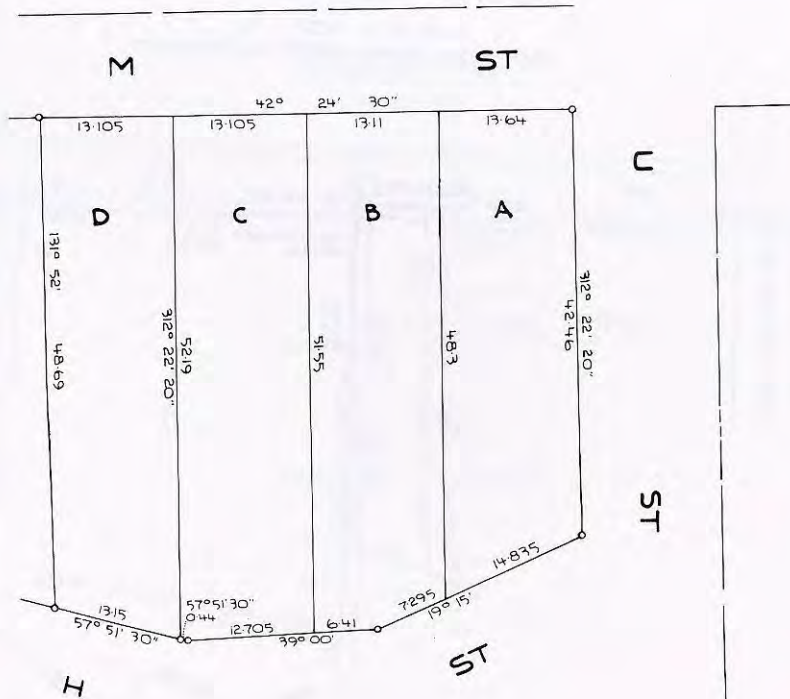
EXAMPLE 29

PLAN OF SUBDIVISION OF
PART OF LAND IN R.P.A. W
SURVEY 1924
DATUM LINE OF AZIMUTH A-B



5

D.P. Z
PLAN OF SUBDIVISION OF PART
OF LAND IN R.P.A. X
COMPILATION



EXAMPLE 30 - CHAINAGE AND ALIGNMENT

Sketch 1 is a copy of D.P. X surveyed in 1878 on which the current certificates of title are based.

Sketch 2 is a copy of field notes of the Detail Survey made in 1895. This survey shows excesses of 0.025 metres per lot frontage and 0.1 metres per lot depth in D.P. X and D.P. Y.

Sketch 3 is a copy of the alignment plan of J Street and the north side of B Street surveyed in 1912. It is noted that, although alignment marks were placed in the western end of S Street, this street was not aligned and the position of its boundaries was not altered by any alignment action.

Sketch 4 is a plan of re-definition of Lots 3 to 6 inclusive D.P. X surveyed in 1974.

(Report)

The adoption of point A, being the A.P. in S Street for azimuth purposes in J Street is wrong. This practice is usually considered unsound unless supported by confirmatory evidence. The very old peg found at the south western corner of S Street is the more acceptable azimuth point.

The western side of the lane should be re-fixed between points 0.405 metres east of its present position at B Street and 0.15 metres east at S Street due to the alignment of J Street and the chainage standard difference. This is its position as defined by a "good line of pegs" in *Sketch 2* and it is thus brought into better agreement with the occupations on both sides of the lane and will be in closer agreement with the original angle at B Street.

The north western corner of the land in *Sketch 4* has been correctly fixed at 36.47 metres from the old brick shop (note peg found at the north western corner in *Sketch 2*).

The north western corner should be re-fixed at 0.1 metres north of its present position (after allowing for the shift in the position of the western side of the lane above referred to),

thus leaving 36.47 metres between this corner and the northern side of B Street (note peg found at the north eastern corner in *Sketch 2*).

The northern boundary should then be re-fixed in one line between the north western and north eastern corners as fixed above. This boundary will be on a bearing of $89^{\circ} 20'$ and will be clear of the occupations. This can be clearly illustrated by drawing a sketch plotted to an exaggerated scale as shown in Example 20.

The south western corner should be re-fixed in the pegged position as shown in *Sketch 2*. i.e., 0.05 metres north of its present position.

The south eastern corner (after allowing for the shift in the western side of the lane above referred to) should be fixed 0.05 metres south of its present position.

The southern boundary should then be re-fixed in one line between the above corners as re-fixed. This boundary will cut into the occupation erected on the adjoining property now shown on the boundary. This can be clearly illustrated by drawing a sketch plotted to an exaggerated scale as shown in Example 20. However, this fact must be ignored when fixing this boundary as the building has not been established previously as a monument on the boundary. Technically there is no reason why a boundary, originally created by an unimproved straight line, should ever be relocated in any other fashion.

It should be noted that the plan of redefinition would be registered subject to satisfactory replies by the surveyor to the requisitions raised on the present redefinition of Lots 3 to 6 inclusive in D.P. X.

It should be further noted that the northern side of B Street only was aligned and the Old Brick Shop and the Stone Building were adopted as the building line, thus reducing the width of B Street to 12.04 metres.

①

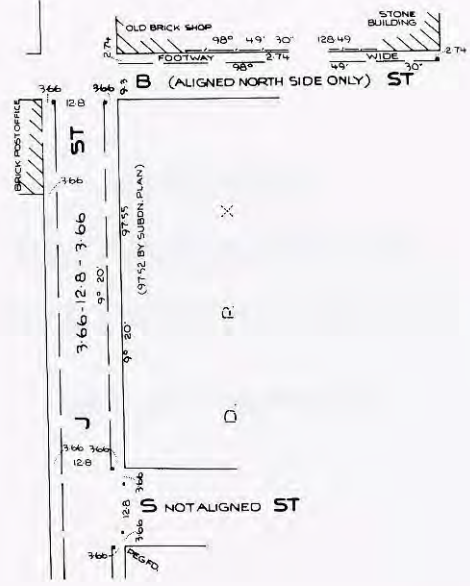
[illegible]

②

[illegible]

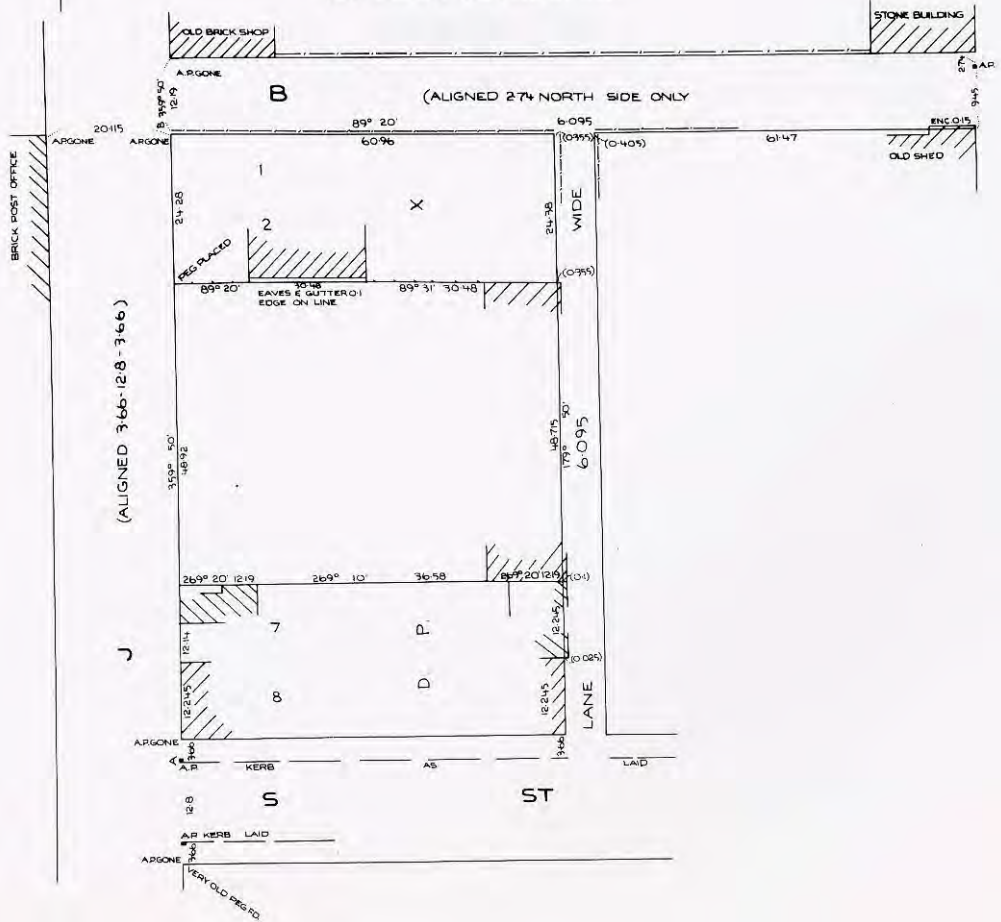
3

ALIGNMENT PLAN OF J ST
AND NORTH SIDE OF B ST
SURVEY 1912.



4

PLAN
OF REDEFINITION OF LOTS 3 TO 6 INCL. D. P. X
SURVEY 1974
DATE LINE OF AZIMUTH A-B.
(9°30' SUBTRACTED FROM ALIGNMENT PLAN)



APPENDIX
PREPARED FOR THE
INSTITUTION OF SURVEYORS

NEW SOUTH WALES

By
A. W. MILLER, F.I.S.
New South Wales

(1) THE ATTORNEY-GENERAL FOR N.S.W. v. LOVE (1898) A.C. 679.

Privy Council, May 14, 1898. (This report appears also in 19 N.S.W.R. 205.)

Held confirming the judgment of the Supreme Court that the Imperial Nullum Tempus Act 9 Geo. III c. 16, is in force in New South Wales, and that it applies to lands which have never been dealt with by the Crown.

The Act 9 Geo. IV c. 83 s. 24 prima facie on its true construction applies the Nullum Tempus Act to the colony. Its operation to that effect cannot be restricted by confining the laws and Statutes thereby applied to those relating to procedure, or by showing that a specific exception in the applied Act preserving the Crown's right could not operate in the circumstances of the colony.

At the original hearing reported in 17 N.S.W.R. 16, Chief Justice Darley said (page 22): "It is well known that in many of the earlier grants issued by the Crown in this colony the description of the lands intended to be granted is indefinite and vague in the extreme, so much so, that it is now nearly impossible to ascertain from the description in the grant to what lands it applies. Sometimes the grant was of so many acres to be known as such or such a farm and nothing more ... If it were once supposed that the Crown had the power of putting any person who, or whose predecessors, had been in possession for 60 years to the proof of his documentary title, this would cause so much doubt and confusion in the transfer of property that we believe in many instances the value of certain properties would be deteriorated, and in some instances be rendered practically unmarketable."

(2) WILLIAMS v. BOOTH 10 C.L.R. 341.

By Crown Grants issued in 1819 and 1834, the Crown granted to the plaintiffs predecessors in title two adjoining parcels of land, which were separated by a salt water lagoon, situated near the sea. The boundaries of the land granted, so far as material, were described as, in the one case, "to a salt water lagoon and on all other sides by that lagoon and the sea," and in the other case, "to Dewy Lagoon, on north by that

lagoon to the sea." The lagoon was separated from the sea by a sand bar. At certain seasons and tides there was an open channel between the lagoon and the sea, through which the tide ebbed and flowed, while at other times the channel was closed by the sand bar, until the waters of the lagoon, being swelled by rain, cut through the bar and restored communication with the sea. Prior to 1860 the channel was more often open than closed, but in recent years it had been more often closed than open.

Held that having regard to the subject matter of the grant and the description of the boundaries, it was the intention of the parties that the land granted should not extend beyond the margin of the lagoon, and that this intention being clearly expressed, the then actual nature and condition of the lagoon was immaterial.

Held also that the medium filum rule is not applicable to marine lagoons, and that if it were so applicable the fact that such lagoons are substantially part of the sea, and may be of public use for purposes of fishing and navigation would exclude the application of the rule in the present case.

Held further, that even if the channel were now permanently closed to the sea, no case of accretion had been made out, and any addition to the soil of the grantee directly caused by each closure could not have been imperceptible.

At page 349 Griffith, C.J., said:

"What then is the meaning of the words 'by that lagoon and the sea' and 'by that lagoon to the sea,' used in the grants, as applied to the subject matter? As a matter of English and apart from any technical or artificial rules of construction, I cannot doubt that a plain person with an ordinary acquaintance with the English language would understand that the parties meant, in the one case, a line dividing the land granted from the lagoon and the sea, i.e., the margin of the lagoon and the sea, and, in the other, a line dividing the land granted from the lagoon and extending

along its margin to the sea. In both cases the continuity of the lagoon and sea is assumed."

(3) *McGRATH v. WILLIAMS* (1912) 12 S.R. 477

The plaintiff claimed to be the owner in fee simple of a piece of land fronting on the north the Shoalhaven River, which is tidal. The land in question was granted by the Crown in 1843 to plaintiffs predecessors in title. The grant was subject to certain reservations, including a reservation of "all land within one hundred feet of high-water mark on the sea coast, and on every creek, harbour and inlet of the sea." The plaintiff sought to bring the land down to high-water mark on the Shoalhaven River under the Real Property Act, claiming that the 30.48 metres reservation had been eroded. The Crown objected to the plaintiffs application on the ground that the reservation in the grant enabled the Crown at any time to take possession of 30.48 metres from the existing high-water mark at the time of such taking of possession.

Held that the reservation operated by way of exception from the grant, and that consequently the 30.48 metres must be measured from high-water mark as at the date of grant.

(4) *LORD v. COMMISSIONER OF SYDNEY* (1859) (12 Moo. P.C. 473). (14 E.R. p. 991)

A right to the use of flowing water does not necessarily depend upon the ownership of the soil covered by such water.

In 1810 the Crown made a grant to R of 135 acres [54.63 hectares] of land in New South Wales described as bounded on the West by N farm, on the north by an east line of 603.5 metres on the east by a south line to a small creek, and on the south by that creek and the water of Botany Bay at the mouth of Cook's River. It was not necessary to include any portion of the creek to make up the quantity of land specified in the grant. In 1823 the Crown made a grant of 600 acres [242.8 hectares] of land higher up the creek to L, in which the land was described as bounded on the north-west by a line from the southeast corner of R's

farm to the southwest corner of W's farm, on the northeast by W's farm, on the southeast by a line bearing west, south to Botany Bay, a creek and R's farm. This grant contained a reservation that the Crown was to be entitled to "any quantity of water and any quantity of land, not exceeding 10 acres, in any part of the said grant, as might be required for public purposes." L afterwards became owner of the land comprised in the grant to R. The water of the creek was used for turning a mill erected on R's land, and for other beneficial purposes.

On the resumption by the Crown under the powers of an Act of Council of N.S.W. 17th Vict. No. 35, of a portion of such lands, and diversion of the stream flowing in the creek,

Held, first that the grant by the Crown in 1810 to R of land bounded by that creek passed the soil of the creek *ad medium filum aquae*, as the description of boundaries in the grant did not exclude from it that portion of the creek which by the general presumption of law would go along with the ownership of the land on the banks of it.

Second that the right to the use of the flowing water of the creek in respect of the land below originally granted to R was not lost by the acceptance of L of the land above, although in the latter grant the Crown had reserved the right to take the water, the only effect of the reservation being that L waived his own rights as riparian owner to the use of the water as it flowed past his land.

In construing grants, the words used must be taken in the sense which the common usage of mankind has applied to them, as well in reference to the context in which they are found as the circumstances in which they are used.

This rule of construction equally applies whether the subject matter be a grant from the Crown or a subject.

(5) *ATTORNEY-GENERAL v. WHITE* (1926) 26 S.R. 216

By two Crown grants made in 1838 two parcels of land in New South Wales containing 1,360 acres [550.4 hectares] and 1,200 acres

[485.6 hectares] respectively were granted to the defendant's predecessors in title. The first parcel was described as bounded on the south and west by the Hunter River, and the second as bounded on the west by that river. It was not necessary to include any portion of the river bed to make up the areas specified in the grants. The Hunter River to the extent to which it bounded the lands in question was a permanent non-tidal and non-navigable stream.

Held that the common law presumption of construction applied, and that the bed of the river *ad medium filum* passed to the grantee in the absence of any surrounding circumstances to negative the presumption; Lord v. Commissioners of Sydney (12 Moore P.C. 473) applied.

Held further, that no change in the land policy of the Crown, of which the Court should take judicial notice, emerged between 1810 and 1925 so as to make the presumption cease to apply to Crown grants after 1825.

At page 220 Harvey, C.J. in Equity, said:

"The presumption was in 1810 a well known matter of law to all conveyances, and in order to rebut it there would, in my opinion, have to be shown by the Crown either surrounding circumstances rebutting the presumption in the particular case, or else some general notorious matter of policy or overriding reason from which the Court could draw the inference that the Crown intended to reserve the soil of all creeks and rivers in New South Wales."

(6) In re WHITE (1927) 27 S.R. 129

Where an application is made to bring land bounded by a river under the provisions of the Real Property Act, 1900, the certificate of title should show, as part of the description of the land, whether the presumption of ownership of the soil *ad medium filum* does or does not apply.

At page 130, Chief Justice Street said:

"The rights of a riparian owner who is also the owner of the bed of a river to

midstream are limited and are fairly well defined. He is not entitled to do anything to interfere with the natural flow of the stream to the injury of other riparian owners; nor may he interfere with any rights that have been acquired by the public; and his boundary is liable to be shifted from time to time by changes in the course of the river. I am clearly of the opinion, therefore, that Mr Manning's contention that the applicants are entitled to have the line of midstream at the time of their application defined and described, and are entitled to the issue of absolute and indefeasible certificates of title to the soil within that fixed boundary so ascertained cannot be supported. I need not enlarge upon the difficulties and the anomalies that might arise in the future if such a right were conceded, and if the centre of the stream should afterwards become altered by reason of changes in the course of the river. Nor on the other hand do I agree with the contention put forward on behalf of the Registrar-General that in such cases nothing more is needed than that a certificate of title should follow the terms of the grant without any additional description."

(7) KINGOOM v THE HUTTRIVER BOARD
(1905) 25 N.Z.L.R. 145

Where a river has defined banks, but the flow of water between the banks is irregular, being confined to a small channel during the dry months and for the greater part of the year, but greatly increasing during wet weather and extending occasionally, in each year, from bank to bank, whilst in exceptional instances, happening once in every two or three years, when the rainfall has been long continued and of great severity, it overflows the banks, the "bed" of the river (in law) extends from bank to bank. It is not confined to the channel in which the water is for the time being flowing in dry weather, nor does it extend beyond the banks to land over which the water flows in time of flood.

Where land described as bounded by such a river (namely, the Hutt River) was granted by the Crown to hold as from the 2nd April, 1847,

Held: That the presumption that the grantee held *ad medium filum* applied, there being no circumstances existing at that date which it could be held rebutted the presumption.

(8) ATTORNEY-GENERAL v.
MEREWETHER (1905) 5 S.R. 157

By Crown Grant dated 29th February, 1840, 50 acres [20.23 hectares] of land were granted bounded on the east by the sea beach and on the north by the south margin of a small lagoon or lake reserving all land "within one hundred feet of high water mark on the sea coast and on every creek, harbour and inlet." On the evidence the Court found (1) that the state of the lagoon was continually varying according to the conditions of wind and weather, (2) that the lagoon was more or less permanently separated from the sea by the sand bar which rose appreciably above the ordinary level of the lagoon and above high water whether at spring or neap tide, (3) that after a heavy rainfall the creek or stream running into the lagoon from the west filled up the lagoon until the water was nearly on a level with the top of the sand bar, (4) that when this was the case a channel was often made artificially across the bar, and the water allowed to run into the sea, (5) that occasionally the water of the lagoon made a channel by its own pressure across the bar, (6) that the water running through the channel widened and deepened it, (7) that when the water in the lagoon had run out, the channel was soon closed by the action of the sea and wind banking up the sand bar, (8) that in recent years when a channel in the bar was open, the sea water flowed into the lagoon on some occasions at high water - the depth of the sea water so flowing in, in the channel, varying from about 0.3 metres to about 0.05 metres, (9) that previously to 1880 there was rarely or never any inflow from the sea, except by waves sometimes lapping over the bar, (10) that at high spring tides with a southeasterly gale blowing, the waves of the sea ran up the outer slope of the sand bar, and the end of the

waves ran over into the lagoon, (11) that the water in the lagoon was salt, at any rate at the eastern end, from the access of sea water, (12) that in 1840 the lagoon was less exposed to the entrance of the sea than in recent years, and (13) that the lagoon was not subject to the ordinary ebb and flow of the tides.

Held on these findings of fact that the lagoon, was not an inlet of the sea within the meaning of the Crown Grant, and that there was no reservation in favour of the Crown of the land within 30.48 metres of the southern shore of the lagoon.

(9) ATTORNEY-GENERAL v SWAN (1921)
21 S.R. 408

By Crown Grant dated 30th March, 1840, certain land at Illawarra Lake was granted to L subject to a reservation of "all land within 100 feet of high water mark on the sea coasts and on every creek, harbour and inlet." In 1853 part of the land became vested in the defendant's predecessor in title, such part being situated on a tongue of land bounded on one side by the waters of the western shore of the lake and on the other by Mullet Creek, which flows into the lake.

Upon the evidence the Court found that, at the time of the grant, Illawarra Lake was only intermittently open to the sea, as the effect of the sea's action was to close its entrance by heaping up sand in the form of a bank, and when closed it remained closed until artificially opened or forced open by the pressure of water accumulated within the lake. Though more often open than closed, it was periodically closed for long periods. When open the ordinary neap tides did not enter the lake, and there was, in fact, no daily visible rise and fall of the tide on the western shores of the lake or in Mullet Creek corresponding with the movement of the sea tides.

Evidence was also adduced that the land within 30.48 metres of the water of the lake and creek had for more than 60 years prior to the information been used by the defendant partly for farming and partly for grazing, and that the land was fenced from the lake to the creek. And further that in 1889 a Government

surveyor made a survey of the reservation, in 1900 a police constable purported to take possession by turning a sod, and in 1905 the Crown served a notice on the defendant's predecessor in title to the effect that her title was illegal, and that an agent purporting to act on her behalf had offered to take a lease of the land from the Crown.

Held that Illawarra Lake was not a harbour or inlet of the sea, nor was Mullet Creek a creek or inlet of the sea, within the meaning of the grant inasmuch as (1) Illawarra Lake was only intermittently open to the sea and could not, therefore, be said to be subject to the regular ebb and flow of the tides; and (2) there was in fact no daily visible rise and fall of the tide on the western shore of the lake or in Mullet Creek.

Held therefore that the reservation in the grant was not applicable to the land within 30.48 metres of the waters of the lake and of Mullet Creek.

Held further, assuming the land in question was within the reservation of the grant, that the defendant had established a case of uninterrupted adverse possession of the land against the Crown for the statutory period and that the Crown had not resumed possession by any of the acts enumerated.

(10) *WATSON v. GRAY* (1880) 14 Ch. D. 192 - See footnote to appendix.

(11) *In re PRIDDLE* (1916) 16 S.R. 54

A transfer of land under the Real Property Act which describes the land transferred as being certain numbered allotments upon a deposited plan of subdivision, divests the estate or interest of the transferee in the soil of roads or streets adjoining such allotments in the absence of circumstances showing a contrary intention.

(12) *ATTORNEY-GENERAL v. WILCOX* (1938) 54 T.L.R. 985

From the judgment at p. 986 (Mr Justice Farwell).

"The vendors ... convey unto the purchaser as beneficial owner and the

beneficial owner conveys to the sub-purchaser 'All that piece or parcel of land by the River Thames at East Moseley aforesaid, bounded on the north by the towing path, on the west, etc., etc and together (so far as the vendors are able to grant the same, but not further or otherwise) with (1) the right of way for the sub-purchaser and all others authorised by him at all times for all purposes over the towpath on the north side of the said property.'

"It seems to me that the only inference properly to be drawn from the document as a whole is that the parties did not intend by this conveyance to pass the property in the towpath to the purchaser. In other words the presumption which would otherwise have made the purchaser entitled to the soil of the towpath is rebutted by the very instrument which conveys the property to the purchaser, because it is incredible that the vendors and the purchaser can have intended that there should be a right of way granted over property which presumably was intended to be the purchaser's own property."

(13) *TIERNEY v. LOXTON*, 12 N.S.W. 308

A person owning land, under title derived from a Crown Grant adjoining what is known as a Government road, that is, a road marked or laid out by the Crown, and described in the grant under which he owns his land as bounding the land granted, has not an "interest" in the soil of the road within the meaning of section 72(b) of the Real Property Act, and he cannot therefore lodge a caveat against an application to bring the land comprising the road under the Act.

Under section 72(b), a person cannot lodge a caveat unless he has some legal or equitable interest in the land partaking of the character of an estate, or of an equitable claim upon the land.

The presumption that an owner of land adjacent to a road has the property in the soil of the road *usque ad medium filum viae* arises

in the absence of express evidence on the supposition that the adjoining owners have contributed to the formation of the road and have dedicated it to the public benefit. But this presumption is rebutted where the owner of the land derives his title by Crown Grant and in the grant the road is described as bounding the land.

(14) GREAT TORRINGTON COMMONS
CONSERVATORS v. MOORE STEVENS
(1904) 1 Ch. 34/

By a private Act of Parliament passed to settle certain disputes between the lord of a manor and the commoners, certain common lands-abutting on a river were vested in a body of conservators incorporated by the Act. Such lands were defined in a schedule to the Act and by reference to a map, but these were not so expressed or drawn as to include any part of the bed of the river. The conservators by virtue of the presumption applicable to a grant of land abutting on a river claimed to be entitled to the adjoining moiety of the bed of the river, including the moiety of an island in the middle of the river and they brought an action against another riparian proprietor in respect of an alleged trespass by the removal of gravel from this half of the bed of the river. This island was of ancient origin. The spot from which the gravel was dug was partly opposite to the island and nearer to the island than to the plaintiff's bank.

Held that, assuming that the presumption applied, the *medium filum aquae* ought to be drawn, not through the island, but through the stream between the island and the plaintiffs land, and that the action failed.

Semble the plaintiffs were entitled under the Act to half the bed of the stream between their lands and the island.

(15) NIMMO v. THE CALEDONIAN
RAILWAY (1903) 5 F (COURT OF
SESSION) 1001

Where adjoining properties were situated *ex adverso* of the convex side of a bend in a tidal river - the actual *medium filum* (as determined by the report of a skilled geographer) being approximately an arc of a circle.

Held (1) that the method of determining the foreshore boundary by drawing a perpendicular from the end of the land boundary at high water mark to an average *medium filum* represented by a straight line was inapplicable, and (2) that the proper method was to draw a perpendicular, to a tangent of the circular arc forming the actual medium filum, by joining the end of the land boundary at high water mark to the centre of the circle.

(16) PORTAGE LA PRAIRIE v. CARTIER
(1924) 1 D.L.R. (CANADA) 775

The common law rule as to ownership of the bed of a stream by riparian owners applies to municipalities bounded by a non-navigable river. This rule is that the owner has title to that portion of the bed of the stream bounded at the sides by lines drawn from the limits of his upland, at right angles to the thread of the stream, and in front by the thread of the stream.

P. 778 per Mathers, C.J. - "It seems to me that for the location of the municipal boundary where it crosses the stream recourse must be had, not to the opinion of surveyors, but to the rules of the common law. It is a well-known principle of the common law that the owner of land bordering on a non-navigable river has, in the absence of any controlling grant, a title to the bed of the stream opposite to and adjacent to his upland to its thread or centre line ... Since a riparian proprietor owns the soil of the river opposite his upland to its thread or centre line and is entitled to a frontage thereon as near as may be to his frontage on the shore, it follows as a necessary corollary that that part of his holding must be bounded on each side by lines the shortest and most direct from the shore to the centre line of the stream, without reference to the direction of the side lines on land unless these lines are at right angles to the course of the stream."

(17) LOPEZ v. MUDDEN MOHUN
THAKOOR (1870) 20 E.R. 625 (P. C.)

Land forming part of a mouzah on the banks of the Ganges by reason of continual encroachments of that river became

submerged, the surface soil being wholly washed away. After recession and re-encroachment by the river the waters ultimately subsided and left the land reformed on its original site.

Held: Applying the principles of English law ... that the land washed away and afterwards reformed on the old ascertained site was not land gained by increment, within the meaning of section 4 of Ben. Reg. XI of 1825.

(18) ATTORNEY-GENERAL OF NIGERIA
v. HOLT (1915) A.C. 599

The respondents were in occupation of lands on the shore of the island of Lagos and there carried on business as African merchants. The lands had originally been granted by native grants to the respondents' predecessors in title, who in 1861 had obtained Crown Grants. All the grants described the lands as bounded by the sea. About 1860 a wharf and two piers had been built upon the foreshores. At various dates subsequent to the Crown Grants the respondents had carried out works on the foreshore to prevent incursion by the sea and erosion. Owing to these works a strip of land had been reclaimed below that which in 1861 had been high water mark. The respondents had built stores and sheds upon the reclaimed land and had for a period of from thirty to fifty years used it, together with the land granted and the piers and wharf, for purposes of their businesses and had had exclusive possession. The Government of the island had knowledge of the reclamation and of the building upon and use of the reclaimed land.

Held: That the reclaimed land, not being the result of the natural accretion, vested in the Crown as owner of the foreshore, but that the respondents continued to have the rights of riparian owners over the foreshore, and that there was to be presumed in the respondents' favour an irrevocable license from the Crown to erect buildings and to store goods upon the reclaimed land to use it generally for the purposes of their businesses.

P. 612, per Lord Shaw - Upon the other hand, if accretions had been formed in the course of nature by the silting up of sand, gravel, and the

like, and these accretions had been of the gradual character to be afterwards referred to, they would have added to the land, notwithstanding the measurements in square yards or feet which the title contained.

The reason of this is not far to seek and it is substantially to be found in the general convenience and security which lie at the root of the entire doctrine of accretion. To suppose that lands which, although of specific measurement in the title deeds, were de facto fronted and bounded by the sea were to being the situation that their frontage to the sea was to disappear by the action of nature to the effect of setting up a strip of land (it might be yards, feet, or inches) between the receded foreshore and the actual measured boundary of the adjoining lands, which strip was to be the property of the Crown, and was to have the effect of converting the land so held into inland property would be followed by grotesque and well-nigh impossible results, and violate the doctrine which is founded upon the general security of landholders and upon the general advantage.

At p. 613. Although various points were brought before their Lordships in the direction of questioning the law of accretion, their Lordships, for the reasons stated, do not doubt its general applicability to lands like those of the respondents abutting on the foreshore. Nor do they, however, doubt the one condition of the operation of the rule. That is that the accretion should be natural, and should be slow and gradual - so slow and gradual as to be in a practical sense imperceptible in its course and progress as it occurs: .. The true reason for the principle of law in regard to foreshores is the same as the principle in regard to river banks, i.e., that it is founded upon security and general convenience.

(19) VERRALL v. NOTT, 39 S.R. 89

V was the owner of four lots of land situated near Manly held under old system title, which were described in the grants as being bounded on the south by "North Harbour". There were erected on the four lots of land certain houses and other buildings. Since the original Crown grant was made in 1845 to V's predecessors in

title, certain land had been added by a gradual process of accretion to the four lots. The process of accretion had been facilitated by the erection of a rubble wall by V.

By virtue of sections 3A and 27 of the Sydney Harbour Trust Act, 1900-1935, the bed and shores of the harbour bounded by high water mark were vested in the Maritime Services Board. Under the provisions of the Sydney Harbour Trust Land Titles Act, 1909, a certificate of title was issued to the Board in respect of those lands.

Held: (1) That notwithstanding that a certificate of title for the lands had been issued the boundary of the lands vested in the Maritime Services Board was not fixed, but varied from time to time in accordance with high water mark.

(2) That V was entitled to the benefit of any accretion to his land from the sea, although the original boundary of his land was ascertainable.

(A.G. of Southern Nigeria v. John Holt & Co. Ltd (1915) A.C. 599 applied).

(3) That V was not prevented from taking the benefit of accretions because of the erection of the rubble wall.

(Brighton & Hove General Gas Co. v. Hove Bungalows Ltd (1924) 1 Ch. 372, applied).

Further findings were also made having no bearing on the definition of boundaries.

(20) BRIGHTON AND HOVE GENERAL GAS CO. v. HOVE BUNGALOWS LTD (1924) 1 Ch. 372

The general law of accretion applies to a gradual and imperceptible accretion to land abutting upon the foreshore brought about by the operations of nature, even though it has been unintentionally assisted by, or would not have taken place without, the erection of groynes for the purpose of protecting the shore from erosion.

The general law of accretion also applies where the natural accretion, gradual and imperceptible, abuts upon land of which the

former boundary was well known and readily ascertainable.

(21) GIFFORD v. LORD YARBOROUGH (1828) 130 E.R. 1023

Land not suddenly derelict, but formed by alluvion of the sea, imperceptible in progress, belongs to the owner of the adjoining demesne land, and not to the Crown.

(22) Re HULL & SELBY RLY COY (1839) 151 E.R. 139

If the sea or an arm of the sea by gradual and imperceptible progress encroach upon the land of a subject, the land thereby covered with water belongs to the Crown.

(23) A.G. v. REEVE (1885) 1 T.L.R. 675

Where accretions of land on the seashore are shown to have been perceptible by marks and measures as they took place, such accretions belong to the Crown and not the adjacent private owner.

Per Lord Coleridge, p. 678 - "Applying the principle in the evidence in this case, I do not think that we can say that the increase, in the language of the Digest and Bracton, 'ta paullatim adjicitur ut intelligere non possis quantum quoquo mom en to temporis adjiciatur', or that, according to Lord Hale, it was so insensible that it cannot be by any means found that the sea was there; or to use his other expression, that the gain is 'so insensible and indiscernible by any marks that it cannot be known'. On the contrary, the witnesses, who had the best means of observing, are able by marks and measures, to indicate what was gained ... Henderson said ... that this advance of the beach and receding of the line of ordinary high water mark could be plainly perceived from time to time as it went on; that when the wind was blowing strong from northwest to north, with a high tide, it was often visible from day to day; and that he had frequently noticed during the prevalence of such winds that the line of ordinary high water mark receded some 10 or 12 feet in a single tide, leaving an accretion of sand and shingle many feet in depth over the high water mark of the previous tide."

(24) HINDSON v. ASHBY (1896) 2 Ch. 1 -
See footnote to Appendix.

(25) WELLS v. MITCHELL & BROWN
(1939) 2 D.L.R. 535; (1939) 3 D.L.R. 126 -
See footnote to appendix.

(26) RIDDIFORD v FEIST (1902-3) 5 G.L.R.
(N.Z.) 43

Where a new shore is formed on a non-navigable stream by accretions of alluvion, and the opposite shore has been eroded to an extent equal to the accretions, the land on the new shore is to be divided between the owners entitled to it according to the rule laid down in Batchelor v. Keniston (Amer. Rep. 12, p. 143) and similar cases, thus: "Give to each owner a share of the new shore line in proportion to what he held in the old shore line, and complete the division of the land by running a line from the bound between the parties on the old shore to the point thus ascertained on the new.

A river had, by erosion of its bed during a period of 50 years, changed its course, and caused the accretion of alluvion on the frontages of riparian freeholders on one side and the wearing away of the shore on the opposite side. Fences had from time to time been erected by the owners of land adjoining the alluvion, but the true lines of such fences had never been ascertained and the main question in this action was "upon what principle should the alluvial lands be apportioned among the respective owners."

Held that the rule of the Roman law and that generally followed in America, and summarized at pp. 56 and 59 "Angell on Watercourses" should be followed as ensuring the most equitable division.

(27) TURNER v. MYERSON (1917) 18 S.R.
133See footnote to Appendix.

(28) TURNER v. HUBNER (1923) S.R. 3See
footnote to Appendix.

(29) SMALL v. GLEN (1880) 6 V.L.R. (L)
154

Where the description of land in a certificate of title giving the area approximately is merely

a plan on the margin showing abutments at each end on a street the dimensions of the boundary lines being also marked, but falling short of the actual distance between such two streets the position shown by plan will govern to the exclusion of the figured dimensions, which will be considered as *falsa demonstratio*.

(30) MOORE v. DENTICE (1901) 20
N.Z.L.R. 128

A town section under the Land Transfer Act was subdivided by the owner for sale. The subdivision was made by an authorized surveyor, who prepared a plan, and pegged out the lots on the ground. The subdivisional plan was never deposited in the Land Transfer Office and the transfers made of lots sold did not refer to it, but the different purchasers went into possession on the supposition that the subdivisional survey was correct.

Held in an action involving the question what was the true boundary between two adjoining lots, that the peg originally put in by the surveyor in laying out the lots ought, under all the circumstances, to be followed notwithstanding that this might give the defendant about 0.1 metres more of frontage than was shown in her certificate of title, and that there was some question whether there was sufficient frontage in the whole section to give the other owners as much as was shown in their certificates, and notwithstanding that the occupation had not been exactly according to the peg.

A variance of 0.1 metres on a frontage stated as 9.145 metres is not more than is covered by the use of the words "be the said measurements a little more or less."

Where adjoining owners concur in putting up a fence along a certain line, on an erroneous assumption by each that it is the true boundary, neither party having made any representation to the other upon the subject, neither is stopped from setting up that some other line is the true boundary.

(31) PIERS v. WHITING (1923) 3 D.L.R.
879See footnote to Appendix.

(32) A.G. v. DRUMMOND, 1 Dru. and War.
368 See footnote to Appendix.

(33) WATCHAM v. A.G. OF EAST AFRICA
PROTECTORATE (1919). A.C. 533

The principle that when an instrument contains an ambiguity, evidence of user under it may be given in order to show the sense in which the parties used the language employed, applies to a modern as well as to an ancient instrument, and where the ambiguity is patent as well as where it is latent.

Where, therefore, in a land certificate issued by the Crown in 1899 there is a variance between the stated area and the area as described by physical boundaries (namely, 1 609.3 metres along a river to a width of 402.33 metres there-from), evidence can be given of user inconsistent with the area intended being that included in the boundaries, so as to establish that that description is *falsa demonstratio*.

From the judgment, p. 545 -

"It is, their Lordships think, clear from these facts that the statement of the boundaries contained in the certificate is no true guide to the ascertainment of the property intended to be conveyed. There is only one other guide - the area. The choice lies between them, one or other must be a *falsa demonstratio*. The area comes first and is repeated after the boundaries. In their Lordships' view the description of the boundaries is the *falsa demonstratio* and the other description being complete and sufficient in itself, that of the boundaries should be rejected."

(34) OVERLAND v. LENEHAN 11 Q.L.J. 59

Where it appears that the description of land or of its boundaries as set out in a certificate of title is erroneous, the error in such description may be disregarded.

Extrinsic evidence is admissible to show the identity of land intended to be included in a certificate of title and section 44 of the Real Property Act of 1861 (Queensland) does not confer upon a registered proprietor the right to

retain land included by an erroneous description in his certificate of title.

Per Griffiths, C.J., at p. 60-

"Before dealing with the facts of the case, it is necessary, I think, in order to dispel a mistaken notion which seems to be the foundation of much of the argument addressed to the Court in this case, to point out that a certificate of title does not rest upon a pinnacle by itself, but is an ordinary written instrument, and that, although its operation is far reaching, and in some aspects exceptional, it must be construed in accordance with the ordinary rules for the construction of documents of title. Without extrinsic evidence to identify its subject matter, it has no intelligible meaning. Extrinsic evidence is therefore admissible ... and when admitted, must be applied in precisely the same way as in the case of any other document of title. The doctrine expressed in the words *falsa demonstratio non nocet* is just as applicable to it as to any other instrument of title."

(35) DONALDSON V. HEMMANT 11 Q.L.J.
35

The plaintiff bought at auction from the defendant certain allotments of land which, before the sale, had been marked on the ground with corner pegs bearing the numbers of the lots and showing the position of the roads as laid out. The plaintiff, after the sale, inspected the lots which he had bought and was quite satisfied. The sale note described the land as "the land described in plan of subdivision of, etc., as allotments so and so." The conditions of sale contained a proviso for compensation for errors in description or particulars.

It appeared that the plan alleged to be that referred to in the sale note did not accurately delineate the allotments as marked on the ground by the pegs.

Nine years after the sale, and before transfer, the plaintiff brought an action against the defendant alleging that the position of the pegs had been fraudulently altered by the defendant

from their original position, which, he contended, corresponded with the plan; but this was negatived by the jury. He then claimed to be entitled to rescission or damages on the ground that the land which the defendant was willing to transfer to him, being the land marked by the pegs, did not correspond with the plan.

Held that the subject matter of the contract was the land marked on the ground by the pegs at the time of the sale, and that the plaintiffs remedy, if any, was for compensation under the conditions of sale. But held that this claim was barred by the Statute of Limitations.

(36) *EQUITABLE BUILDING AND INVESTMENT COY v. ROSS*, N.Z.L.R. Vol. 5, S.C. p. 229

Where parcels of land are granted by the Crown, having no natural boundaries, the original survey marks being gone, and where there is not great difference in admeasurement, a long occupation acquiesced in by the adjoining owners will be taken by the Court as convincing evidence that the lands occupied are the land granted, notwithstanding that they cannot be made to tally with the plans on the grants.

Next to natural boundaries, the highest regard is had to lines actually run, and corners actually marked at the time of a grant, and, if the description is doubtful, parol evidence of the construction given to it by the parties is admissible, and will bind their successors in title.

Semble that even under the Land Transfer Act possession should be the best evidence of title.

Per Richmond, J., p. 234-

"Neither the words of a deed, nor the lines and figures of a plan can absolutely speak for themselves. They must, in some way or other, be applied to the ground. Where there are no natural boundaries and the original survey marks are gone, and there is no great difference in admeasurement, a long occupation, originally authorized by the proper public authority and

acquiesced in throughout the period by the surrounding owners, is evidence of a convincing nature that the land so occupied is that which the deed conveys. Even where monuments exist which enable a more accurate survey to be made, no trifling discrepancy can be allowed to over-rule the practical interpretation put upon the instrument by such an occupation. The occupier is not to be driven to rely on a mere possessory title; but has a right to assert that the land he holds is the very land granted. Land surveying is a practical art; which is as much as to say that it is not capable of the ideal precision of the mathematics ... The rough old peg pointed by Messrs Plimmer and Bennett gives, with the help of Mr Bennett's explanation, a starting point, the measurements from which correspond pretty closely with the description in the grants. The apparent discrepancy of three-quarters of a link cannot, under the circumstances, be regarded as of any moment."

Note - (by A.W.M.) the rough peg was placed by Mr Surveyor Park about 1842. Neither Bennett or Plimmer was a surveyor and their evidence was accepted that this 40 year old peg was placed not on the corner, but 1.22 metres therefrom, on a prolongation of the side line.

(37) *A.G. v. NICHOLAS* (1927) N.Z. G.L.R. 340

Where the granted land cannot be fixed from the original survey, or where there are no natural boundaries, and the original survey marks are gone, a long occupation, acquiesced in throughout the period by the surrounding owners is evidence of a convincing nature that the land so occupied is that which the grant conveys, in the absence, of course, of striking differences in admeasurement, or some significant counter-vailing circumstances, and if the description of the grant be ambiguous or doubtful, parol evidence of the practical construction given by the parties by acts of

occupancy, recognition of monuments or boundaries, or otherwise is admissible in aid of interpretation.

(38) *CURRIE v. CLARK*, 29 S.R. 215

Where a Crown Grant describes the subject land by reference to the boundaries of a "measured portion", evidence of the measurements which were made and the survey marks which were erected or adopted on such portion by the Crown or its agents on the last occasion (preceding the grant) when such portion was measured as a portion for sale, is admissible for the purpose of ascertaining the boundaries of the Crown Grant.

Per Harvey, C.J., in Equity, at p. 216 -

"I will admit the evidence. The report and plan are statements of a deceased person made in the course of his duty. They serve to show the making and adoption of the survey marks on a portion and the distances measured between those survey marks in 1867. In the absence of evidence of any measurement and marking of that portion between March, 1867, and March, 1869, the "measured portion" mentioned in the grant of 1869 should be taken to be the portion of 8 acres 1 rood 24 perches measured and marked by F.N. in 1867. Upon evidence being placed before the Court that certain of the original survey marks are still identifiable on the ground, the position of the "South-eastern corner of the measured portion" can be ascertained ... That reference in the Crown Grant to the "measured portion" is just as clearly a reference to this plan of F.N. as if the Crown Grant had said "the measured portion" indicated on F.N.'s plan deposited in the Surveyor-General's Office in 1867."

(39) *EASTWOOD v. ASHTON* (1915) A.C. 900 See footnote to Appendix.

(40) *FRANCIS v. HAYWOOD* (1882) 22 Ch. D. 177

At page 181 - "When after a description of a property it is stated that on one side it is bounded by a certain other property, and it

appears that it is not so bounded for every inch there is an inaccuracy in the statement of the boundary, but this is not enough to exclude what is not so bounded if it appears from the evidence to have been part of the property dealt with, and the previous description of that property is sufficient to include it."

(41) *HORNE v. STRUBEN* (1902) A.C. 454

In a grant of land with certain specified boundaries "as will further appear by the diagram framed by the surveyor".

Held that, as a matter of construction, where the diagram is repugnant to the terms of the Grant, the latter will prevail.

Although by Articles 8 and 13 of the Proclamation of August 6, 1913, there must be a diagram before a title be granted, yet the title of the grantee must be expressed in his title, and when so expressed will not be limited by the diagram.

(42) *ROURKE v. SCHWEIKERT* (1888) 9 L.R. Eq. (N.S.W.) 152 - See footnote to Appendix.

(43) *HAY v. SOLLING* (1895) 16 L.R. (N.S.W.) 60 See footnote to Appendix.

(44) *CABLE AND ANOR v. ROCHE AND ORS* (1961 N.Z.L.R.614)

Where the land comprised in a certificate of title cannot be fixed from the original survey or where there are no natural boundaries and the original survey marks are gone, a long occupation acquiesced in throughout the period by the surrounding neighbours is evidence of a convincing nature that the land so occupied is that comprised in the certificate of title in the absence of striking differences in admeasurement or some significant countervailing circumstance. However, mere proof of such long and uncontested occupation does not relieve the Court of the duty of enquiry and of considering the history of the property and the technical evidence bearing on the dispute.

(45) *RE BULMAN* 57 D.L.R. (2d) 658
BRITISH COLUMBIA SUPREME COURT

Accretion means adding to existing dry land by horizontal progression outwards from the shore, gradually, naturally and imperceptibly. Where water recedes from the land, or where land by alluvial deposit is added to the foreshore, there has been an accretion for the benefit of the adjoining owner. However, where there has been a vertical development over a wide area rather than a gradual extension of the existing upland, as where a fast flowing river laden with sand and silt

deposits the sand and silt in a fan shaped pattern at the entrance to a lake, so that the lake bottom appears above the water level in the form of sand bars which eventually become joined to the upland by further sanding and silting. There has been no accretion. This is so even where the land only becomes arable by the gradual advance of the top soil across the raised lake bottom from the existing upland, since nothing turns on the nature of the soil.

FOOTNOTE TO APPENDIX

(10) WATSON v. GRAY

(24) HINDSON v. ASHBY

(25) WELLS v. MITCHELL & BROWN

(27) TURNER v. MYERSON

(28) TURNER v. HUBNER

(31) PIERS v. WHITING

(32) A.G. v. DRUMMOND

(39) EASTWOOD v. ASHTON

(42) ROURKE v. SCHWEIKERT

(43) HAY v. SOLLING

Details of these cases have not been included. In some of them sufficient particulars are already comprised in the text of the notes. In the remainder the principles established by the cases have been mentioned and inclusion of details is unnecessary.

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