



New South Wales

Surveyors (Practice) Regulation 1996

under the
Surveyors Act 1929

His Excellency the Governor, with the advice of the Executive Council, has made the following Regulation under the *Surveyors Act 1929*.

Kim Yeadon MP
Minister for Land and Water Conservation.

Explanatory note

The object of this Regulation is to repeal and remake the provisions of the *Survey Practice Regulation 1990*. Those provisions are substantially unchanged, but have been reworked in a slightly more contemporary style.

The new Regulation deals with the following matters:

- (a) duties of surveyors,
- (b) procedures and standards in relation to different types of surveys,
- (c) adoption of a datum line,
- (d) reference marks placed on site,
- (e) field notes,
- (f) special procedures when water is a boundary.

The Regulation is made under the *Surveyors Act 1929* and in particular section 23 (1) of that Act.

The Regulation is made in connection with the staged repeal of subordinate legislation under the *Subordinate Legislation Act 1989*.

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Surveyors (Practice) Regulation 1996

Part 1 Preliminary

1 Name of Regulation

This Regulation is the *Surveyors (Practice) Regulation 1996*.

2 Commencement

This Regulation commences on 1 September 1996.

3 Application of Regulation

This Regulation applies to every survey made after the commencement of this Regulation, whether or not the survey was started before that commencement.

4 Definitions

In this Regulation:

AHD means Australian Height Datum, that is, a system of control points for height based on a network of levelling measurements which covered the whole of Australia and which was fitted to mean sea level, as measured at tide gauges distributed around the Australian coast, over the period 1968–1970.

appropriate accuracy means such accuracy as is reasonably practicable to attain in any particular survey.

approved means approved by the Surveyor General.

city or suburban survey means a survey of land:

- (a) that is within a zone identified in an environmental planning instrument, within the meaning of the *Environmental Planning and Assessment Act 1979*, as being residential, commercial or industrial. or
- (b) on which development for residential, commercial or industrial purposes is permitted by or under that Act to be carried out.

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country survey means a survey that is not a city or suburban survey.

established permanent mark means a permanent mark the horizontal position of which is precisely determined as approved by the Surveyor General.

ISG means Integrated Survey Grid, that is, a rectangular co-ordinate system drawn on a Transverse Mercator projection with zones 2 degrees wide, designed for integrated surveys in New South Wales.

monument means a natural or artificial object, or a point on it, or a mark, used for the purpose of locating or relocating a boundary or a point in a survey.

permanent mark means a permanent mark placed in accordance with the provisions of the *Survey Co-ordination Act 1949*.

plan of survey means a representation or drawing of land surveyed, prepared from particulars recorded in the field book of the survey and carried out for delivery to or lodgment with any government department or public authority or person as evidence of a survey, but does not include plans compiled from previous surveys or sketches in illustration of any report or similar document prepared in explanation of or arising from any survey.

reference mark means a survey mark of a durable nature placed or situated near and connected by measurement to a corner, angle or tangent point of any survey.

road includes any road, street, laneway, pathway or private parcel of land used for community access, either existing or being created by the subject survey.

State Control Survey means a comprehensive set of points marked, under the supervision of the Surveyor General, by monuments of standard form, being points of known horizontal **position** or height (or both) throughout the State.

survey mark means permanent mark, reference mark, or corner mark, as referred to in Part 5.

surveyor means a person registered under the Act as a surveyor.

the Act means the *Surveyors Act 1929*.

Part 2 General duties of surveyor

5 Surveys under supervision of surveyor

Nothing in this Regulation prevents a survey being made under the supervision of a surveyor.

6 Nature of supervision

When a survey is made under the supervision of a surveyor, the surveyor must:

- (a) personally attend on the ground for such time during the making of the survey, and
- (b) exercise such immediate oversight and personal direction of the work,

as will ensure that the surveyor has a comprehensive knowledge of all aspects of the survey and that the survey has been carried out in accordance with sound professional practice and this Regulation.

7 General principles of survey

When carrying out a survey, a surveyor must, in accordance with this Regulation:

- (a) ascertain with appropriate accuracy the positions of monuments relevant to the survey, and
- (b) locate or relocate with appropriate accuracy the boundaries of the land surveyed, and
- (c) mark the survey as required by this Regulation, and
- (d) make complete field notes of the survey, and
- (e) if the purpose of the survey so requires, prepare a plan of the land surveyed.

8 Surveyor to record survey marks and zoning

- (1) A surveyor must indicate on the plan of survey:
 - (a) the nature of any survey mark, object or monument found by the surveyor, and

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Part 2 General duties of surveyor

- (b) the nature of any survey mark (other than a peg) placed by the surveyor, and
 - (c) the essential measurements from any reference mark, permanent mark, object or monument to the nearest corner, angle or line mark.
- (2) If reference marks are placed or found at depths of more than 80 mm below the natural surface of the ground, the surveyor must indicate the depths on the plan.
- (3) If reference marks are found, the surveyor must note their origin on the plan by reference to the number of the plan on which the marks first occur.
- (4) A surveyor must also indicate on the plan of survey the zoning of the land surveyed, according to any environmental planning instrument, within the meaning of the *Environmental Planning and Assessment Act 1979*, that applies to the land.

9 Surveyor to record nature of boundaries

- (1) A surveyor must show on a plan of a re-survey or subdivision:
 - (a) the nature of the boundaries at the time of the re-survey or the subdivision, whether defined by survey marks, lockspits, lines, fences, roads, natural or artificial features or buildings or walls, and
 - (b) the width of all walls used in common and the position of the boundaries in those walls, and
 - (c) the description and relationship to the boundary of any substantial structure within 1 metre of the boundary or otherwise relevant to the boundary definition.
- (2) If a wall is on a boundary, the boundary must be described in the plan as “face of wall” or “passing through wall” or with other appropriate words.
- (3) A wall must not be described with the expression “party wall” unless it is the subject of such easements as are referred to in relation to party walls in the Conveyancing Act 1919 or the surveyor is instructed that it is intended to create such easements in respect of the wall.

10 Surveyor to furnish certificate

- (1) When a surveyor furnishes a plan of survey, the surveyor must endorse a certificate in Form 1 (of Schedule 1) on the plan.
- (2) The certificate may be incorporated in any other certificate which must be endorsed on the plan in accordance with any other Act or instrument made under an Act.

11 Notice of entry

- (1) The prescribed notice for the purposes of section 13 of the *Surveyors Act 1929* is Form 2 (of Schedule 1).
- (2) The notice must be given prior to entry:
 - (a) by delivering the notice to a person apparently in occupation of the land to be entered, or
 - (b) if the land to be entered is apparently unoccupied, by attaching the notice to a place of residence, or some conspicuous object, on the land.

12 Surveyor to meet requisitions

A surveyor must promptly answer, or comply with, requisitions from the Surveyor General or Registrar-General.

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Part 3 Measurement and calculations

Part 3 Measurement and calculations

13 Surveyor to obtain information

A surveyor must obtain information on public record with government departments and public authorities to the extent that the information is necessary to locate or relocate the boundaries of any land to be surveyed.

14 Equipment for measurement of surveys

- (1) A surveyor must make every survey with appropriate equipment.
- (2) A surveyor must not use any equipment in making a survey unless the surveyor knows the accuracy obtained by its use. That accuracy must be determined in relation to:
 - (a) the Australian primary standard of measurement of length, within the meaning of the *National Measurement Act 1960* of the Commonwealth, or
 - (b) the State primary standard of measurement of length, within the meaning of that Act, that is under the control of the Surveyor General.
- (3) A surveyor must not use any steel or invar band in making a survey unless it is verified at least once every 2 years and immediately after repair.
- (4) A surveyor must not use any electronic distance measuring equipment in making a survey unless it is verified against the State primary standard of measurement of length (as referred to above), by using pillared testlines, at least once each year and immediately after service or repair.
- (5) The accuracy and method of verification must be as approved.

15 Measurement of boundaries and lines

A surveyor must measure boundaries and lines by the most direct method that is reasonable and practicable.

16 Measurement by remote-sensing methods

- (1) A surveyor may use measurements derived from photogrammetry, airborne sensors, satellites or approved remote-sensing methods.

- (2) If any methods referred to in subclause (1) are used, the surveyor must indicate the methods on the plan of survey.

17 Partial surveys

If a survey embraces only part of the land in a document of title, the surveyor must connect that part by field measurements to monuments or points having a known relation to 2 or more corners of the land in the document.

18 Surveys for easement purposes only

- (1) If a survey is carried out for the purpose of defining an easement, the surveyor must connect the site of the easement by measurement to relevant monuments.
- (2) At the terminals of the easement, and wherever the easement intersects a boundary of land held in different ownership, the surveyor must redefine the existing parcel boundary and show connections on the plan of survey from the easement to the nearest parcel corner.
- (3) The surveyor must:
- (a) connect by measurement to, or place and connect, one reference mark within 30 metres of each terminal of the easement, and
 - (b) show on the plan of survey by bearing and distance the essential dimensions of the site and note the site on the plan as “easement” or “proposed easement” (as applicable), and
 - (c) adopt a datum line in accordance with clause 30.
- (4) In addition, the surveyor must:
- (a) for a city or suburban survey, connect by measurement to, or place and connect, reference marks at intervals not exceeding 500 metres, or
 - (b) for a country survey, connect by measurement to, or place and connect, reference marks at intervals not exceeding 1,000 metres.

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- (5) If an easement is to be created over existing pipes and conduits which are underground or within a building and the precise location of those pipes and conduits cannot reasonably be determined, subclauses (3) and (4) do not apply, but the approximate positions must be shown on the plan of survey together with appropriate notations.
- (6) If the Surveyor General is of the opinion that it is not practicable or necessary to comply with a requirement under this clause, the Surveyor General may in writing exempt the surveyor conducting the survey from complying with the requirement. A surveyor who obtains an exemption under this subclause must record the exemption number on the plan of survey.

19 Re-survey of property boundaries

- (1) If a surveyor makes a re-survey, the surveyor must adopt the boundaries as originally marked on the ground as the true boundaries unless there is sufficient evidence to show that the marks were incorrectly placed or have been disturbed.
- (2) The surveyor must disclose, on the plan of survey, the extent of any discrepancy in the marking of boundaries. If the marks are shown on an original Crown survey plan, the surveyor must advise the Surveyor General in writing of that fact.

20 Surveys involving boundaries that include natural features

- (1) For the purpose of determining a boundary that is or includes a natural feature:
 - (a) the traverse lines of the survey must be within 30 metres of the boundary with offsets at such intervals as may be necessary to accurately determine each change of course or direction of the boundary, and
 - (b) any bearing and distance observation made to a point on the boundary must not exceed 100 metres.
- (2) Despite subclause (1), a surveyor who uses remote sensing methods for the purpose of determining such a boundary is to use discretion as to the distance that the ground control of the survey is from the boundary.

- (3) if physical or environmental circumstances prevent compliance with the methods referred to in subclause (1) or (2) for determining such a boundary, a surveyor may use such other approved methods as will permit the survey determining the boundary to be of appropriate accuracy.
- (4) if remote sensing methods are used, the surveyor must indicate the methods on the plan of survey.

21 Definition of common boundary between land and road or reservation

- (1) If the common boundary between a parcel of land and an existing road or reservation of stipulated width along a watercourse or other natural feature has not been defined by survey, on redefinition or subdivision of that parcel by a survey the boundary must be defined by right lines or circular curves, or a combination of both, approximately parallel to the position of that feature as originally defined.
- (2) The approval of the Minister administering the Crown Lands Act 1989 or, in the case of a public road, of the council of the local government area in which the road is situated, must be obtained to the definition of the common boundary.

22 Procedure if crooked fence defines boundary

- (1) If a crooked fence is used to define a boundary in a survey, the surveyor must survey the crooked fence and place the angle points of the boundary in such a way that the boundary line does not leave the material of the fence at the surface of the ground.
- (2) The surveyor must substantially mark the angle points and show the nature of the points on the plan. The surveyor must indicate on the plan the age, type and condition of the fence at the date of the survey.

23 Calculation of areas of land

Areas of land must be computed by a method that provides appropriate accuracy and is recognised by surveyors as good practice.

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Part 3 Measurement and calculations

24 Surveyor to check angular work

- (1) A surveyor who makes a survey in which the total length of surveyed boundaries exceeds 10,000 metres on level or undulating terrain, 8,000 metres on steep terrain or 6,000 metres on mountainous terrain must check the angular work in the survey by astronomical observation or by a complete angular close or by a comparison with the State Control Survey.
- (2) Any such comparison must be shown on the plan of survey.
- (3) A surveyor must not, for the purposes of this clause, interpolate any angular measurement by another surveyor.
- (4) For the purposes of this clause, terrain is taken to be:
 - (a) *level or undulating* where slopes are less than 10 degrees, or
 - (b) *steep* where slopes are between 10 and 15 degrees, or
 - (c) *mountainous* where slopes are more than 15 degrees.

25 Determination of angular close

- (1) Whenever practicable, a complete angular close must be obtained.
- (2) The observed angular misclose must not exceed 30 seconds plus $20\sqrt{n}$ seconds:
 - (a) for the whole surround, and
 - (b) between stations at which astronomical observations for azimuth have been made, and
 - (c) between pairs of established permanent marks.
- (3) In subclause (2), “n” is the number of traverse angular stations.
- (4) No misclose may exceed 3 minutes.

26 Checking and accuracy of all measurements

- (1) A surveyor must, if the nature of a survey permits, check all measurements made in a survey by closure of the eastings and northings of the lines in all surrounds in the survey computed in metres to 3 decimal places.

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- (2) The internal closure of any survey must be such that the length of the misclose vector must not exceed:
- (a) 15mm + 100ppm of the perimeter, for boundaries crossing level or undulating country, or
 - (b) 15mm + 150ppm of the perimeter, for boundaries crossing steep or mountainous country.
- (3) The misclose vector must be determined as $\sqrt{a^2 + b^2}$, where “a” is the misclose in eastings and “b” is the misclose in northings.
- (4) For the purposes of this clause, country is taken to be:
- (a) *level or undulating* where slopes are less than 10 degrees, or
 - (b) *steep or mountainous* where slopes are 10 degrees or more.

27 Accuracy of length measurements

When making a survey, a surveyor must measure all lengths to an accuracy of 6mm + 30ppm or better.

28 Identification or remarking surveys

- (1) A surveyor may make a survey of a parcel of land for the purpose of redefining the boundaries of the parcel, or of locating the parcel in relation to adjoining lands, in such manner as may be required by the nature of the survey.
- (2) A surveyor may make a survey requiring the re-marking of a parcel of land in such manner and with such marks in such positions as may be specially required by the relevant client, but such a survey must not be used for the purpose of any disposition of land or of any interest in land.
- (3) Of this Regulation, only this clause and clauses 1–6, 7 (a), (b) and (d), 11, 13, 14, 27, 31, 39 and 48–53 apply to a survey referred to in this clause.

29 Surveys not requiring strict accuracy

- (1) A surveyor may make a survey for a purpose not requiring strict accuracy under arrangements with a client, and in such a manner and with such marking as are agreed on between the surveyor and the client.

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Part 3 Measurement and calculations

- (2) A plan of such a survey must show monuments as approximately located.
- (3) The surveyor must endorse on the plan of the survey a certificate in Form 3 (of Schedule 1).
- (4) Of this Regulation, only this clause and clauses 1–6,7 (d), 11,13, 31,39 and 48–53 apply to the survey.
- (5) In addition, if the survey is to be lodged on public record:
 - (a) if the survey is of a class specified in the Surveyor General's published directions to surveyors, the survey must comply with those directions, or
 - (b) if the survey is not so specified, the surveyor must obtain the Surveyor General's approval for the survey and the survey must comply with the conditions of the approval.

Part 4 Datum line

38 Procedure for adopting datum line

- (1) A surveyor must determine, specifically for each survey, the position of the marks defining the datum line for the survey.
- (2) The bearing used for the orientation must be adopted from the plane grid bearing derived from the ISG co-ordinates of 2 established permanent marks if the survey is:
 - (a) within or contiguous to a survey area proclaimed under section 11 (2) of the Survey Co-ordination Act 1949, or
 - (b) within 300 metres of established permanent marks (for a city or suburban survey), or 1,000 metres of established permanent marks (for a country survey).
- (3) That bearing must be verified by angular, and (if practicable) distance, connection to at least one other established permanent mark.
- (4) If a comparison of those connections reveals differences exceeding 20mm + 100ppm, the surveyor must show on the plan of survey all the observed and calculated bearings and distances and:
 - (a) include an additional connection to at least one other established permanent mark, or
 - (b) forward a report of the survey to the Surveyor General.
- (5) If the survey does not fall within subclause (2) (a) or (b), the bearing used for the orientation must be taken from a survey for which a plan or description is filed or recorded at a government department or public authority, or from astronomical observations or satellite observations, and the surveyor must state the origin of the orientation on the plan of survey.
- (6) If the Surveyor General considers that compliance with any requirement of subclauses (2) and (3) is not practicable or necessary in relation to a survey, the Surveyor General may in writing exempt the surveyor conducting the survey from

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Part 4 Datum line

complying with the requirement. A surveyor who obtains an exemption from the Surveyor General under this subclause must record the exemption number on the plan of survey.

31 Surveyor to record datum line in field notes

A surveyor must clearly indicate in the field notes the datum line of the survey and the origin of the orientation adopted.

32 Method of recording datum line on plan

- (1) A surveyor must show the datum line of a survey on the plan of the survey by distinguishing characters placed at the terminals of the datum line and must also note on that plan the nature of the marks defining the datum line.
- (2) If the orientation of the survey is adopted from the ISG co-ordinates, the co-ordinate values together with the zone, accuracy classification, date, combined scale factor, and source, of all the established permanent marks used for orientation purposes are to be shown in a schedule on the plan.
- (3) If astronomical or satellite observations are used to determine or confirm the orientation of the survey, the results of the observations are to be shown in a table on the plan under the headings "Occupied station", "Observed station" and "Astronomical body" or "Satellite constellation", together with the derived bearing between the occupied and observed stations.

Part 5 Monuments and reference marks

33 Connection of surveys and marks

- (1) A survey for any purpose (resulting in a plan lodged on public record) that is within or contiguous to a survey area proclaimed under section 11 (2) of the *Survey Co-ordination Act 1949* must connect by measurement, regardless of distance, to 2 or more established permanent marks.
- (2) A survey for any purpose (resulting in a plan lodged on public record with a government department or public authority) that is not a survey referred to in subclause (1) must connect by measurement to at least 2 existing permanent marks if the marks are within 300 metres (for a city or suburban survey) or 1,000 metres (for a country survey) of the land surveyed.
- (3) If there are established permanent marks within the relevant distance specified in subclause (2), the connection referred to in that subclause must be made to those marks in preference to non-established permanent marks even if the latter are closer to the survey.
- (4) In a survey that redefines or creates parcels of land, the surveyor must connect (or place and connect) by measurement no less than the following number of permanent marks in relation to the following numbers of parcels:
 - (a) 1–10 parcels — 2 marks,
 - (b) 11–20 parcels — 3 marks,
 - (c) more than 20 parcels—4 marks plus 1 mark for every 20 (or part of 20) by which the number of parcels exceeds 40.
- (5) Any permanent marks connected in accordance with subclauses (1)–(3) may be included in the total number of marks required by subclause (4) if the permanent marks are within 300 metres (for a city or suburban survey) or 1,000 metres (for a country survey) of the land surveyed.
- (6) A survey that redefines a road frontage or that is conducted for the purposes of creating a road under any Act must have 2 or more permanent marks connected, or placed and connected, by measurement for each interval of approximately 1,000 metres (for a city or suburban survey) or 2,000 metres (for a country survey).

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Part 5 Monuments and reference marks

- (7) A survey for the purposes of creating an easement that is less than 200 metres long must have 2 or more existing permanent marks connected if the marks are within 300 metres (for a city or suburban survey) or 1,000 metres (for a country survey) of the land surveyed.
- (8) A survey for the purposes of creating an easement that is 200 metres long or more must have 2 or more permanent marks connected, or placed and connected, by measurement for each interval of approximately 2,000 metres (for a city or suburban survey) or 4,000 metres (for a country survey).
- (9) Measurements between all permanent marks found or placed, and connections to the survey, must be proved by closed survey and shown on the plan of survey.
- (10) If the permanent marks connected in accordance with subclause (1) (in the case of any survey referred to in that subclause) or subclause (2) (in the case of a city or suburban survey) have accurate AHD values, the locality sketch plan of each additional permanent mark placed in accordance with subclause (4), (6) or (8) must show:
 - (a) the AHD value for each additional permanent mark derived by closed height differences to a precision of 0.018k metres or better (where “k” is the distance in kilometres between permanent marks), and
 - (b) the AHD values, and the nature and source, of the 2 connected permanent marks.
- (11) A permanent mark placed in accordance with subclause (4), (6) or (8) must:
 - (a) be so located as to be suitable for an orientation of the survey and for re-definition of the survey, and
 - (b) be so located at road junctions, road intersections, road angles or crests of hills as to be visible between other permanent marks without obstruction, and to be suitable for subsequent inclusion in the State Control Survey, and
 - (c) be identified in location by a sketch plan that meets approved standards.

- (12) A sketch plan referred to in subclause (10) or (11) must be forwarded to the Surveyor General as soon as practicable after placement of the permanent mark.
- (13) If the Surveyor General considers that any requirement under this clause is not practicable or necessary in relation to a survey, the Surveyor General may in writing exempt the surveyor conducting the survey from complying with the requirement. A surveyor who obtains an exemption under this subclause must note the exemption on the relevant plan of survey (for example, by specifying the number of the exemption).

34 Placement of pegs or marks

- (1) If a surveyor makes a survey other than a survey of a kind referred to in clause 28 (Identification or remarking surveys) or clause 29 (Surveys not requiring strict accuracy), the surveyor must when possible firmly mark each corner (including corners of each parcel of land in a subdivision) with a peg or mark of the type prescribed by clause 42.
- (2) If it is not practicable to place such a peg or mark, a reference mark must be placed.
- (3) In a country survey, if a fence post is on a corner on which a reference mark has been placed, no further marking of the corner is required.

35 City or suburban surveys: reference marks

If a surveyor makes a city or suburban survey for the purpose of a disposition of land or disposition of an interest in land, an acquisition or resumption of land under the authority of any Act, a subdivision of land or a redefinition of parcels of an existing subdivision, or a primary application (or a cancellation or redefinition of a certificate of title) under the *Real Property Act 1900*, the surveyor must:

- (a) if the land abuts a road—connect by measurement from, or place and connect to, a reference mark within 30 metres of the extremity of the land and place reference marks at intervals of not less than 30 metres and not more than 100 metres throughout the length of the road frontage of the survey, or

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- (b) if the land does not abut a road—place at least 2 reference marks.

36 Country surveys

- (1) In a country survey, a surveyor must mark definitely and durably all lines which form or are to form the boundaries between parcels. the marking is to be done with a peg or mark of the type prescribed by clause 42.
- (2) In addition, if a boundary is unfenced, the lines that form it must also be marked with lockspits cut in the direction of the boundary from each corner and angle or, if an obstacle exists at a corner or angle, with a suitable reference mark near that corner or angle.
- (3) On unfenced boundaries, the pegs and lockspits, or marks and lockspits, must be placed at intervals of not more than 200 metres, except in a case where one peg or mark can be seen from the next at a distance greater than 200 metres. In that case, the distance can be that greater distance, but never more than 300 metres.
- (4) Unless environmental considerations dictate otherwise, an unfenced boundary must be reasonably cleared and any tree that has a trunk diameter greater than 100mm and is within 500mm of the unfenced boundary must be blazed or, if situated on any boundary, must be double blazed.
- (5) In a country survey, if the land surveyed is not being subdivided, the surveyor must place 2 reference marks in selected positions suitable for redefinition of the survey.
- (6) If the land surveyed is being subdivided into separate parcels or comprises separate parcels of an existing subdivision that are being redefined or are the subject of a primary application or an application for cancellation or correction of a certificate of title under the *Real Property Act 1900*, the surveyor must connect or place and connect 2 reference marks in respect of each parcel of 4 hectares or more and one reference mark in respect of each parcel of less than 4 hectares.
- (7) If a boundary (other than a road frontage) of the land exceeds 2,400 metres, a surveyor must place additional reference marks along the boundary at intervals of not more than 1,500 metres.

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- (8) If a boundary required to be marked is a road frontage, a surveyor must place reference marks at intervals of not more than 1,200 metres along the boundary and one reference mark at each extremity of the boundary.
 - (9) This clause does not apply to a survey referred to in clause 18 (Surveys for easement purposes only).

37 Placement of reference marks for roads

- (1) If a surveyor makes a survey for the purpose of the creation, redefinition or widening of a road under any Act, the surveyor must place reference marks in the positions prescribed by this clause and must show the type and location of the reference marks in the plan of the survey.
- (2) If the survey is a city or suburban survey, reference marks must be placed:
 - (a) at the junction or intersection of roads:
 - (i) if a triangle is cut off from the corner formed by the intersection of the road boundaries, so as to refer to either end or both ends of the base line of the triangle, or
 - (ii) if the corner is rounded off, so as to refer to either or both tangent points, or
 - (iii) if the corner is not cut off or rounded off, so as to refer to the point of intersection of the road boundaries, and
 - (b) so as to refer to each end, each angle and each tangent point in a road and to the terminals of any series of chords, or of any regular curve, in a road, and
 - (c) when placed in a road, as far as is practicable on the same side of the road, and
 - (d) when placed in a road that is variable in width, with connections made to both sides of the road.
- (3) The requirement of subclause (2) (b) is subject to the conditions that a reference mark need not be placed within 30 metres of another reference mark, but that there must not be more than 300 metres between reference marks.

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Part 5 Monuments and reference marks

- (4) If a reference mark placed in accordance with this clause is of the type prescribed by clause 43 (1) (e) (ie a drill hole and wing) and is to be placed in a concrete kerb cast in situ, there must be 2 such marks and the marks must be such that they are not likely to be disturbed.
- (5) If the survey is a country survey, reference marks must be placed so as to refer to each end of the road, to each junction or intersection of any roads and in pairs suitable for orientation purposes throughout the whole length of the road in selected positions so that the maximum distance between any 2 successive reference marks does not exceed 1,200 metres.
- (6) If a road being created joins or intersects an existing road and reference marks have already been placed in the existing road in accordance with this clause or with any Act or any instrument made under an Act, those marks must be connected by survey with the reference marks placed in the road being created and the orientation of one series of reference marks must be compared with the orientation of the other series of reference marks and the comparison shown on the plan.

38 Procedure on finding existing corner peg and reference mark

If a corner peg and reference mark are found together, a surveyor must determine the bearing and distance between them, and if a difference from the original reference is disclosed, the surveyor must decide from other evidence which of the monuments to adopt, and must note details of any difference on the plan of survey.

39 Procedure if monuments of original survey missing

To the extent that the relevant monuments of an original survey are missing, a surveyor must determine the boundaries and corners of the land being surveyed by measurement in correct relation to boundaries of adjacent parcels of land and parcels of land on opposite sides of roads, and to fences, and to such other evidence of correct location as may be found after full investigation and inquiry.

40 Procedure if differences exist between measured and recorded lengths

- (1) If a measurement discloses a boundary of land surveyed to be different from that indicated in the document of title to the land, the surveyor must verify the length of the boundary and make appropriate entries in the surveyor's field notes and show in the notes and on any plan of the survey the monuments adopted.
- (2) In the absence of monuments defining the land surveyed, the surveyor must indicate whether there is sufficient land available to permit the adoption of the measurement referred to in subclause (1) without causing any encroachment on any road or on any adjoining or adjacent parcel of land.

41 Surveyor to note nature and position of all monuments

- (1) The nature and position of all monuments found by a surveyor must be indicated in the surveyor's field notes and on the plan of survey. A monument which is important for the definition of the land must be shown on the plan of survey and in the surveyor's field notes with the annotation "found", "gone", "disturbed" or "inaccessible" as appropriate.
- (2) A monument must not be recorded as "gone" unless a thorough search for the monument has been made and the measurements of its probable site recorded in the field notes.

42 Marking of surveys

- (1) The marking of surveyed boundaries of land must be done so that the boundaries are readily and unambiguously discernible on the ground.
- (2) The making of points must be done with a peg or drill hole in rock or concrete or other similar material or with a chisel mark or nail in fixed timber.
- (3) If lockspits are used, the lockspits must consist of trenches one metre long, 200mm wide and 150mm deep dug in the direction of the boundary lines and commencing 300mm from each corner or angle, or may consist of stones packed to similar or greater

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dimensions. However, if the type of soil renders trenches ineffective, direction stakes 50mm by 30mm by 300mm may be placed 4 metres distant from and directed to the corner or angle instead of trenches.

- (4) If a corner or angle is marked with a drill hole or chisel mark or non-corrodible nail in fixed timber:
 - (a) if practicable, wings must be cut there in solid rock or concrete or fixed timber 80mm long, 20mm wide and not less than 10mm deep commencing 50mm from and directed to the corner, or
 - (b) if the surface makes wings impracticable, lines at least 300mm long and 20mm wide may be painted on the surface.
- (5) In surveys of lots of:
 - (a) 4,000 square metres or more, pegs must be of sound durable hardwood or white cypress pine at least 450mm long and not less than 75mm by 75mm nominal section at the top end, or
 - (b) less than 4,000 square metres, pegs must be of sound durable hardwood or white cypress pine at least 350mm long and not less than 75mm by 35mm nominal section at the top end.
- (6) Pegs must be pointed for about two-thirds of their length.
- (7) The centre of the top of a peg must represent the survey point except that, if conditions prevent the correct centring of a peg, the survey point may be represented by a non-corrodible tack or nail driven into the peg.
- (8) Pegs must be placed upright in the ground, point downwards, so that their tops are not more than 80mm above the ground level. The earth surrounding them must be securely compacted.
- (9) If a peg projecting above the surface of the ground could be hazardous or inconvenient to the public the peg may, at the discretion of the surveyor, be placed flush with the surface of the ground. If that is done, the fact must be noted on the survey plan.

- (10) If the depth of soil is insufficient to permit the conventional placement of a peg, the peg may be driven to the point of refusal and then:
- (a) if there is sound rock under the peg, a drill hole, a spike or a mark and wing must be placed in the rock beneath the peg, or
 - (b) if there is no sound rock under the peg, a cairn of rocks must be built around the peg above the surface of the soil.
- (11) If drill holes, chisel marks or similar marks are to be placed in an ornamental wall or ornamental path or similar structure, the size of the mark placed may be reduced at the discretion of the surveyor to avoid undue damage to the wall, path or other structure being marked, but only if the marking is durable and readily and unambiguously discernible.

43 Requirements relating to reference marks

- (1) Reference marks required to be placed by this Regulation must consist of
- (a) a permanent mark, or
 - (b) a reinforced concrete block in the form of a truncated pyramid 400mm long, 150mm square at the lower end and 100mm square at the upper end with a non-corrodible metal nail, peg or plug not less than 80mm long inserted at least 75mm into the block, or
 - (c) a galvanised iron pipe not less than 300mm long and 20mm internal diameter with a rim wall thickness of not less than 3mm, or
 - (d) a galvanised iron spike 100mm long driven completely into fixed timber with a wing 80mm long cut into the timber and directed to the spike, or
 - (e) a drill hole cut into a kerb or other substantial structure not less than 6mm in diameter and not less than 10mm deep with a wing 80mm long and directed to the drill hole, or
 - (f) if bedrock exists within 300mm of the natural surface of the ground, a drill hole not less than 10mm in diameter and 30mm deep cut into bedrock with a wing 80mm long directed to the drill hole, or

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Part 5 Monuments and reference marks

- (g) a wing 80mm long cut into the sound wood of a suitable tree, facing directly towards the relevant corner and at a convenient height above ground level, the point of the wing or arrow being the reference point, or
 - (h) an approved mark of a durable character, or a specific point, on a permanent or substantial structure.
- (2) The marks referred to in subclause (1) (b) and (c) must be placed vertically with the tops of the marks at least 80mm below the natural surface of the ground or, if placed on a boundary on which netting fencing is likely to be erected, sufficiently deep to permit the erection of the fence without disturbance of the mark.

44 Placement of reference marks

A reference mark that this Regulation requires to be placed must be located within 30 metres from the point to which it refers and in such a position as to preserve the mark from disturbance.

45 Use of broad arrows

In any case in which the use of a broad arrow is authorised under the *Survey Marks Act 1902*, the marking may be used instead of a wing in the placement of a corner mark or reference mark (or both) in connection with the marking of a survey.

46 Surveyor to record datum used for levelling

- (1) The field notes in relation to a survey must specify the datum of the levels shown on the plan, and must specify the bench marks used to establish and verify that datum.
- (2) All levels shown on a plan of survey must be related to AHD or such other datum as is approved.
- (3) The datum must be verified by closed height difference between 2 bench marks the heights of which have an approved accuracy.
- (4) All height differences verified or derived for a survey must attain a precision of $0.018\sqrt{k}$ metres or better (where “k” is the distance in kilometres between benchmarks).

47 Bench marks for determining height or depth

- (1) In a survey for the purpose of a limitation in height or depth (or both), the surveyor must relate the survey to 2 or more bench marks of which one or more must be external to the relevant parcel.
- (2) The value, nature, origin, accuracy classification and position of the bench marks must be stated on the plan of survey.
- (3) The external bench mark, or any one of the external bench marks, must be:
 - (a) an existing permanent mark within 300 metres of the parcel, or
 - (b) if it is impracticable to use an existing permanent mark, a mark placed by the surveyor in accordance with the requirements of clause 33 (11) for permanent marks within 300 metres of the parcel.
- (4) If a surveyor is required to place a bench mark in accordance with this Regulation, the bench mark must be a permanent mark or a mark of durable nature as approved.

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Part 6 Field notes

Part 6 Field notes

48 Surveyor to make field notes

- (1) A surveyor must make field notes and record in them any facts, readings and observations immediately after they are ascertained.
- (2) Field notes must:
 - (a) be neat, precise, complete and readily intelligible in accordance with the usage of surveyors, and
 - (b) be retained with the indices and cross references set out in a manner that facilitates the preparation of a complete and accurate plan.

49 Electronic records

If a survey has been recorded in whole or in part by electronic methods, an electronic copy (in the same form as the recording) and a paper copy of the reduced and formatted data must be retained in a manner that facilitates the preparation of a complete and accurate plan.

50 Surveyor to record astronomical observations

If a surveyor makes an astronomical observation in the course of a survey, the surveyor must enter in the field notes the time and date and the latitude of the relevant station together with full particulars of all observations.

51 Method of recording bearings

A surveyor must observe and record all angles or, if appropriate, bearings in the field notes in degrees, minutes and seconds of arc, and all bearings must be reckoned and expressed clockwise from zero to 360 degrees.

52 Surveyor to record landmarks

A surveyor must enter in the field notes the names of estates, houses, roads, rivers, creeks, lakes and the like, and house numbers, as far as material to the survey and ascertainable by the surveyor.

53 Surveyor to sign and date field notes

- (1) A surveyor must personally sign and date each page or sheet of the field notes (or, in the case of a survey recorded by electronic means, of the reduced and formatted data) of a survey that has been performed by the surveyor personally or under the surveyor's supervision.
- (2) Before signing each page or sheet, the surveyor must be satisfied that the notes on it are accurate and that the date when the work recorded on it was performed appears on it.

54 Surveyor to disclose difficulties

A surveyor must disclose any doubt, discrepancy or difficulty suggested by or encountered in a survey on the plan of survey or in an annexure to the plan or in an accompanying report.

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Clause 55 Surveyors (Practice) Regulation 1996

Part 7 Water as a boundary

Part 7 Water as a boundary

55 Relocation of high-water mark

If, since the date of a previous survey, there has been a change in the position of high-water mark forming a boundary of land to be surveyed and that change has been caused otherwise than by gradual and imperceptible accretion or erosion, in any subsequent survey the position of mean high-water mark as it was immediately before the change must be relocated after examination of all relevant accessible information.

56 Relocation of stream banks forming boundaries

- (1) If, since the date of a previous survey, there has been a change in the position of a bank of any non-tidal stream forming a boundary of land to be surveyed and that change has been caused otherwise than by gradual and imperceptible accretion or erosion, in any subsequent survey the position of the bank as it was immediately before the change must be relocated after examination of all relevant accessible information.
- (2) The middle line of a stream need not be determined by offsets or marked unless the purpose for which the survey is made so requires.

57 Determination of high-water mark as boundary

- (1) High-water mark in a document relating to land must, unless a contrary intention appears, be taken to be mean high-water mark, that is, the line of mean high tide between the ordinary high-water spring and ordinary high-water neap tides.
- (2) The boundary of land that abuts tidal water must, unless a contrary intention appears, be taken to be the mean high-water mark.
- (3) The mean high-water mark must be determined by a surveyor with appropriate accuracy.
- (4) If it is not reasonably practicable to determine an inaccessible or irregular high-water mark, the surveyor may determine the high-water mark approximately by reference to regular or approximately regular curves or to right lines or to any combination of curves and lines.

- (5) If a surveyor determines mean high-water mark in relation to land, the approval of the Minister administering the *Crown Lands Act 1989* (or of a person authorised by that Minister) to the determination and of the owner of any adjoining land below the mean high-water mark must be obtained.
- (6) In seeking Ministerial approval of the determination of a mean high-water mark that has changed, a surveyor must give an opinion in the form of a comprehensive report to the Surveyor General as to the reason for the change and the process by which that change took place.

58 Determination of landward boundary of reservation fronting tidal waters

- (1) If the landward boundary of an existing reservation fronting tidal waters has not been defined by survey, on redefinition or subdivision of the adjoining land by a survey, the boundary must be defined by right lines or circular curves, or a combination of both, approximately parallel to the position of mean high-water mark.
- (2) The approval of the Minister administering the *Crown Lands Act 1989* (or of a person authorised by that Minister) must be obtained to the definition of the landward boundary.

59 Calculation of areas of land abutting water

The area of land abutting tidal water or a non-tidal stream must be ascertained by the surveyor with appropriate accuracy and must include all lands to the mean high-water mark or the bank of the stream.

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Clause 60 Surveyors (Practice) Regulation 1996

Part 8 Miscellaneous

Part 8 Miscellaneous

60 Deferment of survey marks

- (1) If it is likely that construction or development will disturb any survey marks placed on land that is the subject of a survey, a surveyor may defer the placement of the survey marks required by this Regulation on that land.
- (2) In such a case, the surveyor must:
 - (a) notify the Surveyor General of the deferment, and
 - (b) deposit with the Surveyor General an amount equivalent to 2 penalty units for each survey mark deferred (but not less than 5 penalty units for each survey), and
 - (c) comply with any requirement of the Surveyor General, notice of which is served on the surveyor within 30 days of the date on which the surveyor notified the Surveyor General of the deferment.
- (3) On completion of the construction or development, the surveyor must:
 - (a) place the deferred survey marks, and
 - (b) have their nature and position noted on the plan of survey in the manner approved by the Registrar-General, and
 - (c) inform the Surveyor General that the survey has been carried out in compliance with this Regulation.
- (4) If the Surveyor General is satisfied that the survey has been satisfactorily completed, the deposit must be returned to the surveyor less an administrative charge not exceeding 15 per cent of the amount deposited.
- (5) If the placement of survey marks has been deferred under this clause, the marks must be placed no later than the earlier of the following days:
 - (a) the day that falls 6 months after the completion of the survey, or
 - (b) the day that falls 28 days after the completion of the construction or development.

61 Effect of contravention

If a survey or surveyor fails to comply with a provision of this Regulation, that failure does not constitute an offence, but, subject to section 14 of the Act (Power of board to deal with offences), constitutes a ground for action by the board under that section against the relevant surveyor.

62 Repeal

- (1) The *Survey Practice Regulation 1990* is repealed.
- (2) Any act, matter or thing that was done for the purposes of, or immediately before that repeal had effect under, that Regulation is taken to have been done for the purposes of, or to have effect under, this Regulation.

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Surveyors (Practice) Regulation 1996

Schedule 1 Forms

Schedule 1 Forms

Form 1 Survey Certificate

(Clause 10)

Surveyors (Practice) Regulation 1996

I,
of
a surveyor registered under the *Surveyors Act 1929*, hereby certify that the survey
represented in this plan is accurate, has been made in accordance with the *Surveyors
(Practice) Regulation 1996* and was completed on

The survey relates to

*(here specify the land actually surveyed, or specify any land shown in the plan that is not
the subject of the survey)*

(Signature)
Surveyor registered under
the *Surveyors Act 1929*

Surveyors (Practice) Regulation 1996

Forms

Schedule 1

Form 2 Notice of Entry

(Clause 11)

Surveyors (Practice) Regulation 1996

To the occupier of
(*here insert reference to land proposed to be entered*)

Notice is given under section 13 of the *Surveyors Act 1929* that I, the undersigned, a surveyor registered under the *Surveyors Act 1929*, intend to enter the abovementioned land on

(*here insert dates of proposed entry*)
together with my assistants for purposes relating to the making of a survey.

Dated this day of

(Signature)
Surveyor registered under
the *Surveyors Act 1929*

(Address)

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Surveyors (Practice) Regulation 1996

Schedule 1 Forms

**Form 3 Certificate as to survey not requiring
strict accuracy**

(Clause 29)

Surveyors (Practice) Regulation 1996

I,
of
a surveyor registered under the *Surveyors Act 1929*, certify that the survey represented in
this plan (or sketch) was made in accordance with clause 29 of the *Surveyors (Practice)
Regulation 1996* and is a survey to be
(insert "not" if appropriate)
lodged on public record as referred to in that clause.

(Signature)

Surveyor registered under
the *Surveyors Act 1929*