

1994—No. 527

## SURVEYORS ACT 1929—REGULATION

(Relating to survey practices)

NEW SOUTH WALES



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HIS Excellency the Governor, with the advice of the Executive Council, and in pursuance of the Surveyors Act 1929, has been pleased to make the Regulation set forth hereunder.

GEORGE SOURIS, M.P.,  
Minister for Land and Water Conservation.

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### Commencement

1. This Regulation commences on 1 October 1994.

### Amendments

2. The Survey Practice Regulation 1990 is amended:
  - (a) by inserting in clause 4 (1) in alphabetical order the following definitions:

“**approved**” means approved by the Surveyor-General;  
“**established permanent mark**” means a permanent mark the horizontal position of which is precisely determined as approved;
  - (b) by omitting from the definition of “road” in clause 4 (1) the word “established” and by inserting instead the word “created”;
  - (c) by omitting from the definition of “State Control Survey” in clause 4 (1) the words “and height” and by inserting instead the words “or height (or both)”;
  - (d) by omitting clause 4 (2);

- (e) by omitting clause 8 (1) and by inserting instead the following subclause:
  - (1) A surveyor must indicate on the plan of survey:
    - (a) the nature of any survey mark, object or monument found by the surveyor, or placed by the surveyor if not a peg; and
    - (b) the essential measurements from any reference mark, permanent mark, object or monument to the nearest corner, angle or line mark.
- (f) by omitting from clause 8 (2) the words “at depths other than” and by inserting instead the words “or found at depths of more than”;
- (g) by omitting from clause 9 (1) (c) the matter “500mm of the boundary” and by inserting instead the words “1 metre of the boundary or otherwise relevant to the boundary definition”;
- (h) by omitting clause 9 (3) and by inserting instead the following subclause:
  - (3) A wall must not be described as a “party wall” unless it is the subject of such easements as are referred to in section 181B of the Conveyancing Act 1919 or the surveyor is instructed that it is intended to create such easements in respect of the wall.
- (i) by omitting from clause 10 (1) the words “made personally or under supervision”;
- (j) by omitting clause 13 and by inserting instead the following clause:

**Surveyor to obtain information**

13. A surveyor must obtain all available information on record with a government department or public authority necessary to locate or relocate the boundaries of any land to be surveyed.

- (k) by omitting clause 14 (5) and by inserting instead the following subclause:
  - (5) The accuracy and method of verification must be as approved.
- (l) by omitting clauses 16–18 and by inserting instead the following clauses:

**Measurement by remote sensing methods**

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

(2) If any such remote sensing methods are used, the surveyor must indicate the method or methods on the plan of survey.

**Partial surveys**

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

**Surveys for easement purposes only**

18. (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 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 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.

(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, the reference mark provisions of this clause do not apply but the approximate positions must be shown on the plan together with appropriate notations.

(6) The surveyor must connect from, or place and connect to, permanent marks in accordance with clause 33.

(7) If the Surveyor-General is of the opinion that the requirement under subclause (4) is not practicable or necessary having regard to the length of the easement, 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.

- (m) by omitting clause 19 (2) and by inserting instead the following subclause:

(2) The extent of any error must be disclosed on the plan of survey and, if the mark is shown on an original Crown survey plan, the Surveyor-General must be advised in writing.

- (n) by omitting clause 20 and by inserting instead the following clause:

**Surveys involving boundaries which are natural features**

20. (1) Except as provided by subclauses (2) and (3), for the purpose of determining a boundary which comprises 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 observation made by a surveyor of the bearing and distance directly to a point on the boundary must be made at a distance from a point which does not exceed 100 metres.

(2) A surveyor who uses remote sensing methods (as permitted by clause 16) for the purpose of determining a boundary which comprises a natural feature is to use discretion as to the distance 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 a boundary which comprises a natural feature, a surveyor may use such other methods as will permit the survey determining the boundary to be of the appropriate accuracy.

(4) If remote sensing methods are used, the surveyor must indicate the method or methods on the plan of survey.

- (o) by inserting after clause 24 (3) the following subclause:

(4) For the purposes of this clause and clause 26, the country is taken to be:

- (a) level—where slopes do not exceed 3 degrees; and
- (b) undulating—where slopes vary between 3–10 degrees; and
- (c) steep—where slopes vary between 10–15 degrees; and
- (d) mountainous—where slopes exceed 15 degrees.

- (p) by omitting clause 26 (2) and by inserting instead the following subclause:
  - (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.
- (q) by inserting in clause 26 (3) after the word “misclose” the word “vector”;
- (r) by omitting from clause 26 (3) the word “error”, wherever occurring and by inserting instead the word “misclose”;
- (s) by omitting clause 27 and by inserting instead the following clause:

**Measurement and accuracy of lengths**

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

- (t) by omitting from clause 28 (2) the matter “13, 27” and by inserting instead the matter “11, 13, 14, 27”;
- (u) by omitting clause 30 and by inserting instead the following clause:

**Procedure for adopting datum line**

30. (1) A surveyor must, before adopting a line as the datum line of a survey, specially determine the position of the marks defining that line.

- (2) The bearing used for the orientation must:
  - (a) be adopted from the plane grid bearing derived from the ISG co-ordinates of 2 established permanent marks if the survey is:
    - (i) within or contiguous to a survey area proclaimed under section 11 (2) of the Survey Co-ordination Act 1949; or
    - (ii) 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; and
  - (b) be verified by angular and (if practicable) distance connection to at least one other established permanent mark.

(3) If the comparison of the connections under subclause (2) reveal 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.

(4) If subclause (2) does not apply to the survey, 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. The surveyor must state the origin of the orientation on the plan of survey.

(5) If the Surveyor-General is of the opinion that any requirement under subclause (2) 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 record the exemption number on the plan of survey.

- (v) by omitting from clause 31 the word “azimuth” and by inserting instead the word “orientation”;
- (w) by omitting clause 32 and by inserting instead the following clause:

**Method of recording datum line**

32. (1) A surveyor must show the datum line of the survey on the plan by distinguishing characters placed at the terminals of the datum line and the nature of the marks defining the datum line must be noted on the plan of survey.

(2) If the orientation is adopted from the ISG co-ordinates under clause 30, the co-ordinate values together with the zone, accuracy classification, date, combined scale factor and source of all the established 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 a 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” together with the derived bearing between the occupied and observed stations.

- (x) by omitting clause 33 and by inserting instead the following clause

**Connection of survey to State Control Survey**

33. (1) A survey for any purpose (resulting in a plan lodged on public record):

- (a) which is within or contiguous to a survey area proclaimed under section 11 (2) of the Survey Co-ordination Act 1949—must connect by direct measurement, regardless of distance, from 2 or more established marks; or
- (b) which is not within or contiguous to such a survey area—must connect 2 or more existing permanent marks by direct measurement if the 2 marks are within:
  - (i) 300 metres for a city or suburban survey; or
  - (ii) 1,000 metres for a country survey.

However, if there are established permanent marks within the distances specified, connection must be made from those marks in preference to non-established permanent marks which may be closer to the survey.

(2) If the permanent marks to be connected under subclause (1) are established marks, ISG orientation must be adopted in accordance with clause 30 (2).

(3) In a survey which redefines or creates parcels of land:

- (a) the surveyor must connect or place and connect by direct measurement no less than the following number of permanent marks in relation to the number of parcels:
  - (i) 1–10 parcels—2 marks;
  - (ii) 11–20 parcels—3 marks;
  - (iii) 21–40 parcels—4 marks;
  - (iv) 41–60 parcels—5 marks;
  - (v) 61–80 parcels—6 marks,

and 1 additional permanent mark for every additional 20 parcels or part of 20 parcels; and

- (b) the permanent marks connected in accordance with subclause (1) may be included in the total number of marks required by this subclause, provided they are significant to the definition or redefinition of the survey.

(4) 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 direct measurement for each interval of approximately:

- (a) 1,000 metres for a city or suburban survey; or
- (b) 2,000 metres for a country survey.

(5) A survey for the purposes of creating any easement must have 2 or more permanent marks connected, or placed and connected, by direct measurement for each interval of approximately:

- (a) 2,000 metres for a city or suburban survey; or
- (b) 4,000 metres for a country survey.

(6) Direct 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.

(7) If 2 of the permanent marks connected in accordance with subclause (1) (a) or (b) (i) have accurate AHD values, the locality sketch plan of each additional permanent mark placed in accordance with this clause must show:

- (a) the value related to AHD for the mark derived by closed height differences to a precision of  $0.018 \sqrt{\text{km}}$  metres or better (where “km” is the length of section in kilometres); and
- (b) the AHD value, and the nature and source of the 2 permanent marks connected.

(8) A permanent mark referred to in this clause 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, intersections, angles or crests of hills as to be visible without obstruction between other permanent marks and suitable for subsequent inclusion in the State Control Survey; and
- (c) be identified in location by a sketch plan which meets approved standards and which is forwarded to the Surveyor-General as soon as practicable after placement of the permanent mark.

(9) If the Surveyor-General is of the opinion 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 record the exemption number on the plan of survey.

- (y) by omitting from clause 35 (a) the word “near” and by inserting instead the words “within 30 metres of”;
- (z) by omitting from clause 35 (b) the matter “200” and by inserting instead the matter “100”;
- (aa) by omitting from clause 36 (1) (a) (i) the words “in the direction of each” and by inserting instead the words “on unfenced boundaries in the direction of the”;
- (ab) by omitting from clause 36 (1) (b) (ii) the word “place” and by inserting instead the words “connect or place and connect”;
- (ac) by inserting in clause 36 (1) (b) (ii) before the word “placed” the words “connected or”;
- (ad) by omitting clause 36 (1) (c) and by inserting instead the following paragraph:
  - (c) connect from, or place and connect to, permanent marks in accordance with clause 33.
- (ae) by omitting from clause 37 (1) the word “establishment” and by inserting instead the word “creation”;
- (af) by omitting from clause 37 (2) the words “If practicable, a” and by inserting instead the word “A”;
- (ag) by omitting from clause 37 (2) the matter “10” and by inserting instead the matter “30”;
- (ah) by omitting clause 37 (3) and (7);
- (ai) by omitting from clause 37 (5) the word “azimuth” and by inserting instead the word “orientation”;
- (aj) by omitting clause 37 (6) and by inserting instead the following subclause:
  - (6) The surveyor must connect from, or place and connect to, permanent marks in accordance with clause 33.
- (ak) by omitting from clause 37 (8) the word “established” wherever occurring and by inserting instead the word “created”;
- (al) by omitting from clause 37 (8) the word “azimuth” wherever occurring and by inserting instead the word “orientation”;
- (am) by inserting after clause 37 (10) the following subclauses:
  - (1 1) If the road the subject of a survey under this clause has not been constructed, a surveyor may defer the placement of reference marks required by this clause. In such a case, the surveyor must deposit with the Surveyor-General an amount equivalent to 2

penalty units for each reference mark deferred. On completion of construction, the surveyor must place the reference marks deferred and have their nature and position noted on the plan and inform the Surveyor-General that the survey has been carried out in compliance with this Regulation. 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% of the amount deposited.

(12) A surveyor may defer the placement of reference marks as provided in subclause (11) for a period not exceeding:

- (a) 6 months from the completion of the survey; or
- (b) 28 days from completion of construction,

whichever is the earlier.

- (an) by omitting clause 41 and by inserting instead the following clause:

**Surveyor to note nature and position of all monuments**

41. (1) The nature and position of all monuments found by a surveyor must be indicated in the 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.

- (ao) by inserting in clause 43 (1) (b) after the word "pipe" the words "not less than";
- (ap) by inserting in clause 43 (1) (d) after the word "structure" the words "not less than";
- (aq) by inserting in clause 43 (1) (f) after the matter "80mm long or" the words ", subject to clause 45,";
- (ar) by omitting from clause 43 (1) (g) the words "a mark" and by inserting instead the words "an approved mark";
- (as) by omitting from clause 45 the words "permanent mark" and by inserting instead the words "corner mark or reference mark (or both)";
- (at) by omitting clauses 46-48 and by inserting instead the following clauses:

**Surveyor to record datum used for levelling**

46. (I) All levels shown on plans must be related to AHD or such other datum as approved.

(2) The datum must be verified by closed height difference between 2 bench marks with accurate height in relation to the datum.

(3) All height differences verified or derived for a survey must attain a precision of  $0.018 \sqrt{\text{km}}$  metres or better (where “km” is the length of section in kilometres).

**Bench marks for determining height or depth**

47. (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 parcel.

(2) 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 impractical to use an existing permanent mark, a mark placed by the surveyor in accordance with clause 33 (8) within 300 metres of the parcel.

(3) The value, nature, origin, accuracy classification and position of the bench marks referred to in subclause (1) must be stated on the plan of survey.

(4) If a surveyor is required to place a bench mark in accordance with this Regulation, the bench mark must be:

- (a) a permanent mark; or
- (b) a mark of durable nature as approved.

**Surveyor to make field notes**

48. (1) A surveyor must make field notes and record in them any facts, readings and observations immediately when 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 which facilitates the preparation of a complete and accurate plan from the field notes without recourse to any other records and without verbal explanation.

(3) 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 which facilitates the preparation of a complete and accurate plan from the data without recourse to other records and without verbal explanation.

- (au) by omitting clause 49;
- (av) by omitting from Form 2 in Schedule 1 the word “surveyor” and by inserting instead the words “, a surveyor registered under the Surveyors Act 1929”;
- (aw) by inserting in Form2 in Schedule 1 after the word “Surveyor” the words “registered under the Surveyors Act 1929”.

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#### **EXPLANATORY NOTE**

The object of this Regulation is to clarify and simplify the provisions of the Survey Practice Regulation 1990 and to ensure consistency between the 1990 Regulation and current survey practice.

This Regulation is made under the Surveyors Act 1929, including section 23 (1) (h), (k), (1) and (n).

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