

LAND SURVEY REGULATIONS

(under section 32 of the Act)

Date of commencement: 7th August, 1970)

Arrangement of Regulations

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PART I — OPERATION AND DEFINITIONS

Short title.

1. These regulations may be cited as the Land Survey Regulations, 1970.

Interpretation.

2. In these regulations, unless the context otherwise requires —

“accurately determined” means determined with a standard of accuracy conforming to that prescribed in regulation 10(1);

“Act” means the Land Survey Act, No. 46 of 1961;

“arc” of observations means the mean of two rounds of observations to surrounding stations and beacons, one being taken in a clockwise direction and the other, with the telescope transitted, in an anti-clockwise direction;

“figure of regular shape” means a rectangular figure, a parallelogram, a right-angled triangle, a right-angled trapezium, or any of these figures of which one or more of its corners has been cut off by an isosceles triangle;

“immediate parent diagram” means the registered diagram of a property which is being subdivided or over which the servitude or lease is to be registered;

“right or left bank of a river” means that bank of the river which is on his right or left side, as the case may be, when the observer is looking downstream; and the “middle of the river” means the line midway between the banks;

“rural land” means all land not situated in a township, village or settlement;

“side”, when used in relation to a figure on a diagram or general plan, means a straight boundary line represented thereon, or the imaginary line joining any two beacons between which the boundary is curvilinear, and includes the line joining an unbeaconed corner point with the indicatory beacon defining such point.

PART II

POWER OF SURVEYOR-GENERAL TO TEST SURVEYS

Surveyor-General may test surveys.

3. If the Surveyor-General has reason to doubt the accuracy, correctness or authenticity of any survey, or of any information supplied in connection with such survey, he may, after having given notice of his intention to the land surveyor concerned, test such accuracy, correctness or authenticity and thereafter take such further action as he may deem fit.

PART III

FIELD WORK

Survey Information.

4. (1) Before carrying out any survey in terms of the Act, a land surveyor shall provide himself with all available information in respect of any previous surveys of the piece of land to be surveyed, of the adjoining pieces of land, of official co-ordinate values and designations of beacons affected by his survey.

(2) If the Surveyor-General is able to furnish this information, he shall do so free of charge.

Surveyor to furnish sketch plan, etc.

5. In applying for information required in terms of the preceding regulation, a land surveyor shall furnish a sketch plan, or a verbal description of the land, indicating the approximate location of the portion to be surveyed in relation to surrounding pieces of land.

Instruments.

6. (1) Every land surveyor shall ensure that his instruments and equipment are in proper adjustment.

(2) A measuring band shall be tested against a standard base approved by the Surveyor-General who shall assign an official number thereto.

(3) Such band may at any time be submitted to the Surveyor-General to be tested free of charge.

(4) When called upon by the Surveyor-General a land surveyor shall make his instruments and equipment available for testing.

(5) The Surveyor-General may condemn any instrument or equipment which he considers unfit for survey work.

(6) It shall not be lawful to use any instrument or equipment so condemned in any survey done under the Act.

Field measurements and observations.

7. (1) A land surveyor shall determine the position of all stations, beacons, landmarks and boundaries within the limits of accuracy prescribed in regulation 10 and shall adequately check every part of his survey.

(2) Unless a point is otherwise adequately checked —

- (a) when its position is determined by intersection or trilateration, the angle at the vertex of any triangle used in such determination shall not be less than 30 degrees nor greater than 150 degrees.
- (b) its position shall not be determined by resection from less than four points favourably situated, and the observations used in such determination shall consist of not less than two arcs, unless three of such points are within 3 000 m of the point being determined, in which case only one arc need be observed.
- (c) its position shall not be determined by a single triangle only, unless observations are made at all three points and on at least two different parts of the circle.

(3) Observations at any station or beacon shall consist of at least one arc when observing over distances exceeding 800 m, or over any distance of more than 100 m when the slope exceeds ten degrees.

Measurements of base lines and other distances.

8. (1) If in any survey it is necessary to measure a base, the length of such base shall not be less than ten per cent of the perimeter of the land under survey where such perimeter does not exceed 13 000 m.

(2) When the perimeter exceeds 13 000 m the length of base shall be at least 1 300 m.

(3) In this regulation the perimeter of the land shall include the connections required by regulation 32.

(4) A base shall be measured —

- (a) once in each direction; or
- (b) in two sections of more or less equal length, not necessarily in one straight line, which shall be compared through subsidiary triangles; or
- (c) in one continuous length, in which case it shall either be compared with a check base or checked in some other adequate manner.

(5) The difference between any two measurements or between a measurement and a derived distance shall not exceed 1/7 500.

(6) The requirements of this regulation may, in exceptional circumstances be relaxed with the approval of the Surveyor-General.

(7) Measured distances shall be corrected for all factors to enable the correct plane distance to be obtained.

(8) Measurements made in the course of a survey based on trigonometrical stations shall, in addition, be reduced to sea level and corrected for the scale enlargement factor.

Connection to trigonometrical stations, reference marks.

9. (1) Any survey of land situated in a township, village or settlement shall be connected to, or based upon reference marks:

Provided that such connection or basing shall not be necessary —

- (a) when the land is situated more than 300 m from the nearest reference mark; or
- (b) in the case of reference marks whose positions have been recorded on a general plan, when the land surveyor is able from other sources to apply satisfactory checks to the correctness of positions of beacons of the land being surveyed;

(2) Any survey of rural land shall be based on trigonometrical stations if surrounded by such stations and situated within 3 000 m of any such stations:

Provided that such basing shall not be necessary when it is dependent upon a traverse from any such station and the distance between such land and such station exceeds 800 m.

(3) When the survey of rural land is not based on trigonometrical stations, the positions of all trigonometrical stations (as referred to in regulation 30(1)(a)(iii) falling within the land under survey or within 100 m of any corner point shall be accurately determined.

(4) Any survey station, whose position on the trigonometrical system has been determined with a degree of accuracy conforming with that prescribed in regulation 10 for Class A surveys, and which has been placed in a position and permanently marked in a manner acceptable to the Surveyor-General, shall rank as a trigonometrical station or a reference mark, as the case may be, for the purpose of this regulation.

(5) The Surveyor-General shall maintain a record of all such survey stations and shall issue their co-ordinate values.

(6) The Surveyor-General may, in exceptional circumstances and subject to such conditions as he may deem necessary, exempt any survey from the operation of this regulation.

Limits of allowable error in field work.

10. (1) The error in a survey, other than that referred to in paragraph (4), shall not exceed the limits expressed by the following formulae, where —

(a) Class A refers to —

- (i) the fixing of reference marks in previously surveyed townships, villages or settlements; and
- (ii) such other determinations as may be prescribed in these regulations.

(b) Class B refers to the —

- (i) determination of reference marks in new townships, villages or settlements;
- (ii) survey of new townships, villages and settlements;
- (iii) re-survey or subdivision of a lot in an existing township, village or settlement;
- (iv) survey for the replacement of a beacon in a township, village or settlement; and
- (v) survey for the preparation of a diagram required under any law relating to the registration of mining titles in respect of precious stones and minerals.

(c) Class C refers to all surveys not included in Class A or Class B.

(2) When the position of the point is determined by triangulation the displacement between the observed and the calculated position of any ray used in the determination of the point shall not exceed —

for Class A	1 x D metres
for Class B	1.5 x D metres
for Class C	3 x D metres

$$\text{Where } D = \frac{0.4848 \times S}{100,000} + 0.0808 \left(1 - \frac{1000}{3S + 1000}\right),$$

and S is the distance in metres between the known and the unknown point.

(Amended L.N. 43/1971; I N 58/1971.)

(3) When the position of the point is determined by traverse, the closure of the traverse shall not exceed —

for Class A	E metres
for Class B	2 E metres
for Class C	4 E metres

$$\text{where } E \text{ equals } 0.015 \text{ metre} + \frac{f}{8000}$$

and where f is the total traverse expressed in metres:

Provided that when the traverse closes on the starting point, the closure for Class C shall not exceed that prescribed for Class B.

(Amended L.N. 43/1971.)

(4) The error in a traverse made for the purpose of determining the position of a curvilinear boundary shall not exceed —

$$0.10 \times \text{square root of } (0.25f + 0.00015f^2)$$

where f is the sum of the traverse distances in metres between known points fixed to the same standard of accuracy as the main survey:

Provided that such traverse distances shall be measured with a steel tape.

(5) The position of a curvilinear boundary shall be determined with an accuracy commensurate with tacheometric measurements.

Limit of allowable difference from original survey.

11. (1) For the purpose of section 13 of the Act the limit of disagreement from the original diagram is:—

$$0.2 \times \text{square root of } d$$

where d represents the distance in metres derived from data on the original diagram between any two beacons affected by the subdivisions.

(2) Any portion of a boundary line shall be deemed to be within the limit when the whole of such boundary line is within such limit.

Official co-ordinate values.

12. (1) The Surveyor-General may assign an official co-ordinate value, based on the trigonometrical survey system, to any beacon which has been correctly identified, if the determination of the co-ordinate value of such beacon conforms with the standard of accuracy prescribed in regulation 10 for Class A surveys.

(2) The Surveyor-General shall assign distinctive official designation to every beacon to which an official co-ordinate value has been assigned and shall maintain a record of all such official designations and values.

(3) An official co-ordinate value shall be used on all new diagrams, except as otherwise provided in regulation 43, and the position of the beacon to which an official co-ordinate value has been assigned, shall not be redetermined except for the purpose of verification.

(4) An official co-ordinate value shall not be altered save with the consent of the Surveyor-General, and then only:—

- (a) if the effect of a subsequent extension of the trigonometrical stations in the relevant area has, in his opinion, rendered an adjustment necessary or desirable;
- (b) when the lawful position of the affected beacon has to be subsequently reviewed;
- (c) when an undetected error in survey had adversely affected the previous determination; or

- (d) when in any subsequent survey it is deemed necessary to use a co-ordinate value determined with a greater degree of accuracy.

Adoption of data.

13. (1) If the position of a terminal beacon has previously been properly identified and determined on the trigonometrical system, the co ordinates of such beacon may be adopted for the purpose of aligning thereto:

Provided that a beacon shall not be placed so close to such terminal beacon that its alignment could be appreciably affected by such survey errors as could normally be expected in the determination of the position of the terminal beacon.

(2) The data defining an unbeaconed point in relation to an indicatory beacon and obtained in the process of correcting the alignment of a beacon as prescribed in regulation 15, may be adopted without verification for the purpose of any new diagram.

Curvilinear boundaries.

14. (1) If the centre line of a railway forms or defines an existing boundary, the intersections of such line with the rectilinear boundaries, and when necessary, the ends of the straights, shall be accurately determined, but the position of a railway curve defining an existing boundary may be determined by any survey methods:

Provided that such determination conforms with the standard of accuracy prescribed in regulation 10(4) and (5).

Provided further that, unless the elements of the curve are accurately determined, or the curve is determined, by photogrammetric methods, points surveyed on such curve shall be not more than 30 m apart.

(2) Notwithstanding the provisions of paragraph (1), it shall not be necessary to re-determine the radius and the centre of a circular curve which forms or defines an existing boundary, when such curve has previously been accurately determined.

(3) Wire fences, railway lines, roads, streams which are liable to change course or any regular curves, or natural or artificial features which are not permanently or clearly defined shall not be adopted as new boundaries.

(4) If a land surveyor is prevented from obtaining access to the middle of a river forming a boundary, he may determine its position by surveying the position of one of the banks and the widths at critical points.

(5) The survey records relating to a survey in terms of section 3 of the Act shall include a plan showing complete details of the new boundary together with the relevant numerical data for inclusion in a new diagram that may be required to be framed of any property affected.

(6) Photogrammetric methods acceptable to the Surveyor-General, may be used for determining the position of any curvilinear boundary.

Alignment of existing beacons.

15. (1) In surveying a piece of land, any existing beacon which is supposed to be on a straight line boundary common to such piece of land and other properties, a land surveyor shall, subject to paragraph (9), proceed as follows:—

(a) when the terminals of the common boundary line are established beacons, or are well ascertained beacons recognised by all parties, the beacon, if not on the straight line joining the terminals, shall, subject to paragraph (8) be replaced on line unless it is an established beacon, in which case it shall be adopted as a beacon of the land under survey;

(b) when the terminals of the common boundary line are not established beacons, and the position of one or both is doubtful, the beacon, if not on line, may be adopted if it is a well ascertained beacon recognized by all parties and in respect of which an agreement substantially in accordance with the agreement set out in the Schedule of the Act, signed by all parties concerned, is lodged with the Surveyor-General.

(2) When any beacon of a piece of land adjoining that under survey, which is supposed to be on the common boundary referred to in paragraph (1) is found not to be on line, it need not be dealt with;

Provided that —

(a) if it is an established beacon it shall be adopted as a beacon of the land under survey;

(b) if it is a well ascertained beacon recognised by all parties and in respect of which an agreement substantially in accordance with the agreement set out in the Schedule of the Act signed by all parties concerned, is lodged with the Surveyor-General, it may be adopted as a beacon of the land under survey.

(3) In cases not provided for in paragraphs (1) and (2), a land surveyor shall investigate the matter thoroughly and collect all available information and evidence to enable him to place the beacons in the most likely position.

(4) An agreement as mentioned in paragraph (1) to all such beacons, shall if deemed necessary, be lodged by the Surveyor-General.

(5) Cognisance shall be taken of the beacons and boundary of a township, village or settlement along the straight line boundary.

(6) A full report detailing all the evidence on which the land surveyor based his action shall be submitted with the relative survey records.

(7) In correcting the alignment of a beacon as provided for in this regulation, such beacon shall, as a rule, be placed at the intersection of the boundary line of which it forms a terminal, with the straight line on which it is supposed to be.

(8) For the purpose of this regulation a beacon shall be deemed not to be on the true and correct boundary when its displacement exceeds —

$$0.05 + \frac{d}{4000} \text{ metres with a maximum of 1 metre}$$

Provided that a beacon need not be moved in order to correct its alignment when its displacement falls within the limit of —

$$0.05 + \frac{d}{2000} \text{ metres with a maximum of 1 metre}$$

where d is the distance from such beacon to the nearest terminal, or point justifiably adopted as terminal in terms of this regulation:

Provided further that, in cases where it is necessary to correct alignment, if the beacon is not replaced on line —

- (a) it shall be used as an indicatory beacon for the unbeaconed point adopted as a corner of the land under survey; and
- (b) such data as may be necessary to define the position of such point in relation to such indicatory beacons, shall be recorded on any new diagram affected.

(Amended L.N. 43/1971).

(9) If a surveyor is able to identify a beacon previously placed on line, and in respect of which the survey records have been approved and the Surveyor-General is satisfied that the alignment was correctly effected, such beacon need not be re-tested for alignment.

PART IV

BEACONS; TRIGONOMETRICAL STATIONS, REFERENCE MARKS

Specifications for beacons.

16. (1) Except as provided in regulation 17, the corner point of every piece of land, shall be marked by beacons in accordance with the following minimum specifications —

- (a) For land situate in a township, village or settlement — a 12 millimetre iron peg or galvanised iron pipe, 450 millimetres long, driven in vertically and flush with the surface of the ground;

(Amended L.N. 58/1971)

- (b) for rural land, an iron standard weighing approximately three kilogrammes per metre, a 20 mm iron peg or galvanised iron pipe, 900 mm long, driven in vertically and projecting not more than 150 mm above the surface of the ground; over the standard, peg or pipe shall be erected a cairn of stones, or a heap of sods, 600 mm high with a base of 600 mm;

Provided that if —

- (i) the corner point falls in soft or sandy grounds the length of the standard peg or pipe shall be increased sufficiently to ensure the stability and permanence of the beacon;
- (ii) it is not possible to drive the standard, peg or pipe into the ground, the corner point shall be defined by a 12 mm hole drilled 25 mm deep into the obstructing rock, pavement or structure;
- (iii) the corner point falls in hard or rocky grounds and the standard, peg or pipe cannot be driven in to the prescribed depth its length may be reduced if the stability and permanence of the beacon is not thereby impaired, otherwise the corner point shall be defined by a standard, peg or pipe, 300 mm long, embedded in a symmetrical block of concrete 15 000 cc in volume.

(2) If a post forms part of a properly erected fence and occupies a corner point of the land being surveyed, it may be adopted as a beacon.

(3) For rural land the corner post shall be distinguished from other fence posts in the vicinity by erecting a small cairn of stones or a heap of sods around the post, by paint marks, or by two trenches dug in the directions of the two boundaries meeting at the post.

(4) A peg shall not be placed at the foot of the corner post for the purpose of identification.

(5) Any departure from the prescribed types of beacons shall be reported to the Surveyor-General for sanction.

(6) If in the survey of any piece of land a beacon which should define one of its corner points is missing, or in a dilapidated condition, or of a decidedly inferior type, it shall be restored in conformity with the requirements of this regulation.

(7) This regulation shall not apply to the survey of a Mining Right.

When beacons are not required.

17. (1) It shall not be necessary to define any corner point by a beacon —

- (a) if the corner point coincides with the corner of a permanent building, which shall in such case be adopted as a beacon;
- (b) if the corner point is in such close proximity to the corner of a building that a beacon cannot be conveniently placed in position; in such case the position of the corner of the building shall be accurately determined for use as an indicatory beacon;
- (c) at the ends of the straight of a railway line forming a boundary;
- (d) if the purpose of the beacon will fall away by consolidation of title; and
- (e) in the case of a servitude based on visible physical features of a permanent nature.

(2) The Surveyor-General may waive the requirement to erect or restore any beacon, when it is evident that such beacon would serve no useful purpose.

Indicatory beacons.

18. (1) When a corner point of a piece of land falls in an inaccessible or insecure position, or in a position where it is deemed inadvisable to place a beacon, such position shall be preserved by means of indicatory beacons.

(2) Except as otherwise provided in regulation 15(8), an indicatory beacon shall be placed on each of two of the rectilinear boundaries meeting at such corner point, and as close thereto as will be consistent with its safety:

Provided that it shall not be placed in a position where it could be mistaken for the corner beacon; and

Provided further that it shall not be necessary to place an indicatory beacon if special dispensation has been obtained from the Surveyor-General, or it cannot be placed on line due to an obstructing building or permanent structure.

(3) An indicatory beacon for defining the intersection of a rectilinear boundary with a curvilinear boundary, shall be placed on the former boundary, as near to the intersection as circumstances permit without endangering the permanency of the beacon and, unless impractical, on the same side of the curvilinear boundary as the land under survey.

(4) When the removal of a beacon is authorised in terms of section 21 of the Act and it is not possible or advisable to replace it in its original position, the land surveyor shall place indicatory beacons, and where possible one on each of the straight boundary lines meeting thereat or in such other positions as may have been authorised by the Surveyor-General and shall without delay furnish such information as the Surveyor-General may require to enable him to record the positions of the indicatory beacons on the relative diagrams.

Marking of survey stations.

19. All favourably situated main survey stations which are not likely to be disturbed, shall be marked in a permanent manner, preferably by iron pegs or pipes not less than 300 mm long.

Damage to and removal of trigonometrical stations, reference marks and bench marks.

20. (1) Trigonometrical station, a reference mark erected according to the specifications set out in regulation 21(4) or a bench mark, shall not be moved or demolished except on written authority of the Surveyor-General.

(2) If it comes to the knowledge of a land surveyor that a trigonometrical station, a reference mark or a bench mark has been or is likely to be damaged or destroyed, he shall immediately report the circumstances to the Surveyor-General.

Reference marks.

21. (1) In the survey of new townships, villages or settlements, reference marks shall be placed at convenient intervals; and in suitable positions, and as a general rule one such mark shall be placed at each street intersection.

Provided that not less than two such marks shall be placed.

(2) Such reference mark shall consist of a metal peg or pipe not less than 12 mm in diameter and 600 mm in length, set in a cylinder of concrete of volume not less than 0.1 cu.m.

(3) Any departure from the authorised type of reference mark referred to in paragraph (2), shall be reported to the Surveyor-General for sanction.

(4) A reference mark erected in a previously surveyed township shall be erected in accordance with such specifications as the Chief Engineer may from time to time prescribe.

PART V
DIAGRAMS

Nature, form and size.

22. (1) A diagram shall be framed on a single rectangular sheet of good durable paper of a quality approved by the Surveyor-General, and in accordance with a lay-out, style and specification prescribed by the Surveyor-General.

(2) Only one side of the paper shall be used.

(3) Only good quality drawing ink shall be used in preparing a diagram.

Provided that the Surveyor-General may permit the use of a type-writer for such preparation.

(4) The signature shall be in black or blue-black ink of good quality

(5) The dimensions of a diagram form shall be either 297 by 420 mm (size A3) or 297 by 210 mm (size A4):

Provided that the Surveyor-General may refuse to approve a diagram framed on Size A3 if in his opinion a Size A4 could conveniently have been used; and

Provided further that in exceptional circumstances the Surveyor-General may permit the use of forms of different sizes.

(6) No writing or drawing shall encroach on the margins of a diagram, which shall be —

(a) in the case of size A4 forms, 40 mm wide along the left hand edge of the longer side and 10 mm wide along the other sides;

(b) in the case of size A3 forms, 80 mm wide along the middle of the form and parallel to the shorter side and 10 mm wide along the sides;

(c) in the case of all other forms, of such nature as the Surveyor-General may prescribe:

Provided that the right hand margin may be used for initialling alterations.

(7) The Surveyor-General may refuse to approve any diagram if he considers it is dilapidated, framed in a careless manner, or its appearance spoilt by amendments or additions.

Number of copies required.

23. (1) Unless land is to be registered by reference to a general plan, a diagram shall be submitted for examination and approval in —

- (a) single, when a size A4 form is used;
- (b) such number as may be required for registration, when forms larger than size A4 are used, or when it is essential to record information in a colour other than black;

Provided that the Surveyor-General shall prepare and supply the additional copies required for registration when the diagram is framed on a size A4 form.

(2) When a diagram is framed on a size A3 form the figure shall be drawn wholly to the left or to the right of the central margin.

Figure

24. (1) Land shall be represented on a diagram by a single figure.

(2) Notwithstanding paragraph (1) two or more parts of a piece of land may be represented when —

- (a) the diagram is framed for the purpose of amendment or rectification, of title;
- (b) the diagram is framed for the purpose of consolidation of title and a component portion has been split into parts by the deduction of one or more intervening portions, or comprises existing detached portions represented on a single diagram which are accepted as constituting a single property;
- (c) such parts meet at one or more common points; or
- (d) such parts are disconnected by the prior deduction of a strip of road or railway reserve.

Scale and plot.

25. (1) The figure of a diagram shall be accurately plotted to one of the following scales —

1/1000	1/1250	1/1500	
1/2000	1/2500	1/3000	
1/4000	1/5000	1/6000	1/7500

or to any of these scales in which the denominator is multiplied or divided by ten to any integral power:

Provided that the size of the figure shall not be less than 10 square cm., or so small that essential information would be inadequately represented.

(2) When beacons are in such close proximity to each other that their relative positions cannot be clearly shown without unduly increasing the size of the diagram form, they shall be represented in an inset at a larger scale oriented to the main figure.

(3) The scale to which the figure is plotted shall be recorded on the diagram below the figure.

(4) The scale of an inset shall be given in such inset.

(5) The plot of the figure shall agree with the data on the diagram within a limit of 1 mm.

Land held under different tenures or conditions of title.

26. (1) When it is necessary for the purpose of registration to represent the boundaries of areas held under different tenures or conditions of title on a diagram such boundaries shall be represented by black broken lines and shall be lettered.

(2) Such lines shall be repeated in a similar manner on all subsequent diagrams unless they are no longer required for registration purposes.

Connecting figure.

27. When it is necessary to depict the connecting figure referred to in regulation 32(1), it shall be indicated on a diagram by broken lines or by means of an inset and it shall not be necessary to plot such figure to scale if this is found to be inconvenient.

Description of beacons.

28. (1) A diagram shall contain a clear and concise description of each beacon, and of the locality of each beacon in relation to any permanent feature in its immediate vicinity.

(2) If any beacon is a fence post, this shall be clearly evident from the description, e.g. iron rail (corner fence post).

(3) The description of any adopted beacon to which an official co-ordinate value has been assigned, shall be obtained from the official record.

Official designations of beacons.

29. Official beacon designations shall be tabulated on a diagram in a manner prescribed by the Surveyor-General.

Numerical data.

30. (1) Subject to regulation 43(2), a diagram shall contain the following numerical data :—

(a) Co-ordinates: subject to regulation 31(2) the co-ordinates in metres to two decimal places of —

(i) every corner point defining the rectilinear figure and of every indicatory beacon defining each corner point;

(ii) all other corner points in respect of which connecting data are furnished in terms of regulation 32;

- (iii) all trigonometrical stations falling within the figure, or within 30 m of any corner point referred to in subparagraphs (i) and (ii);
- (iv) in the case of a survey of rural land at least two favourably situated trigonometrical stations to which the survey has been connected
- (v) the centre and tangent points of every circular curve forming a boundary, if determined during the course of a survey; and,
- (vi) the ends of the straights when the elements of the curve have not been accurately determined:

Provided that on a diagram of land in a township village or settlement the co-ordinates shall be expressed to two decimal places of a metre.

(b) *Sides and other distances:* The lengths in metres to two decimal places —

- (i) of the sides of the rectilinear figure;
- (ii) of the radius of every circular curve forming a boundary, if determined during the course of the survey or adopted:

Provided that on a diagram of land in a township village or settlement the lengths shall be expressed to two decimals of a metre; and,

Provided further that it shall not be necessary to record the distance from an indicatory beacon to an irregular curvilinear boundary.

(c) *Directions:* Directions to the nearest ten seconds of all sides:

Provided that —

- (i) when the length of the side exceeds 2 000 metres the direction shall be expressed to single seconds;
- (ii) when a side is part of a boundary, determined during the course of a survey, and whose length exceeds 2 000 metres the direction of such side shall be expressed to single seconds;
- (iii) *angles may be recorded on the diagram of a lot which is represented by a*

figure of regular shape, or which is represented on an approved general plan on which angles are recorded.

- (d) *Area.* The area, which shall be expressed in square metres to the nearest square metre when the area is less than one hectare, otherwise in hectares to four decimal places:

Provided that —

- (i) when disconnected parts of land are represented on the diagram only the combined area of such parts shall be recorded;
 - (ii) as a general rule the area of a servitude need not be recorded.
- (e) *Servitude data:* Subject to the provisions of regulation 41(2), such data as may be necessary to define the limits of the figures representing a servitude.
- (f) *Connecting data:* Such data as prescribed in regulation 32(2);

- (2) Data shall be tabulated:

Provided that indicatory data may be shown in an inset drawn to an enlarged scale.

(3) In the tabulation of data on a diagram the corner points of the figure shall be referred to consecutively in clockwise order by letters placed outside the figure.

Co-ordinates.

31. (1) When a survey has been based on trigonometrical stations or on reference marks, a reference to the system and to the constant by which the co-ordinates have been reduced, shall be recorded on the diagram.

(2) The constant shall conform with the constant used in the calculations and referred to in regulation 56(4).

- (3) Co-ordinates need not be stated on a diagram —
- (a) framed from an approved general plan, unless the co-ordinates of each corner point of the land concerned are stated on such general plan;
 - (b) of land situated in a township, village or settlement, unless the survey or resurvey of such land is based on or connected to trigonometrical stations, or to reference marks in the manner prescribed in regulation 9;

- (c) compiled for consolidated title in the special circumstances referred to in paragraphs (b) and (c) of the first proviso to regulation 43(1).

Connecting data.

32. (1) When no rectilinear boundary of a subdivision coincides in whole or in part with a boundary of the land being subdivided, the position of two suitably situated beacons of such land, or of a former sub-division thereof, shall be accurately determined and connecting data, comprising the sides, directions and co-ordinates of the quadrilateral figure connecting such beacons to two beacons of the subdivision, shall be furnished on the subdivisional diagram:

Provided that —

- (a) the co-ordinates shall be omitted when no other co-ordinates are furnished;
- (b) if a diagram of a road or a railway traversing the land or of a servitude area within the land is filed in the office of the Surveyor-General, the subdivision may be connected to two suitable beacons represented on such diagram;
- (c) connecting data shall not be furnished on a subdivisional diagram when the subdivisional survey is based on trigonometrical stations or on reference marks, and any approved survey, of the land being subdivided which included at least two beacons not less than 150 metres apart has been similarly based.

(2) When a rectilinear boundary of a subdivision coincides in whole or in part, with a boundary of the land being subdivided, the following connecting data shall be recorded on the diagram:—

- (a) the two sides of the remaining extent along the boundary on either side of the subdivision as well as the co-ordinates of the corresponding terminals, adjusted, if necessary, to coincide with the true and correct boundary determined as required by regulation 15; and
- (b) the distances from the aforementioned terminals or from the beacons of the subdivision on that boundary to, as well as the co-ordinates of, beacons such as are referred to in regulation 15(1) and (2), when the positions of such beacons have been accurately determined for the purpose of affecting the correct alignment:

Provided that —

- (i) the co-ordinates of the terminals shall be omitted when no other co ordinates are furnished;

- (ii) if a land surveyor is in a position to effect the correct alignment of the subdivisional beacons without determining the position of both terminals referred to, data in respect of one such terminal only need be recorded; and,
- (iii) such connections shall not be recorded if the subdivisional survey is based on trigonometrical stations or reference marks and the co-ordinates of the terminals are similarly based and recorded on an approved diagram, unless it was necessary to redetermine the positions of the terminals.

Provided further that if the boundary requires the application of section 8 of the Act the position of both terminals shall be accurately determined and the data recorded accordingly.

(3) Connecting data shall not be furnished on a subdivisional diagram if such data can be deduced from diagrams of adjoining subdivisions submitted for examination at the same time.

(4) For the purpose of this regulation the word "terminal" means a beacon which terminates the boundary of the land being subdivided.

Consistency of data.

33. (1) Sides, angles or directions, and areas given on any diagram shall be numerically consistent with the co-ordinates recorded thereon as far as the limitations of regulation 30 allow.

(2) The numerical data recorded on a diagram, other than a diagram compiled for the purpose of registering a certificate of consolidated title, on which co-ordinates are not recorded, shall be unacceptable for registration when —

- (a) the closure of a data traverse computed round the rectilinear figure exceeds:

$$\frac{p \sqrt{n}}{10\,000}$$

or

- (b) the inconsistency in the area of the rectilinear figure as computed from its sides and angles, or directions, exceeds —

$$\frac{p^2 \sqrt{n}}{80\,000}$$

where p represents the perimeter and n the number of sides of the rectilinear figure

(3) When the land represented on any diagram, is bounded by a curvilinear line, other than a railway line or a curve defined entirely by mathematical data, the allowable maximum discrepancy in the recorded area shall be the area contained between the curvilinear line and a line parallel to it, displaced at a distance corresponding to 1 mm on the scale adopted for the working plan in terms of regulation 57 (2) (c).

(4) The curvilinear area shall be derived from a correct representation of the curvilinear line on the working plan.

(5) When, in the survey of several lots, it is necessary to frame a diagram of the whole block of such lots, the data recorded on the diagrams of the individual lots shall be consistent with the data recorded on the diagram of the whole block

Certificate.

34. Every diagram, except a diagram referred to in regulation 43(3), shall be signed by the responsible land surveyor under the following certificate:—

“Surveyed in (month, year) . . . by me
Land Surveyor”;

Provided that —

- (a) in appropriate circumstances the certificate may be modified with the consent of the Surveyor-General;
- (b) in the case of a diagram reflecting only official co-ordinate values, the diagram shall be signed by any land surveyor under the certificate:—

“Framed in (month, year) . . . by me
Land Surveyor”.

Thoroughfares.

35. When a roadway, street, right-of-way or lane of uniform width abuts on any boundary of any township, village or settlement under survey, its registered width shall be recorded on the subdivisional diagram:

Provided that if the width has been redetermined such new width shall be given.

True north.

36. The direction of true north shall be indicated on every diagram by an arrow pointing, as a general rule, towards the top of the paper.

Ambiguous curvilinear boundary.

37. When a curvilinear boundary is not described in clear terms on the original diagram, or its description is ambiguous, the ambiguity shall, whenever possible, be removed under section 8 of the Act:

Provided that if the ambiguity is not removed it shall be retained in the same form on all new diagrams affected.

Verbal definition.

38. (1) Subject to regulation 37 every diagram shall contain a clear verbal definition of the limits of the figure representing the land.

(2) In the definition shall be recited, clockwise and in the order in which they occur, the letters by which the corner points are indicated, and if applicable a description of the curvilinear boundary.

(3) When a river, stream, water-course, wall, kran, or other well-defined permanent, natural or artificial feature forms a new boundary, it shall be distinctly recorded in the verbal definition of the figure which specific part of the feature forms such boundary.

(4) In the cases referred to in regulation 24(2)(c) and (d) the verbal definition shall be recorded in such manner as not to reflect separate figures.

Locality.

39. Whenever applicable, a diagram shall contain an appropriate reference to the --

- (a) township, village or settlement;
- (b) area of the urban local authority; and
- (c) administrative district, in which the land is situated.

Reference.

40. Every diagram shall contain --

- (a) a reference to the Surveyor-General's number or the immediate parent diagram;
- (b) a reference to the title deed to which the immediate parent diagram relates; and
- (c) such deeds office references to the immediate parent diagram as may be required.

Servitudes.

41. (1) Special care shall be taken to represent with accuracy on a diagram, features which form the subject of a servitude.

(2) When features or boundaries defining an existing servitude have been determined by survey and are represented on a registered diagram they need not be re-surveyed for the purpose of a new diagram of the whole or portion of the land affected by such servitude:

Provided that the limits of the servitude falling within the land surveyed are graphically represented and described on the new diagram and a reference is made to the diagram and to the deed, when available, from which such limits and description were obtained.

(3) When a new subdivision boundary falls in close proximity to an existing servitude which is not indicated on the diagram of the relevant subdivision, the land surveyor shall furnish the Surveyor-General with a certificate to the effect that the subdivision is not affected by such servitude.

(4) When it is intended to create a servitude over a portion of land upon transfer of such portion, the feature or boundaries defining such servitude shall be represented on the relevant subdivisional diagram together with a note describing such servitude.

(5) The said note shall be in the form of a direct statement and shall contain no condition which it is proposed to attach to the servitude.

(6) If upon transfer of a portion of land a servitude is to be registered against the remainder or against contiguous or neighbouring land, the features or boundaries defining such servitude may, with the consent of the Surveyor-General, be represented and described on the subdivisional diagram.

(7) If the figure of the servitude cannot conveniently be represented to the scale of the diagram it may be shown in an inset plotted to a different scale.

(8) When an existing servitude is not registered in a deeds registry and the only indication of its existence is a note on a registered diagram, the identical words used on such diagram shall be reproduced in a similar position on any subdivisional diagram representing land affected by such servitude:

Provided that such note shall not be altered or omitted except as a result of an order of competent authority, the registration of a notarial deed to remove any uncertainty, or a lapsing by merger.

(9) When a servitude encumbers land extending beyond the limits of the feature determining the position of the servitude, the servitude note shall, whenever practicable, refer to the area concerned as a servitude area.

(10) The provisions of regulation 32 shall apply to a diagram framed for the registration of a servitude.

Composite diagrams.

42. No subdivisional diagram shall represent portions of land represented on more than one immediate parent diagram.

Diagrams for consolidated title.

43. (1) A diagram compiled, without re-survey for the purpose of consolidation of title, shall contain only such numerical data as are directly derived from component diagrams or are obtained by simple addition or subtraction of data appearing on diagrams of components and their immediate parent diagrams:

Provided that when —

- (a) a component diagram contains both beacon and transfer data, both sets of data shall be reproduced on the compiled diagram, the beacon data being recorded in red but if in the opinion of the Surveyor-General, the reproduction of the transfer data may lead to confusion, all such data may be omitted;
- (b) component diagrams record different co-ordinate systems, only co-ordinates based on the trigonometrical survey system shall be furnished;
- (c) component diagrams contain discordant co-ordinates on the trigonometrical survey system, of common corner points, all such values shall be reproduced on the compiled diagram:

Provided further that only the official co-ordinate value shall be recorded in respect of beacons to which the provisions of regulation 12 have been applied.

(2) On a diagram compiled, without re-survey, for the purpose of consolidation of title —

- (a) the numerical data shall be consistent within the limits prescribed by regulation 33:

Provided that these limits may be exceeded with the approval of the Surveyor-General;

- (b) the aggregate area shall agree exactly with the sum of the transfer areas of the component portions.

(3) On any diagram prepared for the registration of consolidated title, whether framed by compilation of component diagrams or from survey —

- (a) the diagram and deed references shall be quoted for each component portion;
- (b) the internal boundaries of component portions and of land held under different tenures or conditions of title, shall be indicated by black broken lines and lettered;
- (c) the data in respect of internal boundaries of the component portions shall be omitted;

Certificate for consolidation of title.

44. A land surveyor shall sign a diagram compiled for consolidation of title under the certificate —

"Compiled in (month, year) . . . by me Land Surveyor"

Certificate of township or registered title.

45. (1) When an area to be laid out as a township or settlement does not comprise the whole of the land represented by an approved diagram, a sub-divisional diagram of the portion to be so laid out shall be framed for the purpose of annexure to the certificate of registered title.

(2) When an area to be subdivided into lots in any manner not provided for in paragraph (1) does not comprise the whole of the land represented on an approved diagram a diagram of the portion so being subdivided shall be framed for the purpose of annexure to a certificate of registered title if deemed necessary by the Surveyor-General.

Deductions, alterations, endorsements.

46. (1) No deduction, note, alteration or endorsement shall be made on a registered diagram except by the Surveyor-General or unless authorised by him in writing.

(2) An approved diagram may be amended, prior to the registration thereof, only by the Surveyor-General with the consent of the land surveyor concerned.

(3) Alteration to any diagram under examination shall be initialled by the land surveyor or in special circumstances, by the Surveyor-General, who shall, in appropriate circumstances, notify the land surveyor thereof.

(4) Erasures shall not be permitted.

Certified copies of diagrams.

47. A certified copy of an approved diagram shall not be issued by the Surveyor-General prior to the registration thereof, unless the written consent of the land surveyor or of any person legally entitled to act on his behalf, is produced to the Surveyor-General.

Provided that if the Surveyor-General has been supplied with evidence that the land surveyor has unreasonably withheld his consent or has failed to respond within a reasonable time to a notice requesting authorisation for the issue of a certified copy, or if one or more original copies of the diagram are produced by the applicant to the Surveyor-General, he shall be entitled to prepare and issue such copy.

PART VI

GENERAL PLANS

When required.

48. A general plan shall be provided when —

- (a) land is subdivided into five or more portions and the immediate parent diagram is plotted on a scale which does not permit the deduction of such portions being clearly shown;

- (b) a general plan is required under any law, or
- (c) in the opinion of the Surveyor-General a general plan is required for any other reason.

Number of copies required.

49. A general plan shall be framed in such numbers as may be required for registration, provided that a single copy shall be lodged with the Surveyor-General if he is in a position to supply the additional copies required for registration.

Nature, form and size.

50. (1) One copy of a general plan shall be framed on good drawing paper mounted on linen.

(2) If the Surveyor-General is not in a position to supply additional copies, any second copy required shall be framed on tracing linen and any additional copies required shall be linen prints.

(3) General plans shall be framed on a size of paper and in a manner prescribed by the Surveyor-General.

(4) If the plan comprises more than one sheet, all sheets shall be of the same size.

(5) Unencumbered margins, not less than 75 mm wide, shall be along the sides of every sheet of a general plan:

Provided that a margin not less than 250 mm wide shall be left along the right-hand side of the title sheet:

Provided further that these requirements may be relaxed with the consent of the Surveyor-General.

(6) In order to ensure neatness on the final general plan, a preliminary general plan may be submitted to the Surveyor-General for examination.

Data and details to be recorded.

51. (1) The provisions of regulation 22(3), (4) and (7), 25, 26, 28, 29, 31(1) and (2), 33, 35, 36, 37, 38(3), 39, 40, 41, and 46 which are applicable to a diagram shall, *mutatis mutandis*, apply to the whole figure and to the subdivisions represented on a general plan.

(2) Regulation 30(1)(a) (b), (c) and (e) and 30(3) shall, *mutatis mutandis*, apply to the whole figure and to the subdivisions represented on a general plan:

Provided that —

- (a) in the case of rural land, no data other than the co-ordinates referred to in regulation 30(1)(a)(iii) need be recorded;

(b) in the case of townships, villages and settlements, the co-ordinates of the reference marks shall be tabulated; and

(c) the sides and directions may be recorded on the figure.

(3) The following information shall be furnished in respect of the subdivisions:—

(a) *Co-ordinates*: The co-ordinates, which shall be tabulated, of

- (i) in the case of rural land, all corner points and any indicatory beacons defining any such point;
- (ii) the corners of blocks of lots or, in lieu thereof, the apices of truncated corners, unless adjacent blocks are of regular shape and several block corners, or apices are co-linear, in which case the co-ordinates of only the terminals of the line are required;

Provided that the co-ordinates of corner points of blocks of lots in a township, village or settlement shall be expressed in metres to two decimal places.

(Amended L.N. 43/1971; L.N. 58/1971)

(b) *Sides and directions*. The length and direction of each side, which shall be recorded within the figure whenever it is feasible to do so:

Provided that —

- (i) it shall not be necessary to record such data on both sides of a common boundary;
- (ii) when two or more lots in a single block abut on the same straight line it shall be sufficient to record the direction of such line once only;
- (iii) when the sides of two or more adjoining lots in a block are parallel, it shall only be necessary to record the directions of the first and last of such parallel sides;
- (iv) the sides of lots in a township, village or settlement shall be expressed in metres to two decimal places;

(Amended L.N. 58/1971)

(v) the value of the direction of a side shall be recorded within the figure so as to represent the clockwise direction of such side irrespective of the manner in which it is written; and

(vi) when a change of direction is not visually obvious on the general plan, the point at which the change occurs shall be distinguished by a single black circle.

(c) *Areas*: The areas, which shall be tabulated consecutively and separately for each lot, shall be expressed in accordance with regulation 30(1)(d):

Provided that these requirements may be relaxed with the consent of the Surveyor-General.

(d) *Road widths*. The widths of the roads when uniform, which shall be recorded, in the figure of the road.

(e) *Connecting data*. Sufficient numerical data in the figure of the plan, or in an inset to connect the blocks to each other, and with the boundaries of the outside figure.

(4) The designation of each lot shall be written within the figure.

Numbering of lots.

52. The numbering of lots on a general plan shall proceed consecutively in each block and progressively along the streets or roads adjoining a block.

Certificate.

53. (1) Every general plan shall bear the date of survey and shall be signed under the certificate referred to in regulation 34.

(2) If two or more land surveyors are engaged on the survey and the responsibility can be divided, each land surveyor shall sign the general plan under a separate certificate from which the extent of the division of responsibility shall be clearly evident.

(3) Each sheet of a general plan shall be signed by the land surveyor and approved by the Surveyor-General.

PART VII
SURVEY RECORDS

Survey records: composition and lodgment.

54. (1) The survey records referred to in section 5(1)(c) of the Act shall be —

- (a) the original field book, the computations the working plan and the report on the survey and on matters incidental thereto substantially in a form prescribed by the Surveyor-General;
- (b) such records as the Surveyor-General may require when a curvilinear boundary has been determined by photogrammetric methods; and
- (c) an index to the calculations and field notes, which may be included in the co-ordinate list.

(2) Survey records shall be lodged with the Surveyor-General for examination and permanent filing simultaneously with every relevant diagram or general plan, unless such records are already filed in his office.

Field notes.

55. (1) The field book referred to in regulation 54 shall contain a record of the following —

- (a) all angular and linear measurements and all observations made for the purposes of reducing such measurements which shall be entered in pencil on one side of the paper only;
- (b) calculated data used for the placing and checking of beacons, which shall be entered in ink and references to the calculation pages from which such data were extracted;

Provided that a field plan may be used for placing internal beacons of a block of lots in a township, village or settlement;

- (c) the date on which each set of measurements or observations were made and a reference to any conditions which could affect the quality of the measurements;
- (d) a description of —
 - (i) the land under survey;
 - (ii) the measuring instruments used in-

cluding the official numbers of such instruments; and

- (iii) all beacons, landmarks and permanently marked stations, found or erected, including particulars of witness marks found or placed; and

(e) the name of the observer.

(2) All measurements and observations shall be entered in the field-book at the time they were made

(3) On no account shall erasures be made in a field book.

(4) Entries may be altered only as a result of re-measurement or re-observation and in such manner that the original entries are not obliterated.

(5) The field-book and the manner of recording entries therein shall be substantially in a form prescribed by the Surveyor-General.

Computations.

56. (1) Computations shall be done in ink on only one side of the paper, whose dimensions shall be 297 by 210 mm (size A4), provided that computations may be done electronically on size A4 paper in which case the print-out shall for each determination of co-ordinates be confined to:—

- (a) the input data abstracted from field records or from reduction sheets;
- (b) displacements in seconds and their equivalents in metres, between the finally selected point and the directions used in its determination;
- (c) calculated distances and directions from the finally selected point to fixed points used for its determination;
- (d) traverse closures;
- (e) limiting values and class of accuracy obtained as prescribed in regulation 10; and
- (f) the final co-ordinate values derived from the computations.

(2) In addition to the print-out of data, error figures shall be provided in respect of all trilateration and triangulation fixes unless the measure of accuracy, the reliability and the manner of fix is supplied in a form acceptable to the Surveyor-General.

(3) When a survey is not based on trigonometrical stations or reference marks, the co-ordinate system shall be based on an approximate direction of true north:

Provided that in any survey of land in a township, village or settlement a co-ordinate axis parallel to the general direction of a block of lots may be used.

(4) When co-ordinates are reduced by a constant, such constant shall comprise only figures common to all co-ordinates, so that neither the signs nor any of the numerals of the original values are changed by the reduction:

Provided that the reduction shall be confined to multiples of one thousand.

(5) Checks on field work and computations shall be provided and shall be clearly indicated by means of cross-reference or concise statements.

(6) The computations shall include —

(a) a list of all final co-ordinates used and calculated, in which complete references to the source from which the co-ordinates were obtained shall be provided;

(b) a consistency sheet in respect of —

(i) each diagram, other than diagrams representing regular figure in respect of which no co-ordinates are recorded; and

(ii) each figure, other than a regular figure, represented on a general plan;

(c) a comparison sketch on which the following are recorded:—

(i) the data derived from the survey;

(ii) the data obtained or deduced from the original and adjoining diagrams, in brackets, and

(iii) the data finally adopted for the survey underlined;

Provided that when the original and the new survey are based on the same system of co-ordinates, only a list of the original, surveyed and adopted values need be furnished.

(d) a triangulation plan, unless all trigonometrical stations are plotted to scale on the working plan; and

(e) such calculations as may have been made to determine a curvilinear area,

and shall contain a complete reference to the sources from which the data for the computations have been obtained.

(7) Minor computations made in the field for the placing of a beacon may be made in the field-book.

(8) When the position of a point is determined by a single closed triangle, the angles of the triangle shall be extracted directly from the field-book and a comparison made in the calculations with the corresponding values derived from directions obtained from finally calculated co-ordinates.

Working plan.

57. (1) The working plan which shall not be smaller than 297 by 210 mm (size A4), shall be neatly framed in ink on tracing linen, in accordance with a style, layout, and specification prescribed by the Surveyor-General.

(2) A typewriter shall not be used in preparing a working plan.

(3) The following information shall be recorded on a working plan —

(a) the designation of —

- (i) the land under survey;
- (ii) each portion or lot into which the land has been subdivided;
- (iii) adjoining land, and the locality referred to in regulation 39;

(b) the positions and designations of —

- (i) all beacons, stations or points used, adopted fixed or calculated during the course of the survey;
- (ii) principal and ground control points when photogrammetric methods are used;

(c) the position of all curvilinear boundaries and of o, servitude features, which shall be plotted to the scale of the diagrams to be framed, or to a scale of 1/7 500, whichever is the larger:

Provided that with the prior consent of the Surveyor-General a different scale be used;

- (d) all measured lines and directions used in the determination of a curvilinear boundary or of a servitude feature,
- (e) all measured lines used for the determination of any beacon, station or other point;
- (f) the co-ordinate axes with their values reduced by the constant appearing on the co-ordinate list;
- (g) the topographical features, including boundary fences;
- (h) the direction of true north;
- (i) a concise description of all marked stations, beacons and landmarks, or other indications of corner points, which were adopted, found, determined or placed in the course of the survey;

- (j) the scale of the figure and of the plot of curvilinear boundaries and servitude features, if any; and,
- (k) the area of each portion contained between the curvilinear boundary and the straight line joining the stations used in fixing the position of such boundary, or between the curvilinear boundary and the straight line joining the beacons nearest to that boundary if the area can be determined with sufficient accuracy.

(4) When points are in such close proximity to each other, or to fences or boundaries, that details cannot be clearly shown at the scale of the working plan, an enlarged inset, not necessarily to scale, shall be provided.

(5) The working plan shall be signed and dated under the following certificate —

“Surveyed by me in accordance with the provisions of the Land Survey Act and the regulations framed thereunder.

Date of Survey Land Surveyor”.

(6) Each land surveyor engaged in the survey shall sign the working plan in the manner prescribed in regulation 53(2).

PART VIII. MISCELLANEOUS

Letters and numbers: limitation on use.

58. Letters or numbers which cannot be reproduced by an ordinary typewriter, shall not be used in any field-book, working plan, diagram, sketch or calculation.

Surveys on behalf of the Government.

59. Any survey of Government owned land, or on behalf of the Government shall not be undertaken except upon written instructions or authorisation issued by the Surveyor-General. (Amended L.N. 2/1974)

Surveyor-General not liable for cost of any document officially required.

60. Any diagram, plan report, document or other information, required by the Surveyor-General in terms of these regulations, shall be deemed to be an essential part of the survey and the cost thereof shall form part of the cost of such survey.

Replacement of beacons.

61. When a land surveyor has replaced a beacon he shall report forthwith the circumstances to the Surveyor-General and shall submit to that officer, for examination and permanent filing, the survey records relative to such replacement.

When a beacon has a bearing on a piece of land.

62. For the purpose of section 13 of the Act, a beacon shall be deemed to have a bearing on a piece of land represented on a diagram based upon a division survey, when it defines a terminal point of a straight boundary line which is common to such piece of land and to the land being subdivided.

Tariff for surveys. (First Schedule).

63. The charge for any service performed by a land surveyor under the Act and these regulations shall be in accordance with the tariff of fees prescribed in the First Schedule:

Provided that increased charges may be made by written agreement between the land surveyor and the person responsible for the payment of his fees.

Taxation of accounts.

64. (1) The Surveyor-General shall exercise in case of dispute, all the functions of a taxing officer of the court in relation to fees charged by land surveyors in terms of regulation 63.

(2) The fee of office for taxing the account of a land surveyor shall be 5 cents for every R1, or fraction thereof, of the amount to be taxed subject to a minimum fee of R1.

Fees of office. (Second Schedule)

65. The Surveyor-General shall not accept a diagram or general plan for examination unless the fee of office for such examination has been paid.

Arbitration proceedings (Third Schedule).

66. (1) Any person who has called upon a contiguous owner to sign an agreement in terms of section 8(3) of the Act shall preserve a record of the hour and day on which, and the place at which, he so called upon him, or, if he called upon him in writing, he shall preserve a copy of the letter and any reply thereto he shall receive.

(2) In the event of such contiguous owner refusing to sign the agreement, the person calling upon him to do so shall, if possible, obtain the signature of such owner to such record of such day, hour and place, and also the signature of any witness present.

(3) Whenever it becomes necessary to proceed to arbitration in terms of the Act, the Surveyor-General shall serve notice upon every owner concerned, or to his duly authorised agent, requiring him within a period of one month after the date of notification, or if he was not in Swaziland upon such date, within three months thereafter, to complete and sign before two witnesses, and to return to him, a deed of submission substantially in the form contained in the Second Schedule.

(4) Upon receipt of deeds of submission from every owner affected by an objection, or from his duly authorised agent, the Surveyor-General shall appoint an arbitrator to determine the matter in dispute, but if he deems it otherwise desirable, he may appoint more than one arbitrator.

(5) If, however, half or more than half the persons affected by the objection demand that more than one arbitrator be appointed, he shall appoint at least three arbitrators.

(6) In the event of three arbitrators being appointed the decision of any two of them shall determine all questions under submission.

(7) Before any arbitrator enters on a reference under the Act he shall make and subscribe to the following declaration before a justice of the peace or commissioner of oaths —

I, do solemnly and sincerely declare that I will faithfully and honestly, and to the best of my skill and ability, hear and determine the matter referred to me under the Land Survey Act No. 46 of 1961.

(8) The appointment of an arbitrator shall not be revoked without the consent of all parties affected by the objection, nor shall the death of any such party act as the revocation of an appointment.

(9) An arbitrator or arbitrators shall submit his or their awards to the Surveyor-General within sixty days after his or their appointment, but the Surveyor-General may for particular reasons to be recorded in writing extend the time in which the award may be made.

(10) If an arbitrator dies or becomes incapable of acting before making his award, or fails or refuses to make his award within sixty days after his appointment, or within such extended period as may have been allowed by the Surveyor-General, the Surveyor-General shall appoint another arbitrator in his place.

(11) Every arbitrator appointed under paragraph (10) shall have the same powers and authority as were vested in the arbitrator in whose place the appointment is made.

(12) An arbitrator acting under a submission shall have the power to summon and hear witnesses, to administer oaths or take affirmations, to call for the production of papers and documents, and to enter upon and inspect any land for the purpose of determining the matter in dispute.

(13) The issue of a subpoena or summons on a witness to compel his attendance, and the production of documents before an arbitrator may be procured by such arbitrator or by any party to a submission, in the same way and subject to the same conditions as if the matter were an action pending in a magistrate's court.

(14) The parties affected by an objection shall submit to be examined by the arbitrator or arbitrators upon oath or affirmation in relation to the question in dispute and to all matters appertaining thereto, and shall produce before the arbitrator or arbitrators all documents within their possession or power respectively which he or they may call for or require, and shall do all other things which during the arbitration the arbitrator or arbitrators may require in connection therewith.

(15) Any party affected by an objection shall have the right to be represented by counsel or attorney.

(16) As far as practicable, written notes shall be taken of the oral evidence of witnesses by the arbitrator or arbitrators before whom it is given, and such notes shall be submitted to the Surveyor-General, together with the award, for purposes of record.

(17) The arbitrator or arbitrators may proceed ex parte in case any party to a dispute or any person affected by an objection, after reasonable notice has been given to him, shall neglect or refuse to attend on a reference.

(18) In every award the arbitrator or arbitrators shall direct by whom the cost of and consequent upon arbitration, or any part thereof, shall be paid, and may decide upon or tax the amount of the cost or part thereof to be paid other than the fees payable to the arbitrator or arbitrators:

Provided that if no direction is given as to the scale on which costs are to be taxed they shall be taxed according to the tariff allowed in a magistrate's court.

(19) The scale of fees to be paid to an arbitrator shall be determined by the Surveyor-General prior to the appointment of such arbitrator, and the Surveyor-General may, upon such appointment being made, require that the parties affected by an objection, or any of them, shall deposit with him a sum of money equal to the estimated amount of the fees of the arbitrator and of the expenses which will be incurred by him in travelling and subsistence, or shall give satisfactory security thereof.

(20) If the amount of such fees and expenses is subsequently found to exceed the deposit, the Surveyor-General may withhold the award until the amount of the excess has been paid.

(21) The amount due to an arbitrator by way of fees, on the scale determined by the Surveyor-General and by way of travelling and subsistence expenses, shall be taxable by the Surveyor-General.

(22) The Surveyor-General shall certify in writing the amount due by any person affected by an objection.

(23) Such certificate shall be indebted to the Surveyor-General in the amount stated therein.

Provided that the Surveyor-General may rectify any error in such certificate.

FIRST SCHEDULE

TARIFF OF FEES

(Referred to in Regulation 63)

1. Basic area charge.
2. Official co-ordinate values.
3. Remaining extent.
4. Defining a given area.
5. Connections.
6. Curvilinear boundaries.
7. Diagrams.
8. General plans.
9. Servitudes.
10. Travelling and transport.
11. Subsistence.
12. Line-clearing.
13. Miscellaneous.

TARIFF OF FEES

Basic area charge.

1. The fees for the survey of one or more pieces of land, included in the same survey, surveyed at the same time and having not more than six boundaries shall be as prescribed in either Table A or Table B:

TABLE A

Total No. of pieces	Charge for each Piece of Land: Areas			
	450 sq.m. and under	451-1500 sq metres	1501-4000 sq metres	4001 sq. metres to 2 hectares
1	R113	R127	R139	R147
2	77	90	96	102
3	63	74	80	86
4	55	65	69	74
5	50	60	63	68
6	48	57	61	65
7	46	55	59	63
8	45	53	57	62
9	44	52	56	61
10	43	51	55	60
15	40	48	52	56
20	38	46	50	55
50 and over	28	42	46	50

N.B. The charge per piece for any number of pieces not specified shall be derived proportionally from the tabulated charges.

(Amended L.N. 80/1975.)

TABLE B

Charge for each piece of land								Charge for every piece over—
Are in hectares		Number of pieces, for each of—						
		(1)	(2)	(3)	(4)	(5)	(6)	
Over	To	R	R	R	R	R	R	R
2	5	152	109	90	79	72	70	6- 70
5	10	156	114	96	85	79	77	6- 77
10	25	160	129	113	102	95	93	6- 93
25	50	175	144	124	113	104	102	6-102
50	100	197	167	147	135	127	124	6-124
100	200	230	192	172	157	—	—	4-157
200	300	247	206	181	168	—	—	4-168
300	500	277	222	201	182	—	—	4-182
500	750	295	240	213	194	—	—	4-194
750	1000	314	253	230	212	—	—	4-212
1000	1500	332	277	—	—	—	—	4-277
1500	2000	351	295	—	—	—	—	2-295
2000	3000	369	310	—	—	—	—	2-310
3000	5000	388	321	—	—	—	—	2-321
5000	7500	427	347	—	—	—	—	2-347
7500	10000	452	374	—	—	—	—	2-374

(Amended L.N. 80/1975.)

Provided that —

- (a) The basic area charge shall include the cost of —
- (i) supplying survey records as prescribed;
 - (ii) a reasonable amount of additional computing to verify the positions of the beacons of the land under survey;
 - (iii) preparing and supplying all reports and certificates as may be required, or prescribed;
 - (iv) preparing, lodging and supplying diagrams and general plans in such form and number as may be required, or prescribed for registration;
 - (v) except as provided for elsewhere in this tariff, supplying and erecting new beacons, reference marks and witness marks and permanently marking main survey stations;
 - (vi) bringing existing beacons up to prescribed standard;
 - (vii) preparing and supplying any agreement to beacons as may be required, which shall not include obtaining the signature of land owners on such agreement;
 - (viii) searching for and fixing sufficient beacons and corner points to complete the survey, if the time occupied in doing so is reasonable;
 - (ix) obtaining survey data prescribed by regulation 4;
 - (x) basing the survey on trigonometrical stations and reference marks;
 - (xi) testing the alignment of existing beacons when terminals do not have to be fixed, but excluding replacement of beacons on line;
 - (xii) placing new beacons on an existing boundary;
 - (xiii) pointing out beacons and boundaries during the course of field work;
 - (xiv) transport during the course of the field work;
 - (xv) supply of normal labour; and
 - (xvi) reasonable time devoted to receiving and persuing instructions for the survey;

(b) For the survey of any piece of land whose area exceeds 10 000 hectares the charge specified in Table B shall be increased by R13 for every additional 1000 hectares or part thereof;

(c) for each piece of land of two hectares and under, which is a regular figure the area, charge as specified in Table A shall be reduced by 25 per cent for those regular figures in excess of 10 in number; but the 10 regular figures exempted shall be the smallest regular figures;

(d) no reduction of the basic area charge shall be made when diagrams are not required for registration;

(e) when it is necessary to embed the centre mark of a beacon in concrete, as prescribed, an additional charge of R5.00 per beacon shall be made; (Amended L.N. 80/1975)

(f) when a beacon in conformity with regulation 16 (1)(b) is placed a charge of R4.00 for every such beacon shall be made;

(g) in the survey of pieces of land varying areas, the charge for an individual piece shall be derived from its area at a rate which would be applicable if all the pieces were of the same area;

(h) for each servitude endorsement on a diagram a charge of R2.00 shall be made; (Amended L.N. 80/1975.)

(i) for each component clause of a consolidated diagram prepared by the land surveyor, a charge of R0.60 per copy shall be made;

(j) in the survey of pieces of land represented on different immediate parent diagrams less than 2 hectares in extent an additional charge of R10.00 in respect of the second and each subsequent immediate parent diagram shall be made and; (Amended L.N. 80/1975.)

(k) for the survey of additional boundaries above six, the charge specified in Table A or Table B shall be increased by 10% for each of ten such additional boundaries and thereafter by 5% for any further such boundaries but the line joining an unbeaconed point with an indicatory beacon shall not be deemed to be a boundary for the purpose of this tariff of fees.

Official Co-ordinate Values.

2. The basic area charge for each piece of land shall be reduced by 5% in respect of each beacon to which an official co-ordinate value has been assigned:

Provided that —

(a) no reduction shall be made when it is necessary to re-determine or to verify the position of such beacon;

(b) the total amount by which the basic area charge is reduced shall not exceed 50%.

Remaining extent.

3. If it is necessary to survey the remaining extent of a piece of land being subdivided in order to ascertain its area all charges as prescribed in paragraphs 1 and 2 shall apply in respect of the area of such remaining extent as if it were one of the subdivisions.

Defining a given area.

4. The charge for computing the position of and placing a beacon to define a given area shall be 10% of the charge specified in Table B:

Provided that —

- (a) this charge shall not apply in respect of pieces of land referred to in Table A; and
- (b) for computing the position of and placing a beacon on a circular curve the charge prescribed in paragraph 6 shall be made;

Connections.

5. The charges for connections shall be made in accordance with Table C hereunder for each of —

- (a) the two lengths between two suitably situated beacons of the land being subdivided and two beacons of the subdivision as referred to in regulation 32(1);
- (b) the sides referred to in regulation 32(2)(a); or the distances referred to in regulation 32(2)(b):

Provided that —

- (i) no length shall be charged for twice;
- (ii) no charges shall be made if information obtained in previous survey can be used again;
- (iii) the charge shall be made once only when two or more contiguous subdivisions are surveyed at the same time; and
- (iv) no charge shall be made for connections to terminal beacons, whose positions can be adopted from previous surveys, or when in circumstances as prescribed, it is not essential to record connecting data on a diagram.

TABLE C

Metres	R
0 to 50	6
51 to 100	8
101 to 150	10
151 to 300	15
301 to 600	20
601 to 900	25
901 to 1500	30
over 1500	R30 plus R1 for every 50 metres, or part thereof; in excess of 1500 metres.

(Amended L.N. 80/1975.)

Curvilinear boundaries.

6. (1) Circular for —

(a) determining the elements of a circular curve a charge of R11.50 shall be made.

(b) placing a beacon on a circular curve a charge of R3.30 shall be made.

(2) Irregular: For surveying irregular curvilinear boundaries a charge of R2.00 for every 30 metres, or part thereof, plus an initial charge of R5.00 for each subdivision abutting on the curvilinear boundary shall be made:

Provided that when it is necessary to survey both banks of a river, in order to determine the middle, the charge shall be R4.00 for every 30 metres, or part thereof, plus an initial charge of R5.00 for each subdivision abutting on to the curvilinear boundary.

(Amended L.N. 80/1975.)

(3) Information obtained from previous surveys: A land surveyor shall not charge a second time for the survey of a curvilinear boundary if the information obtained in a previous survey can be used:

Provided that any work that may be necessary to enable the land surveyor to use this information shall be charged in accordance with paragraph 13.

Diagrams, endorsements, prints.

7. (1) The following charge shall be made for the preparation and provision of each hand drawn copy of a diagram when not charged for elsewhere in this tariff —

(a) Diagrams without co-ordinates for —

(i) a diagram with six sides or less . . . R4.00

(ii) each additional side above six . . . R0.20

(Amended L.N. 80/1975.)

(b) Diagram with co-ordinates for —

(i) a diagram of six sides or less R5.00

(ii) each additional side above six R0.30

(Amended L.N. 80/1975)

(c) Consolidated diagrams: For consolidated diagrams the charges prescribed in sub-paragraphs (a) and (b) shall apply and an additional charge of R2.00 shall be made for each component clause of the consolidation:

(Amended L.N. 80/1975.)

Provided that a charge for the compilation and calculation of data shall be made in accordance with paragraph 13.

(2) Servitude Endorsements: For each servitude endorsement on a diagram a charge of R2.00 shall be made. (Amended L.N. 80/1975)

(3) Prints: For providing linen prints of diagrams suitable for registration, a charge of R0.50 per square foot, or part thereof, shall be made. (Amended L.N. 80/1975.)

General plans.

8. The following charges shall be made for the preparation and supply of each handdrawn copy of a general plan when not charged for elsewhere in this tariff: for —

(a) any number of figures up to ten R30.00

(b) every additional figure up to fifty R 0.80

(c) every additional figure above fifty R 0.50

(Amended L.N. 80/1975.)

Servitudes.

9. (1) Line Servitudes (separate servitude diagrams): —

(a) the basic charge for the survey of a line, to be represented on a separate servitude diagram, shall be made as prescribed in paragraph 1 of this tariff, for the area of a square whose side is equal to one quarter of the length of such line:

Provided that —

(i) all other charges and reductions specified in this tariff shall apply, *mutatis mutandis*, as if the line represents one or more boundaries of a piece of land.

- (ii) such length shall be taken as being the distance along such line between the property boundaries for which connecting data are normally deemed necessary by the Surveyor-General;
- (b) in the case of two or more lines, following the same route, and represented on the same servitude diagram, the charge for the survey of each additional line after the first line, shall be thirty-five per cent of the charge prescribed in sub paragraph (a).

(2) Area servitudes (separate servitude diagram). The charges prescribed in this tariff for the survey of a piece of land shall apply, *mutatis mutandis*, to the survey involving the beaconing of a servitude area when it is essential to represent such area on a separate servitude diagram:

Provided that when such area affects a number of contiguous properties, each section of such area which is necessarily beaconed shall rank as a separate piece of land for the purpose of applying the basic area charge.

(3) Line and area servitudes combined with subdivision. For a servitude combined with a subdivision and represented on a subdivisional diagram —

- (a) if such servitude lies outside the boundaries of the subdivision, the charges prescribed in sub-paragraphs (1) and (2) shall apply;
- (b) which shall be deemed to be an integral part of such sub-division, if such servitude lies within the boundaries of the subdivision, the charges prescribed in this tariff shall *mutatis mutandis*, apply in regard to the survey of such servitude:

Provided that —

- (i) the charge for additional boundaries as prescribed in paragraph (k) of the proviso to paragraph 1 shall be determined from the aggregate number of beacons of such subdivision and such beacons as have necessarily been placed to define the limits of the servitude; and
- (ii) the applicable charge as prescribed in paragraph 6 shall be made when the servitude is defined by a curvilinear line.

(4) Miscellaneous servitude:— For professional work in connection with servitudes, not specified elsewhere in this paragraph, a charge shall be made in accordance with paragraph 13.

Travelling, Transport and Subsistence.

10. (1) A charge for the forward and the return journey between a land surveyor's headquarters and the site of the survey, or from the place where he was last employed to such site and onwards to other work, shall be made at the rate of R0.40 per km: (Amended L.N. 80/1975.)

Provided that —

(a) such charges shall be made for only one completed journey unless substantial reasons exist for additional journeys being made;

(b) no charge shall be made unless in excess of 100 km when a charge shall be R0.15 per km for travelling and transport during the performance of a survey for which a basic area charge is made; (Amended L.N. 80/1975.)

(c) no additional charge shall be made for the time occupied in travelling.

(2) When a land surveyor is not provided with free accommodation at the site of a survey, he shall charge travelling and transport expenses at the rate prescribed in sub-paragraph (1) in respect of one forward and one return journey per day between the site of the survey and either —

- (a) his headquarters, or
- (b) the nearest suitable accommodation, or
- (c) the free accommodation provided by the client:

Provided that —

- (i) the distance per day for which such charge is made shall not exceed 50 km;
- (ii) no charge shall be made in terms of this paragraph for the first day devoted to the survey;
- (iii) for accommodation supplied by the land surveyor, he shall charge subsistence at the rate of R15.00 for himself and one assistant and R3.00 for each of his labourers, plus the cost of their lodging. (Amended L.N. 80/1975.)

Abnormal circumstances.

11. (1) The charges specified in Tables A and B of paragraph 1, Table C of paragraph 5 and paragraph 6 may be increased by an amount not exceeding 35% if abnormal circumstances beyond the control of the land surveyor adversely affect the performance of field work.

(2) The increase is to be assessed in each case on its merits.

Line-clearing.

12. When it is essential for the performance of a survey that vegetation should be cleared, the time necessarily occupied by the land surveyor solely on supervising such clearing shall be charged at the rate of R 10 per hour:

Provided that the land surveyor shall ensure that the clearing is done as economically and expeditiously as possible; and

Provided further that, whenever practicable the client shall be afforded the opportunity of having the necessary clearing done and supplying the necessary labour and that the cost of labour supplied by the land surveyor for the clearing shall be recoverable from the client.

Miscellaneous.

13. For professional work not specified elsewhere in this Schedule a charge of R20 per hour shall be made: (Amended L.N. 80/1975)

Provided that the following costs shall be recoverable —

- (a) for motor transport supplied by the land surveyor, at a rate of R0.15 per km.; (Amended L.N. 80/1975.)
- (b) the amount of disbursements for beacon material;
- (c) the actual cost of labour necessarily employed a charge equal to 1.5% of their monthly wage or salary per hour shall be made.

SECOND SCHEDULE

Search Fees	R0,50
Certified Copies	R1,00
Subdivisional Diagram	R6,00
Township Lots	R2,00 per lot
Consolidation Diagram	R3,50
(Added L.N. 2/1974)	