

**CHAPTER 33:01 - LAND SURVEY: SUBSIDIARY LEGISLATION**  
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Land Survey (Training In Practical Survey Work) Regulations  
Land Survey Regulations

**LAND SURVEY REGULATIONS**

*(under section 46)*

*(16th September, 1963)*

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## **PART I** ***Preliminary (regs 1-3)***

### **1. Citation**

These Regulations may be cited as the Land Survey Regulations.

### **2. Application**

In so far as these Regulations differ from procedures established by usage they shall not apply to any survey the field work of which has been actually commenced before the commencement of these Regulations.

### **3. Interpretation**

In these Regulations unless the context otherwise requires-

**"accurately determined"** means determined with a standard of accuracy conforming with that prescribed in regulation 11(1);

**"administrative district"** means a district prescribed in terms of section 2 of the Administrative Districts Act;

**"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;

**"degree square"** means an area abounded by lines of latitude and longitude joining the four intersection points of two adjacent whole numbered lines of latitude and longitude within Botswana;

**"Director"** means the Director of Surveys and Lands;

**"original diagram"** means the diagram of the property being surveyed, resurveyed, or subdivided;

**"registration division"**, in respect of any land, means the degree square in which such land is situate;

**"regular figure"** or **"figure of regular shape"** means a rectangular figure or a right-angled triangle;

**"rural land"** means all land not situate 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;

**"the 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.

## **PART II**

### ***Power of Director to Test Surveys (reg 4)***

### **4. Director may test surveys**

If the Director 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 (regs 5-17)**

##### **5. Survey information**

(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, and of official co-ordinate values and designations of beacons affected by his survey.

(2) If the Director is able to furnish the information required under subregulation (1), he will do so on payment of such disbursements as he may prescribe.

##### **6. Surveyor to finish sketch plan, etc.**

In applying for information required in terms of regulation 5 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.

##### **7. Instruments**

(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 Director, who shall assign an official number thereto.

(3) On payment of a fee of P3 such band may at any time be submitted to the Director to be tested.

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

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

##### **8. Field measurements and observations**

(1) A land surveyor shall determine the positions of all stations, beacons, landmarks and boundaries within the limits of accuracy prescribed in regulation 11 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 3000 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 1000 m, or over any distance of more than 100 m when the slope exceeds 10 degrees.

##### **9. Measurement of base lines and other distances**

(1) If in any survey it is necessary to measure a base, the length of such base shall not be less than 10 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 the base shall be at least 1300 m.

(3) In this regulation, the perimeter of the land includes the connections required by regulation 37.

- (4) A base shall be measured-
- (a) once in each direction;
  - (b) in two sections of more or less equal length, 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 1/7500.

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

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

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

#### **10. Connection to trigonometrical stations, reference marks**

(1) Any survey of land situate 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-

- (i) when the land is situate more than 300 m from the nearest reference mark;
- (ii) 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 the positions of beacons of the land being surveyed; or
- (iii) in the case of reference marks other than those shown on a general plan or erected in terms of section 23 of the Act, unless the Director has published a notice in the *Gazette*, setting forth a date after which such connection or basing shall be compulsory.

(2) Any survey of rural land shall be based on trigonometrical stations if surrounded by such stations and situate within 3000 m of any such station:

Provided 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 35(1)(a)(iii), 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 11 for Class A surveys, and which has been placed in a position and permanently marked in a manner acceptable to the Director, shall rank as a trigonometrical station or a reference mark, as the case may be, for the purposes of this regulation.

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

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

#### **11. Limits of allowable error in field work**

(1) The error in a survey, other than that referred to in subregulation (2), shall not exceed the limits expressed by the following formulae, where-

Class A refers to-

- (i) the determination of reference marks established in terms of section 23 of the Act;
- (ii) the fixing of reference marks in previously surveyed townships, villages or settlements; and
- (iii) such other determinations as may be prescribed in these Regulations.

Class B refers to-

- (i) the determination of reference marks in new townships, villages or settlements;
- (ii) the survey of new townships, villages or settlements;
- (iii) the re-survey or subdivision of a lot in an existing township, village or settlement;
- (iv) the survey for the replacement of a beacon in a township, village or settlement; and
- (v) the 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.

Class C refers to all surveys not included in Class A or Class B, and shall include surveys for mining titles in respect of base minerals-

- (a) when the position of a point is determined by triangulation, the difference between the observed and the calculated value of any of the directions used in the determination of the point shall not exceed-

$$\text{for Class A, } \frac{50\,000}{3S + 1000} \text{ seconds,}$$

$$\text{for Class B, } \frac{75\,000}{3S + 1000} \text{ seconds,}$$

$$\text{for Class C, } \frac{150\,000}{3S + 1000} \text{ seconds,}$$

where S is the distance in metres between the known and the unknown point;

- (b) when the position of the point is determined by traverse, the closure of the traverse shall not exceed-

for Class A, 0,01 X square root of  $(0,25f + 0,00015f^2)$

for Class B, 0,02 X square root of  $(0,25f + 0,00015f^2)$

for Class C, 0,04 X square root of  $(0,25f + 0,00015f^2)$

where f is the sum of the traverse distances 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:

Provided that the Director shall determine a standard of accuracy for any survey operation not specified in this regulation.

(2) The error in a traverse made for the purpose of determining the position of a curvilinear boundary shall not exceed one per cent of the length of the traverse.

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

## **12. Limit of allowable difference from original survey**

(1) For the purposes of section 17 of the Act the limit of disagreement from the original diagram shall be-

$$0,4 \text{ X square root of } d,$$

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

(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.

## **13. Official co-ordinate values**

(1) The Director 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 11 for Class A surveys.

(2) The Director shall assign a 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 48, 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 except with the consent of the Director, and then only-

- (a) if the effect of a subsequent extension of the trigonometrical system or an alteration of the co-ordinate values of 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 subsequently to be reviewed;
- (c) when an undetected error in survey has 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.

#### **14. Adoption of data**

(1) When 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 alignment thereto:

Provided that a beacon is not 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 17, may be adopted without verification for the purpose of any new diagram.

#### **15. Curvilinear boundaries**

(1) When 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.

(2) The position of a railway curve defining an existing boundary may be determined by any survey methods:

Provided that-

- (i) such determination conforms with the standard of accuracy prescribed in regulation 11(2);
- (ii) unless the elements of the curve are accurately determined, or the curve is determined by photogrammetric methods, points surveyed on such curve shall not be more than 30 m apart.

(3) Notwithstanding the provisions of subregulation (2), 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.

(4) 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.

(5) When 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.

(6) When a river boundary is described on the original diagram in ambiguous terms, but the land is depicted as extending to a bank, and when the ambiguity is not removed in terms of section 29 of the Act, the position of such bank shall be determined for the purpose of representing it on a new sub-divisional diagram.

(7) The survey records relating to a survey in terms of section 14 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.

(8) Photogrammetric methods acceptable to the Director may be used for determining the position of any curvilinear boundary.

(9) The total length of a traverse, made for the purpose of determining the position of a curvilinear boundary, shall not exceed 2500 m, unless otherwise adequately checked.

## **16. Topography**

In the survey of rural land sufficient observations, measurements and sketches shall be made to enable the main topographical features to be determined. Alternatively, the topography may be reproduced from large scale modern maps or from vertical or near vertical aerial photographs:

Provided that the positions of features which are liable to change shall be verified.

## **17. Alignment of existing beacons**

(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 the provisions of subregulation (7), proceed as follows-

- (a) when the terminals of the common boundary line are established beacons, or are well ascertained beacons recognized by all parties, the beacon if not on the straight line joining the terminals shall, subject to the provisions of subregulation (6), 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 positions of one or both is doubtful, the beacon, if not on line, may be adopted provided 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 to the Act, signed by all parties concerned, is lodged with the Director.

(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 subregulation (1) is found to be not on line, it need not be dealt with:

Provided that-

- (i) if it is an established beacon it shall be adopted as a beacon of the land under survey;
- (ii) 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 to the Act, signed by all parties concerned, is lodged with the Director, it may be adopted as a beacon of the land under survey.

(3) In cases not provided for above, 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 positions; an agreement as abovementioned, to all such beacons, shall be lodged if deemed necessary by the Director.

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

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

(6) 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.

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

$$0,06 + \frac{d}{4000} \text{ metres}$$

with a maximum of 0,9 m:

Provided that-

- (i) a beacon need not be moved in order to correct its alignment when its displacement falls within the limit of-

$$0,06 + \frac{d}{2000} \text{ metres}$$

with a maximum of 0,9 m, where "d" is the distance from such beacon to the nearest terminal, or point justifiably adopted as terminal in terms of this regulation;

- (ii) 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 beacon, shall be recorded on any new diagram affected.

(8) When 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 Director is satisfied that the alignment was correctly effected, such beacon need not be re-tested for alignment.

#### **PART IV**

#### ***Beacons, Trigonometrical Stations, Reference Marks (regs 18-23)***

#### **18. Specifications for beacons**

(1) Except as provided in regulation 19, the corner points 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 mm iron peg or galvanized iron pipe, 455 mm long, driven in vertically and flush with the surface of the ground;  
(b) for rural land, an iron standard weighing approximately 3 kg per m, a 20 mm iron peg or galvanized iron pipe, 900 mm, 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-

- (i) when the corner point falls in soft or sandy ground the length of the standard, peg or pipe shall be increased sufficiently to ensure the stability and permanence of the beacon;  
(ii) when 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) when the corner point falls in hard or rocky ground 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 1500 cc in volume;  
(iv) if deemed necessary, any standard, peg or pipe may be embedded in a symmetrical block of concrete 1500 cc in volume.

(2) When a post forms part of a properly erected fence and occupies a corner point of 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 direction of 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 Director for sanction.

(6) When 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.

(8) In no circumstances shall a trigonometrical station erected by the Director or the Directorate of Overseas Surveys be used as a new beacon.

#### **19. When beacons are not required**

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

- (a) when the corner point coincides with the corner of a permanent building, which shall in such case be adopted as a beacon;
- (b) when 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) when the area affected by a servitude is of defined width, in which case it shall be necessary to place beacons along one side only of the area, or on a convenient line indicatory to such side;
- (d) at the ends of the straight of a railway line forming a boundary;
- (e) when the purpose of the beacon will fall away by consolidation of title;
- (f) in the case of a servitude based on visible physical features of a permanent nature.

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

#### **20. Indicatory beacons**

(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 17(7), 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-

- (i) it shall not be placed in a position where it could be mistaken for the corner beacon;
- (ii) it shall not be necessary to place an indicatory beacon when-
  - (a) special dispensation is obtained from the Director; or
  - (b) 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 impracticable, on the same side of the curvilinear boundary as the land under survey.

(4) When the removal of a beacon is authorized in terms of section 34 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 authorized by the Director, and shall without delay furnish such information as the Director may require to enable him to record the positions of the indicatory beacons on the relative diagrams.

#### **21. Marking of survey stations**

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

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

(1) A trigonometrical station, a reference mark erected in terms of section 23 of the Act or a bench mark, shall not be moved or demolished except on written authority of the Director.

(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 Director.

### **23. Reference marks**

(1) In the survey of new townships, villages or settlements, or of extensions of existing 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 a reference mark shall consist of a metal peg or pipe, not less than 12 mm in diameter and 600 mm in length, sunk or driven in so that its top is not less than 250 mm below the surface of the ground.

(3) Any departure from the authorized type of reference mark, referred to in subsection (2), shall be reported to the Director for sanction.

(4) A reference mark erected in terms of section 23 of the Act shall be in accordance with specifications prescribed by the Director.

## **PART V**

### ***Diagrams (regs 24-52)***

### **24. Nature, form and size**

(1) Except as provided in subregulation (3), a diagram shall be framed on a single rectangular sheet of good durable paper, of a quality approved by the Director, and in accordance with a lay-out, style and specification prescribed by the Director; only one side of the paper shall be used.

(2) Only good quality drawing ink shall be used in preparing a diagram:

Provided that the Director may permit the use of a typewriter for such preparation.

(3) The signature on any diagram shall be in black or blue-black ink of good quality.

(4) At least one copy of a servitude diagram shall be framed on paper and the remaining copies may be on paper or prepared by a process approved by the Director.

(5) The length of one side of a diagram shall be 330 mm and of the other side either 200 mm or 370 mm:

Provided that in exceptional circumstances the Director may permit the use of forms of a different size.

(6) No writing or drawing shall encroach upon the margins of a diagram, which shall be at least 38 mm wide along the left hand edge and 12 mm wide along the other edges:

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

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

### **25. Number of copies required**

A diagram shall, subject to the provisions of any other law, be framed in triplicate:

Provided that the Director may in any particular case dispense with one or more copies of a diagram.

### **26. Figure**

Land shall be represented on a diagram by a single figure:

Provided that two or more parts of a piece of land may be represented when-

- (i) the diagram is framed for the purpose of amendment or rectification of title as prescribed in section 42 of the Deeds Registry Act;
- (ii) 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; or
- (iii) such parts meet at one or more common points; or
- (iv) such parts are disconnected by the prior deduction of a strip of road or railway reserve.

## **27. Scale and plot**

(1) The figure of a diagram shall be accurately plotted to one of the following scales-  
1/1000, 1/1200, 1/1250, 1/1500, 1/1800,  
1/2000, 1/2400, 1/2500, 1/3000, 1/3600,  
1/4000, 1/4800, 1/5000, 1/6000, 1/7500,

or to any of these scales in which the denominator is multiplied or divided by 10 to any integral power:

Provided that the size of the figure shall not be less than 10 cm<sup>2</sup> 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.

## **28. Topographical features**

All topographical features, determined as prescribed in regulation 16, shall be depicted on a diagram in a manner prescribed by the Director.

## **29. Land held under different tenures or conditions of title**

(1) When it is necessary for the purpose of registration to represent on a diagram the boundaries of areas held under different tenures or conditions of title, 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.

## **30. Established beacons and boundaries**

Established beacons and boundaries shall be represented on a diagram in a manner prescribed by the Director.

## **31. Connecting figure**

(1) When it is necessary to depict the connecting figure referred to in regulation 37(1), it shall be indicated on a diagram by broken lines or by means of an inset.

(2) It shall not be necessary to plot such figure to scale if this is found to be inconvenient.

## **32. Description of beacons**

(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 must 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.

## **33. Official designation of beacons**

Official beacon designations shall be tabulated on a diagram in a manner prescribed by the Director.

## **34. Unit of measure**

On any diagram the sides, and when required, the co-ordinates, shall be expressed in metres.

## **35. Numerical data**

(1) Subject to the provisions of regulation 48(2), a diagram shall contain the following numerical data-

*Co-ordinates:*

(a) subject to the provisions of regulation 36, the co-ordinates in metres to one decimal

place 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 37;
- (iii) all trigonometrical stations falling within the figure, or within 30 m of any corner point referred to in subparagraphs (i) and (ii) hereof;
- (iv) at least two favourably situated trigonometrical stations or reference marks to which the survey has been connected:

Provided that the Director may, in his discretion, waive this requirement;

- (v) the centre and tangent points of every circular curve forming a boundary, if determined during the course of a survey;
- (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;

*Sides and Other Distances:*

- (b) the lengths in metres to one decimal place-
  - (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-

- (i) on a diagram of land in a township, village or settlement the lengths shall be expressed to two decimal places of a metre;
  - (ii) it shall not be necessary to record the distance from an indicatory beacon to an irregular curvilinear boundary;
- (c) directions to the nearest 10 seconds of all sides:
    - Provided that-
    - (i) when the length of the side exceeds 1500 m 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 1500 m, the direction of such side shall be expressed to single seconds; and
    - (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;

*Area:*

- (d) 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;

*Servitude data:*

- (e) subject to the provisions of regulation 46(2), such data as may be necessary to define the limits of the figure representing a servitude;

*Connecting data:*

- (f) such data as are prescribed in regulation 37.

(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.

**36. Co-ordinates: system, constant; when not required**

(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 61(3).

(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 situate in a township, village or settlement, unless the survey or re-survey of such land is based on or connected to trigonometrical stations, or to reference marks in the manner prescribed in regulation 10;
- (c) compiled for consolidated title, in the special circumstances referred to in regulation 48(4) and (5).

**37. Connecting data**

(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 subdivision 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-

- (i) the co-ordinates shall be omitted when no other co-ordinates are furnished;
- (ii) if a diagram of a road or railway traversing the land or of a servitude area within the land is filed in the office of the Director, the subdivision may be connected to two suitable beacons represented on such diagram;
- (iii) 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, which included at least two beacons not less than 150 m apart, of the land being subdivided 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 prescribed in regulation 17; 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 17(1) and (2), when the positions of such beacons have been accurately determined for the purpose of effecting 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 positions of both terminals referred to, data in respect of one such terminal only need be recorded;
- (iii) if the boundary requires the application of section 11 of the Act, the positions of both terminals shall be accurately determined and the data recorded accordingly;
- (iv) it shall not be necessary to record such connections 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.

(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 purposes of this regulation the word "terminal" means a beacon which terminates the boundary of the land being subdivided.

### **38. Consistency of data**

(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 35 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, will be unacceptable for registration when-

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

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

or

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

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

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 as a distance corresponding to 1 mm on the scale adopted for the working plan in terms of regulation 62(3)(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 diagram of the individual lots shall be consistent with the data recorded on the diagram of the whole block.

### **39. Certificate**

Every diagram, except a diagram such as is referred to in regulation 48(8), shall be signed by the responsible land surveyor under the following certificate-

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

Provided that-

- (i) in appropriate circumstances the certificate may be modified with the consent of the Director; and
- (ii) 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".

### **40. Thoroughfares**

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.

#### **41. True north**

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.

#### **42. Ambiguous curvilinear boundary**

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 the provisions of section 29 of the Act:

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

#### **43. Verbal definition**

(1) Subject to the provisions of regulation 42, 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 paragraphs (iii) and (iv) of the provisoes to regulation 26, the verbal definition shall be recorded in such a manner as not to reflect separate figures.

#### **44. Locality**

Whenever applicable a diagram shall contain an appropriate reference to-

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

#### **45. References**

Every diagram shall contain-

- (a) a reference to the Director's number of the original diagram;
- (b) a reference to the title deed to which the original diagram relates; and
- (c) such Deeds Office references to the original diagram as may be required.

#### **46. Servitudes**

(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 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 subdivisional 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 Director 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 note, underlined in red, 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 Director, 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 of 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 37 shall apply to a diagram framed for the registration of a servitude.

#### **47. Composite diagrams**

No subdivisional diagram shall represent portions of land represented on more than one original diagram.

#### **48. Diagrams for consolidated title**

(1) Subject to subregulations (2) to (6), 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 original diagrams.

(2) Where 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.

(3) If in the opinion of the Director, the reproduction of the transfer data may lead to confusion, all such data may be omitted.

(4) Where component diagrams record different co-ordinate systems, only co-ordinates based on the trigonometrical survey system shall be furnished.

(5) Where 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.

(6) Only the official co-ordinate value shall be recorded in respect of beacons to which the provisions of regulation 13 apply.

(7) On a diagram compiled, without resurvey, for the purpose of consolidation of title-

(a) the numerical data shall be consistent within the limits prescribed by regulation 38:

Provided that these limits may be exceeded with the approval of the Director;

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

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

(a) the diagram and the deed reference 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 areas of component portions shall be omitted;

(d) the data in respect of internal boundaries of the component portions shall be omitted.

#### **49. Certificate for consolidation of title**

A land surveyor shall sign a diagram compiled for consolidation of title under the certificate-

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

Land

Surveyor".

#### **50. Certificate of township or registered title**

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

(2) When an area to be subdivided into lots in any manner not provided for in subregulation (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 Director.

#### **51. Deductions, alterations, endorsements**

(1) No deduction, note, alteration or endorsement shall be made on a registered diagram except by the Director or unless authorized by him in writing.

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

(3) Alterations to any diagram under examination shall be initialled by the land surveyor or in special circumstances, by the Director, who shall, in appropriate circumstances, notify the land surveyor thereof, and no erasures shall be permitted.

#### **52. Certified copies of diagrams**

A certified copy of an approved diagram shall not be issued by the Director 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 Director:

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

### **PART VI**

#### **General Plans (regs 53-58)**

#### **53. General plan: when required**

A general plan shall be provided when-

- (a) land is subdivided into five or more portions and the original diagram is plotted on a scale which does not permit the deductions of such portions being clearly shown;
- (b) a general plan is required under any law; or
- (c) in the opinion of the Director a general plan is required for any other reason.

#### **54. Number of copies required**

A general plan shall be framed in duplicate:

Provided that-

- (i) when a general plan is required in terms of regulation 53(a) or (c), only one copy need be supplied;
- (ii) an additional copy will be approved by the Director if required by the owner of the property and if submitted simultaneously with the other copies.

#### **55. Nature, form and size**

(1) One copy of a general plan shall be framed on good drawing paper mounted on linen, any second copy required shall be framed on tracing linen and any additional copies

required shall be linen prints.

(2) General plans shall be framed on a size of paper and in a manner prescribed by the Director.

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

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

Provided that-

- (i) a margin of not less than 230 mm wide shall be left along the right-hand side of the title sheet, and
- (ii) these requirements may be relaxed with the consent of the Director.

(5) In order to ensure neatness on the final general plan, a preliminary general plan may be submitted to the Director for examination.

#### **56. Data and details to be recorded**

(1) The provisions of regulations 24(2) and (6), 27, 28, 29, 32, 33, 36(1) and (2), 38, 40, 41, 42, 43(3), 44, 45, 46 and 51 which are applicable to a diagram shall, *mutatis mutandis*, apply to the whole figure and to the subdivisions represented on a general plan.

(2) The provisions of regulation 35(1)(a), (b), (c) and (e) and of 35(2) shall, *mutatis mutandis*, apply to the whole figure represented on a general plan:

Provided that-

- (i) in the case of rural land, no data other than the co-ordinates referred to in regulation 35(1)(a)(iii) and (iv) need be recorded,
- (ii) in the case of townships, villages and settlements, the co-ordinates of the reference marks shall be tabulated; or
- (iii) the sides and directions may be recorded on the figure.

(3) The following information shall be furnished in respect of the subdivisions-  
*Co-ordinates:*

- (a) 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 collinear, 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 and in all other cases in metres to one decimal place;

*Sides and directions:*

- (b) 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, and to one decimal place in all other cases;
  - (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;
  - (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;

*Areas:*

- (c) the areas, which shall be tabulated consecutively and separately for each lot, shall be expressed in accordance with the provisions of regulation 35(1)(d):

Provided that these requirements may be relaxed with the consent of the Director;

*Road widths:*

- (d) the widths of roads when uniform, which shall be recorded in the figure of the road;

*Connecting data:*

- (e) sufficient numerical data to connect the blocks with each other, and with the boundaries of the outside figure and such data shall be provided in the figure of the plan, or in an inset.

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

#### **57. Numbering of lots**

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

#### **58. Certificate**

(1) Every general plan shall bear the date of survey and shall be signed under the certificate prescribed in regulation 39.

(2) If two or more land surveyors were 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 Director.

### **PART VII**

#### **Survey Records (regs 59-62)**

#### **59. Survey records: composition and lodgement**

(1) The survey records referred to in section 8(1)(c) of the Act shall be-

- (a) the original field-book;
- (b) the computations;
- (c) the working plan;
- (d) report on the survey and on matters incidental thereto substantially in a form prescribed by the Director;
- (e) such records as the Director may require when a curvilinear boundary has been determined by photogrammetric methods;
- (f) 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 Director for examination and permanent filing simultaneously with every relevant diagram or general plan, unless such records are already filed in his office.

#### **60. Field notes**

(1) The field-book as referred to in regulation 59, shall contain a record of the following-

- (a) all angular and linear measurements and all observations made for the purpose of reducing such measurements; the entries of all such measurements and observations shall be made 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, including official numbers of such instruments;
  - (iii) all beacons, landmarks and permanently marked stations, as found or as erected, including particulars of witness marks found or placed;
  - (e) such topographical sketches as may be necessary;
  - (f) 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 a 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 Director.

### **61. Computations**

- (1) Computations shall be done in ink, on only one side of the paper and substantially in a form prescribed by the Director.
- (2) When a survey is not based on trigonometrical stations or on 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.
- (3) 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 valuer are changed by the reduction:  
 Provided that the reduction shall be confined to multiples of 10, 000.
- (4) Checks on field work and computations shall be provided and shall be clearly indicated by means of cross-reference or concise statements.
- (5) 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, excepting diagrams representing regular figures in respect of which no co-ordinates are recorded;
    - (ii) each figure, other than a regular figure, represented on a general plan;
  - (c) a comparison sketch, on which the data derived from the survey are compared with those recorded on or deducible from the original and adjoining diagrams;
  - (d) a triangulation plan, unless all trigonometrical stations are plotted to scale on the working plan;
  - (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.
- (6) Minor computations made in the field for the placing of a beacon may be made in the field-book.
- (7) When the position of a point is determined by a single closed triangle, the angle 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.

### **62. Working plan**

- (1) The working plan which shall not be smaller than 200 mm by 330 mm, shall be neatly framed in ink on tracing linen or on durable paper, in accordance with a style, layout, and specification prescribed by the Director.
- (2) A typewriter shall not be used in preparing a working plan framed on tracing linen.

- (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 as referred to in regulation 44:
  - (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 positions of all curvilinear boundaries and of all servitude features, which shall be plotted to the scale of the diagram to be framed, or to a scale of 1/7500, whichever is the larger:
 

Provided that with the prior consent of the Director a different scale may 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;
  - (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 made 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 58(2).

## **PART VIII**

### **Miscellaneous (regs 63-73)**

#### **63. Letters and numbers: limitation on use**

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.

#### **64. Director not liable for cost of any document officially required**

Any diagram, plan, report, document or other information, required by the Director 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.

#### **65. Replacement of beacons**

When a land surveyor has replaced a beacon he shall report forthwith the circumstances

to the Director, and shall submit to that officer, for examination and for permanent filing, the survey records relative to such replacement.

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

For the purposes of section 20 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.

**67. Tariff for surveys**

The charge for any services 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.

**68. Taxation of accounts**

(1) The Director 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 67.

(2) The fee of office for taxing the account of a land surveyor shall be 5 thebe for every P1, or fraction thereof, of the amount of the account to be taxed, with the minimum fee of P1.

**69. Fees of office**

(1) The Director shall not accept a diagram or general plan for examination unless the fee of office for such examination has been paid.

(2) The scale of fees to be charged in the office of the Director shall be as set out in the Second Schedule.

**70. Arbitration proceedings**

(1) Any person who has called upon a contiguous owner to sign an agreement in terms of section 11(2) 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 which he has received. 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.

(2) Whenever it becomes necessary to proceed to arbitration in terms of the Act, the Director shall serve notice upon every owner concerned, or to his duly authorized agent, requiring him within a period of one month after the date of notification, or if he was not in Botswana 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 following form:

**"DEED OF SUBMISSION**

I, ..... the registered owner of the piece of land called, ..... situate at ..... in the administrative district of ..... hereby undertake to submit the question of the disputed beacon and boundary common to the land called ..... and to the land called ..... to the decision of an arbitrator or arbitrators to be appointed by the Director under the provisions of the Land Survey Act and to accept ..... award in regard of such beacon and boundary, and to the costs of or incidental to such arbitration as final and conclusive. I further agree that, for the purpose of giving effect to any award or order made in terms of the arbitration this deed shall be deemed to be a submission under the Arbitration Act and that at the instance of either party it may be made the subject of an order of court.

(Signed) ....."

Witnesses (2).

(3) Upon receipt of deeds of submission from every owner affected by an objection, or from his duly authorized agent, the Director shall appoint an arbitrator or arbitrators to determine

the matter in dispute, but shall, unless he deems it otherwise desirable, appoint one arbitrator only. If, however, half or more than half of the persons affected by the objection demand that more than one arbitrator shall be appointed, he shall appoint at least three arbitrators:

Provided that in no circumstances shall he appoint more than one arbitrator for the settlement of a dispute under section 18 of the Act. In the event of three arbitrators being appointed, the decision of any two of them shall determine all questions under submission.

(4) 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, without fear or favour, and to the best of my skill and ability, hear and determine the matter referred to me under the Land Survey Act."

(5) 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.

(6) An arbitrator or arbitrators shall submit his or their awards to the Director within 60 days after his or their appointment, but the Director may for particular reasons to be recorded in writing extend the time in which the award may be made.

(7) If an arbitrator dies or becomes incapable of acting before making his award, or fails or refuses to make his award within 60 days after his appointment, or within such extended period as may have been allowed by the Director, the Director shall appoint another arbitrator in his place. Every arbitrator so appointed shall have the same powers and authorities as were vested in the arbitrator in whose place the appointment is made.

(8) 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.

(9) 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.

(10) 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 arbitrators may require in connection therewith. Any party affected by an objection shall have the right to be represented by counsel or attorney.

(11) 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 Director, together with the award, for purposes of record.

(12) 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, neglects or refuses to attend on a reference.

(13) In every award the arbitrator or arbitrators shall direct by whom the costs of and consequent upon arbitration, or any part thereof, shall be paid, and may decide upon or tax the amount of the costs or part thereof to be so paid except 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 subordinate court.

(14) The scale of the fees to be paid to an arbitrator shall be determined by the Director prior to the appointment of such arbitrator, and the Director 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 therefor. In case the amount of such fees and expenses is subsequently found to exceed the deposit, the Director may withhold the award until the amount of the excess has been paid.

(15) The amount due to an arbitrator by way of fees, on the scale determined by the Director as aforesaid, and by way of travelling and subsistence expenses, shall be taxable by the Director.

(16) The Director shall certify in writing the amount due by any person affected by an objection. Such certificate shall be final, and the person named therein shall be indebted to the Director in the amount stated therein:

Provided that the Director may rectify any error in such certificate."

#### **71. How to recover costs of resurveying blocks of land other than township**

(1) A scheme framed by the Director under the provisions of section 18(6) of the Act, apportioning the costs of and incidental to a resurvey made under that section, shall lie for a period of 30 days for inspection at the respective offices of the Director and the District Commissioner of the administrative district in which the land surveyed is situated.

(2) Such costs shall be paid to the Director by the owners named in such scheme, either in full at the expiration of the period referred to in subregulation (1) or within such extension of that period as the Director may allow, or if the owner finds security to the satisfaction of the Director for the payment of such costs in 10 equal annual instalments, the first of which shall become due at the expiration of such period, plus interest at the rate of six *per cent per annum* on the amount of the costs which may from time to time be outstanding:

Provided that-

- (i) an owner may pay in larger instalments any costs so apportioned to him;
- (ii) if the owner of any land affected by the resurvey desires to effect registration of any portion of such land, the balance of costs, plus interest still unpaid at the date of such transfer shall become due and payable forthwith.

(3) The Director shall certify in writing the amount of the costs due by an owner in terms of section 18 of the Act, and the certificate of the Director shall be final:

Provided that the Director may rectify an error in such certificate.

(4) The owner named in such certificate shall be deemed to be indebted to the Government in the amount stated therein, plus interest at the rate of six *per cent per annum* from the date of expiration of the period referred to in subregulation (1), and such costs, plus interest, shall be recoverable from such owner by action in a competent court.

(5) The Director shall furnish the Registrar of Deeds with a certified copy of the scheme referred to in subregulation (1), and thereafter the Registrar of Deeds shall not effect registration of any piece of land described in the said scheme until a certificate signed by the Director is produced to him that the costs, plus interest, if any, of and incidental to the resurvey have been paid.

#### **72. Details of prescribed matters obtainable from Director**

Details of any matter in these Regulations which has been prescribed by the Director may be obtained free of charge on application to the Director.

#### **73. Oath or affirmation to be taken before registration as a land surveyor**

The oath or affirmation referred to in section 6(3)(d) of the Act shall be made before a justice of the peace or a commissioner of oaths and shall be in the following form-

"I, ..... do hereby swear/solemnly and sincerely affirm <sup>i</sup>1 that I will discharge the duties of a Land Surveyor within Botswana carefully and without partiality, fear, favour, or affection, and will conform to all laws defining those duties which are now in force, or shall hereafter be established.

So help me God  
(in the case of an oath)

.....  
 Sworn/solemnly and sincerely affirmed <sup>ii\*</sup> and signed before me  
 ..... at ..... this .....day of  
 ..... 20 .....

.....  
 Justice of the Peace/Commissioner of Oaths".

**FIRST SCHEDULE**  
**TARIFF OF FEES**(reg. 67)

TARIFF ITEM

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

**1. Basic area charge**

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 hereunder in either Table A or Table B and the charge per piece for any number of pieces not specified in Table A shall be derived proportionally from the tabulated charges to the nearest P5:

**TABLE A**

<i>Charge for each piece of land</i>				
<i>Total number of pieces</i>	<i>Areas</i>			
	<i>600m<sup>2</sup></i>	<i>600-1500m<sup>2</sup></i>	<i>1501-4000m<sup>2</sup></i>	<i>4000m<sup>2</sup> ha</i>
1	740	850	910	920
2	485	545	590	620
3	390	440	470	510
4	340	385	410	440
5	310	355	370	400
10	270	300	325	350
20	235	270	290	320
50	190	265	270	290
100	180	245	265	290
250	160			
500 and over	145			

**TABLE B**

<i>Charge for each piece of land</i>		
<i>Area in hectares</i>	<i>Number of pieces, for each of.....</i>	<i>Charge for every piece over.....</i>
-	-	-

	<u>One</u>	<u>Two</u>	<u>Three</u>	<u>Four</u>	<u>Five</u>	<u>Six</u>		
Over 2 to 5	935	670	555	484	440	430	Six	430
Over 5 to 10	955	695	595	540	480	470	Six	470
Over 10 to 25	985	795	695	625	565	560	Six	560
Over 25 to 50	1075	885	765	690	650	630	Six	630
Over 50 to 100	1220	1020	895	820	780	760	Six	760
Over 100 to 200	1350	1180	1055	970	-	-	Four	970
Over 200 to 300	1515	1265	1120	1030	-	-	Four	1030
Over 300 to 500	1700	1375	1235	1115	-	-	Four	1115
Over 500 to 750	1815	1480	1305	1190	-	-	Four	1190
Over 750 to 1000	1925	1590	1410	1300	-	-	Four	1300
Over 1000 to 1500	2040	1700	-	-	-	-	Two	1700
Over 1500 to 2000	2150	1815	-	-	-	-	Two	1815
Over 2000 to 3000	2270	1900	-	-	-	-	Two	1900
Over 3000 to 5000	2380	2035	-	-	-	-	Two	2035
Over 5000 to 7500	2580	2130	-	-	-	-	Two	2130
Over 7500 to 10000	2780	2290	-	-	-	-	Two	2290

Provided that:

(1) For the survey of any piece of land whose area exceeds 10 000 hectares the charge prescribed in Table B shall be increased by P100,00 for every additional 1000 hectares or part thereof.

(2) The basic area charge shall include the cost of-

- (a) supplying survey records as prescribed;
- (b) a reasonable amount of additional computing to verify the positions of the beacons of the land under survey;
- (c) preparing and supplying all such reports and certificates as may be required or prescribed;
- (d) preparing, lodging with the Director and supplying diagrams and general plans in such form and number as may be required or prescribed for registration:  
Provided further that when a general plan consists of 10 or fewer figures a charge for such general plan shall be made in terms of paragraph 9;
- (e) except as provided for elsewhere in this Tariff, supplying and erecting new beacons and reference marks and permanently marking main survey stations;
- (f) bringing existing beacons up to the prescribed standard;
- (g) preparing and supplying any agreement to beacons as may be required but shall not include obtaining the signature of land owners on such agreement;
- (h) searching for and fixing sufficient beacons and corner points to complete the survey provided the time occupied in doing so is reasonable;
- (i) obtaining survey data prescribed by regulations;
- (j) basing the survey on trigonometrical stations and reference marks;
- (k) determining the position of such topographical features as may be required;
- (l) placing new beacons on an existing boundary;
- (m) pointing out beacons and boundaries in the course of the field work;
- (n) transport in the course of the field work;
- (o) supply of normal labour; and
- (p) reasonable time devoted to receiving and perusing instructions for the survey.

(3) For each piece of land of two hectares or under the area, which is a regular figure, the area charge as specified in Table A shall be reduced by 15 per cent for those regular figures in excess of 10 in number:

Provided further that the 10 regular figures exempted shall be the smallest regular figures.

(4) No reduction of the basic area charge shall be made when diagrams are not required for registration.

(5) When it is necessary to embed the centre mark of a beacon in concrete, as prescribed, an additional charge of P40,00 shall be made; and when a beacon is placed in accordance with the provisions of regulation 18(1)(b), a charge of P30,00 shall be made for every such beacon.

(6) In the survey of pieces of land of 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 size:

Provided further that when two pieces of land are being surveyed and one piece of land is greater and the other smaller than two hectares, the charge for the larger area shall be made in accordance with the first column of Table B.

(7) For each servitude endorsement on a set of diagrams or general plan, a charge of P20,00 shall be made.

(8) For each component clause of a set of consolidated diagrams prepared by a land surveyor, a charge of P20,00 shall be made.

(9) In the survey of pieces of land represented on separate original diagrams an additional charge of P50,00 in respect of the second and each subsequent original diagram shall be made.

(10) For the survey of additional boundaries above six in number, the charge specified in Table A or Table B shall be increased by 10 percent for each of 10 such additional boundaries and thereafter by five percent for any further such boundaries:

Provided that the line joining an unbeaconed point with an indicative beacon shall not be deemed to be a boundary for the purpose of this tariff of fees.

(11) Except as provided in paragraphs 4 and 10 of this Tariff, no charge shall be made for the survey of any road area for which registration as a separate property is not required and which is created in the survey of one or more pieces of land.

(12) No charge shall be made for the survey of the outside figure represented on a general plan, unless a diagram of such figure is required for registration:

Provided that when such diagram is prepared a charge shall be made for the outside figure as a separate survey.

## **2. Location and replacement of beacons**

For the location or replacement of beacons of a property in a township, a charge in terms of either paragraph 13 or Table A of paragraph 1 and paragraph 11 of this Tariff, whichever is less, shall be made.

## **3. Official co-ordinate values**

The basic charge for each piece of land shall be reduced by five percent for each beacon to which an official co-ordinate value has been assigned:

Provided that-

- (i) no reduction shall be made when it is necessary to redetermine or to verify the position of such beacon;
- (ii) the total amount by which a charge is reduced shall not exceed 50 per cent.

## **4. Remaining extent**

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 paragraph (1) hereof shall apply to the area of such remaining extent as if it were one of the subdivisions.

## **5. Defining a given area**

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

Provided that this charge shall not apply to pieces of land referred to in Table A.

## **6. Connections**

For each of-

- (a) the two distances between two suitably situated beacons of the land being subdivided and two beacons of the subdivision as referred to in regulation 37 (1);
- (b) the sides referred to in regulation 37(2)(a), or the distance referred to in regulation

37(2)(b), the charges for connections shall be made in accordance with Table C hereunder:

Provided that-

- (i) no length shall be charged for twice;
- (ii) no charge shall be made if information obtained in a 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;
- (iv) no charge shall be made for connections to terminal beacons, whose position can be adopted from previous surveys, or when in circumstances as prescribed, it is not essential to record connecting data on diagram.

#### **TABLE C**

<i>Length in metres</i>	<i>P</i>
0 to 50	70
Over 50 to 600	155
Over 600 to 900	175
Over 900 to 1500	235
Over 1500	235 plus P20,00 for every 100 metres or part thereof in excess of 1500 metres.

### **7. Curvilinear boundaries**

(1) For surveying any curvilinear boundary a charge of P25,00 for every 50 metres, or part thereof, plus an initial charge of P55,00 for each subdivision of the property being surveyed, 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 P50,00 for every 50 metres, or part thereof, plus an initial charge of P60,00 for each subdivision abutting on the curvilinear boundary.

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

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

### **8. Diagrams, endorsements and prints**

(1) The following charge shall be made for the preparation and provision of each copy, other than those prepared by a photographic reproduction process, of a diagram when not charged for elsewhere in this Tariff-

- (a) *Diagrams without co-ordinates* P40,00
  - For a diagram of six sides or less .....
  - For each additional side above six .....
- (b) *Diagrams with co-ordinates* P50,00
  - For a diagram of six sides or less .....
  - For each additional side above six .....

(c) *Consolidated diagrams*

For consolidated diagrams the charges prescribed in subparagraphs (a) and (b) above shall apply and an additional charge of P20,00 shall be made for each component clause of the consolidation:

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 P20,00 shall be made.

(3) *Prints*

For providing suitable prints of diagrams for the purpose of registration a charge P10,00 per 1000 square centimetres, or part thereof, shall be made.

## 9. General plans

The following charge shall be made for the preparation of each copy, other than those produced by a photographic process, of a general plan when no charge for such plan has been prescribed elsewhere in this Tariff-

For any number of figures up to and including 10.....	P325,00
For every additional figure up to and including 50.....	P15,00
For every additional figure above 50.....	P10,00

Provided that the cost for printed or photographic copies shall be the actual cost incurred by the land surveyor.

## 10. Servitudes

(1) *Line servitude* (Separate servitude diagram)

(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 Director.
- (b) For 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 survey of each additional line after the first line shall be 35 per cent of the charge prescribed in subparagraph (a) of this subparagraph.

(2) *Area servitudes* (Separate servitude diagram)

The charges prescribed in this Tariff for the survey of a piece of land shall, *mutatis mutandis*, apply 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 subdivisions*

- (a) for a servitude combined with a subdivision and represented on a subdivisional diagram when such servitude lies outside the boundaries of the subdivision, the charges prescribed in subparagraphs (1) and (2) hereof shall apply;
- (b) a servitude combined with a subdivision and represented on a subdivisional diagram shall be deemed to be an inherent part of such subdivision when such servitude lies within the boundaries of the subdivision, and 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 subparagraph (9) of paragraph 1 shall be determined from the aggregate number of beacons as have necessarily been placed to define the limits of the servitude;
- (ii) the applicable charge as prescribed in paragraph 7 shall be made when the servitude is defined by a curved line.

(4) *Miscellaneous servitudes*

For professional work in connection with servitudes not specified elsewhere in this paragraph, a charge shall be made in accordance with paragraph 13 of this Tariff.

## 11. Travelling, transport and subsistence

(1) A charge for the forward and return journeys between a land surveyor's headquarters and the site of the survey, or from the place where last employed to such site and onwards to other work, shall be made at the rate of P1,50 per kilometre:

Provided that-

- (i) such journey shall be made in respect of one completed journey only and only one vehicle unless substantial reasons exist for additional journeys being made or additional vehicles being used;
- (ii) no charge shall be made for travelling and transport during the performance of a survey for which a basic area charge is made;
- (iii) an additional charge shall be made for the time occupied in travelling, during the forward and return journey between the land surveyor's head quarters and the site of the survey at a rate of P75,00 per hour.

(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 subparagraph (1) in respect of one forward and one return journey per day between the site of the survey and either-

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

Provided that-

- (i) the distance per day for which such charge is made shall not exceed 100 kilometres;
- (ii) no charge shall be made in terms of this paragraph for the first day devoted to the survey; and
- (iii) for accommodation supplied by the land surveyor away from his headquarters, he shall charge subsistence at the daily rate of P75,00 for himself, and one assistant and P25,00 for each of his labourers:

Provided that subsistence shall not be claimed for more than one technical assistant and two labourers per land surveyor.

## 12. Line clearing

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 P75,00 per hour:

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

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

## 13. Miscellaneous

(1) For professional work not specified elsewhere in this Tariff a charge of P110,00 per hour shall be made:

Provided that the following costs shall be recoverable-

- (i) P 1,50 per kilometre in respect of motor transport supplied by the land surveyor during the performance of the survey;
- (ii) the amount of disbursements for beacon materials; and
- (iii) a charge equal to one and a half percent of their monthly wage per hour or part thereof for technical assistants and labourers necessarily employed.

## SECOND SCHEDULE SCALE OF FEES TO BE CHARGED IN THE OFFICE OF THE DIRECTOR OF SURVEYS AND LANDS (regulation 69)

### *Examination of Cadastral Surveys*

1. (a) For the examination of a general plan or a data plan, inclusive of such additional copies as are prescribed by these Regulations, provided all copies are lodged simultaneously.....

P50,00 per sheet, plus P5,00 per lot, holding or portion

(b) For the examination of a diagram of any lot, holding,

subdivision or portion, inclusive of additional copies as are prescribed by these Regulations, provided all copies are lodged simultaneously..... P37,50 per diagram plus P3,00 for each side over six

(c) For the examination of a diagram of any lot, holding, subdivision or portion shown on an approved general plan for which the fees prescribed in subparagraph (a) have been paid, inclusive of additional copies as prescribed by these Regulations, provided all copies are lodged simultaneously..... P20,00 per diagram plus P1,50 for each side over six

(d) For the examination of any servitude diagram, inclusive of additional copies as prescribed by these Regulations, provided all copies are lodged simultaneously..... P37,50 per diagram plus P3,00 for each side over six

(e) For the examination of any servitude appearing on a general plan, data plan or diagram..... P12,50 per servitude

*Certified Copies of Diagrams*

2. For comparing and certifying a true copy of an approved diagram and for approving copies additional to those prescribed by these Regulations..... P25,00

*Consolidation Diagrams by Compilation*

3. For the examination of a diagram of consolidation by compilation P18,50 plus P 3,00 per component clause of the diagram

*Deductions and Endorsements, etc*

4. For effecting each amendment, deduction, addition or endorsement to a diagram or general plan..... P 5,00

*Certificate of Remaining Extent Or Compliance*

5. (a) For supplying a Certificate of Remaining Extent- For every hour or part thereof spent in the preparation of such certificate..... P25,00  
With a minimum charge of P25,00

(b) Certificate of Compliance..... P25,00 plus any transport costs

*Duostat, Contact Prints and Other Copies*

6. (a) For duostat or contact prints- Actual cost of material, labour and direct overhead costs  
(b) In addition to (a) above, the Director may levy a charge to cover a part of, or all costs of, original data.

*Searches*

7. For each search made in the office of the Director of Surveys and Lands- For every hour or part thereof..... P25,00  
With a minimum charge of P25,00

N.B. Licensed land surveyors shall, subject to such conditions as the Director of Surveys and Lands may prescribe, be exempt from the payment of fees for searches made by themselves.

*Defective Surveys*

8. Any cadastral survey which is returned to a surveyor will be surcharged at the discretion of the Director and the fee shall

be 20% of the normal total examination fee.

*Miscellaneous Work*

9. For any work or service not specified above the charge shall be on a time basis at the rate of P25,00 for each hour or portion thereof, or P75,00 for each hour or part thereof where professional services are involved.

*Licence Fee*

10. The Director may at his discretion levy a licence fee for the use of data supplied by the Department or for the copying of maps or other matter in any publication.

## **LAND SURVEY (TRAINING IN PRACTICAL SURVEY WORK) REGULATIONS**

*(under section 46)*

*(9th April, 1964)*

### ARRANGEMENT OF REGULATIONS

#### REGULATION

1. Citation
2. Interpretation
3. Practical training for recognition as a land surveyor

G.N. 36, 1964,  
L.N. 84, 1966.

#### **1. Citation**

These Regulations may be cited as the Land Survey (Training in Practical Survey Work) Regulations.

#### **2. Interpretation**

In these Regulations-

**"Board"** means the Land Surveyors' Board established under section 4 of the Act;

**"survey work"** means such land survey operations, the nature of which shall be approved by the Board and includes title surveys;

**"title surveys"** means survey operations executed with a view to the registration of land or real rights therein or to the relocation of beacons, and includes the preparation of the relevant survey records as defined in regulation 59 of the Land Survey Regulations.

#### **3. Practical training for recognition as a land surveyor**

(1) For the purposes of proviso (i) to section 7(1) of the Act, and subject to the provisions of subregulation (3), the training in practical survey work to be served, shall be the carrying out of survey work under the direct personal supervision of a surveyor practising as such and qualified for registration as a land surveyor under the Act.

(2) The period of such training shall be 270 working days:

Provided that no less than half such period shall be occupied in title surveys, the nature of which shall be approved by the Board.

(3) If a person has undergone training, which in the opinion of the Board is equivalent to the training referred to in subregulation (1), he may be granted exemption from such portion of the period of training prescribed in subregulation (2) as the Board may determine:

Provided that no such exemption shall-

- (i) reduce the requisite period of training to less than 200 working days; or
- (ii) be granted in the case of a person referred to in section 7(1)(e) of the Act in respect of training served before the completion of the first year of study.

(4) Recognition of any period of training undergone by a candidate outside Botswana

shall be subject to the provision that during such period laws relating to the survey of land in the country concerned were in the opinion of the Board, substantially the same as those in Botswana.

(5) Proof of employment during the period of training shall be submitted to the Board in the form of a certificate as prescribed hereunder-

**CERTIFICATE OF EMPLOYMENT**

(a) I, ..... a land surveyor practising in Botswana/a surveyor qualified for registration as a land surveyor <sup>iii\*</sup> under the Land Survey Act, and practising in ..... do hereby certify that Mr ..... has been engaged in practical survey work under my direct supervision for the following periods ..... and that, for not less than ..... days of this period he was occupied on title surveys, particulars of which in regard to the time and nature of the work, are annexed.

Dated at ..... on the ..... day of .....

.....  
Land Surveyor/Surveyor

(b) The certificate prescribed in this regulation shall be supported by an annexure in the form of a diary, signed by the land surveyor or the surveyor and the employee, in which detailed particulars of all survey work are entered.

(c) The Board may dispense with the certificate prescribed in this subregulation, if it is satisfied that the land surveyor or the surveyor with whom the employee was employed unreasonably refuses, or for some reason is not in a position to grant the certificate:

Provided that proof to its satisfaction can be given that the employee was actually employed under the personal supervision of such land surveyor or surveyor for the periods during which he claims to have been so employed.

(d) The Board may require the employee to undergo such further training as it may deem fit and may refuse to accept a certificate for a shorter period of training than 45 working days.

(6) The fee payable for registration as a land surveyor shall be P10,50.

<sup>i</sup>Delete item inapplicable.

<sup>ii</sup>Delete whichever is inapplicable.

<sup>iii</sup>Delete whichever is not applicable.