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[1961

LICENSED SURVEYORS ACT, 1909-1958.

Regulations for the Direction and Guidance of Licensed Surveyors.

Department of Lands and Surveys,
Perth, 12th September, 1961.

HIS Excellency the Lieutenant-Governor and Administrator in Executive Council has been pleased to approve of the Regulations for the Direction and Guidance of Licensed Surveyors set forth in the schedule hereunder, made by the Land Surveyors' Licensing Board pursuant to the provisions of section 26 of the Licensed Surveyors Act, 1909-1958, to have and take effect on and from the 1st day of January, 1962.

(Sgd.) F. C. SMITH,
Under Secretary for Lands.

Schedule. Regulations. General.

- Citation. 1. These regulations may be cited as the Licensed Surveyors (Guidance of Surveyors) Regulations, 1961.
- Revocation. 2. The general regulations for the guidance of surveyors published in the *Government Gazette* on the 24th June, 1910, as amended from time to time thereafter by regulations amending the same and duly made under the Licensed Surveyors Act, 1909, as amended, are revoked.
- Interpretation. 3. In these regulations unless the context requires otherwise—
“plans” includes diagrams;
“surveyor” means a surveyor licensed under the Act whose name appears on the register;
“Surveyor General” includes as well any other person appointed by the Governor to approve plans of authorised surveys;
“the Act” means the Licensed Surveyors Act, 1909, as amended.
- Duty of surveyor. 4. It shall be the duty of every surveyor making surveys under these regulations to work in a professional manner and to study the interests of the State in all his operations; to disclose all doubts, discrepancies and difficulties, and afford to the Surveyor General all information obtained by him in the due performance of surveys entrusted to him. Before commencing a survey, the surveyor shall obtain the relevant survey information from the Department of Lands and Surveys, the Office of Titles and the Mines Department.

Accuracy. 5. The necessity for the greatest practical accuracy cannot be too strongly impressed upon surveyors. In many instances no means exist by which errors can be immediately detected. If, therefore, it is found that a surveyor's work is not up to the necessary standard of accuracy, or is generally unreliable, or that he has in other respects neglected to comply with these regulations, he will be dealt with under section 21 of the Act.

Knowledge of Acts and regulations. 6. A surveyor conducting authorised surveys under the regulations should make himself conversant with the provisions of the Act and all other Acts and regulations a knowledge of which is necessary to enable him to efficiently discharge his duties as a surveyor.

Other instructions. 7. A surveyor effecting any authorised survey under the Act shall comply with departmental instructions supplementary to these regulations.

Field Notes.

Field books 8. Field notes shall be recorded in books provided or approved by the Surveyor General. The original notes taken in the field shall be lodged. Where, in cases of accidental destruction or mutilation, it is not possible to lodge the original notes, replacements or copies, with the written approval of the Surveyor General, may be lodged, provided a written signed statement, stating which parts are copies, is made on the index page immediately following the certificate, referred to in regulation 15 of these regulations. The use of ball point pens and Biro type pencils is prohibited. Great care must be taken by a surveyor that his field notes show everything he does or finds to exist on the ground.

Making of field notes. 9. Field notes shall be kept in a neat and professional manner, and indexed and referenced in such a way that a qualified draftsman may be able to prepare a plan therefrom. Minute figuring or lettering must be avoided. A margin of at least a quarter of an inch must be left at each edge of the pages.

Recording of field notes. 10. Field notes shall be recorded in the field in ink. When it is not practicable to use ink in the field a hard pencil may be used. In such cases the surveyor shall ink in the notes himself. No erasure shall be allowed and every alteration shall be made by striking once through the detail in error, placing the correct detail immediately above and initialling the alteration. Black or blue-black ink shall be used generally and may be used throughout. Red ink may be used to show offset or traverse lines and values, reference marks and values and such other detail as seems desirable in the interests of clarity. No other colours shall be used by the surveyor. The use of purple ink is reserved for the examining staff.

Distances. 11. Measurements of length shall be entered as read in links to two decimal parts of a link; allowances for slope, sag and temperature shall be noted and the lengths deduced therefrom clearly shown to one place of decimals for boundary distances. Running chainages and intermediate distances must be shown. Measurements to offsets, reference marks, buildings and structures should be shown to the second place of decimals of a link. Measurements shall be corrected for temperature, slope and sag, and for that purpose all relevant particulars, including length, weight and standard temperature of the tape, should be noted in the field book. Angles of slope should be prefixed by E. or D., according to whether they are elevations or depressions in the direction of chainage.

Calculated or original values. 12. Any distance or angle not measured by the surveyor shall be designated "cal." or "orig.," according to whether it has been calculated by him or copied from earlier survey data.

Abbreviations and symbols. 13. A boundary line shall be indicated by a full ink line; a traverse line or a tie line across a road by a broken black line or full red line. A circle shall indicate a post, peg or intermediate spike actually in position upon completion of the survey. A cross shall indicate a reference mark. A filled square will indicate a faced peg. Except in the case of newly placed marks each circle

shall have its appropriate description or symbol—*e.g.*, “O.P.” or “P.F.,” etc. It is important to describe clearly the condition of old marks for which a search has been made; whether they have been found in a suitable condition to positively identify a point; or whether some remains have been found sufficient only to indicate the point approximately; or whether the mark has disappeared. A practice to be avoided is to show a circle with the description “O.P. gone.” If the O.P. is gone and not replaced the circle should be cancelled by a cross. The use of the abbreviation “O.P.R.” without any further explanation is not to be used. The position of all trenches both old and new shall be shown in the field book.

Survey marks. 14. (1) Any post, peg, spike, reference or other survey mark found in the field, which has been established previously in the course of a survey or of a re-survey of any Crown allotment, location or public road, made under instruction from the Surveyor General and accepted by him, shall be recorded in the field notes thus “O.P.,” “O.R.M.” or “O.S.” and, if competently searched for and not found, thus “O.P. gone,” “O.R.M. gone” or “O.S. gone” as the case may be. If a new mark is placed so as to replace one which is gone, it should be noted in the field book as “O.P. gone, post put,” “O.R.M. gone sp. put” and so on. Where an O.P., O.S. or O.R.M. is found in position, but is in a state of decay so that it should be replaced to preserve its identity for a longer period, it should then be replaced by a new mark and shown in the field book as “definite remains of O.P. etc. fd. O.P.R.” “O.P.R., O.S.R., etc.” should not be used unless there is sufficient evidence available to definitely fix the position from the remains.

(2) Any post, peg, spike, or other mark found in the field which is not an original of a Crown survey and is recorded on a plan or diagram deposited in the Office of Land Titles and passed by the Inspector of Plans and Surveys shall be shown in the field notes as post, peg, spike, or other mark “found” as the case may be.

Topography. 15. Offsets to and intersections with natural or other features shall be recorded. The topographical features of the land, the nature of the water supply, soil and vegetation along and adjacent to the lines of survey shall also be recorded.

Names. 16. All known names of rivers, creeks, hills, lakes, localities, etc., shall be recorded.

Certificate. 17. Each page of a field book, where notes appear, shall be initialled by the surveyor and shall bear the date on which the survey was made. The following certificate shall be signed by the surveyor at the end of the field book:—

This is to certify that these field notes have been taken in the field by me personally (or under my own personal supervision, inspection and field check), are the actual results of the observations and measurements and the survey is in strict accordance with the Licensed Surveyors (Guidance of Surveyors) Regulations, 1961.

Date.....

.....
Licensed Surveyor.

Field Work.

Instruments. 18. Before commencing authorised surveys the surveyor shall submit for the approval of the Surveyor General, or other duly authorised officer, the theodolites and other instruments to be used on such surveys, and during the performance of any surveys the Surveyor General, or other duly authorised officer, may inspect the instruments being used. Any instrument or band condemned by the Surveyor General, or other duly authorised officer, shall not be used upon any work entrusted to the surveyor. Any instrument subsequently acquired shall similarly be submitted for approval before use.

Measuring band. 19. Every surveyor shall keep a steel or invar band acceptable to the Surveyor General to be used solely as a standard; such standard band shall not be used on field work other than for testing field bands.

- Field measuring bands. 20. The surveyor shall hand all his bands to the Surveyor General for testing before use and at intervals not exceeding one year and at such times as the Surveyor General may direct.
- Field measurement. 21. Field measurements shall be made with a steel or invar band, tested at frequent intervals with the surveyor's standard. Tension shall be applied by using a tested spring balance. Provided that with the prior approval of the Surveyor General measurements may be made with an electronic instrument.
- Connection to old alignment. 22. Each survey must be connected to a previous survey by traverse or triangulation unless otherwise directed. In all re-establishment the position indicated by the reference marks should be generally accepted in preference to that indicated by the post or peg if there is disagreement between them.
- Proof of old alignment. 23. In all cases where a new survey is connected with an old one, the surveyor shall range sufficient of the old boundary to verify the alignment thereof. Normally a minimum of three reliable reasonably spaced marks in agreement constitutes a satisfactory alignment, provided that in special cases the Surveyor General may approve of a survey based on a lesser number. All portions of old survey lines so used shall be carefully measured and, if found to be in disagreement to the extent of more than one-quarter of a link in ten chains average with the previous value, they shall be re-measured.
- Renovation of survey. 24. In connecting with old surveys, the surveyor must renew the posts and pegs, if at all decayed, and also clear out the trenches.
- Re-establishment of surveys. 25. When re-establishing original Crown surveys the surveyor must adhere to the principle of the unchangeableness of the position of the boundary marks except as hereinafter mentioned, and where they have been originally established on the ground by a Government surveyor in pursuance of the survey system at that time in force they must be regarded as the true positions even if found by the new survey not to be in the exact position assigned to them; but to prevent the perpetuation of patent errors in original surveys and to guard against fraud in case where a material disagreement is found to exist between a new and an old survey, the surveyor shall forward a full report and a sketch showing the position of and describing all old survey marks and improvements on or near the boundary line. Where original intermediate marks are not truly aligned between the corners the surveyor may correct the alignment of them provided that no improvements are affected by the alteration. The original and amended positions of the marks must be clearly recorded in the field book and a full report thereon must be made to the Surveyor General.
- New alignments. 26. All new boundary lines shall be accurately ranged and chained except where distances and alignments can be computed from connections with another fully ranged line such as the opposite side of a road, an offset, traverse, or similar line parallel or nearly so. Boundaries with calculated distances shall be fully cleared and marked.
- Offsets and traverses. 27. In ranging an old line or running a new line, the true line should be run for preference. If an offset is necessary, a parallel offset should be used if possible. If a skew offset is necessary it should be in one line only for the full length of the true line or the portion picked up. In any exceptional case in which it is necessary to run a series of traverse lines in place of an offset line a special report must be lodged with the field book.
- Connection traverse. 28. On long lines of feature and connection surveys the surveyor shall put in temporary chainage marks every 20 chains and shall note same in his field book.
- Angle reading. 29. Angles shall in every case be measured and repeated with instrument "Face left" and "Face right" alternately to a total of four readings. The first and final readings shall be recorded in the field book as well as the adopted mean value of the angle.
- Azimuth. 30. The direction of a survey line with reference to the meridian shall be determined by solar or stellar observation, or by applying the correction for convergence from the nearest point

of observation for azimuth. A bearing may be adopted from an adjoining survey unless there appears reason to doubt its accuracy. Carried on bearings of survey lines shall be adjusted so as to show true bearings in the field book to the nearest minute. Observations for azimuth shall be obtained at intervals of not more than five miles.

Observations. 31. The particulars, date, time of day, point of observation, point of referring mark, and bubble readings of all astronomical observations for azimuth and the latitude and declination used for reducing them shall be shown in the field book followed by the resulting true bearing for each observation and the mean result. Observations shall be taken to the specification of the Surveyor General.

Adjustment of distances. 32. The actual measurement of each old line chained must be recorded in the field book and if in rural lands it does not disagree with the distance previously adopted more than a quarter of a link in ten chains or proportionately as between marks found the distance so measured shall be adjusted to agree with the previously accepted distance. If the difference is greater the line or part of a line shall be measured again. Upon confirmation of the discrepancy the newly measured distance shall be adopted.

Adjustment of angles. 33. The actual measurement of each angle in a rural survey for which a value has been supplied as survey information shall be recorded in the field book. If it does not differ by more than 30 seconds in value from the previous value it shall be adjusted to the previous value. If the difference exceeds 30 seconds the reading shall be repeated and upon confirmation of the discrepancy the newly measured value shall be adopted.

Limits of error of closure. 34. The normal limits of error of closure are set out in sections (a) and (b) herein, provided that the Surveyor General may vary the limits on consideration of the particular survey and the examining officer's report. As accurate surveys and a high standard of work shall be the first object of surveyors, they will be expected to obtain as nearly as possible a true closure.

(a) Angles:

City and suburban 10 seconds per angle
 Rural 15 seconds per angle
 For lines with intermediate set-ups add five seconds for each.

The position of intermediate set-ups should be shown in the field book and marked by a spike without trenches.

Limit of closure:

City and suburban 1 minute
 Rural 3 minutes

(b) Chainage:

Chainage error shall be determined by the following formula:—

The square root of the sum of the squares of the errors in latitude and in departure in links, divided by the total perimeter in miles, and then compared with the table:—

Links per Mile.

Type of Country.	City and Suburban.	Rural.
Level or undulating	1	2
Rough and hilly ...	1½	3

Distribution of misclose. 35. Angular miscloses shall be distributed evenly between angles unless there is good reason to the contrary. Linear miscloses shall be distributed according to the Bowditch Rule:—

As the total length of the traverse is to the length of each line, so is the whole error in latitude or departure to the correction of the corresponding latitude or departure, each correction being so applied as to diminish the whole error in latitude or departure.

For areas of less than two acres, latitudes and departures shall be calculated to hundredths of a link and for more than two acres to tenths of a link. When the resulting calculation for area does not exceed two acres it shall be recorded to the nearest tenth of a perch. All other areas shall be recorded to the nearest perch.

MARKING RURAL LANDS (EXCEPT FEATURE SURVEYS).

Specifications
for survey
marks.

36. Posts or pegs shall be of approved hardwood, rot and termite resistant such as jarrah, jam or wandoo, from which the bark shall have been entirely removed, or of concrete, reasonably reinforced, and of approved specification. The sizes will vary according to the area enclosed by the particular perimeter upon which they are placed. In the case of two adjoining perimeters of different category, the larger size shall be used on the angles of the common boundary.

(a) Over 10 acres:

A hardwood post not less than four inches square, pointed on the top, 30 inches long, sunk 18 inches in the ground, well rammed and firmly fixed. The number of the location, allotment, etc., shall be neatly cut on the side of the post and the departmental mark on the point; or a concrete block two and a half inches square, 18 inches long, sand to cement ratio 2 to 1, of a design approved by the Surveyor General, sunk 15 inches in the ground, fitted on top with a brass or copper plate two inches square x 20 gauge or thicker, securely anchored into the block and drilled with a hole to show the centre. Numbers to be stamped into the brass plate with quarter-inch stamps.

(b) One acre to 10 acres:

A hardwood peg, flat topped, three inches square, 15 inches long, pointed at the lower end, sunk 12 inches in the ground, with numbers and departmental mark cut or stamped on the top, centre marked with galvanised nail, or

a concrete block as specified in (a) above.

(c) Under one acre:

A flat-topped hardwood peg, not less than two inches square and 15 inches long, pointed at the lower end, sunk 12 inches in the ground, with numbers cut or stamped on the top, centre marked with a galvanised nail, or

a concrete block, two inches square, 12 inches long, sunk 10 inches in the ground, fitted with a brass plate as specified in (a) above.

(d) Where the marks as in (a), (b) and (c) are not reasonably available, substitute marks of steel of substantial section in good condition may be used instead of posts or pegs and marks of glass such as bottles may be used for reference or intermediate marks.

(e) All the exposed portions of the posts, pegs and blocks specified in this section shall be painted white, when practicable.

Where
to place
reference
marks.

37. At every angle of a location, allotment, etc., containing an area exceeding 10 acres and at key points for smaller areas or at the angles of any other boundary lines, two reference marks shall be placed so that one shall be exactly on an alignment, or the production thereof and the other at right angles to that alignment. While it is permitted to place these marks at any distance from the angle according to the judgment of the surveyor it is preferred that the distance shall be five links. The distance between the two marks shall be measured and recorded in the field book to the nearest hundredth of a link.

A single reference mark without trenching shall be placed under the theodolite at every instrument point not being otherwise permanently marked. A set-up for producing a line shall be so marked. The chainage to these marks shall be recorded.

Specifications of reference marks. 38. A reference mark shall be either an iron spike at least half an inch in diameter and 10 inches long sunk at least two inches below the natural surface or a concrete block as specified in paragraph (c) of regulation 36 of these regulations. Where these are not reasonably available glass bottles may be used.

Intermediate marks. 39. On all permanent boundaries that exceed $12\frac{1}{2}$ chains in length spikes, at least half an inch in diameter and 10 inches long driven flush, shall be placed exactly on the alignment and at intervals of about 10 chains but at such distances that from each spike at least one other spike is visible forward and backward. In reasonably level country the spikes shall be placed at regular distances of 10 chains. Substitution of a block as specified in paragraph (c) of regulation 36 of these regulations may be made, and where neither of these are reasonably available glass bottles may be used.

Mile posts. 40. If the length of any boundary exceeds 120 chains, numbered referenced mile posts shall be placed on the boundary. Posts and reference marks shall be similar to those placed at angles.

Shorter boundaries. 41. When two or more adjoining boundary lines are five chains or less in length the mark to be placed at the angle between them may be as specified in paragraph (c) of regulation 36 of these regulations. If, as in the case of traverse of a natural feature or the marking of a winding road or a railway boundary, there are more than five consecutive boundaries less than five chains long, reference spikes may be omitted from every second pair of angles.

Road surveys. 42. When marking both sides of a new road, the angle posts on both sides will be referenced according to regulation 37 of these regulations. Where a surveyor is instructed to mark only one side of a road, he shall set out posts for the angle points on the opposite side of the road, according to its width and reference them, as specified above, but without intermediate marks or trenches or line clearing.

Road frontage posts. Isolated surveys. 43. All posts on a road shall be marked on the side facing the road with the letter "R."

44. At each corner of every isolated block of rural land, the nearest sound tree (if within two chains of the corner) shall be marked with a broad arrow, and under it the number of the block, cut into the solid wood (the sap-wood having been first removed) at least three-quarters of an inch. The bearing and distance of the broad arrow (which is the point of reference) from the corner must be carefully recorded in the field notes and on the diagram or plan. Reference marks shall be placed as required by regulation 37 of these regulations.

MARKING OF TOWN AND SUBURBAN LANDS.

Town corner pegs 45. Each corner of a street or right-of-way shall be marked by a peg or block as specified in paragraph (b) of regulation 36 of these regulations with the exposed portion painted red, marked with numbers and letters and departmental mark as for rural lands. Reference spikes will be placed at each street corner in accordance with regulation 37 of these regulations, except that they will be 15 inches long, half an inch in diameter and sunk at least six inches below the surface. At truncated corners the intersection shall be marked by one spike and both truncation pegs shall be referenced by two spikes. Where the corners are not intervisible the intermediate instrument point will be marked by a spike without trenches and the chainage to it recorded.

Town subdivision pegs. 46. The remaining corners and angles of allotments shall be marked by pegs or blocks as specified in paragraph (c) of regulation 36 of these regulations, with the exposed portion painted white.

MARKING PASTORAL AND TIMBER LEASES.

47. The boundaries of pastoral and timber leases shall be marked in a similar manner to other rural lands, with the exception that the intermediate marks may be placed at intervals of not more than 40 chains. These marks may be fiat-topped pegs, three inches square, and 15 inches long, sunk 12 inches in the

ground, with consecutive numbers clearly cut or stamped thereon, or spikes or bottles. Mile posts shall be placed as provided in regulation 40 of these regulations.

MARKING GENERALLY.

48. The Departmental marks referred to in these regulations to be placed on posts, pegs, trees, etc., shall be—

Lands and Surveys Department **A**
 Mines Department **△**
 Land Titles Office **T**

Centring
of marks.

49. In all marking carried out under these regulations, the centre of every post, peg, block or spike shall be placed with precision over the point which it is intended to indicate and such post, peg, block or spike shall be truly perpendicular.

Size and
position of
trenches.

50. All posts, pegs, concrete blocks and intermediate marks (but not reference marks) shall be trenched except where improvements already indicate the direction of the line or make trenching impracticable.

The size of trenches shall be four links long, one link wide and one link deep.

All pegs, etc., will be trenched in the direction of boundary lines commencing seven links from the peg, except in the case of the intermediate marks as specified in regulation 39 of these regulations where they will commence three links from the mark.

Method of
marking
where trench
cannot be
made.

51. In any place where, on account of rock or other causes, a hole or trench cannot be sunk or cut, a cross shall be cut in the rock to indicate the exact position of the corner post or intermediate mark, and the post or mark must be placed exactly over the cross and protected by a cairn of stones, with neat pointers of stones, four links long in the direction of the boundary lines.

Line
clearing.

52. All boundary lines shall be cleared to a width of not less than one foot by the removal of all scrub, and trees (if on the line) of a less diameter than two feet, shall be cut down. The trees within two feet shall be blazed on the sides facing the line. If the boundary line passes through a tree which is too large to remove, the tree is to be marked on each side with a triangular mark cut into the wood, and the apex of the triangle shall be on the boundary line. Rocks which may be on the boundary line are to be marked in suitable places with the departmental mark cut into the rock if the character of the rock will permit. If, after running a line, it is found necessary to offset the posts or pegs, the true line shall in all cases be cleared out and marked.

Damage to
survey
marks.

53. The removal or defacement of any survey mark is a misdemeanour under the provisions of The Criminal Code. Any such misdemeanour coming under the notice of a surveyor should be reported to the Surveyor General.

DRAFTING.

Certificate
on plan or
diagram.

54. The following certificate, signed and dated by the surveyor shall be written on every original plan:—

I hereby certify that this survey was performed by me personally (or under my own personal supervision, inspection and field check) in strict accordance with the Licensed Surveyors (Guidance of Surveyors) Regulations, 1961.

Date.....

.....
 Licensed Surveyor.

Drafting.

55. Plans shall be accurately plotted in accordance with the requirements of the Department concerned.

56. Any person committing a breach of any of the foregoing regulations, either by act or omission, shall on conviction be liable to a penalty not exceeding twenty pounds.

Western Australia.

REGULATIONS FOR THE GUIDANCE OF SURVEYORS IN THE
DEPARTMENT OF LANDS AND SURVEYS.

Department of Lands and Surveys,
Perth, 12th September, 1961.

HIS Excellency the Governor in Executive Council, under section 172 of the Land Act, 1933-1960, has been pleased to make the following regulations providing for the mode in which surveys under the said Act shall be executed, and fixing rates of payment for such surveys, to take effect on and after 1st day of January, 1962.

(Sgd.) F. C. SMITH,
Under Secretary for Lands.

In these regulations, unless the context otherwise indicates, the following terms shall have the meanings set against them respectively:—

“Department”: The Department of Lands and Surveys.

“Inspecting Surveyor”: A surveyor on the permanent staff of the Department of Lands and Surveys, or a surveyor deputed by the Surveyor General to examine surveys.

“Minister”: The responsible Minister of the Crown for the time being administering the Department of Lands and Surveys.

“The regulations”: The general regulations for the guidance of surveyors under the Licensed Surveyors Act, 1909 (as amended), in addition to the regulations of the Department of Lands and Surveys.

“Surveyor General”: The permanent head of the Survey Division of the Department of Lands and Surveys, or the officer for the time being authorised to act on his behalf.

“Surveyor”: A surveyor licensed under the Licensed Surveyors Act, 1909 (as amended).

“Plans” includes diagrams.

PART I—VARIOUS.

1. The rules and directions for the guidance of surveyors gazetted on the 16th day of September, 1910, and amendments, are hereby cancelled; provided, however, that such cancellation shall not in any way invalidate anything heretofore done under or in conformity therewith.

2. In all questions arising in connection with the regulations or the established practice of the Department, not provided for in the regulations, the Surveyor General's decision as interpreting such regulations or practice shall be accepted as final.

3. No surveys will be accepted by the Department unless the same are in accordance with the regulations, and such amendments thereof as may from time to time be authorised.

4. All surveys shall be performed under the direction of the Surveyor General, or other officer duly authorised by him, and must be carried out by surveyors licensed under the Licensed Surveyors Act, 1909 (as amended).

5. In the absence of special instructions from the Surveyor General to the contrary, every parcel of land surveyed shall be in the form of a rectangle, with boundaries in the direction of the true meridian and at right angles to it.

6. Surveyors performing surveys which are to be dealt with by the Department will be supplied with numbered blank field books, in such quantities as the Surveyor General considers necessary.

7. As a general rule, one field book should be completed before another is commenced. Notes should be consecutively entered according to the dates of the surveys.

8. A surveyor shall endeavour to avoid conferring undue advantage on individuals, or to act in any way so as to bring discredit on the Department. He should avoid effecting surveys in such a manner as to render any portion of land waste.

9. Should a surveyor, when defining the boundaries of a selection, have to run unnecessary lines for the benefit of any selector, he shall obtain an undertaking from such selector that he will recoup the Department the actual cost of surveying the lines, and furnish a full report to the Surveyor General.

10. A surveyor shall not accept a fee from any person or persons for the performance of surveys, the cost of which is to be or has been paid by the Government.

11. All field books, in connection with work done, must be lodged with the Surveyor General within a period not exceeding one month from the date of the completion of the field work, and the instructions to undertake the work, survey information, copy of closes and areas (see Appendix No. 4), report on any special circumstances and the classification of the land (see Appendix No. 7) must in all cases accompany the field book showing such survey. Provided that in certain cases with the Surveyor General's approval, these requirements may be eased according to the nature of the survey.

12. The date of survey of any work is the date the plan showing it is approved by the Surveyor General, or other duly authorised officer, and the date the survey is completed by the surveyor in the field shall be the "date of marking."

13. All instructions shall be acted upon without delay, and in the order fixed by the Surveyor General. Instructions not acted upon within three months of their issue shall be specially reported on and returned, and if not carried out or returned at the expiration of three months, may be cancelled by the Surveyor General and all charges in connection therewith disallowed.

14. Any unfulfilled instructions which a surveyor may hold for work for the Department may be withdrawn or cancelled at any time by the Surveyor General. Upon the receipt by the surveyor of notice to that effect, the instructions shall be forthwith returned.

15. When carrying out surveys of lands proposed to be resumed for railway purposes under the Public Works Act, 1902, (as amended), a surveyor will be expected to conform in every respect to the regulations for the guidance of surveyors issued by the Department of Lands and Surveys and the Office of Land Titles.

Intersection posts and tangent lines should, in every case, be picked up and shown in the field notes.

In marking the boundaries of the railway lands on a curve, the ends of the straights should be fixed from the intersection posts by laying off the lengths of the tangents shown on the centre line plans.

Chords are to be laid off from one end of the curve to the other, the intersections of chords being placed at points midway between the rails. At the ends of straights and at chord intersections, the side widths to be laid off by secant distances computed from the widths of the railway reserve and half the included angles.

The lengths of the chords above referred to will vary as the radii of the curves, in accordance with the following table:—

Radius (in links).	Length of Chords.
Below 2,000 links 	300 links
2,000 and over 	500 links

16. The boundaries of land fronting on the ocean, sea, or any sound, bay, or creek, or any part thereof affected by the ebb or flow of the tide, shall be right lines marked in the same manner as other permanent boundaries, approximately parallel to and not less than two chains inland from high water mark. When the conditions are favourable, and in view of probable traffic, the distance between the boundaries and high water mark should be increased to three chains to provide a road one chain wide.

"High water mark" when applied to tidal waters, means the ordinary high water at spring tides, and when applied to other waters, means the ordinary high water mark at winter level.

17. Certain indefinite riparian rights being conferred by the alienation of Crown land with frontages to rivers, creeks, lagoons, swamps, lakes, or main streams, the banks of such rivers, creeks, lagoons, swamps, lakes, or main streams should not be treated as boundaries, but the land to be alienated shall be defined by right lines; such lines must be approximately parallel to and not less than 100 links inland from the ordinary high water marks of such rivers, creeks, lagoons, swamps, lakes, or main streams, and shall be marked, posted, and pegged in exactly the same manner as other permanent boundaries. The distance of 100 links may be varied at the direction of the Surveyor General.

18. The strip of land between the frontage lines and high water mark shall be deemed a reserve, and should not be shown as a road unless there is a special reason.

19. On the banks of rivers, lakes, creeks, or other watercourses access to water and necessary reserves should, if practicable, be provided at frequent intervals. When such reservations are made, the surveyor shall report to the Surveyor General his reasons for providing such reserves.

20. Whenever a surveyor, in the course of his duty, may observe any land which it may appear desirable to withhold from sale, or reserve for townsites, public water supply, trigonometrical stations, or for any of the special purposes provided for under the Land Act, 1933, (as amended), or other Acts relating to the disposal of Crown lands, he shall at once bring the matter under the notice of the Surveyor General by a separate and comprehensive report, with a sketch annexed defining the area recommended to be reserved.

21. No permanent natural surface water should be alienated, unless special instructions to include it in the land being measured have been given by the Surveyor General.

22. In the subdivision of land, and in view of future settlement, the surveyor should exercise judgment in selecting and recommending for reservation for public use permanent water-holes, springs, and parts of rivers desirable for water supply which may be necessary for the beneficial use of the surrounding country or for the benefit of travellers and stock. All reservations must be provided with convenient means of access by a suitable road or roads.

23. As it is essential for the upkeep of roads and streets that provision for quarries and gravel-pits should be made wherever settlement takes place, surveyors should recommend suitable areas for reservation for these purposes, but not within townsites and preferably in inconspicuous positions.

24. Timber being one of the most valuable assets in the State, surveyors should be careful that no valuable jarrah or other timber is wantonly destroyed by parties under their control; and should they observe localities containing valuable timbers, they should forward to the Surveyor General a sketch showing the boundaries of any area that they consider should be reserved for the purpose of protecting the timbers. A full report should accompany the sketch.

25. All known names of rivers, creeks, hills, lakes, localities, etc., shall be recorded in the field book, care being taken to ascertain and adhere to the correct orthography. Wherever native names can be ascertained, they should be most carefully recorded, special care being taken to ascertain the correct pronunciation. For recording native names, the system of orthography adopted by the Royal Geographical Society (see Appendix No. 6) should be followed. Provided that in accordance with clause 3 of Appendix 6 the spelling "oo" should be used where the pronunciation in use is as in the words boot and kangaroo.

26. Except for the purpose of locating errors, producing or intersecting on lines, the surveyor should not re-mark any old line that has been marked upon the ground for a less period than 10 years, unless specially instructed to do so by the Surveyor General.

27. Surveyors should avoid unnecessary re-running of old survey lines.

28. Field notes must clearly indicate the job number, file number and a short descriptive title of every survey.

29. If, in the course of a survey, the line being run intersects the boundary of any surveyed blocks, or road, or any railway, telegraph, or other surveyed line, the surveyor shall note the point of intersection with the former surveyed line and observe the included angle and bearing at the point of intersection, unless specifically instructed otherwise.

30. When an isolated block is measured in a remote locality, bearings should be observed from one or more corners or defined points on the survey to prominent hills or other conspicuous natural features, upon which, if necessary, permanent cairns should be erected.

31. Before surveying any selection the surveyor shall, when practicable, communicate with the selector, and give him every opportunity of being present when the survey is being effected.

32. If a surveyor holding instructions for the survey of a block is informed by the selector that it is his intention to abandon it, the surveyor shall refrain from surveying it. A written statement to that effect, signed by the selector, shall be forwarded to the Surveyor General with the instructions for survey.

33. If the area of a block as surveyed does not agree with the area applied for, an "Amendment of Boundary" form, duly signed by the applicant, shall be forwarded to the Surveyor General at the earliest opportunity.

34. An "Amendment of Boundary" form (see Appendix No. 3) must in every case show the applicant's name, location number, all measurements of external boundaries, the area and all adjacent holdings.

35. The diagram form of keeping field notes should be adopted.

36. In rural surveys, improvements, such as buildings, fences, wells, windmills, roads, tracks, telegraph lines, clearing, etc., within five links of a boundary, should be located with sufficient accuracy for plotting. Where substantial definable points of a building are available within two chains of a boundary, at least one point should be connected accurately by angle and distance to the survey to act as a reference or monument. The distances of five links and two chains should be increased at the discretion of the surveyor, particularly in remote areas. Where a fence or telegraph line cuts the survey line, the intersection should be recorded within one link of distance and ten minutes of arc.

37. Private surveys of the boundaries of pastoral leases or other holdings under the Land Regulations or the Land Act must be carried out in accordance with the regulations. The original plans and field notes must be lodged with the Surveyor General for examination and retention within six months of the completion of the field work. In no case should such surveys be made without making application to the Surveyor General for the information necessary to enable the boundaries to be correctly defined on the ground. This will be supplied free of cost.

38. Plans of surveys shall be drawn by the office staff, but it shall be the duty of surveyors to sign plans of their surveys at the earliest opportunity.

PART II—SALARIED SURVEYORS.

39. Surveys performed by salaried surveyors are required to be subject in all respects to the regulations, except in so far as the payment for work performed is concerned.

40. All surveyors shall be personally responsible for the safe custody and care of all instruments and equipment entrusted to them by the Department, and shall, prior to the departure of any survey party under their command, furnish the Surveyor General with a complete list of the instruments and various articles comprising their outfit, and upon the return of such party shall return all stores, instruments, and equipment, giving a detailed account of any that may have been damaged or otherwise disposed of. In any case a return of all instruments and equipment held must be made at the 30th June each year and forwarded to the Surveyor General within two weeks.

41. Salaried surveyors shall furnish continuous consecutive monthly diaries on the prescribed forms (see Appendix No. 2), giving full details of their daily work, whether in the field or office, and a summary of the work performed shall be given on the back of the form. The diaries and statements must be signed by the surveyor employed, at the foot of both the diary and of the summary, and posted in time to reach the Surveyor General not later than the sixth day of the following month, except for the month of June,

when diaries should close on the thirtieth, and reach the Surveyor General's office not later than the third day of July or as soon thereafter as postal facilities permit.

42. Officers holding authority to issue cash orders must make themselves acquainted with and strictly observe the instructions relating thereto.

43. A salaried surveyor must not leave his camp without having first obtained the written consent of the Surveyor General.

PART III—CONTRACT SURVEYORS.

44. Surveyors employed and paid at the schedule rates under the regulations are called "contract surveyors," and are subject to the regulations.

45. A contract surveyor shall provide, at his own cost and charge, all instruments, tools, labour, materials, stores, and everything necessary for the proper execution of the work undertaken by him, excepting such drawing and tracing paper, field books, diagram forms, tabulation and account forms, etc., as may, in the opinion of the Surveyor General, be requisite.

46. A contract surveyor shall pay to his employees the wages prescribed by and be bound by the conditions of employment embodied in any Industrial Agreement now in force or hereafter entered into between the Hon. the Minister for Lands and the Survey Hands Industrial Union of Workers.

47. Every contract surveyor shall enter into a contract with an insurance company, to be approved by the Minister for Lands, for insurance in respect of all liability of the contract surveyor under the Workers' Compensation Act, 1912 (as amended), to the workers, within the meaning of that Act, intended to be employed by him.

48. The policy of insurance and the receipts for all premiums payable thereunder shall be deposited by the contract surveyor with the Under Secretary for Lands.

49. A contract surveyor shall not employ any worker not covered by such policy of insurance, and if any contract surveyor has occasion to employ additional assistance he shall, before doing so, duly extend his policy to cover such further risk before any additional assistant is engaged.

50. If any contract surveyor shall make default in the due observance of these regulations the Minister for Lands may effect the insurance and pay the premiums, and all money so paid by the Minister shall be repaid to him by the contract surveyor on demand, or may be set off against any money payable by the Minister to the contract surveyor; or, in the alternative, the Minister may, in his discretion, cancel the contract with the contract surveyor.

51. Every contract surveyor shall append to each account rendered by him to the Department a statement of the names of all workers employed by him and in what capacity, and shall certify that such workers are covered by the policy of insurance deposited with the Under Secretary for Lands.

52. Any specified district may be assigned to a surveyor, who will generally be entrusted with the survey operations required therein; but such assignment shall not confer on him an exclusive claim to all the work in his district. Any other surveyor may also be employed therein, should circumstances render such a course expedient.

53. Surveyors are expected, so far as may be practicable, to so arrange their work as to minimise the charges for "travelling."

54. Surveys discovered to be erroneous, or surveys in contravention of the Land Act and the regulations thereunder, or any laws relating to the disposal of Crown lands, or surveys not in accordance with the practice of the Department, may be rejected by the Surveyor General, and the fees charged for the same may be struck out of the accounts; or, if such fees have been paid, the amount may be surcharged against any money which may be due or may become due to the surveyor; or if another surveyor be employed to amend or re-measure, then the cost of his services at the authorised rates may be surcharged to the accounts of the surveyor who made the original erroneous survey.

55. Every surveyor working for the Department, or performing surveys which may be submitted to it for acceptance, may, at any time, be required, with his own men and instruments, to run, in the presence of a Departmental surveyor, any check lines which such surveyor may require. If the work be found correct, such check lines shall be paid for by the Department according to the rates of traverse survey per mile.

56. If the regulations are not strictly adhered to, the Surveyor General may stop advances on surveyor's accounts or refuse to give employment in future.

57. Under certain circumstances, such as when a surveyor fails to complete surveys according to the regulations, or areas have been incorrectly computed, and when it may not be expedient or desirable to reject the survey, a discount, which shall not exceed 50 per cent. on the authorised fees, may be imposed by the Surveyor General as compensation for additional professional labour involved in examination and amendment, or as a fine; or, in the event of the account for such imperfect surveys having been paid, such discount or fine may be surcharged against any money which may be due or may become due for services rendered.

58. A surveyor should carry out his instructions expeditiously and having commenced a survey he should, when practicable, complete it before commencing another survey. Where it is necessary to leave a survey incomplete he should return to it within one week or report the circumstances.

59. On the completion of a contract, the surveyor shall, without delay, forward field books, relevant papers, computations and instructions to the Surveyor General, or, if instructed, shall attend himself at the Surveyor General's office with these items.

60. A contract surveyor, while employed as such by the Department, shall not publicly criticise the administration of the Department or the Government. Any breach of this regulation may lead to the cancellation of any instructions for work held by such contract surveyor.

61. If, in the opinion of the Surveyor General, any surveyor wilfully or carelessly disregards the regulations, or any Departmental instructions he may receive from time to time, or be guilty of undue delay in making a survey for which he has instructions, or of carelessness in the execution of such survey, the Surveyor General may disqualify such offending surveyor from being further employed as a surveyor by the Department.

62. The Surveyor General shall not be obliged to accept any surveys performed under the regulations unless he is satisfied with the accuracy of the work done, and he may instruct any surveyor to test it. In the event of the work proving inaccurate, the Surveyor General may reject the whole or any portion of it, and charge the cost of inspection to the surveyor.

PART IV.—ROAD SURVEYS.

63. The subject of the selection of roads being one of vital importance, the attention of all surveyors employed by the Department is specially directed to the following instructions in reference thereto. As soon as a surveyor arrives in a district in which he is likely to undertake the survey of any roads, he shall communicate with the Shire Council, and request its co-operation and advice in selecting the best routes for lines of road through the portions of the district in which his work is to be performed. The width of roads shall be not less than one chain unless the surveyor has been specially instructed.

64. Reports on road surveys should give a general description of the route traversed, and (if practicable) be accompanied by a letter from the Shire Council in which the road is situate, stating that the survey was carried out in accordance with its wishes.

65. As far as possible roads should form boundaries of blocks to be measured, but in all cases where the reservation of a road through any section of land is necessary the surveyor shall run one side line on the ground, offset and clear the opposite side, and post, peg and trench both sides, as well as the intersections with the external boundaries of such section; he must also observe the angles of intersection and measure the distance from the intersections to the nearest angle or other fixed marks on the boundaries.

66. In all cases where roads intersect the boundaries of locations or lots, the closure of one side of the road with the boundaries must be computed.

67. The area taken by a road out of each block must in all cases be computed.

68. Where roads are to be surveyed through alienated land, surveyors should make a careful inspection of the country along the proposed route. In selecting the road, the first consideration should be public requirements and the conditions favourable to traffic; the second, the least possible interference with, or injury to private property.

69. When making the survey of a deviation of a surveyed road passing through land alienated or in process of alienation, all intersections of the old survey with the new shall be posted. In no case must a surveyor obliterate the marking of a deviated road unless specially instructed to do so by the Surveyor General.

70. When a road along a railway reserve forms a boundary of a block, only one side of such road must be marked, i.e., the block boundary: this boundary must be marked along the straights by lines parallel to the centre line of the railway, and when following the curves by lines parallel to the chords fixed as provided in regulation 15 of these regulations.

71. On road surveys (not being the boundaries of locations) exceeding two miles in length, the angle posts on the "run" side shall be numbered consecutively with the addition of a distinctive letter. The letter and number shall be placed immediately under the letter "R," care being taken that the combination of letters and numbers does not lead to confusion. Mile posts shall also be placed on the "run" side of the road and numbered consecutively.

72. In all surveys of land it is necessary that proper road access can be provided for every location or lot if held by different owners. If such road access is not surveyed at the time, the surveyor must supply a full report showing the manner in which it can be provided.

PART V.—TOWN AND SUBURBAN LANDS.

73. The corners of roads and streets less than three chains in width where the intersecting angle is less than 135 degrees shall be truncated unless otherwise instructed. Posts or pegs shall be set back at equal distances where practicable along the intersecting alignments so that in town surveys the minimum distance between them is 42.4 links. In rural surveys these distances may be increased.

Designs which include curved or winding roads should be set out so that the opposite sides are a series of parallel straight lines.

74. Before the permanent work on any survey of town or suburban lands is commenced, a design of the proposed arrangements of streets and allotments shall (unless otherwise instructed) be submitted for the approval of the Surveyor General. The dimensions and approximate areas of the proposed lots must be indicated thereon.

In order to ensure well graded streets and efficient drainage, sufficient data should be obtained by the surveyor to enable approximate contour lines to be plotted on the plan of the site. A report on the suitability and general characteristics of the site selected shall accompany the design.

PART VI—FEATURE SURVEYS.

75. The lines in feature surveys and connections shall be cleared to a width of not less than one foot by the removal of all scrub and trees (if on line) of a less diameter than two feet. At every angle of a traverse a spike is to be driven in the ground. At intervals of about two or three miles a conspicuous tree shall be selected for reference, connected with the traverse and marked with a broad arrow and a distinguishing letter and number deeply cut into the wood after the removal of the sapwood. The apex of the broad arrow must be the reference mark, and its bearing and distance from the adjacent traverse or boundary line noted in the field book. The instrument point used when connecting to the tree shall be marked by a spike.

76. In localities where stone is readily available for cairns, posts should be substituted for marked trees; such posts to be not less than six inches square, pointed on the top, placed firmly in the ground and protected by a cairn of stones three feet in diameter and three feet high. Each post shall be referenced in the usual manner and shall have a broad arrow and distinguishing letter and number deeply cut in it; such numbers to be distinctly visible above the top of the cairn.

If hills or rises are in the vicinity of the traverse lines, the cairns should be erected on the summits thereof and connected, either by direct measurement or well-conditioned cross bearings, to the traverse survey.

77. If the lines of traverse should pass within a reasonable distance of a prominent hill commanding an extensive view of the surrounding country, the summit of such hill shall be cleared (if necessary) and marked by a post not less than six inches square sunk flush with the natural surface of the ground, and a substantial pole and cairn erected over it. At least two reference spikes to the post shall be placed clear of the cairn. The native or English name, or a distinguishing symbol shall be cut upon the pole, which shall in all cases be connected to the traverse either by direct chainage or well-conditioned cross bearings. An observation for azimuth shall (if possible) be obtained at the cairn, and a round of angles taken to all features visible, and their distances estimated.

78. In the event of the survey being in the vicinity of stations of the geodetic survey, it is imperative that connections be made, either by well-conditioned bearings or by direct chainage. The azimuth of the feature survey should, if possible, be connected by angular measurement with the azimuth of the geodetic survey.

79. Observations for azimuth shall be obtained at intervals of not more than five miles.

80. All features shall be comprehensively shown in field notes so that a draftsman may be able to represent the general aspect of the country.

81. In selecting the route for a feature or connection survey, preference shall be given to rivers and watercourses or tracks. Where there are no leading features the connecting survey shall be as direct as possible.

PART VII.—DRAFTING.

82. Field notes of each survey shall be sent to the Surveyor General who may at his discretion accept the field notes and have the plans drawn by Departmental draftsman, or he may require the surveyor to draw his own plans without cost to the Department.

83. Plans should not be folded for transmission through the post, but should be sent on rollers, and protected from damage. Should plans be damaged through want of proper care in transmission, the surveyor will be required to furnish others at his own cost.

84. Any plan, field book, or field notes which may have been, or may hereafter be registered in the Surveyor General's office, shall be the property of the Government.

85. Plans or field notes that are rejected for any cause, after having been registered in the Surveyor General's office, shall not be returned to the surveyor; neither will payment for them be made.

86. Lands and Surveys forms are used for all surveys which represent—

- (a) Crown lands;
- (b) land held under conditional purchase or other leases;
- (c) all road surveys except where freehold land is being acquired by transfer;
- (d) freehold land which is being acquired for Government purposes and immediate revestment.

87. Land Titles Office forms will be used for surveys of—

- (a) subdivision of land under the Transfer of Land Act;
- (b) freehold land to be acquired for a public purpose (including road) by transfer; and
- (c) freehold land to be acquired for a public purpose (other than road) by resumption.

88. Plans shall be accurately plotted and the drawing and writing shall be neat and legible.

89. The scales that may be used for plans and diagrams are 1, 2, 3, 4, 5, 6, 8, 10, 16, 20, 30, 40, 50, 60, 80, 160 links or chains to an inch. In the case of diagrams, smaller scales than 20 chains to an inch should not be used except in special cases, e.g., some pastoral lease boundaries and some traverses.

Careful regard must be given to the choice of scale to avoid an unnecessary number of enlargements and a reasonable margin allowed for abutments. The scale to which every plan or diagram is drawn should be written clearly in the space provided on the form.

90. Drawings on plan forms must be oriented in accordance with the printed protractor.

91. Where necessary, plans may be drawn on a blank form and the true meridian clearly defined by an arrow. (This is not to be encouraged and should be used only when absolutely necessary.)

92. On each plan a title or heading shall be shown clearly setting forth what such plan represents, together with the Land District in which it is situated and the correspondence number. Such heading shall be placed in a top centre position, where possible.

93. All work shall be of sufficient strength to bear photographic reproduction, and must be drawn in a recognised water-proof ink.

94. Water colours may be used only in marginal work, and in topographical information involving the use of a wash.

95. All data shown in the field book relevant to plotting shall be shown, where practicable, on the plan, excepting offsets of under 20 links.

96. All posts, pegs and intermediate spikes when centred shall be shown on the plan as circles in black. Those which have been faced shall be shown as filled squares.

97. (a) All old posts, pegs or intermediate spikes of Lands Department's surveys found and recorded in the field notes shall be shown thus, "O.M." If renewed, thus, "O.M.R." If adjusted, thus, "O.M.adj."

(b) All old posts, pegs or intermediate spikes of private subdivisional surveys found shall be shown thus, "M.F." If renewed, "M.F.R." Where old posts, pegs or intermediate spikes are gone, thus, "O.M. gone." Where old marks are gone and replaced, thus, "O.M. gone R." Where old marks are gone or have been removed, no circle is shown.

(c) When a new survey mark is put in by the surveyor, no notation is necessary on the plan.

(d) All old faced posts found are to be shown as such on the alignment. Old reference marks are shown by a small red cross and marked, "O.M." New reference marks are not to be shown.

(e) Intersection points: e.g., (the junction of the prolongation of the sides of intersecting roads where a truncation occurs) where a spike has been placed are shown by a black cross.

(f) Where the post at the original intersection has been removed and replaced by a spike the position is shown by a black cross designated "O.M.R."

98. Where the surveyor has ranged old lines for the purpose of establishing or verifying alignments the information shown in the field book must be shown on the original plans, but such "pick up" may be shown not to scale suitably delineated.

99. All intermediate distances shown by the surveyor in his field book shall be shown on the plan. All total lengths of lines, i.e., the sum of the intermediates must be shown on the plan. For lease or Crown Grant purposes the total length of each individual boundary line must be clearly shown. Where such distance includes a road or railway it is shown in brackets.

100. All fractions of a link shall be shown in decimals to the nearest tenth of a link except to reference marks which shall be to two decimal places if so measured.

101. Where to complete a survey dimensions from existing surveys are used, then—

- (a) Where a line is composed of both existing and new work, the existing portion shall be shown in red without intermediates, and the new portion in black. Total distances to be shown "Per Orig." in black.

- (b) Where complete old lines are used to help establish a surround of a location or lot only they shall be shown in red without intermediates. Angle posts are not shown. Total distances and angles in red.
- (c) Where original information is used to complete the surround of a road widening, then that information shall be shown in black as per section (d) below.
- (d) When it is necessary to show an original angle or distance in black, it shall be marked "orig."

102. Where a boundary has been pegged by offsets from a run line, and the offset distances are 20 links or greater, any distance appearing along the boundary shall be shown as calculated (cal.), and the traverse indicated by a thin red line. Information on traverse shall be shown only where practicable. Where the offset distances are less than 20 links then the true boundary shall be treated as the run line and the angles shown as true angles and not as "calculated."

103. Where the sides of a road have been laid off from a traverse more than 20 links from either side then the traverse shall be shown by a thin red line showing survey information in red where practicable. All information on the boundaries of the road shall be shown in black with the word "cal." written after it, likewise the calculated distances as distinct from the chained distances shall also be shown "cal." where one side of the road has been actually run.

104. The lengths of all road secants shall be shown on the plan and the bearings where the secant forms part of the location boundary, or where necessary to complete a close.

105. Bearings other than those observed shall be shown to the nearest minute.

106. On even truncations the angles to the truncation line and the bearing of that line shall be omitted.

107. The point where an observation has been taken for true meridian must be indicated on the plan by a small red triangle. The true bearing to be shown in black to the nearest computed second, with the word "Obs." written after it in red and the whole underlined in red. This is only to be shown after examination of the plan.

108. All angles shall be shown to the nearest second, and when calculated shall be shown "cal."

109. On all plans units of minutes and perches must be written without prefixing an "0," e.g., 1 minute or 1 perch, not 01 minute or 01 perch.

110. Where angles or bearings contain degrees alone then they shall be shown as, e.g., $90^{\circ} 0'$, not 90° or $141^{\circ} 0'$ and not $141^{\circ} 0' 0''$.

111. The bearings on any plan shall be shown from true meridian in a clockwise direction from zero to 360° where possible.

112. When there are a number of consecutive short lines on a survey and the bearings, etc., cannot conveniently be written in place along them, the lines may be numbered, and the necessary information given in tabular form on the face of the plan or diagram.

113. Offset tie lines from surveyed boundaries to fix river banks, etc., and improvements must not be shown unless their value as a reference mark is assured. In which case they shall be shown in red pecked lines with red distances and angles.

114. On plans showing town allotments, the lot numbers shall, where practicable, be shown adjacent to the street frontages and upright to the bottom edge of the paper.

115. (a) Areas of less than one acre are to be shown thus—

3r. 26.5p., not 0a. 3r. 26.5p. and 26.5p. not 0a. 0r. 26.5p and 0.5p. not .5p.

(b) Where an area is less than two acres, it shall be shown to the nearest decimal point of a perch, and where greater than two acres, to the nearest perch.

116. Plans of town allotments shall not be drawn on a smaller scale than that of two chains to an inch.

117. Where it becomes necessary on account of lack of space or to preserve clarity to indicate by an arrow the position of information, then the information shall be written parallel to the line in question in the case of a distance or bearing and to the "half angle" in the case of an angle.

118. Boundary lines and the marked sides of roads are to be firmly ruled in black with the bearings and lengths shown along them. All unsurveyed lines are to be shown as broken black lines.

119. (a) Where a road has been surveyed through a location it is necessary to show where practicable a severance of the location using original work where necessary.

(b) Where only one side of the road is newly surveyed and the other is an original line then no severance is to be shown.

(c) Deviation surveys shall show where practicable the road to be closed by deviation.

(d) Where it is unreasonable to show a severance, latitude and departure as calculated must be shown in pecked black lines and black figures.

(e) These plans shall be drawn at a scale not smaller than 10 chains to an inch.

120. When a road is provided through a location or lot at time of survey, the area of the location or lot shall be shown thus, "100 acres ex road, etc." When a new road is surveyed through old surveyed locations or lots, the area of the separate portions taken by the road out of each location or lot shall be clearly shown, and the total area to be excised from each location or lot shall be shown under the location or lot number, and underlined in red.

121. The names of roads shall be written along them when approved names exist, and their gazetted numbers. If unnamed, show width and gazetted number in writing. If undeclared and unnamed show width only in writing. Where a closed road is necessary as an abuttal, it is to be shown uncoloured and carrying the words "closed road."

122. The numbers of all adjoining locations or lots are to be written in black on plans and the numbers of their survey plans written in red beneath the location or lot number.

123. The date of "marking" is to be shown on the plan and is the date the survey was completed in the field.

124. On each plan the "Public Plan" reference shall be shown in black ink in the space provided. The compilation number shall be shown in pencil. The draftsman's name and date of drawing must also be shown.

125. All known names of rivers, creeks, hills, lakes, localities, etc., shall be recorded on the plans in black in the style laid down on registered Miscellaneous Plan, numbered 250.

Care must be taken to ascertain and adhere to the correct spelling of same, and where doubt exists, a recommendation shall be sought from the Nomenclature Advisory Committee, and submitted to the Surveyor General for his approval.

126. All new names suggested for townsites, streets or features must first have the approval of the Surveyor General.

127. The latitude and departure calculated from the true meridian required for describing the relative positions of measured isolated locations, or between permanent marks on traverse or feature surveys shall be shown on the plan in pecked black lines, and black figures. The word "calculated" is to be omitted.

128. Plans shall show topographical information, the position of all improvements on or near the lines of survey, tracks, watercourses, hills, etc., but classification of soil types and timber is not to be shown, except on long roads, feature surveys or pastoral lease boundaries.

129. Hills and undulations of the ground are to be shown by colour shading. They are not to be confined to the land measured but are to be represented on either sides of the lines of survey as far as the boundaries of the plan sheet will permit.

130. Lines of coasts, rivers, creeks, swamps, lakes, watercourses, etc., are to be shown, where their position is determined with precision, by firm blue lines, except in the cases where such form part of the boundary of a location or lot when they are shown by a firm black line.

Where not determined with precision they are to be shown by broken blue or black lines.

Both sides of rivers are to be shown where reasonable, also an arrow denoting the direction of flow of the stream.

131. Where an area of land is surveyed by surround, and no further measurements are required, compiled plans may be drawn. All pegs excluding reference marks shall be shown together with angles bearings, distances and abutments. All work to be in black with the exception of the plan or diagram numbers of the adjoining surveys which shall be in red. The word "Compiled" shall be clearly shown in the space usually reserved for the surveyor's signature.

132. Trigonometrical Stations shall be shown according to the symbol on registered Miscellaneous Plan, numbered 250. Where possible a description of the structure, its height and latitude and longitude, shall be given.

133. Lines joining trigonometrical stations shall be drawn in firm blue lines with all relative detail in blue.

134. Trigonometrical station ties to location or lot boundaries or features if run and measured shall be shown as traverses. If the tie is made by angular observations and calculations, then it shall be shown in red pecked lines, with red angles and calculated distances.

135. When a plan comprises one or more locations a green border is drawn around the inside of each location. In town surveys, a green border is shown when the plan is of one lot only. When more than one lot no green border is shown.

136. In the case of a single lot or location survey the area is shown immediately below the title on a plan form or in the space provided on a diagram form. Where the survey is of more than one lot or location, then the areas are shown within their respective boundaries.

137. Plans submitted by contract surveyors shall conform to these regulations, and should they be below the required Departmental standard in plotting or penmanship they may be rejected.

138. All newly drawn plans must be immediately forwarded with the appropriate correspondence to the Custodian of Plans for registration.

139. For specimen plan illustrating these regulations refer to registered Miscellaneous Plan, numbered 250, and Appendix No. 8.

140. The following colours shall be used in drawing Lands Department plans and diagrams and shall be confined to the subject of the plan or diagram except for topographical features, railways and roads:—

- (i) All newly surveyed boundary lines, and figures of distances, angles and bearings—Black.
- (ii) All original survey detail used in completing the survey except as provided in regulation 17 of these regulations—Red.
- (iii) All original survey detail used in the compilation of a survey by surround—Black.
- (iv) New roads—Dark Burnt Sienna Wash.
Old roads—Light Burnt Sienna Wash.
Private roads—Uncoloured.
- (v) Roads closed by deviation—Blue Wash.
- (vi) All water features—Blue boundaries encompassing a light blue wash; names shown—Black. For exception see regulation 130.
- (vii) Traverse lines (excepting centre line traverses)—Red; angles and bearings—Black; distances—Red.
- (viii) Centre line traverses—wholly Red.
- (ix) Ties to Trigonometrical Stations—Pecked Red lines with Red angles—and calculated distances when unchained. Show in the form of a traverse when chained.
- (x) Inter Trigonometrical Station ties—Blue lines, calculated distances and angles.

- (xi) Latitude and departure lines—Pecked lines in Black and distances in Black.
- (xii) Soil classifications, tracks, improvements, and minor topographical information as rocks, cliffs, etc.—Black.
- (xiii) Hill shading—Paynes Grey.
- (xiv) Contours (where necessary)—Brown.
- (xv) Locations, lots, pastoral leases, etc.—Narrow border of Hookers Green along the complete extent of their boundaries.
(Note.—Where a series of Town Lots are drawn on the one plan or diagram no marginal colour is shown.)
- (xvi) Reserves—Carmine border.

PART VIII—FEES AND ACCOUNTS.

141. It shall be competent for the Surveyor General, with the approval of the Minister, to let, under contract, surveys at such rates as shall appear to him sufficient, and the schedule of rates given herein may be subject to discount or augmentation by the Surveyor General with the approval of the Minister. In any question arising out of accounts or charges made by a contract surveyor, the Surveyor General's decision shall be final.

142. Payments may be made to the extent of 25 per cent. on the work certified to by the surveyor as having been performed. When the field books and relevant papers are received, a payment to the extent of 75 per cent. on the work performed may be made, and the balance shall be paid on the certificate of the Inspector of Plans and Surveys that the whole of the accounts for the work charged for have been examined and passed, and the plans, diagrams, field books and relevant papers conform with the regulations and the instructions issued by the Surveyor General.

143. It is essential that details of all charges made by a surveyor be shown on the prescribed account forms (see Appendix No. 5) and if he fails to do so, such charges may be struck out of the accounts.

144. Not more than six separate surveys shall be charged for in each account. Surveys in separate Land Districts must not be charged for in the same account. Accounts should be furnished regularly each month as the surveys are completed, and shall be dated and numbered consecutively for each year, thus 1/60, 2/60, 3/60, 1/61, 2/61, 3/61, etc. Care must be taken in the preparation of accounts, which will not be accepted if vitiated by erasure or interlineation.

145. Accounts for all work performed during the month of June in each year shall reach the Surveyor General's office not later than the third of July.

146. Accounts for any service to be paid for under the daily rates shall be rendered upon printed forms provided for that purpose. Such accounts must be accompanied by diaries, if required, giving full particulars of the service performed, the time occupied in the field and the time occupied in office work.

147. Before an account is passed for payment errors will be corrected. Persistent over-charging is severely deprecated, and will impair a surveyor's claims for further employment.

148. Particulars of adjustments of accounts will be intimated to the surveyor on request. No claim in respect of any correction or reduction in account will be entertained after the expiration of six months from the date of final payment.

149. Surveyors may furnish supplementary accounts for items that have been struck out of original accounts, when the causes for which they were struck out have been removed by such surveyors.

150. The fees payable to contract surveyors for surveys carried out under the regulations shall be at the following rates:—

(a) Rural Surveys.

- (1) Fees shall be paid according as the area surveyed falls within the Divisions numbered 1 to 5, and shown on the table appended to this regulation, the key being the relevant public plan, provided that for

surveys on plans not quoted, the Minister for Lands shall fix the appropriate price division in each case. Provided also that the Minister for Lands may amend the table referred to and re-amend it at any time by altering the division relative to any plan. Where a survey extends beyond a division boundary the rate of fee to be charged shall be that of the division in which the larger portion of the survey has been carried out.

(2) The rates per chain are as follows:—

	s.	d.
Division 1 (per chain)	3	0
Division 2 (per chain)	3	6
Division 3 (per chain)	4	0
Division 4 (per chain)	7	0
Division 5 (per chain)	9	6

(3) Chainage rates shall be the same for old lines picked up and new lines run, provided they are ranged and chained.

(4) For temporary lines marked at half-mile intervals, deduct 33½ per cent.

	£	s.	d.
(5) For reading an angle with four repetitions		6	0
(6) For a post supplied and placed in position	10	0	
(7) For spikes (each)		2	0
(8) For classification by compass traverse—			
Divisions 1 and 2 (per chain)			5½
Divisions 3 and 4 (per chain)			6
Division 5 (per chain)			9
Minimum fee	5	0	0

(b) Travelling.

Either—

- (1) For time spent in travelling, daily rate, plus 12d. per road mile, or
- (2) For distance from point to point, according to strength of the party—

	£	s.	d.
Surveyor with one employee (per mile)		3	0
Surveyor with two employees (per mile)		3	3
Surveyor with three employees (per mile)		3	6

(c) Surveys in any Locality.

	£	s.	d.
(1) For observation of sun or star for azimuth	5	0	0
(2) For observation for latitude (at least 2 pairs circum. Merid. stars)	10	0	0
(3) For obliteration of marked boundaries, per mile	1	1	0
(4) For each tree marked and connected to traverse		6	0
(5) Triangulations			Daily rate
(6) For loss of time attributable to Department or applicant, or necessary interviews			Daily rate
(7) For involved survey not payable at chainage rates			Daily rates
(8) For office work in connection with normal type of survey			Nil

(d) Levels.

Levels will be paid for at daily rates.

(e) Daily Rates.

(1) For surveyor employed on office work	10	10	0
(2) For surveyor on field work with one employee	15	0	0
(3) For surveyor on field work with two employees	19	10	0
(4) For each additional employee	4	10	0
(5) In addition to the foregoing, the surveyor shall be allowed 75 per cent. of the fees mentioned in paragraph (a), subparagraphs (6) and (7) and paragraph (f), subparagraph (8), for expenses incurred in providing the necessary posts, spikes and pegs.			

(e) Daily Rates—*continued*.

£ s. d.

- (6) When part of the time charged at daily rates is spent in travelling, the additional payment shall be at the rate of one shilling per road mile.
- (7) The daily rate is divisible, for work occupying part of a day, at one-eighth of the daily rate per hour.

(f) City, Metropolitan Area and Country Towns.

- (1) For subdivisions up to five lots under half acre each, or the equivalent to Items 2-6 below—one day at the daily rate payable under Item 3 of paragraph (e).
- (2) For each lot after the first five lots under half acre ... 1 8 0
- (3) For each lot after the first four lots over half acre to two acres ... 2 6 0
- (4) For each lot after the first three lots over two acres to seven acres ... 3 14 0
- (5) For each lot after the first two lots over seven acres to fifteen acres ... 7 10 0
- (6) For each lot after the first lot over fifteen acres to thirty acres ... 15 0 0
- (7) For lots over thirty acres—scale of fees as for rural surveys. (For lots outside South-West Land Division add 10 per cent. for this section.)
- (8) Fees additional to fees for Items 1-6 of this paragraph—
- (i) Posts, 4 in. x 4 in. (each) ... 10 0
- (ii) Pegs, 3 in. x 3 in. (each) ... 5 6
- (iii) Pegs, 2 in. x 2 in. (each) ... 3 0
- (iv) Truncations (each) ... 18 6
- (v) Reference spikes, 15 in. (sunk) (each) ... 4 9
- (9) For lots with irregular sides, add to prescribed fee 33½ per cent.
- (10) For lots with curved boundaries, add to prescribed fee 100 per cent.
- (11) Inspection surveys for identification for Housing Commission—
- (i) Within five miles of Head Office (each) ... 2 2 0
- (ii) Beyond a five-mile radius of Head Office, add travelling both ways at 2s. 6d. per mile by shortest route.
- (iii) Outside Metropolitan Area (each) ... 2 15 0
- (iv) Outside South-West Land Division (each) ... 3 3 0
- (12) For re-pegging lots the fees for Item 1 of this paragraph shall apply, and the fees for Items 2 to 6, when applicable, shall be reduced by 25 per cent.

(g) Various.

- (1) Searches by surveyors will be paid for at daily rates, subject to such cost being considered reasonable by the Surveyor General.
- (2) Copies of all calculations for close and area and the original instructions for survey shall be lodged by the surveyor with his field notes.

(h) General.

On the first variation of the State basic wage for the Metropolitan Area after the 1st July, 1954, in accordance with section 127 of the Industrial Arbitration Act, 1912-1952, and for each subsequent variation, all the foregoing fees shall be increased or decreased by a percentage calculated as follows:—

$$\begin{array}{r} \text{Variation from } \text{£}12 \text{ 6s. 6d.} \quad 100 \\ \hline \text{£}12 \text{ 6s. 6d.} \quad 1 \\ \text{(to the nearest 0.1 per cent.)} \end{array} \times$$

TABLE.
PRICE DIVISIONS for CONTRACT SURVEYS

80 Chain

Plan No /80	DIVISION					Plan No /80	DIVISION					Plan No /80	DIVISION						
	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5		
1	A					120		2				407-408	1						
2	B					121	D	A	B			409		B	A				
3-5	I					122		I				410			B	A			
6		2				123	A	B	C	D		411-414					4		
10		2				124-127		2				415			B	A	D		
19		2				128	A	B	C			416		B	A	C			
23		2				129		2				417	I						
24-26	I					136-138		2				418-424		2					
27	B		A			145-147		2				429-430		2					
28		A	B	C		154-164		2				432-434		2					
29-30		2				170-172		2				435		2					
31		A	B	C		186		2				436	A	B	C				
32	B		A			190-192		2				437			A	B	C		
33-35	I					200		2				438			B	A	C		
36		2				221		2				439			B	A	C		
39-41		2				341	A			B	C	440-441					4		
48-50		2				342	B			A		442					5		
53-55		2				343-345	I					443				A	B	C	
56	A		B			346		2				444				B	A	C	
57	I					350		2				445				C	A	B	
58-62		2				371-372		2				446		2					
63-64	I					374-375		2				447-448		2					
65	D		A	B		376-377	I					450		2					
66-67		2				378	A	B	C	D		451			3				
71-73		2				379			B	A	D	452					B	A	D
82		2				380				3		453-455						5	
88		2				381				3		456					B	A	C
89-90	I					383				3		457			3				
91-93		2				384				B	A	466		2					
94	B	A	D	C		385	B	C	D			501		2					
95	I					386-387	I					563			3				
96	A		B			388-389		2				817							
97		2				392		2				844							
103		2				402		2				1054							
113		2				404-406		2				1056							

240-300 Chain

Plan No /240-300	DIVISION				
	1	2	3	4	5
4-5		2			
10-11		2			
18-19		2			
24-25		2			
34-36		2			
41-43		2			
54-59		2			

PART IX—OFFICE INSPECTION, REPORTS, ETC.

151. The inspection of all plans, diagrams, field books, computations, and accounts shall be entrusted to the Inspector of Plans and Surveys, or to such other officers as shall be specially deputed by the Surveyor General, and such inspector or other officers shall be responsible to the Surveyor General that the regulations have been adhered to, and that the accounts are correct.

152. All official letters and reports should be addressed to "The Surveyor General," written or typed upon the forms or the cut foolscap paper provided for the purpose, and left hand margin being left blank to a depth of not less than one inch.

153. All official communications should be clear and legible free of corrections, the lines not too close, the paragraphs numbered, and the respective ranks of the officers stated after their signatures.

154. Surveyors employed by the Department should address all communications and parcels containing plans, diagrams, field books, accounts, diaries, traverse sheets, or other matter in connection with their work to "The Surveyor General."

155. In conducting correspondence with the Surveyor General, officers should write on one side of the paper only, write a separate letter on each distinct subject, and invariably quote the subject, and correspondence number.

156. All communications from the Surveyor General, or an officer duly authorised, must be replied to by the surveyor with the least possible delay.

157. Reports on town and suburban lots should contain recommendations respecting the numbers of the lots suitable for reservation and the purpose for which they should be set apart, names for new streets, upset prices and the conditions under which the lots should be thrown open, and the descriptions and values of any improvements thereon.

158. Every surveyor employed by the Department shall furnish on the prescribed form a monthly statement, giving a complete list of the unfulfilled instructions in hand (see Appendix No. 1) and such statement must be forwarded to the Surveyor General by contract and salaried surveyors at the end of each month.

159. Surveyors should inform the Surveyor General every week of the locality in which they are at work, and should give adequate accurate warning of their impending movements.

Appendix No. 1.

S. 214

STATEMENT OF INSTRUCTIONS.

Place.....
Date

The Surveyor General, Perth.

The following statement shows jobs completed during the month of and also jobs not completed at the end of the month.

.....
Surveyor.

Name of Survey	Corr. No.	Job No.	Litho. No.	Date			
				Receipt	Completion	Field Book Lodged	Expected Completion
.....
.....
.....
.....
.....
.....

NOTE.—This Form must be filled in at the end of each month and forwarded to Head Office with other returns. Expected completion date for each job to be done in ensuing month is to be shown, and thereafter jobs in that column may be grouped in months.

S. 42

DIARY of Mr. Surveyor..... from.....
to..... 19....., in the..... District.

	Corr. No.
.....19.....	
.....	
.....	
.....	
.....	
.....	
.....	
.....	

Licensed Surveyor.

Date.....

Appendix No. 3.

S. 46.

Amendment of Boundaries.

Location No.	District	Conditional Purchase No.	Name	Area	Diagram No. Standard Plan No.	Remarks

I hereby agree to accept the land contained within the boundaries of the above holding as marked by Mr. Surveyor, and as shown hereunder.

No rth

Signature.....

Date.....

The Divisional Surveyor,

There is no objection to this amendment.

Divisional Surveyor.

I certify that the following men were employed by me in the various capacities shown, and that such workers are covered by the Policy of Insurance under the Workers' Compensation Act, 1912, lodged with the Under Secretary for Lands.

Appendix No. 6.

The following system of orthography for native names of places adopted by the Council of the Royal Geographical Society, the Foreign and Colonial Offices, Admiralty, and War Office is to be adhered to in all Intelligence Division publications:—

1. No change is made in the orthography of foreign names in countries which use Roman letters; thus, Spanish, Portuguese, Dutch, etc., names will be spelt as by the respective nations.

2. Neither is change made in the spelling of such names in languages which are not written in Roman character as have become by long usage familiar to English readers; thus, Calcutta, Cutch, Celebes, Mecca, etc., will be retained in their present form.

3. The true sound of the word as locally pronounced will be taken as the basis of the spelling.

4. An approximation, however, to the sound is alone aimed at. A system which would attempt to represent the more delicate inflexions of sound and accent would be so complicated as only to defeat itself. Those who desire a more accurate pronunciation of the written name must learn it on the spot by a study of local accent and peculiarities.

5. The broad features of the system are:—

- (a) That vowels are pronounced as in Italian and consonants as in English.
- (b) Every letter is pronounced, and no redundant letters are introduced. When two vowels come together, each one is sounded, though the result, when spoken quickly, is sometimes scarcely to be distinguished from a single sound, as in ai, au, ei.
- (c) One accent only is used, the acute, to denote the syllable on which stress is laid. This is very important, as the sounds of many names are entirely altered by the misplacement of this "stress."

6. Indian names are accepted as spelt in Hunter's "Gazetteer of India," 1881.

The following application of these rules explains their application:—

Letters	Pronunciation and Remarks	Examples
a	<i>ah</i> , a as in <i>father</i>	Java, Banána, Somáli, Bari.
e	<i>eh</i> , a as in <i>fate</i>	Tel-el-Kebir, Oléleh, Yezo, Medina, Levúka, Peru.
i	English <i>e</i> ; <i>i</i> as in <i>ravine</i> ; the sound of <i>ee</i> in <i>beet</i> . Thus, not <i>Feejee</i> , but	Fiji, Hindi.
o	<i>o</i> as in <i>mote</i>	Tokyo.
u	long <i>u</i> as in <i>flute</i> ; the sound of <i>oo</i> as in <i>boot</i> , <i>oo</i> or <i>ou</i> should never be employed for this sound. Thus, not <i>Zooloo</i> , but <i>All vowels are shortened in sound by doubling the following consonant</i>	Zulu, Sumatra.
	Doubling of a vowel is only necessary where there is a distinct repetition of the single sound	Yarra, Tanna, Mecca, Jidda, Bonny.*
ai	English <i>i</i> as in <i>ice</i>	Nuulúia, Oosima. Shanghai.

Letters	Pronunciation and Remarks	Examples
au	<i>ow</i> as in <i>how</i> Thus, not <i>Foochow</i> , but	Fuchau.
ao	is slightly different from above Macao.	
aw	as in <i>law</i> .	
ei	is the sound of the two Italian vowels, but is frequently slurred over, when it is scarcely to be distinguished from <i>ey</i> in the English <i>they</i>	Beirút, Beilúl.
b	English <i>b</i> .	
c	is always soft, but it is so nearly the sound of <i>s</i> that it should be seldom used. If <i>Celébes</i> were not already recognised it would be written <i>Selébes</i> .	Celébes.
ch	is always soft as in <i>church</i> Chingchin.	
d	English <i>d</i> .	
f	English <i>f</i> ; <i>ph</i> should not be used for the sound of <i>f</i> . Thus, not <i>Haiphong</i> , but Haifong, Nafa.	
g	is always hard. (Soft <i>g</i> is given by <i>j</i>) Galápagos.	
h	is always pronounced when inserted.	
hw	as in <i>what</i> ; better rendered by <i>hw</i> than by <i>wh</i> , or <i>h</i> followed by a vowel, thus <i>Hwang ho</i> , not <i>Whang ho</i> , or <i>Hoang ho</i> .	Hwang ho, Ngan hwi
j	English <i>j</i> . <i>Dj</i> should never be put for this sound Japan, Jinchuen.	
k	English <i>k</i> . It should always be put for the hard <i>c</i> . Thus, not <i>Corea</i> , but Korea.	
kh	The Oriental guttural Khan.	
gh	is another guttural, as in the Turkish Dagħ, Ghazi.	
l	} As in English.	
m		
n		
ng		has two separate sounds, the one hard as in the English word <i>finger</i> , the other as in <i>singer</i> . As these two sounds are rarely employed in the same locality, no attempt is made to distinguish between them.
p	As in English.	
ph	As in <i>loophole</i> Chemulpho, Mokpho.	
th	stands both for its sound in <i>thing</i> , and as in <i>this</i> . The former is most common	Bethlehem.
q	should never be employed; <i>qu</i> (in <i>quiver</i>) is given as <i>kw</i> . When <i>qu</i> has the sound of <i>k</i> as in <i>quoit</i> , it should be given as <i>k</i> .	Kwangtung.
r	} As in English.	
s		
sh		
t		
v		
w		
x	} is always a consonant, as in <i>yard</i> , and therefore should never be used as a terminal, <i>i</i> or <i>e</i> being substituted as the sound may require	Kikúyu.
y		
z	Thus, not <i>Mikindány</i> , but not <i>Kwaly</i> , but	Mikindáni.
zh	English <i>z</i> Kwale.	
	The French <i>j</i> , or as <i>s</i> in <i>treasure</i> Zulu.	
	Accents should not generally be used, but where there is a very decided emphatic syllable or stress, which affects the sound of the word, it should be marked by an <i>acute</i> accent	Muzhdaha.
		Tongatábu, Galápagos, Paláwan, Saráwak.

* The *y* is retained as a terminal in this word under Rule 2 above. The word is given as a familiar example of the alteration in sound caused by the second consonant.

N.B.—These Rules were revised and approved by the Council, Royal Geographical Society, 11th December, 1891.

E. F. CHAPMAN, Major-General, D.M.I.

Intelligence Division, W.O., January, 1892.

LANDS—DEPARTMENTAL.

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REGULATION UNDER THE TRANSFER OF LAND ACT, 1893-1959.

PURSUANT to the Transfer of Land Act, 1893-1959, I, Arthur Frederick Watts, Attorney General of the State of Western Australia, being the Minister in charge of the Department concerned with the administration of that Act, do hereby order and declare that the regulations made for the guidance of surveyors practising under that Act and which were approved under the provisions of the Licensed Surveyors Act, 1909-1958, by His Excellency the Governor in Executive Council on the 27th day of September, 1961, shall be observed by all licensed surveyors lawfully entitled to practise under the said Transfer of Land Act, 1893.

Dated the 3rd day of October, 1961.

A. F. WATTS,
Attorney General.

LICENSED SURVEYORS ACT, 1909-1958.

TRANSFER OF LAND ACT, 1893-1959.

Regulations for the Guidance of Surveyors Practising under the Transfer of Land Act, 1893-1959.

Office of Titles,
Perth, 27th September, 1961.

HIS Excellency the Governor has been pleased to approve of the regulations for the guidance of surveyors practising under the Transfer of Land Act, 1893-1959, set forth in the schedule hereunder, to have and take effect on and from the 1st day of January, 1962.

(Sgd.) F. A. BLOTT,
Registrar of Titles.

TRANSFER OF LAND ACT, 1893-1959.

(56 Vict., No. 14.)

LICENSED SURVEYORS ACT, 1909-1958.

(9 Ed. VII., No. 21.)

IN these regulations, unless the context otherwise indicates, the following terms shall have the meaning set against them respectively:—

Inspector of Plans and Surveys: A licensed surveyor on the staff of the Department of Lands and Surveys, appointed by the Governor to approve plans of authorised surveys.

The regulations: The general regulations for the direction and guidance of surveyors made by the Land Surveyors' Licensing Board under the Licensed Surveyors Act, 1909 (as amended), in addition to the regulations of the Office of Land Titles.

Surveyor: A licensed surveyor lawfully entitled to practise under the Transfer of Land Act, 1893 (as amended).

PART I.—GENERAL.

1. Every survey, re-survey, or subdivision made or used for the purpose of any application or dealing in the Office of Land Titles must be made by a licensed surveyor lawfully entitled to practice under the Transfer of Land Act, 1893 (as amended), of Western Australia, and such survey or re-survey, or subdivision, and every plan submitted to the Office of Land Titles purporting to represent the same respectively, must be made in strict accordance with the regulations.

2. The surveyor will be expected to disclose all doubts, discrepancies, and difficulties, and to afford all other information obtainable by him relative to the property, that may aid in securing accuracy and completeness in the certificate of title to the land.

In these matters he must consider himself rather an agent and adviser of the Government than of the person employing him, nor will a regard for the interests of such employer be considered as excusing in any degree the

withholding of any information affecting the merits of the application or dealing, even though the description supplied be literally and technically correct.

3. Whenever the land applied for differs from that contained in the deeds, the survey will not be considered complete without showing (whenever practicable) that there is or is not sufficient land left to supply the quantity belonging to adjoining owners under the most liberal interpretation of their rights.

4. A surveyor before making a survey of any land must obtain all available information respecting it in the office of the Department of Lands and Surveys, Mines Department, and in the office of Land Titles. Every assistance will be given by the officers to enable him to refer to any Certificate of Title, field book, plan, or document.

5. On receipt of notice from the Inspector of Plans and Surveys to amend a survey or to supply more information than that contained in the field notes, or to report on same, the surveyor so notified must immediately comply with the notice. Every surveyor shall observe and comply with any special directions from time to time given by the Commissioner, Registrar of Titles, or Inspector of Plans and Surveys in relation to plans and surveys.

PART II.—FIELD NOTES.

6. Field books will be supplied at cost price by the Registrar of Titles on application being made to him, and no other style of book containing field notes will be received at the office of the Surveyor General unless under exceptional circumstances.

7. Every field book must contain, when it is possible, a sketch of the exterior boundaries of the land to be represented on the plan or diagram to be deposited in the Land Titles Office.

8. The original field book kept in the field shall be lodged at the Department of Lands and Surveys. It must show everything that the surveyor does or finds to exist on the ground such as angles, bearings, distances, old marks tied on to or replaced, offsets, position of fences, buildings, walls, roads, rights-of-way, subdivisions, etc. If a wall is on or along the boundary its exact position and width must be defined. The words "two walls," "party wall," "no party wall" should be written.

All improvements within five links of the boundary must be located. Field notes must show all new marks of the survey and all old ones along previously surveyed lines, also all methods of running the lines.

9. A surveyor shall show by a sketch in the field notes the position of each post and peg centre or outer edge with reference to the alignment of the boundary which it defines. (See regulation 37.)

10. The notes of the "surround" of each survey must be shown in the field book distinct from those of the internal subdivisional surveys.

11. The area of the land surveyed must be written in the field notes, and if a subdivision is made the area of each allotment must be recorded.

12. The field notes must define the land under survey as to the original number and district or town in which it is situated or as it is registered in the Office of Land Titles. If the land is subdivided the number of each allotment must be written on the subdivision in the field book. Sectional or alphabetical numbering is not permitted. Consecutive numbering from one upwards must be made, and the same number must not be repeated in a location or Crown allotment except by special permission from the Inspector of Plans and Surveys. A surveyor before numbering a subdivision of a portion of a large location should ascertain if any numbers have been previously allotted in the location, and if any numbers have been allotted he must begin with the next highest number.

The allotments of a re-subdivision of a subdivisional allotment or allotments of any land must be numbered consecutively from one upwards, unless, by doing so, lot numbers are duplicated in the section, in which case the surveyor should use numbers which will avoid duplication.

13. Any post, peg, or spike or other survey mark found in the field which has been established in the course of a survey or of a re-survey of any Crown allotment or location or public road made under instructions from the Surveyor General and accepted by him shall be shown in the field notes, as an original post, peg, or spike as the case may be.

14. Any post, peg, spike or other mark found in the field which is not an original of a Crown survey and is recorded on a plan or diagram deposited in the Office of Land Titles and passed by the Inspector of Plans and Surveys shall be shown in the field notes as post, peg, spike, "found" (as the case may be).

15. The name of every public street and road adjoining the land under survey, and also the name and width of any private street, road, and lane forming part of the survey or connected therewith, must be written in the field notes.

16. The actual measurement of each line chained must be recorded in the field book, and if in rural lands it does not disagree from the distance previously adopted in the Lands and Surveys Department or Office of Land Titles more than a quarter of a link in ten chains in level and undulating country, or half a link in ten chains in hilly country, the distance so measured shall be adjusted in red to agree with such accepted distance. If the difference is more than that stated, the line shall be measured again and the second distance shall be also noted in the field book.

PART III.—FIELD WORK.

17. When re-establishing original Crown surveys the surveyor must adhere to the principle of the unchangeableness of the position of the boundary marks except as hereinafter mentioned, and where they have been originally established on the ground by a Government surveyor in pursuance of the survey system at that time in force they must be regarded as the true positions even if found by the new survey not to be in the exact position assigned to them; but to prevent the perpetuation of patent errors in original surveys and to guard against fraud in case where a material disagreement is found to exist between a new and an old survey, the surveyor shall forward a full report and a sketch showing the position of and describing all old survey marks and improvements on or near the boundary line. Where original intermediate marks are not truly aligned between the corners the surveyor may correct the alignment of them provided that no improvements are affected by the alteration. The original and amended positions of the marks must be clearly recorded in the field book and a full report thereon must be made to the Surveyor General.

18. When a new street which is not an extension of a named street is laid out in a municipality, suburban lot, or location, it must not be given the name of any street that has been previously surveyed in such municipality, suburban lot or location. A new street which is an extension of a named street shall bear the same name.

19. A surveyor when re-marking any allotment or portion thereof abutting on any street or road where the total distance between the street or road corners does not agree with the original subdivision (whether Crown or otherwise) shall survey the section bounded by four streets or roads and shall locate all the improvements along the frontages at or near the corners of each allotment, provided that if a surround re-survey has previously been made and verified and contains sufficient information, and the street or road corners have been correctly located and are in existence, it will only be necessary to align the frontage between the two street or road corners on which the allotment or portion of allotment abuts.

20. The surveyor shall, if practicable, align and measure the actual boundaries of the land under survey, but should difficulties render this impossible the offsets used and the methods observed in measuring and obtaining distances shall be recorded in the field notes. If an offset has to be used it should be set off, if possible, parallel to the boundary line.

21. Before any survey post, peg, spike, or other mark is adopted it must, if possible, be proved to be in the position assigned to it on a deposited plan either in the Lands and Surveys Department or Office of Land Titles, and in every instance its position must be verified from the reference tree, peg, spike, wall, or other mark, if any, and such position must be recorded in the field notes.

22. The area of every block not being a rectangle shall be calculated by double longitudes, and the particulars of such calculations shall be supplied by the surveyor when notified by the Inspector of Plans and Surveys to do so.

23. A surveyor when re-marking or re-defining a corner of a road or street must connect it to two or more permanent points, if they can be obtained, and must, in every instance, whether the old mark is in existence or not, connect by angles and distances to the opposite corners (where they are known) and note the connections in the field book.

24. The original alignment of every Crown survey must always be adhered to except as provided for in general regulation 23.

25. When an irregular boundary is defined by offsets and insets measured thereto from traverse lines, such traverse lines must form part of the geometrical figure used in computing the area, and the areas of the portions lying between the traverse lines and the boundary are to be computed from such offsets and insets.

26. If only a portion of a location is being dealt with the survey must be connected with at least two corners of the location. If the portion of land is included in or adjoins a previous survey which is shown in a deposited plan or diagram and connected to at least two corners of the location, then the survey need only be connected with two or more corners of the previous survey.

27. When a portion of any allotment situate within a municipality is being set out, the surveyor shall obtain sufficient information and record it in his field book to determine all of the original boundaries of the said allotment.

28. When an old survey is superseded by a new survey with amended boundaries the old posts, pegs, trenches, and other marks must be removed or obliterated by the surveyor who makes the new survey. Provided if any original survey marks are removed the surveyor shall report such removal to the Inspector of Plans and Surveys, who shall notify the Surveyor General of such removal.

PART IV.—MARKING.

Note.—The following regulations are to be observed in addition to the instructions set forth in the general regulations.

29. The Departmental mark referred to in general regulation 48 shall for Land Titles Office surveys be the letter "T."

Rural Lands.

30. In the course of any survey when it is necessary to re-mark or to re-establish, or to connect to the corner of a subdivisional lot the area of which exceeds 10 acres, or to the corner of a location which is not "referenced," the surveyor shall reference such corner in the manner prescribed by the general regulations.

31. Marking, line clearing, trenching and referencing shall be as specified in the general regulations.

Town and Suburban Lands.

32. When a re-survey is made of any allotment or allotments, or any portion thereof, and the post, peg, spike, or other mark denoting any road or street corner of the section in which the land is situated is obliterated, the surveyor shall re-mark the road corner or corners re-established by him and reference same as is provided by the general regulations.

33. If a peg cannot be put in, an iron spike not less than fifteen inches in length and half an inch in diameter shall be used instead of a peg. If a peg or spike cannot be placed in position a broad arrow must be cut into the obstruction. A wall should be marked in preference to a footpath.

34. Three-inch pegs shall be painted red. Two-inch pegs shall be painted white.

35. When, in the course of any survey, it is necessary to re-establish, or to connect to, a corner of a street or road which has not been tied in to a building or permanent mark, then, if there are buildings or permanent marks within a radius of one and a half chains from the corner, the surveyor shall connect the corner to them by two or more measurements to different points on them or by angle and distance to two identifiable marks. If the corner is not referenced according to the regulations, the surveyor shall also place a spike in the production of each street line at a distance most suitable for its preservation. The spike shall be sunk or driven until its head is about six inches under the surface, unless the footpath is flagged, tar paved or asphalted, in which

case the head of the spike shall be level with the surface where possible, or, if not possible, then a distinct and durable mark must be made instead of such spike.

Reference spikes or marks shall be placed in every case, whether the original post or peg is standing or not.

The distance between reference spikes or marks shall be measured and recorded.

36. A tack shall be driven into the centre of the top of each peg and it shall be placed in the true alignment of a street, road, lane, or right-of-way. (See general regulation 49.)

37. Surveyors must be particularly careful not to alter the alignment of previous surveys where the outer faces of pegs are on the true alignment. (See regulation 9.)

PART V.—DRAFTING.

38. Every plan and diagram lodged or deposited at the Office of Land Titles must be drawn on the plan and diagram paper which will be sold by the Registrar of Titles at a reasonable price.

39. Every plan and diagram must be drawn to a scale large enough for the necessary details and dealings to be written on each allotment, and it must be approved by the Inspector of Plans and Surveys.

40. The ordinary even scales 10, 16, 20, 30, 40, 50, 60 and 80 shall be used for plotting and the scale of links or chains to an inch must be written on the plan or diagram.

41. All work must be of sufficient strength to bear photographic reproduction and must be drawn in a recognised water proof ink.

42. Plans must show a north point, defined by an arrow of reasonable size, drawn parallel to the shorter sides of the plan form where possible.

43. Should plans or diagrams be below the departmental standard in plotting or draftsmanship, they may be rejected.

44. No plan or diagram will be approved by the Inspector of Plans and Surveys which shows—

- (a) land that is not under the Transfer of Land Act in conjunction with land that is under that Act, or two or more pieces of land registered in the names of different proprietors; unless the whole of the land is being acquired by the Crown, Crown instrumentality or local authority for the purpose of a public work within the meaning of the Public Works Act, 1902, as amended;
- (b) any private street, road, lane, way or reserve over which the proprietor has no registered or implied rights.

45. The lots drawn on any diagram must not exceed twelve in number, and the lots drawn on any plan must not exceed 150 in number.

46. The heading must describe the land represented on the plan or diagram by reference to the original Crown location or lot number, and in the case of a resubdivision the numbers of the previous subdivision must be shown.

47. Every plan or diagram of a survey must show the nature of the boundaries at the time of survey, whether buildings, walls, fences, roads, natural features, posts, pegs, spikes, and in the case of a wall whether a party wall, and if the boundary line runs through the centre or otherwise.

48. Every plan and diagram shall exhibit distinctly delineated all roads, streets, passages, thoroughfares, squares, or reserves appropriated or set apart for the use of the purchasers, and all permanent drains and also all allotments into which the said land has been divided with their distinctive numbers, areas and dimensions.

49. The name of each public street or road adjoining the land under survey, and the name and width of each private street or road forming a part of the land under survey, must be written on the plan or diagram.

The width of the public street, road, or way is not to be shown unless it has been accurately measured in the course of the survey.

50. All posts, pegs and intermediate spikes when centred shall be shown as circles in black. Those which have been faced shall be shown as filled squares.

51. (a) All old posts, pegs or intermediate spikes of Lands Department surveys found and recorded in the field notes shall be shown thus "O.M." If renewed thus "O.M.R." If adjusted thus "O.M.adj."

(b) All old posts, pegs or intermediate spikes of private subdivisional surveys shall be shown thus "M.F." If renewed "M.F.R." If adjusted "M.F.adj."

52. All intermediate distances shown by the surveyor to be shown on the plan or diagram, and all total lengths of lines, that is the sum of the intermediates, shall be shown in brackets.

53. All total lengths of lines being the external boundaries of the land the subject of the plan or diagram shall be shown.

54. Where to complete a survey dimensions from existing surveys are used then—

(a) where angles and complete distances are shown these shall be marked "Orig" and no existing intermediate distances shall be shown;

(b) where a line is composed of both existing and new work, the total distances shall be marked "per Orig."

55. (a) Where a boundary has been pegged by offsets from a run line and the offset distances are 20 links or greater, any distance along that boundary shall be shown as calculated (cal.).

(b) Where the offset distances are less than 20 links then the true boundary shall be treated as the run line and the angles as true angles, not calculated.

56. On even truncations the angles to the truncation line shall be omitted.

57. All angles shall be shown to the nearest second.

58. All units of minutes and perches shall be shown without prefixing an "0" e.g., 1 minute or 1 perch, not 01 minute or 01 perch.

59. (a) Areas of less than one acre are to be shown thus:—

3r. 26.5p. not 0a. 3r. 26.5p. and 26.5p. not 0a. 0r. 26.5p. and 0.5p. not .5p.

(b) Where an area is less than two acres it shall be shown to the nearest decimal point of a perch and where greater than two acres, to the nearest perch.

60. Lines of coasts, rivers, creeks, swamps, lakes, etc., are to be shown in blue, except in the cases where they form part of the boundary of a location or lot when they are to be shown in black.

Both sides of rivers and creeks are to be shown where reasonable and also an arrow denoting the direction of the flow of the stream.

61. (a) A flat wash of green shall be shown on all lots comprised in a plan or diagram.

(b) A darker margin of green shall be shown along the external boundaries to define the limits of the land included in the plan or diagram.

(c) Public roads, streets, lanes or rights-of-way shall be coloured carmine.

(d) Private roads, streets, lanes or rights-of-way shall be coloured brown.

(e) Crown reserves shall be coloured carmine.

(f) Private drain reserves shall be coloured blue.

(g) Traverse lines and angles and distances on same shall be shown in blue.

62. Plans, as distinct from diagrams, shall be left uncoloured at the time of lodging, but a print of the plan coloured in accordance with these regulations shall be lodged together with the plan. The plan, after duplication, shall be coloured to agree with the print by the drafting staff of the Office of Titles.

Diagrams shall be coloured by the surveyor before lodging.

PART VI.—MISCELLANEOUS.

63. The regulations for the guidance of surveyors practising under the Transfer of Land Act, 1893, published in the *Government Gazette* on the 26th May, 1911, and all amendments thereto are hereby revoked, but such revocation shall not invalidate anything done under or in conformity therewith.

MINES DEPARTMENT.

Regulation

Surveys.

No.

1. Previous regulations.
2. Acts under which surveys are made.
3. Surveys—by whom to be made.
4. Surveyors to be conversant with relevant Acts.
5. Surveyors to furnish all information.
6. Field notes to be the property of the Department.
7. Surveyors not to report for private information.
8. Instructions may be cancelled.
9. When to issue instructions.
10. Instructions to be acted upon at once.
11. Surveys not completed within six months.
12. Surveys in remote localities.
13. Area of mining tenements.
14. Areas to be as applied for.
15. Calculation of areas.
16. Excess area to be adjusted.
17. Applicant to be contacted.
18. Tenements lapsing before survey.
19. Adjustment of pegging encroachments.
20. Areas surveyed greater than applied for.
21. Applications wrongly described.
22. Sufficient pick up required.
23. Marking requirements.
24. Marking requirements.
25. Superseded surveys.
26. Inspection surveys.
27. How to perform inspection surveys.
28. Requirements of inspection surveys.
29. Inspection of combined holdings.
30. Extra charges for inspection surveys.
31. Intersections with roads, locations, etc.
32. Road access—miners' homestead leases.
33. Surface reservations for railways, pipe lines, etc.
34. Defining railway boundaries.
35. Connection to previous surveys or geodetic.
36. Connection by traverse.
37. Connection by triangulation.
38. Erection of cairns.
39. Connection of isolated holdings.
40. Topography.
41. Naming of topographical features.
42. Offsets and obstacles.
43. Traverses.
44. Traverses.
45. Connection to be as direct as possible.
46. Classification.
47. Topographical information.
48. Business and residence areas.
49. Check surveys.
50. Original notes and reports.
51. Field notes.
52. Prompt attention to memoranda.
53. Penalty for inefficiency.
54. Field books, etc., supplied by Department.
55. Numbering of surveys.

Regulation

- No.
56. Payment of accounts.
57. Errors corrected.
58. Fees for mining surveys.

Accounts.

Plans.

59. To be drawn by Department.
60. Standard of plans.
61. Scales to be used.
62. Plans to show one tenement.
63. All surface rights to be shown.
64. Superseded surveys on plans.
65. Strength of line and inks.
66. Detail to be shown.
67. Posts and pegs.
68. Abbreviations and symbols.
69. Reference marks.
70. Intermediate distances.
71. Total lengths of lines.
72. Surveyed and unsurveyed boundaries.
73. Original information.
74. Original information.
75. Offsets.
76. Calculated measurements.
77. Connections.
78. Dredging claims.
79. Secant distances.
80. Bearings to be clockwise.
81. Azimuth observations.
82. Units of minutes and perches.
83. Units of angles.
84. Tabulation of short lines.
85. Displaced detail.
86. Boundaries of dredging claims.
87. Names.
88. Co-ordinate distances.
89. Shafts and surface workings.
90. Distances to improvements.
91. Water features.
92. Geodetic stations.
93. Geodetic stations.
94. Tie lines to geodetic stations.
95. Colour washes.
96. Colours—how to show.
97. Colours to indicate surface and underground rights.
98. Colours.
99. Re-surveys.
100. Conditions of approval.
101. Inspection surveys.

Appendices.

1. Amendment of Boundaries.
2. Amendment of Area.
3. Surveyor's Report.
4. Survey Account.

MINING ACT, 1904-1957.

Regulations for the Guidance of Surveyors Performing Authorised
Surveys for the Department of Mines.

Department of Mines,
Perth, 12th September, 1961.

HIS Excellency the Lieutenant-Governor and Administrator in Executive Council, acting pursuant to the provisions of the Mining Act, 1904-1957, has been pleased to make the regulations set forth in the schedule hereunder for the guidance of surveyors performing authorised surveys for the Department of Mines, to take effect on and after the 1st day of January, 1962.

A. H. TELFER,
Under Secretary for Mines.

Schedule.

Regulations.

In these regulations, unless the context requires otherwise—

“Department” means the Department of Mines;

“general regulations” means the general regulations made for the guidance of Surveyors under the Licensed Surveyors Act, 1909 (as amended);

“surveyor” means a surveyor licensed under the Licensed Surveyors Act, 1909 (as amended).

SURVEYS.

1. The Rules and directions for the guidance of surveyors under the Department of Mines as approved of by His Excellency the Governor in Executive Council on 3rd December, 1912, are hereby cancelled, but such cancellation shall not in any way invalidate anything heretofore done under or in conformity therewith.

2. No surveys will be accepted by the Department unless the same have been executed in accordance with the Licensed Surveyors Act 1909 (as amended), the Mining Act, 1904 (as amended), or the Petroleum Act, 1936 (as amended), and the regulations made under those Acts and such amendments thereof as may from time to time be authorised.

(3) All surveys for the Department required under these Acts shall be performed by a surveyor, approved by the Minister for Mines, and licensed under the Licensed Surveyors Act 1909 (as amended).

4. Surveyors executing surveys of mining tenements shall make themselves conversant with all the Acts relating to mining, together with all regulations thereunder, and all amendments and notices in the *Government Gazette* relating thereto.

5. It shall be the duty of surveyors to furnish any information to the Department (in person where required) with regard to surveys of mining tenements, and this will be deemed a part of the work connected with the performance of the surveys.

6. All field notes and other information connected with surveys executed for the Department shall be considered to be solely the property of the Department and no surveyor shall make public anything therein contained without the permission of the Warden or Chief Draftsman.

7. No surveyor to whom instructions have been issued to perform mining surveys shall, without the permission in writing of the Chief Draftsman, report for private or public information upon any mining property. On any violation of this rule, the Chief Draftsman may recommend that no further instructions be issued to such offending surveyor.

8. If, in the opinion of the Chief Draftsman, any surveyor wilfully or carelessly disregards these regulations or any Departmental instructions he may receive, or be guilty of undue delay in making a survey for which he has instructions, the Chief Draftsman may recommend that no further instructions be issued to him.

9. Upon an application for a tenement requiring survey being recommended for approval by the Warden, provided no objections to the granting of the application were lodged, or when the tenement has been approved by the Governor in Executive Council or by the Minister, instructions shall be issued to a surveyor to perform the survey.

10. Except in the case of isolated leases in remote localities, instructions shall be acted upon at once, and in the order fixed by the Chief Draftsman; and all surveys for which instructions have been issued that are not completed within six months must be specially reported upon to the Chief Draftsman.

11. If, at the expiration of six months from the date of instructions being issued to a surveyor, the survey has not been completed, such instructions shall be considered to be cancelled, and are to be returned to the Chief Draftsman with a report. (See regulation 10.)

12. Arrangements should be made to leave the surveys of isolated holdings until there are other holdings for survey in the same locality, and in no case must a long journey be made to survey one or two leases without special authority. When a special journey at the request of the applicant is necessary, mileage shall be payable by the applicant as per arrangement with the approval of the Chief Draftsman.

13. As the Mining Act determines that rent shall be charged "per acre or fractional part of an acre" and in certain cases such fractional part necessitates the employment of an extra miner to fulfil the requirements of the labour provisions, and also that most mining tenements carry a statutory maximum area, strict attention shall be given to the area of mining tenements.

14. So far as possible, areas of mining tenements shall be laid out exactly to the area applied for, or as provided for elsewhere in the regulations.

15. The area of a mining tenement shall be computed to the requirements of regulation 35 of the general regulations. If the area thus computed is found to vary in excess to a range of one perch for every six acres or multiple thereof, it shall be recorded on the diagram to the nearest acre.

Thus: 19 acres, 0 roods, 3 perches, computed, shall be shown as 19 acres.

This provision shall not apply to areas of less than six acres and in all cases over 24 acres the excess allowable is to be at the discretion of the Chief Draftsman.

16. All surveys showing a greater excess than that permitted by the preceding regulation, or allowed by the Chief Draftsman, shall be adjusted at the personal cost of the surveyor by whom the survey was made.

17. Before executing any survey of a mining tenement, the surveyor shall communicate with the applicant or his agent, and arrange with him a time to be on the ground for the purpose of pointing out the application posts or boundary marks of the land applied for. (Reg. 247, Mining Act, 1904.)

18. The surveyor must contact the Mining Registrar of the district before proceeding with surveys of mining tenements in order to ascertain whether any of them have lapsed since his receiving the instructions for survey.

19. In case the area applied for has been inadvertently marked by the applicant so as to encroach upon other land previously applied for and lawfully held by any other person or persons, rendering necessary the excision of such overlap before the area can be surveyed, the surveyor on noticing the same shall call the attention of the applicant thereto, and, if the applicant so desires, shall indicate to him how to alter the situation of his posts so as to avoid encroachments, and the subsequent delay attendant on their adjustment.

20. In cases where it has been found necessary to survey an area in excess of that applied for, a report thereon shall be made (Appendix 2) and the Warden may approve of such increased area, provided that the applicant has signified his consent, and paid any additional fees for rent and survey fees necessitated thereby. (Reg. 249, Mining Act, 1904.) No area shall be surveyed in excess of the area pegged if any adjoining interests are thereby affected. In all cases the surveyor shall note in his field book the original position of the applicants' pegs.

21. When the position of any land as described by the applicant differs considerably from the position as pegged on the ground, the surveyor must obtain from the applicant or his agent a statement (Appendix 1) that the land has been surveyed according to his application posts and in the position he intended to indicate in his description. In such cases the surveyor shall report if in his opinion the applicant has intentionally or otherwise wrongly described the land.

22. When a mining tenement is surveyed, adjoining, including, or otherwise situated with reference to any other holding, the positions of such holdings shall be sufficiently identified and measurements made to enable abutments or possible encroachments to be verified.

23. The provisions of the general regulations relating to marking of rural lands shall be adhered to except that regulation 36 (a) of the general regulations shall apply to mining tenements of all areas unless the boundary of an area less than 10 acres is clearly indicated by fencing or other means in which case regulation 36 (b) or 36 (c) of those regulations shall apply where appropriate.

24. At all posts and intermediate spikes the earth taken out of the trenches is to be heaped up around the post, but in such a manner as not to hide the figures.

25. When an old survey is superseded by a new one with amended boundaries, the old posts and other marks should, at the discretion of the surveyor who makes the new survey, be removed or obliterated. The field book must show the positions of the old boundaries, and the details of what was obliterated.

26. When the boundaries of the land applied for are identical with a mining tenement, the survey of which was completed within five years prior to the date of application, and the survey has not been obliterated by a subsequent survey, an inspection survey is required. (See regulation 101.)

27. In the case of inspection surveys the original number may remain on the posts and, on instructions being received by the surveyor, he shall inspect the ground and make a report as to whether his inspection has disclosed any objection to the granting of the mining tenement.

28. In the case of inspection surveys the field book must show clearly the numbers existing on the posts, and any other necessary information. Where the old posts are defective they must be renewed and in all cases the trenches must be cleared out. When for any reason a survey is rendered necessary by railway reserves, roads, etc., the surveyor must execute it and furnish, with the necessary field notes, a report on the matter.

29. In the case of an inspection survey required where two or more surveyed holdings are taken up as one tenement, the surveyor shall remark the posts with the new tenement number and report accordingly.

30. Extra work involved in carrying out inspection surveys as described in these regulations may be charged for according to the accepted rate for the Department of Lands and Surveys. In each case the account form shall show full details of the extra work being charged for.

31. If a surveyed road is found to run through the land applied for, the road must be marked, and posts with reference marks placed at the intersections of the road with the boundaries of the holding. All tracks shall be recorded in the field book. Intersections with all surveyed locations, lots or other boundaries shall be made where these boundaries cross the mining tenement.

32. When surveying miners' homestead leases, should any other holding be surrounded by the homestead lease, it is necessary that road access be provided. Surveyors must also be careful to note all existing tracks that it may be necessary to keep open. They should be surveyed and marked on the ground. Payment will be made for any extra work involved.

33. Should a railway, tramway, or Government pipe line run through the land under survey, a surface reservation sufficient for the requirements of the Railway Department or other authority shall be marked on the ground and posts placed at all intersections with the boundaries. Unless otherwise specified the usual width of reservation required is: For a railway 300 links, for a tramway 100 links, for a pipe line 50 links.

34. When defining boundaries of holdings adjoining a railway curve, the following course must be adopted: Between the tangent points around the curve, two chain chords on the centre line of the railway to be accepted as a datum, and the boundaries of the reserved area are to be parallel to the two chain centre chords.

35. Each survey shall be connected in the manner laid down under the general regulations to some previous survey, or geodetic station, or to a cairn erected in such a position that it can be connected to the geodetic survey of the State.

36. When connection is made to a previous survey by traverse, the connection shall be made to the nearest measured portion and sufficient of the old line ranged and chained to enable it to be adequately identified. The angle from the traverse to the old survey should in all cases be observed and recorded.

37. When, with a view to connecting leases, or other surveys with any geodetic station, a base is laid down by the surveyor for the purpose of triangulation, all of the calculated distances of any triangles so measured shall be shown in the field book.

38. When a cairn is erected (regulation 35) it shall be fixed by resection or other recognised method to two or more geodetic stations. If the instrument is set up in an eccentric position with relation to the cairn and the observed stations, the angle and distance from the instrument to the centre of the cairn shall be measured and recorded in the field book. It is desirable that a name or number be given to the cairn so that it can be suitably indexed. (See regulation 41.)

39. When isolated leases are surveyed in a remote locality, bearings should be observed from one or more corners or defined points to prominent hills or other positions to approximately fix the position. Hills, creek junctions, or other positions which can be identified on topographical maps prepared from aerial photographs should be used in these cases. No traverse connection over two miles or thereabouts in length is to be made without special instructions.

40. Angles to distant and remarkable points, and to opposite sides of rivers, lakes, etc. are to be observed and recorded in the field book.

41. All known names of rivers, creeks, lakes, hills, localities, etc. within the scope of the survey should be recorded in the field book, care being taken to ascertain and adhere to the correct orthography. Whenever native names can be ascertained, they should be most carefully recorded, especial care being taken to ascertain the correct pronunciation.

42. When by reason of a wide river, lake, ravine, or cliffs, etc. the actual line cannot be measured, the method followed in finding the distance and prolonging the line shall be clearly shown in the field book. Details of offsets shall also be clearly shown in the field book.

43. In surveys of traverses or tie-lines, observations for azimuth must be taken at intervals of not more than five miles. The lines in a feature survey, tie-line, river or other traverse, shall be cleared to a width of not less than one foot by the removal of all scrub and trees of a less diameter than one and a half feet. At every angle of a traverse a short peg is to be driven into the ground in order to show for a few months the exact angular point for the use of an inspector.

44. In surveys of traverses or tie-lines, at intervals of about two or three miles, a cairn and numbered pole shall be erected on some prominent rise close to the traverse, or a conspicuous tree shall be selected and marked for reference with a triangle and a distinguishing letter and number deeply cut into the wood after the removal of the sap wood, or if there is no suitable tree, a post must be placed in a mound, marked in the same manner. These points should be selected with a view to their use by prospectors and others to enable them to approximately fix the position of their pegging.

45. In selecting a route for a connection survey, preference shall be given to rivers, watercourses or tracks. Where there are no leading features, the connecting survey should be as direct as possible.

46. Every traverse shall follow as nearly as possible the feature to be traversed, with a view to accurate delineation on maps; and offsets must be taken at frequent intervals and noted in the field book. The surveyor shall also report on the character of the land, and type of vegetation within scope of his survey.

47. In every survey it is desirable to obtain as much topographical information as possible. The surveyor shall on all possible occasions observe angles to determine by intersection the position of hills and other conspicuous features, or other points which may be identifiable on aerial photographs.

48. In survey of groups of business and residence areas the provisions of the general regulations relating to town and suburban lands shall apply.

49. Every surveyor working for the Department or performing surveys which may be submitted to it for acceptance, may, from time to time, with his own men and instruments, be required to run, in the presence of an inspecting surveyor, check lines over work performed by him. If the work be found correct, such lines shall be paid for by the Department according to the scale of fees laid down by the Lands and Surveys Department.

50. Surveyors shall forward to the Department their original field notes with a report on each tenement surveyed (Appendix 3) and also the forms and information sheets issued with the instructions; and further shall, when required by the Warden, furnish such additional plans and reports as the Warden shall deem necessary to assist him in deciding any matter connected with any mining tenement.

51. In addition to the requirements of the general regulations and any other regulation of these regulations the field book must show—

- (a) the type and number of the tenement and name of applicant;
- (b) the numbers on the posts of adjoining surveys;
- (c) the name of the tenement (if a lease);
- (d) the numbers of and reference to adjoining tenements;
- (e) the calculated area;
- (f) the date of marking;
- (g) the connections to shafts and workings;
- (h) the approximate position of tenements from nearest mining centre;
- (i) the approximate direction of true north.

52. Memoranda relating to omissions or other deficiencies must meet with immediate attention and reply by the surveyor, otherwise the fee for items in question will be struck out of the account. Should such memoranda be neglected, it shall be competent for the Chief Draftsman to cancel the survey, or to cause inspection thereof, the cost of which may be surcharged against the surveyor.

53. Under certain circumstances, such as where there has been a failure to complete surveys according to these regulations, or where areas have been incorrectly computed, and when it may not be expedient or desirable to reject the survey, a discount may be imposed as compensation for additional professional labour involved in examination and amendment, or as a fine. In the event of the account for such imperfect survey having been paid, such discount as a fine may be surcharged against any balance of account which may be due, or may become due for services rendered.

54. Field books, report forms and other requisite printed official forms will be supplied free to surveyors by the Department, but shall remain the property of the Department.

55. The following rules are to be observed in the numbering of surveys:—

- (i) In all surveys, the tenement number is to be cut on the posts, in addition to the Departmental symbol. (See regulation 48 of the general regulations.)
- (ii) If a resurvey is made, the old number is to be obliterated and the new number put on. This new number is thenceforth to be used in all future reference to the new survey.
- (iii) If an inspection is made, it is permissible to leave the original number on the posts.

ACCOUNTS.

56. An account for the work in each field book shall be lodged in duplicate (see Appendix 4) and an immediate payment to the extent of 75 per cent. on the total amount shall be paid. The balance of the account shall be paid on the certificate of the Chief Draftsman that the whole of the surveys and accounts have been examined and passed.

57. Before an account is passed for payment, errors will be corrected, omissions supplied and over-charges reduced.

58. Fees for the survey of mining tenements carried out in accordance with these regulations shall be those fees as prescribed by the Mining Act, 1904 (as amended), and regulations made thereunder and subsequent amendments thereto.

PLANS.

59. Field notes of each survey shall be directed to the Chief Draftsman who shall have the necessary plans drawn.

60. Survey plans and diagrams shall be drawn on a form approved by the Chief Draftsman, and to a standard required by the Chief Draftsman.

61. Careful regard must be given to the choice of scale, to avoid an unnecessary number of enlargements and a reasonable margin allowed for abutments. The preference for a 24 acre block is four chains to an inch. The choice of scale should be made to allow the diagram to be as "compact" as possible. "Sprawling" diagrams are to be avoided.

62. In all cases, the rule is "one tenement, one diagram." (Exception: Business and residence areas.)

63. A check should be made with the Public Plans in the Department of Mines and in the Department of Lands and surface rights, roads, railways, locations, etc., shown on the diagram.

64. A check should be made with the compilation plan and adjoining surveys shown in black and superseded surveys shown in orange. Only those immediate surveys which have been cancelled by the new survey need be shown, unless a special purpose is served otherwise (connections, etc.).

- (a) A surface holding does not cancel a gold mining lease survey, nor a mineral lease survey which partly or wholly covers that area, whether the gold mining lease or mineral lease is existing or dead, except in the case of a subterranean water right.
- (b) a gold mining lease survey or a mineral lease survey cancels the survey of another voided tenement which partly or wholly covers that area, but does not cancel an existing tenement.
- (c) A surface holding does cancel the survey of another voided surface holding which partly or wholly covers that area.

65. All work shall be of sufficient "strength" to bear photographic reproduction, and must be drawn in a recognised waterproof ink.

66. All data shown in the field book relevant to the survey shall be shown, excepting offsets of under 20 links. (Skew and otherwise.)

67. All posts, pegs and intermediates, when centred, shall be shown on the plan or diagram as circles.

68. The following standard symbols shall be used on plans to designate the marking of corners:—

- (a) Original posts, pegs, intermediate spikes or reference marks recorded in the field book shall be shown thus:—

If found	....	....	....	....	....	OM.
If renewed	....	....	....	....	....	OMR.
If adjusted	....	....	....	....	....	OM adj.
If gone	....	....	....	....	....	OM gone.
If removed	....	....	....	....	....	OM removed.
If gone and replaced	....	....	....	....	....	OM gone R.

If old marks are gone or have been removed, no circle is shown.

- (b) When a new survey mark is put in by the Surveyor no notation is necessary on the plan or diagram except if such a new survey mark is a spike used to mark the intersection with a surface boundary when it shall be shown thus, SP. In the case of an old instrument point being found it shall be shown "I.P." All old faced posts are to be shown as such on the alignment.

69. Reference marks are shown by a small vermilion cross and where their distance from the peg varies from five links, such distance shall be shown.

70. All intermediate distances and distances to survey intersections shall be shown in black on the plan or diagram.

71. All total lengths of lines (i.e., the sum of the intermediates) must be shown on the plan or diagram. Such distances shall be shown in brackets.

72. All boundaries of locations, roads, leases, etc. shall be shown in firm black lines when such boundaries have been surveyed and in broken black lines when unsurveyed.

73. All distances and angles adopted as "original" from previous surveys shall be shown in scarlet or carmine with the word "orig." printed after.

74. In cases where it is necessary to show a distance which has been obtained as a combination of new measurements and original measurements, such new distance shall be designated "per orig" and shown in black.

75. Where a boundary has been pegged by offsets from a run line, and the offset distances are 20 links or greater, any distance or angle appearing along the boundary shall be shown in black with the word "cal." printed after.

Where the offset distances are less than 20 links then the true boundary shall be treated as the run line.

76. Distances and angles computed by a recognised method for purposes of protection of areas the subject of approval conditions are to be shown purple on the "outside" of the survey so as not to be confused with distances to survey marks and the word "cal." shall be printed after the distance.

77. Lines of connection traverse and offset lines together with the distance shall be shown in vermilion, with angles and bearings in black.

78. Where the sides of a dredging claim have been surveyed from an offset more than 20 links from either side, or a centre line traverse, then the offset or centre line traverse shall be shown by a vermilion line with distance in vermilion, angles and bearings in black. The distances along the boundaries where not chained are shown in black with the word "cal." printed after.

79. The lengths of all secants shall be shown in black where they have been used to peg the boundaries of dredging claims.

80. Bearings (other than those observed) shall be shown, in black, from true meridian in a clockwise direction from zero to 360°, where possible.

81. The point where an observation has been taken for true meridian must be indicated on the plan or diagram by a small vermilion triangle. The true bearing (shown in the direction of observation) to be shown in vermilion to the nearest computed second, with the word "Obs." printed after it.

82. On all plans and diagrams units of minutes and perches shall be printed without prefixing by an "0," e.g., 1 (minute) or 1 (perch), not 01 (minute) or 01 (perch).

83. Where angles or bearings contain degrees alone, then they shall be shown as 90° not 90° 0', or 141° not 141° 0' 0", likewise 90° 15' not 90° 15' 0".

84. When there are a number of consecutive short lines on a survey and the bearings, etc., cannot conveniently be written in place along them, the lines may be numbered, and the necessary information given in tabular form on the face of the plan or diagram.

85. Where it becomes necessary on account of lack of space, or to preserve clarity, to indicate by an arrow the position of information, then the information should be written parallel to the line in question in the case of a distance or bearing and to the "half angle" in the case of an angle.

86. Boundary lines and the sides of dredging claims where marked shall be firmly ruled in black. All unsurveyed lines shall be shown as broken black lines.

87. All known names of features shall be recorded on plans and diagrams as follows:—

- (i) Water features—Blue.
- (ii) Hills, localities, etc.—Black.

88. The co-ordinates calculated from the true meridian required for describing the relative positions of measured isolated blocks or between permanent marks on traverse surveys shall be shown on the plan or diagram in broken black lines, black figures and the word "cal."

89. Plans and diagrams shall show topographical information, the position of all improvements, shafts and surface workings. Where such information has been located by angular means, lines shall be shown by a broken blue line with angles and bearings in blue.

90. Offset tie lines from surveyed boundaries to fix topographical detail and improvements shall not be shown unless their value as a reference mark is assured, in which case they will be shown in broken blue lines with all relevant measurements in blue.

91. Lines of coasts, rivers, creeks, swamps, lakes, watercourses, etc., shall be shown, where their position is determined with precision, by firm blue lines, except in the cases where such form part of the boundary of a block, when they are shown by a firm black line.

Where not determined with precision they shall be shown by broken blue or black lines.

92. Geodetic stations shall be shown in the form of an equilateral triangle containing an inscribed circle, the sides of the triangle to be one-tenth of an inch, and the space between the sides of the triangle and the inscribed circle to be filled in black. Where possible, a description of the structure, its height and latitude and longitude should be given.

Cairns shall be shown in black by an open triangle with a dot in the centre and marked "Cairn."

93. Lines joining geodetic stations shall be drawn in firm blue lines with all relative detail in blue.

94. Geodetic station ties to lease surveys if run and measured shall be shown as traverses. If the tie is made by angular observations then it shall be shown in broken vermilion lines together with calculated distances. (Angles and bearings in black.)

95. All colour washes shall be done after examination of the survey.

96. The boundary of the tenement under survey shall be indicated by a yellow border.

All other boundaries shall be indicated in the appropriate colour by a band one half the width of the yellow border. Where any boundaries coincide, the narrowest band shall be shown against the line and a yellow "half width" border outside this.

97. Where surface mining is permitted, by agreement or otherwise, a border only shall be indicated around the affected portion. Where underground rights only exist a border as before shall be shown and a lighter wash of the same colour shall be added.

98. The following colours for borders and washes shall be used on Mines Department plans and diagrams:—

Roads—Burnt Sienna.

Railways—Carmine.

Pipeline Reserves—Carmine.

Reserves—Carmine.

State Forests—Blue.

Freehold and Leasehold Land—Green (Hookers).

Miners Homestead Leases—Carmine.

Townsites—Carmine.

99. If the plan or diagram is of a resurvey of a previously surveyed tenement, the original surveyed number shall be shown within the survey in orange and the following note:—

"Resurvey of (tenement and number)"—in orange at the top left hand corner of a diagram and just above the file number on a plan.

100. Conditions of approval and amendments thereto by survey shall be endorsed on the face of the diagram in black.

101. In the case of an inspection survey (regulation 26) no new diagram is necessary but the previous diagram now becomes the diagram for the new survey and is endorsed in scarlet with the new number, by whom inspected and date of inspection.

The number which remains on the survey posts is to be indicated.

Appendix 1.
AMENDMENT OF BOUNDARIES.

No. of Tenement	Goldfield or Mineral Field	Name of Applicant	Area

I have surveyed the ground pegged, although not in the position described by the application. I consider the ground surveyed is that for which the applicant intended to apply. No other interests are affected.

.....
Licensed Surveyor.

I am perfectly satisfied with the survey.

.....
Signature of Applicant.

Appendix 2.
REQUISITION FOR AMENDMENT OF AREA.

Mr.

Licensed Surveyor.

As provided for by the Regulations under the Mining Act you have at request altered the area of tenement. I hereby agree to accept the tenement as now surveyed by you.

.....
Signature of Applicant.

No. of Tenement	Area of Application	Area as Surveyed	Extra Rent Collected	Extra Survey Fee Collected

As no adjoining interests are affected, I have altered the area of the above tenement as requested by applicant.

.....
Licensed Surveyor.

Approved,

.....
Warden.

Appendix 3.
SURVEYOR'S REPORT.

Tenement	Number	Goldfield or Mineral Field	Name of Applicant	Date of Marking

I have surveyed the above lease from datum as pegged and according to description.

There are no interferences,

.....
Licensed Surveyor.

Detailed Statement of Surveys Payable on a Chainage Basis.

Page	Tenement No.	Item	Rate	Cost	Percentage	Total Cost per Tenement

Detailed Statement of Traverse Lines, etc.

Page	From	To	Item	Rate	Costs