SECTION 7 - CADASTRAL SURVEYS

7.1 Existing Data To Be Obtained. See Section 3

A licensed surveyor shall obtain all relevant and necessary information from the Central Plan Office, the Office of Titles and any other appropriate source before commencing a cadastral survey, including information concerning the location of permanent marks and whether the survey to be undertaken is located in a Proclaimed Survey Area.

7.2 Survey Marks

7.2.1 The marking of boundaries in a cadastral survey shall where practicable be with pegs and trenches as follows:
(a) pegs shall be of square section with sides not less than 50 mm and not less than 300 mm long, and of sound, seasoned, durable timber or other material approved by the Surveyors Board;
(b) pegs shall be set with the top not more than 20 mm above the ground:
(i) at corners;
(ii) along boundaries at intervals not exceeding 200 metres, or at lesser intervals so that intervisibility can be achieved between points 1.5 m above adjacent pegs; and
(iii) on curved boundaries so that the offset from the middle of the chord between adjacent pegs shall not exceed 200 mm and that the interval between adjacent pegs be not more than 20 metres;
(c) trenches shall have dimensions not less than 1 metre long (or 3 metres in the case of surveys in rural areas), 120 mm deep, 200 mm wide; and
(d) trenches, commencing 300 mm from each peg, shall be dug in the direction of adjacent boundary lines.

7.2.2 Where a trench cannot be dug, packed stones may be used to form a mound of similar dimensions provided for in Section 7.2.1 (c), and shall be described as "stone mound" on field notes and abstract of field notes.

7.2.3 Where a corner to be marked is situated on rock, concrete or other similar material, the marking shall consist of a drill hole of not less than 10 mm width and 30 mm depth; and
(a) wings 80 mm long, 20 mm wide and not less than 15 mm deep, commencing 50 mm from the corner, shall be cut; or
(b) lines at least 300 mm long and 20 mm wide shall be painted.

7.2.4 A corner situated on fixed timber may be marked by a galvanized iron nail.

7.2.5 Where none of the methods of marking boundaries or corners described above is practicable, the licensed surveyor shall place other suitable marks, as may be approved by the Surveyors Board.

7.2.6 In rural areas:
(a) appropriate trees within 1 metre of an unfenced boundary line shall be blazed on the side facing that boundary;
(b) trees on an unfenced boundary shall be blazed on both sides on the line of the boundary;
(c) any tree to be blazed shall be marked with a vertical cut at least 150 mm long, with a horizontal cut at least 50 mm deep at the base, and the wood of the tree pared down from the top to the horizontal cut.

7.2.7 Approved Reference Marks
(a) galvanized iron piping not less than 300 mm long and 12 mm internal diameter. In rural areas, these marks shall be driven to not less than 50 mm below the natural surface;
(b) a steel spike not less than 300 mm long and 10 mm in diameter. In rural areas, these marks shall be driven to not less than 50 mm below the natural surface;
(c) a drill hole, at least 10 mm in diameter and 30 mm deep, cut into a kerb, brick, concrete or stone wall, solid rock or other substantial structure;
(d) a monument of a substantial and reasonably permanent nature;
(e) a nail, rivet or plug set in a concrete footpath or kerb;
(f) a hardened steel spike, marketed as a Survey Nail, placed in concrete footpath or kerb. These are available in three lengths, 80 mm, 55 mm and 40 mm. The two larger sizes have a 15 mm circular raised head incorporating an engraved cross coloured red;
(g) a chisel cut in concrete kerb, footpath or other concrete structure. The cut is to be similar to the letter L or the letter T with the intersection of the arms of the letter denoting the point of reference. Each cut should be at least 50 mm in length and not less than 3 mm deep;
(h) a broad arrow cut into the face of a reference tree;
(i) some other clearly described mark of stability permanence and identity, as may be approved by the Surveyors Board.

7.2.8 Reference Marks on Trees
Where a reference mark is to be cut into the face of a tree, it shall be made as follows:
(a) the tree shall be prepared by removing a shield of bark and sapwood with a width at the base of approximately one-third of the girth of the tree, and height of 1.25 times the length of the base. The shape of the shield should generally conform to the illustration in Fig. 7.1;
(b) the shield shall face directly towards the corner;
(c) a broad arrow at least 100 mm long and 15 mm deep shall be cut centrally in the shield;
(d) the point of the arrow shall be the reference point.

Note: In searching for blazes made many years ago, it should be borne in mind that some species of trees tend to grow new sapwood over the blaze comparatively quickly. In some cases, the blaze may be completely overgrown, and care should be exercised in not only discerning this growth, but in revealing the existence of the original blaze.

7.2.9 Permanent Marks

Requirements concerning permanent marks as they affect cadastral surveys are set out in the Surveyors (Cadastral Surveys) Regulations 1985; the Subdivision Act 1988, Section 20A; the Subdivision (Procedures) Regulations 1989, Regulation 56; the Subdivision (Miscellaneous Amendments) Act 1991, Section 17; the Surveyors (Cadastral Surveys) (Amendment) Regulations 1989; and the Survey Co-ordination (Surveys) Regulations, 1992.

7.2.10 Monumentation of Surveys - Future Directions

The preceding sections in Section 7.2 have the authority of the Surveyors (Cadastral Survey) Regulations 1985, as amended.

Until these Regulations (Statutory Rules No. 209.1985 and No. 259,1989) have been revised and authorized by the Governor in Council for operation under section 33 of the Surveyors Act 1978, the Surveyors Board after consultation, is reviewing, inter alia, some variations to the existing requirements for the marking and connection of subdivisional and other surveys.

Now that the flow-on procedures consequent on the consolidation of much land tenure legislation now contained in the Subdivision Act 1988, the Subdivision (Miscellaneous Amendments) Act 1991, and Regulations pertaining thereto have been refined, the Board is formulating changes in survey practice to better implement the thrust of this legislation.

In particular, the marking of surveys made to comply with the Subdivision Act 1988, Schedule 10 of the Local Government Act 1989, and the Subdivision (Miscellaneous Amendments) Act 1991, and associated with an Application to bring land under the Transfer of Land Act, have been considered.

Permanent marks are to be divided into two classes:

Class 1

Permanent marks which have the authority of section 15(1) of the Survey Co-ordination Act 1958, and are shown in the Survey Co-ordination (Surveys) Regulation 1992.

Class 2

Survey marks which are to be considered permanent marks for the purposes of the Surveyors (Cadastral Surveys) Regulations 1985; and Standard Survey Marks for the purposes of Schedule 10 of the Local Government Act, but will otherwise be known as Primary Cadastral Marks. These shall comply with the following criteria:

- be of a durable, permanent and stable construction and/or material;
- be so placed that it is easy to find, and is readily identifiable (also to the public as a survey mark requiring protection);
- not to be placed is such a location, or in such a manner, or in any way to present a hazard to the public.

The types of marks in view are:

(a) For concrete, stone, masonry and other artificial surfaces:
- drill holes at least 10mm deep filled with aluminium metal;
- hardened "survey" nails;
- expanding metal dowels with a collar;
- drill holes, as above, with wings.

These lend themselves to installation in concrete kerbs and other places away from pedestrian and vehicular traffic.

(b) For natural surface conditions:

Steel star posts are preferred, located under fences or in other locations less likely to be disturbed by earthworks or other similar events.

The mark should not be less than 600 mm long, or driven to refusal with the top not less than 50 mm beneath the surface. The Surveyors Board will expect that licensed surveyors shall, for the purposes of performing surveys complying with the Subdivision Act 1988 and the Subdivision (Miscellaneous Amendments) Act 1991, use the following interpretations.

Regulation 17(3), Surveyors (Cadastral Surveys) Regulations 1985, as amended -

- For the first three (3) survey marks, i.e. reference marks or permanent marks, required to be placed, or connected to, in a subdivision, at least two (2) must be Permanent Marks (either Class 1 or Class 2). Nothing in this interpretation shall negate the requirements for connection of surveys to Permanent Marks (Class 1)

- For the remaining survey marks, as to be determined in a subdivision of more than 10 lots, a minimum ratio of one (1) Permanent Mark (Class 1 or Class 2) to one (1) reference mark is to be maintained. Where there are more than 20 allotments at least two (2) of the Permanent Marks located on the subdivision, either placed or connected to, shall be Class 1 Permanent Marks. Permanent marks placed shall be strategically located and evenly distributed, as best befits the situation in the surveyor's professional judgement.

Where the subdivision possesses characteristics such as curvilinear streets, culs-de-sac, winding roads or other complex forms, then it will be expected that a higher density of survey marks will be placed. It is expected that Permanent Marks will be placed at cul-de-sac heads, road bends and a majority of tangent points.

Regulation 17(4), Surveyors (Cadastral Surveys) Regulations 1985 as amended -

- In all cases where Works are required, the placement of permanent marks and/or reference marks will be postponed until the completion of the works.
- Emphasis is placed on the requirement to provide documentation within one month of construction. Documentation showing the placement and connections to lot boundaries, can take the form of:
  - Supplementary Abstract of Field Notes, see Fig. 7.4 or as promulgated by the Surveyors Board; or Permanent Mark Sketch Plan(s), as prescribed in Regulation 9, Survey Coordination (Surveys) Regulations 1992.

7.2.11 Connection of Surveys to AMG and AHD

The Surveyors Board recognises the value to the community of the connection of all surveys to the Australian Map Grid (AMG) Co-ordinate System and the Australian Height Datum (AHD). The AMG co-ordinates derived from such a connection will play a major role in increasing the integrity of the cadastre in allowing it to better cope with the increased demands that will be placed on it by increasing land values and sustainable development.

Connections to the AHD will provide information in valuable to disaster planning (e.g. flood prone areas) and increasing land values and sustainable development.

The Board will support requirements for connection to AHD imposed by Municipal Councils or any Referral Authority, however, in all cases the Permanent Marks placed should be suitable, both in type and location, for such a connection.

In rural areas connections will be required where Standard or Local Traverses are available. Available would be taken to mean within a reasonable distance to be defined.

Where no AMG connection has been made, then the reasons for non-compliance would be stated in a Licensed Surveyor's Report.

7.3 Measurements to Occupation, Kerbs and Channels

Fig. 7.2 illustrates some situations where insufficient, or inadequately described, measurements to occupation may cloud the relationship between occupation and adopted boundaries.

It is important that sufficient measurements and adequate descriptions are made to indicate the exact position and nature of occupation at the time of the survey.

In making surveys, owners and/or occupiers should be consulted as they can often assist the surveyor to assess:

- where pegs may have been placed before fence construction
- whether survey marks have been disturbed
- whether fence replacements have followed old lines
- whether fences have been generally accepted as being in their correct positions
- whether walls exist in their entirety within a single property or straddle boundaries.

Measurements to kerbs and channels, which are a very useful aid in the re-establishment of boundaries and alignments should always be taken to the positions indicated in Fig. 7.2.

Current survey practice is to measure to the back of concrete kerbs despite some misgivings that kerbs constructed in situ do sometimes have a somewhat irregular back edge.

Uniformity in measurements, and clear indications of the terminals of the measurements made, will facilitate the determination of boundaries and increase the future reference value of the work.

Because of this lack of uniformity in the past, it is essential to study the relevant survey information, and it is sometimes important to take additional measurements such as:

- the front and back of the kerb
- the plinth and face of a particular post
- the line of a wall or fence as well as the corner post
- the face and centre of round posts.
It is also noted that some municipalities have gazetted widths of footpaths or footways and carriageways. This information is most important in the determination of alignments, and the extent of public highways.

7.4 Field Survey

7.4.1 Datum

7.4.1.1 A licensed surveyor making a cadastral survey shall take all possible care to verify the datum adopted, and shall record full details in the field notes and abstract of field notes. A justification for the adopted datum must be included in the Licensed Surveyor's Report.

The datum adopted shall be:

(a) a line or lines between previously surveyed points which have been satisfactorily re-established; or

(b) a line or lines between points shown on a previous plan or included in a description, which have been satisfactorily re-established.

7.4.1.2 A licensed surveyor shall:

(a) measure the length of the datum, except where permanent marks or reference marks of a recorded or approved survey define the terminals thereof and the distance between has been verified in at least one subsequent survey;

(b) measure the connecting distance to an intersecting road: but measurement to existing pegs or monuments defining adjoining parcels may be adopted if such measurements satisfactorily verify the title position of the subject land; and

(c) locate and adequately describe the occupation (see Section 6) at all datum points, and where applicable, measure the road widths including kerbs or constructed channels at each datum point;
Provided that when the datum is a road boundary and permanent marks or reference marks of a previous survey determine the terminals thereof and have been verified by the licensed surveyor, details may be given on the survey side of the road only.

7.4.2 Scope of Measurements
A licensed surveyor making a cadastral survey shall:
(a) adopt a datum. See Section 7.4.1;
(b) where a connection is shown on a document of title measure such title connection unless the position of the land can be satisfactorily determined otherwise;
(c) determine the metes and bounds of each relevant boundary and independently check the accuracy of each determination and show clearly in the abstract of field notes the methods adopted for such checking;
(d) where the survey is based on co-ordinates of the Australian Map Grid, those co-ordinates shall be shown in the field notes and abstract of field notes;
(e) make an adequate search for all old marks necessary to prove the reliability of his survey and connect the survey to all old marks found;
(f) wherever practicable independently check the accuracy of each measurement (including radiations);
(g) extend any traverse line which has been run to a road intersection across such road and locate the opposite corners in relation thereto;
(h) where appropriate measure the frontage of adjacent parcels and obtain such measurements as will enable comparison to be made with the boundaries of all adjacent titles;
(i) locate the position of all relevant reference marks, pegs and other survey marks placed in the course of the survey;
(j) obtain the position of and describe the occupation constituting possession and the definition of adopted corners, the description of all points measured to (such as peg post plinth base pier column and wall), and the positions of the adopted boundaries relative to the occupation, and, where relevant, obtain the position of all gates and any natural or artificial features affecting or likely to affect title to the land under survey or land abutting;
(k) mark all boundaries of the subject land. See Section 7.2.

Except that -
(i) in the case of an identification survey marks shall not be placed; and
(ii) in the case of partial survey the relevant boundaries only need be marked;
(l) locate the occupation (including any structures in near proximity) in relation to boundaries at intervals not exceeding 200 metres and on both sides of any road being surveyed, provided that when recorded permanent marks or reference marks have been verified by the licensed surveyor, such details may be given on the survey side of the road only;
(m) connect the survey to two or more known permanent marks or reference marks after verification thereof or, if there be no such marks within 1 kilometre of the survey, establish permanent marks or reference marks of the prescribed type which in city town or suburban areas shall be placed near street intersections in such a manner that traverse lines can be run therefrom along the streets;

There shall be a minimum of three such marks for every such survey where the number of allotments does not exceed ten and a further two marks for every additional ten allotments or part thereof. Where the design or layout of the survey is unusual, such additional number of marks shall be placed as the licensed surveyor considers reasonable having regard to the nature of the locality;
These marks shall also be placed to minimize the risk of disturbance;

(n) ensure that no survey shall extend for more than 1 kilometre or two angles without a permanent mark or reference mark being placed or connected to;

(o) connect to all permanent marks within 100 metres of the traverse;

(p) in a Proclaimed Survey Area connect every cadastral survey in accordance with the requirements under Section 12 (3) of the Survey Coordination Act 1958. See Section 4;

(q) The postponement of the placement of permanent marks and reference marks must now comply with Section 17 (4) of the Surveyors (Cadastral Surveys) Regulations 1985 as amended in 1989, which now reads:

4) A licensed surveyor shall postpone the placement of permanent marks or reference marks in a subdivision if roads or buildings are to be constructed which are likely to displace those permanent or reference marks during construction provided that he shall lodge at the Office of Titles within one month of the construction a document showing the particulars of and connection to marks placed.

(r) One side of the alignment of all new roads shall be traversed, the other being set out by offsets, or if necessary also traversed.

7.5 Field Notes

Field notes and any other recorded information of every cadastral survey shall be recorded in a neat and systematic manner and each page shall be signed and dated by the licensed surveyor on the date or dates on which the information on the page was recorded. The licensed surveyor shall retain such field notes in his own possession or where he is employed by a firm corporation Department or public authority he shall take all reasonable steps to ensure that they are kept in safe custody. In either case they shall be retained in such a manner as to be readily available for submission to or perusal by any person duly authorized by the Board, the Surveyor-General or the Surveyor and Chief Draughtsman.

7.5.1 Information to be Recorded in the Field Notes

This shall include:

(a) the dates of commencement and completion of the survey in the field;
(b) all measurements made in the field and all corrections applied to linear measurements;
(c) where relevant to the purpose of the survey, the locations of the present and original banks and beds of a stream that has changed its course, when the original bed and bank can be defined;
(d) the method of determining the position of boundaries defined by buildings, party walls, dividing walls, floors, ceilings, footings, piers, columns or fences;
(e) the type, description, condition and estimated age of fences or buildings forming boundaries and likely to affect boundaries;
(f) where available, full details of dates or other information inscribed on buildings or memorials encountered in the course of the survey;
(g) the relationship of all pegs found to the adopted boundaries;
(h) a list adequately identifying the instruments used, including make and serial number of electronic distance measuring equipment, and the most recent date of calibration and/or standardization;
(i) the field datum adopted.

7.6 Work Sheets

Work sheets showing all work undertaken to produce the dimensional data incorporated in abstracts of field notes shall be retained by the licensed surveyor at least until the survey has been registered, and shall be made available for inspection on request from the Surveyors Board, the Surveyor-General or the Surveyor and Chief Draughtsman.

7.7 Recording of Lengths, Bearings and Areas on Abstracts of Field Notes and Plans of Cadastral Surveys

These shall be shown in accordance with Table 7.1 and the notes following.

7.7.1 Lengths

Every adopted length shown on an abstract of field notes or plan shall be shown in accordance with Table 7.1 provided that:

(a) no designation of the unit of length shall follow any statement of length, except that where misinterpretation is likely to occur there may be shown either the word "metres" or where space is restricted the symbol "m" immediately following the length;
(b) where any length consists of whole metres the decimal sign and trailing zeros shall be omitted, e.g. 15
(c) where any length is less than one metre it must be preceded by a zero, e.g. 0.45

Adopted lengths on an abstract of field notes may be shown to a greater precision than that indicated in Table 7.1, where this is necessary for the purposes of the survey.

7.7.2 Bearings

Every bearing shown on an abstract of field notes or a plan prepared from a cadastral survey shall be in terms of the appropriate zone of the Australian Map Grid. Every Parish lies wholly within one AMG zone for purposes of survey co-ordination, and these are listed in Schedule 5 of the Survey Co-ordination (Surveys) Regulations 1992.
TABLE 7.1

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Unit/s to be used</th>
<th>Precision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lengths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 500 metres</td>
<td>Metre</td>
<td>Correct to the nearest 0.01 metre, except where circumstances require greater precision, then correct to the nearest 0.005 metre</td>
</tr>
<tr>
<td>500 metres and up to 5000 metres</td>
<td>Metre</td>
<td>Correct to the nearest 0.1 metre</td>
</tr>
<tr>
<td>5000 metres</td>
<td>Metre</td>
<td>Correct to the nearest metre</td>
</tr>
<tr>
<td>Bearings of Lengths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 30 metres</td>
<td>Degrees (°) and minutes (') of arc</td>
<td>Correct to the nearest minute of arc</td>
</tr>
<tr>
<td>30 metres and up to 200 metres</td>
<td>Degrees, minutes, and seconds (&quot;) of arc</td>
<td>Correct to the nearest 20 seconds of arc</td>
</tr>
<tr>
<td>Over 200 metres</td>
<td>Degrees, minutes, and seconds (&quot;) of arc</td>
<td>Correct to the nearest 10 seconds of arc</td>
</tr>
<tr>
<td>Areas</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 100 square metres</td>
<td>Square metre</td>
<td>Correct to the nearest 0.1 square metre</td>
</tr>
<tr>
<td>100 square metres and less than 1 hectare</td>
<td>Square metre</td>
<td>Correct to the nearest square metre</td>
</tr>
<tr>
<td>hectare and up to 10 000 hectares</td>
<td>Hectare</td>
<td>Correct to four significant figures</td>
</tr>
<tr>
<td>10 000 hectares</td>
<td>Square kilometre</td>
<td>Correct to four significant figures</td>
</tr>
</tbody>
</table>

For ease of reference/ Fig. 7.3 shows the zone boundary as it applies to the cadastre in Victoria.

Where AMG co-ordinates or bearings are not available within 1 kilometre of any part of the subject land, bearings shall correspond with those of the most recent approved survey in the vicinity.

Where a bearing does not contain any whole degrees of arc, it must be preceded by 0°, e.g.,

0°15'

Leading zeros must be used before minutes and seconds of arc when these numerals are less than 10, e.g.,

3° 00'40"  12° 05'00"

Traverse bearings on an abstract of field notes may be shown to a greater precision than that indicated in Table 7.1, where this is necessary for the purposes of the survey.

7.7.3 Areas
Where any area consists of whole square metres, hectares or square kilometres, the decimal sign and trailing zeros shall be omitted.

7.8 Abstracts of Field Notes

Some examples of abstracts of field notes are provided in the Survey Practice Handbook — Part 1. These are indicative only, and no attempt has been made to embrace the many field situations where only careful appraisal and individual initiative will decide the methods to be used. These examples should be read in conjunction with the Surveyors (Cadastral Surveys) Regulations 1985.

THE SURVEY INFORMATION SHOWN ON ABSTRACTS OF FIELD NOTES SHOULD BE SUFFICIENTLY COMPLETE TO ENABLE THE RELEVANT DATA TO BE SHOWN ON THE CORRESPONDING PLAN WITHOUT RE COURSE TO COMPUTATION OR ANY OTHER DOCUMENT.

7.8.1 General Requirements

In addition to the requirements set out in general terms in the Surveyors (Cadastral Surveys) Regulations 1985, the first and all continuation sheets of abstracts of field notes must meet the following requirements:

(a) They shall be generally in accordance with the examples included in the Survey Practice Handbook - Part 1;

(b) They shall be prepared on good quality paper, tracing cloth or polyester drafting film. The film must have at least one matte surface, and a thickness of not less than 0.07 mm;

If polyester drafting film is used, it must be suitable for folding readily and without damage, as generally abstracts of field notes will be filed to size A4. Good quality drawing paper is recommended;

(c) Only a permanent black ink shall be used in preparation.

7.8.2 Information To Be Shown

(a) the reduced lengths in progressive distance form, as recorded in the field along each boundary, alignment or line surveyed;

(b) the traverse lines and the bearings thereof; instrument points; offsets; reduced lengths to each peg and survey mark, indicating whether such were found or set by the surveyor; connections to geodetic and astronomic azimuth stations;
AMG ZONE BOUNDARY FOR ZONING OF BEARINGS

ZONE 54  ZONE 55

JOINS 1

Fig.7.3

JOINS 2

ZONE 54  ZONE 55

35°S

144°E

39°S

144°E

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method of setting out curves; method of marking; method used to verify each radiation; the registered number of each permanent mark found; the bearing and length of every adopted boundary and connection; appropriate areas; Note: For clarity in all black presentation, it is essential that the appropriate symbols and lines be used/ particularly for traverse information. See Annex A, Survey Practice Handbook - Part 1.

(c) the definition of the adopted corners; description of all points measured to, such as peg/post, plinth, or wall base and the description and position of the occupation relative to the adopted boundaries, and, where relevant, the position of all gates or other means of access and any natural or artificial features affecting or likely to affect title to the land under survey or land abutting and the position of internal features such as houses, garages and sheds; the method of determining the position of boundaries defined by buildings, party walls, dividing walls, floors, ceilings, footings, piers, columns or fences; the type, description, condition and estimated age of fences or buildings forming boundaries or likely to affect boundaries; where available, full details of dates or other information inscribed on buildings or memorials encountered in the course of the survey;

(d) the location of banks of streams, direction of flow, and where the stream is considered to have changed its course, any evidence of the original and any subsequent location of the bed and banks of the stream. See Section 7.11 relating to boundaries based on natural features.

(e) the origin of every peg or other survey mark found and where any previously established mark has been disturbed or replaced, an appropriate note shall be added to the abstract of field notes; the relationship to adopted boundaries of all survey marks found; the length and bearing of the line joining any adjacent permanent mark or reference mark to a boundary or corner adopted in the survey;

(f) the lengths and bearings of chords and lengths of radii and arcs of curves. Tangent points must be identified and indicated by the appropriate symbol and the abbreviation TP;

(g) the relationship between adopted corners and occupation;

(h) all measured or computed tie lines across road intersections, splay lengths and tie lines to significant monuments;

(i) the method used to locate irregular boundaries;

(j) where a closed traverse of the land under survey has not been practicable, the method used to check the measurements;

(k) the relationship between the adopted bearings and title bearings;

(l) the meridian to which the adopted bearings of the survey are related; and where applicable, the method of connection to AMG bearings;

Note: Where the meridian to which the adopted bearings have been referred is other than AMG or true north, an approximation of the divergence from true north shall be determined and used for showing approximate true north on any plan prepared from the survey. See Survey Practice Handbook - Part 1, Sections 3.3 and 3.4.

(m) sufficient measurements or observations to locate the occupation and any survey marks at the opposite corners of a road intersection, and the position of any relevant pre-determined alignments;

(n) all pertinent abuttals and the number or symbol and relevant boundaries of every Crown allotment, section or parcel which relate to the subject land;

(o) the correct names (if any), and the status (if ascertainable), of all roads abutting the subject land;

(p) where bearings of fenced boundaries have been directly observed;

(q) the method of location of every building or other improvement which will be shown on the plan;

(r) the bearing and length of each boundary adopted and each connection, and the area of each surveyed parcel;

(s) a plain north point directed generally towards the top of the sheet;

(t) the name of the licensed surveyor or firm, corporation, public authority or Department, and appropriate reference number;

(u) the date of completion of the survey in the field.

7.8.3 Checklist for Abstracts of Field Notes
This listing is provided as an aide-memoire for the compilation of abstracts of field notes. Though not essential, it may be helpful to add the required information to the documents in the order as listed. Reference should also be made to the examples of abstracts of field notes included in the Survey Practice Handbook - Part 1:

(a) With all-black presentation of information, it is essential to adopt an open style of presentation which is adequate for complete clarity. The layout should be carefully planned so that, though not necessarily to scale, all information is presented in the proper relationship, and with the salient information appropriately shown and emphasised so that a survey plan can be prepared without resort to computation or reference to other sources;

(b) Outline of boundaries adopted; kerbs if any; permanent marks correctly symbolised and numbered; reference marks; peg and trench symbols; dashed lines for connections across road intersections and to permanent marks, reference marks, etc.;

(c) Traverses, radiations, etc.;
(d) Fencing in relative position to boundaries. Fence descriptions;
(e) Other occupation on or near the boundaries;
(f) Any other occupation or features, unless these are to be shown on a separate sheet;
(g) Traverse bearings, traverse offsets and road secant traverse offsets;
(h) Reduced lengths along boundaries and traverses, road widths, etc.;
(i) Bearings and lengths on radiations, and on connections across road intersections. Method of fixing opposite sides of roads;
(j) Location of services;
(k) Bearings and lengths for boundaries adopted, and areas and road widths appropriately rounded off in accordance with Table 7.1. Ensure that all independent checks have been shown;
(l) Description of all adopted corners and of instrument point marking;
(m) Cross-referencing of sheets if more than one;
(n) North point with AMG ZONE 54 or 55 as applicable or APPROX. TRUE NORTH thereon; in the latter case notwithstanding that, in some instances, the adopted survey bearings are based on a magnetic meridian, in which case an appropriate note should be endorsed on the abstract of field notes document. See Survey Practice Handbook — Part 1, Sections 3.3 and 3.4;
(o) Crown allotment, section and parcel numbers and abuttals;
(p) Street names, highway names, description of road formations, etc.;
(q) Datum points indicated with appropriate lettering, datum bearing(s) and length(s). An appropriate notation on the abstract of field notes may, in some cases, be justified - as in Item (n) or to describe the origin of the datum or for other reasons;
(r) References to other relevant surveys and origin of marks found;
(s) Comparison with relevant up-to-date record plans;
(t) Connection to AMG bearing datum; Check correct AMG zone number;
(u) Title block and notations including:
  • Proclaimed Survey Area correctly numbered
datum
  bearing differences with title, true north (see Item (n)) and with other surveys
  reference marks — description and origin
  any other relevant notation;
(v) Sheet numbering, if more than one sheet;
(w) Certification on Sheet 1 and signature(s) and date of completion of survey on all sheets other than sheet 1;
(x) Any other information relevant to the particular survey.

7.8.4 Supplementary Abstract of Field Notes
In cases where tracts of land are subdivided into residential lots and service roads, marks placed initially are often destroyed during construction, and a supplementary abstract of field notes is a means whereby permanent marks and other reference marks established during and after construction, are recorded and registered as appropriate survey information.

The placement of permanent marks and associated covers usually forms part of the footpath construction contract.

Permanent marks, and other reference marks such as nails or plugs in concrete kerbs, are co-ordinated and fixed from the previously co-ordinated control stations which are protected during the construction phase.

Supplementary abstracts of field notes may be prepared to embrace a number of plans of subdivision as noted in the example included as Fig. 7.4.

The Office of Titles attach the supplementary abstract of field notes to the appropriate dealing.

7.9 Plan Preparation
Examples of plans of cadastral surveys prepared for a variety of purposes have been provided in the Survey Practice Handbook - Part 1. These plans should be read in conjunction with the Surveyors (Cadastral Surveys) Regulations 1985 and the Subdivision (Procedures) Regulations 1989.

The example plans included in the update package for Part 1 in 1992, provide an attainable standard of presentation, particularly with the now widespread availability of computer aided drafting techniques.

7.9.1 General Requirements
In addition to the requirements set out in the Surveyors (Cadastral Surveys) Regulations 1985, the first and all continuation sheets of cadastral plans of survey which are to be used for ultimate registration in the Office of Titles or the Central Plan Office must meet the following requirements:

(a) They shall be prepared on polyester drafting film having at least one matte surface and a thickness of not less than 0.07 mm, or on a good quality tracing cloth;
(b) only a permanent black ink shall be used in preparation;
(c) each sheet shall show a plain north point directed generally toward the top of the sheet.

Every plan shall show all relevant information required by the registering authority.
### 7.10 Licensed Surveyor's Report

#### 7.10.1 General

A licensed surveyor is required to prepare a report which must accompany any abstract of field notes produced for a cadastral survey. A report should include all the information applicable to the survey, taking into account the purposes for which the survey was made.

Hereunder are typical aspects which should be discussed, but these are not necessarily exhaustive.

<table>
<thead>
<tr>
<th>SURVEYOR'S NAME:</th>
<th>SURVEYOR'S FIRM NAME AND ADDRESS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>SURVEYOR'S REFERENCE:</td>
<td>CROWN</td>
</tr>
<tr>
<td>DESCRIPTION OF LAND:</td>
<td>RELEVANT NUMBERS OF FREEHOLD TITLE, LEASEHOLD TITLE OR GENERAL LAW DEED.</td>
</tr>
<tr>
<td>MUNICIPALITY:</td>
<td>ANY APPURTENANT EASEMENTS OR ABUTTALS SHOWN AT VARIANCE WITH ONE OR MORE TITLES?</td>
</tr>
<tr>
<td>TITLE:</td>
<td>IF SO WHAT ACTION TAKEN TO JUSTIFY SUCH VARIATION?</td>
</tr>
<tr>
<td>APPURTENANT EASEMENTS, ROAD ABUTTALS, ETC.:</td>
<td>ARE EASEMENTS SHOWN IN ACCORDANCE WITH TITLE OR ARE VARIATIONS REQUIRED PRIOR TO ANY REGISTRATION OF THE PLANS?</td>
</tr>
<tr>
<td>ENCUMBRANCES:</td>
<td>Relevance numbers of freehold title, leasehold title or general law deed.</td>
</tr>
<tr>
<td>SURVEY INFORMATION USED:</td>
<td>ANY APPURTENANT EASEMENTS OR ABUTTALS SHOWN AT VARIANCE WITH ONE OR MORE TITLES?</td>
</tr>
<tr>
<td>OTHER SURVEY INFORMATION PERUSED:</td>
<td>IF SO WHAT ACTION TAKEN TO JUSTIFY SUCH VARIATION?</td>
</tr>
<tr>
<td>PURPOSE:</td>
<td>ARE EASEMENTS SHOWN IN ACCORDANCE WITH TITLE OR ARE VARIATIONS REQUIRED PRIOR TO ANY REGISTRATION OF THE PLANS?</td>
</tr>
<tr>
<td>DATUM RELATIONSHIPS:</td>
<td>Age of fences or occupation or buildings with supporting evidence. Can fencing be identified with that shown on an earlier survey?</td>
</tr>
<tr>
<td>OCCUPATION:</td>
<td>Is evidence available from a local resident?</td>
</tr>
<tr>
<td>OLD SURVEY MARKS:</td>
<td>Can proof of possession by statutory declaration be obtained? (Crown boundary — by the registered proprietor under Section 271 of the Property Law Act 1958. Other boundary — by disinterested parties). Special features concerning occupation should be discussed in regard to matters such as:</td>
</tr>
<tr>
<td>NEED FOR AMENDMENT OF TITLE:</td>
<td>(a) Fencing of convenience;</td>
</tr>
<tr>
<td>(a) Is plan in accordance with title; and/or</td>
<td>(b) Maturity and acceptance or otherwise (by owners) of fencing as Crown boundaries;</td>
</tr>
<tr>
<td>(b) Is amendment of title required because</td>
<td>(c) Displacement of fencing during repairs;</td>
</tr>
<tr>
<td>(i) other title/s is/are affected adversely as to fee, connection or appurtenant easement;</td>
<td>(d) Fencing placed in anticipation of transfer, road deviation, etc.;</td>
</tr>
<tr>
<td></td>
<td>(e) Fencing displaced from title position because of obstruction, council requirement, etc.</td>
</tr>
</tbody>
</table>
ALIGNMENTS AND BOUNDARIES
ADOPTED:

(c) Is plan at variance with title but amendment not recommended because the minor variation does not adversely affect any title?

Note: Suitable diagrams can often assist.

The factors influencing the adoption of boundaries should be clearly outlined. In the case of an application (e.g., for use under the provisions of Section 9.26E, 60.99, 103, etc., of the transfer of Land Act 1958), a specific reference to each boundary is required.

Note: In addition to the written report, a diagram may be used to supplement explanations. An appropriate explanation is required when some land is shown as "Not in Subdivision". Irregular boundaries such as those along streams, lagoons, permanent reserves, etc., require full details on the abstract of field notes and report including:

(a) The location of existing banks;

(b) The width of streams and the location of the opposite bank where practical;

(c) The location of the boundary adopted in the original survey or relevant prior survey;

(d) The description in the abstract of field notes of the points to which measurements have been taken. Elevation sketches may, in certain circumstances, be justified;

(e) The explanation, if possible, for any change in the position of a stream (as opposed to the unchangeable position of a permanent reserve, except pursuant to Section 11 Crown Lands (Reserves) Act 1978). Has any change in the position of a stream been natural, sudden or gradual or due to artificial causes?

(f) Comment on the comparison between position(s) located on the ground and the position(s) derived from document(s) of earlier surveys. (In all cases of variance a copy of the comparison plot should be supplied.)

(g) Comment on information obtained from aerial photographs where appropriate;

(h) Quote in the report the reference numbers of the relevant survey information;

(i) Comment on the relationship between the original boundary and that located and adopted;

(j) Comment on the difference between the area on title and the area surveyed;

(k) Give clear reasons for the adoptions;

(l) Comment as to whether Crown or other title interests are affected. (If Crown interests are likely to be affected the matter of obtaining the consent of the Surveyor-General should be initiated.)

EFFECT ON GOVERNMENT ROAD OR CROWN LANDS:

Has consent of the Surveyor-General been sought or received as to alignments of government roads, boundaries of abutting Crown lands, permanent reserves, stream boundaries, etc.?

PROCLAIMED SURVEY AREA:

Positive identification as to whether land is within such an area, the correct number, and any additional information not shown on the abstract of field notes. This must be a 'Yes' or 'No' statement. A qualified answer is not acceptable.

PLACEMENT OF PERMANENT MARKS AND REFERENCE MARKS:

Statement that in the survey the requisite number of marks have been located and/or placed in appropriate positions and such are indicated on the abstract of field notes.

or

Statement that there have been sufficient marks located to enable retracement of the survey but there has been a postponement of the placement in accordance with the requirements of Regulation 17(4) of the Surveyors (Cadastral Surveys) Regulations 1985. In addition include an acknowledgment that within 1 month of the completion of construction a supplementary abstract of field notes showing the position of the marks that have been subsequently placed will be lodged at the Land Titles Office.
FOR A PLAN OF SUBDIVISION: ADVICE AS TO LAND MARKED OUT: (SECTION OF THE SUBDIVISION that written OF THE SUBDIVISION the date) *ACT 1988*)

Set out either:

That no works were required in connection with the Plan of Subdivision and 20A confirm advice was supplied as in Form 19 of the *Subdivision (Procedures) Regulations 1989* (and to enable Council to issue the statement of compliance.

or

That works are required in connection with the Plan of Subdivision and undertake to supply the written advice (as in the said Form 19) within the period between the completion of the works and one month thereafter and nominate the expected time frame.

or

That works are required in connection with the Plan of Subdivision but there is an agreement to secure compliance with the requirements. Identify also whether the signatory has/has not been instructed to mark out the roads and reserves and to provide the written advice (as in the said Form 19) for the Council.

**OTHER RELEVANT PARTICULARS**

- (a) Differences found with other surveys:
  - (i) These should be set out in detail;
  - (ii) The method of verification of current work should be described;
  - (iii) In the event of any substantial differences from a previous survey, indicate that the other surveyor or his successor has been advised.

**7.9.2 Example Report**

This example is based on the example plan. Plan of Survey — Rural, included in the Survey Practice Handbook — Part 1. While most aspects of a typical report have been covered, this example report should not be taken as definitive in every respect.
LICENSED SURVEYOR'S REPORT

SURVEYOR'S NAME: F. E. Raymond
FIRM NAME AND RAYMOND & FRANCIS
ADDRESS: 100 Calder Highway, Kyneton, 3444.
SURVEYOR'S LICENSING 2663-5 & 2794
REFERENCE:
CROWN DESCRIPTION County of Bourke.
OF LAND: Parish of Bollinda.
Part of Crown Allotments 3 and 4 Section 1.
Parish of Bulla Bulla.
Crown Allotments C and Parts of B and D, 1 to 14 Section A, 1 to 10,12,13
and Part of 11 Section B, 2 and Part of 1 Section 21,1 and part of 2 Section 22.
Part of Crown Portion H and a former Government Road, Part of W.J.T.
Clarke Crown Special Survey.
MUNICIPALITY: Shire of Bulla
TITLE: Certificates of Title
Vol Fol Vol Fol Vol Fol Vol Fol
3605 806 5670 803 5771 058 6281 069
9031 816 9031 817 9050 287 9050 288
APPURTENANT EASEMENTS AND ABUTTALS (a) Francis Lane and the unnamed road near Jackson Creek are not known to
right, and are General Law roads which were proclaimed as Public Highways in
Police Gazette 1920 p. 1234, and the municipal clerk has confirmed no
revocation has been made;
(b) The strip marked A-1 adjacent to part of Jackson Creek is an expressed appurtenant
right to take water from Jackson Creek in favour of the land contained in Certificate
of Title Vol 3605 Fol 806 only;
It is not necessary for the consolidation to justify this appurtenancy in favour of the
rest of the applicant's land;
(c) The other abuttals (roads, Jackson Creek, railway) are all in accord with title and no
further justification is required.
ENCUMBRANCES: The encumbrance for carriage way purpose on Certificate of Title Vol 9031 Fol 817 has
been omitted from the plan, as an Instrument of Surrender of Easement has been
executed, and will be registered prior to the granting of this application.
SURVEY INFORMATION USED: OP 10234 (Obtained from the Central Plan Office)
APPLICATION 4849/215 LP 77876 }
INFORMATION 37704 LP 89951 } Obtained from the
USED: 49707 } Land Titles Office
49707 ”
OTHER SURVEY INFORMATION PERUSED:
APPLICATION 30006 LP5890 ”
INFORMATION 34656 H/524 ”
PURPOSE: Survey made for the ultimate purpose of an extensive residential subdivision. A
recommendation has been included herein for the amendment of titles under Sec. 103 of
the Transfer of Land Act 1958 on the basis of this survey. Dimensions for the internal
boundaries have not been shown as a Plan of Consolidation has been prepared and
certified and must be lodged at the Land Titles Office concurrently with this application.
DATUM Bearings have been adopted in accordance with AMG Zone 55 using PM's 15,32, 33, 45
(RELATIONSHIPS: (Parish of Bulla Bulla) and 124 (Parish of Bollinda) and the connection to Clarke Trig.
The following relationships have been established with previous surveys:
Application 4849/215:7°09'15" added to the bearings by comparison with old posts along
the western boundary of Crown Allotment 1 Section 22 Parish of Bulla Bulla.
LP89951:7°05'50" added to the bearings by comparison with old pegs along the common
boundary with the land under survey, and an old RM at the bend in Sunbury Road.
LP77876: 5°51'50" added to the bearings by comparison with an old post and peg. (See further discussion as to the southern boundary of Crown Allotment 2 Section 22 Parish of Bulla Bulla.)

Application 49707: 7°44'20" added to the bearings by comparison with an old SSM at the south east corner of Crown Allotment 2 Section 21 Parish of Bulla Bulla, and a fence post at the north east corner.

Application 37704: 7°42'10" added to the bearings by re-establishing the parish boundary along the line joining the bend in Lancefield Road to the step in the railway boundary.

Application 34656: precise relationship could not be established along the railway or creek boundaries. However comparison of Application 34656 with Application 4849/215 indicates that the bearings herein are 7°49' in excess of those used in Application 34656.

OCCUPATION:

All fencing is quite old and in varying states of repair, and generally would be the same as located in earlier surveys. However, the railway fence shown in Application 34656 has been subject to repair with resultant displacement, but it appears undisturbed at either end of the survey.

OLD SURVEY MARKS:

See the abstract of field notes for relevant comments.

NEED FOR AMENDMENT OF TITLE:

The existing titles are not in harmony mathematically, being based on various surveys (mainly quite old). The adoptions made (although somewhat in excess of the original figures) do not adversely affect any adjoining titles. An application for amendment and consolidation under Sec. 103 of the Transfer of Land Act 1958 is recommended.

ALIGNMENTS AND BOUNDARIES ADOPTED:

The boundaries have been adopted as follows:

(a) Northern Boundary (Road) The line of the road fence has been adopted at the western end, and title frontage of 848.8 metres adopted along Lancefield Road from the bend adopted at the parish boundary, resulting in an angle at the road intersection (the north east corner) which is only 0° 00' 50" in excess of title, i.e., practical agreement.

(b) Eastern Boundary (Lancefield Road)

(i) The frontage of Crown Allotments 3 & 4 Section 1, Parish of Bollinda has been adopted in accordance with Application 37704;

(ii) The section south of the parish boundary to Francis Lane has been adopted as a straight line except for a bend of 0° 00' 10" at the north east corner of Crown Allotment 1 Section 22 Parish of Bulla Bulla. The corner of Francis Lane has been fixed in the position adopted in Application 4689/215 and the line bearing 179° 02' 50" virtually agrees with the alignment of the frontage used in Application 49707;

(iii) The southern section has been based on a straight line from the corner of Francis Lane aforementioned and the north east corner of LP 77876.

(c) Southern Boundary: Occupation has been adopted as the boundary of Crown Allotment 2 Section 22, leaving a small hiatus to the re-established boundary of LP 77876; the old irregular fence has been adopted as the north-west boundary of Crown Allotment 1 Section 23, and the owner has signified acceptance of such fencing.

(d) South Western Boundary

(i) Sunbury Road: The alignment of LP 89951 has been produced south easterly to Francis Lane and at the north west intersection thereof a bend of 0'00'10" has been introduced to conform with occupation at the south eastern end of the frontage;

(ii) Lines bearing 1°19'40" and 295°43' have been adopted in accordance with LP 89951. There is no occupation along these boundaries;

(iii) Jackson Creek: Both parts have been adopted in what is regarded as title position (further discussion is listed under OTHER RELEVANT PARTICULARS).
(c) Western Boundary

(i) Lines bearing 36°39′30″, 36°39′ and 278°19′ have been located using the datum comparison with Application 4849/215 and an old peg of such survey found at the western end of the line bearing 278°19′;

(ii) Jackson Creek: See earlier comment;

(iii) Railway: Occupation has largely been adopted (see earlier comments re Application 34656) with the step at the parish boundary being within 0.10 metre of that indicated from titles. Reference of the adoptions has been informally made to the Supervising Surveyor, Estates Branch, at the State Rail Authority and it was considered that no encroachment existed on railway property;

(iv) The line bearing 327°10′40″ was located in title position from the intersection of the boundaries of the Clarke Special Survey and the railway land as fixed in Application 34656.

(f) Francis Lane: The alignments have been adopted in accordance with Application 4849/215 (see also notes under OTHER RELEVANT PARTICULARS and APPURTE "TEN EASEMENTS AND ABUTTALS)."

(g) Road near Jackson Creek: This has been adopted in title position from the old peg (Application 4849/215) located at the intersection of the lines bearing 278°19′ and 36°39′. (See also notes under OTHER RELEVANT PARTICULARS and APPURTE "TEN EASEMENTS AND ABUTTALS.)"

EFFECT ON GOVERNMENT ROADS & CROWN

It is considered that no encroachments have been made on government roads, other Crown lands or railway property and no consents have been sought.

It is noted that some shortages in width of Lancefield Road exist towards the northern end and the following comments are made:

(a) the extension of the alignment beyond the northern boundary coincides with a round post defining the next bend in the road;

(b) no excess has been adopted in the frontage along the northern boundary;

(c) the alignment in Application 37704 has been re-established and considered to be satisfactory;

(d) existing survey information indicates a history of fencing encroaching on Lancefield Road from the east.

LAND IN PROCLAIMED SURVEY AREA:

The land is within Proclaimed Survey Area No. 46 and the requirements of the Survey Co-Ordination Act 1958 have been met by connection to the permanent marks indicated on sheets 1 and 2 of the abstract of field notes.

PLACEMENT OF PERMANENT MARKS: AND REFERENCE MARKS FOR A PLAN OF SUBDIVISION ADVICE AS TO LAND MARKED OUT (SECTION 20A OF THE SUBDIVISION ACT 1988):

For the purpose of the application to amend title sufficient marks have been placed and shown on the abstract of field notes.

For the purpose of the subdivision, construction works will require the postponement of the marking. The marks will be placed and supplementary abstract/s of field notes lodged at the Land Titles Office within 1 month of construction.

Not applicable at this time.

OTHER RELEVANT PARTICULARS:

(a) Boundary of Jackson Creek

Titles were based on the surveys made in Application 34656 and Application 4849/215;

Measurements have been taken to similar points;

The banks appear to be reasonably stable and well defined, but comparison plots indicate there has been some accretion and erosion over the 50 or so years between surveys. The total variation in area is negligible. I consider the variations have been due to natural causes, that they have been slow and imperceptible, and that Crown and private interests have not been adversely affected.

*The comparison plots are attached.
(b) *Francis Lane*

Although abuttals have been shown to Francis Lane and the unnamed road on the plan, the shire council has been approached to arrange the discontinuances. At an appropriate time, the municipality will transfer the fee to such lands to the applicant to enable it to be included in a Plan of Subdivision.

Date

__________________________________________

LICENSED SURVEYOR

*These plots have not been included in the Handbook.*
7.11 Boundaries - Natural

7.11.1 General

(a) This section deals mostly with boundaries which are not described by bearings and lengths.
(b) These notes are a guide to surveyors effecting original Crown surveys or re-location surveys where a feature which cannot be described by bearings and lengths, such as a water feature or a water feature frontage, forms one or more of the parcel boundaries.
(c) The notes include comments which are significant in respect of such boundaries:
   • Prior to the field survey
   • In the course of the field survey
   • In the assessment of the survey
   • In the documentation of the survey
   • In the examination of the survey documents.
(d) It is not intended that these notes be used for the purpose of legal interpretation of boundaries.

7.11.2 Relevant Survey Information

(a) In all cases where such a boundary is a Crown boundary, it is necessary, if at all possible, to obtain the survey information on which the Crown Grant was based or, if the Crown Grant has been the subject of a Certificate of Adjustment issued by the Surveyor-General, the survey information on which that Certificate of Adjustment was based.
(b) In cases where such a boundary was established subsequent to the Crown Grant or Certificate of Adjustment, then the survey information for the establishment of that boundary would be basic to its re-establishment and must be obtained.
(c) Such survey information should be obtained prior to the commencement of the field survey so that it can be assessed and used by the surveyor in searching for and locating field evidence of the original boundary feature and any other relevant monuments or features.
(d) The surveyor can then use the basic survey information and the field evidence to assess whether there is any discrepancy between the original boundary, and what purports to be that boundary at the date of the current survey.
(e) In requesting survey information from the Central Plan Office the surveyor should specify his need for such basic survey data, especially if it predates the start of the 20th century because, normally, that office may not provide survey information prior to a certain date (1890 or thereabouts). Also, there are large numbers of unsorted and not easily accessible files containing early survey information.
(f) If the basic survey information is not available from the Central Plan Office or from any other relevant source of supply, the surveyor should obtain and use the best available relevant information - e.g. survey plans or other early plans of the subject parcel or adjacent parcels, together with copies of field notes if available, as near as possible to the date of establishment of the boundary.
(g) In the absence of any information of the foregoing nature, it may be necessary to rely on a parish or township plan, preferably one compiled nearest to the appropriate date. The use of such plans is preferable to the use of the diagram on a Crown Grant or Certificate of Title.
(h) Notwithstanding the foregoing, there may be special circumstances where a survey made subsequent to the original Crown Grant survey in the case of a Crown boundary, or the original survey for Titles Office purposes in the case of a boundary established subsequent to the Crown Grant, may be regarded as appropriate for use rather than the original survey. Examples of such special circumstances could be:
   • Where a Certificate of Adjustment issued affects a boundary or boundaries under consideration.
   • Where the current survey is for the purpose of an application to bring land under the operation of the Transfer of Land Act 1958 or for Amendment of Title.

7.11.3 Relevant Legislation

Some of the legislation which is relevant to the matter of parcel boundaries defined by water features or by water feature frontages was contained in the Water Act. From 1905 to 1989 the Water Act contained a definition of "Bed and Banks".

However, Section 327 of the Water Act 1989 No. 80/1989 placed the new definition of "Bed and Banks" in the Land Act.

Section 384(1) of the Land Act 1958 now states - "Bed and banks", in relation to a watercourse -

(a) includes the land over which the water in the watercourse normally flows and the land that is normally covered by that water;
(b) does not include land abutting on or adjacent to the bed and banks that is from time to time temporarily covered by floodwaters from the watercourse.

"Watercourse" is defined as -

"Watercourse" means any river, creek, stream, watercourse, lake, lagoon, swamp or marsh.

The application of "Watercourse" to lake, lagoon, swamp or marsh is further defined in Section 384(2).

Section 385 of the Land Act 1958 now provides that the bed and banks of watercourses and lakes shall be deemed to have remained the property of the Crown and not have passed with the land alienated prior to, on or after the commencement of Section 327 Water Act 1989.

(b) Melbourne and Metropolitan Board of Works Act
These Acts provide that the bed, banks and soil of certain specified rivers, creeks and watercourses and their tributaries vest in particular Authorities.


Sections 5 (i) and 11 (i) of the Crown Lands (Reserves) Act provide for the revocation of the original permanent reserve and substitution of a new permanent reserve in cases where a water feature has changed course. Any surplus land is then unreserved Crown land available for alienation or re-reservation pursuant to the Land Act 1958 or the Crown Lands (Reserves) Act 1978.

7.11.4. Field Survey and Related Aspects

Having regard to the requirements of the Surveyors Act 1978 and appurtenant Regulations and to any special requirements of the Surveyor-General's Office or the Office of Titles, the following are some of the important items with regard to the field survey:

(a) The original location or re-location of irregular boundaries such as a water feature boundary or a water feature frontage boundary which forms a parcel boundary shall be based on a control traverse which shall form part of the geometrical figure used in the computations for closure and area, tie lines being observed where the extent of the traverse justifies such action. The points fixed on the irregular boundary shall be at intervals generally not exceeding 50 metres or at such lesser intervals as are necessary to accurately and unambiguously determine the boundary. Offsets from the control traverse shall generally not exceed 20 metres, and where radiations are used they shall not, save in exceptional circumstances, exceed 100 metres. The determination of the position of each salient point fixed by radiation shall be the subject of an independent check.

(b) Normally the banks of the water feature shall be determined in accordance with the definition in Section 2 of the Water Act 1958, but if comparison with the survey on which the said boundary was originally established indicates the possibility of some other definition of 'bank' having then been adopted, connections to all available evidence of such 'bank' must be observed and recorded for subsequent showing on the abstract of field notes.

(c) Where a water feature parcel boundary, or a water feature from which a parcel boundary was offset, has changed from its original location, connections to all available evidence bearing on its original location and any subsequent location must be supplied. In such circumstances the interpretation of aerial photographs of varying dates can sometimes be a very useful aid. These are obtainable back to 1945 from the Map Sales Centre of the Central Plan Office, and even earlier in some areas from Commonwealth aerial photography.

Inquiries concerning this photography should be initiated through the Division of National Mapping.

(d) In the case of streams, where practicable, the location of the opposite bank should be determined at all salient points; and in some cases, connections to surveys on the opposite side of the stream are relevant and necessary.

(e) All points measured to and the actual boundary adopted must be clearly described in the field notes, and later on the abstract of field notes either by unambiguous words or by an appropriate diagram or both. In respect of streams, an elevation sketch of the terraced banks with an indication of points measured to would be useful in many instances, both in the assessment and examination phases of the current survey and in any later re-location surveys.

(f) Where the location of a water feature boundary has changed, every effort must be made to ascertain the nature of the change (imperceptibly slow and gradual or sudden, artificial or whatever) and the reason or reasons for such change; and this information should be recorded in detail in the Licensed Surveyor's report.

(g) Another factor which has an effect on fieldwork and on the subsequent assessment and documentation both in original Crown surveys, including those still to be effected, and in re-location surveys, is the permanent reservation for public purposes in the year 1881 of strips of unalienated Crown land abutting major streams and water features in Victoria. Prior to 1881, large tracts of land were alienated from the Crown up to the edge of the stream or water feature, and in some cases up to the middle of the stream. The 1881 permanent reservation, of course, had no effect on those previously alienated lands. It was then realised that continuity of such practice would be adverse to the public interest, public amenity and public access along streams. Accordingly, it was decided, pursuant to the powers conferred under the then current Land Act 1869, to permanently reserve for public purposes a strip of Crown land of appropriate width along major streams and water features. This had the effect of safe-guarding very extensive areas of Crown land for public access and amenity and for many purposes deemed from time to time to comply with the reservation description of public purposes. The limits of land permanently reserved can be diminished only by Act of Parliament.

(h) Details of the Order-in-Council by which the permanent reservation was effected are recorded in the Victoria Government Gazette of 1881 on page 1389, and this gazettal refers back to earlier Gazette references which give detailed descriptions of the extent of the reservation as it applies to the various streams and water features involved.

(i) The streams and water features included in the permanent reservation of 1881 together with relevant descriptions are also recorded in the pub-
The descriptions vary from straightforward ones such as "1 chain from each bank throughout" to the more complex ones such as "TV-i chains from each bank from the point where it leaves Lake Hindmarsh to the point where it enters Lake Albacutya and from Lake Albacutya to the point where it terminates on Wirrengren Plain, and also from the contour line of the wasting level of all dams where such exist, a strip 3 chains wide following the lowest level where the defined channel is lost, and another strip 3 chains wide across Wirrengren Plain following the line of lowest level northward so far as water will flow".

From this wide variation at the extremes of the range, it is clear that reference to the relevant gazettal description for the particular water feature concerned would be a wise precaution prior to effecting the field work and the subsequent assessment and documentation stages of the survey.

In the case of some land parcels alienated after the 1881 permanent reservation, the land was alienated up to a dashed line at the appropriate offset, according to the gazettal, from the water feature. In other cases, a series of straight lines with bearings and lengths assigned thereto defined the boundaries of the alienated land.

In the case where the water frontage boundaries are straight lines defined by bearings and lengths, it is assumed that the original Crown survey allowed, or in the case of a future Crown survey, would allow, at least the appropriate offset according to the gazettal. This would mean that pieces of Crown land in addition to the permanently reserved land would lie between that reserved land and the Crown boundary. In certain cases, for example when a Committee of Management is to be placed in control of a stream frontage, an additional reservation, which may be temporary or permanent, is often gazetted to rationalise the situation so as to allow effective control.

In effecting a new Crown survey for Crown land to be alienated adjacent to a permanent reservation along a water feature, the Crown surveyor must select boundaries which do not encroach on the permanent reservation, and in so doing, he may, in the interests of soil conservation, suitable fencing lines, public amenity, public access and the like, adopt boundaries well clear of the permanent reservation. It would then be for the Department of Conservation, Forests and Lands to consider whether a complementary modern reservation embracing the frontage land beyond the permanent reservation is justified.

It is of interest to note that, in the case of the River Murray, the prescription in the 1881 permanent reservation mentions "3 chains from the left bank at winter level". The High Court of Australia ruled in 1982 that the State boundary is at the top of the left bank. One effect of this ruling is that, along much of the length of the River Murray, the permanent reserve in Victoria will be less than its original width.

A further point of interest in respect of the River Murray is that, in the vicinity of the Robinvale settlement, the original permanent reserve has been superseded by a new temporary reserve. Reference to up-to-date record plans is therefore necessary to determine the extent of this variation.

In the case of Crown surveys of land adjacent to a stream along which there is no existing reservation, it has been and still is the common practice to retain a frontage of appropriate width having due regard to the interests of soil conservation, suitable fencing lines, public amenity, public access and the like.

Sometimes, in the course of the field work or after its completion, it becomes evident to the surveyor that Crown interests may be affected. In the majority of such cases where a dealing in the Office of Titles is involved, it is preferable for the survey documents to be lodged at the Office of Titles with the appropriate application or dealing.

There may, however, be some special cases where consultation with the Surveyor-General's Office could be deemed justified prior to the completion of the survey or formal lodgement of the documents.

In the case of Crown surveys involving water features which comprise or influence the position of the Crown boundary, perhaps the majority of such cases would be those where the resultant survey information records traverses and offsets in sufficient detail and with sufficient accuracy to permit reliable future re-establishment within close limits, and to indicate whether or not the Water Act definition of the bank was the one originally adopted.

There are many other cases where an analysis of the original survey information shows that lack of detail in respect of traverses and offsets, or very approximate measurements, or a combination of both, resulted in an erroneous record of the position of the stream at the time of the original survey.

In the circumstances described Section 7.11.4 (s), there is much to commend adherence to the principle of the unchangeableness, except by accretion and erosion, of the original boundaries established on the ground at the time of the Crown survey by Government or other duly authorized surveyors in good faith; however, in the circumstances of Section 7.11.4 (l), some departure, based on the facts on the ground, from strict reliance on the erroneous record of the position of the original boundary, may well be justified.
7.11.5 Assessment

(a) In the assessment of the results of the field survey there are many factors to be considered. Where the parcel boundary is a water feature, there are a number of sets of circumstances which may be disclosed by the current survey.

For example —

(i) There could be agreement, or virtual agreement, between the original and the modern locations of the water feature boundary;

(ii) There could be variations between the two as a result of sudden break-through either from natural causes or from artificial intervention. In these circumstances, it is necessary to determine if the change was before or after the commencement of the Water Act 1905 (1 May 1906) so that the common law principle of "ad medium filum" can be considered in conjunction with Section 5 of the Water Act 1958. In such circumstances, consultation with the Surveyor-General's Office may be advisable;

(iii) There could be variations between the two as a result of different interpretations of the position of the bank according to the original and the current surveys;

(iv) There could be variations between the two as a result of imperceptibly slow and gradual movement of the bank from natural causes;

(v) There could be variations between the two as a result of a combination of two or more of the foregoing sets of circumstances.

(b) In the first two examples above, the original boundary is deemed to remain as that to be adopted; in the third example, the bank as defined in the Water Act 1958 shall be adopted; in the fourth example, the parcel boundary is deemed to have moved with imperceptibly slow and gradual natural movement; the fifth example provides for a combination of two or more situations.

(c) Where there is a strip of reserved or unreserved Crown land between the stream and the parcel boundary, again there are different sets of circumstances which can apply. For example:

(i) The parcel boundary may be delineated as a line at a certain offset from the water feature;

(ii) The parcel boundary may be delineated by a series of straight lines with bearings and lengths thereon at or somewhat in excess of a certain offset from the water feature.

(d) As a general rule, in both of the examples (c) (i) and (c) (ii) above, the parcel boundary is deemed to remain in the position originally established notwithstanding any movement of the water feature either towards it or away from it, from whatever cause. However in the event of the water course moving imperceptibly so as to cross the Crown land and to invade adjoining freehold land, the adjoining freehold land becomes lost to the owner. In the case of the River Murray where the left bank forms the State boundary and the bank actually moves across the parcel boundary onto land originally in the parcel, the land encroached upon would be deemed to be lost to the parcel and to the State of Victoria.

(e) Some illustrations follow showing the recommended practice to be observed where the course of a stream is noted to be at variance with that disclosed on the original title documents.

In the examples below:
Title boundaries are shown in thick lines; Present locations of the bank of streams are shown in broken lines.

Example 1

Only minor differences with original survey. Evidence on ground indicates that changes are due to slow and imperceptible movement. RECOMMENDED PRACTICE - ADOPT PRESENT BANK.

Example 2

Evidence indicates that differences in location are due to 'man-made' alterations to straighten the creek. RECOMMENDED PRACTICE - ORIGINAEBOUNDARY OR BANK AS KNOWN PRIOR TO ALTERATION SHOULD BE ADOPTED FOR PLANS.

(If application is to be made to bring the land under the operation of the Transfer of Land Act 1958 the extent of the subject land should be considered with the owner, particularly in regard to occupation and use of the land, and rights of any Authority etc.)

Example 3

RECOMMENDED PRACTICE - ADOPT ORIGINAL TITLE BOUNDARIES.
7.12 Boundaries- Artificial

Most boundaries encountered by the surveyor consist of marked lines being walls, fences or buildings. The licensed surveyor must at all times consider all available evidence in determining the weight to be attached to various segments of this evidence when deciding on the boundaries to be adopted, and fixed by definitive bearings and lengths.

As an example, in dealing with applications to bring land under the operation of the Transfer of Land Act (especially where adjoining lands are not under that Act), more weight would attach to the existence of walls or fences etc. on the boundaries sought to be adopted, than would normally be attached when dealing with a section or locality where all the lands are under the Torrens title system. The reason for this is that possession will not affect title to land, except by long continuous possession against the documentary owner, and enclosure with the land claimed is a matter of consideration.

7.12.1 Monuments

The term "monument" in the sense of an indication of a boundary, does not seem to have been defined judicially.

The Oxford Dictionary gives the following definition:

"Any object natural or artificial fixed permanently in the soil and referred to in a document as a means of ascertaining the location of a tract of land or any part of its boundaries."

A building, wall or fence may become a monument when it is described in a transaction between parties as forming the boundary between their respective properties. As an example, if a sale is made of a parcel of land shown as having a width of 15 metres between walls of buildings, and subsequently it is found that there is more or less than 15 metres between the respective buildings, they as monuments in that transaction, will govern the boundaries and the measurement of 15 metres must give way and be adjusted accordingly.

Where a building is not a monument defining a boundary, but has clearly been erected out of position so as to cause an encroachment on the land in the Certificate of Title of another owner, the discrepancy cannot be cured by amendment of a certificate, but should be adjusted by way of transfer unless the possession can be proved to be long standing.

Fences are not entirely satisfactory as monuments. They have a tendency to move in localities where the soil is light, and a paling fence which has been blown over by heavy wind when the soil is wet, may be many millimetres out of position when it is straightened.

The position of a fence claimed as a monument of considerable age should be tested carefully as far as possible, either by connection to a known point, or by other corroborative evidence.

Survey pegs found in the course of re-survey are not always to be accepted as conclusive. If they can be established as being the original marking of a survey, they would of course, carry considerable weight and be strong evidence of where the lines were fixed by that survey.

The weight to be attached to a peg found would depend largely on the nature and appearance of the peg, its apparent age as compared with the date at which the land was originally marked out, and the position in which it was found. This position might suggest so strongly that the peg has been moved that its value as evidence would be depreciated.

If a peg seemed to be new and the marking of the particular parcel of land had occurred many years before, it would be of questionable value as evidence of a boundary.

Unless the facts would enable a strong inference to be drawn that the peg was an original mark and had not been moved, it should not be given much weight.

Probably, of all monuments, the ordinary small survey peg is least likely to remain undamaged, or in its original position.

7.12.2 Fences

In considering fenced boundaries, remember that fences are not always erected with close regard to exact boundary lines; that fences may, under the influence of wind and weather, move appreciably; that in erecting a fence the owner may decide to place the fence entirely on his own land instead of placing the centre of the fence on the boundary line.

The notation "Old post found" or "fence post at corner" should not necessarily be regarded as indicating a spot on the ground which can be pin-pointed for the purposes of reproduction of a boundary.
The fallacy of this becomes apparent when it is realized that some corner posts are as much as 0.5 m in diameter. Furthermore, most corner posts have a tendency to lean in the direction of the straining wires of the attached fences and often their original upright positions cannot be determined with precise accuracy.

The notation "post on corner" may be misleading when shown as at a street corner, for the reason that there is no rule governing the placing of posts or regarding their description.

Speaking generally, a surveyor will adopt the intersection of the outside faces of a square post when its use becomes necessary to redefine a street, but may use the measured centre of the post or the intersection of lines along the outside faces of the post which incidentally, if it is a round post, would be a point outside the post.

As recurring doubts have arisen as to the point on a fence to which measurement is to be made when defining a boundary between adjoining properties, the Surveyors Board has given further consideration to this matter, and in the interests of standard practice now (1992) recommends:

In rural areas measure to the line of the wires which may be threaded through the centre of the posts or along one face particularly when netting is used.

In urban areas measure to the face of the rail to which the dividing material is fastened. (This line is usually the face of the posts into which the rail is morticed, but sometimes in the case of corner posts, the mortice is near the centre of the corner post).

There is not much difficulty in making appropriate comparisons when the side fences are erected at or nearly at right angles to the street, but complications arise when the lot boundaries are at an acute angle. The intersection point of the lines of the fences may fall outside the corner post.
7.12.3 Boundary Determinants
When making a decision as to the location of the line of occupation and the extent to, and the manner in which land has been enclosed, and for the purposes of making comparisons with previous records, the surveyor should consider the following:

- description of the materials constituting the wall or fence
- the age of the wall or fence
- the intentions of the owners or occupiers at the time of construction of the wall or fence
- the practice in the locality at the time of construction of the wall or fence relative to survey marks
- the line of occupation by walls or fences relative to buildings, concrete paths etc. erected on or near parts of the boundary
- views of the owners as to possession
- the line shown on previous records
- the line along road alignments as determined or required by the municipal authority

- aerial photography
  - From May 1992, the Land Titles Office has accepted the use of aerial photographic imagery as a basis for the confirmation and/or determination of boundaries involved in an application for adverse possession made under Sections 9,26E or 60 of the Transfer of Land Act 1958. The criteria for these boundary determinations are set out in Guidance Notes on the Use of Aerial Photography in Support of Adverse Possession Applications issued by the Land Titles Office in May 1992.

7.13 Roads and Water Frontages - Administration in Victoria

7.13.1 Introduction
The purpose of these notes is to answer various basic and commonly asked questions. They therefore attempt to give a reasonably accurate general statement rather than an absolutely positive interpretation on finer legal aspects.

7.13.2 Creation of Roads
In this context, creation refers to land being provided and given road status of some sort, but does not include any aspect of the physical construction of a road, this being a separate subject.

Roads created may be divided into two broad categories:

- Crown or "government" roads
- Freehold or "private" roads.

The usage of the words "private" and "public" can appear confusing to the uninitiated. For instance, private streets in certain circumstances become public highways, and there is provision in the Local Government Act whereby particular Crown roads may be declared to be public streets for the purpose of private street construction schemes.

7.13.3 Crown or Government Roads
These are roads for which the land has been provided out of Crown land. The whole land title system in Victoria is based on the concept that all the land in the State is Crown land unless, and until, it has been conveyed to some person or persons by way of Crown grant, which is the original freehold title from which all subsequent titles are derived. There are some minor exceptions to this concept, but they are not significant in this context.

Prior to any Crown and land being alienated by way of Crown grant or lease, or reserved for a special purpose, it was surveyed into allotments, and appropriate strips of Crown land were retained as roads both as public highways from town to town, and to provide access to allotments. There are various methods by which these strips of Crown land acquired the legal status of roads commonly referred to as being dedicated road. These include:

- By being proclaimed as road pursuant to Section 25 (3) (c) of the Land Act 1958 or corresponding sections of earlier acts. The practice of proclaiming roads virtually "en masse" by reference to red colour on parish plans was very common in the 1870s and 1880s, but not nearly as common either in earlier or later periods. Some 1100 such plans, known as Proclaimed Road Plans, are kept in the Central Plan Office.

- By being shown or described as abuttals on Crown grants. In the earlier Crown grants the land granted was defined by a technical description tracing the boundaries of the land. Where any description referred to a boundary as "by a road", whether or not named it is accepted that the grant also conveyed the right to use of the road. Similarly, in later grants the land granted is defined by a diagram on the grant document, and where such diagram shows a road abutting the land, this is also accepted as conferring rights in respect of the road. In either case, the roads concerned are regarded as having been effectively dedicated as road.

There are other methods by which Crown land could acquire legal status as road, but these are not always clear-cut, and it could be misleading to attempt to summarize them here. It is sufficient to mention the following aspects which, depending on circumstances, may be factors in assessing whether dedication has taken place:

- Transfer to Crown of freehold land already dedicated as road.

- Reservation under the Land Act 1958 or the Crown Lands (Reserves) Act 1978. "Road" is one of the purposes for which land may have been reserved under either of these Acts. There are also circumstances in which land reserved for "public purposes" might be regarded as having road status also.
7.13.5 Care and Management of Roads

Section 535 of the Local Government Act 1958 provides that the Council of every municipality shall have the care and management of all roads within the municipal district. However this must be read in conjunction with the provisions of the Transport Act under which certain roads or classes of road are the responsibility of the Road Construction Authority.

7.13.6 Timber and/or Vegetation on Roads

The following points are relevant in addition to the general provision for "care and management" by the Council:

- The ownership of timber on Crown roads is vested in the Crown, but its control and management is with the municipal council. By arrangement, the Department of Conservation and Environment exercises jurisdiction in certain matters of approval and/or royalty collection in regard to removal of timbers from Crown roads, subject to consultation with the municipality.
- Section 77 (1) Forest Act 1958 gives the Department of Conservation and Environment certain direct authority over trees etc. on roads which pass through State forest.
- Section 77 (4) Forests Act 1958 gives municipal council the control and management of all trees etc. on roads under the care and management of such council.
- Under Section 58 (3) Forest Act 1958 all forest produce (as defined in Section 3 of that Act) in a protected forest is under the control and management of the Department of Conservation and Environment.
- Section 3, Forests Act 1958 defines "protected forest" so as to include every unused road as defined in Part XIII of the Land Act 1958 (Section 399).

Note that "unused road" here has a special meaning which is dependent on formal action either by the municipality or by the Governor in Council. It does not automatically include all roads which are in fact not used as such. For practical purposes so far as protected forest is concerned, the term "unused road" is often regarded as meaning a road in respect of which there is a current Unused Road Licence.
- Section 190, Land Act 1958 provides a penalty for the offence of unauthorised cutting or removal of timber from any Crown lands including Crown roads.
- In general, the traditional view of the Department of Conservation and Environment is that any responsibility for maintaining or conserving appropriate timber and or vegetation on Crown roads not held under licence is primarily a matter for the municipal council.

7.13.7 Unused Road Licences and Water Frontage Licences

7.13.7.1 In many instances there is little or no public use of Crown roads and water frontages. These may be used for other than their normal purposes in conjunction with adjoining private land. In such cases, subject to the agreement of the local municipal council, an Unused Road Licence or a Water Frontage Licence may be granted by the Department of Conservation and Environment to the owner of adjoining private land. This would authorize that owner to place fences across the ends of the road or water frontage, thus effectively enclosing it for use, within others.
certain specified limits, with his own land. Such licences are normally for a term of one year and may be renewed annually. Even where a road or water frontage is not licensed it does not necessarily follow that it must be excluded by fencing from adjoining privately owned land. The lack of a fence separating such a road or water frontage from adjoining land is not in itself an offence.

7.13.7.2 The Land Act provides that in any instance considered appropriate, special conditions may be inserted in the licence to require either unlocked swing gates to allow vehicular traffic and/or unlocked wicket gates or styles to cater for pedestrian access.

7.13.7.3 If the extent of demand for public use of any unused road or water frontage held under licence increased sufficiently to warrant termination of the licence, then consideration could be given to either non-renewal or cancellation of the licence.

7.13.8 Physical Roadways or Tracks Not Necessarily Legal Roads

7.13.8.1 It must be remembered that the physical existence of a road formation or track does not necessarily mean that it has legal status as a road, except perhaps for the purposes of the Transport Act 1983. For example, there are formed and sealed roadways running through or alongside some of Melbourne's park lands which are much used for through traffic, but apart from the Transport Act implications if applicable, the land traversed by the roadway is simply part of a Crown reserve. Similarly, traversing many of Victoria's water feature frontages, there are roadways which have no legal status as road.

7.13.8.2 Where this type of situation exists and it is desired to subdivide adjoining privately owned land with lots having no other means of access, Section 569 B (7) (AA) of the Local Government Act 1958 provides that the Council shall refuse to seal such a plan of subdivision. If it is not feasible to provide other means of access, an approach could be made to the Department of Conservation, Forests and Lands for formal road provision to be considered, or for the consent of the Minister to the use of the subject land for access to be sought.

7.13.9 Roads Not Known to Title

7.13.9.1 It sometimes happens that a Crown road, which has legal status as such, adjoins privately owned land, but is not known to the relevant title. This can be the case, for example, where the subject road came into existence at a date later than the original Crown Grant from which the current title derived.

7.13.9.2 In cases, such as a proposed private subdivision, where a valid abuttal to the subject road is essential, an approach to the Surveyor-General's Office, Division of Survey and Mapping would be the proper course of action.

7.13.10 Some Other Legislation Relating to Roads

7.13.10.1 The Local Government Act 1958 deals extensively in Part XIX with matters relating to roads. The index to the relevant divisions, subjects and sections is set out hereunder:

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<td>14</td>
<td>Alignment, Widening and Opening of Streets</td>
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7.13.10.2 The Land Act 1958 has several Sections relating to roads, viz—

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<th>Section</th>
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<td>25(3)(c)</td>
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<td>209</td>
<td>Detached strips of Land may be sold at a valuation. (This includes roads or parts thereof after formal closure under Section 349.)</td>
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<tr>
<td>349</td>
<td>Power to close certain unused Roads on Crown land.</td>
</tr>
</tbody>
</table>
7.13.10.3 The Housing Act 1983, Section 16 (1)(b) provides for the closure of an unnecessary street.

7.14 Bibliography

This Section consists of a listing of books and papers relating to the law and practices affecting surveying and land boundaries. It is included to provide an historical and general background to various cadastral systems and practices. Although the listing is intended to provide a broad coverage of these subjects, no claim is made that it is exhaustive.

BOOKS


Note: The Law Book Company of Australia, Pty. Ltd., has offices in most capital cities in Australia.

PAPERS


Ball, R.J. "What is a Strata Title?" Law Institute Journal Vol. 58, 1984.


Clements, L.G. "Converting a Stratum Title to a Strata Title". Law Institute Journal Vol 58, 1984.


**OFFICE OF TITLES - NOTES AND DIRECTIONS**

These are issued on an occasional basis as information papers covering Office of Titles requirements on a range of subjects.
7.1 Standard Parcel Identifier

7.1.1 Introduction

The Standard Parcel Identifier project currently under way in Land Victoria aims at assigning a unique identifier to each land parcel in Victoria. The ability to uniquely identify each land parcel will enable matching of information about that parcel across various databases thereby enhancing the value of land information.

Initially, Victorian land parcels were uniquely identified. However, for many years, it was possible for utilities and land owners to create new parcels without a formal subdivision process. The resulting parcels were known as "part" of the original descriptor, and there were always two or more "parts".

The diagram below outlines the resulting situation:

```
+-----------------+     +-----------------+
| Road            |     | Road            |
|                 |     |                 |
| Part 5          | Part 6| Part 5          | Part 6 |
|                 |     |                 |
|                 |     |                 |
```

These examples apply to both Crown and Lot on Plan type descriptors.

The use of the same parcel identifier for several parcels destroys the ability of computers to identify that parcel uniquely and therefore makes it impossible to match parcel related information across various databases.

A further issue arises in the Crown Allotment, parish system. In some parishes the numbering system for parcels can be very complex. It is therefore necessary to simplify descriptors such as portion, block, section, parish, by reducing the number of levels to two.

Some 20% or 400,000 of Victoria’s land parcels have non unique or complex identifiers.

7.1.2 Solution

The majority of Victoria's parcels descriptors are already unique. All of these could be put into Lot on Plan type format. Examples such as:

- Lot a LPnnnnn
- Lot a PSnnnnnn

Crown allotments can also be considered as a lot on plan. For example Crown Allotment 1 of the Parish of Acheron could be considered allotment 1 on PP 2001 where 2001 is the parish number for Acheron. It was therefore decided that the Standard Parcel identifier should have the format of:

```
[Lot]-[Section]-[Plan Type][Plan Number]
```

The examples from above therefore have the following SPIs:

- Lot a LPnnnnn has a SPI of aLPnnnnn
- Lot a PSnnnnnn has a SPI of aPSnnnnnn
- Crown allotment 1 of the parish of Acheron has a SPI of 1PP2001

Complex Crown descriptors will be simplified.

7.1.3 Assignment of SPI

Non unique parcels within the Torrens system will be assigned a unique lot on a Title Plan as part of the Titles Automation Project. Because they will then be lots on a plan, they will conform to the general SPI format.

Each parcel of Victorian Crown land already has a unique descriptor. The few complex parcels descriptors that did exist have been reformatte by the Central Plan Office.

General Law parcels will have a lot on Title Plan assigned to each parcel on conversion and will therefore conform to the SPI format.

Detailed business rules have been developed for all known situations and can be found on http://www.land.vic.gov.au/spi. These business rules are continually evolving. It is therefore necessary to check the currency of any paper copies of the rules prior to applying them.

7.1.4 SPI Distribution Process

SPIs will be created in the Titles Register as part of the Titles Automation Project. They will be held as part of the Victoria Online Title System.

SPIs will also be migrated to Vicmap Digital (Property), and then to other parcel databases.

It should be noted that Vicmap Digital (Property) will not attempt to carry SPI for those parcels that are, for all practical purposes, parts of roads.
Once the SPI project has been completed, any organisation that obtains a copy of Vicmap digital (Property), or an update to it, will automatically get the SPIs. Using the SPI, they will be able access parcel information from all other databases that incorporate the SPI.

7.1.5 Timelines
Creation of SPI for parcels with non unique or complex descriptors is expected to be completed in the 3rd quarter of 2000. SPIs are expected to be in Vicmap by early 2001.

7.1.6 Impact on Surveyors
In one sense the impact on surveyors will be small. The Subdivision Act 1988 effectively stopped the creation of "part" parcels. Recent administrative changes within Land Victoria have ensured no further non unique descriptors could be created. However, in another sense, the impact could be significant. Once the project has been completed, and SPI is used widely throughout all parcel databases, then access to all the information about the land becomes much easier.

SPI is linking various land information projects throughout Land Victoria. The SPI project is facilitating the integration of land information and working with the Titles Automation Project to overcome ambiguities associated with different land descriptors. This will result in improved clarity of parcel definition. More titles will be defined on plans and their delineation will be more easily obtained through digital images. Information obtained as part of the Property Information Project working with local government will be more complete and able to be accessed through Vicmap Digital using the SPI.