

# Rules for Cadastral Survey 2018

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## **1. Title and Commencement**

These Rules may be cited as the Rules for Cadastral Survey Information 2018, and they come into effect on 25 December 2018.

## **2. Definitions**

<b>accretion</b>	<b>the slow and imperceptible</b>
adopt	to incorporate into a cadastral survey information from a prior cadastral survey that has already been integrated into the cadastre or, in the absence of suitable cadastral survey information, from an estate record held by the tenure system manager. 'Adoption' and 'adopted' have corresponding meanings.
approved cadastral survey	a cadastral survey which has been approved as being in terms of cadastral survey rules or regulations, but excludes those lodged only for recording purposes
arc boundary	a boundary that follows part of the circumference of a circle
<b>avulsion</b>	<b>the rapid or sudden</b>
balance parcel	the portion of one of the following parcels that is intended to remain after a part has been removed by survey (a) a railway parcel that is not in a computer freehold register, or (b) a road parcel, or (c) a fixed marginal strip parcel, or (d) the bed of a lake, river, stream, the sea or the common marine and coastal area not currently recorded in the cadastre, and not intended to vest, and not intended to have a new estate record (e) the portion of an easement or covenant parcel that is intended to remain after a part has been surrendered (f) a primary parcel limited as to parcels (g) a primary parcel subject to an adverse possession claim (h) a primary parcel subject to a change in registration from the Deeds Registration Act 1908 to the Land Transfer Act 1952
boundary mark	a cadastral survey mark positioned at a boundary point
boundary point	a uniquely identified point on a parcel boundary, whether marked or unmarked
cadastral survey dataset	as defined in section 4 of the Cadastral Survey Act 2002
cadastre	as defined in section 4 of the Cadastral Survey Act 2002
Canterbury earthquakes	has the same meaning as in section 4 of the Canterbury Property Boundaries and Related Matters Act 2016

centreline easement	an easement which is spatially represented by one or more lines along its centre
common marine and coastal area	as defined in section 9 of the Marine and Coastal Area (Takutai Moana) Act 2011
company lease conflict	as defined in section 2 of the Resource Management Act 1991 a difference that exceeds the applicable accuracy standards: <ul style="list-style-type: none"> <li>(a) between an estate boundary and its recorded position in a cadastral survey integrated into the cadastre, or</li> <li>(b) between the same boundary as recorded in different cadastral surveys integrated into the cadastre, or</li> <li>(c) between the same survey mark or point as recorded in a cadastral survey integrated into the cadastre and other evidence including field evidence</li> <li>(d) an error recorded in the cadastre</li> </ul>
cross lease	as defined in section 2 of the Resource Management Act 1991
disturbed	an old mark which is observed as physically disturbed
earthquake movement	means the movement of land within the meaning of section 8(2) of the Canterbury Property Boundaries and Related Matters Act 2016
<b>erosion</b>	<b>the slow and imperceptible</b>
esplanade strip	as defined in section 2 of the Resource Management Act 1991
estate boundary	the boundary of an estate recorded in a tenure system for: <ul style="list-style-type: none"> <li>(a) a fee simple estate, or</li> <li>(b) Māori freehold land, or</li> <li>(c) Māori customary land, or</li> <li>(d) land of the Crown, or</li> <li>(e) a stratum estate, or</li> <li>(f) a leasehold estate</li> </ul>
extinguished	in relation to a parcel means no longer available for the assignment of rights
fixed marginal strip	a marginal strip under section 24(3) of the Conservation Act 1987
greater Christchurch	has the same meaning as in section 4 of the Canterbury Property Boundaries and Related Matters Act 2016
Hawke's Bay interim	a certificate of title issued under sections 6 or 8 of the Land title Transfer (Hawke's Bay) Act 1931
higher class	a class of accuracy which has more precise accuracy requirements than another; for example, class A is higher than class B, which is higher than class C
irregular boundary	a boundary that is depicted as an irregular line but is not a water boundary

irregular line	a line consisting of a series of connected vertices that are usually irregularly spaced and not on a single alignment
<b>limited as to parcels</b>	
lower class	a class of accuracy which has less precise accuracy requirements than another; for example, class C is lower than class B, which is lower than class A
Māori customary land	as defined in section 4 of the Te Ture Whenua Māori Act 1993
Māori freehold land	as defined in section 4 of the Te Ture Whenua Māori Act 1993
marginal strip	as defined in section 2 of the Conservation Act 1987
monumentation survey	a survey that places one or more boundary marks at a boundary point already defined in an approved cadastral survey integrated into the cadastre and, the survey does not create a new parcel
movable marginal strip	a marginal strip as defined in section 2 of the Conservation Act 1987 except those created under section 24(3) of that Act
natural boundary	an irregular boundary following a described natural feature
non-primary parcel	any parcel that is not a primary parcel and includes the following examples: (a) an easement, including an esplanade strip or an access strip, (b) a covenant, (c) a lease or an area associated with a lease, (d) a licence or a permit area, (e) a unit or common property for the purposes of the Unit Titles Act 2010, (f) a movable marginal strip, and (g) a roadway or a restricted roadway that is an encumbrance over a primary parcel
occupation	the physical features that describe the extent of an occupier's use of land
old boundary mark	a boundary mark that is an old survey mark
old survey mark	a survey mark measured to on the survey and which is from the national survey control system or from a cadastral survey that is already integrated into the cadastre
parcel	an area or space that is a single contiguous portion of land separately identified in a cadastral survey that is integrated into the cadastre
permanent structure	a building or recognisable physical structure that is likely to remain undisturbed for 50 years or more
permanent structure boundary	a boundary related to a permanent structure

primary parcel	any parcel that is intended to be: (a) owned by the Crown, with the exception of a movable marginal strip, (b) held in fee simple (c) Māori freehold or customary land (d) part of the common marine and coastal area (e) the bed of a lake or river (f) road or railway, or (g) vested in a local authority
reduced level	a height in terms of a vertical datum
reinstated	means a new boundary mark that has been placed in the position of a previous boundary mark that has not been found
renewed	means a new survey mark has been placed in the same position as an old survey mark that has been found
reliable	a survey mark or evidence of a survey mark that remains in its original relative position to the ground in which it was emplaced
right-line boundary	a boundary that is a single straight line between two boundary points
Rules	Rules for Cadastral Survey 2016
stratum boundary	a boundary, not being a permanent structure boundary, that defines the upper or lower extent of a parcel
survey mark	as defined in section 4 of the Cadastral Survey Act 2002
Survey Plan	for the purposes of these regulations, where enactments makes reference to a Survey Plan, this shall be read as the Diagram of Parcels.
Surveyor-General	as defined in section 4 of the Cadastral Survey Act 2002
Title Plan	for the purposes of these regulations, where enactments makes reference to a Title Plan, this shall be read as the Diagram of Parcels
underlying parcel	the parcel, whether primary or non-primary, whose interests are or will be directly affected or encumbered by a new parcel
vector	the bearing and distance between two survey marks or points
water boundary	a boundary set at the landward margin of: (a) a river or stream bed (b) a lake bed, or (c) the common marine and coastal area or other tidal area, (d) and includes a natural boundary where this term is used in enactments to refer to a boundary at a water margin

### **3. Conduct of Cadastral Surveys**

- (a) In undertaking a cadastral survey to determine and describe the spatial extent (including boundaries) of interests under a tenure system, a Cadastral Surveyor is acting in a quasi-judicial manner as though an adviser to the courts.
- (b) The determination and description of the spatial extent shall be in relation to the adjoining parcels, shall take into account the lawful interests of the Crown, the adjoining owners, and other affected parties (whether current or future).
- (c) Cadastral surveys shall be undertaken in terms of good survey practise.

### **4. Search**

- (a) A Cadastral Surveyor shall gather all evidence relevant to the definition of a boundary and its boundary points from:
  - (1) the Cadastre
  - (2) the field, and
  - (3) in areas of proven or suspected land movement, other relevant data that may be available

### **5. Observations**

#### **5.1 Monuments**

##### **5.1.1 General**

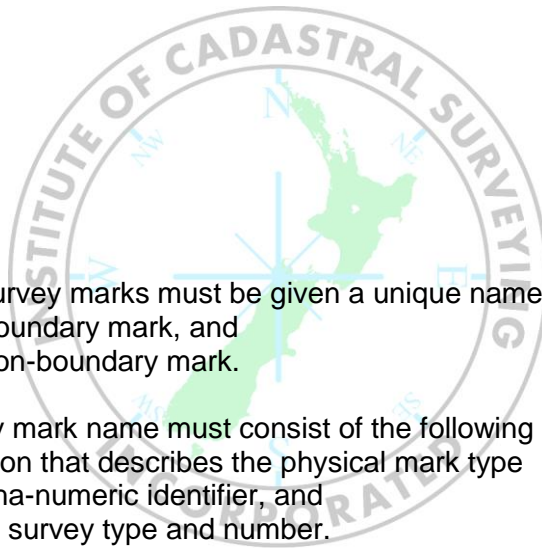
- (a) The following survey marks must be given a unique name:
  - (1) a new non-boundary mark, and
  - (2) a renewed non-boundary mark.
- (b) A unique survey mark name must consist of the following components in this order:
  - (1) an abbreviation that describes the physical mark type
  - (2) a unique alpha-numeric identifier, and
  - (3) the cadastral survey type and number.

##### **5.1.2 Origin marks**

- (a) An origin of survey shall consist of the vectors between a minimum of three reliable old marks, located as close as possible to the area of survey, and should ideally extend across the area of survey

##### **5.1.3 Non-boundary marks**

- (a) A non-boundary mark is any survey mark that is not placed at a boundary point
- (b) A new non-boundary mark shall be made of a durable material, and be soundly anchored



#### **5.1.4 Permanent reference marks**

- (a) A permanent reference mark is a non-boundary survey mark which is made of sufficiently durable material, set in sufficiently stable material, and located in a suitable position, such that it can be reasonably expected to survive and remain useable for at least 50 years
- (b) A minimum of two permanent reference marks are required for a survey that requires a witness mark
- (c) Each permanent reference mark shall be within the following distance of at least one boundary mark, where at least one boundary point on the survey is required to be witnessed
  - (1) 300 m for a class A point
  - (2) 500 m for a class B point
  - (3) 1000 m for a class B point when connected by vectors to one or more cadastral survey network marks
  - (4) 1000 m for a class C point
- (d) An adopted mark cannot serve as a permanent reference mark
- (e) A permanent reference mark may be used as a witness mark if it meets witnessing requirements
- (f) Two permanent reference marks must also have reduced levels if any witness mark is required to have reduced levels

#### **5.1.5 Witness marks**

- (a) A witness mark is a non-boundary survey mark which is made of sufficiently durable material, set in sufficiently stable material, and located in a suitable position, such that it can be reasonably expected to survive and remain useable for least 10 years
- (b) The following boundary points on a cadastral survey must be witnessed
  - (1) every new boundary point on a primary parcel boundary
  - (2) every new boundary point on a parcel where the purpose of the parcel is for a lease and the boundary is not a permanent structure boundary,
  - (3) every new or old boundary mark on the boundary of a parcel under survey, and
  - (4) every new stratum boundary point.
- (c) Each boundary point requiring witnessing must have at least one witness mark within
  - (1) 150 m for a class A boundary point
  - (2) 500 m for a class B boundary point
  - (3) 1000 m for a class B point when connected by vectors to one or more cadastral survey network marks
  - (4) 1000 m for a class C boundary point
- (d) A survey that requires a witness mark must include a minimum of three witness marks if all boundaries are class A, or a minimum of four witness marks if any boundaries are class B or C
- (e) An adopted mark cannot serve as a witness mark.
- (f) In the case of a stratum boundary point that requires witnessing at least one of its witness marks required must have a reduced level

- (g) Every boundary point on a permanent structure boundary that is permitted to be non-coincident with the permanent structure must be witnessed by a clearly identified point on the structure

#### **5.1.6 Old marks**

- (a) An old survey mark shall consist of the physical presence or evidence of a survey mark from a prior survey integrated into the cadastre
- (b) An old survey mark with a unique name must retain that name annotated with its cadastral survey reference
- (c) An old survey mark that is renewed shall be appropriately annotated
- (d) An old survey mark that is determined as being disturbed must be identified as disturbed

#### **5.1.7 New boundary marks**

- (a) The following boundary points must be marked, where practicable:
  - (1) each new boundary point on a new primary parcel, unless:
    - (a) it is a boundary point that is only between new parcels that are all intended to remain in Crown ownership, or
    - (b) it is on a survey under the jurisdiction of the Māori Land Court, or
    - (c) it is a boundary point that is only between parcels that are required to be, or as a result of the survey will be required to be, held in common ownership, or
    - (d) it is on a boundary where the parcels on each side of that boundary are required to be, or as a result of the survey will be required to be, subject to reciprocal rights of way, or
    - (e) it is unlikely that it will need to be physically located in the foreseeable future because of the terrain, ground cover, or protected vegetation, or
    - (f) the boundary point is readily identifiable by occupation along the boundary;
  - (2) each boundary point on an existing boundary of a new primary parcel, unless:
    - (a) a reliable mark is already in place, or
    - (b) it is part of a parcel where the title is to remain limited as to parcels and the boundary point is not in common with a new parcel where the limitation is not going to remain, and
  - (3) each primary parcel boundary point that results from an existing irregular class A boundary that is being converted to one or more right-line boundaries
- (b) A new boundary mark must be:
  - (1) a wooden peg, chamfered at the top, with a minimum width of 45 mm and at least 3000 mm<sup>2</sup> in cross-section, or
  - (2) any other type of peg that is clearly labelled as a boundary mark, or
  - (3) a post, or
  - (4) if the above marks are impractical, any other type of mark which must, if practical, be clearly labelled as a boundary mark
- (c) A new boundary mark must be:
  - (1) soundly anchored in place, and
  - (2) readily visible, where practical.



## **5.2 Vectors**

### **5.2.1 Bearings**

- (a) Each bearing must be expressed in sexagesimal degrees, minutes, and seconds notation
- (b) Each bearing must be expressed clockwise from north
- (c) Each bearing must be expressed in terms of the datum used
- (d) Each bearing must be recorded to sufficient significant figures to reflect the accuracy requirements specified in these Rules

### **5.2.2 Distance**

- (a) Each distance must be expressed in metres
- (b) Each horizontal distance must be reduced to the horizontal on the ellipsoid of the datum used
- (c) A vertical angle must be expressed in terms of the horizontal plane of the datum used
- (d) Each distance must be recorded to sufficient significant figures to reflect the accuracy requirements specified in these Rules

## **5.3 Reduced levels**

- (a) Each reduced level must be
  - (1) expressed in metres
  - (2) reduced to the datum used
  - (3) recorded to sufficient significant figures to reflect the accuracy requirements specified in these Rules
- (b) Where a reduced level is required, the following shall be recorded:
  - (1) the origin mark used to obtain the reduced level,
  - (2) the reduced level of the origin mark, and
  - (3) the source of the origin information

## **5.4 Occupation**

- (a) A cadastral survey must include the following occupation information:
  - (1) the nature of the physical feature,
  - (2) the approximate age of the physical feature,
  - (3) the relationship, by vector, distance, or description, between the occupation and the boundary or boundary position, and
  - (4) details of each mark that has the appearance of a boundary mark but which is not in the cadastre.
- (b) Occupation information must be provided in relation to each of the following:
  - (1) a new boundary mark
  - (2) a new boundary point

## **6. Spatial Extent**

### **6.1 Datum**

- (a) Every bearing in a cadastral survey must be expressed in terms of the same horizontal datum
- (b) Every reduced level in a cadastral survey must be expressed in terms of the same vertical datum

### **6.2 Conflicts**

- (a) Conflicts must be resolved using good survey practice
- (b) Conflicts and their resolution must be recorded in the dataset

### **6.3 Dispensations**

- (a) Dispensations to these rules must be in terms of section 47(5) of the Cadastral Survey Act 2002

### **6.4 Definition**

#### **6.4.1 General**

- (a) A Cadastral Surveyor shall interpret the evidence gathered, in accordance with all relevant enactments, rules of law, common law, and use that evidence to determine the correct position of the boundary and boundary points in relation to adjoining boundaries and boundary points
- (b) Except for the conversion of units of measure or the application of a bearing adjustment, all adopted information, must be copied without change, although bearing rounding may be utilised where this will not create a conflict
- (c) For definition purposes a hierarchy of evidence should be used generally comprising
  - (1) natural boundaries
  - (2) monuments
  - (3) documentary records, and
  - (4) occupation, while
  - (5) in areas of known or suspected land movement additional weight should be given to occupation

#### **6.4.2 Boundaries**

- (a) The following boundaries or boundary points are subject to survey
  - (1) a new water boundary
  - (2) a new irregular boundary,
  - (3) a new boundary point, including the terminal points of an arc boundary,
  - (4) an existing irregular boundary that has been converted into one or more right-line boundaries,
  - (5) an existing boundary point that is being marked,
  - (6) a boundary or boundary point that is subject to conflict, unless it is a class C or class D boundary

- (7) a boundary where its extent and location as defined in an approved cadastral survey are insufficient for the determination of its compliance with the applicable accuracy standard,
- (8) an existing boundary point of a parcel where its limitation as to parcels is being uplifted,
- (9) an existing boundary point of a parcel subject to a claim for adverse possession,
- (10) an existing boundary point of a parcel where the interim nature of a Hawke's Bay interim title is being removed,
- (11) a point that is on the boundary of a parcel which was created on a cadastral survey previously approved under LINZS10000: Interim standard for computed cadastral survey datasets for Māori freehold land, and
- (12) a boundary point on a primary parcel boundary that was previously used only as a non-primary parcel boundary point
- (13) at every new intersection of a primary parcel boundary with another primary parcel boundary on the survey, including a primary stratum boundary.

(b) A boundary or boundary point that is not subject to survey must be adopted

(c) A parcel boundary must be defined in its horizontal extent by:

- (1) a right-line boundary, or
- (2) an arc boundary, or
- (3) a water boundary, or
- (4) an irregular boundary, or
- (5) a permanent structure boundary

(d) The vertical extent of a parcel, where the vertical extent is limited, must be defined by:

- (1) a permanent structure boundary, or
- (2) a stratum boundary

(e) Where the margin of the water body defining a water boundary has moved but the boundary has not moved, that boundary:

- (1) must be converted to one or more right-line boundaries and pegged for a class A boundary, or
- (2) may become an irregular boundary if it meets the criteria for class B or C boundaries

(f) An existing irregular boundary that is not a previous water boundary must be converted to one or more right-line boundaries, except that it may remain as an irregular boundary if it is a class C boundary, or it is the landward boundary of a moveable marginal strip or esplanade strip

(g) A stratum boundary must be:

- (1) a surface that is mathematically described where at least one point has a reduced level, or
- (2) the surface of a water body or the bed of a water body.

(h) A permanent structure boundary must:

- (1) follow a described part of a permanent structure, or
- (2) be a straight line between clearly identified points on the interior or exterior of a permanent structure, or
- (3) be a straight line connecting boundary points located from clearly identified points on the interior or exterior of a permanent structure, provided that those boundary points are no more than 20 m horizontally from the permanent structure

- (4) be at a constant offset from a clearly identified interior or exterior part of a permanent structure, or
  - (5) where it is a surface, be unambiguously located from clearly identified points on the interior or exterior of a permanent structure
  - (6) Irrespective of 1 - 5, the outline of a future development unit is a permanent structure boundary for the purposes of these Rules
- (i) A permanent structure boundary may only be used for a parcel that is intended for:
- (1) a right under the Unit Titles Act 2010, where at least part of the permanent structure is on the same underlying parcel(s) as the unit development, but may encroach onto an adjoining parcel, or
  - (2) a lease where the lease boundary is located in relation to a permanent structure, where at least part of the permanent structure is on the same underlying parcel as that lease, but may encroach onto an adjoining parcel, or
  - (3) a right over or appurtenant to a right or lease described in 1 and 2 above, where this right will expire before or at the same time as the base right, and at least part of the permanent structure is on the same underlying parcel as that base right, or
  - (4) an easement whose use is directly related to the permanent structure and the right is expected to become redundant if that permanent structure ceases to exist.
- (j) Class A
- (1) class A must be used for a boundary and its associated boundary points that are:
    - (a) in an urban area
    - (b) are intended as a result of a survey to be in an urban area
    - (c) for the boundary and the associated boundary points of any parcel that is not in an urban area, but is used, or is intended as a result of a survey to be used, for intensive commercial, industrial, or residential purposes; and
  - (2) class A may be used in any other circumstances.
- (k) Class B
- (1) class B must be used for a boundary and its associated boundary points except:
    - (a) where Class A is used, or
    - (b) Class C may be used, or
    - (c) Class D may be used, or
    - (d) the Surveyor-General has approved the use of another class
- (l) Class C
- (1) class C may be used for a primary parcel boundary and its associated boundary points that are adopted, where this boundary is either:
    - (a) part of a new parcel over 20 ha that comprises more than 80 % of the existing primary parcel being extinguished, or
    - (b) part of a new parcel over 100 ha, and
    - (c) its boundary points do not meet class B accuracy tolerances, it is part of a title that is to remain limited as to parcels, or remain a Hawke's Bay interim title, or it is a water boundary, or it is an irregular boundary
  - (2) class C may be used for a non-primary parcel boundary and its associated boundary points where this boundary intersects or coincides with a primary parcel boundary that is adopted and which meets the criteria for Class C
  - (3) class C may be used for any boundary with the approval of the Surveyor-General

(m) Class D

- (1) class D may be used for an existing primary parcel boundary and its associated boundary points where there is no risk of this boundary encroaching on another parcel, and this boundary is:
  - (a) part of a new primary parcel over 20 ha that comprises more than 80% of the existing primary parcel being extinguished, and
  - (b) the boundary is a right-line boundary that does not have a boundary bearing or a boundary distance in a cadastral survey that has been integrated into the cadastre, or
  - (c) has a magnetic bearing and the reorientation of the bearing cannot be determined without measurement, or
  - (d) is part of the balance of a title that is to remain limited as to parcels or remain a Hawke's Bay interim title and its boundary points do not meet the class C boundary accuracy, or
  - (e) is an existing irregular boundary whose location is not dependent on the location of a water boundary
  - (f) an existing boundary and boundary points of a balance parcel that is not common with another new parcel on the survey
  - (g) an existing boundary and its associated boundary points that are part of a new primary parcel over 100 ha and the boundary is not in common with another new parcel on the survey that is 100 ha or less
- (2) class D may be used for any boundary with the approval of the Surveyor-General

#### **6.4.3 Parcels**

- (a) Where a cadastral survey creates a new primary parcel:
  - (1) all land in existing primary parcels being extinguished must be included in one or more new primary parcels or balance parcels and
  - (2) where the new primary parcel has a stratum boundary, all space occupied by existing primary parcels being extinguished must be included in one or more new primary parcels or balance parcel.
- (b) Where a cadastral survey creates a new non-primary parcel to identify part of an existing easement or covenant to be surrendered, the remainder of that easement or covenant must be a balance non-primary parcel, or be replaced by a new non-primary parcel.
- (c) A non-primary parcel must not cross an underlying primary parcel boundary unless that non-primary parcel is in a unit title development.

## **7. Alternative requirements**

### **7.1 Monumentation surveys**

- (a) A monumentation survey may be used to record the placement of a boundary mark on an existing boundary point where:
  - (1) the boundary point is a class A or class B boundary point, and
  - (2) the boundary mark has been placed in terms of an old non-boundary survey mark, and
  - (3) the boundary point and that old non-boundary survey mark are recorded in cadastral surveys that have been approved as to survey, and
  - (4) the accuracy between the boundary point and the old non-boundary survey mark meets the boundary witnessing accuracy requirements of these rules

- (b) A monumentation survey is not required to comply with rules for:
  - (1) permanent reference marks
  - (2) witnessing of boundary marks
  - (3) a Diagram of Parcels
- (c) A monumentation survey requires a minimum of one witness mark

## **7.2 Covenant surveys**

- (a) Class C accuracies may be used for the boundaries and associated boundary points of a non-primary parcel where the parcel is for a covenant, and class B accuracies would otherwise be required
- (b) The relationship between the boundaries of a covenant parcel and the boundaries of its underlying parcel need not be determined accurately where classes B or C would otherwise apply and the underlying parcel is not being created by the survey
- (c) Class D must be used for a covenant parcel boundary or boundary point that coincides or intersects with its underlying parcel boundary. In this case, a covenant parcel boundary point that coincides with an underlying parcel boundary point must be adopted
- (d) A boundary point on a covenant parcel that is marked by a post is exempt from the witnessing requirements where that point is class B or class C, and not coincident with an underlying parcel boundary
- (e) Where a new covenant parcel is being defined and the underlying parcel is not being created by the survey, for each contiguous portion of land to be covenanted (which may be made up of one or more parcels)
  - (1) there must be at least two permanent reference marks, each within 500 m of at least one new boundary point that is not on an underlying parcel boundary for class B
  - (2) there must be at least two permanent reference marks, each within 1,000 m of at least one new boundary point that is not on an underlying parcel boundary for class C

## **7.3 Existing unit and lease boundaries**

# **8. Dataset**

## **8.1 General**

- (a) A dataset must include:
  - (1) a cadastral survey report
  - (2) an observation record
  - (3) calculations applicable to the cadastral survey
  - (4) a diagram of survey as applicable
  - (5) a diagram of parcels as applicable

- (b) When a boundary mark is placed on a cadastral survey that does not create a parcel, a dataset must be lodged within six months of that placement
- (c) Where a boundary point has been marked more than once within a six-month period, only one dataset is required to be lodged, recording the last placement

## **8.2 Observation record**

- (a) All relevant field information must be included in the dataset to which it relates

## **8.3 Calculations**

- (a) Each of the following calculations as relevant to the survey must be included in the dataset
  - (1) old mark searching
  - (2) old marks located
  - (3) adopted bearing adjustments
  - (4) observed bearing adjustments
  - (5) scale adjustments
  - (6) traversing & pegging
  - (7) conflict resolution
  - (8) definition
  - (9) new boundary points on underlying boundaries
  - (10) parcel dimension and area
  - (11) computer register variances

## **8.4 Diagrams**











### **8.4.1 General**

- (a) Every parcel involved in the survey must have an appellation
- (b) Each sheet of a diagram must include the cadastral survey type and number, and the sheet number and the total number of sheets
- (c) All notations, memorials, or other matters required by law shall be referenced to the relevant parcels
- (d) Every new parcel other than a parcel of Māori freehold land, or a balance parcel, must be identified in a cadastral survey using the following components in this order:
  - (1) a parcel type, and
  - (2) a unique parcel identifier
- (e) Every new parcel of Māori freehold land must be described in a cadastral survey using the following components in this order unless an alternative legal description has been confirmed for use by the Māori Land Court:
  - (1) a block name, and
  - (2) a unique parcel identifier
- (f) Every new balance parcel other than a balance parcel which is being defined as the bed of a lake, river, or part of the common marine and coastal area, must be described in a cadastral survey with:
  - (1) the prefix Part, and
  - (2) the underlying unique parcel identifiers, and
  - (3) the underlying cadastral survey type and number

- (g) Every balance parcel which is being defined as the bed of a lake, river, or part of the common marine and coastal area must not be given an appellation
- (h) The parcel type component of the appellation shall be specified as:
  - (1) Lot - for a primary parcel in a Land Transfer cadastral survey
  - (2) Section - for a primary parcel in a Survey Office cadastral survey
  - (3) Principal Unit, Accessory Unit, Future Development Unit, Common Property (as applicable) - for a unit title development
  - (4) Marginal Strip - for a movable marginal strip parcel
  - (5) Esplanade Strip - for an esplanade strip parcel
  - (6) Area - for any other non-primary parcel
- (i) The unique parcel identifier component of the appellation shall use positive integers and upper case letters, and be specified as:
  - (1) a number - for a Lot or Section
  - (2) a number which may only be followed by a letter - for a Unit as part of a unit title development, or a Lease, or a licence
  - (3) a letter which may only be followed by another letter - for a right associated with a non-primary parcel including a movable marginal strip or an esplanade strip
  - (4) sequence of alternating letters and numbers - for a Māori Block
  - (5) no identifier - for Common property as part of a unit title development

#### 8.4.2 Symbols, lines and text


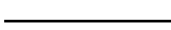
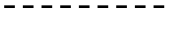




- (a) All symbols, lines and text must be black in colour
- (b) The symbol for a renewed survey mark must be for an old mark
- (c) The symbol for a reinstated mark must be for a new mark
- (d) Mark symbols shall be

- (1)  for a new permanent reference mark
- (2)  for an old permanent reference mark
- (3)  for a new witness mark
- (4)  for an old witness mark
- (5)  for a new or adopted non-boundary mark
- (6)  for an old non-boundary mark
- (7) x for an unmarked point
- (8)  for a new or adopted post
- (9)  for an old post
- (10)  for other new or adopted survey marks
- (11)  for other old survey marks

(when a survey mark serves more than one purpose, a symbol higher up the order takes precedence over a symbol below it)



(e) Line styles shall be

- |     |   |   |
|-----|---|---|
| (1) |  | for a new primary, unit, or lease parcel boundary |
| (2) |  | for a non-primary parcel boundary                 |
| (3) |  | for a measured and intervisible vector or line    |
| (4) |  | for a calculated vector or line                   |
| (5) |  | for an adopted vector or line                     |
| (6) |  | for an estate boundary                            |
| (7) |  | for an adjacent primary parcel boundary           |

(when a line serves more than one purpose, a style higher up the table takes precedence over a style below it)

(f) The font size for each parcel appellation, area and annotation must be significantly larger than the font size used for vectors, dimensions, descriptions, and survey mark information

#### **8.4.3 Diagram of Survey**

(a) A Diagram of Survey must include the following survey mark and point information:

- (1) a depiction of all survey marks used for the purposes of the cadastral survey,
- (2) an abbreviation that describes the physical mark type for each new or old survey mark, other than a peg or post,
- (3) the source cadastral survey type and number for each survey mark and point
- (4) an abbreviation that describes the former physical mark type for each old survey mark that has been renewed,
- (5) the identifier for each survey mark or point where an identifier is required or already exists,
- (6) the former identifier for each disturbed survey mark and each survey mark that has been renewed,
- (7) the source cadastral survey type and number for each old survey mark, each adopted survey mark and point, each disturbed mark, and each mark that has been renewed,
- (8) a notation indicating that an existing survey mark has been renewed or found disturbed,
- (9) the reduced level of each witness mark, where required
- (10) the reduced level of each PRM, where required
- (11) the name from the national survey control system for each mark used from that system

(b) A Diagram of Survey must include the following vector information:

- (1) sufficient vectors to enable the relationship between all non-boundary marks and points to be ascertained in accordance with the accuracy requirements
- (2) sufficient vectors to enable the relationship between all boundary points and non-boundary marks to be ascertained in accordance with the accuracy requirements
- (3) sufficient vectors to determine the position of the end points of a water or an irregular boundary
- (4) each adopted vector used for the purposes of boundary definition

- (c) A Diagram of Survey must include the following boundary information:
- (1) each new primary parcel boundary
  - (2) all boundaries that meet at a boundary mark,
  - (3) water boundaries must be depicted as:
    - (a) as an irregular line
    - (b) at a scale that clearly shows its shape and relationship to other boundaries
    - (c) adequate to meet the required accuracy standard
    - (d) where the margin of the water body has moved and entitlement to accretion or dried up water body is not being claimed, then the water boundary may continue to be a water boundary depicted in its former position
    - (e) the relationship between the physical location of a water boundary and its position shown in the Diagram of Survey, or a statement clearly indicating that the parcel boundary and the water's edge are not coincident
    - (f) an existing water boundary that will become redundant when a parcel is added to an existing water body must be an irregular boundary
    - (g) describe the legal water boundary including where it is a stratum boundary
  - (4) irregular boundaries must be depicted as:
    - (a) as an irregular line
    - (b) at a scale that clearly shows its shape and relationship to other boundaries
    - (c) adequate to meet the required accuracy standard
  - (5) a description of the physical feature where it defines a water or an irregular boundary
  - (6) adopted class D boundaries must clearly depict 'bearing unknown', 'distance unknown', 'magnetic bearing', and 'boundary adopted from (existing survey)' as applicable
- (d) A Diagram of Survey must include the following parcel information:
- (1) the extent of all primary parcels
  - (2) a parcel must be represented as a polygon or polyhedron
  - (3) the appellation of each new primary parcel, which can be in abbreviated form provided it is unique
  - (4) the appellation for each parcel that adjoins a boundary point that has been marked
  - (5) the relationships between a parcel and its boundaries and boundary points in the horizontal extent, and where applicable in the vertical extent,
  - (6) the description 'accretion' if land is being claimed as accretion,
  - (7) the description 'erosion' if the land has been eroded,
  - (8) the name, or where no name is available a simple description, for any road, railway, or water body that abuts a new parcel
  - (9) the description 'marginal strip' for a balance parcel that is a fixed marginal strip
  - (10) a Diagram of Survey for a cross lease development must depict the spatial relationship between
    - (a) each cross lease area boundary and each other non-primary parcel boundary, and
    - (b) each non-primary parcel boundary and each underlying parcel boundary
- (e) All information on a diagram of survey must be clear, unambiguous and legible when printed at A3 size, with a north point shown on each sheet

#### **8.4.4 Diagram of Parcels**

- (a) A Diagram of Parcels must include the following survey mark and point information
  - (1) a depiction of all survey marks used for the purposes of the cadastral survey
  - (2) where a Diagram of Survey is not produced:
    - (a) an abbreviation that describes the mark type for each mark, other than a peg or post,
    - (b) the identifier for each survey mark or point where an identifier already exists,
    - (c) the source cadastral survey type and number for each survey mark and point
- (b) A Diagram of Parcels must include the following vector information:
  - (1) sufficient vectors to enable the relationship between all boundary points to be ascertained in accordance with the accuracy requirements
- (c) A Diagram of Parcels must include the following boundary information:
  - (1) a bearing and distance for each right-line or arc boundary together with the boundary points related to that bearing and distance, unless it is
    - (a) an existing non-primary parcel boundary already defined in a cadastral survey integrated into the cadastre, or
    - (b) an adopted class D boundary, In this case the diagram must show the adopted boundary bearing and or distance where it exists, or
  - (2) stratum boundaries must show sufficient vectors, bearings, distances, reduced levels, mathematical formulae, or similar information, to enable the relationship between any position on the stratum boundary surface and any other boundary to be ascertained in accordance with the required accuracy standards
  - (3) the width of each movable marginal strip or esplanade strip that is depicted in the survey
  - (4) permanent structure boundaries must depict:
    - (a) each permanent structure boundary at a scale that clearly shows the shape and location of the boundary in relation to other boundaries
    - (b) sufficient information to define the relationship of each permanent structure boundary to each nearby parcel boundary
    - (c) the permanent structure and its spatial relationship to the permanent structure boundary, including any parts that extend beyond the boundary
    - (d) a description of every permanent structure from which the permanent structure boundary is located by reference
    - (e) where a permanent structure boundary is not coincident with a permanent structure, show sufficient information to enable any point on the boundary to be accurately ascertained in relation to the permanent structure
- (d) A Diagram of Parcels must include the following parcel information:
  - (1) the horizontal extent and, where applicable, the vertical extent of each parcel included in the cadastral survey
    - (a) a parcel must be represented as a polygon or polyhedron
    - (b) a parcel may be represented as a centreline where it is for an existing centreline easement and the extent of the easement to be retained is completely within a single underlying parcel, or its width is unknown
    - (c) an existing centreline easement of unknown width shall be annotated with 'width unknown'

- (2) each parcel must be depicted in its entirety (excepting a balance parcel) on at least one sheet with
  - (a) its boundaries
  - (b) its appellation, which can be in an abbreviated form provided it is unique
  - (c) in the case of a non-primary parcel, the appellation of the underlying parcel which can be in an abbreviated form provided it is unique, and
  - (d) an area if required by a rule, except an area must not be shown for a movable marginal strip
- (3) the spatial relationship between:
  - (a) each non-primary parcel and its entire underlying parcel
  - (b) each cross lease area and each other non-primary parcel
- (4) an estate boundary where it passes through the land under survey, clearly annotated with the estate record references
- (5) a water boundary must be depicted as an irregular line that clearly shows its shape and relationship to other boundaries of the parcel
  - (a) where the margin of a water body defining a water boundary has moved, but entitlement to accretion or the dried up water body is not being claimed, then the relationship of the physical water's edge to the boundary must be stated, or a statement indicating that the parcel boundary and the water's edge are not coincident included
  - (b) a description of the legal water boundary including where it is a stratum boundary
  - (c) land being claimed as accretion, with the description 'accretion'
  - (d) the description 'erosion' if the land has been eroded
  - (e) the name of a water body, road, or railway that abuts a new parcel, or where no name is available a simple description
- (6) the description 'marginal strip' for a balance parcel that is a fixed marginal strip
- (7) where a movable marginal strip is included in the cadastral survey it must be depicted as being contained within its underlying primary parcel
- (8) an irregular boundary must be depicted as an irregular line that clearly shows its shape and relationship to other boundaries of the parcel
- (9) any territorial authority boundary that passes through a parcel, clearly annotated with the names of the relevant territorial authorities
- (10) a suitable notation referenced to the relevant parcel where an enactment requires to show a vesting or other information
- (11) a unit title development must clearly depict the spatial relationship between
  - (a) each unit and each other non-primary parcel, and
  - (b) each non-primary parcel and the estate boundary
- (12) land in a parcel intended to remain in a title limited as to parcels must be annotated with 'Limited as to parcels'
- (13) land in a parcel intended to remain in a Hawke's Bay interim title must be annotated 'Hawke's Bay interim title'
- (14) land in a parcel intended for disposal by the Crown, or land already subject to Part 4A Conservation Act 1987 shall be annotated 'Subject to Part 4A Conservation Act 1987'
- (15) An area must be assigned to:
  - (a) each primary parcel except where it is a residue parcel or balance parcel.  
The area must include the areas of all movable marginal strips in that primary parcel,
  - (b) each parcel intended for a lease except where the parcel is defined by one or more permanent structure boundaries, and
  - (c) each portion of land being claimed as accretion.

- (16) where a parcel requires an area
  - (a) each area must be reduced to the ellipsoid of the datum used
  - (b) if its shape varies with height, the area must be for the polygon described by the extent of the parcel when vertically projected onto the ellipsoid of the datum used
- (17) parcel areas derived from class D boundaries shall be annotated with 'area not determined by survey'
- (18) an area assigned to a parcel must be expressed in hectares:
  - (a) must be correctly calculated from its boundary information,
  - (b) must not be less than 0.0001 ha.
  - (c) recorded to sufficient significant figures to reflect the accuracy requirements specified in these Rules
- (19) all information on a diagram of parcels must be clear, unambiguous, legible when printed at A4 size, while a north point must be shown on each sheet

### **8.5 Cadastral survey report**

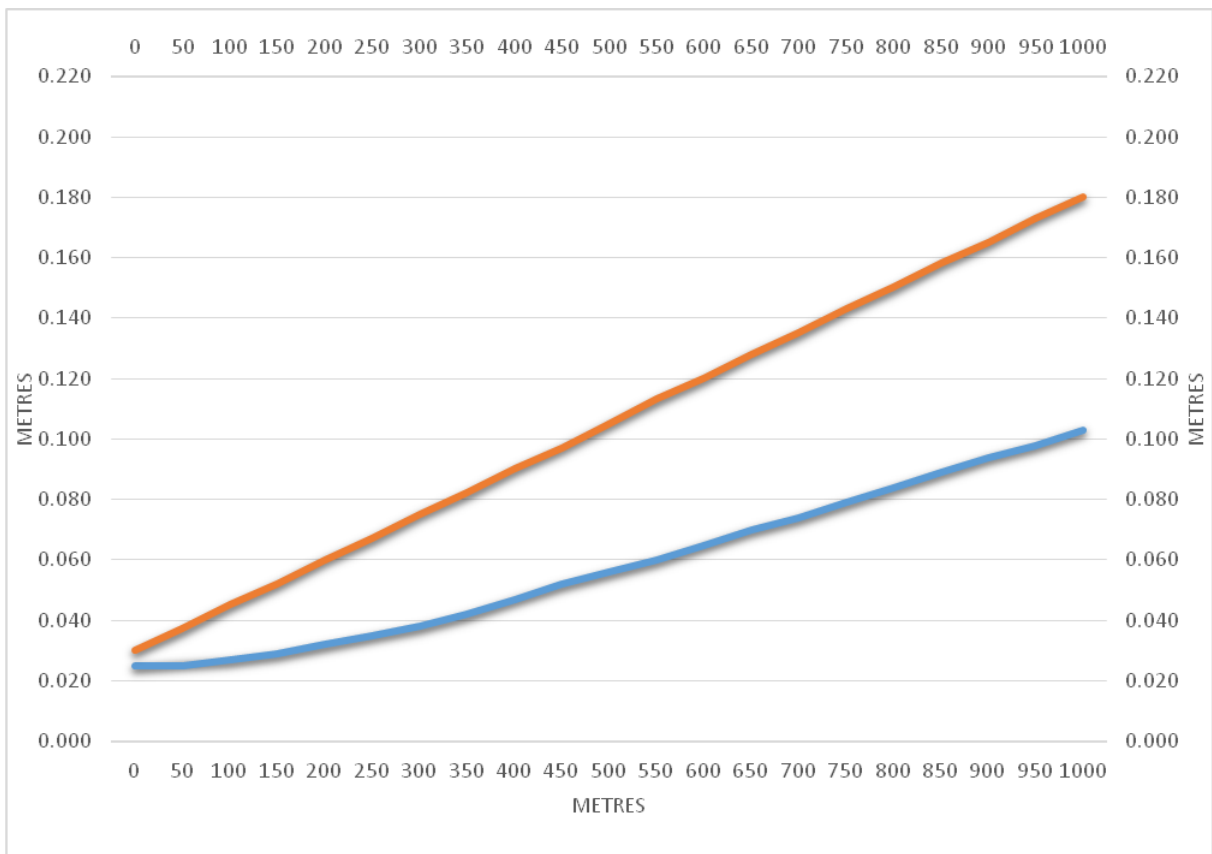
- (a) A cadastral survey report must contain the following:
  - (1) the appellation of each parcel that is to be created and extinguished
  - (2) notification from the Māori Land Court of a non-standard appellation
  - (3) the purpose for which the survey was conducted
  - (4) a description of the type of equipment and methods used
  - (5) a description of the evidence gathered and considered
  - (6) a list of cadastral surveys used and, where a cadastral survey number is not unique, the land district of the cadastral survey
  - (7) an assessment of the adequacy of the number and location of old survey marks used to define boundaries
  - (8) information about old survey marks not located
  - (9) reasons why old survey marks were not searched for
  - (10) the reliability of old marks and the reasons for not relying on an old survey mark
  - (11) the source of the origin
  - (12) reasons why it was impracticable to mark any boundary point
  - (13) reasons why it is impracticable to use a vertical control mark as a witness mark
  - (14) the basis for any bearing adjustment applied to a bearing
  - (15) the basis for any scale adjustment applied to a distance
  - (16) occupation
  - (17) the datum's and the meridional circuit used
  - (18) details of any conflict and how this was resolved
  - (19) reference to any prior correspondence with LINZ on issues relevant to the application of these Rules
  - (20) reasons for, and details of decisions made regarding each boundary defined and the information considered in order to reach those decisions
  - (21) the accuracy class of each boundary
  - (22) any applicable notes concerning the diagram of survey
  - (23) any applicable notes concerning the diagram of parcels
  - (24) the accuracy of:
    - (a) observations,
    - (b) non-boundary vectors,
    - (c) witnessing,
    - (d) boundary vectors
    - (e) water and irregular boundaries,
    - (f) underlying boundaries,
    - (g) areas
  - (25) any applicable additional notes

- (b) Where any of the information required in the survey report is not included in the survey report, the report must state
- (1) where that information is located, or
  - (2) that the requirement for that information does not apply

## 9. Auditing

### 9.1 Non-boundary accuracies

- (a) The accuracy requirements between two new and/or old non-boundary marks on a survey are:
- (1) the horizontal and vertical accuracy between all new and old non-boundary marks must not exceed  $\sqrt{0.025^2 + (dist \times 0.0001)^2}$  m, at the 95 % confidence level
  - (2) the horizontal and vertical accuracy between any two new non-boundary marks, old non-boundary marks, or adopted cadastral survey network marks must not exceed  $0.03 \text{ m} + dist \times 0.00015 \text{ m}$

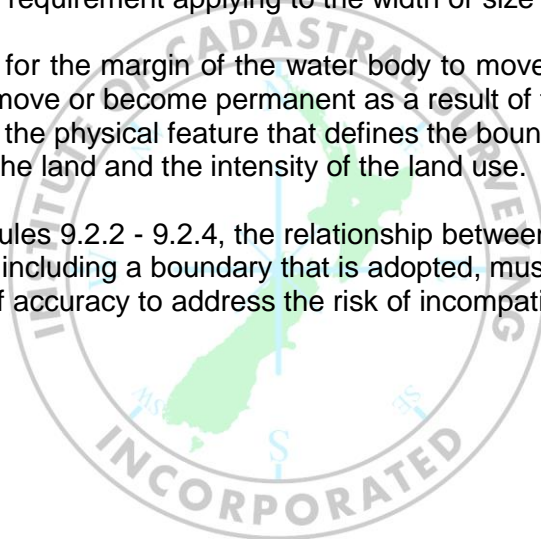


- (3) the horizontal and vertical accuracy between any two new or old non-boundary marks must not exceed 0.50 m
- (b) The horizontal and vertical accuracy requirements between all old or new non-boundary marks and all old or new boundary points that require witnessing shall not exceed:
- (1) 0.04 m for a Class A boundary point within 150 m of said non-boundary mark
  - (2) 0.20 m for Class B boundary point within 500 m of said non-boundary mark
  - (3) 0.60 m for a Class C boundary point within 1000 m of said non-boundary mark
  - (4) there are no accuracy requirements for a Class D boundary mark

## **9.2 Boundary accuracies**

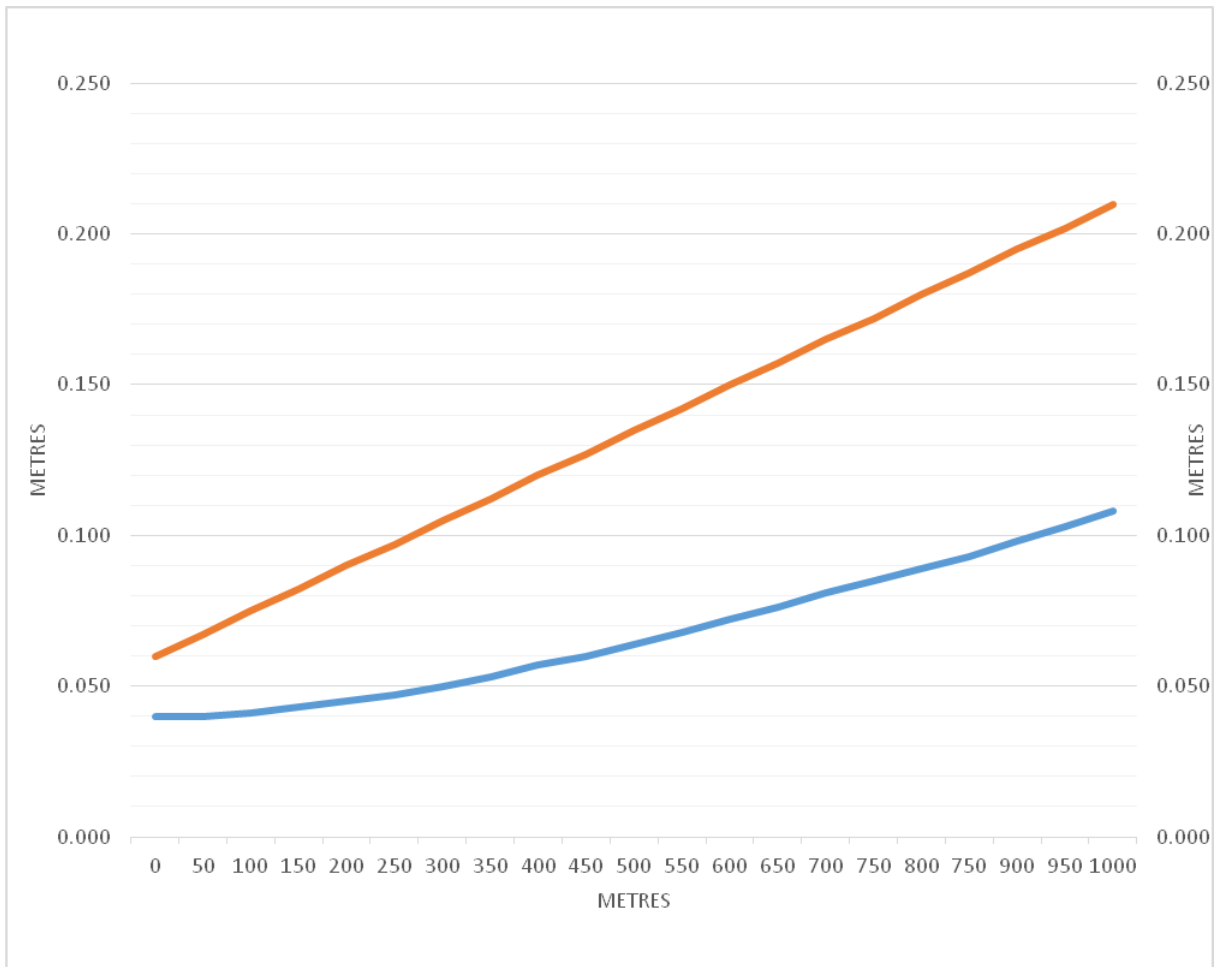
### **9.2.1 General**

- (a) The accuracy class that applies to a boundary point must be the highest class of the boundaries connected to that point
- (b) Where any two boundary points have different applicable accuracy classes, the lower class of boundary accuracy applies between those two points
- (c) The accuracy standards also apply between the boundary points of a non-primary parcel and the boundary points of its underlying primary parcel where that underlying primary parcel is not created by the survey
- (d) The position of a water boundary or an irregular boundary, including a boundary defined by adoption, must be determined to a sufficient level of accuracy to take into account:
  - (1) the risk of overlap or ambiguity in boundaries, including the water boundary on the other side of the water body,
  - (2) any statutory requirement applying to the width or size of the related water bodies,
  - (3) the potential for the margin of the water body to move and for the related water boundary to move or become permanent as a result of that movement,
  - (4) the nature of the physical feature that defines the boundary, and
  - (5) the value of the land and the intensity of the land use.
- (e) Irrespective of rules 9.2.2 - 9.2.4, the relationship between a new boundary and any other boundary, including a boundary that is adopted, must be determined to a sufficient level of accuracy to address the risk of incompatible rights overlapping



### 9.2.2 Class A

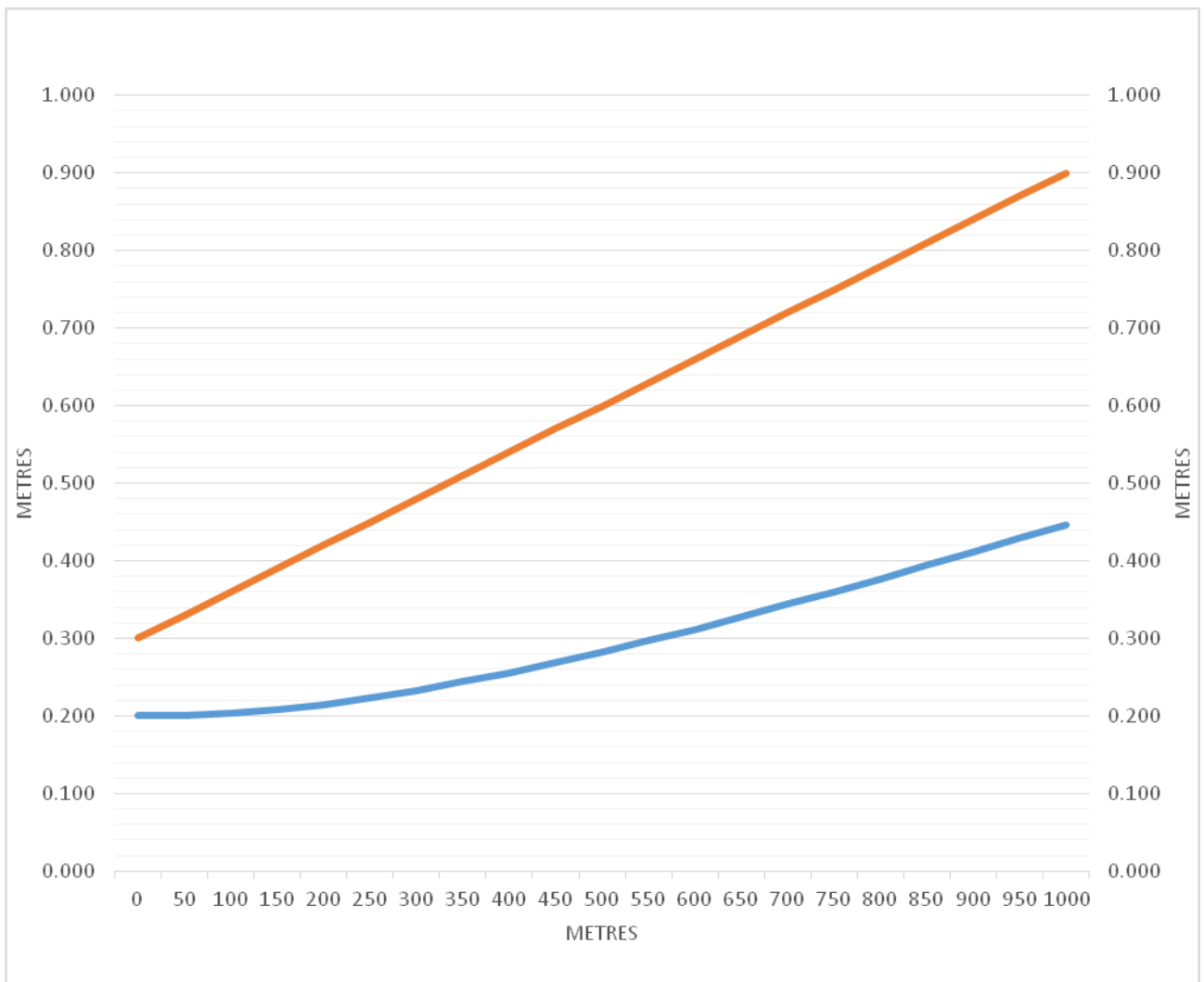
- (a) The horizontal and vertical accuracy between all boundary points, other than adopted points, and irrespective of these points being marked or not must not exceed  $\sqrt{0.04^2 + (dist \times 0.0001)^2}$  m at the 95 % confidence level
- (b) The horizontal and vertical accuracy between any boundary point and any other boundary point, including adopted points and irrespective of these points being marked or not must not exceed  $0.06 \text{ m} + dist \times 0.00015 \text{ m}$





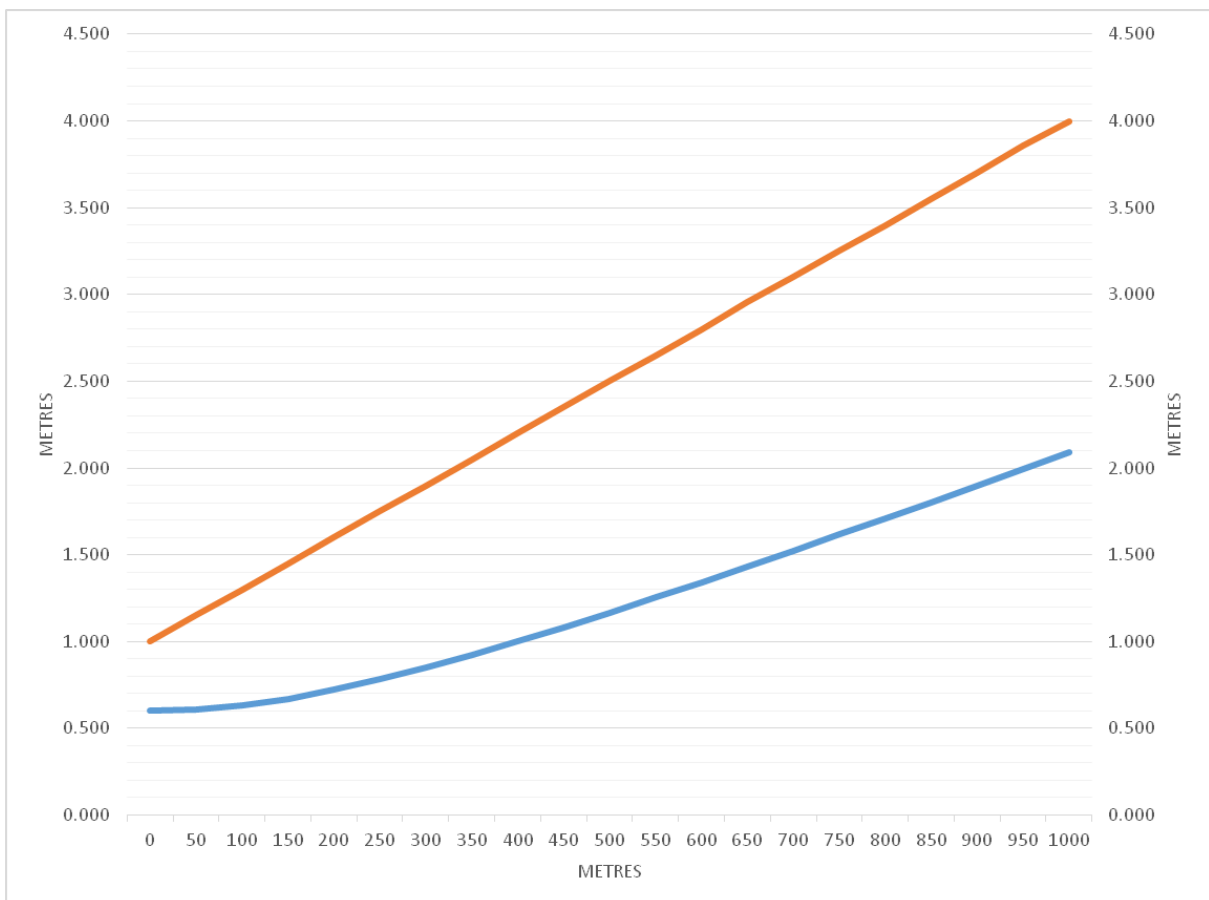
### 9.2.3 Class B

- (a) The horizontal and vertical accuracy between all boundary points, other than adopted points, and irrespective of these points being marked or not must not exceed  $\sqrt{0.20^2 + (dist \times 0.0004)^2}$  m at the 95 % confidence level
- (b) The horizontal and vertical accuracy between any boundary point and any other boundary point, including adopted points and irrespective of these points being marked or not must not exceed  $0.30 \text{ m} + dist \times 0.0006 \text{ m}$



### 9.2.4 Class C

- (a) The horizontal and vertical accuracy between all boundary points, other than adopted points, and irrespective of these points being marked or not must not exceed  $\sqrt{0.60^2 + (dist \times 0.002)^2}$  m, at the 95 % confidence level
- (b) The horizontal and vertical accuracy between any boundary point and any other boundary point, including adopted points and irrespective of these points being marked or not must not exceed  $1.00 \text{ m} + dist \times 0.003 \text{ m}$



### 9.2.5 Class D

- (a) The horizontal and vertical accuracy between any boundary point and any other boundary point is not specified

### 9.3 Parcel accuracies

- (a) A parcel area may be rounded to one part in 1000 or 0.0001 ha, whichever is greater

#### **9.4 Covenant accuracies**

- (a) The relationship between the covenant parcel boundaries and the underlying parcel boundaries must be determined to sufficient accuracy to ensure that each covenant parcel boundary or boundary point is either coincident with an underlying parcel boundary or is contained within the underlying parcel
- (b) Where a new covenant parcel is being defined and the underlying parcel is not being created by the survey, for each contiguous portion of land to be covenanted (which may be made up of one or more parcels)
  - (1) the horizontal and vertical accuracy between every PRM within 500 m of a boundary point must not exceed 0.20m for class B
  - (2) the horizontal and vertical accuracy between every PRM within 1,000 m of a boundary point must not exceed 0.60m for class C

#### **10. Certification**

- (a) A dataset of cadastral survey shall be certified in the following form:  
I (full name), being a licensed cadastral surveyor, certify that the dataset provided by me is accurate, correct, and in accordance with the Cadastral Survey Act 2002 and the Rules for Cadastral Survey 2016, and that its associated survey was undertaken by me or under my personal direction.

(signature)

(dated)

#### **11. Revocation and Savings**

- (a) The Surveyor-General's Rules for Cadastral Survey 2010 are revoked when the Rules for Cadastral Survey 2018 come into effect
- (b) A survey commenced under the Surveyor-General's Rules for Cadastral Survey 2010 that, prior to the commencement of these Rules, had appellations which would be required to change as a result of these Rules may continue to use those appellations if this change would make the resource consent of subdivision, obtained before the coming into effect of these Rules, invalid